



# Great Western Operating Company, LLC

TOLLWAY LC 24-368HN

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API # 05-001-10435

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## Surface

March 22, 2020

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Quote #: QUO-25335-W3P1L7

Execution #: EXC-25335-W3P1L702



# Great Western Operating Company, LLC

Great Western Operating Company, LLC | 1801 Broadway, Suite 500 | Denver, CO 80202

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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

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# BJ Cementing Treatment Report

<b>SERVICE SUPERVISOR</b>	Chad Johnson	<b>RIG</b>	Ikon 12
<b>DISTRICT</b>	Cheyenne, WY	<b>COUNTY</b>	ADAMS
<b>SERVICE</b>	Cementing	<b>STATE / PROVINCE</b>	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	2,023.00	2,023.00	30.00		
Casing	8.92	9.63	36.00	2,023.00	2,023.00		J-55	LTC

## HARDWARE

<b>Bottom Plug Used?</b>	No	<b>Centralizers Type</b>	Bow
<b>Top Plug Used?</b>	Yes	<b>Landing Collar Depth (ft)</b>	1,978.25
<b>Top Plug Provided By</b>	Non BJ	<b>Pipe Movement</b>	None
<b>Top Plug Size</b>	9.630	<b>Job Pumped Through</b>	Manifold
<b>Centralizers Used</b>	Yes	<b>Top Connection Thread</b>	LTC
<b>Centralizers Quantity</b>	19.00	<b>Top Connection Size</b>	9.63

## CIRCULATION PRIOR TO JOB

<b>Well Circulated By</b>	Rig	<b>Mud Density In (ppg)</b>	8.40
<b>Circulation Prior to Job</b>	Yes	<b>Mud Density Out (ppg)</b>	8.40
<b>Circulation Time (min)</b>	30.00	<b>Solids Present at End of Circulation</b>	No
<b>Circulation Rate (bpm)</b>	8.00	<b>Flare Prior to / during the Cement Job</b>	No
<b>Circulation Volume (bbls)</b>	240.00	<b>Gas Present</b>	No
<b>Lost Circulation Prior to Cement Job</b>	No		

## TEMPERATURE

<b>Ambient Temperature (°F)</b>	35.00	<b>Mix Water Temperature (°F)</b>	60.00
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## FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H <sub>2</sub> 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

<b>Displaced By</b>	BJ	<b>Amt of Cement Returned / Reversed</b>	33.00
<b>Calculated Displacement Vol (bbls)</b>	153.00	<b>Method Used to Verify Returns</b>	Visual
<b>Actual Displacement Vol (bbls)</b>	153.00	<b>Amt of Spacer to Surface</b>	20.00
<b>Did Float Hold?</b>	Yes	<b>Pressure Left on Casing (psi)</b>	0.00
<b>Bump Plug</b>	Yes	<b>Amt Bled Back After Job</b>	1.00
<b>Bump Plug Pressure (psi)</b>	700.00	<b>Total Volume Pumped (bbls)</b>	407.00
<b>Were Returns Planned at Surface</b>	Yes	<b>Top Out Cement Spotted</b>	No
<b>Cement Returns During Job</b>	Yes	<b>Lost Circulation During Cement Job</b>	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	03/21/2020 16:00	Callout					Crew called out requested on location for 2230
2	03/21/2020 21:00	Arrive on Location					Crew arrived on location
3	03/21/2020 21:05	STEACS Briefing					Safety meeting
4	03/21/2020 21:20	Spot Units					Spotted all units
5	03/21/2020 21:30	Rig Up					Rigged up all equipment
6	03/21/2020 22:30	Client					Waiting on rig to finish running casing and circulate the well
7	03/21/2020 23:45	STEACS Briefing					Safety meeting
8	03/22/2020 00:13	Prime Up	8.3400	3.00	5.00	100.00	Fill lines
9	03/22/2020 00:15	Pressure Test					Pressure test lines
10	03/22/2020 00:19	Pump Spacer	8.3400	6.00	20.00	200.00	Pump water spacer
11	03/22/2020 00:24	Pump Tail Cement	14.5000	6.00	230.00	250.00	Pump cement (930 sks, 1.39Y, 6.81 gal/sk) (Batch up, slow down on pod swaps)
12	03/22/2020 01:15	Other (See comment)					Shutdown
13	03/22/2020 01:19	Drop Top Plug					Drop top plug
14	03/22/2020 01:20	Pump Displacement	8.3400	8.00	140.00	800.00	Pump displacement
15	03/22/2020 01:40	Cement Back-to-Surface					Cement back to surface, 33 bbls cement to surface
16	03/22/2020 01:43	Other (See comment)	8.3400	3.00	13.00	700.00	Slow pump rate. Land plug at 700 psi took to 1500 psi.
17	03/22/2020 01:46	Casing Test					30 min casing test: start 1532 psi, end 1573 psi.
18	03/22/2020 02:16	Check Floats					Check floats, floats holding, 1 bbls back
19	03/22/2020 02:20	STEACS Briefing					Safety meeting
20	03/22/2020 02:40	Rig Down					Rigged down all equipment
21	03/22/2020 04:00	Leave Location					Crew departed location



JobMaster Program Version 5.00C1

Job Number:

Customer: Great Western

Well Name: Tollway LC 24-368HN

