



Great Western Operating Company, LLC

Ottesen LE 09-369HNX

API # 05-123-49309

Surface

March 30, 2020

Quote #: QUO-44101-H5Y1Z6

Execution #: EXC-25480-M2M4P202



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

BJ Cementing Treatment Report

SERVICE SUPERVISOR	Eric Dewit	RIG	WM 454
DISTRICT	Cheyenne, WY	COUNTY	WELD
SERVICE	Cementing	STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	ID (in)	OD (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)	GRADE	THREAD
Open Hole	13.50	0.00	0.00	2,022.00	2,022.00	30.00		
Casing	8.92	9.63	36.00	2,022.00	2,022.00		J-55	LTC

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,977.26
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	2,720.00
Top Plug Size	9.625	Max Casing Pressure - Operated (psi)	1,600.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	19.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	LTC
Landing Collar Depth (ft)	1,977.26	Top Connection Size	9.625

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)	8.00	Flare Prior to / during the Cement Job	No
Circulation Volume (bbls)	240.00	Gas Present	No
Lost Circulation Prior to Cement Job	No		

TEMPERATURE

Ambient Temperature (°F)	60.00	Slurry Cement Temperature (°F)	56.00
Mix Water Temperature (°F)	55.00		

Client: Great Western Operating Company, LLC

Well: OTTESEN LE #09-369HNX

Well API: 05-123-49309

Start Date: 3/30/2020

End Date: 3/30/2020



FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H ₂ O REQ (gals/sk)	PLN TOP FLD (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	2,000.00	930	1293.0000	230.3000
Displacement Final	Water	8.3300			0.00			0.0000	151.4000

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	Amt of Cement Returned / Reversed	0.00
Calculated Displacement Vol (bbls)	152.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	152.00	Amt of Spacer to Surface	0.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amt Bled Back After Job	1.00
Bump Plug Pressure (psi)	1,525.00	Total Volume Pumped (bbls)	400.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	Yes - Top-out pumped on 4/1/20
Cement Returns During Job	No	Lost Circulation During Cement Job	Yes

BJ Cementing Event Log

Surface - Cheyenne, WY - Eric Dewit

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	03/30/2020 08:00	Callout					Customer calls with an OL time of 14:00 on 3/30/20 Crew gets equipment and materials ready to travel to location
2	03/30/2020 10:30	Depart for Location					Crew leaves yard to travel to location
3	03/30/2020 12:45	Arrive on Location					Arrive on location (rig is running casing) Pre-rig up safety meeting
4	03/30/2020 13:00	Spot Units					
5	03/30/2020 13:10	Rig Up					Rig up everything except for the rig floor
6	03/30/2020 14:00	Rig					Waiting on rig to finish running casing, and circulate (Rig is having trouble getting casing down)
7	03/30/2020 15:45	STEACS Briefing					Pre-job safety meeting with BJ Crew, Rig Crew, and Company Man
8	03/30/2020 16:00	Rig Up					Rig up cement head
9	03/30/2020 16:10	Other (See comment)	8.3400	5.20	5.00	669.00	Load lines with 5 bbls of fresh water
10	03/30/2020 16:12	Pressure Test	8.3400	0.00	0.00	2893.00	Test pumps and lines
11	03/30/2020 16:15	Pump Spacer	8.3400	5.60	15.00	483.00	Pump 15 bbls of fresh water ahead of cement
12	03/30/2020 16:17	Pumping Cement	14.5000	5.70	230.00	514.00	Pump 930 sks of cement @14.5 ppg
13	03/30/2020 17:02	Drop Top Plug					
14	03/30/2020 17:06	Pump Displacement	8.3400	8.00	0.00	177.00	Send plug start fresh water displacement + Biocide (Provided by the customer)
15	03/30/2020 17:15	Pump Displacement	8.3400	5.70	54.00	450.00	Had to drop rate due to pressure getting to high (1,100 psi) returns started to slow (well was bridging off)
16	03/30/2020 17:25	Pump Displacement	8.3400	2.80	134.00	950.00	Drop rate to land the plug
17	03/30/2020 17:31	Other (See comment)	8.3400	2.80	140.00	1120.00	Lost returns completely at 140 bbls away into displacement, never had full returns once we caught pressure
18	03/30/2020 17:34	Land Plug	8.3400	2.80	152.00	1531.00	Land plug (FCP was 1,027 psi) No cmt to surface. Start casing test.
19	03/30/2020 17:44	Pressure Test	8.3400	0.00	0.00	1540.00	10 min. into casing test
20	03/30/2020 17:54	Pressure Test	8.3400	0.00	0.00	1560.00	20 min into casing test
21	03/30/2020 18:04	Check Floats	8.3400	0.00	0.00	1578.00	Floats held (1 bbl back) Final pressure on casing test was 1,578 psi

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Quote #: QUO-44101-H5Y1Z6

Plan #: ORD-25480-M2M4P2

Execution #: EXC-25480-M2M4P202

22	03/30/2020 18:06	STEACS Briefing					Pre-rig down safety meeting
23	03/30/2020 18:15	Rig Down					rig everything down
24	03/30/2020 18:50	Leave Location					Leave location



JobMaster Program Version 5.00C1

Job Number: 22033

Customer: Great Western

Well Name: Ottesen LC 09-369HNX

