

# Cement Verification Report - Cementer's Well Service, Inc.

P.O. BOX 336220 • GREELEY, CO 80633 • (970) 353-7299 • FAX (970) 353-7712



COGCC Operator Guidance RULE #308.A.B(2)A.ii

CLIENT: Great Western Operating	Cementer's FIELD TICKET #	400116-D
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## Requested Operator Guidance:

Well Name & Number	Lease	Raindance	Well No.	FC 23 - 272HC
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Well API Number	05-123-51583
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Job Date	7/15/21	Time on	16:00	24 hr time
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Job Type	New Well Surface
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Cementing Company	Cementer's Well Service, Inc	Contact	Nate Kvamme - 303-324-4296
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Ambient conditions	clear / rain / snow / other	90	temp deg F
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Slurry Description	
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a) Purpose	Surface - 9 5/8" 40# CSG, 13 1/2" hole
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b) Cement Class	Type I / II
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c) Cement Yield	1.61 cuft / sk
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d) Cement Density	13.9 PPG
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e) Number of sks	920 sks (94# equiv)
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f) Mix Fluid Type	
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Water / Cement	8.5 Gal / sk
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g) Slurry mixed	263.8 BBLs slurry
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h) Additives used	1.50% CaCl2 3.00% Bentonite
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Total Water Used	361.2 BBLs H2O
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i) Displacement Fluid Vol	155.0 BBLs H2O
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j) Method of Placement	
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k) Set Depth	2,048 feet (ft)
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l) Stage tool depth	n/a
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m) Float Collar Depth	2,004 feet (ft)
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n) Designed Top of Cement	n/a to surface	feet (ft)
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o) Centralizer depths	18 Centralizers at Following Depths: 96.66, 220.19, 342.42, 466.25, 589.69, 713.17, 836.39, 959.57, 1080.42, 1204.19, 1326.72, 1450.47, 1567.42, 1691.47, 1815.31, 1937.22, 1977.57, 2032.03
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## Charts - (pressure, density, pump rate)

Landed Plug @	1705 psi	Final Lift Pressure @	575 psi
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Cement Density (as weighed during job) @	13.9 PPG
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## Job notes

a) Plug down	Y / N	Time	18:42	24 hr time
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b) Floats held	Y / N	7/15/21
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c) Full Returns	Y / N	Lost Circulation	Y / N
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d) Cement to surface	Y / N	40.0 BBLs to surface
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e) If no returns, top off	n/a BBLs
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f) Top off detail	-
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DATE: DATE: 7/15/21



Great Western Operating Company, LLC

Lease: Raindance  
Well: FC 23 - 272HC  
API# 05-123-51583

Date &  
Time On 7/15/21  
16:00

Item	Event	Date	Time (24 hr)	Density (PPG)	Pump Rate (BPM)	Incremental (Line Item) Volume (BBLs)	Cumulative Volume (BBLs)	Pressure (PSI)	Comment
Pre-job	1 Call Out	7/15/21	13:00						Great Western Call out w/ 3 hr notice
	2 Leave Yard	7/15/21	15:15						Cementers leaves yard to travel to location
On Location: Pre-job	3 Arrive On Location	7/15/21	16:00						Arrive on location
	4 Spot Trucks	7/15/21	16:05						Spot trucks on location
	5 Rig Up	7/15/21	16:07						Rig up water & Cementer's Bulk Truck, prep pump and mixing operation
	6 Safety Meeting	7/15/21	16:12						Pre-job safety meeting with IKON12 rig crew, GWO company man & Cementer's crew
	7 Rig Up	7/15/21	16:17						Rig up cement head w/plug
	8 Fill Lines	7/15/21	16:19	8.34	2.00				Fill lines with up to 5 bbls of fresh water
	9 Pressure Test	7/15/21	0:00	8.34	-			-	Pressure test pumps and lines
Initial Job Start	10 Pump Spacer	7/15/21	16:45	8.34	4.00	20	20	-	Pump dye fresh water @ 20 BBLs
Cementing	11 Pump Cement	7/15/21	16:50	13.90	4.00	263.82	283.82	45	Pump Cement @ 920 SKS
									Type I/II cement with 1.5% CaCl2 & 3.0% Bentonite @ 1.61 cuft/sk & 13.9 PPG 263.82 BBLs slurry
Displacement	12 Drop Plug	7/15/21	18:02			n/a			Shut down cementing operation & release top plug
	13 Initial Displacement	7/15/21	18:04	8.34	2.00	4.00	287.82	-	Send plug with 4.0 BBLs H2O @ 2.0 BPM
	14 Plug Drop Verification	7/15/21	18:08			n/a			Visual verification plug released from head
	15 Displacement	7/15/21	18:10	8.34	5.00	100.99	384.80	80-450	Continued Displacement with total fresh water @ 155.0 BBLs H2O
	16 Spacer To Surface	7/15/21	18:32	8.34	5.00	104.99	388.80	385	Identified Spacer, looking for Cement / green water
	17 Cement To Surface	7/15/21	18:35	8.34	5.00	114.99	398.80	390	Identify Cement to surface w/ 40 BBLs back
	18 Drop Rate	7/15/21	18:40	8.34	2.50	144.99	428.80	400	Drop rate to 2.5 BPM for last 10 BBLs of Displacement to land plug
Casing Test	19 Land Plug	7/15/21	18:42	8.34	2.50	154.99	438.80	1,705	Land Plug @ 1,705 PSI
									with final lift pressure @ 575 PSI
								1,705	Start 30 min casing test w/ pressure @ 1,705 PSI
								1,720	10 min into casing test, pressure @ 1,720 PSI
								1,742	20 min into casing test, pressure @ 1,742 PSI
Post Job & Testing	20 Check Floats	7/15/21	19:13	n/a	0	0	0	1,756	30 min into casing test, pressure @ 1,756 PSI
	21 End Job	7/15/21	19:15						BBLs back (.25-1BBL expected)
	22 Safety Meeting	7/15/21	19:17						Bleed off pressure, job complete
	27 Rig Down	7/15/21	19:20						Pre-rig down safety meeting, wash up equipment
									Rig down Cementer's Equipment, leave location

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Great Western Operating Company, LLC

## Surface Cement Job Graph

### COMPANY DETAILS

Date	7/15/21	API #	05-123-51583	Well No.	FC 23 - 272HC
County	Weld	State	CO	Lease	Raindance

Client Great Western Operating Company, LLC

Contact / email

### JOB DETAILS

TIME ON	16:00	24 hr	Depth	2,048	ft.	Pressure Test @	1,705	psi
START TIME	16:30	7/15/21	Bottom of Surface	2,048	ft.	10 min	1,720	psi
END TIME	19:45	7/15/21	Plug Landed @	2,005	ft.	20 min	1,742	psi
			Plug Landed @	18:42	24 hr	30 min	1,756	psi

### SUMMARY GRAPH

