



Great Western Operating Company, LLC

Schneider HD 11-019HNX

API # 05-123-46413

Surface

August 29, 2019

Quote #: QUO-35927-P5B1S4

Execution #: EXC-20820-Q5Y1W602



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	Hector Montoya	RIG	Ikona 12
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
Casing	8.92	9.63	36.00	1,577.00	1,564.00		J-55	LTC
Open Hole	13.50	0.00	0.00	1,577.00	1,564.00	30.00		

HARDWARE

Bottom Plug Used?	No	Landing Collar Depth (ft)	1,530.20
Top Plug Used?	Yes	Max Casing Pressure - Rated (psi)	3520.00
Top Plug Provided By	Non BJ	Max Casing Pressure - Operated (psi)	2860.00
Top Plug Size	9.625	Job Pumped Through	Manifold
Centralizers Used	Yes	Top Connection Thread	LTC
Centralizers Quantity	15.00	Top Connection Size	9.625
Centralizers Type	Bow		

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	PV Mud Out	1
Circulation Prior to Job	Yes	YP Mud In	1
Circulation Time (min)	60.00	YP Mud Out	1
Circulation Rate (bpm)	6.00	Solids Present at End of Circulation	No
Circulation Volume (bbls)	320.00	10 sec SGS	1
Lost Circulation Prior to Cement Job	No	10 min SGS	1
Mud Density In (ppg)	8.60	30 min SGS	1
Mud Density Out (ppg)	8.60	Flare Prior to / during the Cement Job	No
PV Mud In	1	Gas Present	No

Client: Great Western Operating
Company, LLC

Well: SCHNEIDER HD 11-
019HNX

Well
API: 05-123-46413

Start Date: 8/29/2019

End Date: 8/29/2019



TEMPERATURE

Ambient Temperature (°F)	75.00	Slurry Cement Temperature (°F)	65.00
Mix Water Temperature (°F)	60.00	Flow Line Temperature (°F)	90.00

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	1001.0000	178.3000
Displacement 1	Water	8.3300					0.0000	117.0000

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	37.00
Calculated Displacement Vol (bbls)	117.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	117.00	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)	140.00	Total Volume Pumped (bbls)	315.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement Returns During Job	Yes	Lost Circulation During Cement Job	No

Client: Great Western Operating Company, LLC

Well: SCHNEIDER HD 11-019HNX

Well API: 05-123-46413

Start Date: 8/29/2019

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BJ Cementing Event Log

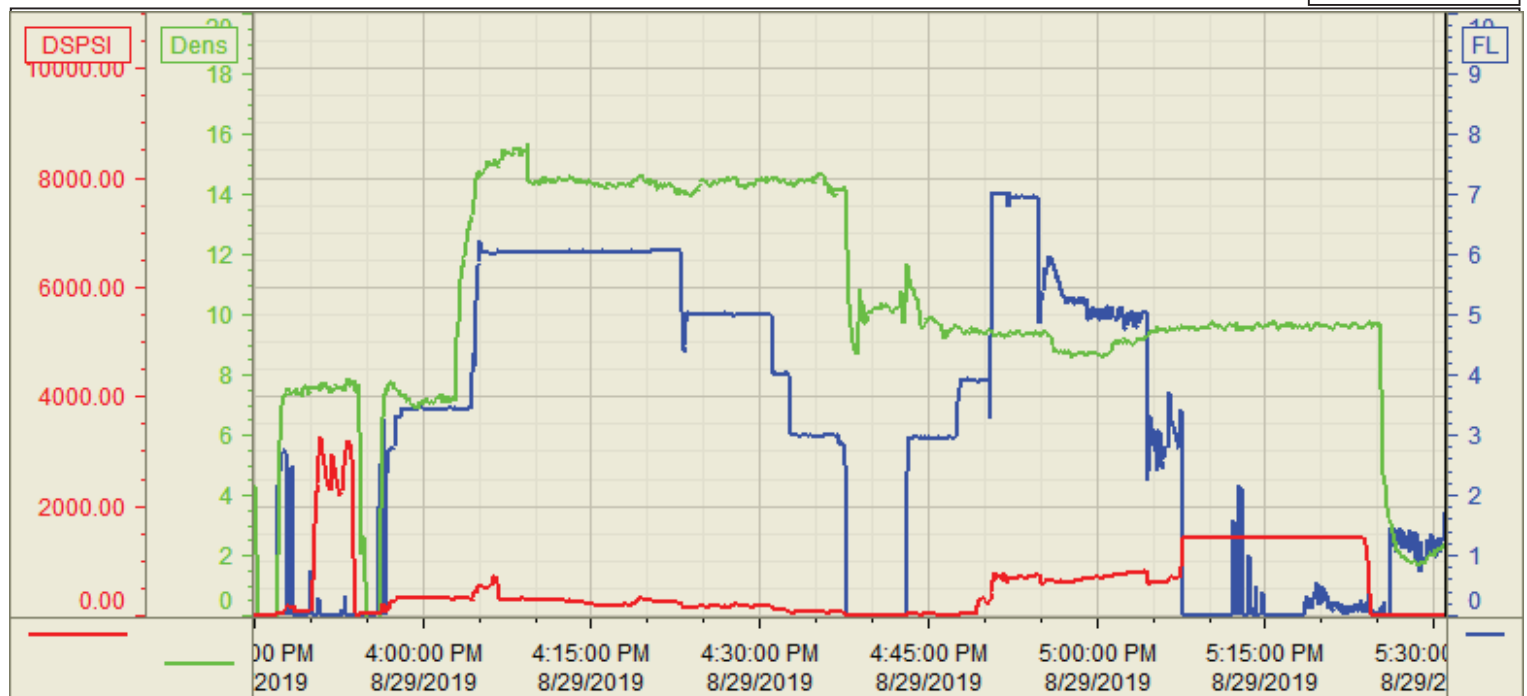
Surface - Cheyenne, WY - Hector Montoya

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	08/29/2019 02:00	Callout					BJ Crew gets called out
2	08/29/2019 04:00	Other (See comment)					Load Up for Job
3	08/29/2019 05:00	STEACS Briefing					BJ Crew talks about hazards of driving to location
4	08/29/2019 05:20	Arrive on Location					Arrive safely
5	08/29/2019 07:20	STEACS Briefing					BJ Crew discusses hazards of rigging up
6	08/29/2019 07:30	Rig Up					Rig Up
7	08/29/2019 09:30	Other (See comment)					Wait on casing to be ran
8	08/29/2019 15:00	STEACS Briefing					BJ Crew and Rig Crew discuss hazards of pumping the job
9	08/29/2019 15:40	Prime Up					Fill Lines
10	08/29/2019 15:50	Pressure Test					Pressure test to 3500psi
11	08/29/2019 15:56	Pump Spacer	8.3300	3.50	20.00	120.00	Pump 20bbl Red Dye spacer
12	08/29/2019 16:04	Pump Tail Cement	14.5000	6.00	178.00	300.00	Primary 178bbl at 14.5ppg, γ-1.39, gpc-6.81, mix water-116bbl
13	08/29/2019 16:38	Drop Top Plug					Customer witnesses Top Plug leave
14	08/29/2019 16:43	Pump Displacement	8.3300	6.00	100.00	900.00	Total Displacement 117bbl
15	08/29/2019 17:04	Pump Displacement	8.3300	3.00	17.00	1420.00	Slow rate last 20bbl to 3bpm. 37bbl cement to surface
16	08/29/2019 17:07	Other (See comment)				1420.00	15min Casing Test: start 1420 psi, end 1420 psi.
17	08/29/2019 17:23	STEACS Briefing					BJ Crew talks about the hazards of rigging down
18	08/29/2019 17:30	Rig Down					Rig Down
19	08/29/2019 19:00	Leave Location					Depart location

Customer: GREAT WESTERN
Well Number: 11-019HNX
Lease Info: SCHEIDER HD



Print Date/Time
8/29/2019 5:40:08 PM



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	8.7	8/29/2019 5:30:57 PM	Cementer\DS_DISCHARGE_PRESS_DIAL
2	DH - Density (PPG)	2.35 i.	8/29/2019 5:31:00 PM i.	Cementer\DENSITY2_ACTUAL_RATE
3	BPM	1.47 i.	8/29/2019 5:31:00 PM i.	Cementer\Flow_Combined
4				
5				

Source: Control1 5:40:01 PM