

Cement Post Job Report

Client: PDC Energy

Well Name: Erwin 3N

API #: 05-123-49380-00

Job Date: February 5, 2021

Job Type: New Well - 5.5" Production String

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



Treatment Report

Client: PDC Energy	Well Name and Number: Erwin 3N	Rig Name: Ensign 142	Date: 2/5/3021		
Job Type: Production	Well Head Connection: 5 1/2" HP Cement Head	Casing/Tubing Thread Type: Buttress	Well MD: 13796	Well TVD: 6697	Deg. Dev:
Max Casing/Tubing/DP PSI: 50000	Max Allowed Ann. PSI:	No. of Stages:	DV Tool Depth (ft):		
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	1697
Production	Casing	5.5	20	4.778	8.5	0	13790

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	862.00	Sacks	1288.00	Vol/bbls	305.5
Volume	75	Vol/bbls	234.89	Vol/bbls	314.27	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		Last 10 Rate	3.0
Rate		TOL (ft)	500	TOT (ft)	6013	Final volume	

Pre-Job Details:			
Mud Properties:		Circulation Data:	
Mud Type:	Invert	Time Circulated (hrs)	3
Mud Weight (ppg)	10.5	Circulation Rate (bpm)	11
Flow Line Temp (F)	98.0	Full Circulation	Yes
Visc. (sec/qt)	52	Gas Present	Yes
PV (cP)	25	Units of Gas	
Yield Point	8	Centralizers & Plugs:	
10 Sec Gel	8	Quantity/Type	
10 Min Gel	11	Top Plug Used	
30 Min Gel	12	Bottom Plug Used	

Job Circulation Details:			
Calc. Displacement (bbls)	305.5	Gas After Placement?	No
Actual Pumped Displ. (bbls)	305.5	Cement to Surface?	No
Bump Plug?	Yes	Cement to Surface (bbls)	
Floats Holding?	Yes	Top Out?	
Qty. Returned to Tank (bbls)	3	Top Out Volume (bbls)	

Additional Treatment Comments:
354 BBLs Spacer to Pit. TOL 730 Feet TOT 6200 Feet



ROCK SOLID
 WELL INTEGRITY
 SOLUTIONS

Job Treatment Log

32 Deg F / 45% / 224.79 in+B1:126	Well Name and Number:	Rig Name:	Date:	Ambient Conditions (Temperature/ Humidity/ Air Pressure)
PDC Energy	Erwin 3N	Ensign 142	2/5/2021	32 Deg F / 45% / 24.79 in

Date (MM/DD/YY)	Time (HH:MM)	Density (ppg)	Rate (BPM)	Volume	Cumulative Volume	Pressure	Comments
2/5/2021	4:00:00 AM						Arrived on Location
	4:10:00 AM						Wait to spot equipment in till casing is on pipe racks
	5:00:00 AM						Spot equipment Rig up hard line and hoses
	9:15:00 AM						Safety Meeting
	9:30:00 AM						Rig Up Floor Iron
	9:40:00 AM	8.3	5.0	2.0		400.0	Fill Lines
	9:41:00 AM	8.3					Pressure test Lines to 4900 PSI
	9:43:00 AM	11.5	6.0	25.0		1000.0	Spacer @ 11.54 PPG With Surfactants And Fiber
	9:47:00 AM	12.0	6.0	25.0	27.0	1000.0	Spacer @ 12 PPG With Surfactants And Fiber
	9:52:00 AM	12.5	6.0	25.0	52.0	1000.0	25 BBLS Scavenger @ 12.5 PPG Yield 1.68 WR- 8.93 GAL/SK
	9:56:00 AM						Shut Down
	9:58:00 AM						Drop Bottom Plug
	10:00:00 AM	12.9	10.0	234.9	77.0	1500.0	892 Sack Lead @ 12.9 PPG Yield 1.53 WR-7.83 GAL/SK
	10:28:00 AM	13.7	9.5	314.0	311.0	1350.0	1288 Sacks Tail @ 13.7 Yield 1.37 WR- 6.66 GAL/SK
	11:00:00 AM				625.0		Shut Down
	11:01:00 AM						Wash Lines too pit
	11:03:00 AM						Drop Top Plug
	11:08:00 AM	8.3	9.9	50.0		400.0	Displace. First 10 BBLS has Sugar, first 100 BBLS has Biocide
	11:13:00 AM	8.3	9.9	50.0	675.0	1600.0	Displace, 50 BBLS Away
	11:18:00 AM	8.3	10.0	50.0	725.0	2100.0	Displace 100 BBLS away
	11:23:00 AM	8.3	10.0	50.0	775.0	2700.0	Displace 150 BBLS Away
	11:28:00 AM	8.3	9.5	50.0	825.0	2850.0	Displace 200 BBLS Away
	11:33:00 AM	8.3	9.5	35.0	875.0	3000.0	Displace 250 BBLS away
	11:37:00 AM	8.3	2.6	20.0	915.0	1900.0	285 BBLS Away. Slow rate Last 20 BBLS
	11:44:00 AM	8.3	2.6		935.0	2000.0	Land Plug
	11:44:00 AM						Bumped Plug to 2600 PSI
	11:47:00 AM	8.3	1.0	2.0		3600.0	Pressure up to shift Sleeve.
	11:50:00 AM	8.3	5.0	5.0		4100.0	Sleeve shifted Pump 5 BBL Wet Shoe
	11:51:00 AM	8.3				1800.0	Shut Down
	11:52:00 AM					1800.0	Check Floats. Held. 3 BBLS Back
	12:01:00 PM						Wash Stack Rig down floor and ground Iron.
	12:45:00 PM						End Of Job. 35 BBLS Spacer to Surface



Centralizer Depths

Well Name: Erwin 3N

Production, Set Depth: 13,790.0ftKB

API 0512349380000		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 2/1/2021 22:30		Rig Release Date 2/5/2021 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 Jwry	Connections	Top (ftKB)	Cum Len (ft)
9	1	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			13,707.8	82.17
11	3	Casing Joints	5 1/2	20.00	P-110	Yes	45.15	Yes			13,615.2	174.77
13	5	Casing Joints	5 1/2	20.00	P-110	Yes	43.25	Yes			13,528.4	261.63
15	7	Casing Joints	5 1/2	20.00	P-110	Yes	43.43	Yes			13,441.3	348.66
17	9	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			13,346.9	443.11
19		Marker Joint	5 1/2	20.00	P-110	Yes	23.41	Yes			13,280.1	509.95
21	12	Casing Joints	5 1/2	20.00	P-110	Yes	44.31	Yes			13,188.3	601.71
23	14	Casing Joints	5 1/2	20.00	P-110	Yes	47.46	Yes			13,096.6	693.37
25	16	Casing Joints	5 1/2	20.00	P-110	Yes	35.45	Yes			13,014.6	775.37
27	18	Casing Joints	5 1/2	20.00	P-110	Yes	47.00	Yes			12,926.0	863.97
29	20	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			12,832.4	957.62
31	22	Casing Joints	5 1/2	20.00	P-110	Yes	46.88	Yes			12,741.7	1,048.30
33	24	Casing Joints	5 1/2	20.00	P-110	Yes	44.35	Yes			12,653.8	1,136.25
35	26	Casing Joints	5 1/2	20.00	P-110	Yes	43.50	Yes			12,566.7	1,223.35
37	28	Casing Joints	5 1/2	20.00	P-110	Yes	44.15	Yes			12,477.4	1,312.60
39	30	Casing Joints	5 1/2	20.00	P-110	Yes	44.31	Yes			12,387.6	1,402.36
41	32	Casing Joints	5 1/2	20.00	P-110	Yes	44.31	Yes			12,299.0	1,491.03
43	34	Casing Joints	5 1/2	20.00	P-110	Yes	43.50	Yes			12,211.2	1,578.83
45	36	Casing Joints	5 1/2	20.00	P-110	Yes	43.60	Yes			12,123.2	1,666.78
47	38	Casing Joints	5 1/2	20.00	P-110	Yes	43.80	Yes			12,033.3	1,756.68
49	40	Casing Joints	5 1/2	20.00	P-110	Yes	43.70	Yes			11,944.2	1,845.78
51	42	Casing Joints	5 1/2	20.00	P-110	Yes	46.55	Yes			11,853.3	1,936.68
53	44	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			11,764.6	2,025.39
55	46	Casing Joints	5 1/2	20.00	P-110	Yes	41.90	Yes			11,675.3	2,114.74
57	48	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			11,583.5	2,206.54
59	50	Casing Joints	5 1/2	20.00	P-110	Yes	43.40	Yes			11,497.3	2,292.69
61	52	Casing Joints	5 1/2	20.00	P-110	Yes	38.10	Yes			11,419.4	2,370.64
63	54	Casing Joints	5 1/2	20.00	P-110	Yes	41.80	Yes			11,336.0	2,454.05
65	56	Casing Joints	5 1/2	20.00	P-110	Yes	43.20	Yes			11,249.0	2,541.00
67	58	Casing Joints	5 1/2	20.00	P-110	Yes	42.25	Yes			11,165.8	2,624.25
69	60	Casing Joints	5 1/2	20.00	P-110	Yes	40.10	Yes			11,083.0	2,707.05



Centralizer Depths

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Production, Set Depth: 13,790.0ftKB

API 0512349380000		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 2/1/2021 22:30		Rig Release Date 2/5/2021 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 Jwry	Connections	Top (ftKB)	Cum Len (ft)
71	62	Casing Joints	5 1/2	20.00	P-110	Yes	41.40	Yes			11,000.6	2,789.45
73	64	Casing Joints	5 1/2	20.00	P-110	Yes	38.51	Yes			10,924.2	2,865.76
75	66	Casing Joints	5 1/2	20.00	P-110	Yes	37.15	Yes			10,845.5	2,944.51
77		Marker Joint	5 1/2	20.00	P-110	Yes	23.95	Yes			10,781.4	3,008.56
79	69	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			10,694.0	3,096.01
81	71	Casing Joints	5 1/2	20.00	P-110	Yes	39.91	Yes			10,613.6	3,176.43
83	73	Casing Joints	5 1/2	20.00	P-110	Yes	43.35	Yes			10,529.2	3,260.78
85	75	Casing Joints	5 1/2	20.00	P-110	Yes	43.91	Yes			10,442.5	3,347.49
87	77	Casing Joints	5 1/2	20.00	P-110	Yes	38.00	Yes			10,363.0	3,426.99
89	79	Casing Joints	5 1/2	20.00	P-110	Yes	41.10	Yes			10,280.4	3,509.59
91	81	Casing Joints	5 1/2	20.00	P-110	Yes	41.98	Yes			10,202.2	3,587.85
93	83	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			10,114.6	3,675.45
95	85	Casing Joints	5 1/2	20.00	P-110	Yes	41.78	Yes			10,033.2	3,756.81
97	87	Casing Joints	5 1/2	20.00	P-110	Yes	42.90	Yes			9,950.0	3,839.96
99	89	Casing Joints	5 1/2	20.00	P-110	Yes	42.15	Yes			9,867.4	3,922.56
101	91	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			9,782.2	4,007.80
103	93	Casing Joints	5 1/2	20.00	P-110	Yes	41.75	Yes			9,697.7	4,092.35
105	95	Casing Joints	5 1/2	20.00	P-110	Yes	41.15	Yes			9,613.7	4,176.30
107	97	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			9,518.9	4,271.11
109	99	Casing Joints	5 1/2	20.00	P-110	Yes	39.75	Yes			9,436.3	4,353.68
111	101	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			9,351.7	4,438.35
113	103	Casing Joints	5 1/2	20.00	P-110	Yes	42.55	Yes			9,266.2	4,523.78
115	105	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			9,177.8	4,612.18
117	107	Casing Joints	5 1/2	20.00	P-110	Yes	43.20	Yes			9,089.6	4,700.43
119	109	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			9,003.2	4,786.83
121	111	Casing Joints	5 1/2	20.00	P-110	Yes	43.00	Yes			8,916.4	4,873.65
123	113	Casing Joints	5 1/2	20.00	P-110	Yes	46.35	Yes			8,825.3	4,964.75
125	115	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			8,738.8	5,051.20
127	117	Casing Joints	5 1/2	20.00	P-110	Yes	42.15	Yes			8,650.4	5,139.65
129	119	Casing Joints	5 1/2	20.00	P-110	Yes	42.31	Yes			8,563.0	5,227.01
131	121	Casing Joints	5 1/2	20.00	P-110	Yes	41.85	Yes			8,475.7	5,314.31



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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 2/1/2021 22:30	Rig Release Date 2/5/2021 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 Jwry	Connections	Top (ftKB)	Cum Len (ft)
133	123	Casing Joints	5 1/2	20.00	P-110	Yes	43.30	Yes			8,389.4	5,400.61
135	125	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			8,302.1	5,487.91
137	127	Casing Joints	5 1/2	20.00	P-110	Yes	42.35	Yes			8,217.7	5,572.28
139	129	Casing Joints	5 1/2	20.00	P-110	Yes	41.80	Yes			8,131.9	5,658.10
141	131	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			8,042.8	5,747.20
143	133	Casing Joints	5 1/2	20.00	P-110	Yes	45.50	Yes			7,952.3	5,837.75
145	135	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			7,868.8	5,921.25
147	137	Casing Joints	5 1/2	20.00	P-110	Yes	42.35	Yes			7,784.0	6,005.96
149	139	Casing Joints	5 1/2	20.00	P-110	Yes	42.35	Yes			7,698.8	6,091.16
151	141	Casing Joints	5 1/2	20.00	P-110	Yes	42.78	Yes			7,613.2	6,176.85
153	143	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			7,527.3	6,262.70
155	145	Casing Joints	5 1/2	20.00	P-110	Yes	47.15	Yes			7,436.7	6,353.30
156		Marker Joint	5 1/2	20.00	P-110	Yes	9.55	Yes			7,427.2	6,362.85
157	146	Casing Joints	5 1/2	20.00	P-110	Yes	42.60	Yes			7,384.6	6,405.45
158	147	Casing Joints	5 1/2	20.00	P-110	Yes	42.88	Yes			7,341.7	6,448.33
159	148	Casing Joints	5 1/2	20.00	P-110	Yes	41.60	Yes			7,300.1	6,489.93
160	149	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			7,257.3	6,532.73
161	150	Casing Joints	5 1/2	20.00	P-110	Yes	41.41	Yes			7,215.9	6,574.14
162	151	Casing Joints	5 1/2	20.00	P-110	Yes	43.51	Yes			7,172.4	6,617.65
163	152	Casing Joints	5 1/2	20.00	P-110	Yes	45.45	Yes			7,126.9	6,663.10
164	153	Casing Joints	5 1/2	20.00	P-110	Yes	46.50	Yes			7,080.4	6,709.60
165	154	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			7,037.6	6,752.45
166	155	Casing Joints	5 1/2	20.00	P-110	Yes	42.60	Yes			6,995.0	6,795.05
167	156	Casing Joints	5 1/2	20.00	P-110	Yes	42.45	Yes			6,952.5	6,837.50
168	157	Casing Joints	5 1/2	20.00	P-110	Yes	42.88	Yes			6,909.6	6,880.38
169	158	Casing Joints	5 1/2	20.00	P-110	Yes	45.00	Yes			6,864.6	6,925.38
170	159	Casing Joints	5 1/2	20.00	P-110	Yes	45.88	Yes			6,818.7	6,971.26
171	160	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			6,771.3	7,018.71
172	161	Casing Joints	5 1/2	20.00	P-110	Yes	47.40	Yes			6,723.9	7,066.11
173	162	Casing Joints	5 1/2	20.00	P-110	Yes	41.75	Yes			6,682.1	7,107.86
174	163	Casing Joints	5 1/2	20.00	P-110	Yes	47.02	Yes			6,635.1	7,154.88



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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)
175	164	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			6,587.9	7,202.13
176	165	Casing Joints	5 1/2	20.00	P-110	Yes	44.21	Yes			6,543.7	7,246.34
177	166	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			6,496.2	7,293.79
178	167	Casing Joints	5 1/2	20.00	P-110	Yes	45.15	Yes			6,451.1	7,338.94
179	168	Casing Joints	5 1/2	20.00	P-110	Yes	43.11	Yes			6,408.0	7,382.05
180	169	Casing Joints	5 1/2	20.00	P-110	Yes	46.00	Yes			6,362.0	7,428.05
181	170	Casing Joints	5 1/2	20.00	P-110	Yes	43.60	Yes			6,318.4	7,471.65
182	171	Casing Joints	5 1/2	20.00	P-110	Yes	47.50	Yes			6,270.9	7,519.15
183	172	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			6,227.2	7,562.80
184	173	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			6,179.8	7,610.25
185	174	Casing Joints	5 1/2	20.00	P-110	Yes	45.35	Yes			6,134.4	7,655.60
186	175	Casing Joints	5 1/2	20.00	P-110	Yes	47.24	Yes			6,087.2	7,702.84
187		Marker Joint	5 1/2	20.00	P-110	Yes	9.51	Yes			6,077.7	7,712.35
188	176	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			6,030.3	7,759.70
189	177	Casing Joints	5 1/2	20.00	P-110	Yes	47.10	Yes			5,983.2	7,806.80
190	178	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			5,935.8	7,854.25
191	179	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			5,888.5	7,901.50
192	180	Casing Joints	5 1/2	20.00	P-110	Yes	44.05	Yes			5,844.5	7,945.55
193	181	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			5,797.0	7,993.00
194	182	Casing Joints	5 1/2	20.00	P-110	Yes	43.61	Yes			5,753.4	8,036.61
195	183	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			5,706.1	8,083.86
196	184	Casing Joints	5 1/2	20.00	P-110	Yes	47.20	Yes			5,658.9	8,131.06
197	185	Casing Joints	5 1/2	20.00	P-110	Yes	45.35	Yes			5,613.6	8,176.41
198	186	Casing Joints	5 1/2	20.00	P-110	Yes	46.91	Yes			5,566.7	8,223.32
199	187	Casing Joints	5 1/2	20.00	P-110	Yes	47.21	Yes			5,519.5	8,270.53
200	188	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			5,472.0	8,317.98
201	189	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			5,424.8	8,365.23
202	190	Casing Joints	5 1/2	20.00	P-110	Yes	43.50	Yes			5,381.3	8,408.73
203	191	Casing Joints	5 1/2	20.00	P-110	Yes	47.25	Yes			5,334.0	8,455.98
204	192	Casing Joints	5 1/2	20.00	P-110	Yes	46.71	Yes			5,287.3	8,502.69
205	193	Casing Joints	5 1/2	20.00	P-110	Yes	47.10	Yes			5,240.2	8,549.79



Centralizer Depths

Well Name: Erwin 3N

Production, Set Depth: 13,790.0ftKB

API 0512349380000		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 2/1/2021 22:30		Rig Release Date 2/5/2021 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 Jwry	Connections	Top (ftKB)	Cum Len (ft)
206	194	Casing Joints	5 1/2	20.00	P-110	Yes	47.40	Yes			5,192.8	8,597.19
207	195	Casing Joints	5 1/2	20.00	P-110	Yes	43.61	Yes			5,149.2	8,640.80
208	196	Casing Joints	5 1/2	20.00	P-110	Yes	44.04	Yes			5,105.2	8,684.84
209	197	Casing Joints	5 1/2	20.00	P-110	Yes	47.41	Yes			5,057.8	8,732.25
210	198	Casing Joints	5 1/2	20.00	P-110	Yes	38.40	Yes			5,019.4	8,770.65
211	199	Casing Joints	5 1/2	20.00	P-110	Yes	46.45	Yes			4,972.9	8,817.10
212	200	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			4,925.6	8,864.45
213	201	Casing Joints	5 1/2	20.00	P-110	Yes	45.50	Yes			4,880.1	8,909.95
214	202	Casing Joints	5 1/2	20.00	P-110	Yes	46.15	Yes			4,833.9	8,956.10
215	203	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			4,786.5	9,003.55
216	204	Casing Joints	5 1/2	20.00	P-110	Yes	43.40	Yes			4,743.1	9,046.95
217	205	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			4,695.6	9,094.40
218	206	Casing Joints	5 1/2	20.00	P-110	Yes	44.35	Yes			4,651.3	9,138.75
219	207	Casing Joints	5 1/2	20.00	P-110	Yes	46.41	Yes			4,604.8	9,185.16
220	208	Casing Joints	5 1/2	20.00	P-110	Yes	47.21	Yes			4,557.6	9,232.37
221	209	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			4,510.2	9,279.82
222	210	Casing Joints	5 1/2	20.00	P-110	Yes	47.35	Yes			4,462.8	9,327.17
223	211	Casing Joints	5 1/2	20.00	P-110	Yes	42.60	Yes			4,420.2	9,369.77
224	212	Casing Joints	5 1/2	20.00	P-110	Yes	42.31	Yes			4,377.9	9,412.08
225	213	Casing Joints	5 1/2	20.00	P-110	Yes	43.15	Yes			4,334.8	9,455.23
226	214	Casing Joints	5 1/2	20.00	P-110	Yes	45.55	Yes			4,289.2	9,500.78
227	215	Casing Joints	5 1/2	20.00	P-110	Yes	47.45	Yes			4,241.8	9,548.23
228	216	Casing Joints	5 1/2	20.00	P-110	Yes	42.81	Yes			4,199.0	9,591.04
229	217	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			4,156.1	9,633.89
230	218	Casing Joints	5 1/2	20.00	P-110	Yes	43.05	Yes			4,113.1	9,676.94
231	219	Casing Joints	5 1/2	20.00	P-110	Yes	42.88	Yes			4,070.2	9,719.82
232	220	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			4,026.6	9,763.37
233	221	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			3,983.8	9,806.17
234	222	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			3,941.1	9,848.92
235	223	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			3,898.2	9,891.77
236	224	Casing Joints	5 1/2	20.00	P-110	Yes	41.80	Yes			3,856.4	9,933.57



Centralizer Depths

Well Name: Erwin 3N

Production, Set Depth: 13,790.0ftKB

API 0512349380000		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 2/1/2021 22:30	Rig Release Date 2/5/2021 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 Jwry	Connections	Top (ftKB)	Cum Len (ft)
237	225	Casing Joints	5 1/2	20.00	P-110	Yes	42.65	Yes			3,813.8	9,976.22
238	226	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			3,771.0	10,019.02
239	227	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			3,728.2	10,061.82
240	228	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			3,685.3	10,104.67
241	229	Casing Joints	5 1/2	20.00	P-110	Yes	42.81	Yes			3,642.5	10,147.48
242	230	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			3,599.5	10,190.50
243	231	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			3,556.7	10,233.35
244	232	Casing Joints	5 1/2	20.00	P-110	Yes	42.10	Yes			3,514.6	10,275.45
245	233	Casing Joints	5 1/2	20.00	P-110	Yes	43.04	Yes			3,471.5	10,318.49
246	234	Casing Joints	5 1/2	20.00	P-110	Yes	43.05	Yes			3,428.5	10,361.54
247	235	Casing Joints	5 1/2	20.00	P-110	Yes	42.84	Yes			3,385.6	10,404.38
248	236	Casing Joints	5 1/2	20.00	P-110	Yes	42.65	Yes			3,343.0	10,447.03
249	237	Casing Joints	5 1/2	20.00	P-110	Yes	42.84	Yes			3,300.1	10,489.87
250	238	Casing Joints	5 1/2	20.00	P-110	Yes	42.50	Yes			3,257.6	10,532.37
251	239	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			3,214.6	10,575.39
252	240	Casing Joints	5 1/2	20.00	P-110	Yes	43.15	Yes			3,171.5	10,618.54
253	241	Casing Joints	5 1/2	20.00	P-110	Yes	40.80	Yes			3,130.7	10,659.34
254	242	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			3,087.8	10,702.19
255	243	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			3,045.0	10,744.99
256	244	Casing Joints	5 1/2	20.00	P-110	Yes	42.45	Yes			3,002.6	10,787.44
257	245	Casing Joints	5 1/2	20.00	P-110	Yes	42.45	Yes			2,960.1	10,829.89
258	246	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			2,917.4	10,872.64
259	247	Casing Joints	5 1/2	20.00	P-110	Yes	42.30	Yes			2,875.1	10,914.94
260	248	Casing Joints	5 1/2	20.00	P-110	Yes	42.95	Yes			2,832.1	10,957.89
261	249	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			2,789.3	11,000.69
262	250	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			2,746.5	11,043.49
263	251	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			2,703.7	11,086.34
264	252	Casing Joints	5 1/2	20.00	P-110	Yes	42.50	Yes			2,661.2	11,128.84
265	253	Casing Joints	5 1/2	20.00	P-110	Yes	43.10	Yes			2,618.1	11,171.94
266	254	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			2,575.2	11,214.79
267	255	Casing Joints	5 1/2	20.00	P-110	Yes	43.00	Yes			2,532.2	11,257.79



Centralizer Depths

Well Name: Erwin 3N

Production, Set Depth: 13,790.0ftKB

API 0512349380000		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 2/1/2021 22:30	Rig Release Date 2/5/2021 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 Jwry	Connections	Top (ftKB)	Cum Len (ft)
268	256	Casing Joints	5 1/2	20.00	P-110	Yes	39.90	Yes			2,492.3	11,297.69
269	257	Casing Joints	5 1/2	20.00	P-110	Yes	41.10	Yes			2,451.2	11,338.79
270	258	Casing Joints	5 1/2	20.00	P-110	Yes	40.75	Yes			2,410.5	11,379.54
271	259	Casing Joints	5 1/2	20.00	P-110	Yes	42.61	Yes			2,367.9	11,422.15
272	260	Casing Joints	5 1/2	20.00	P-110	Yes	42.81	Yes			2,325.0	11,464.96
273	261	Casing Joints	5 1/2	20.00	P-110	Yes	39.75	Yes			2,285.3	11,504.71
274	262	Casing Joints	5 1/2	20.00	P-110	Yes	43.30	Yes			2,242.0	11,548.01
275	263	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			2,198.1	11,591.86
276	264	Casing Joints	5 1/2	20.00	P-110	Yes	42.60	Yes			2,155.5	11,634.46
277	265	Casing Joints	5 1/2	20.00	P-110	Yes	42.81	Yes			2,112.7	11,677.27
278	266	Casing Joints	5 1/2	20.00	P-110	Yes	41.20	Yes			2,071.5	11,718.47
279	267	Casing Joints	5 1/2	20.00	P-110	Yes	42.15	Yes			2,029.4	11,760.62
280	268	Casing Joints	5 1/2	20.00	P-110	Yes	41.71	Yes			1,987.7	11,802.33
281	269	Casing Joints	5 1/2	20.00	P-110	Yes	41.45	Yes			1,946.2	11,843.78
282	270	Casing Joints	5 1/2	20.00	P-110	Yes	41.75	Yes			1,904.5	11,885.53
283	271	Casing Joints	5 1/2	20.00	P-110	Yes	39.90	Yes			1,864.6	11,925.43
284	272	Casing Joints	5 1/2	20.00	P-110	Yes	41.11	Yes			1,823.5	11,966.54
285	273	Casing Joints	5 1/2	20.00	P-110	Yes	41.71	Yes			1,781.8	12,008.25
286	274	Casing Joints	5 1/2	20.00	P-110	Yes	41.25	Yes			1,740.5	12,049.50
287	275	Casing Joints	5 1/2	20.00	P-110	Yes	42.10	Yes			1,698.4	12,091.60
288	276	Casing Joints	5 1/2	20.00	P-110	Yes	43.35	Yes			1,655.1	12,134.95
289	277	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			1,612.3	12,177.75
290	278	Casing Joints	5 1/2	20.00	P-110	Yes	41.40	Yes			1,570.9	12,219.15
291	279	Casing Joints	5 1/2	20.00	P-110	Yes	40.58	Yes			1,530.3	12,259.73
292	280	Casing Joints	5 1/2	20.00	P-110	Yes	40.20	Yes			1,490.1	12,299.93
293	281	Casing Joints	5 1/2	20.00	P-110	Yes	40.25	Yes			1,449.8	12,340.18
294	282	Casing Joints	5 1/2	20.00	P-110	Yes	39.90	Yes			1,409.9	12,380.08
295	283	Casing Joints	5 1/2	20.00	P-110	Yes	43.00	Yes			1,366.9	12,423.08
296	284	Casing Joints	5 1/2	20.00	P-110	Yes	42.20	Yes			1,324.7	12,465.28
297	285	Casing Joints	5 1/2	20.00	P-110	Yes	40.40	Yes			1,284.3	12,505.68
298	286	Casing Joints	5 1/2	20.00	P-110	Yes	41.05	Yes			1,243.3	12,546.73



Centralizer Depths

Well Name: Erwin 3N

Production, Set Depth: 13,790.0ftKB

API 05123493800000		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 2/1/2021 22:30	Rig Release Date 2/5/2021 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 Jwry	Connections	Top (ftKB)	Cum Len (ft)
299	287	Casing Joints	5 1/2	20.00	P-110	Yes	40.45	Yes			1,202.8	12,587.18
300	288	Casing Joints	5 1/2	20.00	P-110	Yes	40.45	Yes			1,162.4	12,627.63
301	289	Casing Joints	5 1/2	20.00	P-110	Yes	40.50	Yes			1,121.9	12,668.13
302	290	Casing Joints	5 1/2	20.00	P-110	Yes	40.85	Yes			1,081.0	12,708.98
303	291	Casing Joints	5 1/2	20.00	P-110	Yes	42.75	Yes			1,038.3	12,751.73
304	292	Casing Joints	5 1/2	20.00	P-110	Yes	40.15	Yes			998.1	12,791.88
305	293	Casing Joints	5 1/2	20.00	P-110	Yes	41.10	Yes			957.0	12,832.98
306	294	Casing Joints	5 1/2	20.00	P-110	Yes	41.10	Yes			915.9	12,874.08
307	295	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			872.2	12,917.83
308	296	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			829.1	12,960.85
309	297	Casing Joints	5 1/2	20.00	P-110	Yes	42.35	Yes			786.8	13,003.20
310	298	Casing Joints	5 1/2	20.00	P-110	Yes	40.90	Yes			745.9	13,044.10
311	299	Casing Joints	5 1/2	20.00	P-110	Yes	42.40	Yes			703.5	13,086.50
312	300	Casing Joints	5 1/2	20.00	P-110	Yes	40.60	Yes			662.9	13,127.10
313	301	Casing Joints	5 1/2	20.00	P-110	Yes	43.15	Yes			619.7	13,170.25
314	302	Casing Joints	5 1/2	20.00	P-110	Yes	38.41	Yes			581.3	13,208.66
315	303	Casing Joints	5 1/2	20.00	P-110	Yes	43.00	Yes			538.3	13,251.66
316	304	Casing Joints	5 1/2	20.00	P-110	Yes	43.00	Yes			495.3	13,294.66