



# Great Western Operating Company, LLC

RIO LC 12-372HNX

API # 05-001-10465

Surface

March 14, 2020

Quote #: QUO-43365-P8W8K4

Execution #: EXC-25171-G7W7N402



# 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](mailto: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

SERVICE SUPERVISOR	Eric Dewit	RIG	White Mountain
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
Open Hole	13.50	0.00	0.00	2,002.00	2,001.00	30.00		
Casing	8.92	9.63	36.00	2,002.00	2,001.00		J-55	LTC

## HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,957.22
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	2,720.00
Top Plug Size	9.625	Max Casing Pressure - Operated (psi)	1,500.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	20.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	LTC
Landing Collar Depth (ft)	1,957.22	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)	5.00	Flare Prior to / during the Cement Job	No
Circulation Volume (bbls)	150.00	Gas Present	No
Lost Circulation Prior to Cement Job	No		

## TEMPERATURE

Ambient Temperature (°F)	44.00	Slurry Cement Temperature (°F)	56.00
Mix Water Temperature (°F)	55.00		

## 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

Displaced By	BJ	Amt of Cement Returned / Reversed	41.00
Calculated Displacement Vol (bbls)	151.40	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	151.40	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)	1,572.00	Total Volume Pumped (bbls)	404.00
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 - Eric Dewit

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	03/14/2020 06:00	Callout					Customer calls with an OL time of 12:00 on 3/14/20 crew gets equipment and materials ready to travel to location
2	03/14/2020 10:00	Depart for Location					
3	03/14/2020 11:50	Arrive on Location					Arrive on location (rig is running casing) Pre-rig up safety meeting
4	03/14/2020 12:00	Spot Units					
5	03/14/2020 12:10	Rig Up					
6	03/14/2020 13:00	STEACS Briefing					Pre-job safety meeting with BJ crew, Rig crew, and company man
7	03/14/2020 13:15	Rig Up					Rig up cement head
8	03/14/2020 13:36	Other (See comment)	8.3400	5.00	3.00	150.00	Load lines
9	03/14/2020 13:40	Pressure Test	8.3400	0.00	0.00	5400.00	
10	03/14/2020 13:43	Pump Spacer	8.3400	4.50	20.00	180.00	Pump 20 bbls of fresh water + Dye ahead
11	03/14/2020 13:48	Pumping Cement	14.5000	5.30	0.00	246.00	Start going down hole with 930 sks of cement @14.5 pg
12	03/14/2020 14:40	Pumping Cement	14.5000	4.10	70.00	120.00	Had to drop rate to hold density
13	03/14/2020 14:40	Drop Top Plug			230.00	0.00	Shut down to drop the plug
14	03/14/2020 14:44	Pump Displacement	8.3400	7.50	0.00	132.00	Send plug, Start fresh water displacement + Biocide (provided by customer)
15	03/14/2020 14:59	Spacer Back-to-Surface	8.3400	6.00	80.00	598.00	Getting dye back to surface (slowed rate to 1.3 bbls/min. at 86 bbls away for .5 bbls for rig to swap return line)
16	03/14/2020 15:03	Cement Back-to-Surface	8.3400	6.00	110.00	750.00	Start getting good cement to surface
17	03/14/2020 15:07	Other (See comment)	8.3400	2.70	130.00	754.00	Drop rate to land the plug
18	03/14/2020 15:13	Land Plug	8.3400	0.00	151.00	1572.00	Land plug, hold for 30 min casing test (41 bbls of cement to surface)
19	03/14/2020 15:23	Other (See comment)	8.3400	0.00	0.00	1577.00	PSI 10 min into test
20	03/14/2020 15:33	Other (See comment)	8.3400	0.00	0.00	1586.00	PSI 20 min into test
21	03/14/2020 15:43	Check Floats	8.3400	0.00	0.00	1591.00	Floats held (.5 bbls back)

Client: Great Western Operating Company, LLC

Well Name / API: RIO LC #12-372HXX / 05-001-10465



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Plan #: ORD-25171-G7W7N4

Execution #: EXC-25171-G7W7N402

22	03/14/2020 15:45	STEACS Briefing					Pre-rig down safety meeting
23	03/14/2020 15:55	Rig Down					
24	03/14/2020 16:25	Leave Location					



JobMaster Program Version 5.00C1

Job Number:

Customer: Great Western

Well Name: Rio LC 12-372HXX

