

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

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COGCC Operator Guidance

RULE #308.A.B(2)A.ii



CLIENT: PDC - Petroleum Development Corp	Cementer's FIELD TICKET #	300151-D
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## Requested Operator Guidance:

1) Well Name & Number	Lease	Thunder	Well No.	9N
2) Well API Number	05-123-49994-00			
3) Job Date	2/26/21	Time on	3:15	24 hr time
4) Job Type	New Well Surface			
5) Cementing Company	Cementer's Well Service, Inc	Contact	Nate Kvamme - 303-324-4296	
6) Ambient conditions	clear / rain / snow / other	-3	temp deg F	
7) Slurry Description				
a) Purpose	Surface - 9 5/8" CSG, 12 1/4" hole			
b) Cement Class	Type I / II			
c) Cement Yield	1.61	cuft / sk		
d) Cement Density	13.9	PPG		
e) Number of sks	550	sks (94# equiv)		
f) Cement Volume (dry)	550	cuft (ft^3)		
g) Mix Fluid Type				
Water / Cement	8.5	Gal / sk		
h) Slurry mixed	157.7	BBLs slurry		
i) Additives used	1.50%	CaCl2	3.00%	Bentonite
Total Water Used				
j) Displacement Fluid Vol	128.6	BBLs H2O		
k) Method of Placement				
l) Set Depth	1,707	feet (ft)		
m) Stage tool depth	n/a			
n) Float Collar Depth	1,664	feet (ft)		
o) Designed Top of Cement	n/a	to surface		
p) Centralizer depths	1685, 1642, 1558, 1390, 1221, 1053, 884, 716, 547, 379, 210, 42 feet (ft)			
8) Charts - (pressure, density, pump rate)				
Landed Plug @	950	psi	Final Lift Pressure @	575 psi
Cement Density (as weighed during job) @	13.9	PPG		
9) Job notes				
a) Plug down	Y/N	Time	4:45	24 hr time
b) Floats held	Y/N			
c) Full Returns	Y/N	Lost Circulation	Y/N	
d) Cement to surface	Y/N	18.0	BBLs to surface	
e) If no returns, top off	BBLs			
f) Top off detail				



## Centralizer Depths

Well Name: Thunder 9N

Surface, Set Depth: 1,706.6ftKB

API 05123499940000		Surface Legal Location SENW 3 5N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal	
Ground Elevation (ft) 4,621.00	Original KB Elevation (ft) 4,634.00	KB-Ground Distance (ft) 13.00		Spud Date	Rig Release Date	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		Casing Joints	9 5/8	36.00	J-55	Yes	42.18	Yes		LT&C	1,662.6	44.03
6		Casing Joints	9 5/8	36.00	J-55	Yes	42.15	Yes		LT&C	1,494.0	212.55
10		Casing Joints	9 5/8	36.00	J-55	Yes	42.14	Yes		LT&C	1,325.5	381.11
14		Casing Joints	9 5/8	36.00	J-55	Yes	42.11	Yes		LT&C	1,156.9	549.67
18		Casing Joints	9 5/8	36.00	J-55	Yes	42.14	Yes		LT&C	988.4	718.21
22		Casing Joints	9 5/8	36.00	J-55	Yes	42.18	Yes		LT&C	819.8	886.80
26		Casing Joints	9 5/8	36.00	J-55	Yes	42.15	Yes		LT&C	651.2	1,055.38
30		Casing Joints	9 5/8	36.00	J-55	Yes	42.12	Yes		LT&C	483.0	1,223.55
34		Casing Joints	9 5/8	36.00	J-55	Yes	42.10	Yes		LT&C	314.5	1,392.03
38		Casing Joints	9 5/8	36.00	J-55	Yes	42.13	Yes		LT&C	146.0	1,560.57
40		Casing Joints	9 5/8	36.00	J-55	Yes	42.10	Yes		LT&C	61.8	1,644.82