

Cement Post Job Report

Client: PDC Energy

Well Name: Hen 5N

API #: 05-123-51799

Job Date: August 21, 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 05N	Patterson 272	Production	Buttress	5 1/2" Cement Head

WELL MD (FT)	WELL TVD (FT)	DEVIATION (DEG)	NUMBER OF STAGES	BHST (DEG)	BHCT (DEG)
15020	6786	90	1	225	185

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			13.50			1708
Production	P-110	5.5	20	4.778	20	0	0	15007
MAXIMUM CASING/TUBING/DP PSI				MAXIMUM ANNULAR PSI				

Mud Type	OBM	Rotate Y,N	No	Circulation Data				Water Requirements (bbls)	
Mud ppg	10.6	Rate (rpm)		Circulate Time (hrs)		2		Spacers	140
Flow Temp	144	Torque Val.		Circulation Rate (bpm)		10		Stage 1 Lead	112
Vis. Sec/qt	46	Time (hr)		Full Circulation ? (Y,N,P)		Yes		Stage 1 Tail	173
PV (cP)	13	Pipe Reciprocation		Gas Present (Y,N)		No	Units	Stage 2 Lead	
Yield Pt	7	Recip Y,N	No	Centralizers/Plugs				Stage 2 Tail	
10 sec gel	5	Stroke (ft)		Quantity & Type		Customer Provided		Displacement	323
10 min gel	9	Recip time		Top Plug/Type		Customer Provided		Wash up	20
30 min gel	12	Stuck ?		Bottom Plug/Type		Customer Provided		Total + 10% Safety	845

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	1061	Sacks		Sacks		Dens. ppg	8.34
		Vol/bbbls	256.8	Vol/bbbls	258.9	Vol/bbbls	0.0	Vol/bbbls	0.0	Vol. bbl	332
		Rate	12	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	312
		TOL (ft)	2039	TOT (ft)	8314	TOL (ft)		TOT (ft)		Bump PSI	3120

Final Displacement (bbbls)	332
Bump Plug?	Yes
Final Bump Pressure (psi)	3120
Full Returns throughout job?	Full
Vol. away/Time when returns lost	
Vol. away when returns were regained	
Spacer to Surface?	Yes
Spacer volume returned (bbbls)	20
Cement to surface?	No
Cement volume to surface stage 1	
Cement volume to surface stage 2	

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



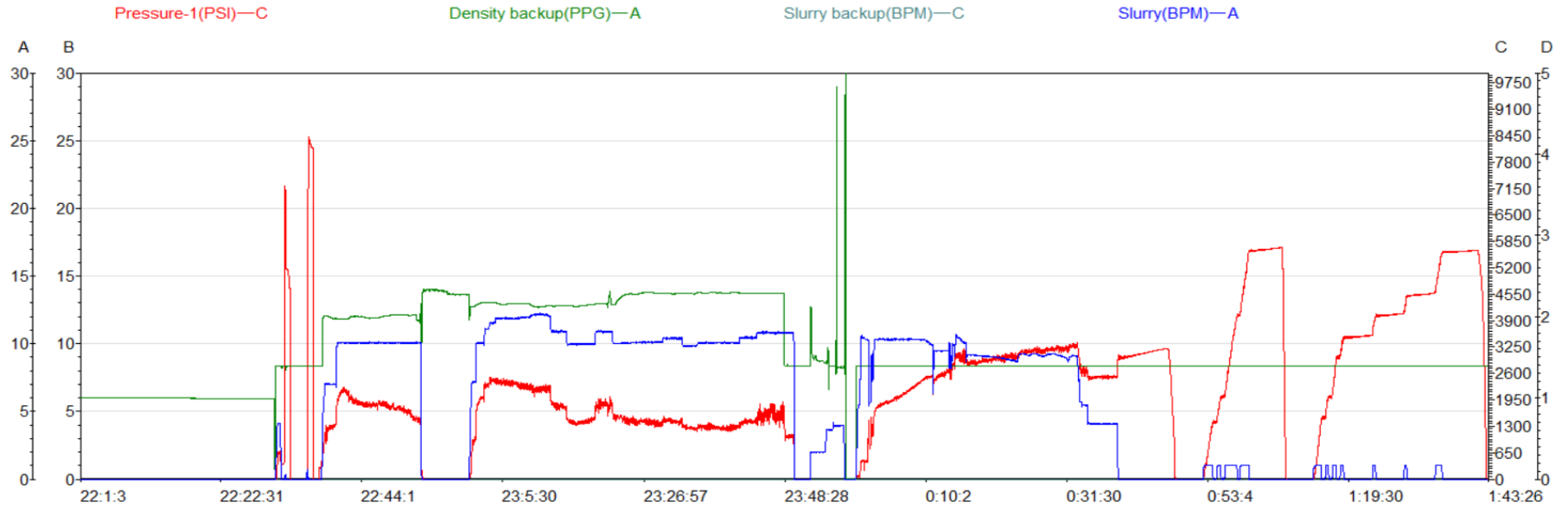
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JOB LOG

CLIENT	WELL	RIG	JOB TYPE	START DATE	Ambient Conditions
PDC Energy	Hen 05N	Patterson 272	Production	8/21/2023	Temp / Hum / Air Press 74 Deg F / 34 % / 25.08 in

DATE (dd/mm)	TIME (hh:mm)	DENSITY (ppg)	RATE (bpm)	VOL. (bbl)	TOTAL VOL.	PRESSURE	TREATMENT COMMENTS
8/21/2023	12:15:00 PM						arrived on location with a location time of 14:00. waited for rig to run casing.
	8:30:00 PM						spotted equipment and rigged up. Then, waited for rig to finish circulating.
	10:00:00 PM						pre job/ safety meeting.
	10:34:00 PM	8.34	4.0	3		700	loaded lines for pressure test.
	10:35:00 PM					8300	pressure tested.
	10:41:00 PM	12	10.0	140		2000	pumped spacer.
	10:58:00 PM						shutdown dropped bottom plug.
	11:03:00 PM	12.9	12.0	256		2300	pumped 1276 sks, yield: 1.13, Gps: 3.68, lead cement.
	11:27:00 PM	13.7	10.0	259		1500	Pumped 1061 sks, yield: 1.37, Gps: 6.63 tail cement.
	11:51:00 PM	8.34	11.0	15		1000	pumped sugar water
	11:53:00 PM						shutdown dropped top plug and washed pumps and lines.
	12:01:00 AM	8.34	10.5	50		1750	pumped water displacement with biocide.
	12:09:00 AM	8.34	10.5	50	50	2000	pumped water displacement with biocide.
	12:14:00 AM	8.34	10.5	50	100	2600	pumped water displacement with biocide.
	12:19:00 AM	8.34	9.5	50	150	3200	pumped water displacement with biocide.
	12:25:00 AM	8.34	9.0	50	200	3000	pumped water displacement with biocide.
	12:30:00 AM	8.34	9.0	62	250	3300	pumped water displacement with biocide.
	12:38:00 AM	8.34	4.0	20	312	2600	slowed rate to land plug.
	12:42:00 AM				332		plug landed fcp was 2650 psi took to 3120 psi.
	12:49:00 AM						checked floats, floats held, with 4 bbls back.
	12:53:00 AM	8.34					set packer per tool hand.
8/22/2023	1:50:00 AM	8.34					flushed stack.
	2:00:00 AM						rigged down.

Hen 5N Production Pump Chart – Pressure / Rate / Density



Chart



Centralizer Depths

Well Name: Hen 05N

Production, Set Depth: 15,007.0ftKB

API 0512351799000		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 8/19/2023 01:00		Rig Release Date 8/22/2023 06:00		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	44.51	Yes			14,925.3	81.67
9	3	Casing Joints	5 1/2	20.00	P-110	Yes	44.53	Yes			14,836.0	171.01
11	5	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			14,747.2	259.80
13	7	Casing Joints	5 1/2	20.00	P-110	Yes	44.91	Yes			14,657.8	349.22
15	9	Casing Joints	5 1/2	20.00	P-110	Yes	44.89	Yes			14,568.4	438.63
17		Marker Joint	5 1/2	20.00	P-110	Yes	10.83	Yes			14,513.3	493.66
19	12	Casing Joints	5 1/2	20.00	P-110	Yes	44.52	Yes			14,424.7	582.30
21	14	Casing Joints	5 1/2	20.00	P-110	Yes	44.95	Yes			14,335.1	671.86
23	16	Casing Joints	5 1/2	20.00	P-110	Yes	41.70	Yes			14,248.5	758.51
25	18	Casing Joints	5 1/2	20.00	P-110	Yes	44.51	Yes			14,161.1	845.87
27	20	Casing Joints	5 1/2	20.00	P-110	Yes	44.62	Yes			14,074.7	932.32
29	22	Casing Joints	5 1/2	20.00	P-110	Yes	44.61	Yes			13,985.1	1,021.93
31	24	Casing Joints	5 1/2	20.00	P-110	Yes	44.63	Yes			13,898.6	1,108.39
33	26	Casing Joints	5 1/2	20.00	P-110	Yes	44.62	Yes			13,809.8	1,197.25
35	28	Casing Joints	5 1/2	20.00	P-110	Yes	44.51	Yes			13,722.7	1,284.29
37	30	Casing Joints	5 1/2	20.00	P-110	Yes	35.69	Yes			13,647.6	1,359.43
39	32	Casing Joints	5 1/2	20.00	P-110	Yes	42.17	Yes			13,560.9	1,446.06
41	34	Casing Joints	5 1/2	20.00	P-110	Yes	44.34	Yes			13,471.6	1,535.40
43	36	Casing Joints	5 1/2	20.00	P-110	Yes	43.18	Yes			13,383.9	1,623.10
45	38	Casing Joints	5 1/2	20.00	P-110	Yes	44.51	Yes			13,298.3	1,708.75
47	40	Casing Joints	5 1/2	20.00	P-110	Yes	44.60	Yes			13,209.3	1,797.69
49	42	Casing Joints	5 1/2	20.00	P-110	Yes	42.10	Yes			13,122.7	1,884.34
51	44	Casing Joints	5 1/2	20.00	P-110	Yes	44.64	Yes			13,033.5	1,973.50
53	46	Casing Joints	5 1/2	20.00	P-110	Yes	44.62	Yes			12,944.0	2,063.02
55	48	Casing Joints	5 1/2	20.00	P-110	Yes	44.53	Yes			12,855.6	2,151.36
57	50	Casing Joints	5 1/2	20.00	P-110	Yes	44.34	Yes			12,766.7	2,240.34
59	52	Casing Joints	5 1/2	20.00	P-110	Yes	44.97	Yes			12,678.0	2,329.00
61	54	Casing Joints	5 1/2	20.00	P-110	Yes	43.92	Yes			12,589.1	2,417.88
63	56	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			12,501.7	2,505.34
65	58	Casing Joints	5 1/2	20.00	P-110	Yes	43.74	Yes			12,414.2	2,592.78
67	60	Casing Joints	5 1/2	20.00	P-110	Yes	44.82	Yes			12,324.3	2,682.75



Centralizer Depths

Well Name: Hen 05N

Production, Set Depth: 15,007.0ftKB

API 0512351799000		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 8/19/2023 01:00		Rig Release Date 8/22/2023 06:00		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	43.64	Yes			12,235.8	2,771.19
71	64	Casing Joints	5 1/2	20.00	P-110	Yes	38.71	Yes			12,153.4	2,853.65
73	66	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			12,065.8	2,941.16
75	68	Casing Joints	5 1/2	20.00	P-110	Yes	44.15	Yes			11,984.5	3,022.48
77	70	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			11,897.4	3,109.64
79	72	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			11,810.6	3,196.39
81	74	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			11,723.1	3,283.86
83	76	Casing Joints	5 1/2	20.00	P-110	Yes	43.63	Yes			11,636.5	3,370.54
85	78	Casing Joints	5 1/2	20.00	P-110	Yes	41.62	Yes			11,551.2	3,455.79
87	80	Casing Joints	5 1/2	20.00	P-110	Yes	42.90	Yes			11,464.7	3,542.28
89	82	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			11,377.2	3,629.80
91	84	Casing Joints	5 1/2	20.00	P-110	Yes	42.78	Yes			11,290.8	3,716.22
93	85	Casing Joints	5 1/2	20.00	P-110	Yes	43.58	Yes			11,236.6	3,770.40
95	87	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			11,149.1	3,857.91
97	89	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			11,062.3	3,944.75
99	91	Casing Joints	5 1/2	20.00	P-110	Yes	43.72	Yes			10,974.9	4,032.10
101	93	Casing Joints	5 1/2	20.00	P-110	Yes	43.74	Yes			10,887.6	4,119.38
103	95	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			10,804.3	4,202.69
105	97	Casing Joints	5 1/2	20.00	P-110	Yes	40.46	Yes			10,720.7	4,286.33
107	99	Casing Joints	5 1/2	20.00	P-110	Yes	44.75	Yes			10,632.2	4,374.81
109	101	Casing Joints	5 1/2	20.00	P-110	Yes	44.15	Yes			10,544.4	4,462.63
111	103	Casing Joints	5 1/2	20.00	P-110	Yes	40.28	Yes			10,465.9	4,541.10
113	105	Casing Joints	5 1/2	20.00	P-110	Yes	42.81	Yes			10,379.5	4,627.52
115	107	Casing Joints	5 1/2	20.00	P-110	Yes	43.42	Yes			10,292.3	4,714.69
117	109	Casing Joints	5 1/2	20.00	P-110	Yes	43.63	Yes			10,205.3	4,801.75
119	111	Casing Joints	5 1/2	20.00	P-110	Yes	44.52	Yes			10,117.1	4,889.86
121	113	Casing Joints	5 1/2	20.00	P-110	Yes	43.58	Yes			10,029.2	4,977.78
123	115	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			9,942.6	5,064.38
125	117	Casing Joints	5 1/2	20.00	P-110	Yes	44.64	Yes			9,857.4	5,149.59
127	119	Casing Joints	5 1/2	20.00	P-110	Yes	44.64	Yes			9,772.9	5,234.12
129	121	Casing Joints	5 1/2	20.00	P-110	Yes	36.89	Yes			9,693.3	5,313.72



Centralizer Depths

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Production, Set Depth: 15,007.0ftKB

API 05123517990000		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 8/19/2023 01:00		Rig Release Date 8/22/2023 06:00		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	43.92	Yes			9,604.7	5,402.27
133	125	Casing Joints	5 1/2	20.00	P-110	Yes	40.38	Yes			9,520.9	5,486.08
135	127	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			9,431.5	5,575.48
137	129	Casing Joints	5 1/2	20.00	P-110	Yes	43.50	Yes			9,343.4	5,663.61
139	131	Casing Joints	5 1/2	20.00	P-110	Yes	44.51	Yes			9,254.4	5,752.64
141	133	Casing Joints	5 1/2	20.00	P-110	Yes	41.77	Yes			9,170.5	5,836.46
143	135	Casing Joints	5 1/2	20.00	P-110	Yes	38.78	Yes			9,087.4	5,919.58
145	137	Casing Joints	5 1/2	20.00	P-110	Yes	44.52	Yes			8,999.0	6,007.99
147	139	Casing Joints	5 1/2	20.00	P-110	Yes	40.66	Yes			8,913.4	6,093.60
149	141	Casing Joints	5 1/2	20.00	P-110	Yes	41.84	Yes			8,826.6	6,180.39
151	143	Casing Joints	5 1/2	20.00	P-110	Yes	39.48	Yes			8,742.1	6,264.94
153	145	Casing Joints	5 1/2	20.00	P-110	Yes	41.68	Yes			8,655.6	6,351.41
155	147	Casing Joints	5 1/2	20.00	P-110	Yes	44.19	Yes			8,567.1	6,439.94
157	149	Casing Joints	5 1/2	20.00	P-110	Yes	44.52	Yes			8,476.8	6,530.21
159	151	Casing Joints	5 1/2	20.00	P-110	Yes	44.99	Yes			8,387.0	6,620.00
161	153	Casing Joints	5 1/2	20.00	P-110	Yes	42.70	Yes			8,299.7	6,707.32
163	155	Casing Joints	5 1/2	20.00	P-110	Yes	45.05	Yes			8,212.0	6,795.05
165	157	Casing Joints	5 1/2	20.00	P-110	Yes	38.64	Yes			8,128.8	6,878.21
167	159	Casing Joints	5 1/2	20.00	P-110	Yes	44.62	Yes			8,039.6	6,967.36
169	161	Casing Joints	5 1/2	20.00	P-110	Yes	44.63	Yes			7,950.2	7,056.79
171	163	Casing Joints	5 1/2	20.00	P-110	Yes	41.50	Yes			7,864.8	7,142.19
173	165	Casing Joints	5 1/2	20.00	P-110	Yes	44.64	Yes			7,775.6	7,231.45
175	167	Casing Joints	5 1/2	20.00	P-110	Yes	44.52	Yes			7,688.4	7,318.63
177	169	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			7,601.2	7,405.79
179		Marker Joint	5 1/2	20.00	P-110	Yes	22.65	Yes			7,534.2	7,472.78
180	171	Casing Joints	5 1/2	20.00	P-110	Yes	45.00	Yes			7,489.2	7,517.78
181	172	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			7,444.8	7,562.19
182	173	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			7,400.4	7,606.59
183	174	Casing Joints	5 1/2	20.00	P-110	Yes	40.19	Yes			7,360.2	7,646.78
184	175	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			7,315.8	7,691.24
185	176	Casing Joints	5 1/2	20.00	P-110	Yes	44.62	Yes			7,271.1	7,735.86



Centralizer Depths

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Production, Set Depth: 15,007.0ftKB

API 05123517990000		Surface Legal Location SWNE 8 4N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal			
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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)
186	177	Casing Joints	5 1/2	20.00	P-110	Yes	44.63	Yes			7,226.5	7,780.49
187	178	Casing Joints	5 1/2	20.00	P-110	Yes	42.38	Yes			7,184.1	7,822.87
188	179	Casing Joints	5 1/2	20.00	P-110	Yes	44.96	Yes			7,139.2	7,867.83
189	180	Casing Joints	5 1/2	20.00	P-110	Yes	44.60	Yes			7,094.6	7,912.43
190	181	Casing Joints	5 1/2	20.00	P-110	Yes	45.14	Yes			7,049.4	7,957.57
191	182	Casing Joints	5 1/2	20.00	P-110	Yes	44.94	Yes			7,004.5	8,002.51
192	183	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			6,960.1	8,046.94
193	184	Casing Joints	5 1/2	20.00	P-110	Yes	45.37	Yes			6,914.7	8,092.31
194	185	Casing Joints	5 1/2	20.00	P-110	Yes	42.61	Yes			6,872.1	8,134.92
195	186	Casing Joints	5 1/2	20.00	P-110	Yes	45.07	Yes			6,827.0	8,179.99
196	187	Casing Joints	5 1/2	20.00	P-110	Yes	44.65	Yes			6,782.4	8,224.64
197	188	Casing Joints	5 1/2	20.00	P-110	Yes	43.05	Yes			6,739.3	8,267.69
198	189	Casing Joints	5 1/2	20.00	P-110	Yes	42.43	Yes			6,696.9	8,310.12
199	190	Casing Joints	5 1/2	20.00	P-110	Yes	44.51	Yes			6,652.4	8,354.63
200	191	Casing Joints	5 1/2	20.00	P-110	Yes	45.19	Yes			6,607.2	8,399.82
201	192	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			6,562.8	8,444.25
202	193	Casing Joints	5 1/2	20.00	P-110	Yes	38.62	Yes			6,524.1	8,482.87
203	194	Casing Joints	5 1/2	20.00	P-110	Yes	44.58	Yes			6,479.6	8,527.45
204	195	Casing Joints	5 1/2	20.00	P-110	Yes	44.63	Yes			6,434.9	8,572.08
205	196	Casing Joints	5 1/2	20.00	P-110	Yes	44.34	Yes			6,390.6	8,616.42
206		Marker Joint	5 1/2	20.00	P-110	Yes	22.59	Yes			6,368.0	8,639.01
207	197	Casing Joints	5 1/2	20.00	P-110	Yes	44.53	Yes			6,323.5	8,683.54
208	198	Casing Joints	5 1/2	20.00	P-110	Yes	42.66	Yes			6,280.8	8,726.20
209	199	Casing Joints	5 1/2	20.00	P-110	Yes	35.89	Yes			6,244.9	8,762.09
210	200	Casing Joints	5 1/2	20.00	P-110	Yes	45.00	Yes			6,199.9	8,807.09
211	201	Casing Joints	5 1/2	20.00	P-110	Yes	44.91	Yes			6,155.0	8,852.00
212	202	Casing Joints	5 1/2	20.00	P-110	Yes	44.83	Yes			6,110.2	8,896.83
213	203	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			6,065.8	8,941.24
214	204	Casing Joints	5 1/2	20.00	P-110	Yes	43.63	Yes			6,022.1	8,984.87
215	205	Casing Joints	5 1/2	20.00	P-110	Yes	45.05	Yes			5,977.1	9,029.92
216	206	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			5,933.3	9,073.68



Centralizer Depths

Well Name: Hen 05N

Production, Set Depth: 15,007.0ftKB

API 0512351799000		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 8/19/2023 01:00	Rig Release Date 8/22/2023 06:00	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)
217	207	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			5,889.6	9,117.43
218	208	Casing Joints	5 1/2	20.00	P-110	Yes	43.12	Yes			5,846.5	9,160.55
219	209	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			5,802.7	9,204.30
220	210	Casing Joints	5 1/2	20.00	P-110	Yes	44.49	Yes			5,758.2	9,248.79
221	211	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			5,714.5	9,292.55
222	212	Casing Joints	5 1/2	20.00	P-110	Yes	43.74	Yes			5,670.7	9,336.29
223	213	Casing Joints	5 1/2	20.00	P-110	Yes	41.37	Yes			5,629.3	9,377.66
224	214	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			5,585.6	9,421.41
225	215	Casing Joints	5 1/2	20.00	P-110	Yes	44.63	Yes			5,541.0	9,466.04
226	216	Casing Joints	5 1/2	20.00	P-110	Yes	43.58	Yes			5,497.4	9,509.62
227	217	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			5,453.6	9,553.38
228	218	Casing Joints	5 1/2	20.00	P-110	Yes	43.61	Yes			5,410.0	9,596.99
229	219	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			5,366.3	9,640.74
230	220	Casing Joints	5 1/2	20.00	P-110	Yes	42.40	Yes			5,323.9	9,683.14
231	221	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			5,280.1	9,726.89
232	222	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			5,236.5	9,770.54
233	223	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			5,192.7	9,814.30
234	224	Casing Joints	5 1/2	20.00	P-110	Yes	43.52	Yes			5,149.2	9,857.82
235	225	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			5,105.4	9,901.57
236	226	Casing Joints	5 1/2	20.00	P-110	Yes	41.50	Yes			5,063.9	9,943.07
237	227	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			5,020.2	9,986.82
238	228	Casing Joints	5 1/2	20.00	P-110	Yes	42.93	Yes			4,977.3	10,029.75
239	229	Casing Joints	5 1/2	20.00	P-110	Yes	43.74	Yes			4,933.5	10,073.49
240	230	Casing Joints	5 1/2	20.00	P-110	Yes	43.74	Yes			4,889.8	10,117.23
241	231	Casing Joints	5 1/2	20.00	P-110	Yes	41.97	Yes			4,847.8	10,159.20
242	232	Casing Joints	5 1/2	20.00	P-110	Yes	38.88	Yes			4,808.9	10,198.08
243	233	Casing Joints	5 1/2	20.00	P-110	Yes	43.66	Yes			4,765.3	10,241.74
244	234	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			4,721.5	10,285.49
245	235	Casing Joints	5 1/2	20.00	P-110	Yes	43.87	Yes			4,677.6	10,329.36
246	236	Casing Joints	5 1/2	20.00	P-110	Yes	42.12	Yes			4,635.5	10,371.48
247	237	Casing Joints	5 1/2	20.00	P-110	Yes	41.71	Yes			4,593.8	10,413.19



Centralizer Depths

Well Name: Hen 05N

Production, Set Depth: 15,007.0ftKB

API 0512351799000		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 8/19/2023 01:00		Rig Release Date 8/22/2023 06:00		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)
248	238	Casing Joints	5 1/2	20.00	P-110	Yes	44.70	Yes			4,549.1	10,457.89
249	239	Casing Joints	5 1/2	20.00	P-110	Yes	44.33	Yes			4,504.8	10,502.22
250	240	Casing Joints	5 1/2	20.00	P-110	Yes	39.85	Yes			4,464.9	10,542.07
251	241	Casing Joints	5 1/2	20.00	P-110	Yes	44.70	Yes			4,420.2	10,586.77
252	242	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			4,376.4	10,630.62
253	243	Casing Joints	5 1/2	20.00	P-110	Yes	44.60	Yes			4,331.8	10,675.22
254	244	Casing Joints	5 1/2	20.00	P-110	Yes	43.90	Yes			4,287.9	10,719.12
255	245	Casing Joints	5 1/2	20.00	P-110	Yes	42.26	Yes			4,245.6	10,761.38
256	246	Casing Joints	5 1/2	20.00	P-110	Yes	39.15	Yes			4,206.5	10,800.53
257	247	Casing Joints	5 1/2	20.00	P-110	Yes	44.22	Yes			4,162.3	10,844.75
258	248	Casing Joints	5 1/2	20.00	P-110	Yes	43.91	Yes			4,118.3	10,888.66
259	249	Casing Joints	5 1/2	20.00	P-110	Yes	44.62	Yes			4,073.7	10,933.28
260	250	Casing Joints	5 1/2	20.00	P-110	Yes	42.50	Yes			4,031.2	10,975.78
261	251	Casing Joints	5 1/2	20.00	P-110	Yes	44.63	Yes			3,986.6	11,020.41
262	252	Casing Joints	5 1/2	20.00	P-110	Yes	44.64	Yes			3,942.0	11,065.05
263	253	Casing Joints	5 1/2	20.00	P-110	Yes	44.51	Yes			3,897.4	11,109.56
264	254	Casing Joints	5 1/2	20.00	P-110	Yes	44.34	Yes			3,853.1	11,153.90
265	255	Casing Joints	5 1/2	20.00	P-110	Yes	43.90	Yes			3,809.2	11,197.80
266	256	Casing Joints	5 1/2	20.00	P-110	Yes	43.90	Yes			3,765.3	11,241.70
267	257	Casing Joints	5 1/2	20.00	P-110	Yes	44.62	Yes			3,720.7	11,286.32
268	258	Casing Joints	5 1/2	20.00	P-110	Yes	44.84	Yes			3,675.8	11,331.16
269	259	Casing Joints	5 1/2	20.00	P-110	Yes	44.63	Yes			3,631.2	11,375.79
270	260	Casing Joints	5 1/2	20.00	P-110	Yes	44.52	Yes			3,586.7	11,420.31
271	261	Casing Joints	5 1/2	20.00	P-110	Yes	43.90	Yes			3,542.8	11,464.21
272	262	Casing Joints	5 1/2	20.00	P-110	Yes	42.45	Yes			3,500.3	11,506.66
273	263	Casing Joints	5 1/2	20.00	P-110	Yes	44.90	Yes			3,455.4	11,551.56
275	264	Casing Joints	5 1/2	20.00	P-110	Yes	41.30	Yes			3,399.9	11,607.11
276	265	Casing Joints	5 1/2	20.00	P-110	Yes	45.37	Yes			3,354.5	11,652.48
277	266	Casing Joints	5 1/2	20.00	P-110	Yes	44.61	Yes			3,309.9	11,697.09
278	267	Casing Joints	5 1/2	20.00	P-110	Yes	43.92	Yes			3,266.0	11,741.01
279	268	Casing Joints	5 1/2	20.00	P-110	Yes	45.09	Yes			3,220.9	11,786.10



Centralizer Depths

Well Name: Hen 05N

Production, Set Depth: 15,007.0ftKB

API 0512351799000		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 8/19/2023 01:00		Rig Release Date 8/22/2023 06:00		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)
280	269	Casing Joints	5 1/2	20.00	P-110	Yes	43.56	Yes			3,177.3	11,829.66
281	270	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			3,132.9	11,874.06
282	271	Casing Joints	5 1/2	20.00	P-110	Yes	44.83	Yes			3,088.1	11,918.89
283	272	Casing Joints	5 1/2	20.00	P-110	Yes	44.48	Yes			3,043.6	11,963.37
284	273	Casing Joints	5 1/2	20.00	P-110	Yes	43.34	Yes			3,000.3	12,006.71
285	274	Casing Joints	5 1/2	20.00	P-110	Yes	44.60	Yes			2,955.7	12,051.31
286	275	Casing Joints	5 1/2	20.00	P-110	Yes	44.95	Yes			2,910.7	12,096.26
287	276	Casing Joints	5 1/2	20.00	P-110	Yes	43.90	Yes			2,866.8	12,140.16
288	277	Casing Joints	5 1/2	20.00	P-110	Yes	44.50	Yes			2,822.3	12,184.66
289	278	Casing Joints	5 1/2	20.00	P-110	Yes	44.51	Yes			2,777.8	12,229.17
290	279	Casing Joints	5 1/2	20.00	P-110	Yes	42.90	Yes			2,734.9	12,272.07
291	280	Casing Joints	5 1/2	20.00	P-110	Yes	36.81	Yes			2,698.1	12,308.88
292	281	Casing Joints	5 1/2	20.00	P-110	Yes	45.20	Yes			2,652.9	12,354.08
293	282	Casing Joints	5 1/2	20.00	P-110	Yes	43.63	Yes			2,609.3	12,397.71
294	283	Casing Joints	5 1/2	20.00	P-110	Yes	44.32	Yes			2,565.0	12,442.03
295	284	Casing Joints	5 1/2	20.00	P-110	Yes	44.29	Yes			2,520.7	12,486.32
296	285	Casing Joints	5 1/2	20.00	P-110	Yes	44.52	Yes			2,476.2	12,530.84
297	286	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			2,432.4	12,574.59
298	287	Casing Joints	5 1/2	20.00	P-110	Yes	42.39	Yes			2,390.0	12,616.98
299	288	Casing Joints	5 1/2	20.00	P-110	Yes	41.05	Yes			2,349.0	12,658.03
300	289	Casing Joints	5 1/2	20.00	P-110	Yes	43.97	Yes			2,305.0	12,702.00
301	290	Casing Joints	5 1/2	20.00	P-110	Yes	43.64	Yes			2,261.4	12,745.64
302	291	Casing Joints	5 1/2	20.00	P-110	Yes	43.63	Yes			2,217.7	12,789.27
303	292	Casing Joints	5 1/2	20.00	P-110	Yes	38.33	Yes			2,179.4	12,827.60
304	293	Casing Joints	5 1/2	20.00	P-110	Yes	41.96	Yes			2,137.4	12,869.56
305	294	Casing Joints	5 1/2	20.00	P-110	Yes	43.74	Yes			2,093.7	12,913.30
306	295	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			2,049.9	12,957.06
307	296	Casing Joints	5 1/2	20.00	P-110	Yes	43.64	Yes			2,006.3	13,000.70
308	297	Casing Joints	5 1/2	20.00	P-110	Yes	43.73	Yes			1,962.6	13,044.43
309	298	Casing Joints	5 1/2	20.00	P-110	Yes	43.64	Yes			1,918.9	13,088.07
310	299	Casing Joints	5 1/2	20.00	P-110	Yes	39.20	Yes			1,879.7	13,127.27



Centralizer Depths

Well Name: Hen 05N

Production, Set Depth: 15,007.0ftKB

API 0512351799000		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 8/19/2023 01:00		Rig Release Date 8/22/2023 06:00		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)
311	300	Casing Joints	5 1/2	20.00	P-110	Yes	44.35	Yes			1,835.4	13,171.62
312	301	Casing Joints	5 1/2	20.00	P-110	Yes	44.17	Yes			1,791.2	13,215.79
313	302	Casing Joints	5 1/2	20.00	P-110	Yes	43.71	Yes			1,747.5	13,259.50
314	303	Casing Joints	5 1/2	20.00	P-110	Yes	39.18	Yes			1,708.3	13,298.68
315	304	Casing Joints	5 1/2	20.00	P-110	Yes	43.05	Yes			1,665.3	13,341.73
316	305	Casing Joints	5 1/2	20.00	P-110	Yes	42.31	Yes			1,623.0	13,384.04
317	306	Casing Joints	5 1/2	20.00	P-110	Yes	43.63	Yes			1,579.3	13,427.67
318	307	Casing Joints	5 1/2	20.00	P-110	Yes	42.00	Yes			1,537.3	13,469.67
319	308	Casing Joints	5 1/2	20.00	P-110	Yes	44.42	Yes			1,492.9	13,514.09
320	309	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			1,448.5	13,558.50
321	310	Casing Joints	5 1/2	20.00	P-110	Yes	42.33	Yes			1,406.2	13,600.83
322	311	Casing Joints	5 1/2	20.00	P-110	Yes	38.59	Yes			1,367.6	13,639.42
323	312	Casing Joints	5 1/2	20.00	P-110	Yes	43.95	Yes			1,323.6	13,683.37
324	313	Casing Joints	5 1/2	20.00	P-110	Yes	43.73	Yes			1,279.9	13,727.10
325	314	Casing Joints	5 1/2	20.00	P-110	Yes	36.99	Yes			1,242.9	13,764.09
326	315	Casing Joints	5 1/2	20.00	P-110	Yes	45.04	Yes			1,197.9	13,809.13
327	316	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			1,154.1	13,852.88
328	317	Casing Joints	5 1/2	20.00	P-110	Yes	43.97	Yes			1,110.2	13,896.85
329	318	Casing Joints	5 1/2	20.00	P-110	Yes	43.96	Yes			1,066.2	13,940.81
330	319	Casing Joints	5 1/2	20.00	P-110	Yes	39.63	Yes			1,026.6	13,980.44
331	320	Casing Joints	5 1/2	20.00	P-110	Yes	39.12	Yes			987.4	14,019.56
332	321	Casing Joints	5 1/2	20.00	P-110	Yes	44.33	Yes			943.1	14,063.89
333	322	Casing Joints	5 1/2	20.00	P-110	Yes	42.82	Yes			900.3	14,106.71
334	323	Casing Joints	5 1/2	20.00	P-110	Yes	45.06	Yes			855.2	14,151.77
335	324	Casing Joints	5 1/2	20.00	P-110	Yes	43.97	Yes			811.3	14,195.74
336	325	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			768.4	14,238.59
337	326	Casing Joints	5 1/2	20.00	P-110	Yes	43.96	Yes			724.5	14,282.55
338	327	Casing Joints	5 1/2	20.00	P-110	Yes	43.97	Yes			680.5	14,326.52
339	328	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			635.7	14,371.32
340	329	Casing Joints	5 1/2	20.00	P-110	Yes	41.33	Yes			594.4	14,412.65
341	330	Casing Joints	5 1/2	20.00	P-110	Yes	43.97	Yes			550.4	14,456.62



Centralizer Depths

Well Name: Hen 05N

Production, Set Depth: 15,007.0ftKB

API 05123517990000		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 8/19/2023 01:00		Rig Release Date 8/22/2023 06:00		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)
342	331	Casing Joints	5 1/2	20.00	P-110	Yes	43.62	Yes			506.8	14,500.24