



Great Western Operating Company, LLC

TOLLWAY LC 24-363HN

API # 05-001-10425

Surface

March 14, 2020

Quote #: QUO-43349-Z1B1M0

Execution #: EXC-25199-X4T7P902



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	Chad Johnson	RIG	Ikon 12
DISTRICT	Cheyenne, WY	COUNTY	ADAMS
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	2,008.00	2,008.00		J-55	LTC
Open Hole	13.50	0.00	0.00	2,008.00	2,008.00	30.00		

HARDWARE

Bottom Plug Used?	No	Centralizers Type	Bow
Top Plug Used?	Yes	Landing Collar Depth (ft)	1,963.25
Top Plug Provided By	Non BJ	Pipe Movement	None
Top Plug Size	9.630	Job Pumped Through	Manifold
Centralizers Used	Yes	Top Connection Thread	LTC
Centralizers Quantity	19.00	Top Connection Size	9.63

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)	34.00	Mix Water Temperature (°F)	60.00
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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	43.00
Calculated Displacement Vol (bbls)	152.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	152.00	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	1.00
Bump Plug Pressure (psi)	700.00	Total Volume Pumped (bbls)	407.00
Were Returns Planned at Surface	Yes	Top Out Cement Spotted	No
Cement Returns During Job	Yes	Lost Circulation During Cement Job	No

BJ Cementing Event Log

Surface - Cheyenne, WY - Chad Johnson

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	03/14/2020 00:01	Callout					Crew called out requested on location for 0600
2	03/14/2020 05:00	Arrive on Location					Crew arrived on location
3	03/14/2020 05:05	STEACS Briefing					Safety meeting
4	03/14/2020 05:20	Spot Units					Spotted all units
5	03/14/2020 05:30	Rig Up					Rigged up all equipment
6	03/14/2020 06:15	STEACS Briefing					Safety meeting
7	03/14/2020 06:45	Prime Up	8.3400	3.00	5.00	100.00	Fill lines
8	03/14/2020 06:50	Pressure Test					Pressure test lines to 2500 psi
9	03/14/2020 06:53	Pump Spacer	8.3400	6.00	20.00	200.00	Pump water spacer
10	03/14/2020 07:00	Pump Tail Cement	14.5000	6.00	230.00	250.00	Pump cement (930 sks, 1.39 Y, 6.81 gal.sk) (had to shut down for 3 mins while mixing due to poor delivery out of pod 3 on bin)
11	03/14/2020 08:00	Other (See comment)					Shutdown
12	03/14/2020 08:04	Drop Top Plug					Drop top plug
13	03/14/2020 08:05	Pump Displacement	8.3400	8.00	140.00	800.00	Pump displacement
14	03/14/2020 08:21	Cement Back-to-Surface					Cement to surface, 43 bbls cement to surface
15	03/14/2020 08:25	Other (See comment)	8.3400	3.00	12.00	700.00	Slow pump rate. Land plug at 700 psi, took to 1500 psi
16	03/14/2020 08:30	Test Casing					30 min csg test: start 1510 psi, end 1512 psi
17	03/14/2020 09:00	Check Floats					Check floats, floats holding, 1 bbls back
18	03/14/2020 09:10	STEACS Briefing					Safety meeting
19	03/14/2020 09:30	Rig Down					Rigged down all equipment
20	03/14/2020 11:00	Leave Location					Crew departed location



JobMaster Program Version 5.00C1

Job Number:

Customer: Great Western

Well Name: Tollway LC 24-363HN

