



Great Western Operating Company, LLC

Rio LC 12-375HNX

API # 05-001-10459

Surface

March 21, 2020

Quote #: QUO-43369-F2G0V9

Execution #: EXC-25337-N1N1C802



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	Eric Dewit	RIG	White Mountain
CLIENT FIELD REPRESENTATIVE	Shane	COUNTY	ADAMS
DISTRICT	Cheyenne, WY	STATE / PROVINCE	CO
SERVICE	Cementing		

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	2,015.00	2,014.00	30.00		
Casing	8.92	9.63	36.00	2,015.00	2,014.00		J-55	LTC

HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	1,970.28
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	2720.00
Top Plug Size	9.625	Max Casing Pressure - Operated (psi)	1600.00
Centralizers Used	Yes	Pipe Movement	None
Centralizers Quantity	19.00	Job Pumped Through	Manifold
Centralizers Type	Bow	Top Connection Thread	LTC
Landing Collar Depth (ft)	1,970.28	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)	21.00	Slurry Cement Temperature (°F)	51.00
Mix Water Temperature (°F)	50.00		

Client: Great Western Operating Company, LLC

Well: RIO LC #12-375HNX

Well API: 05-001-10459

Start Date: 3/21/2020

End Date: 3/21/2020

Field Ticket #:

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	32.00
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	0.50
Bump Plug Pressure (psi)	1576.00	Total Volume Pumped (bbls)	403.00
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	03/21/2020 01:30	Callout					Customer calls with an OL time of 7:30 on 3/21/20 Crew gets equipment and materials ready to travel to location
2	03/21/2020 04:30	Depart for Location					
3	03/21/2020 06:15	Arrive on Location					Arrive on location (rig is running casing) Pre-rig up safety meeting
4	03/21/2020 06:25	Rig Up					Rig up water, bulk, and treating line to the rig
5	03/21/2020 07:30	Rig					waiting on rig to finish running casing, and circulate
6	03/21/2020 08:45	STEACS Briefing					Pre-job safety meeting with BJ crew, Rig crew, and Company man
7	03/21/2020 09:00	Rig Up					Rig up cement head
8	03/21/2020 09:10	Other (See comment)	8.3400	5.20	5.00	175.00	load pumps and lines
9	03/21/2020 09:12	Pressure Test	8.3400	0.00	0.00	3497.00	
10	03/21/2020 09:15	Pump Spacer	8.3400	4.20	15.00	235.00	Pump water spacer ahead (no dye per customer)
11	03/21/2020 09:20	Pumping Cement	14.5000	5.20	230.00	160.00	Pump 930 sks @14.5 ppg
12	03/21/2020 10:07	Drop Top Plug					Shut down and drop top plug
13	03/21/2020 10:11	Pump Displacement	8.3400	7.40	0.00	59.00	Send plug, start fresh water displacement + Biocide (provided by customer)
14	03/21/2020 10:28	Cement Back-to-Surface	8.3400	7.40	120.00	816.00	Start getting good cement to surface
15	03/21/2020 10:30	Pump Displacement	8.3400	2.80	135.00	686.00	Drop rate to land the plug
16	03/21/2020 10:36	Land Plug	8.3400	2.80	152.00	1576.00	Land plug (784 was final circulating pressure) 32 bbls of cement to surface
17	03/21/2020 10:46	Pressure Test	8.3400	0.00	0.00	1587.00	Casing test pressure 10 min into test
18	03/21/2020 10:56	Pressure Test	8.3400	0.00	0.00	1588.00	Casing test pressure 20 min into test
19	03/21/2020 11:06	Check Floats	8.3400	0.00	0.00	1596.00	Final pressure was 1596 (Floats held) .5 bbls back
20	03/21/2020 11:08	STEACS Briefing					Pre-rig down safety meeting
21	03/21/2020 11:15	Rig Down					Rig everything down

Client: Great Western Operating Company, LLC

Well Name / API: RIO LC #12-375HNX / 05-001-10459



Quote #: QUO-43369-F2G0V9

Plan #: ORD-25337-N1N1C8

Execution #: EXC-25337-N1N1C802



JobMaster Program Version 5.00C1

Job Number:

Customer: Great Western

Well Name: Rio LC 12-375HNX

