

# 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**



<b>CLIENT: Great Western Operating</b>	Cementer's FIELD TICKET #	<b>400113-D</b>
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**Requested Operator Guidance:**

<b>Well Name &amp; Number</b>	Lease	Raindance	Well No.	FC 23 - 312HN
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<b>Well API Number</b>	05-123-51586			
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<b>Job Date</b>	7/12/21	<b>Time on</b>	15:00	24 hr time
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<b>Job Type</b>	New Well Surface			
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<b>Cementing Company</b>	Cementer's Well Service, Inc	<b>Contact</b>	Nate Kvamme - 303-324-4296	
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<b>Ambient conditions</b>	clear / rain / snow / other	85	temp deg F	
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<b>Slurry Description</b>				
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<b>a) Purpose</b>	Surface - 9 5/8" 40# CSG, 13 1/2" hole			
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<b>b) Cement Class</b>	Type I / II			
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<b>c) Cement Yield</b>	1.61	cuft / sk		
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<b>d) Cement Density</b>	13.9	PPG		
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<b>e) Number of sks</b>	920	sks (94# equiv)		
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<b>f) Mix Fluid Type</b>				
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<b>Water / Cement</b>	8.5	Gal / sk		
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<b>g) Slurry mixed</b>	263.8	BBLs slurry		
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<b>h) Additives used</b>	1.50%	CaCl2	3.00%	Bentonite
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<b>Total Water Used</b>	361.7	BBLs H2O		
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<b>i) Displacement Fluid Vol</b>	155.5	BBLs H2O		
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<b>j) Method of Placement</b>				
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<b>k) Set Depth</b>	2,051	feet (ft)		
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<b>l) Stage tool depth</b>	n/a			
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<b>m) Float Collar Depth</b>	2,011	feet (ft)		
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<b>n) Designed Top of Cement</b>	n/a	to surface		feet (ft)
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<b>o) Centralizer depths</b>	20 Centralizers at Following Depths: 13.77, 55.12, 96.43, 220.4, 343.47, 467.12, 591.11, 715.1, 839.08, 963.04, 1087.04, 1206.8, 1329.97, 1453.62, 1577.62, 1694.74, 1818.67, 1942.7, 1984.04,			
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**Charts - (pressure, density, pump rate)**

<b>Landed Plug @</b>	1660	psi	<b>Final Lift Pressure @</b>	525	psi
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<b>Cement Density (as weighed during job) @</b>	13.9	PPG			
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**Job notes**

<b>a) Plug down</b>	Y/N	<b>Time</b>	19:00	24 hr time
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<b>b) Floats held</b>	Y/N	7/12/21		
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<b>c) Full Returns</b>	Y/N	<b>Lost Circulation</b>	Y/N	
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<b>d) Cement to surface</b>	Y/N	28.0	BBLs to surface	
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<b>e) If no returns, top off</b>	n/a	BBLs		
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<b>f) Top off detail</b>	-			
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# Surface Cement Job Report - Cementer's Well Service, Inc.

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DATE: DATE: 7/12/21



Great Western Operating Company, LLC

Lease: Raindance  
Well: FC 23 - 312HN  
API# 05-123-51586

Date & Time On 7/12/21 15:00

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	7/11/21	12:00						Great Western Call out w/ 3 hr notice
	2 Leave Yard	7/11/21	14:15						Cementer's leaves yard to travel to location
On Location: Pre-job	3 Arrive On Location	7/11/21	15:00						Arrive on location
	4 Spot Trucks	7/11/21	15:05						Spot trucks on location
	5 Rig Up	7/11/21	15:07						Rig up water & Cementer's Bulk Truck, prep pump and mixing operation
	6 Safety Meeting	7/11/21	15:12						Pre-job safety meeting with IKON12 rig crew, GWO company man & Cementer's crew
	7 Rig Up	7/11/21	15:17						Rig up cement head w/plug
	8 Fill Lines	7/11/21	15:19	8.34	2.00				Fill lines with up to 5 bbls of fresh water
Initial Job Start	9 Pressure Test	7/11/21	0:00	8.34	-			-	Pressure test pumps and lines
	10 Pump Spacer	7/11/21	17:00	8.34	4.00	20	20	-	Pump dye fresh water @ 20 BBLs
Cementing	11 Pump Cement	7/11/21	17:05	13.90	4.00	263.84	283.84	45	Pump Cement @ 920 SKS
									Type I/II cement with 1.5% CaCl2 & 3.0% Bentonite @ 1.61 cuft/sk & 13.9 PPG
Displacement	12 Drop Plug	7/11/21	18:15			n/a			Shut down cementing operation & release top plug
	13 Initial Displacement	7/11/21	18:17	8.34	2.00	4.00	287.84	-	Send plug with 4.0 BBLs H2O @ 2.0 BPM
	14 Plug Drop Verification	7/11/21	18:21			n/a			Visual verification plug released from head
	15 Displacement	7/11/21	18:23	8.34	5.00	113.53	397.37	80-450	Continued Displacement with total fresh water @ 155.5 BBLs H2O
	16 Spacer To Surface	7/11/21	18:50	8.34	5.00	117.53	401.37	385	Identified Spacer, looking for Cement / green water
	17 Cement To Surface	7/11/21	18:53	8.34	5.00	127.53	411.37	390	Identify Cement to surface w/ 28 BBLs back
	18 Drop Rate	7/11/21	18:58	8.34	2.50	145.53	429.37	400	Drop rate to 2.5 BPM for last 10 BBLs of Displacement to land plug
Casing Test	21 Casing Test	7/11/21	19:10	n/a	0	0	0	1,677	Land Plug @ 1,660 PSI
									with final lift pressure @ 525 PSI
Casing Test	22 Casing Test	7/11/21	19:20	n/a	0	0	0	1,695	Start 30 min casing test w/ pressure @ 1,660 PSI
									10 min into casing test, pressure @ 1,677 PSI
									20 min into casing test, pressure @ 1,695 PSI
Casing Test	23 Casing Test	7/11/21	19:30	n/a	0	0	0	1,708	30 min into casing test, pressure @ 1,708 PSI
Post Job & Testing	24 Check Floats	7/11/21	19:31	n/a	0	0	0	1	BBLs back (.25-1BBL expected)
	25 End Job	7/11/21	19:33						Bleed off pressure, job complete
	26 Safety Meeting	7/11/21	19:35						Pre-rig down safety meeting, wash up equipment
	27 Rig Down	7/11/21	19:38						Rig down Cementer's Equipment, leave location

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Great Western Operating Company, LLC

## Surface Cement Job Graph

### COMPANY DETAILS

Date	7/12/21	API #	05-123-51586	Well No.	FC 23 - 312HN
County	Weld	State	CO	Lease	Raindance

Client Great Western Operating Company, LLC

Contact / email

### JOB DETAILS

TIME ON	15:00	24 hr	Depth	2,051	ft.	Pressure Test @	1,660	psi
START TIME	16:58	7/12/21	Bottom of Surface	2,051	ft.	10 min	1,677	psi
END TIME	19:44	7/12/21	Plug Landed @	2,012	ft.	20 min	1,695	psi
			Plug Landed @	19:00	24 hr	30 min	1,708	psi

### SUMMARY GRAPH

