



Great Western Operating Company, LLC

Schneider HD 11-179HNX

API # 05-123-46402

Surface

September 07, 2019

Quote #: QUO-35941-B3B3P6

Execution #: EXC-21009-H7D0W302



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	Gregory Black	RIG	Ikon 12
DISTRICT	Cheyenne, WY	COUNTY	WELD
SERVICE	Cementing	STATE / PROVINCE	CO

WELL GEOMETRY

TYPE	ID (in)	OD (in)	WEIGHT (lbs/ft)	MD (ft)	TVD (ft)	EXCESS (%)	GRADE	THREAD
Open Hole	13.50			1,610.00	1,610.00	30.00		
Casing	8.92	9.63	36.00	1,610.00	1,610.00		J-55	LTC

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,653.58
Top Plug Provided By	BJ	Max Casing Pressure - Rated (psi)	3,512.00
Top Plug Size	9.625	Max Casing Pressure - Operated (psi)	2,012.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	16.00	Job Pumped Through	Manifold
Centralizers Type	Rigid	Top Connection Thread	LTC
Landing Collar Depth (ft)	1,563.58	Top Connection Size	9.625

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	Mud Density In (ppg)	8.50
Circulation Prior to Job	Yes	Mud Density Out (ppg)	8.50
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)	85.00	Slurry Cement Temperature (°F)	87.00
Mix Water Temperature (°F)	75.00		

Client: Great Western Operating Company, LLC

Well: SCHNEIDER HD 11-179HNX

Well API: 05-123-46402

Start Date: 9/7/2019

End Date: 9/7/2019

Field Ticket #: FT-21009-H7D0W30201-1229670818



FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H ₂ O 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	6.81	1,550.00	720	1,001.0000	178.3000
Displacement 1	Water	8.3300					0.0000	119.8000

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	Rig	Amt of Cement Returned / Reversed	34.00
Calculated Displacement Vol (bbls)	119.80	Method Used to Verify Returns	Flowmeter
Actual Displacement Vol (bbls)	119.80	Amt of Spacer to Surface	20.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amt Bled Back After Job	0.50
Bump Plug Pressure (psi)	1,330.00	Total Volume Pumped (bbls)	317.80
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement Returns During Job	Yes	Lost Circulation During Cement Job	No

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BJ Cementing Event Log

Surface - Cheyenne, WY - Gregory Black

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	09/07/2019 09:00	Callout					Callout location time of 15:00
2	9/7/2019 10:00:00 AM	Other (See comment)					Crew arrives in yard and pre-trips equipment
3	09/07/2019 13:00	STEACS Briefing					Journey management to location
4	09/07/2019 13:05	Depart for Location					Crew departs to great western
5	09/07/2019 14:30	Arrive on Location					Crew arrival
6	09/07/2019 14:30	STEACS Briefing					Rig up and plan meeting
7	09/07/2019 14:35	Rig Up					Crew rigs up ground iron
8	09/07/2019 15:00	Rig					Waiting on rig to finish running casing
9	09/07/2019 16:18	STEACS Briefing					Pre-job safety and job procedure with rig crew and company man
10	09/07/2019 16:23	Rig Up					Rig up head and crew gets equipment setup to start job
11	09/07/2019 16:46	Other (See comment)	8.3400	2.50	2.00		Load lines for pressure test
12	09/07/2019 16:48	Pressure Test	8.3400			2000.00	Pressure test
13	09/07/2019 16:51	Pump Spacer	8.3400	5.00	20.00	250.00	Pump dyed water spacer
14	9/7/2019 4:55:00 PM	Pump Tail Cement	14.5000	5.00	178.00	200.00	Pump 720 sks(178bbls) of cement @14.5 ppg (mix water:6.81)
15	09/07/2019 17:29	Other (See comment)					Shutdown to start washing pump and getting ready to drop top plug and displace
16	09/07/2019 17:37	Drop Top Plug					Plug dropped
17	09/07/2019 17:37	Pump Displacement	8.3400		30.00	350.00	
18	09/07/2019 17:39	Pump Displacement	8.3400		20.00	400.00	
19	09/07/2019 17:49	Pump Displacement	8.3400		40.00	500.00	Slowed rate to 3 bpm to bump plug
20	09/07/2019 17:55	Land Plug					Landed plug final circulation: 600 bump pressure:1200
21	09/07/2019 17:56	Pressure Test					Casing pressure test for 15 minutes: start 1310 psi, end 1332 psi.

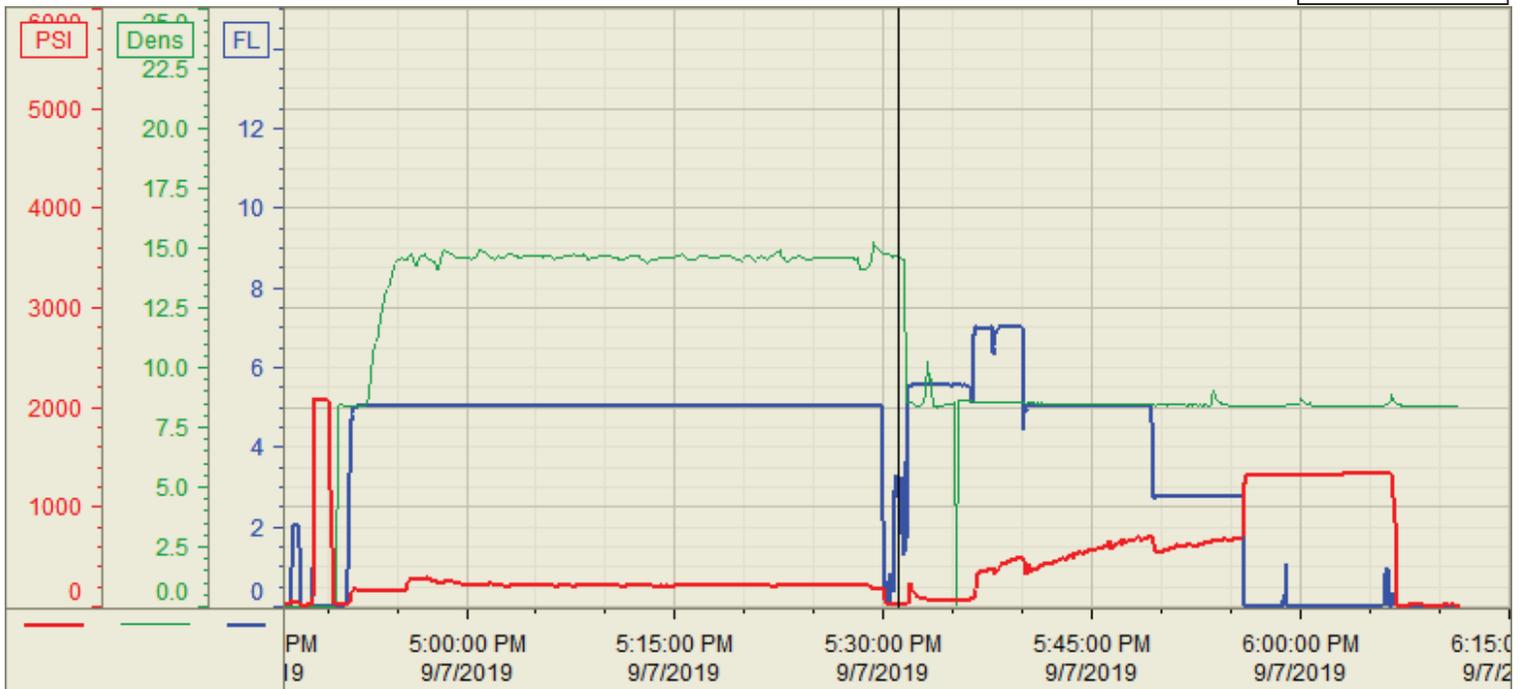
22	09/07/2019 18:07	Check Floats					.5 bbls back floats held
23	09/07/2019 18:07	Spacer Back-to-Surface					20 bbls of spacer to surface @66bbls away
24	09/07/2019 18:07	Cement Back-to-Surface					34of cement back @86bbls away
25	09/07/2019 18:07	STEACS Briefing					Rig down meeting
26	09/07/2019 18:13	Rig Down					Crew rigs down
27	09/07/2019 18:35	STEACS Briefing					Journey management
28	09/07/2019 18:40	Leave Location					



Customer: GREAT WESTERN
 Well Number: HD-11-179HNX
 Lease Info: Schneider



Print Date/Time
 9/7/2019 6:11:22 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	25.7 i.	9/7/2019 5:31:02 PM i.	Cementer\DS_DISCHARGE_PRESS_DIAL
2	Recirc - Density (PPG)	14.61	9/7/2019 5:31:03 PM	Cementer\DENSITY_ACTUAL_RATE
3	Combined pump rate	2.75	9/7/2019 5:31:01 PM	Cementer\Flow_Combined
4				
5				

Source: Control1 6:11:22 PM