

# Cement Post Job Report

**Client:** PDC Energy

**Well Name:** Hen 14N

**API #:** 05-123-51806

**Job Date:** September 13, 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
<b>PDC Energy</b>	<b>Hen 14N</b>	<b>Patterson 272</b>	<b>Production</b>	<b>Buttress</b>	<b>5 1/2" Cement Head</b>

WELL MD (FT)	WELL TVD (FT)	DEVIATION (DEG)	NUMBER OF STAGES	BHST (DEG)	BHCT (DEG)
<b>15131</b>	<b>6879</b>	<b>90</b>	<b>1</b>	<b>225</b>	<b>200</b>

PACKER/RETAINER/CIBP/DV TOOL DEPTHS	TOOL TYPE	TOP OF PERFS (FT)	BOTTOM OF PERFS (FT)	NUMBER OF HOLES
<b>Packer @ 3333' / Wet shoe sub @ 15090'</b>	<b>PACKER</b>			

CASING/TUBING/DP DETAILS									
STRING TYPE	GRADE	OD"	WT/FT	ID"	OH SIZE"	% EXCESS LEAD	% EXCESS TAIL	TOTAL DEPTH (FT)	
<b>Surface</b>		<b>9.625</b>	<b>36</b>	<b>8.921</b>	<b>13.50</b>			<b>1737</b>	
<b>Production</b>	<b>P-110</b>	<b>5.5</b>	<b>20</b>	<b>4.778</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>15122</b>	
MAXIMUM CASING/TUBING/DP PSI			<b>9888</b>			MAXIMUM ANNULAR PSI			<b>8880</b>

Mud Type	OBM	Rotate Y,N	No	Circulation Data				Water Requirements (bbls)	
Mud ppg	<b>10.1</b>	Rate (rpm)		Circulate Time (hrs)		<b>2</b>		Spacers	<b>140</b>
Flow Temp	<b>154</b>	Torque Val.		Circulation Rate (bpm)		<b>10</b>		Stage 1 Lead	<b>112</b>
Vis. Sec/qt	<b>48</b>	Time (hr)		Full Circulation ? (Y,N,P)		<b>Yes</b>		Stage 1 Tail	<b>163</b>
PV (cP)	<b>9</b>	Pipe Reciprocation		Gas Present (Y,N)		<b>No</b>	Units	Stage 2 Lead	
Yield Pt	<b>5</b>	Recip Y,N	<b>No</b>	Centralizers/Plugs				Stage 2 Tail	
10 sec gel	<b>7</b>	Stroke (ft)		Quantity & Type		<b>Customer Provided</b>		Displacement	<b>326</b>
10 min gel	<b>11</b>	Recip time		Top Plug/Type		<b>Customer Provided</b>		Wash up	<b>20</b>
30 min gel	<b>12</b>	Stuck ?		Bottom Plug/Type		<b>Customer Provided</b>		Total + 10% Safety	<b>837</b>

Preflush & Spacers		Stage 1 Lead - Class G		Stage 1 Tail - Class G		Stage 2 Lead		Stage 2 Tail		Displacement	
Spacer 1	<b>Spacer</b>	Density	<b>12.9</b>	Density	<b>13.7</b>	Density		Density		Fluid Type	<b>Water</b>
		Sacks	<b>1276</b>	Sacks	<b>1076</b>	Sacks		Sacks		Dens. ppg	<b>8.34</b>
		Vol/bbbls	<b>256.8</b>	Vol/bbbls	<b>262.5</b>	Vol/bbbls	<b>0.0</b>	Vol/bbbls	<b>0.0</b>	Vol. bbl	<b>335</b>
		Rate	<b>11</b>	Rate	<b>11</b>	Rate		Rate		Rate bpm	<b>11</b>
Spacer 2		Yield	<b>1.13</b>	Yield	<b>1.37</b>	Yield		Yield		Clay Stay?	<b>No</b>
		Gal/Sk	<b>3.68</b>	Gal/Sk	<b>6.63</b>	Gal/Sk		Gal/Sk		Biocide ?	<b>Yes</b>
		% Excess	<b>0</b>	% Excess	<b>0</b>	% Excess		% Excess		Slow @ bbl	<b>315</b>
		TOL (ft)	<b>2017</b>	TOT (ft)	<b>8316</b>	TOL (ft)		TOT (ft)		Bump PSI	<b>2600</b>

Final Displacement (bbbls)	<b>335</b>
Bump Plug?	<b>Yes</b>
Final Bump Pressure (psi)	<b>3100</b>
Full Returns throughout job?	<b>Full</b>
Vol. away/Time when returns lost	
Vol. away when returns were regained	
Spacer to Surface?	<b>Yes</b>
Spacer volume returned (bbbls)	<b>46</b>
Cement to surface?	<b>No</b>
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)	<b>70</b>
Dens. ppg	<b>NA</b>	MFC 67 (gal) <b>168</b>
Sacks qty	<b>NA</b>	Defoamer (gal) <b>20</b>
Gal/sk	<b>NA</b>	Biocide (gal) <b>15</b>
Yield	<b>NA</b>	Corr. Inhib (gal) <b>0</b>
Lbs. of chloride used	<b>NA</b>	Fiber (lbs) <b>290</b>
Top out pipe used ?	<b>NA</b>	Chloride (lbs) <b>0</b>
Feet of top out pipe	<b>NA</b>	Retarder (lbs) <b>0</b>
Annulus holding?		Clay Stabilizer (gal) <b>0</b>
Sodium Silicate Used	Other	<b>0</b>

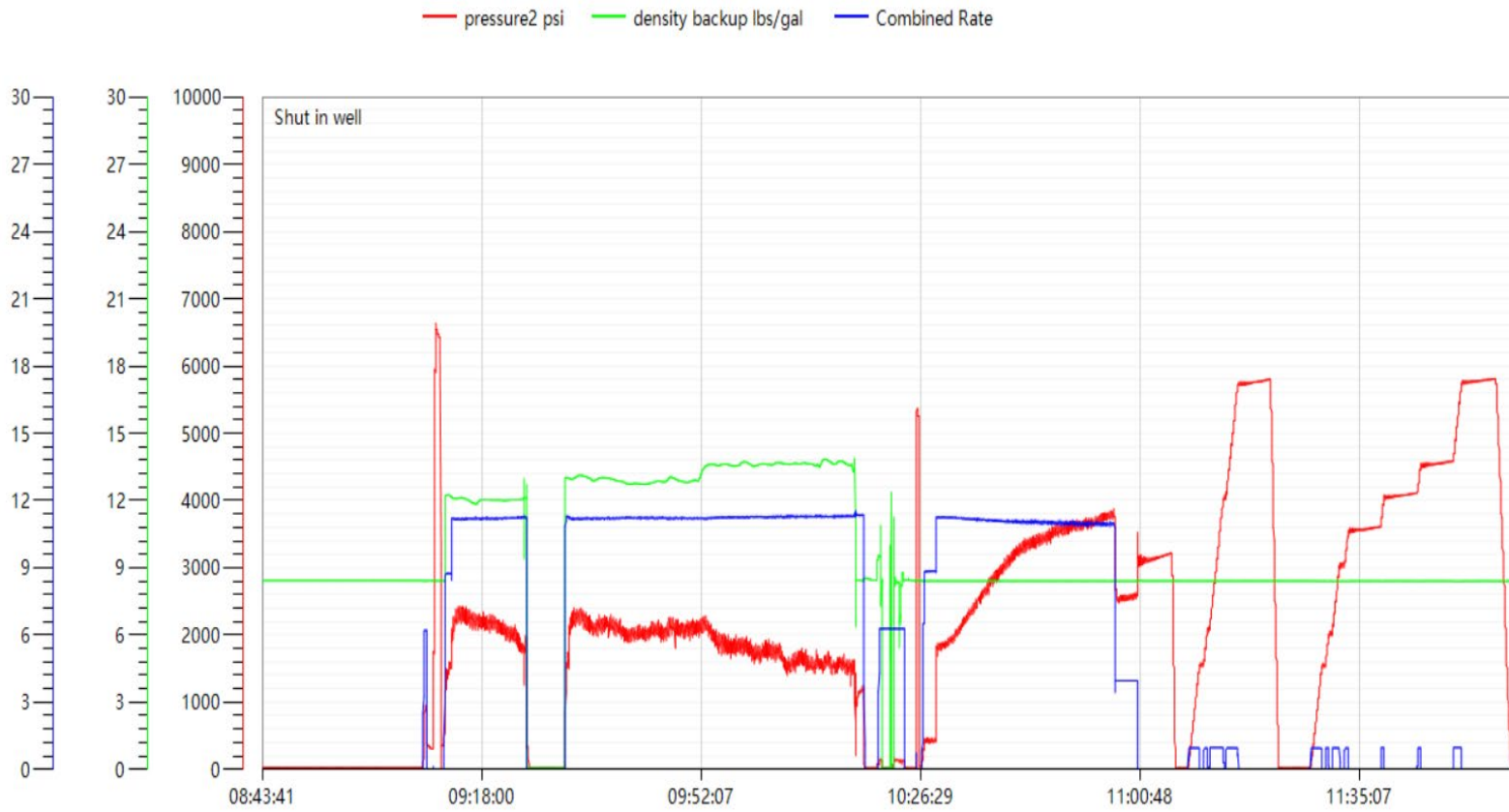


## JOB LOG

CLIENT	WELL	RIG	JOB TYPE	START DATE	Ambient Conditions
<b>PDC Energy</b>	<b>Hen 14N</b>	<b>Patterson 272</b>	<b>Production</b>	<b>9/13/2023</b>	Temp / Hum / Air Press 56 Deg F / 84% / 25.02 in

DATE (dd/mm)	TIME (hh:mm)	DENSITY (ppg)	RATE (bpm)	VOL. (bbl)	TOTAL VOL.	PRESSURE	TREATMENT COMMENTS
9/13/2023	5:30:00 AM						Arrived on location/ Wait for rig to finish running casing
9/13/2023	7:45:00 AM						Spot equipment
9/13/2023	7:50:00 AM						Rig up/ Wait for rig to finish circulating
9/13/2023	8:45:00 AM						Safety meeting
9/13/2023	9:04:00 AM						Rig up floor
9/13/2023	9:08:00 AM	8.33					Fill surface lines
9/13/2023	9:10:00 AM	8.33				6500	Pressure test
9/13/2023	9:12:00 AM	12	11.2	140	140	2200	Pump 140 bbl SPACER @ 12# with surfactant and fiber
9/13/2023	9:24:00 AM						Shutdown/ Drop BOTTOM plug
9/13/2023	9:30:00 AM	12.9	11.2	257	257	2100	Pump 257 bbl (1276 sks) LEAD cement @ 12.9#, 1.13Y, 3.68 gal/sk - TOL - 2017'
9/13/2023	9:53:00 AM	13.7	11.3	263	263	1600	Pump 263 bbl (1076 sks) TAIL cement @ 13.7#, 1.37Y, 6.63 gal/sk - TOT-8316'
9/13/2023	10:16:00 AM	8.33	11.3	15	15	1100	Pump 15 bbl SUGAR water
9/13/2023	10:17:00 AM	8.33					Shutdown/ Wash pumps and lines / Drop TOP plug
9/13/2023	10:26:00 AM	8.33					Pump 335 bbl FRESHWATER Displacement with biocide in all
9/13/2023	10:27:00 AM	8.33	11.2	10	10	1850	Pump Freshwater Displacement
9/13/2023	10:31:00 AM	8.33	11.2	50	50	2000	Pump Freshwater Displacement
9/13/2023	10:36:00 AM	8.33	11.2	100	100	2700	Pump Freshwater Displacement
9/13/2023	10:41:00 AM	8.33	11.1	150	150	3200	Pump Freshwater Displacement
9/13/2023	10:45:00 AM	8.33	11.0	200	200	3500	Pump Freshwater Displacement
9/13/2023	10:50:00 AM	8.33	11.0	250	250	3700	Pump Freshwater Displacement, Spacer to surface @ 289 bbl away, circulate 46 bbl spacer to surface
9/13/2023	10:55:00 AM	8.33	11.0	300	300	3800	Pump Freshwater Displacement
9/13/2023	10:57:00 AM	8.33	4.0	315	315	2700	Pump Freshwater Displacement, Slow rate to 4 bbl/min to bump plug
9/13/2023	11:00:00 AM	8.33	BUMP	335	335	2600-3100	Bump plug/ Shutdown -FCP- 2700 psi, bumped to 3100 psi
9/13/2023	11:05:00 AM	8.33					Check Float, Float held, 4 bbl back to truck
9/13/2023	11:08:00 AM	8.33				5700	Set packer per tool hand
9/13/2023	11:58:00 AM	8.33					Check Float, Float held, 7 bbl back to truck
9/13/2023	12:20:00 PM	8.33	10.0	30	30	450	Rig up and flush stack clean
9/13/2023	12:45:00 PM						Rig down
9/13/2023	1:30:00 PM						Depart location

# Hen 14N Production Pump Chart – Pressure / Rate / Density





# Centralizer Depths

Well Name: Hen 14N

Production, Set Depth: 15,122.0ftKB

API 0512351806000		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 9/10/2023 13:00		Rig Release Date 9/13/2023 15:00		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	41.26	Yes			15,044.5	77.52
9	3	Casing Joints	5 1/2	20.00	P-110	Yes	44.35	Yes			14,955.8	166.21
11	5	Casing Joints	5 1/2	20.00	P-110	Yes	44.33	Yes			14,867.1	254.88
13	7	Casing Joints	5 1/2	20.00	P-110	Yes	44.76	Yes			14,781.0	341.01
15	9	Casing Joints	5 1/2	20.00	P-110	Yes	41.88	Yes			14,694.5	427.48
17		Marker Joint D	5 1/2	20.00	P-110	Yes	10.17	Yes			14,642.3	479.72
19	12	Casing Joints	5 1/2	20.00	P-110	Yes	44.34	Yes			14,553.6	568.38
21	14	Casing Joints	5 1/2	20.00	P-110	Yes	45.07	Yes			14,467.9	654.11
23	16	Casing Joints	5 1/2	20.00	P-110	Yes	44.58	Yes			14,378.8	743.19
25	18	Casing Joints	5 1/2	20.00	P-110	Yes	44.32	Yes			14,289.5	832.55
27	20	Casing Joints	5 1/2	20.00	P-110	Yes	42.49	Yes			14,203.5	918.51
29	22	Casing Joints	5 1/2	20.00	P-110	Yes	44.76	Yes			14,113.8	1,008.20
31	24	Casing Joints	5 1/2	20.00	P-110	Yes	44.94	Yes			14,024.5	1,097.47
33	26	Casing Joints	5 1/2	20.00	P-110	Yes	44.03	Yes			13,935.8	1,186.23
35	28	Casing Joints	5 1/2	20.00	P-110	Yes	43.54	Yes			13,847.2	1,274.81
37	30	Casing Joints	5 1/2	20.00	P-110	Yes	44.75	Yes			13,758.1	1,363.89
39	32	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			13,670.4	1,451.65
41	34	Casing Joints	5 1/2	20.00	P-110	Yes	44.36	Yes			13,581.9	1,540.11
43	36	Casing Joints	5 1/2	20.00	P-110	Yes	44.36	Yes			13,492.8	1,629.16
45	38	Casing Joints	5 1/2	20.00	P-110	Yes	44.05	Yes			13,404.2	1,717.80
47	40	Casing Joints	5 1/2	20.00	P-110	Yes	44.58	Yes			13,315.3	1,806.68
49	42	Casing Joints	5 1/2	20.00	P-110	Yes	44.72	Yes			13,225.6	1,896.43
51	44	Casing Joints	5 1/2	20.00	P-110	Yes	44.86	Yes			13,136.1	1,985.93
53	46	Casing Joints	5 1/2	20.00	P-110	Yes	45.48	Yes			13,046.3	2,075.71
55	48	Casing Joints	5 1/2	20.00	P-110	Yes	44.95	Yes			12,960.8	2,161.16
57	50	Casing Joints	5 1/2	20.00	P-110	Yes	44.33	Yes			12,872.0	2,250.00
59	52	Casing Joints	5 1/2	20.00	P-110	Yes	42.93	Yes			12,784.7	2,337.27
61	54	Casing Joints	5 1/2	20.00	P-110	Yes	45.04	Yes			12,695.4	2,426.64
63	56	Casing Joints	5 1/2	20.00	P-110	Yes	44.30	Yes			12,606.0	2,515.97
65	58	Casing Joints	5 1/2	20.00	P-110	Yes	44.36	Yes			12,520.2	2,601.78
67	60	Casing Joints	5 1/2	20.00	P-110	Yes	44.69	Yes			12,432.8	2,689.18



# Centralizer Depths

Well Name: Hen 14N

Production, Set Depth: 15,122.0ftKB

API 0512351806000		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 9/10/2023 13:00		Rig Release Date 9/13/2023 15:00		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	44.35	Yes			12,345.2	2,776.85
71	64	Casing Joints	5 1/2	20.00	P-110	Yes	44.33	Yes			12,256.5	2,865.49
73	66	Casing Joints	5 1/2	20.00	P-110	Yes	44.61	Yes			12,167.3	2,954.72
75	68	Casing Joints	5 1/2	20.00	P-110	Yes	44.18	Yes			12,078.7	3,043.26
77	70	Casing Joints	5 1/2	20.00	P-110	Yes	43.26	Yes			11,990.5	3,131.46
79	72	Casing Joints	5 1/2	20.00	P-110	Yes	44.03	Yes			11,902.2	3,219.83
81	74	Casing Joints	5 1/2	20.00	P-110	Yes	44.50	Yes			11,812.9	3,309.06
83	76	Casing Joints	5 1/2	20.00	P-110	Yes	43.08	Yes			11,725.3	3,396.73
85	78	Casing Joints	5 1/2	20.00	P-110	Yes	44.36	Yes			11,636.5	3,485.55
87	80	Casing Joints	5 1/2	20.00	P-110	Yes	44.33	Yes			11,549.9	3,572.13
89	82	Casing Joints	5 1/2	20.00	P-110	Yes	44.34	Yes			11,460.9	3,661.15
91		Marker Joint H	5 1/2	20.00	P-110	Yes	22.40	Yes			11,394.1	3,727.90
93	85	Casing Joints	5 1/2	20.00	P-110	Yes	44.57	Yes			11,305.2	3,816.76
95	87	Casing Joints	5 1/2	20.00	P-110	Yes	43.97	Yes			11,216.9	3,905.06
97	89	Casing Joints	5 1/2	20.00	P-110	Yes	44.32	Yes			11,127.6	3,994.42
99	91	Casing Joints	5 1/2	20.00	P-110	Yes	42.01	Yes			11,041.2	4,080.76
101	93	Casing Joints	5 1/2	20.00	P-110	Yes	44.32	Yes			10,952.3	4,169.69
103	95	Casing Joints	5 1/2	20.00	P-110	Yes	44.87	Yes			10,864.5	4,257.54
105	97	Casing Joints	5 1/2	20.00	P-110	Yes	45.07	Yes			10,775.2	4,346.78
107	99	Casing Joints	5 1/2	20.00	P-110	Yes	44.35	Yes			10,686.5	4,435.48
109	101	Casing Joints	5 1/2	20.00	P-110	Yes	44.37	Yes			10,597.8	4,524.19
111	103	Casing Joints	5 1/2	20.00	P-110	Yes	42.80	Yes			10,510.4	4,611.60
113	105	Casing Joints	5 1/2	20.00	P-110	Yes	44.58	Yes			10,420.9	4,701.13
115	107	Casing Joints	5 1/2	20.00	P-110	Yes	44.35	Yes			10,332.2	4,789.84
117	109	Casing Joints	5 1/2	20.00	P-110	Yes	44.50	Yes			10,243.3	4,878.70
119	111	Casing Joints	5 1/2	20.00	P-110	Yes	44.17	Yes			10,154.4	4,967.65
121	113	Casing Joints	5 1/2	20.00	P-110	Yes	44.32	Yes			10,065.7	5,056.30
123	115	Casing Joints	5 1/2	20.00	P-110	Yes	44.33	Yes			9,978.3	5,143.66
125	117	Casing Joints	5 1/2	20.00	P-110	Yes	44.01	Yes			9,889.7	5,232.31
127	119	Casing Joints	5 1/2	20.00	P-110	Yes	44.01	Yes			9,801.2	5,320.84
129	121	Casing Joints	5 1/2	20.00	P-110	Yes	43.94	Yes			9,713.2	5,408.81



# Centralizer Depths

Well Name: Hen 14N

Production, Set Depth: 15,122.0ftKB

API 0512351806000		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 9/10/2023 13:00		Rig Release Date 9/13/2023 15:00		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	44.08	Yes			9,624.3	5,497.72
133	125	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			9,536.6	5,585.38
135	127	Casing Joints	5 1/2	20.00	P-110	Yes	43.15	Yes			9,449.7	5,672.35
137	129	Casing Joints	5 1/2	20.00	P-110	Yes	44.47	Yes			9,361.1	5,760.91
139	131	Casing Joints	5 1/2	20.00	P-110	Yes	43.86	Yes			9,276.5	5,845.48
141	133	Casing Joints	5 1/2	20.00	P-110	Yes	44.03	Yes			9,188.5	5,933.53
143	135	Casing Joints	5 1/2	20.00	P-110	Yes	43.82	Yes			9,100.6	6,021.44
145	137	Casing Joints	5 1/2	20.00	P-110	Yes	44.09	Yes			9,012.6	6,109.36
147	139	Casing Joints	5 1/2	20.00	P-110	Yes	44.48	Yes			8,924.1	6,197.87
149	141	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			8,836.5	6,285.53
151	143	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			8,748.8	6,373.22
153	145	Casing Joints	5 1/2	20.00	P-110	Yes	44.49	Yes			8,660.4	6,461.57
155	147	Casing Joints	5 1/2	20.00	P-110	Yes	43.97	Yes			8,572.1	6,549.87
157	149	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			8,484.1	6,637.90
159	151	Casing Joints	5 1/2	20.00	P-110	Yes	44.03	Yes			8,396.3	6,725.73
161	153	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			8,308.0	6,814.04
163	155	Casing Joints	5 1/2	20.00	P-110	Yes	44.48	Yes			8,219.5	6,902.52
165	157	Casing Joints	5 1/2	20.00	P-110	Yes	43.79	Yes			8,131.7	6,990.32
167	159	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			8,043.5	7,078.52
169	161	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			7,954.7	7,167.34
171	163	Casing Joints	5 1/2	20.00	P-110	Yes	44.05	Yes			7,866.3	7,255.74
173	165	Casing Joints	5 1/2	20.00	P-110	Yes	44.12	Yes			7,777.1	7,344.91
175	167	Casing Joints	5 1/2	20.00	P-110	Yes	44.54	Yes			7,688.5	7,433.47
177		Marker Joint I	5 1/2	20.00	P-110	Yes	20.29	Yes			7,626.1	7,495.90
178	169	Casing Joints	5 1/2	20.00	P-110	Yes	43.50	Yes			7,582.6	7,539.40
179	170	Casing Joints	5 1/2	20.00	P-110	Yes	44.36	Yes			7,538.2	7,583.76
180	171	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			7,494.1	7,627.86
181	172	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			7,450.3	7,671.69
182	173	Casing Joints	5 1/2	20.00	P-110	Yes	43.80	Yes			7,406.5	7,715.49
183	174	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			7,362.4	7,759.60
184	175	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			7,318.6	7,803.44



# Centralizer Depths

Well Name: Hen 14N

Production, Set Depth: 15,122.0ftKB

API 0512351806000		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 9/10/2023 13:00		Rig Release Date 9/13/2023 15:00		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)
185	176	Casing Joints	5 1/2	20.00	P-110	Yes	43.46	Yes			7,275.1	7,846.90
186	177	Casing Joints	5 1/2	20.00	P-110	Yes	43.16	Yes			7,231.9	7,890.06
187	178	Casing Joints	5 1/2	20.00	P-110	Yes	44.01	Yes			7,187.9	7,934.07
188	179	Casing Joints	5 1/2	20.00	P-110	Yes	43.31	Yes			7,144.6	7,977.38
189	180	Casing Joints	5 1/2	20.00	P-110	Yes	44.22	Yes			7,100.4	8,021.60
190	181	Casing Joints	5 1/2	20.00	P-110	Yes	42.39	Yes			7,058.0	8,063.99
191	182	Casing Joints	5 1/2	20.00	P-110	Yes	43.80	Yes			7,014.2	8,107.79
192	183	Casing Joints	5 1/2	20.00	P-110	Yes	44.04	Yes			6,970.2	8,151.83
193	184	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			6,926.1	8,195.93
194	185	Casing Joints	5 1/2	20.00	P-110	Yes	43.87	Yes			6,882.2	8,239.80
195	186	Casing Joints	5 1/2	20.00	P-110	Yes	43.81	Yes			6,838.4	8,283.61
196	187	Casing Joints	5 1/2	20.00	P-110	Yes	43.55	Yes			6,794.8	8,327.16
197	188	Casing Joints	5 1/2	20.00	P-110	Yes	40.58	Yes			6,754.3	8,367.74
198	189	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			6,710.4	8,411.58
199	190	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			6,666.7	8,455.34
200	191	Casing Joints	5 1/2	20.00	P-110	Yes	41.58	Yes			6,625.1	8,496.92
201	192	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			6,581.2	8,540.76
202	193	Casing Joints	5 1/2	20.00	P-110	Yes	40.50	Yes			6,540.7	8,581.26
203	194	Casing Joints	5 1/2	20.00	P-110	Yes	40.63	Yes			6,500.1	8,621.89
204	195	Casing Joints	5 1/2	20.00	P-110	Yes	43.82	Yes			6,456.3	8,665.71
205	196	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			6,412.5	8,709.54
206	197	Casing Joints	5 1/2	20.00	P-110	Yes	43.82	Yes			6,368.6	8,753.36
207	198	Casing Joints	5 1/2	20.00	P-110	Yes	44.47	Yes			6,324.2	8,797.83
208	199	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			6,280.3	8,841.67
209		Marker Joint J	5 1/2	20.00	P-110	Yes	22.23	Yes			6,258.1	8,863.90
210	200	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			6,214.0	8,908.03
211	201	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			6,169.2	8,952.83
212	202	Casing Joints	5 1/2	20.00	P-110	Yes	43.80	Yes			6,125.4	8,996.63
213	203	Casing Joints	5 1/2	20.00	P-110	Yes	41.64	Yes			6,083.7	9,038.27
214	204	Casing Joints	5 1/2	20.00	P-110	Yes	44.01	Yes			6,039.7	9,082.28
215	205	Casing Joints	5 1/2	20.00	P-110	Yes	45.40	Yes			5,994.3	9,127.68



# Centralizer Depths

Well Name: Hen 14N

Production, Set Depth: 15,122.0ftKB

API 0512351806000		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 9/10/2023 13:00		Rig Release Date 9/13/2023 15:00		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)
216	206	Casing Joints	5 1/2	20.00	P-110	Yes	44.00	Yes			5,950.3	9,171.68
217	207	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			5,906.5	9,215.52
218	208	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			5,862.4	9,259.65
219	209	Casing Joints	5 1/2	20.00	P-110	Yes	44.10	Yes			5,818.3	9,303.75
220	210	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			5,774.4	9,347.58
221	211	Casing Joints	5 1/2	20.00	P-110	Yes	41.20	Yes			5,733.2	9,388.78
222	212	Casing Joints	5 1/2	20.00	P-110	Yes	39.75	Yes			5,693.5	9,428.53
223	213	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			5,649.6	9,472.37
224	214	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			5,605.8	9,516.20
225	215	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			5,561.7	9,560.31
226	216	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			5,517.7	9,604.33
227	217	Casing Joints	5 1/2	20.00	P-110	Yes	44.28	Yes			5,473.4	9,648.61
228	218	Casing Joints	5 1/2	20.00	P-110	Yes	43.77	Yes			5,429.6	9,692.38
229	219	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			5,385.6	9,736.40
230	220	Casing Joints	5 1/2	20.00	P-110	Yes	41.55	Yes			5,344.1	9,777.95
231	221	Casing Joints	5 1/2	20.00	P-110	Yes	44.04	Yes			5,300.0	9,821.99
232	222	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			5,256.0	9,866.01
233	223	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			5,212.2	9,909.84
234	224	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			5,168.3	9,953.68
235	225	Casing Joints	5 1/2	20.00	P-110	Yes	44.03	Yes			5,124.3	9,997.71
236	226	Casing Joints	5 1/2	20.00	P-110	Yes	43.82	Yes			5,080.5	10,041.53
237	227	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			5,036.6	10,085.37
238	228	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			4,992.5	10,129.50
239	229	Casing Joints	5 1/2	20.00	P-110	Yes	44.20	Yes			4,948.3	10,173.70
240	230	Casing Joints	5 1/2	20.00	P-110	Yes	42.47	Yes			4,905.8	10,216.17
241	231	Casing Joints	5 1/2	20.00	P-110	Yes	44.88	Yes			4,861.0	10,261.05
242	232	Casing Joints	5 1/2	20.00	P-110	Yes	44.00	Yes			4,817.0	10,305.05
243	233	Casing Joints	5 1/2	20.00	P-110	Yes	42.54	Yes			4,774.4	10,347.59
244	234	Casing Joints	5 1/2	20.00	P-110	Yes	44.26	Yes			4,730.2	10,391.85
245	235	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			4,686.3	10,435.69
246	236	Casing Joints	5 1/2	20.00	P-110	Yes	42.02	Yes			4,644.3	10,477.71



# Centralizer Depths

Well Name: Hen 14N

Production, Set Depth: 15,122.0ftKB

API 0512351806000		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 9/10/2023 13:00		Rig Release Date 9/13/2023 15:00		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)
247	237	Casing Joints	5 1/2	20.00	P-110	Yes	43.89	Yes			4,600.4	10,521.60
248	238	Casing Joints	5 1/2	20.00	P-110	Yes	44.17	Yes			4,556.2	10,565.77
249	239	Casing Joints	5 1/2	20.00	P-110	Yes	42.17	Yes			4,514.1	10,607.94
250	240	Casing Joints	5 1/2	20.00	P-110	Yes	44.00	Yes			4,470.1	10,651.94
251	241	Casing Joints	5 1/2	20.00	P-110	Yes	43.86	Yes			4,426.2	10,695.80
252	242	Casing Joints	5 1/2	20.00	P-110	Yes	40.38	Yes			4,385.8	10,736.18
253	243	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			4,342.0	10,780.01
254	244	Casing Joints	5 1/2	20.00	P-110	Yes	44.20	Yes			4,297.8	10,824.21
255	245	Casing Joints	5 1/2	20.00	P-110	Yes	44.22	Yes			4,253.6	10,868.43
256	246	Casing Joints	5 1/2	20.00	P-110	Yes	40.64	Yes			4,212.9	10,909.07
257	247	Casing Joints	5 1/2	20.00	P-110	Yes	40.32	Yes			4,172.6	10,949.39
258	248	Casing Joints	5 1/2	20.00	P-110	Yes	43.86	Yes			4,128.8	10,993.25
259	249	Casing Joints	5 1/2	20.00	P-110	Yes	44.14	Yes			4,084.6	11,037.39
260	250	Casing Joints	5 1/2	20.00	P-110	Yes	43.07	Yes			4,041.5	11,080.46
261	251	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			3,997.7	11,124.30
262	252	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			3,953.9	11,168.06
263	253	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			3,909.9	11,212.08
264	254	Casing Joints	5 1/2	20.00	P-110	Yes	44.20	Yes			3,865.7	11,256.28
265	255	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			3,821.9	11,300.11
266	256	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			3,777.8	11,344.24
267	257	Casing Joints	5 1/2	20.00	P-110	Yes	44.01	Yes			3,733.8	11,388.25
268	258	Casing Joints	5 1/2	20.00	P-110	Yes	42.95	Yes			3,690.8	11,431.20
269	259	Casing Joints	5 1/2	20.00	P-110	Yes	44.01	Yes			3,646.8	11,475.21
270	260	Casing Joints	5 1/2	20.00	P-110	Yes	43.89	Yes			3,602.9	11,519.10
271	261	Casing Joints	5 1/2	20.00	P-110	Yes	43.86	Yes			3,559.0	11,562.96
272	262	Casing Joints	5 1/2	20.00	P-110	Yes	42.08	Yes			3,517.0	11,605.04
273	263	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			3,472.8	11,649.17
274	264	Casing Joints	5 1/2	20.00	P-110	Yes	43.92	Yes			3,428.9	11,693.09
275	265	Casing Joints	5 1/2	20.00	P-110	Yes	44.20	Yes			3,384.7	11,737.29
276	266	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			3,340.3	11,781.69
277		External Casing Packer	5 1/2	20.00	P-110	Yes	14.77	Yes			3,325.5	11,796.46



# Centralizer Depths

Well Name: Hen 14N

Production, Set Depth: 15,122.0ftKB

API 0512351806000		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 9/10/2023 13:00		Rig Release Date 9/13/2023 15:00		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)
278	267	Casing Joints	5 1/2	20.00	P-110	Yes	44.14	Yes			3,281.4	11,840.60
279	268	Casing Joints	5 1/2	20.00	P-110	Yes	44.07	Yes			3,237.3	11,884.67
280	269	Casing Joints	5 1/2	20.00	P-110	Yes	44.09	Yes			3,193.2	11,928.76
281	270	Casing Joints	5 1/2	20.00	P-110	Yes	39.85	Yes			3,153.4	11,968.61
282	271	Casing Joints	5 1/2	20.00	P-110	Yes	41.18	Yes			3,112.2	12,009.79
283	272	Casing Joints	5 1/2	20.00	P-110	Yes	40.31	Yes			3,071.9	12,050.10
284	273	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			3,027.5	12,094.55
285	274	Casing Joints	5 1/2	20.00	P-110	Yes	43.91	Yes			2,983.5	12,138.46
286	275	Casing Joints	5 1/2	20.00	P-110	Yes	44.14	Yes			2,939.4	12,182.60
287	276	Casing Joints	5 1/2	20.00	P-110	Yes	44.01	Yes			2,895.4	12,226.61
288	277	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			2,851.0	12,271.05
289	278	Casing Joints	5 1/2	20.00	P-110	Yes	42.22	Yes			2,808.7	12,313.27
290	279	Casing Joints	5 1/2	20.00	P-110	Yes	44.19	Yes			2,764.5	12,357.46
291	280	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			2,720.7	12,401.30
292	281	Casing Joints	5 1/2	20.00	P-110	Yes	43.81	Yes			2,676.9	12,445.11
293	282	Casing Joints	5 1/2	20.00	P-110	Yes	42.28	Yes			2,634.6	12,487.39
294	283	Casing Joints	5 1/2	20.00	P-110	Yes	43.99	Yes			2,590.6	12,531.38
295	284	Casing Joints	5 1/2	20.00	P-110	Yes	42.53	Yes			2,548.1	12,573.91
296	285	Casing Joints	5 1/2	20.00	P-110	Yes	44.02	Yes			2,504.1	12,617.93
297	286	Casing Joints	5 1/2	20.00	P-110	Yes	44.00	Yes			2,460.1	12,661.93
298	287	Casing Joints	5 1/2	20.00	P-110	Yes	41.58	Yes			2,418.5	12,703.51
299	288	Casing Joints	5 1/2	20.00	P-110	Yes	44.18	Yes			2,374.3	12,747.69
300	289	Casing Joints	5 1/2	20.00	P-110	Yes	41.05	Yes			2,333.3	12,788.74
301	290	Casing Joints	5 1/2	20.00	P-110	Yes	41.40	Yes			2,291.9	12,830.14
302	291	Casing Joints	5 1/2	20.00	P-110	Yes	44.18	Yes			2,247.7	12,874.32
303	292	Casing Joints	5 1/2	20.00	P-110	Yes	43.20	Yes			2,204.5	12,917.52
304	293	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			2,160.6	12,961.36
305	294	Casing Joints	5 1/2	20.00	P-110	Yes	42.73	Yes			2,117.9	13,004.09
306	295	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			2,074.1	13,047.92
307	296	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			2,030.3	13,091.75
308	297	Casing Joints	5 1/2	20.00	P-110	Yes	44.05	Yes			1,986.2	13,135.80



# Centralizer Depths

Well Name: Hen 14N

Production, Set Depth: 15,122.0ftKB

API 0512351806000		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 9/10/2023 13:00	Rig Release Date 9/13/2023 15:00	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)
309	298	Casing Joints	5 1/2	20.00	P-110	Yes	42.76	Yes			1,943.4	13,178.56
310	299	Casing Joints	5 1/2	20.00	P-110	Yes	43.73	Yes			1,899.7	13,222.29
311	300	Casing Joints	5 1/2	20.00	P-110	Yes	44.14	Yes			1,855.6	13,266.43
312	301	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			1,811.4	13,310.56
313	302	Casing Joints	5 1/2	20.00	P-110	Yes	44.15	Yes			1,767.3	13,354.71
314	303	Casing Joints	5 1/2	20.00	P-110	Yes	42.86	Yes			1,724.4	13,397.57
315	304	Casing Joints	5 1/2	20.00	P-110	Yes	40.77	Yes			1,683.7	13,438.34
316	305	Casing Joints	5 1/2	20.00	P-110	Yes	42.83	Yes			1,640.8	13,481.17
317	306	Casing Joints	5 1/2	20.00	P-110	Yes	43.02	Yes			1,597.8	13,524.19
318	307	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			1,554.0	13,568.02
319	308	Casing Joints	5 1/2	20.00	P-110	Yes	42.72	Yes			1,511.3	13,610.74
320	309	Casing Joints	5 1/2	20.00	P-110	Yes	40.36	Yes			1,470.9	13,651.10
321	310	Casing Joints	5 1/2	20.00	P-110	Yes	42.66	Yes			1,428.2	13,693.76
322	311	Casing Joints	5 1/2	20.00	P-110	Yes	44.14	Yes			1,384.1	13,737.90
323	312	Casing Joints	5 1/2	20.00	P-110	Yes	41.17	Yes			1,342.9	13,779.07
324	313	Casing Joints	5 1/2	20.00	P-110	Yes	41.32	Yes			1,301.6	13,820.39
325	314	Casing Joints	5 1/2	20.00	P-110	Yes	41.97	Yes			1,259.6	13,862.36
326	315	Casing Joints	5 1/2	20.00	P-110	Yes	44.03	Yes			1,215.6	13,906.39
327	316	Casing Joints	5 1/2	20.00	P-110	Yes	44.11	Yes			1,171.5	13,950.50
328	317	Casing Joints	5 1/2	20.00	P-110	Yes	40.61	Yes			1,130.9	13,991.11
329	318	Casing Joints	5 1/2	20.00	P-110	Yes	44.01	Yes			1,086.9	14,035.12
330	319	Casing Joints	5 1/2	20.00	P-110	Yes	44.35	Yes			1,042.5	14,079.47
331	320	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			998.7	14,123.32
332	321	Casing Joints	5 1/2	20.00	P-110	Yes	43.84	Yes			954.8	14,167.16
333	322	Casing Joints	5 1/2	20.00	P-110	Yes	44.15	Yes			910.7	14,211.31
334	323	Casing Joints	5 1/2	20.00	P-110	Yes	43.86	Yes			866.8	14,255.17
335	324	Casing Joints	5 1/2	20.00	P-110	Yes	43.82	Yes			823.0	14,298.99
336	325	Casing Joints	5 1/2	20.00	P-110	Yes	42.56	Yes			780.5	14,341.55
337	326	Casing Joints	5 1/2	20.00	P-110	Yes	44.03	Yes			736.4	14,385.58
338	327	Casing Joints	5 1/2	20.00	P-110	Yes	43.79	Yes			692.6	14,429.37
339	328	Casing Joints	5 1/2	20.00	P-110	Yes	43.80	Yes			648.8	14,473.17



# Centralizer Depths

Well Name: Hen 14N

Production, Set Depth: 15,122.0ftKB

API 05123518060000		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 9/10/2023 13:00	Rig Release Date 9/13/2023 15:00	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)
340	329	Casing Joints	5 1/2	20.00	P-110	Yes	44.15	Yes			604.7	14,517.32
341	330	Casing Joints	5 1/2	20.00	P-110	Yes	44.18	Yes			560.5	14,561.50
342	331	Casing Joints	5 1/2	20.00	P-110	Yes	44.00	Yes			516.5	14,605.50