

Cement Post Job Report

Client: PDC Energy

Well Name: Erwin 4N

API #: 05-123-49376-00

Job Date: February 1, 2021

Job Type: New Well - 5.5" Production String

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



Treatment Report

Client:	Well Name and Number:	Rig Name:	Date:		
PDC Energy	Erwin 4N	Ensign 142	2/1/2021		
Job Type:	Well Head Connection:	Casing/Tubing Thread Type:	Well MD:	Well TVD:	Deg. Dev:
Production	5 1/2" HP Cement Head	Buttress	13544	6627	90
Max Casing/Tubing/DP PSI:	Max Allowed Ann. PSI:	No. of Stages:	DV Tool Depth (ft):		
5000					
Packer/Retainer Depth (ft)	Top of Perfs:	Bottom of Perfs:	Tapered String:		
			No		

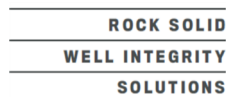
String Details:							
String:	Type:	OD (in)	Wt. (lb/ft)	ID (in)	Bit/OH (in)	Excess %	Depth (ft)
Surface	Casing	9.625	36	8.921		0	1674
Production	Casing	5.5	20	4.778	8.5	0	13535

Preflush/Spacers:		Lead System: Class G		Tail System: Class G		Displacement:	
Spacer 1	Production OBM Spacer	Density	12.90	Density	13.70	Fluid Type	Water
Density	11.5,12.0,12.5	Sacks	854.00	Sacks	1265.00	Vol/bbls	300.0
Volume	75	Vol/bbls	232.71	Vol/bbls	308.66	Density	8.3
Rate	8	Rate	8.00	Rate	8.00	Clay Stab.?	yes
Spacer 2		Yield	1.53	Yield	1.37	Bump to?	2600.0
Density		Gal/Sack	7.83	Gal/Sack	6.66	Rate (bpm)	10.0
Volume		% Excess	0.00	% Excess	0.00	Last 10 Rate	3.0
Rate		TOL (ft)	630	TOT (ft)	6314	Final volume	300.0

Pre-Job Details:			
Mud Properties:		Circulation Data:	
Mud Type:	OBM	Time Circulated (hrs)	3
Mud Weight (ppg)	10.5	Circulation Rate (bpm)	10
Flow Line Temp (F)	90.0	Full Circulation	Yes
Visc. (sec/qt)		Gas Present	No
PV (cP)	21	Units of Gas	0
Yield Point	7	Centralizers & Plugs:	
10 Sec Gel	7	Quantity/Type	
10 Min Gel	10	Top Plug Used	Yes
30 Min Gel	11	Bottom Plug Used	Yes

Job Circulation Details:			
Calc. Displacement (bbls)	300	Gas After Placement?	No
Actual Pumped Displ. (bbls)	300	Cement to Surface?	No
Bump Plug?	Yes	Cement to Surface (bbls)	0
Floats Holding?	Yes	Top Out?	No
Qty. Returned to Tank (bbls)	3	Top Out Volume (bbls)	0

Additional Treatment Comments:			



Job Treatment Log

Client:		Well Name and Number:		Rig Name:		Date:	Ambient Conditions (Temperature/ Humidity/ Air Pressure):	
PDC Energy		Erwin 4N		Ensign 142		2/1/2021	22 Deg F / 72% / 25.16 in	
Date (MM/DD/YY)	Time (HH:MM)	Density (ppg)	Rate (BPM)	Volume	Cumulative Volume	Pressure	Comments	
1/31/2021	11:00:00 PM						Arrive on location , meet with customer to get well information and discuss the job.	
	11:15:00 PM						Spot equipment and rig up all ground equipment.	
2/1/2021	12:00:00 AM						Wait for rig to circulate to condition the well.	
	4:45:00 AM						Pre job safety meeting with the rig crew.	
	5:20:00 AM						Rig up the floor.	
	5:23:00 AM	8.3	3.0	3.0		300.0	Fill lines.	
	5:25:00 AM						Test lines to 5000 PSI.	
	5:34:00 AM	11.5	5.8	25.0		950.0	Mix and pump spacer 1 , with surfactants and fiber.	
	5:38:00 AM	12.0	5.8	25.0		800.0	Mix and pump spacer 2 , with surfactants and fiber.	
	5:42:00 AM	12.5	5.8	25.0		700.0	Mix and pump Scavenger , (yield 1.68 and water 8.93) , 17.75 bbls mix water. Add fiber.	
	5:48:00 AM						Shut down and drop bottom plug.	
	5:50:00 AM	12.9	9.0	233.0		1800.0	Mix and pump 854 sks Lead cement @ 12.9# , 1.53 cuft/sk and 7.83 gals/sk. , Top of Lead cement @ 626'.	
	6:16:00 AM	13.7	8.0	309.0		1000.0	Mix and pump 1265 sks Tail cement @ 13.7# , 1.37 cuft/sk and 6.66 gals/sk. , Top of Tail cement @ 6314'.	
	6:55:00 AM						Shut down and wash pumps and lines.	
	6:59:00 AM						Drop top plug.	
	7:01:00 AM	8.3	8.0	50.0	50.0	2050.0	Start water displacement , sugar in the first 10 bbls and biocide in the first 100 bbls.	
	7:06:00 AM	8.3	10	50.0	100.0	2500.0	Water displacement	
	7:11:00 AM	8.3	10.0	50.0	150.0	2900.0	Water displacement	
	7:16:00 AM	8.3	8.5	50.0	200.0	2750.0	Water displacement	
	7:22:00 AM	8.3	8.0	50.0	250.0	2900.0	Water displacement	
	7:28:00 AM	8.3	2.6	50.0	300.0	1985.0	Water displacement , 30 bbls spacer back to surface.	
	7:39:00 AM	8.3	2.6		300.0	2000.0	Land plug and bump to 2600 PSI.	
	7:41:00 AM					4000.0	Pressure up and shift sleeve open.	
	7:43:00 AM	8.3	5.0	5.0		2600.0	Pump wet shoe.	
	7:46:00 AM						Check floats , 3 bbls back.	
	7:52:00 AM	8.3	5.0	20.0		400.0	Flush BOP stack.	
	8:00:00 AM						Shut down and rig down.	
	9:00:00 AM						Depart location.	



Centralizer Depths

Well Name: Erwin 4N

Production, Set Depth: 13,535.0ftKB

API 05123493760000		Surface Legal Location SWSE 27 5N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal					
Ground Elevation (ft) 4,639.00		Original KB Elevation (ft) 4,667.00		KB-Ground Distance (ft) 28.00		Spud Date 1/30/2021 00:00		Rig Release Date 2/1/2021 10:00		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)
9	1	Casing Joints	5 1/2	20.00	P-110	Yes	43.61	Yes			13,455.2	79.84
11	3	Casing Joints	5 1/2	20.00	P-110	Yes	43.30	Yes			13,368.2	166.79
13	5	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			13,280.8	254.19
15	7	Casing Joints	5 1/2	20.00	P-110	Yes	43.70	Yes			13,193.5	341.50
17	9	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			13,103.0	432.00
19		Marker Joint	5 1/2	20.00	P-110	Yes	23.42	Yes			13,037.4	497.57
21	12	Casing Joints	5 1/2	20.00	P-110	Yes	42.35	Yes			12,953.9	581.10
23	14	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			12,866.7	668.29
25	16	Casing Joints	5 1/2	20.00	P-110	Yes	40.81	Yes			12,782.3	752.75
27	18	Casing Joints	5 1/2	20.00	P-110	Yes	42.20	Yes			12,696.3	838.70
29	20	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			12,611.8	923.21
31	22	Casing Joints	5 1/2	20.00	P-110	Yes	47.40	Yes			12,517.2	1,017.81
33	24	Casing Joints	5 1/2	20.00	P-110	Yes	41.15	Yes			12,432.4	1,102.61
35	26	Casing Joints	5 1/2	20.00	P-110	Yes	43.60	Yes			12,345.3	1,189.71
37	28	Casing Joints	5 1/2	20.00	P-110	Yes	43.60	Yes			12,258.0	1,276.96
39	30	Casing Joints	5 1/2	20.00	P-110	Yes	46.70	Yes			12,169.5	1,365.51
41	32	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			12,084.0	1,451.02
43	34	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			11,997.6	1,537.42
45	36	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			11,910.1	1,624.92
47	38	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			11,824.7	1,710.32
49	40	Casing Joints	5 1/2	20.00	P-110	Yes	43.40	Yes			11,738.9	1,796.12
51	42	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			11,651.4	1,883.63
53	44	Casing Joints	5 1/2	20.00	P-110	Yes	43.61	Yes			11,564.1	1,970.94
55	46	Casing Joints	5 1/2	20.00	P-110	Yes	42.20	Yes			11,478.2	2,056.79
57	48	Casing Joints	5 1/2	20.00	P-110	Yes	42.81	Yes			11,392.6	2,142.41
59	50	Casing Joints	5 1/2	20.00	P-110	Yes	42.81	Yes			11,307.0	2,228.04
61	52	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			11,213.2	2,321.79
63	54	Casing Joints	5 1/2	20.00	P-110	Yes	46.02	Yes			11,120.2	2,414.81
65	56	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			11,025.9	2,509.11
67	58	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			10,932.6	2,602.41
69	60	Casing Joints	5 1/2	20.00	P-110	Yes	45.50	Yes			10,839.8	2,695.17



Centralizer Depths

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API 05123493760000		Surface Legal Location SWSE 27 5N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal					
Ground Elevation (ft) 4,639.00		Original KB Elevation (ft) 4,667.00		KB-Ground Distance (ft) 28.00		Spud Date 1/30/2021 00:00		Rig Release Date 2/1/2021 10:00		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)
71	62	Casing Joints	5 1/2	20.00	P-110	Yes	41.68	Yes			10,750.8	2,784.20
73	64	Casing Joints	5 1/2	20.00	P-110	Yes	47.20	Yes			10,659.3	2,875.70
75	66	Casing Joints	5 1/2	20.00	P-110	Yes	47.30	Yes			10,564.8	2,970.18
77		Marker Joint	5 1/2	20.00	P-110	Yes	11.32	Yes			10,506.2	3,028.81
79	69	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			10,411.6	3,123.36
81	71	Casing Joints	5 1/2	20.00	P-110	Yes	41.73	Yes			10,324.7	3,210.34
83	73	Casing Joints	5 1/2	20.00	P-110	Yes	40.50	Yes			10,238.0	3,297.05
85	75	Casing Joints	5 1/2	20.00	P-110	Yes	42.50	Yes			10,149.2	3,385.85
87	77	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			10,058.2	3,476.85
89	79	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			9,963.4	3,571.60
91	81	Casing Joints	5 1/2	20.00	P-110	Yes	46.60	Yes			9,871.7	3,663.30
93	83	Casing Joints	5 1/2	20.00	P-110	Yes	46.00	Yes			9,779.2	3,755.80
95	85	Casing Joints	5 1/2	20.00	P-110	Yes	47.00	Yes			9,686.2	3,848.82
97	87	Casing Joints	5 1/2	20.00	P-110	Yes	47.10	Yes			9,594.4	3,940.62
99	89	Casing Joints	5 1/2	20.00	P-110	Yes	47.24	Yes			9,502.6	4,032.36
101	91	Casing Joints	5 1/2	20.00	P-110	Yes	45.00	Yes			9,410.4	4,124.61
103	93	Casing Joints	5 1/2	20.00	P-110	Yes	46.25	Yes			9,318.0	4,217.01
105	95	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			9,224.4	4,310.61
107	97	Casing Joints	5 1/2	20.00	P-110	Yes	44.85	Yes			9,135.7	4,399.26
109	99	Casing Joints	5 1/2	20.00	P-110	Yes	46.70	Yes			9,042.3	4,492.71
111	101	Casing Joints	5 1/2	20.00	P-110	Yes	45.85	Yes			8,950.7	4,584.34
113	103	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			8,857.8	4,677.19
115	105	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			8,765.2	4,769.84
117	107	Casing Joints	5 1/2	20.00	P-110	Yes	41.90	Yes			8,677.1	4,857.92
119	109	Casing Joints	5 1/2	20.00	P-110	Yes	45.60	Yes			8,586.2	4,948.82
121	111	Casing Joints	5 1/2	20.00	P-110	Yes	46.38	Yes			8,492.6	5,042.45
123	113	Casing Joints	5 1/2	20.00	P-110	Yes	46.05	Yes			8,399.3	5,135.68
125	115	Casing Joints	5 1/2	20.00	P-110	Yes	45.51	Yes			8,307.4	5,227.60
127	117	Casing Joints	5 1/2	20.00	P-110	Yes	47.31	Yes			8,213.0	5,322.01
129	119	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			8,121.7	5,413.27
131	121	Casing Joints	5 1/2	20.00	P-110	Yes	42.35	Yes			8,033.9	5,501.12



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Ground Elevation (ft) 4,639.00		Original KB Elevation (ft) 4,667.00		KB-Ground Distance (ft) 28.00		Spud Date 1/30/2021 00:00		Rig Release Date 2/1/2021 10:00		On Production Date		Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
133	123	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			7,944.1	5,590.89
135	125	Casing Joints	5 1/2	20.00	P-110	Yes	46.98	Yes			7,849.7	5,685.32
137	127	Casing Joints	5 1/2	20.00	P-110	Yes	46.75	Yes			7,755.6	5,779.41
139	129	Casing Joints	5 1/2	20.00	P-110	Yes	47.46	Yes			7,660.6	5,874.38
141	131	Casing Joints	5 1/2	20.00	P-110	Yes	44.22	Yes			7,568.9	5,966.15
143	133	Casing Joints	5 1/2	20.00	P-110	Yes	47.49	Yes			7,474.0	6,061.04
144		Marker Joint	5 1/2	20.00	P-110	Yes	11.86	Yes			7,462.1	6,072.90
145	134	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			7,418.0	6,117.00
146	135	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			7,370.5	6,164.50
147	136	Casing Joints	5 1/2	20.00	P-110	Yes	42.62	Yes			7,327.9	6,207.12
148	137	Casing Joints	5 1/2	20.00	P-110	Yes	46.55	Yes			7,281.3	6,253.67
149	138	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			7,234.0	6,301.02
150	139	Casing Joints	5 1/2	20.00	P-110	Yes	46.90	Yes			7,187.1	6,347.92
151	140	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			7,139.6	6,395.37
152	141	Casing Joints	5 1/2	20.00	P-110	Yes	47.55	Yes			7,092.1	6,442.92
153	142	Casing Joints	5 1/2	20.00	P-110	Yes	45.91	Yes			7,046.2	6,488.83
154	143	Casing Joints	5 1/2	20.00	P-110	Yes	47.15	Yes			6,999.0	6,535.98
155	144	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			6,951.6	6,583.43
156	145	Casing Joints	5 1/2	20.00	P-110	Yes	46.91	Yes			6,904.7	6,630.34
157	146	Casing Joints	5 1/2	20.00	P-110	Yes	44.21	Yes			6,860.5	6,674.55
158	147	Casing Joints	5 1/2	20.00	P-110	Yes	47.48	Yes			6,813.0	6,722.03
159	148	Casing Joints	5 1/2	20.00	P-110	Yes	47.41	Yes			6,765.6	6,769.44
160	149	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			6,721.5	6,813.54
161	150	Casing Joints	5 1/2	20.00	P-110	Yes	47.55	Yes			6,673.9	6,861.09
162	151	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			6,626.5	6,908.54
163	152	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			6,579.1	6,955.89
164	153	Casing Joints	5 1/2	20.00	P-110	Yes	47.11	Yes			6,532.0	7,003.00
165	154	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			6,484.5	7,050.50
166	155	Casing Joints	5 1/2	20.00	P-110	Yes	43.68	Yes			6,440.8	7,094.18
167	156	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			6,398.0	7,136.98
168	157	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			6,350.8	7,184.23



Centralizer Depths

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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)
169	158	Casing Joints	5 1/2	20.00	P-110	Yes	40.05	Yes			6,310.7	7,224.28
170	159	Casing Joints	5 1/2	20.00	P-110	Yes	47.34	Yes			6,263.4	7,271.62
171	160	Casing Joints	5 1/2	20.00	P-110	Yes	46.35	Yes			6,217.0	7,317.97
172	161	Casing Joints	5 1/2	20.00	P-110	Yes	47.30	Yes			6,169.7	7,365.27
173	162	Casing Joints	5 1/2	20.00	P-110	Yes	45.88	Yes			6,123.9	7,411.15
174	163	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			6,076.6	7,458.40
175	164	Casing Joints	5 1/2	20.00	P-110	Yes	46.65	Yes			6,030.0	7,505.05
176		Marker Joint	5 1/2	20.00	P-110	Yes	9.55	Yes			6,020.4	7,514.60
177	165	Casing Joints	5 1/2	20.00	P-110	Yes	47.34	Yes			5,973.1	7,561.94
178	166	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			5,925.6	7,609.39
179	167	Casing Joints	5 1/2	20.00	P-110	Yes	45.85	Yes			5,879.8	7,655.24
180	168	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			5,837.0	7,697.99
181	169	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			5,789.5	7,745.49
182	170	Casing Joints	5 1/2	20.00	P-110	Yes	45.35	Yes			5,744.2	7,790.84
183	171	Casing Joints	5 1/2	20.00	P-110	Yes	47.00	Yes			5,697.2	7,837.84
184	172	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			5,649.8	7,885.19
185	173	Casing Joints	5 1/2	20.00	P-110	Yes	47.41	Yes			5,602.4	7,932.60
186	174	Casing Joints	5 1/2	20.00	P-110	Yes	45.61	Yes			5,556.8	7,978.21
187	175	Casing Joints	5 1/2	20.00	P-110	Yes	43.11	Yes			5,513.7	8,021.32
188	176	Casing Joints	5 1/2	20.00	P-110	Yes	43.60	Yes			5,470.1	8,064.92
189	177	Casing Joints	5 1/2	20.00	P-110	Yes	45.40	Yes			5,424.7	8,110.32
190	178	Casing Joints	5 1/2	20.00	P-110	Yes	47.10	Yes			5,377.6	8,157.42
191	179	Casing Joints	5 1/2	20.00	P-110	Yes	47.31	Yes			5,330.3	8,204.73
192	180	Casing Joints	5 1/2	20.00	P-110	Yes	47.41	Yes			5,282.9	8,252.14
193	181	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			5,235.4	8,299.64
194	182	Casing Joints	5 1/2	20.00	P-110	Yes	47.55	Yes			5,187.8	8,347.19
195	183	Casing Joints	5 1/2	20.00	P-110	Yes	44.31	Yes			5,143.5	8,391.50
196	184	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			5,096.3	8,438.75
197	185	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			5,052.6	8,482.40
198	186	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			5,009.1	8,525.95
199	187	Casing Joints	5 1/2	20.00	P-110	Yes	44.70	Yes			4,964.4	8,570.65



Centralizer Depths

Well Name: Erwin 4N

Production, Set Depth: 13,535.0ftKB

API 05123493760000		Surface Legal Location SWSE 27 5N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal					
Ground Elevation (ft) 4,639.00		Original KB Elevation (ft) 4,667.00		KB-Ground Distance (ft) 28.00		Spud Date 1/30/2021 00:00		Rig Release Date 2/1/2021 10:00		On Production Date		Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
200	188	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			4,920.7	8,614.30
201	189	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			4,873.3	8,661.75
202	190	Casing Joints	5 1/2	20.00	P-110	Yes	45.60	Yes			4,827.7	8,707.35
203	191	Casing Joints	5 1/2	20.00	P-110	Yes	43.64	Yes			4,784.0	8,750.99
204	192	Casing Joints	5 1/2	20.00	P-110	Yes	47.30	Yes			4,736.7	8,798.29
205	193	Casing Joints	5 1/2	20.00	P-110	Yes	39.70	Yes			4,697.0	8,837.99
206	194	Casing Joints	5 1/2	20.00	P-110	Yes	41.61	Yes			4,655.4	8,879.60
207	195	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			4,608.0	8,927.05
208	196	Casing Joints	5 1/2	20.00	P-110	Yes	43.25	Yes			4,564.7	8,970.30
209	197	Casing Joints	5 1/2	20.00	P-110	Yes	47.51	Yes			4,517.2	9,017.81
210	198	Casing Joints	5 1/2	20.00	P-110	Yes	46.75	Yes			4,470.4	9,064.56
211	199	Casing Joints	5 1/2	20.00	P-110	Yes	47.30	Yes			4,423.1	9,111.86
212	200	Casing Joints	5 1/2	20.00	P-110	Yes	45.21	Yes			4,377.9	9,157.07
213	201	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			4,335.1	9,199.87
214	202	Casing Joints	5 1/2	20.00	P-110	Yes	43.35	Yes			4,291.8	9,243.22
215	203	Casing Joints	5 1/2	20.00	P-110	Yes	42.55	Yes			4,249.2	9,285.77
216	204	Casing Joints	5 1/2	20.00	P-110	Yes	42.90	Yes			4,206.3	9,328.67
217	205	Casing Joints	5 1/2	20.00	P-110	Yes	43.25	Yes			4,163.1	9,371.92
218	206	Casing Joints	5 1/2	20.00	P-110	Yes	43.14	Yes			4,119.9	9,415.06
219	207	Casing Joints	5 1/2	20.00	P-110	Yes	43.15	Yes			4,076.8	9,458.21
220	208	Casing Joints	5 1/2	20.00	P-110	Yes	42.84	Yes			4,034.0	9,501.05
221	209	Casing Joints	5 1/2	20.00	P-110	Yes	42.25	Yes			3,991.7	9,543.30
222	210	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			3,948.9	9,586.15
223	211	Casing Joints	5 1/2	20.00	P-110	Yes	42.00	Yes			3,906.9	9,628.15
224	212	Casing Joints	5 1/2	20.00	P-110	Yes	42.68	Yes			3,864.2	9,670.83
225	213	Casing Joints	5 1/2	20.00	P-110	Yes	43.05	Yes			3,821.1	9,713.88
226	214	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			3,778.3	9,756.73
227	215	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			3,735.5	9,799.48
228	216	Casing Joints	5 1/2	20.00	P-110	Yes	42.05	Yes			3,693.5	9,841.53
229	217	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			3,650.6	9,884.38
230	218	Casing Joints	5 1/2	20.00	P-110	Yes	42.78	Yes			3,607.8	9,927.16



Centralizer Depths

Well Name: Erwin 4N

Production, Set Depth: 13,535.0ftKB

API 05123493760000		Surface Legal Location SWSE 27 5N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal					
Ground Elevation (ft) 4,639.00		Original KB Elevation (ft) 4,667.00		KB-Ground Distance (ft) 28.00		Spud Date 1/30/2021 00:00		Rig Release Date 2/1/2021 10:00		On Production Date		Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
231	219	Casing Joints	5 1/2	20.00	P-110	Yes	42.51	Yes			3,565.3	9,969.67
232	220	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			3,522.5	10,012.47
233	221	Casing Joints	5 1/2	20.00	P-110	Yes	42.02	Yes			3,480.5	10,054.49
234	222	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			3,437.8	10,097.24
235	223	Casing Joints	5 1/2	20.00	P-110	Yes	41.61	Yes			3,396.2	10,138.85
236	224	Casing Joints	5 1/2	20.00	P-110	Yes	41.91	Yes			3,354.2	10,180.76
237	225	Casing Joints	5 1/2	20.00	P-110	Yes	40.36	Yes			3,313.9	10,221.12
238	226	Casing Joints	5 1/2	20.00	P-110	Yes	41.15	Yes			3,272.7	10,262.27
239	227	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			3,229.9	10,305.07
240	228	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			3,187.2	10,347.82
241	229	Casing Joints	5 1/2	20.00	P-110	Yes	41.81	Yes			3,145.4	10,389.63
242	230	Casing Joints	5 1/2	20.00	P-110	Yes	42.70	Yes			3,102.7	10,432.33
243	231	Casing Joints	5 1/2	20.00	P-110	Yes	41.81	Yes			3,060.9	10,474.14
244	232	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			3,018.1	10,516.94
245	233	Casing Joints	5 1/2	20.00	P-110	Yes	36.90	Yes			2,981.2	10,553.84
246	234	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			2,938.4	10,596.64
247	235	Casing Joints	5 1/2	20.00	P-110	Yes	42.60	Yes			2,895.8	10,639.24
248	236	Casing Joints	5 1/2	20.00	P-110	Yes	42.20	Yes			2,853.6	10,681.44
249	237	Casing Joints	5 1/2	20.00	P-110	Yes	42.40	Yes			2,811.2	10,723.84
250	238	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			2,768.4	10,766.59
251	239	Casing Joints	5 1/2	20.00	P-110	Yes	44.20	Yes			2,724.2	10,810.79
252	240	Casing Joints	5 1/2	20.00	P-110	Yes	42.51	Yes			2,681.7	10,853.30
253	241	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			2,638.9	10,896.10
254	242	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			2,595.9	10,939.12
255	243	Casing Joints	5 1/2	20.00	P-110	Yes	43.00	Yes			2,552.9	10,982.12
256	244	Casing Joints	5 1/2	20.00	P-110	Yes	42.20	Yes			2,510.7	11,024.32
257	245	Casing Joints	5 1/2	20.00	P-110	Yes	40.31	Yes			2,470.4	11,064.63
258	246	Casing Joints	5 1/2	20.00	P-110	Yes	47.51	Yes			2,422.9	11,112.14
259	247	Casing Joints	5 1/2	20.00	P-110	Yes	45.05	Yes			2,377.8	11,157.19
260	248	Casing Joints	5 1/2	20.00	P-110	Yes	37.75	Yes			2,340.1	11,194.94
261	249	Casing Joints	5 1/2	20.00	P-110	Yes	41.70	Yes			2,298.4	11,236.64



Centralizer Depths

Well Name: Erwin 4N

Production, Set Depth: 13,535.0ftKB

API 05123493760000		Surface Legal Location SWSE 27 5N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal					
Ground Elevation (ft) 4,639.00		Original KB Elevation (ft) 4,667.00		KB-Ground Distance (ft) 28.00		Spud Date 1/30/2021 00:00		Rig Release Date 2/1/2021 10:00		On Production Date		Abandon Date	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
262	250	Casing Joints	5 1/2	20.00	P-110	Yes	42.81	Yes			2,255.6	11,279.45
263	251	Casing Joints	5 1/2	20.00	P-110	Yes	46.70	Yes			2,208.9	11,326.15
264	252	Casing Joints	5 1/2	20.00	P-110	Yes	44.50	Yes			2,164.4	11,370.65
265	253	Casing Joints	5 1/2	20.00	P-110	Yes	45.15	Yes			2,119.2	11,415.80
266	254	Casing Joints	5 1/2	20.00	P-110	Yes	47.31	Yes			2,071.9	11,463.11
267	255	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			2,024.4	11,510.61
268	256	Casing Joints	5 1/2	20.00	P-110	Yes	46.45	Yes			1,977.9	11,557.06
269	257	Casing Joints	5 1/2	20.00	P-110	Yes	46.75	Yes			1,931.2	11,603.81
270	258	Casing Joints	5 1/2	20.00	P-110	Yes	46.70	Yes			1,884.5	11,650.51
271	259	Casing Joints	5 1/2	20.00	P-110	Yes	45.30	Yes			1,839.2	11,695.81
272	260	Casing Joints	5 1/2	20.00	P-110	Yes	47.31	Yes			1,791.9	11,743.12
273	261	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			1,744.4	11,790.57
274	262	Casing Joints	5 1/2	20.00	P-110	Yes	47.18	Yes			1,697.3	11,837.75
275	263	Casing Joints	5 1/2	20.00	P-110	Yes	47.15	Yes			1,650.1	11,884.90
276	264	Casing Joints	5 1/2	20.00	P-110	Yes	45.40	Yes			1,604.7	11,930.30
277	265	Casing Joints	5 1/2	20.00	P-110	Yes	44.00	Yes			1,560.7	11,974.30
278	266	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			1,513.2	12,021.80
279	267	Casing Joints	5 1/2	20.00	P-110	Yes	46.85	Yes			1,466.4	12,068.65
280	268	Casing Joints	5 1/2	20.00	P-110	Yes	43.90	Yes			1,422.5	12,112.55
281	269	Casing Joints	5 1/2	20.00	P-110	Yes	46.45	Yes			1,376.0	12,159.00
282	270	Casing Joints	5 1/2	20.00	P-110	Yes	47.48	Yes			1,328.5	12,206.48
283	271	Casing Joints	5 1/2	20.00	P-110	Yes	45.38	Yes			1,283.1	12,251.86
284	272	Casing Joints	5 1/2	20.00	P-110	Yes	45.60	Yes			1,237.5	12,297.46
285	273	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			1,190.3	12,344.71
286	274	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			1,142.8	12,392.21
287	275	Casing Joints	5 1/2	20.00	P-110	Yes	46.55	Yes			1,096.2	12,438.76
288	276	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			1,048.9	12,486.11
289	277	Casing Joints	5 1/2	20.00	P-110	Yes	46.70	Yes			1,002.2	12,532.81
290	278	Casing Joints	5 1/2	20.00	P-110	Yes	46.00	Yes			956.2	12,578.81
291	279	Casing Joints	5 1/2	20.00	P-110	Yes	44.65	Yes			911.5	12,623.46
292	280	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			864.2	12,670.81



Centralizer Depths

Well Name: Erwin 4N

Production, Set Depth: 13,535.0ftKB

API 05123493760000		Surface Legal Location SWSE 27 5N 64W		Field Name Wattenberg		State CO		Well Configuration Type Horizontal					
Ground Elevation (ft) 4,639.00		Original KB Elevation (ft) 4,667.00		KB-Ground Distance (ft) 28.00		Spud Date 1/30/2021 00:00		Rig Release Date 2/1/2021 10:00		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)
293	281	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			816.7	12,718.31
294	282	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			772.9	12,762.06
295	283	Casing Joints	5 1/2	20.00	P-110	Yes	43.70	Yes			729.2	12,805.76
296	284	Casing Joints	5 1/2	20.00	P-110	Yes	43.05	Yes			686.2	12,848.81
297	285	Casing Joints	5 1/2	20.00	P-110	Yes	43.70	Yes			642.5	12,892.51
298	286	Casing Joints	5 1/2	20.00	P-110	Yes	47.10	Yes			595.4	12,939.61
299	287	Casing Joints	5 1/2	20.00	P-110	Yes	47.31	Yes			548.1	12,986.92
300	288	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			500.7	13,034.27