

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: PDC Energy	Cementer's FIELD TICKET #	300428-D
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Requested Operator Guidance:

Well Name & Number	Lease	Broe	Well No.	28NA
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Well API Number	05-123-51955
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Job Date	2/18/23	Time on	16:15	2/18/23	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	33	temp deg F
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Slurry Description	
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a) Purpose	Surface - 9 5/8" 36# 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	796	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	228.0	BBLs slurry
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h) Additives used	1.50% CaCl2	3.00% Bentonite
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Total Water Used	322.2	BBLs H2O
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i) Displacement Fluid Vol	131.1	BBLs H2O
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j) Method of Placement	
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k) Set Depth	1,737	feet (ft)
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l) Stage tool depth	n/a
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m) Float Collar Depth	1,696	feet (ft)
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n) Designed Top of Cement	n/a	to surface
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o) Centralizer depths	-	feet (ft)
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Charts - (pressure, density, pump rate)

Landed Plug @	1,709	psi	Final Lift Pressure @	475	psi
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Cement Density (as weighed during job) @	13.9	PPG
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Job notes

a) Plug down	<input checked="" type="radio"/> Y / <input type="radio"/> N	Time	18:30	24 hr time
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b) Floats held	<input checked="" type="radio"/> Y / <input type="radio"/> N		2/18/23
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c) Full Returns	<input checked="" type="radio"/> Y / <input type="radio"/> N	Lost Circulation	<input checked="" type="radio"/> Y / <input type="radio"/> N
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d) Cement to surface	<input checked="" type="radio"/> Y / <input type="radio"/> N	31.0	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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g) Additional Detail	0
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PDC Energy

Surface Casing Pressure Test - Cement Job Graph

COMPANY DETAILS

Date	2/18/23	API #	05-123-51955	Well No.	28NA
County	Weld	State	CO	Lease	Broe

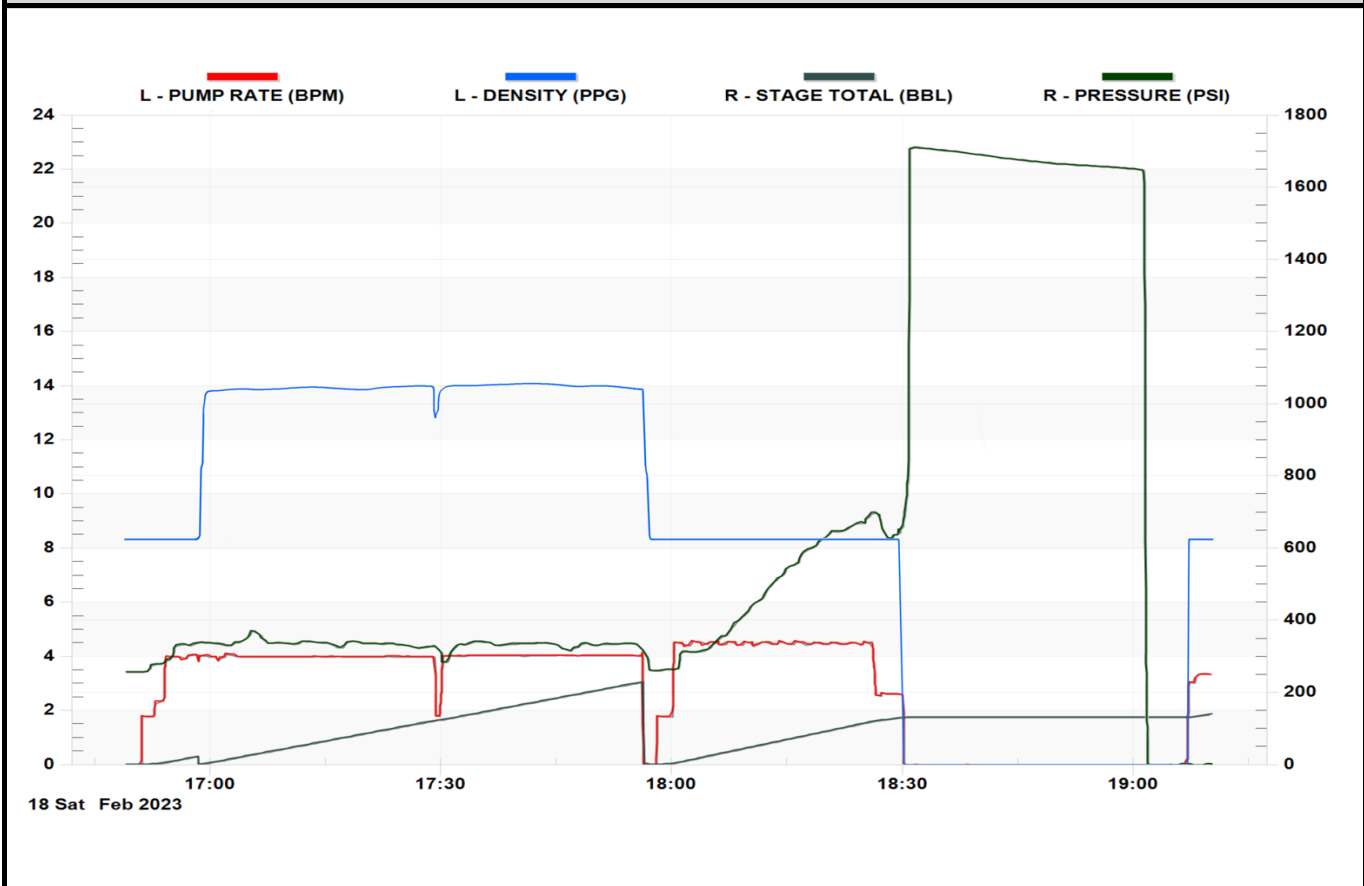
Client PDC Energy

Contact / email

JOB DETAILS

TIME ON	16:15	2/18/23	Depth	1,747	ft.	Pressure Test @	1,709	psi
START TIME	16:49	2/18/23	Bottom of Surface	1,737	ft.	10 min	1,686	psi
END TIME	19:10	2/18/23	Plug Landed @	1,696	ft.	20 min	1,665	psi
			Plug Landed @	18:30	24 hr	30 min	1,650	psi

SUMMARY GRAPH





Centralizer Depths

Well Name: Broe 28NA

Surface, Set Depth: 1,752.6ftKB

API 05123519550000		Surface Legal Location NENW 35 6N 67W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal	
Ground Elevation (ft) 4,741.00	Original KB Elevation (ft) 4,769.00	KB-Ground Distance (ft) 28.00	Spud Date 4/12/2023 14:45	Rig Release Date 4/15/2023 14:30	On Production Date	Abandon Date			

Casing Run Tally												
Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jw/ry	Connections	Top (ftKB)	Cum Len (ft)
2	0	Casing joints	9 5/8	36.00	J-55	Yes	41.30	Yes		LT&C	1,709.9	42.73
4	0	Casing joints	9 5/8	36.00	J-55	Yes	41.16	Yes		LT&C	1,667.4	85.21
5	0	Casing joints	9 5/8	36.00	J-55	Yes	41.22	Yes		LT&C	1,626.2	126.43
9	0	Casing joints	9 5/8	36.00	J-55	Yes	40.46	Yes		LT&C	1,463.1	289.46
13	0	Casing joints	9 5/8	36.00	J-55	Yes	41.13	Yes		LT&C	1,299.0	453.64
17	0	Casing joints	9 5/8	36.00	J-55	Yes	41.00	Yes		LT&C	1,134.7	617.92
21	0	Casing joints	9 5/8	36.00	J-55	Yes	41.16	Yes		LT&C	971.0	781.60
25	0	Casing joints	9 5/8	36.00	J-55	Yes	40.77	Yes		LT&C	807.7	944.92
29	0	Casing joints	9 5/8	36.00	J-55	Yes	40.83	Yes		LT&C	643.9	1,108.75
33	0	Casing joints	9 5/8	36.00	J-55	Yes	39.48	Yes		LT&C	481.9	1,270.66
37	0	Casing joints	9 5/8	36.00	J-55	Yes	40.52	Yes		LT&C	320.8	1,431.79
41	0	Casing joints	9 5/8	36.00	J-55	Yes	40.96	Yes		LT&C	158.3	1,594.26
43	0	Casing joints	9 5/8	36.00	J-55	Yes	41.00	Yes		LT&C	76.5	1,676.14