POST JOB REPORT

Great Western Operating Company

Ottesen LE 06-311HN

API # 05-123-44345

Surface

11/7/2018

Quote #: 21679 **Execution #:** 12854

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	11/7/2018	**Well**	Ottesen LE 06-311HN
End Date	11/7/2018	**API#**	05-123-44345
Client	Great Western Operating Company LLC	**County**	WELD
Client Field Rep.	Ricky	**State/Province**	CO
Service Sup.	Roger Acuna	**Execution ID**	EXC-12854-R9F2X102
District	Cheyenne, WY	**Project ID**	PRJ1012423
Type of Job	Surface		

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	1,818.00	1,785.00	30.00		
Casing	8.92	9.63	36.00	1,818.00	1,785.00		J-55	LTC

Shoe Length (ft): 42.00

HARDWARE

Top Plug Used?	Yes	**Tool Depth (ft)**	1,762.00
Top Plug Provided By	Non BJ	**Max Casing Pressure - Rated (psi)**	2,020.00
Top Plug Size	9.625	**Max Casing Pressure - Operated (psi)**	1,390.00
Centralizers Used	Yes	**Pipe Movement**	None
Centralizers Quantity	17.00	**Job Pumped Through**	Manifold
Centralizers Type	Bow	**Top Connection Thread**	LTC
Landing Collar Depth (ft)	1,762	**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)	30.00	**Solids Present at End of Circulation**	No
Circulation Rate (bpm)	10.00	**Flare Prior to/during the Cement Job**	No
Circulation Volume (bbls)	300.00	**Gas Present**	No
Lost Circulation Prior to Cement Job	No		

TEMPERATURE

Ambient Temperature (°F)	30.00	**Slurry Cement Temperature (°F)**	45.00
Mix Water Temperature (°F)	45.00		

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	6.80	1803	837	1,163.0000	207.0000
Displacement Final	Water	8.3300					0.0000	136.2000

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 Services	**Amount of Cement Returned/Reversed**	26.00
Calculated Displacement Volume (bbls)	136.20	**Method Used to Verify Returns**	Visual
Actual Displacement Volume (bbls)	136.20	**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)	1,390.00	**Total Volume Pumped (bbls)**	363.20
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: Ottesen LE 06-311HN

Job Type: Surface

Quote ID: QUO-21679-Z6C6Y4

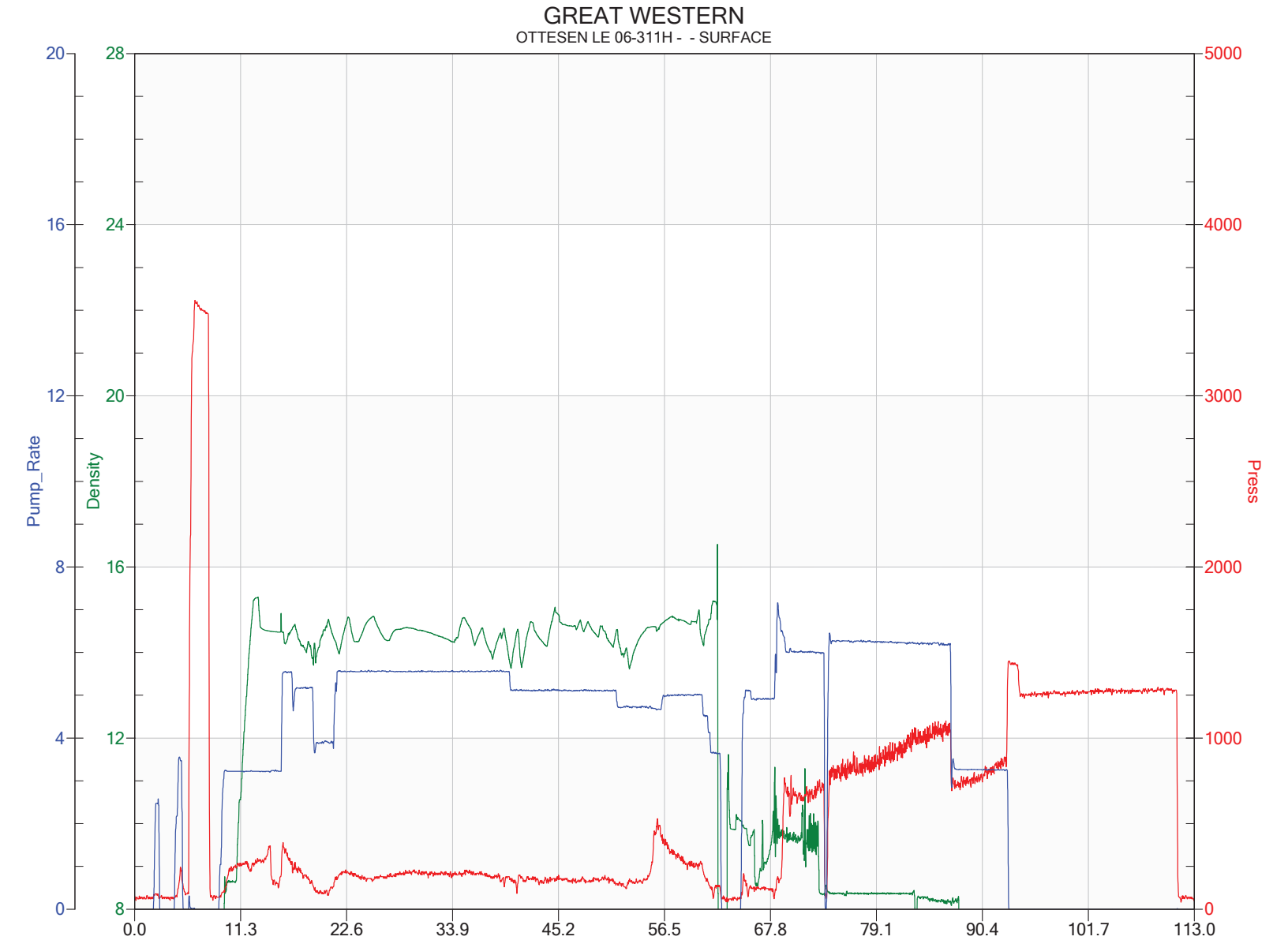
Plan ID: ORD-12854-R9F2X1

Execution ID: EXC-12854-R9F2X102

District: Cheyenne, WY

BJ Supervisor: Roger Acuna

Seq.	Start Dt./Time	Event	Density (ppg)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	11/07/2018 00:00	Callout					CALLED OUT RTS 0400
2	11/07/2018 00:30	Depart for Location					DEPART CHEYENNE WY CAMP
3	11/07/2018 02:30	Arrive on Location					ARRIVE TO LOCATION, CHECK IN WITH COMAPNY MAN
4	11/07/2018 02:30	Spot Units					SPOT EQUIPMENT
5	11/07/2018 02:45	Rig Up					RIG UP IRON AND HOSES
6	11/07/2018 03:30	Client	8.4000	10.00	300.00	200.00	WAITING ON RIG TO RUN CASING AND CIRCULATE
7	11/07/2018 05:39	Pump Spacer	8.3300	3.00	3.00	100.00	PUMP 3BBLS DYE WATER
8	11/07/2018 05:43	Pressure Test				3,500.00	TEST LINES
9	11/07/2018 05:46	Pump Spacer	8.3300	5.00	17.00	250.00	PUMP FRESH WATER FLUSH
10	11/07/2018 05:52	Pump Tail Cement	14.5000	5.00	207.00	220.00	PUMP 207BBLS BJCEM S100.3. XC @ 14.5PPG (837SKS 1.39YLD 6.80GPS)
11	11/07/2018 06:39	End Pumping					SHUTDOWN
12	11/07/2018 06:41	Drop Top Plug					DROP TOP PLUG
13	11/07/2018 06:42	Pump Displacement	8.3300	6.00	116.00	700.00	PUMP FRESH WATER DISPLACEMENT
14	11/07/2018 07:03	Cement Back-to-Surface					CEMENT TO SURFACE @ 110BBLS INTO DISPLACEMENT
15	11/07/2018 07:04	Pump Displacement	8.3300	3.00	20.20	800.00	SLOW RATE TO LAND PLUG
16	11/07/2018 07:10	Land Plug				1,390.00	LAND PLUG 500PSI OVER FINAL CIRCULATING PRESSURE
17	11/07/2018 07:12	Pressure Test				1,250.00	CASING TEST TO 1250 PSI FOR 15MIN - GOOD TEST
18	11/07/2018 07:28	Check Floats					CHECK FLOATS, FLOATS HELD GETTING BBLS BACK TO THE PUMP
19	11/07/2018 07:30	End Pumping					END JOB
20	11/07/2018 07:30	Rig Down					RIG DOEN IRON AND HOSES
21	11/07/2018 08:15	Leave Location					DEPART LOCATION


GREAT WESTERN
OTTESEN LE 06-311H - - SURFACE
Pump_Rate
Density
Press
20
16
12
8
4
0
28
24
20
16
12
8
5000
4000
3000
2000
1000
0
0.0
11.3
22.6
33.9
45.2
56.5
67.8
79.1
90.4
101.7
113.0