

Cement Post Job Report

Client: PDC Energy

Well Name: Hen 9N

API #: 05-123-51789

Job Date: September 1, 2023

Job Type: New Well - 5.5" Production String

Cement Company & Contact: EXERO Well Integrity -
Cheve Meyer 720-239-3819



ROCK SOLID
WELL INTEGRITY
SOLUTIONS

TREATMENT REPORT

CLIENT	WELL	RIG	JOB TYPE	THREAD TYPE	WELLHEAD CONNECTION
PDC Energy	Hen 09N	Patterson 272	Production	Buttress	5 1/2" Cement Head

WELL MD (FT)	WELL TVD (FT)	DEVIATION (DEG)	NUMBER OF STAGES	BHST (DEG)	BHCT (DEG)
14855	6783	90	1	225	200

PACKER/RETAINER/CIBP/DV TOOL DEPTHS	TOOL TYPE	TOP OF PERFS (FT)	BOTTOM OF PERFS (FT)	NUMBER OF HOLES
	PACKER			

CASING/TUBING/DP DETAILS								
STRING TYPE	GRADE	OD"	WT/FT	ID"	OH SIZE"	% EXCESS LEAD	% EXCESS TAIL	TOTAL DEPTH (FT)
Surface		9.625	36	8.921	12.25			1705
Production	P-110	5.5	20	4.778	20	0	0	14844
MAXIMUM CASING/TUBING/DP PSI			9888			MAXIMUM ANNULAR PSI		8880

Mud Type	OBM	Rotate Y,N	No	Circulation Data				Water Requirements (bbls)	
Mud ppg	10.4	Rate (rpm)		Circulate Time (hrs)		2		Spacers	140
Flow Temp	125	Torque Val.		Circulation Rate (bpm)		10		Stage 1 Lead	112
Vis. Sec/qt	39	Time (hr)		Full Circulation ? (Y,N,P)		YES		Stage 1 Tail	163
PV (cP)	16	Pipe Reciprocation		Gas Present (Y,N)		No	Units	0	Stage 2 Lead
Yield Pt	5	Recip Y,N	No	Centralizers/Plugs					
10 sec gel	3	Stroke (ft)		Quantity & Type		Customer Provided			
10 min gel	5	Recip time		Top Plug/Type		Customer Provided			
30 min gel	7	Stuck ?		Bottom Plug/Type		Customer Provided			
								Stage 2 Tail	
								Displacement	329
								Wash up	20
								Total + 10% Safety	840

Preflush & Spacers		Stage 1 Lead - Class G		Stage 1 Tail - Class G		Stage 2 Lead		Stage 2 Tail		Displacement	
Spacer 1	Spacer	Density	12.9	Density	13.7	Density		Density		Fluid Type	Water
		Sacks	1276	Sacks	1034	Sacks		Sacks		Dens. ppg	8.34
		Vol/bbbls	256.8	Vol/bbbls	252.3	Vol/bbbls	0.0	Vol/bbbls	0.0	Vol. bbl	329
		Rate	11	Rate	11	Rate		Rate		Rate bpm	10
Spacer 2		Yield	1.13	Yield	1.37	Yield		Yield		Clay Stay?	NO
		Gal/Sk	3.68	Gal/Sk	6.63	Gal/Sk		Gal/Sk		Biocide ?	YES
		% Excess	0	% Excess	0	% Excess		% Excess		Slow @ bbl	309
		TOL (ft)	2300	TOT (ft)	8302	TOL (ft)		TOT (ft)		Bump PSI	2500

Final Displacement (bbbls)	329
Bump Plug?	YES
Final Bump Pressure (psi)	3000
Full Returns throughout job?	FULL
Vol. away/Time when returns lost	NA
Vol. away when returns were regained	NA
Spacer to Surface?	YES
Spacer volume returned (bbbls)	46
Cement to surface?	NO
Cement volume to surface stage 1	NA
Cement volume to surface stage 2	NA

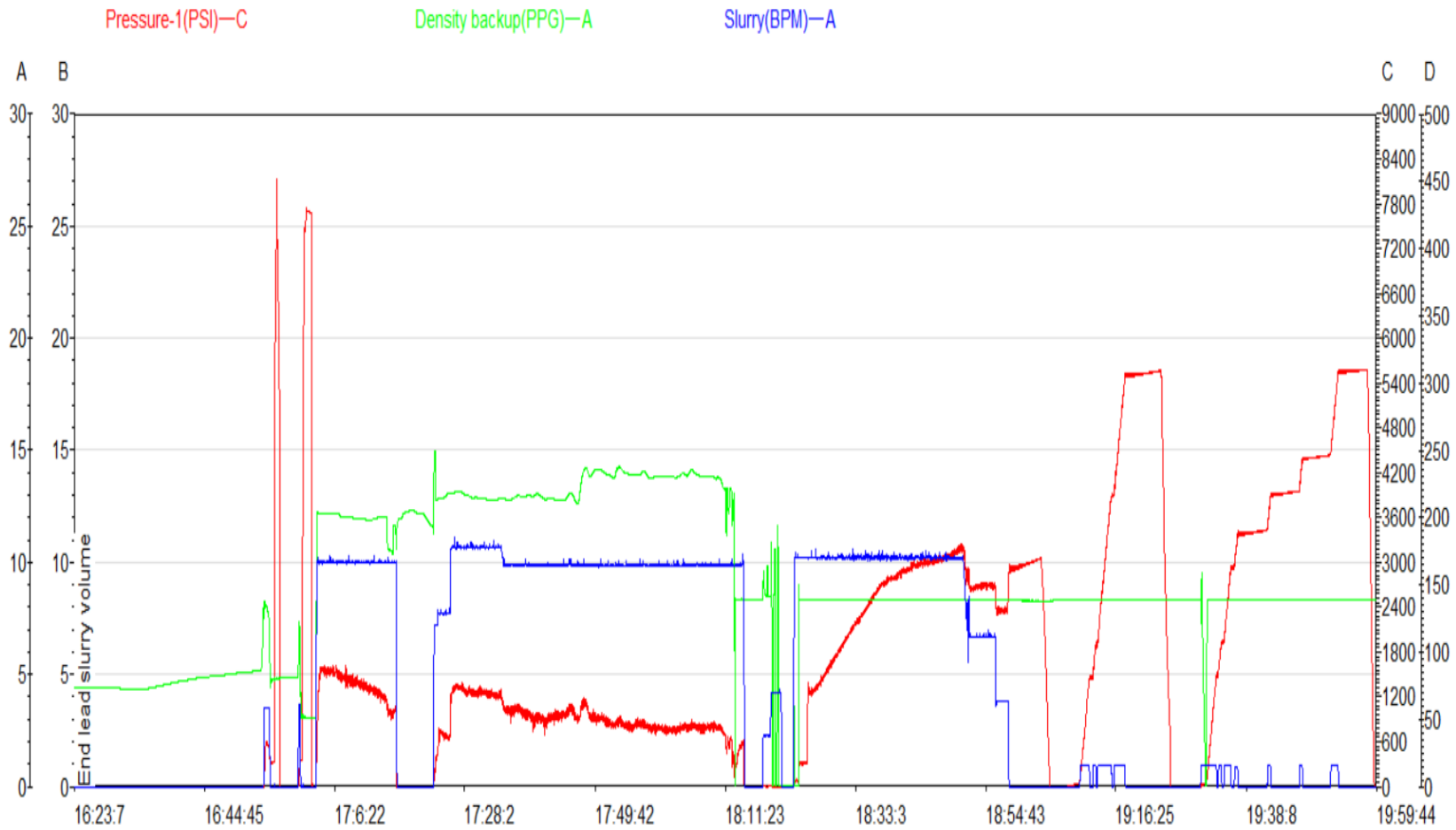
Surface Top Out Details-Pumped		Job Summary Additional Chems Used	
Cement Type		MFC 47 (gal)	70
Dens. ppg	NA	MFC 67 (gal)	168
Sacks qty	NA	Defoamer (gal)	20
Gal/sk	NA	Biocide (gal)	15
Yield	NA	Corr. Inhib (gal)	0
Lbs. of chloride used	NA	Fiber (lbs)	290
Top out pipe used ?	NA	Chloride (lbs)	0
Feet of top out pipe	NA	Retarder (lbs)	0
Annulus holding?		Clay Stabilizer (gal)	0
Sodium Silicate Used		Other	0

JOB LOG

CLIENT	WELL	RIG	JOB TYPE	START DATE	Ambient Conditions
PDC Energy	Hen 09N	Patterson 272	Production	9/1/2023	Temp / Hum / Air Press 94 Deg F / 19% / 24.96 in

DATE (dd/mm)	TIME (hh:mm)	DENSITY (ppg)	RATE (bpm)	VOL. (bbl)	TOTAL VOL.	PRESSURE	TREATMENT COMMENTS
9/1/2023	3:00:00 AM						CREW CALLED OUT FOR AN ON LOCATION TIME OF 1:00 PM
	1:00:00 PM						CREW ARRIVES ON LOCATION/CHECK IN WITH CO REP/CALCULATE JOB
	1:30:00 PM						CASING LANDED AT 14847'/CIRCULATE WELL
	4:30:00 PM						SAFETY MEETING
	4:44:00 PM						RIG UP FLOOR
	4:49:00 PM	8.3	3.5	3	3	680	FILL LINES
	4:51:00 PM	8.3	1.0	1	1	8119	PRESSURE TEST
	4:58:00 PM	12	10.0	140	140	1400	PUMP 140 BBLS OF SPACER AT 12 PPG
	5:12:00 PM						SHUT IN/DROP BOTTOM PLUG
	5:17:00 PM	12.9	9.8	257	257	1203	PUMP 257 BBLS OF LEAD CEMENT AT 12.9 PPG (1276 SKS, 1.13 YLD, 3.68 G/SK, 112 BBLMIXH20)
	5:43:00 PM	13.7	9.8			970	PUMP 252 BBLS OF TAIL CEMENT AT 13.7 PPG (1034 SKS, 1.37 YLD, 6.63 G/SK, 163 BBLMIXH20)
	6:06:00 PM	8.3	9.8			340	PUMP 15 BBLS OF SUGAR WATER
	6:08:00 PM						SHUT IN/WASHUP PUMPS AND LINES/DROP TOP PLUG
	6:18:00 PM	8.3	10.2	10	10	170	BEGIN DISPLACING WITH 329 BBLS OF FRESHWATER WITH BIOCIDES IN ALL
	6:21:00 PM	8.3	10.2	10	20	1507	FRESHWATER DISPLACEMENT/CAUGHT CEMENT
	6:23:00 PM	8.3	10.2	30	50	1740	FRESHWATER DISPLACEMENT
	6:29:00 PM	8.3	10.2	50	100	2380	FRESHWATER DISPLACEMENT
	6:34:00 PM	8.3	10.2	50	150	2508	FRESHWATER DISPLACEMENT
	6:39:00 PM	8.3	10.2	50	200	3106	FRESHWATER DISPLACEMENT
	6:44:00 PM	8.3	10.2	50	250	3208	FRESHWATER DISPLACEMENT/NEOFLO VISIBLE ACROSS SHAKERS
	6:47:00 PM	8.3	10.2	30	280	3390	FRESHWATER DISPLACEMENT/FIBER VISIBLE ACROSS SHAKERS
	6:50:00 PM	8.3	8.6	20	300	2850	FRESHWATER DISPLACEMENT
	6:52:00 PM	8.3	3.8	9	309	2500	FRESHWATER DISPLACEMENT/SLOWED RATE TO LAND PLUG
	6:54:00 PM	8.3	3.8	20	329	3000	BUMPED PLUG ON CALCULATED DISPLACEMENT WITH CALCULATED SPACER TO SURFACE (46 BBLS)
	6:59:00 PM	8.3					CHECK FLOATS/RECEIVED 3.5 BBLS BACK
	7:05:00 PM	8.3	1.5	9	9	5900	SET PACKER PER TOOL HAND
	8:05:00 PM						RIG UP TO FLUSH STACK/RIG DOWN FLOOR
	8:13:00 PM						PUMP 40 BBLS OF FRESHWATER THRU BOP STACK
	8:39:00 PM						RIG DOWN EQUIPMENT/FINISH PAPERWORK/DEPART LOCATION

Hen 9N Production Pump Chart – Pressure / Rate / Density



Chart



Centralizer Depths

Well Name: Hen 09N

Production, Set Depth: 14,844.0ftKB

API 05123517890000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 8/30/2023 03:30		Rig Release Date 9/1/2023 22:00		On Production Date Abandon Date	

Casing Run Tally												
Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
7	1	Casing Joints	5 1/2	20.00	P-110	Yes	44.90	Yes			14,762.7	81.35
9	3	Casing Joints	5 1/2	20.00	P-110	Yes	41.46	Yes			14,677.5	166.50
11	5	Casing Joints	5 1/2	20.00	P-110	Yes	43.41	Yes			14,590.8	253.19
13	7	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			14,504.5	339.51
15	9	Casing Joints	5 1/2	20.00	P-110	Yes	42.30	Yes			14,419.2	424.84
17		Marker Joint	5 1/2	20.00	P-110	Yes	10.40	Yes			14,365.5	478.52
19	12	Casing Joints	5 1/2	20.00	P-110	Yes	43.04	Yes			14,280.3	563.69
21	14	Casing Joints	5 1/2	20.00	P-110	Yes	42.60	Yes			14,194.3	649.73
23	16	Casing Joints	5 1/2	20.00	P-110	Yes	41.35	Yes			14,109.6	734.41
25	18	Casing Joints	5 1/2	20.00	P-110	Yes	43.58	Yes			14,022.6	821.45
27	20	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			13,941.1	902.93
29	22	Casing Joints	5 1/2	20.00	P-110	Yes	43.96	Yes			13,854.3	989.68
31	24	Casing Joints	5 1/2	20.00	P-110	Yes	41.32	Yes			13,768.9	1,075.12
33	26	Casing Joints	5 1/2	20.00	P-110	Yes	43.28	Yes			13,683.7	1,160.32
35	28	Casing Joints	5 1/2	20.00	P-110	Yes	43.88	Yes			13,596.2	1,247.76
37	30	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			13,509.2	1,334.85
39	32	Casing Joints	5 1/2	20.00	P-110	Yes	42.90	Yes			13,423.4	1,420.57
41	34	Casing Joints	5 1/2	20.00	P-110	Yes	43.92	Yes			13,335.3	1,508.70
43	36	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			13,248.3	1,595.74
45	38	Casing Joints	5 1/2	20.00	P-110	Yes	43.94	Yes			13,160.8	1,683.24
47	40	Casing Joints	5 1/2	20.00	P-110	Yes	43.15	Yes			13,076.4	1,767.62
49	42	Casing Joints	5 1/2	20.00	P-110	Yes	43.12	Yes			12,991.4	1,852.64
51	44	Casing Joints	5 1/2	20.00	P-110	Yes	41.63	Yes			12,908.1	1,935.92
53	46	Casing Joints	5 1/2	20.00	P-110	Yes	43.45	Yes			12,821.5	2,022.50
55	48	Casing Joints	5 1/2	20.00	P-110	Yes	43.18	Yes			12,736.1	2,107.93
57	50	Casing Joints	5 1/2	20.00	P-110	Yes	43.00	Yes			12,650.0	2,193.96
59	52	Casing Joints	5 1/2	20.00	P-110	Yes	44.39	Yes			12,562.6	2,281.43
61	54	Casing Joints	5 1/2	20.00	P-110	Yes	38.71	Yes			12,482.6	2,361.42
63	56	Casing Joints	5 1/2	20.00	P-110	Yes	43.03	Yes			12,396.1	2,447.87
65	58	Casing Joints	5 1/2	20.00	P-110	Yes	42.53	Yes			12,311.5	2,532.46
67	60	Casing Joints	5 1/2	20.00	P-110	Yes	43.57	Yes			12,229.9	2,614.14



Centralizer Depths

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Production, Set Depth: 14,844.0ftKB

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Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 8/30/2023 03:30		Rig Release Date 9/1/2023 22:00		On Production Date Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
69	62	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			12,142.9	2,701.08
71	64	Casing Joints	5 1/2	20.00	P-110	Yes	38.10	Yes			12,061.8	2,782.20
73	66	Casing Joints	5 1/2	20.00	P-110	Yes	41.50	Yes			11,979.6	2,864.45
75	68	Casing Joints	5 1/2	20.00	P-110	Yes	43.43	Yes			11,891.7	2,952.29
77	70	Casing Joints	5 1/2	20.00	P-110	Yes	41.67	Yes			11,806.2	3,037.80
79	72	Casing Joints	5 1/2	20.00	P-110	Yes	43.39	Yes			11,720.3	3,123.75
81	74	Casing Joints	5 1/2	20.00	P-110	Yes	43.89	Yes			11,632.6	3,211.41
83	76	Casing Joints	5 1/2	20.00	P-110	Yes	39.44	Yes			11,549.6	3,294.40
85	78	Casing Joints	5 1/2	20.00	P-110	Yes	43.01	Yes			11,465.2	3,378.80
87	80	Casing Joints	5 1/2	20.00	P-110	Yes	42.97	Yes			11,383.3	3,460.67
89	82	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			11,295.0	3,549.02
91	84	Casing Joints	5 1/2	20.00	P-110	Yes	43.12	Yes			11,210.0	3,634.05
93	86	Casing Joints	5 1/2	20.00	P-110	Yes	40.66	Yes			11,125.7	3,718.27
95	87	Casing Joints	5 1/2	20.00	P-110	Yes	41.66	Yes			11,064.6	3,779.39
97	89	Casing Joints	5 1/2	20.00	P-110	Yes	40.86	Yes			10,983.1	3,860.87
99	91	Casing Joints	5 1/2	20.00	P-110	Yes	38.79	Yes			10,901.8	3,942.20
101	93	Casing Joints	5 1/2	20.00	P-110	Yes	43.31	Yes			10,815.5	4,028.50
103	95	Casing Joints	5 1/2	20.00	P-110	Yes	41.32	Yes			10,730.3	4,113.71
105	97	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			10,644.0	4,200.01
107	99	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			10,556.1	4,287.92
109	101	Casing Joints	5 1/2	20.00	P-110	Yes	42.72	Yes			10,475.0	4,368.98
111	103	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			10,388.6	4,455.44
113	105	Casing Joints	5 1/2	20.00	P-110	Yes	43.08	Yes			10,302.5	4,541.54
115	107	Casing Joints	5 1/2	20.00	P-110	Yes	42.40	Yes			10,222.1	4,621.90
117	109	Casing Joints	5 1/2	20.00	P-110	Yes	43.31	Yes			10,135.4	4,708.59
119	111	Casing Joints	5 1/2	20.00	P-110	Yes	43.86	Yes			10,049.8	4,794.25
121	113	Casing Joints	5 1/2	20.00	P-110	Yes	42.01	Yes			9,964.8	4,879.17
123	115	Casing Joints	5 1/2	20.00	P-110	Yes	43.46	Yes			9,880.1	4,963.94
125	117	Casing Joints	5 1/2	20.00	P-110	Yes	41.43	Yes			9,794.1	5,049.89
127	119	Casing Joints	5 1/2	20.00	P-110	Yes	41.51	Yes			9,708.4	5,135.58
129	121	Casing Joints	5 1/2	20.00	P-110	Yes	42.77	Yes			9,622.4	5,221.57



Centralizer Depths

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Production, Set Depth: 14,844.0ftKB

API 05123517890000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 8/30/2023 03:30		Rig Release Date 9/1/2023 22:00		On Production Date Abandon Date	

Casing Run Tally												
Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
131	123	Casing Joints	5 1/2	20.00	P-110	Yes	43.59	Yes			9,533.8	5,310.23
133	125	Casing Joints	5 1/2	20.00	P-110	Yes	44.23	Yes			9,444.5	5,399.53
135	127	Casing Joints	5 1/2	20.00	P-110	Yes	43.59	Yes			9,356.7	5,487.33
137	129	Casing Joints	5 1/2	20.00	P-110	Yes	43.87	Yes			9,270.4	5,573.64
139	131	Casing Joints	5 1/2	20.00	P-110	Yes	43.01	Yes			9,184.5	5,659.49
141	133	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			9,096.3	5,747.72
143	135	Casing Joints	5 1/2	20.00	P-110	Yes	43.46	Yes			9,011.3	5,832.66
145	137	Casing Joints	5 1/2	20.00	P-110	Yes	38.11	Yes			8,932.1	5,911.92
147	139	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			8,844.6	5,999.43
149	141	Casing Joints	5 1/2	20.00	P-110	Yes	44.57	Yes			8,757.0	6,087.02
151	143	Casing Joints	5 1/2	20.00	P-110	Yes	44.12	Yes			8,672.3	6,171.68
153	145	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			8,588.7	6,255.29
155	147	Casing Joints	5 1/2	20.00	P-110	Yes	42.77	Yes			8,501.8	6,342.18
157	149	Casing Joints	5 1/2	20.00	P-110	Yes	44.35	Yes			8,413.2	6,430.76
159	151	Casing Joints	5 1/2	20.00	P-110	Yes	41.93	Yes			8,331.3	6,512.69
161	153	Casing Joints	5 1/2	20.00	P-110	Yes	42.81	Yes			8,246.7	6,597.27
163	155	Casing Joints	5 1/2	20.00	P-110	Yes	43.48	Yes			8,159.7	6,684.30
165	157	Casing Joints	5 1/2	20.00	P-110	Yes	42.60	Yes			8,073.2	6,770.77
167	159	Casing Joints	5 1/2	20.00	P-110	Yes	44.23	Yes			7,986.9	6,857.15
169	161	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			7,899.1	6,944.92
171	163	Casing Joints	5 1/2	20.00	P-110	Yes	42.90	Yes			7,813.5	7,030.47
173	165	Casing Joints	5 1/2	20.00	P-110	Yes	42.25	Yes			7,728.2	7,115.85
175	167	Casing Joints	5 1/2	20.00	P-110	Yes	43.44	Yes			7,645.8	7,198.21
177	169	Casing Joints	5 1/2	20.00	P-110	Yes	38.70	Yes			7,563.1	7,280.92
179	171	Casing Joints	5 1/2	20.00	P-110	Yes	44.54	Yes			7,475.3	7,368.68
181	173	Casing Joints	5 1/2	20.00	P-110	Yes	43.39	Yes			7,388.4	7,455.65
182		Marker Joint	5 1/2	20.00	P-110	Yes	17.69	Yes			7,370.7	7,473.34
183	174	Casing Joints	5 1/2	20.00	P-110	Yes	43.13	Yes			7,327.5	7,516.47
184	175	Casing Joints	5 1/2	20.00	P-110	Yes	43.96	Yes			7,283.6	7,560.43
185	176	Casing Joints	5 1/2	20.00	P-110	Yes	43.47	Yes			7,240.1	7,603.90
186	177	Casing Joints	5 1/2	20.00	P-110	Yes	39.55	Yes			7,200.6	7,643.45



Centralizer Depths

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Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
187	178	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			7,157.0	7,687.00
188	179	Casing Joints	5 1/2	20.00	P-110	Yes	40.69	Yes			7,116.3	7,727.69
189	180	Casing Joints	5 1/2	20.00	P-110	Yes	43.47	Yes			7,072.8	7,771.16
190	181	Casing Joints	5 1/2	20.00	P-110	Yes	43.86	Yes			7,029.0	7,815.02
191	182	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			6,985.2	7,858.85
192	183	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			6,942.1	7,901.87
193	184	Casing Joints	5 1/2	20.00	P-110	Yes	43.68	Yes			6,898.5	7,945.55
194	185	Casing Joints	5 1/2	20.00	P-110	Yes	44.64	Yes			6,853.8	7,990.19
195	186	Casing Joints	5 1/2	20.00	P-110	Yes	41.73	Yes			6,812.1	8,031.92
196	187	Casing Joints	5 1/2	20.00	P-110	Yes	45.06	Yes			6,767.0	8,076.98
197	188	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			6,723.2	8,120.83
198	189	Casing Joints	5 1/2	20.00	P-110	Yes	44.54	Yes			6,678.6	8,165.37
199	190	Casing Joints	5 1/2	20.00	P-110	Yes	43.56	Yes			6,635.1	8,208.93
200	191	Casing Joints	5 1/2	20.00	P-110	Yes	43.03	Yes			6,592.0	8,251.96
201	192	Casing Joints	5 1/2	20.00	P-110	Yes	43.13	Yes			6,548.9	8,295.09
202	193	Casing Joints	5 1/2	20.00	P-110	Yes	41.43	Yes			6,507.5	8,336.52
203	194	Casing Joints	5 1/2	20.00	P-110	Yes	37.68	Yes			6,469.8	8,374.20
204	195	Casing Joints	5 1/2	20.00	P-110	Yes	42.84	Yes			6,427.0	8,417.04
205	196	Casing Joints	5 1/2	20.00	P-110	Yes	43.59	Yes			6,383.4	8,460.63
206	197	Casing Joints	5 1/2	20.00	P-110	Yes	44.22	Yes			6,339.2	8,504.85
207	198	Casing Joints	5 1/2	20.00	P-110	Yes	37.08	Yes			6,302.1	8,541.93
208	199	Casing Joints	5 1/2	20.00	P-110	Yes	43.01	Yes			6,259.1	8,584.94
209	200	Casing Joints	5 1/2	20.00	P-110	Yes	44.52	Yes			6,214.5	8,629.46
210	201	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			6,170.7	8,673.31
211	202	Casing Joints	5 1/2	20.00	P-110	Yes	39.81	Yes			6,130.9	8,713.12
212	203	Casing Joints	5 1/2	20.00	P-110	Yes	43.73	Yes			6,087.2	8,756.85
213	204	Casing Joints	5 1/2	20.00	P-110	Yes	44.20	Yes			6,043.0	8,801.05
214		Marker Joint	5 1/2	20.00	P-110	Yes	21.66	Yes			6,021.3	8,822.71
215	205	Casing Joints	5 1/2	20.00	P-110	Yes	40.09	Yes			5,981.2	8,862.80
216	206	Casing Joints	5 1/2	20.00	P-110	Yes	41.07	Yes			5,940.1	8,903.87
217	207	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			5,897.3	8,946.67



Centralizer Depths

Well Name: Hen 09N

Production, Set Depth: 14,844.0ftKB

API 05123517890000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 8/30/2023 03:30		Rig Release Date 9/1/2023 22:00		On Production Date Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
218	208	Casing Joints	5 1/2	20.00	P-110	Yes	42.02	Yes			5,855.3	8,988.69
219	209	Casing Joints	5 1/2	20.00	P-110	Yes	38.36	Yes			5,817.0	9,027.05
220	210	Casing Joints	5 1/2	20.00	P-110	Yes	43.68	Yes			5,773.3	9,070.73
221	211	Casing Joints	5 1/2	20.00	P-110	Yes	44.53	Yes			5,728.7	9,115.26
222	212	Casing Joints	5 1/2	20.00	P-110	Yes	44.15	Yes			5,684.6	9,159.41
223	213	Casing Joints	5 1/2	20.00	P-110	Yes	45.02	Yes			5,639.6	9,204.43
224	214	Casing Joints	5 1/2	20.00	P-110	Yes	43.73	Yes			5,595.8	9,248.16
225	215	Casing Joints	5 1/2	20.00	P-110	Yes	44.57	Yes			5,551.3	9,292.73
226	216	Casing Joints	5 1/2	20.00	P-110	Yes	43.15	Yes			5,508.1	9,335.88
227	217	Casing Joints	5 1/2	20.00	P-110	Yes	39.66	Yes			5,468.5	9,375.54
228	218	Casing Joints	5 1/2	20.00	P-110	Yes	44.57	Yes			5,423.9	9,420.11
229	219	Casing Joints	5 1/2	20.00	P-110	Yes	37.10	Yes			5,386.8	9,457.21
230	220	Casing Joints	5 1/2	20.00	P-110	Yes	45.30	Yes			5,341.5	9,502.51
231	221	Casing Joints	5 1/2	20.00	P-110	Yes	43.18	Yes			5,298.3	9,545.69
232	222	Casing Joints	5 1/2	20.00	P-110	Yes	37.67	Yes			5,260.6	9,583.36
233	223	Casing Joints	5 1/2	20.00	P-110	Yes	43.20	Yes			5,217.4	9,626.56
234	224	Casing Joints	5 1/2	20.00	P-110	Yes	44.57	Yes			5,172.9	9,671.13
235	225	Casing Joints	5 1/2	20.00	P-110	Yes	43.74	Yes			5,129.1	9,714.87
236	226	Casing Joints	5 1/2	20.00	P-110	Yes	43.56	Yes			5,085.6	9,758.43
237	227	Casing Joints	5 1/2	20.00	P-110	Yes	41.53	Yes			5,044.0	9,799.96
238	228	Casing Joints	5 1/2	20.00	P-110	Yes	43.37	Yes			5,000.7	9,843.33
239	229	Casing Joints	5 1/2	20.00	P-110	Yes	40.49	Yes			4,960.2	9,883.82
240	230	Casing Joints	5 1/2	20.00	P-110	Yes	35.25	Yes			4,924.9	9,919.07
241	231	Casing Joints	5 1/2	20.00	P-110	Yes	39.86	Yes			4,885.1	9,958.93
242	232	Casing Joints	5 1/2	20.00	P-110	Yes	44.05	Yes			4,841.0	10,002.98
243	233	Casing Joints	5 1/2	20.00	P-110	Yes	42.69	Yes			4,798.3	10,045.67
244	234	Casing Joints	5 1/2	20.00	P-110	Yes	40.49	Yes			4,757.8	10,086.16
245	235	Casing Joints	5 1/2	20.00	P-110	Yes	43.73	Yes			4,714.1	10,129.89
246	236	Casing Joints	5 1/2	20.00	P-110	Yes	41.22	Yes			4,672.9	10,171.11
247	237	Casing Joints	5 1/2	20.00	P-110	Yes	43.58	Yes			4,629.3	10,214.69
248	238	Casing Joints	5 1/2	20.00	P-110	Yes	43.56	Yes			4,585.8	10,258.25



Centralizer Depths

Well Name: Hen 09N

Production, Set Depth: 14,844.0ftKB

API 05123517890000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 8/30/2023 03:30		Rig Release Date 9/1/2023 22:00		On Production Date Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
249	239	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			4,542.1	10,301.90
250	240	Casing Joints	5 1/2	20.00	P-110	Yes	44.22	Yes			4,497.9	10,346.12
251	241	Casing Joints	5 1/2	20.00	P-110	Yes	37.78	Yes			4,460.1	10,383.90
252	242	Casing Joints	5 1/2	20.00	P-110	Yes	44.34	Yes			4,415.8	10,428.24
253	243	Casing Joints	5 1/2	20.00	P-110	Yes	45.06	Yes			4,370.7	10,473.30
254	244	Casing Joints	5 1/2	20.00	P-110	Yes	44.26	Yes			4,326.4	10,517.56
255	245	Casing Joints	5 1/2	20.00	P-110	Yes	42.10	Yes			4,284.3	10,559.66
256	246	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			4,240.8	10,603.21
257	247	Casing Joints	5 1/2	20.00	P-110	Yes	43.60	Yes			4,197.2	10,646.81
258	248	Casing Joints	5 1/2	20.00	P-110	Yes	43.57	Yes			4,153.6	10,690.38
259	249	Casing Joints	5 1/2	20.00	P-110	Yes	43.03	Yes			4,110.6	10,733.41
260	250	Casing Joints	5 1/2	20.00	P-110	Yes	42.59	Yes			4,068.0	10,776.00
261	251	Casing Joints	5 1/2	20.00	P-110	Yes	42.12	Yes			4,025.9	10,818.12
262	252	Casing Joints	5 1/2	20.00	P-110	Yes	43.56	Yes			3,982.3	10,861.68
263	253	Casing Joints	5 1/2	20.00	P-110	Yes	43.87	Yes			3,938.5	10,905.55
264	254	Casing Joints	5 1/2	20.00	P-110	Yes	43.60	Yes			3,894.9	10,949.15
265	255	Casing Joints	5 1/2	20.00	P-110	Yes	43.59	Yes			3,851.3	10,992.74
266	256	Casing Joints	5 1/2	20.00	P-110	Yes	43.56	Yes			3,807.7	11,036.30
267	257	Casing Joints	5 1/2	20.00	P-110	Yes	43.88	Yes			3,763.8	11,080.18
268	258	Casing Joints	5 1/2	20.00	P-110	Yes	43.59	Yes			3,720.2	11,123.77
269	259	Casing Joints	5 1/2	20.00	P-110	Yes	43.59	Yes			3,676.6	11,167.36
270	260	Casing Joints	5 1/2	20.00	P-110	Yes	45.12	Yes			3,631.5	11,212.48
271	261	Casing Joints	5 1/2	20.00	P-110	Yes	43.56	Yes			3,588.0	11,256.04
272	262	Casing Joints	5 1/2	20.00	P-110	Yes	38.12	Yes			3,549.8	11,294.16
273	263	Casing Joints	5 1/2	20.00	P-110	Yes	43.13	Yes			3,506.7	11,337.29
274	264	Casing Joints	5 1/2	20.00	P-110	Yes	40.96	Yes			3,465.8	11,378.25
275	265	Casing Joints	5 1/2	20.00	P-110	Yes	42.51	Yes			3,423.2	11,420.76
276	266	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			3,379.7	11,464.31
277	267	Casing Joints	5 1/2	20.00	P-110	Yes	42.48	Yes			3,337.2	11,506.79
278	268	Casing Joints	5 1/2	20.00	P-110	Yes	43.04	Yes			3,294.2	11,549.83
280	269	Casing Joints	5 1/2	20.00	P-110	Yes	39.94	Yes			3,239.6	11,604.42



Centralizer Depths

Well Name: Hen 09N

Production, Set Depth: 14,844.0ftKB

API 05123517890000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 8/30/2023 03:30		Rig Release Date 9/1/2023 22:00		On Production Date Abandon Date	

Casing Run Tally												
Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
281	270	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			3,195.8	11,648.17
282	271	Casing Joints	5 1/2	20.00	P-110	Yes	44.38	Yes			3,151.5	11,692.55
283	272	Casing Joints	5 1/2	20.00	P-110	Yes	43.56	Yes			3,107.9	11,736.11
284	273	Casing Joints	5 1/2	20.00	P-110	Yes	40.49	Yes			3,067.4	11,776.60
285	274	Casing Joints	5 1/2	20.00	P-110	Yes	43.50	Yes			3,023.9	11,820.10
286	275	Casing Joints	5 1/2	20.00	P-110	Yes	41.95	Yes			2,982.0	11,862.05
287	276	Casing Joints	5 1/2	20.00	P-110	Yes	44.26	Yes			2,937.7	11,906.31
288	277	Casing Joints	5 1/2	20.00	P-110	Yes	40.67	Yes			2,897.0	11,946.98
289	278	Casing Joints	5 1/2	20.00	P-110	Yes	42.27	Yes			2,854.8	11,989.25
290	279	Casing Joints	5 1/2	20.00	P-110	Yes	44.53	Yes			2,810.2	12,033.78
291	280	Casing Joints	5 1/2	20.00	P-110	Yes	38.41	Yes			2,771.8	12,072.19
292	281	Casing Joints	5 1/2	20.00	P-110	Yes	44.35	Yes			2,727.5	12,116.54
293	282	Casing Joints	5 1/2	20.00	P-110	Yes	43.56	Yes			2,683.9	12,160.10
294	283	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			2,640.2	12,203.85
295	284	Casing Joints	5 1/2	20.00	P-110	Yes	44.64	Yes			2,595.5	12,248.49
296	285	Casing Joints	5 1/2	20.00	P-110	Yes	41.37	Yes			2,554.1	12,289.86
297	286	Casing Joints	5 1/2	20.00	P-110	Yes	44.63	Yes			2,509.5	12,334.49
298	287	Casing Joints	5 1/2	20.00	P-110	Yes	43.58	Yes			2,465.9	12,378.07
299	288	Casing Joints	5 1/2	20.00	P-110	Yes	43.95	Yes			2,422.0	12,422.02
300	289	Casing Joints	5 1/2	20.00	P-110	Yes	43.50	Yes			2,378.5	12,465.52
301	290	Casing Joints	5 1/2	20.00	P-110	Yes	43.59	Yes			2,334.9	12,509.11
302	291	Casing Joints	5 1/2	20.00	P-110	Yes	38.93	Yes			2,296.0	12,548.04
303	292	Casing Joints	5 1/2	20.00	P-110	Yes	42.77	Yes			2,253.2	12,590.81
304	293	Casing Joints	5 1/2	20.00	P-110	Yes	44.24	Yes			2,209.0	12,635.05
305	294	Casing Joints	5 1/2	20.00	P-110	Yes	44.25	Yes			2,164.7	12,679.30
306	295	Casing Joints	5 1/2	20.00	P-110	Yes	43.12	Yes			2,121.6	12,722.42
307	296	Casing Joints	5 1/2	20.00	P-110	Yes	42.06	Yes			2,079.5	12,764.48
308	297	Casing Joints	5 1/2	20.00	P-110	Yes	35.88	Yes			2,043.6	12,800.36
309	298	Casing Joints	5 1/2	20.00	P-110	Yes	42.89	Yes			2,000.8	12,843.25
310	299	Casing Joints	5 1/2	20.00	P-110	Yes	42.13	Yes			1,958.6	12,885.38
311	300	Casing Joints	5 1/2	20.00	P-110	Yes	41.28	Yes			1,917.3	12,926.66



Centralizer Depths

Well Name: Hen 09N

Production, Set Depth: 14,844.0ftKB

API 0512351789000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 8/30/2023 03:30		Rig Release Date 9/1/2023 22:00		On Production Date Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwry	Connections	Top (ftKB)	Cum Len (ft)
312	301	Casing Joints	5 1/2	20.00	P-110	Yes	42.12	Yes			1,875.2	12,968.78
313	302	Casing Joints	5 1/2	20.00	P-110	Yes	39.33	Yes			1,835.9	13,008.11
314	303	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			1,792.9	13,051.13
315	304	Casing Joints	5 1/2	20.00	P-110	Yes	43.58	Yes			1,749.3	13,094.71
316	305	Casing Joints	5 1/2	20.00	P-110	Yes	43.06	Yes			1,706.2	13,137.77
317	306	Casing Joints	5 1/2	20.00	P-110	Yes	44.18	Yes			1,662.1	13,181.95
318	307	Casing Joints	5 1/2	20.00	P-110	Yes	43.16	Yes			1,618.9	13,225.11
319	308	Casing Joints	5 1/2	20.00	P-110	Yes	38.44	Yes			1,580.5	13,263.55
320	309	Casing Joints	5 1/2	20.00	P-110	Yes	42.65	Yes			1,537.8	13,306.20
321	310	Casing Joints	5 1/2	20.00	P-110	Yes	40.14	Yes			1,497.7	13,346.34
322	311	Casing Joints	5 1/2	20.00	P-110	Yes	43.33	Yes			1,454.3	13,389.67
323	312	Casing Joints	5 1/2	20.00	P-110	Yes	41.69	Yes			1,412.6	13,431.36
324	313	Casing Joints	5 1/2	20.00	P-110	Yes	41.00	Yes			1,371.6	13,472.36
325	314	Casing Joints	5 1/2	20.00	P-110	Yes	42.48	Yes			1,329.2	13,514.84
326	315	Casing Joints	5 1/2	20.00	P-110	Yes	41.90	Yes			1,287.3	13,556.74
327	316	Casing Joints	5 1/2	20.00	P-110	Yes	39.12	Yes			1,248.1	13,595.86
328	317	Casing Joints	5 1/2	20.00	P-110	Yes	41.70	Yes			1,206.4	13,637.56
329	318	Casing Joints	5 1/2	20.00	P-110	Yes	42.67	Yes			1,163.8	13,680.23
330	319	Casing Joints	5 1/2	20.00	P-110	Yes	43.59	Yes			1,120.2	13,723.82
331	320	Casing Joints	5 1/2	20.00	P-110	Yes	44.62	Yes			1,075.6	13,768.44
332	321	Casing Joints	5 1/2	20.00	P-110	Yes	43.72	Yes			1,031.8	13,812.16
333	322	Casing Joints	5 1/2	20.00	P-110	Yes	41.25	Yes			990.6	13,853.41
334	323	Casing Joints	5 1/2	20.00	P-110	Yes	38.55	Yes			952.0	13,891.96
335	324	Casing Joints	5 1/2	20.00	P-110	Yes	43.15	Yes			908.9	13,935.11
336	325	Casing Joints	5 1/2	20.00	P-110	Yes	41.40	Yes			867.5	13,976.51
337	326	Casing Joints	5 1/2	20.00	P-110	Yes	43.57	Yes			823.9	14,020.08
338	327	Casing Joints	5 1/2	20.00	P-110	Yes	43.16	Yes			780.8	14,063.24
339	328	Casing Joints	5 1/2	20.00	P-110	Yes	43.08	Yes			737.7	14,106.32
340	329	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			694.1	14,149.87
341	330	Casing Joints	5 1/2	20.00	P-110	Yes	43.97	Yes			650.2	14,193.84
342	331	Casing Joints	5 1/2	20.00	P-110	Yes	43.48	Yes			606.7	14,237.32



Centralizer Depths

Well Name: Hen 09N

Production, Set Depth: 14,844.0ftKB

API 05123517890000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
Ground Elevation (ft) 4,779.00	Original KB Elevation (ft) 4,807.50	KB-Ground Distance (ft) 28.50	Spud Date 8/30/2023 03:30	Rig Release Date 9/1/2023 22:00	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)
343	332	Casing Joints	5 1/2	20.00	P-110	Yes	42.73	Yes			563.9	14,280.05
344	333	Casing Joints	5 1/2	20.00	P-110	Yes	44.23	Yes			519.7	14,324.28
345	334	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			476.0	14,368.03