

Cement Post Job Report

Client: PDC Energy

Well Name: Hen 21N

API #: 05-123-51798

Job Date: October 3, 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 21N	Patterson 272	Production	Buttress	5 1/2" Cement Head

WELL MD (FT)	WELL TVD (FT)	DEVIATION (DEG)	NUMBER OF STAGES	BHST (DEG)	BHCT (DEG)
15388	6852	90	1	230	230

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

CASING/TUBING/DP DETAILS									
STRING TYPE	GRADE	OD"	WT/FT	ID"	OH SIZE"	% EXCESS LEAD	% EXCESS TAIL	TOTAL DEPTH (FT)	
Surface		9.625	36	8.921	13.50			1724	
Production	P-110	5.5	20	4.778	20	0	0	15377	
MAXIMUM CASING/TUBING/DP PSI			9888			MAXIMUM ANNULAR PSI			4100

Mud Type	OBM	Rotate Y,N	No	Circulation Data				Water Requirements (bbbls)	
Mud ppg	10.7	Rate (rpm)		Circulate Time (hrs)		2		Spacers	140
Flow Temp	150	Torque Val.		Circulation Rate (bpm)		10		Stage 1 Lead	112
Vis. Sec/qt	47	Time (hr)		Full Circulation ? (Y,N,P)		YES		Stage 1 Tail	177
PV (cP)	11	Pipe Reciprocation		Gas Present (Y,N)		No	Units	Stage 2 Lead	
Yield Pt	5	Recip Y,N	No	Centralizers/Plugs				Stage 2 Tail	
10 sec gel	4	Stroke (ft)		Quantity & Type		Customer Provided		Displacement	341
10 min gel	8	Recip time		Top Plug/Type		Customer Provided		Wash up	20
30 min gel	10	Stuck ?		Bottom Plug/Type		Customer Provided		Total + 10% Safety	869

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	1124	Sacks		Sacks		Dens. ppg	8.34
		Vol/bbbls	256.8	Vol/bbbls	274.3	Vol/bbbls	0.0	Vol/bbbls	0.0	Vol. bbl	341
		Rate	12	Rate	12	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	321
		TOL (ft)	2007	TOT (ft)	8603	TOL (ft)		TOT (ft)		Bump PSI	2500

Final Displacement (bbbls)	341
Bump Plug?	YES
Final Bump Pressure (psi)	3100
Full Returns throughout job?	FULL
Vol. away/Time when returns lost	NA
Vol. away when returns were regained	NA
Spacer to Surface?	YES
Spacer volume returned (bbbls)	45
Cement to surface?	NO
Cement volume to surface stage 1	NA
Cement volume to surface stage 2	NA

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

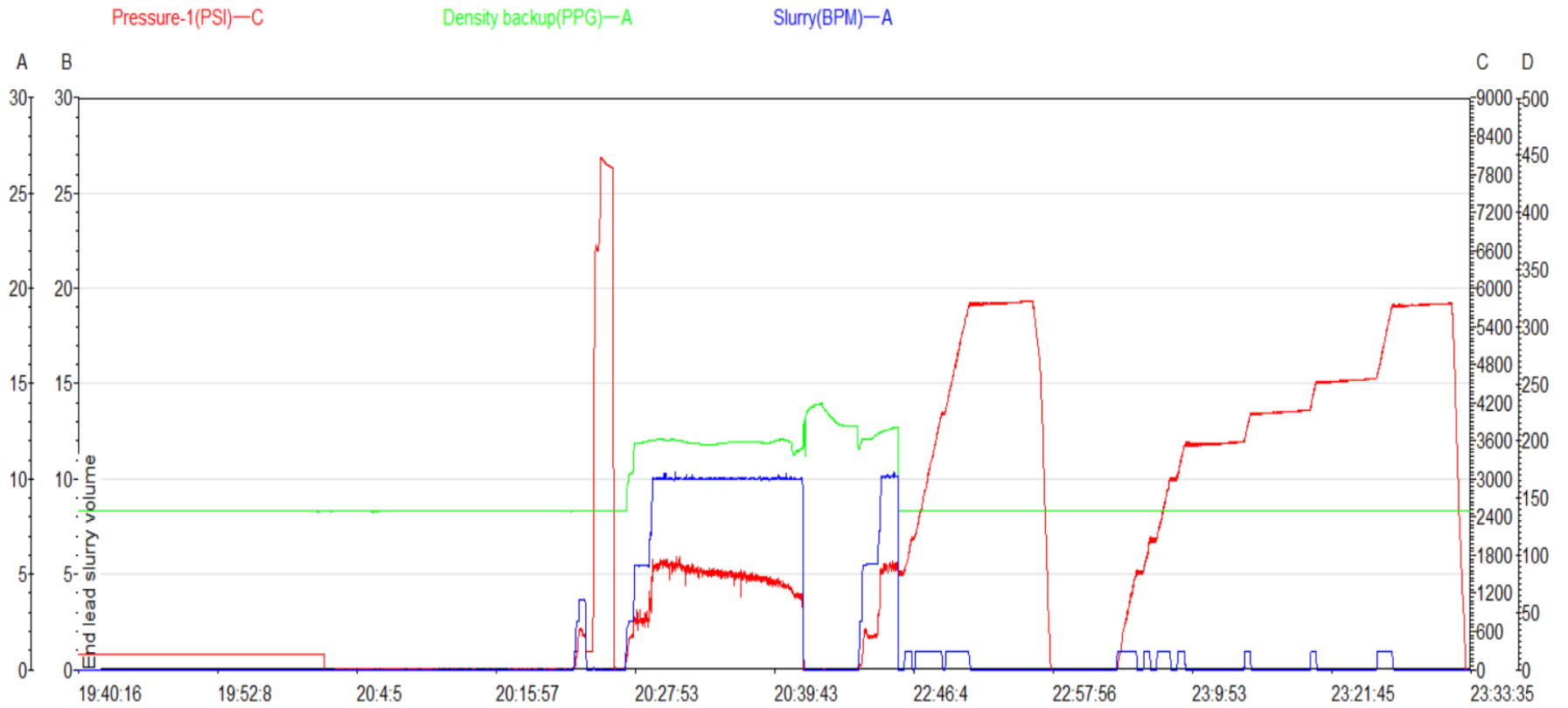


JOB LOG

CLIENT	WELL	RIG	JOB TYPE	START DATE	Ambient Conditions
PDC Energy	Hen 21N	Patterson 272	Production	10/3/2023	Temp / Hum / Air Press 56 Deg F / 39% / 24.94 in

DATE (dd/mm)	TIME (hh:mm)	DENSITY (ppg)	RATE (bpm)	VOL. (bbl)	TOTAL VOL.	PRESSURE	TREATMENT COMMENTS
10/3/2023	6:30:00 AM						CREW CALLED OUT FOR AN ON LOCATION TIME OF 2:30 PM
	12:00:00 PM						CREW ARRIVES ON LOCATION/CHECK IN WITH CO REP/CALCULATE JOB
	5:15:00 PM						CASING LANDED/CIRCULATE WELL
	5:30:00 PM						SPOT IN AND RIG UP EQUIPMENT
	7:45:00 PM						SAFETY MEETING
	8:00:00 PM						RIG UP FLOOR
	8:18:00 PM	8.33	3.6	3	3	624	FILL LINES
	8:19:00 PM	8.33	1.0	1	1	8186	PRESSURE TEST
	8:22:00 PM	12	10.0	140	140	1554	PUMP 140 BBLs OF SPACER AT 12 PPG WITH SURFACTANTS AND FIBER
	8:38:00 PM						SHUT IN AND DROP BOTTOM PLUG
	8:43:00 PM	12.9	10.0	257	257	1632	PUMP 257 BBLs OF LEAD CEMENT AT 12.9 PPG (1276 SKS, 1.13 YLD, 3.68 GAL/SK, 112 BBLMW)
	9:07:00 PM	13.7	10.0	276	274	1301	PUMP 276 BBLs OF TAIL CEMENT AT 13.7 PPG (1124 SKS, 1.37 YLD, 6.63 GAL/SK, 177 BBLMW)
	9:35:00 PM	8.33	10.0	15	15	850	PUMP 15 BBLs OF SUGAR WATER
	9:37:00 PM						SHUT IN AND DROP TOP PLUG
	9:43:00 PM	8.33	8.0	10	10	550	BEGIN DISPLACING OF 341 BBLs OF FRESHWATER WITH BIOCIDES IN ALL
	9:46:00 PM	8.33	10.0	2	12	1600	FRESHWATER DISPLACEMENT/CAUGHT CEMENT
	9:51:00 PM	8.33	10.0	38	50	1800	FRESHWATER DISPLACEMENT
	9:56:00 PM	8.33	10.0	50	100	2500	FRESHWATER DISPLACEMENT
	10:01:00 PM	8.33	10.0	50	150	3000	FRESHWATER DISPLACEMENT
	10:06:00 PM	8.33	10.0	50	200	3100	FRESHWATER DISPLACEMENT
	10:11:00 PM	8.33	10.0	50	250	3300	FRESHWATER DISPLACEMENT
	10:14:00 PM	8.33	10.0	30	280	3400	FRESHWATER DISPLACEMENT
	10:16:00 PM	8.33	10.0	20	300	3500	FRESHWATER DISPLACEMENT
	10:19:00 PM	8.33	3.5	21	321	2500	FRESHWATER DISPLACEMENT
	10:22:00 PM	8.33	3.5	20	341	3100	LANDED PLUG GOING 500 OVER FCP
	10:27:00 PM						CHECK FLOATS/FLOATS HELD/RECEIVED 4 BBLs BACK
	10:39:00 PM	8.3	1.0	19	19	5700	SET PACKER PER TOOL HAND
	11:29:00 PM						RIG UP TO BOP STACK
	11:35:00 PM	8.33	8.0	50	50	100	FLUSH BOP STACK CLEAN WITH 50 BBLs FRESHWATER
	11:45:00 PM						RIG DOWN EQUIPMENT/FINISH PAPER WORK
	11:59:00 PM						DEPART LOCATION

Hen 21N Production Pump Chart – Pressure / Rate / Density



Chart



Centralizer Depths

Well Name: Hen 21N

Production, Set Depth: 15,377.0ftKB

API 0512351798000		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 9/30/2023 06:15		Rig Release Date 10/4/2023 03:00		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	43.07	Yes			15,301.1	75.92
9	3	Casing Joints	5 1/2	20.00	P-110	Yes	43.25	Yes			15,213.4	163.62
11	5	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			15,125.1	251.91
13	7	Casing Joints	5 1/2	20.00	P-110	Yes	42.77	Yes			15,040.0	337.04
15	9	Casing Joints	5 1/2	20.00	P-110	Yes	37.13	Yes			14,957.8	419.21
17		Marker Joint A	5 1/2	20.00	P-110	Yes	9.21	Yes			14,904.6	472.39
19	12	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			14,817.0	560.04
21	14	Casing Joints	5 1/2	20.00	P-110	Yes	44.77	Yes			14,727.7	649.26
23	16	Casing Joints	5 1/2	20.00	P-110	Yes	44.73	Yes			14,638.6	738.44
25	18	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			14,549.1	827.95
27	20	Casing Joints	5 1/2	20.00	P-110	Yes	41.68	Yes			14,468.3	908.73
29	22	Casing Joints	5 1/2	20.00	P-110	Yes	41.65	Yes			14,382.2	994.83
31	24	Casing Joints	5 1/2	20.00	P-110	Yes	43.81	Yes			14,293.9	1,083.07
33	26	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			14,204.5	1,172.52
35	28	Casing Joints	5 1/2	20.00	P-110	Yes	44.59	Yes			14,115.2	1,261.83
37	30	Casing Joints	5 1/2	20.00	P-110	Yes	44.73	Yes			14,025.4	1,351.62
39	32	Casing Joints	5 1/2	20.00	P-110	Yes	43.73	Yes			13,936.9	1,440.07
41	34	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			13,848.1	1,528.95
43	36	Casing Joints	5 1/2	20.00	P-110	Yes	43.44	Yes			13,759.9	1,617.09
45	38	Casing Joints	5 1/2	20.00	P-110	Yes	43.33	Yes			13,671.8	1,705.16
47	40	Casing Joints	5 1/2	20.00	P-110	Yes	39.77	Yes			13,591.2	1,785.76
49	42	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			13,510.4	1,866.56
51	44	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			13,421.7	1,955.31
53	46	Casing Joints	5 1/2	20.00	P-110	Yes	43.39	Yes			13,333.9	2,043.15
55	48	Casing Joints	5 1/2	20.00	P-110	Yes	44.40	Yes			13,245.7	2,131.31
57	50	Casing Joints	5 1/2	20.00	P-110	Yes	41.10	Yes			13,160.8	2,216.17
59	52	Casing Joints	5 1/2	20.00	P-110	Yes	43.94	Yes			13,073.2	2,303.83
61	54	Casing Joints	5 1/2	20.00	P-110	Yes	43.58	Yes			12,985.9	2,391.13
63	56	Casing Joints	5 1/2	20.00	P-110	Yes	43.83	Yes			12,897.6	2,479.41
65	58	Casing Joints	5 1/2	20.00	P-110	Yes	42.77	Yes			12,812.7	2,564.32
67	60	Casing Joints	5 1/2	20.00	P-110	Yes	39.18	Yes			12,729.8	2,647.25



Centralizer Depths

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Ground Elevation (ft) 4,779.00	Original KB Elevation (ft) 4,807.50	KB-Ground Distance (ft) 28.50	Spud Date 9/30/2023 06:15	Rig Release Date 10/4/2023 03:00	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	43.70	Yes			12,645.0	2,731.96
71	64	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			12,556.8	2,820.22
73	66	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			12,468.6	2,908.43
75	68	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			12,380.4	2,996.65
77	70	Casing Joints	5 1/2	20.00	P-110	Yes	43.57	Yes			12,293.0	3,083.99
79	72	Casing Joints	5 1/2	20.00	P-110	Yes	43.74	Yes			12,205.5	3,171.46
81	74	Casing Joints	5 1/2	20.00	P-110	Yes	43.76	Yes			12,118.0	3,258.97
83	76	Casing Joints	5 1/2	20.00	P-110	Yes	42.39	Yes			12,031.9	3,345.11
85	78	Casing Joints	5 1/2	20.00	P-110	Yes	43.51	Yes			11,944.6	3,432.36
87	80	Casing Joints	5 1/2	20.00	P-110	Yes	39.46	Yes			11,861.5	3,515.55
89	82	Casing Joints	5 1/2	20.00	P-110	Yes	45.08	Yes			11,771.3	3,605.68
91	84	Casing Joints	5 1/2	20.00	P-110	Yes	43.74	Yes			11,688.5	3,688.52
93		Marker Joint E	5 1/2	20.00	P-110	Yes	10.29	Yes			11,638.3	3,738.68
95	87	Casing Joints	5 1/2	20.00	P-110	Yes	43.44	Yes			11,554.8	3,822.17
97	89	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			11,467.5	3,909.47
99	91	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			11,381.7	3,995.31
101	93	Casing Joints	5 1/2	20.00	P-110	Yes	43.77	Yes			11,301.0	4,075.96
103	95	Casing Joints	5 1/2	20.00	P-110	Yes	41.25	Yes			11,225.0	4,152.00
105	97	Casing Joints	5 1/2	20.00	P-110	Yes	40.98	Yes			11,140.3	4,236.71
107	99	Casing Joints	5 1/2	20.00	P-110	Yes	43.77	Yes			11,053.0	4,324.02
109	101	Casing Joints	5 1/2	20.00	P-110	Yes	43.85	Yes			10,964.6	4,412.43
111	103	Casing Joints	5 1/2	20.00	P-110	Yes	44.49	Yes			10,876.3	4,500.70
113	105	Casing Joints	5 1/2	20.00	P-110	Yes	43.72	Yes			10,789.5	4,587.47
115	107	Casing Joints	5 1/2	20.00	P-110	Yes	43.03	Yes			10,703.5	4,673.55
117	109	Casing Joints	5 1/2	20.00	P-110	Yes	44.72	Yes			10,614.3	4,762.69
119	111	Casing Joints	5 1/2	20.00	P-110	Yes	44.88	Yes			10,526.1	4,850.89
121	113	Casing Joints	5 1/2	20.00	P-110	Yes	44.18	Yes			10,436.9	4,940.13
123	115	Casing Joints	5 1/2	20.00	P-110	Yes	44.98	Yes			10,347.1	5,029.91
125	117	Casing Joints	5 1/2	20.00	P-110	Yes	43.06	Yes			10,260.9	5,116.13
127	119	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			10,171.6	5,205.36
129	121	Casing Joints	5 1/2	20.00	P-110	Yes	45.06	Yes			10,081.8	5,295.16



Centralizer Depths

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Ground Elevation (ft) 4,779.00		Original KB Elevation (ft) 4,807.50		KB-Ground Distance (ft) 28.50		Spud Date 9/30/2023 06:15		Rig Release Date 10/4/2023 03:00		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	44.44	Yes			9,992.4	5,384.62
133	125	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			9,904.7	5,472.27
135	127	Casing Joints	5 1/2	20.00	P-110	Yes	43.47	Yes			9,818.4	5,558.57
137	129	Casing Joints	5 1/2	20.00	P-110	Yes	44.88	Yes			9,731.5	5,645.55
139	131	Casing Joints	5 1/2	20.00	P-110	Yes	43.15	Yes			9,643.6	5,733.40
141	133	Casing Joints	5 1/2	20.00	P-110	Yes	42.51	Yes			9,558.2	5,818.81
143	135	Casing Joints	5 1/2	20.00	P-110	Yes	44.80	Yes			9,468.3	5,908.69
145	137	Casing Joints	5 1/2	20.00	P-110	Yes	43.47	Yes			9,380.1	5,996.89
147	139	Casing Joints	5 1/2	20.00	P-110	Yes	43.75	Yes			9,293.6	6,083.38
149	141	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			9,204.4	6,172.57
151	143	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			9,114.9	6,262.07
153	145	Casing Joints	5 1/2	20.00	P-110	Yes	43.69	Yes			9,026.8	6,350.21
155	147	Casing Joints	5 1/2	20.00	P-110	Yes	42.85	Yes			8,939.5	6,437.49
157	149	Casing Joints	5 1/2	20.00	P-110	Yes	44.93	Yes			8,850.0	6,527.00
159	151	Casing Joints	5 1/2	20.00	P-110	Yes	41.36	Yes			8,765.4	6,611.65
161	153	Casing Joints	5 1/2	20.00	P-110	Yes	43.50	Yes			8,677.9	6,699.15
163	155	Casing Joints	5 1/2	20.00	P-110	Yes	43.04	Yes			8,590.4	6,786.63
165	157	Casing Joints	5 1/2	20.00	P-110	Yes	44.13	Yes			8,507.4	6,869.58
167	159	Casing Joints	5 1/2	20.00	P-110	Yes	44.41	Yes			8,420.5	6,956.46
169	161	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			8,333.6	7,043.41
171	163	Casing Joints	5 1/2	20.00	P-110	Yes	42.70	Yes			8,246.4	7,130.57
173	165	Casing Joints	5 1/2	20.00	P-110	Yes	43.96	Yes			8,158.1	7,218.90
175	167	Casing Joints	5 1/2	20.00	P-110	Yes	41.61	Yes			8,071.4	7,305.61
177	169	Casing Joints	5 1/2	20.00	P-110	Yes	42.76	Yes			7,985.6	7,391.40
179	171	Casing Joints	5 1/2	20.00	P-110	Yes	40.10	Yes			7,900.4	7,476.63
180		Marker Joint H	5 1/2	20.00	P-110	Yes	20.03	Yes			7,880.3	7,496.66
181	172	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			7,835.9	7,541.12
182	173	Casing Joints	5 1/2	20.00	P-110	Yes	43.95	Yes			7,791.9	7,585.07
183	174	Casing Joints	5 1/2	20.00	P-110	Yes	42.06	Yes			7,749.9	7,627.13
184	175	Casing Joints	5 1/2	20.00	P-110	Yes	44.61	Yes			7,705.3	7,671.74
185	176	Casing Joints	5 1/2	20.00	P-110	Yes	43.35	Yes			7,661.9	7,715.09



Centralizer Depths

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API 05123517980000		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 9/30/2023 06:15		Rig Release Date 10/4/2023 03:00		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)
186	177	Casing Joints	5 1/2	20.00	P-110	Yes	44.36	Yes			7,617.6	7,759.45
187	178	Casing Joints	5 1/2	20.00	P-110	Yes	41.40	Yes			7,576.2	7,800.85
188	179	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			7,531.7	7,845.30
189	180	Casing Joints	5 1/2	20.00	P-110	Yes	39.49	Yes			7,492.2	7,884.79
190	181	Casing Joints	5 1/2	20.00	P-110	Yes	45.08	Yes			7,447.1	7,929.87
191	182	Casing Joints	5 1/2	20.00	P-110	Yes	43.29	Yes			7,403.8	7,973.16
192	183	Casing Joints	5 1/2	20.00	P-110	Yes	41.51	Yes			7,362.3	8,014.67
193	184	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			7,317.9	8,059.13
194	185	Casing Joints	5 1/2	20.00	P-110	Yes	43.93	Yes			7,273.9	8,103.06
195	186	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			7,229.5	8,147.49
196	187	Casing Joints	5 1/2	20.00	P-110	Yes	44.61	Yes			7,184.9	8,192.10
197	188	Casing Joints	5 1/2	20.00	P-110	Yes	37.05	Yes			7,147.9	8,229.15
198	189	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			7,103.4	8,273.58
199	190	Casing Joints	5 1/2	20.00	P-110	Yes	40.44	Yes			7,063.0	8,314.02
200	191	Casing Joints	5 1/2	20.00	P-110	Yes	42.60	Yes			7,020.4	8,356.62
201	192	Casing Joints	5 1/2	20.00	P-110	Yes	42.87	Yes			6,977.5	8,399.49
202	193	Casing Joints	5 1/2	20.00	P-110	Yes	43.63	Yes			6,933.9	8,443.12
203	194	Casing Joints	5 1/2	20.00	P-110	Yes	38.11	Yes			6,895.8	8,481.23
204	195	Casing Joints	5 1/2	20.00	P-110	Yes	42.42	Yes			6,853.4	8,523.65
205	196	Casing Joints	5 1/2	20.00	P-110	Yes	44.74	Yes			6,808.6	8,568.39
206	197	Casing Joints	5 1/2	20.00	P-110	Yes	42.38	Yes			6,766.2	8,610.77
207	198	Casing Joints	5 1/2	20.00	P-110	Yes	41.34	Yes			6,724.9	8,652.11
208	199	Casing Joints	5 1/2	20.00	P-110	Yes	44.73	Yes			6,680.2	8,696.84
209	200	Casing Joints	5 1/2	20.00	P-110	Yes	39.53	Yes			6,640.6	8,736.37
210	201	Casing Joints	5 1/2	20.00	P-110	Yes	37.20	Yes			6,603.4	8,773.57
211		Marker Joint L	5 1/2	20.00	P-110	Yes	19.53	Yes			6,583.9	8,793.10
212	202	Casing Joints	5 1/2	20.00	P-110	Yes	37.91	Yes			6,546.0	8,831.01
213	203	Casing Joints	5 1/2	20.00	P-110	Yes	38.56	Yes			6,507.4	8,869.57
214	204	Casing Joints	5 1/2	20.00	P-110	Yes	43.30	Yes			6,464.1	8,912.87
215	205	Casing Joints	5 1/2	20.00	P-110	Yes	44.73	Yes			6,419.4	8,957.60
216	206	Casing Joints	5 1/2	20.00	P-110	Yes	38.02	Yes			6,381.4	8,995.62



Centralizer Depths

Well Name: Hen 21N

Production, Set Depth: 15,377.0ftKB

API 05123517980000		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 9/30/2023 06:15	Rig Release Date 10/4/2023 03:00	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	37.75	Yes			6,343.6	9,033.37
218	208	Casing Joints	5 1/2	20.00	P-110	Yes	42.10	Yes			6,301.5	9,075.47
219	209	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			6,257.1	9,119.93
220	210	Casing Joints	5 1/2	20.00	P-110	Yes	44.75	Yes			6,212.3	9,164.68
221	211	Casing Joints	5 1/2	20.00	P-110	Yes	44.71	Yes			6,167.6	9,209.39
222	212	Casing Joints	5 1/2	20.00	P-110	Yes	44.72	Yes			6,122.9	9,254.11
223	213	Casing Joints	5 1/2	20.00	P-110	Yes	41.84	Yes			6,081.1	9,295.95
224	214	Casing Joints	5 1/2	20.00	P-110	Yes	35.98	Yes			6,045.1	9,331.93
225	215	Casing Joints	5 1/2	20.00	P-110	Yes	37.42	Yes			6,007.7	9,369.35
226	216	Casing Joints	5 1/2	20.00	P-110	Yes	44.58	Yes			5,963.1	9,413.93
227	217	Casing Joints	5 1/2	20.00	P-110	Yes	38.04	Yes			5,925.0	9,451.97
228	218	Casing Joints	5 1/2	20.00	P-110	Yes	38.73	Yes			5,886.3	9,490.70
229	219	Casing Joints	5 1/2	20.00	P-110	Yes	42.55	Yes			5,843.8	9,533.25
230	220	Casing Joints	5 1/2	20.00	P-110	Yes	44.87	Yes			5,798.9	9,578.12
231	221	Casing Joints	5 1/2	20.00	P-110	Yes	45.07	Yes			5,753.8	9,623.19
232	222	Casing Joints	5 1/2	20.00	P-110	Yes	40.25	Yes			5,713.6	9,663.44
233	223	Casing Joints	5 1/2	20.00	P-110	Yes	44.73	Yes			5,668.8	9,708.17
234	224	Casing Joints	5 1/2	20.00	P-110	Yes	45.07	Yes			5,623.8	9,753.24
235	225	Casing Joints	5 1/2	20.00	P-110	Yes	42.86	Yes			5,580.9	9,796.10
236	226	Casing Joints	5 1/2	20.00	P-110	Yes	37.96	Yes			5,542.9	9,834.06
237	227	Casing Joints	5 1/2	20.00	P-110	Yes	39.19	Yes			5,503.8	9,873.25
238	228	Casing Joints	5 1/2	20.00	P-110	Yes	35.16	Yes			5,468.6	9,908.41
239	229	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			5,424.1	9,952.86
240	230	Casing Joints	5 1/2	20.00	P-110	Yes	42.21	Yes			5,381.9	9,995.07
241	231	Casing Joints	5 1/2	20.00	P-110	Yes	44.73	Yes			5,337.2	10,039.80
242	232	Casing Joints	5 1/2	20.00	P-110	Yes	42.40	Yes			5,294.8	10,082.20
243	233	Casing Joints	5 1/2	20.00	P-110	Yes	42.93	Yes			5,251.9	10,125.13
244	234	Casing Joints	5 1/2	20.00	P-110	Yes	44.99	Yes			5,206.9	10,170.12
245	235	Casing Joints	5 1/2	20.00	P-110	Yes	36.73	Yes			5,170.2	10,206.85
246	236	Casing Joints	5 1/2	20.00	P-110	Yes	44.72	Yes			5,125.4	10,251.57
247	237	Casing Joints	5 1/2	20.00	P-110	Yes	41.37	Yes			5,084.1	10,292.94



Centralizer Depths

Well Name: Hen 21N

Production, Set Depth: 15,377.0ftKB

API 0512351798000		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 9/30/2023 06:15	Rig Release Date 10/4/2023 03:00	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	43.25	Yes			5,040.8	10,336.19
249	239	Casing Joints	5 1/2	20.00	P-110	Yes	44.87	Yes			4,995.9	10,381.06
250	240	Casing Joints	5 1/2	20.00	P-110	Yes	44.88	Yes			4,951.1	10,425.94
251	241	Casing Joints	5 1/2	20.00	P-110	Yes	43.27	Yes			4,907.8	10,469.21
252	242	Casing Joints	5 1/2	20.00	P-110	Yes	44.33	Yes			4,863.5	10,513.54
253	243	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			4,819.0	10,558.00
254	244	Casing Joints	5 1/2	20.00	P-110	Yes	44.71	Yes			4,774.3	10,602.71
255	245	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			4,729.8	10,647.16
256	246	Casing Joints	5 1/2	20.00	P-110	Yes	44.76	Yes			4,685.1	10,691.92
257	247	Casing Joints	5 1/2	20.00	P-110	Yes	45.37	Yes			4,639.7	10,737.29
258	248	Casing Joints	5 1/2	20.00	P-110	Yes	41.81	Yes			4,597.9	10,779.10
259	249	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			4,553.5	10,823.55
260	250	Casing Joints	5 1/2	20.00	P-110	Yes	43.18	Yes			4,510.3	10,866.73
261	251	Casing Joints	5 1/2	20.00	P-110	Yes	44.72	Yes			4,465.6	10,911.45
262	252	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			4,421.1	10,955.89
263	253	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			4,376.7	11,000.34
264	254	Casing Joints	5 1/2	20.00	P-110	Yes	42.29	Yes			4,334.4	11,042.63
265	255	Casing Joints	5 1/2	20.00	P-110	Yes	44.38	Yes			4,290.0	11,087.01
266	256	Casing Joints	5 1/2	20.00	P-110	Yes	44.89	Yes			4,245.1	11,131.90
267	257	Casing Joints	5 1/2	20.00	P-110	Yes	42.97	Yes			4,202.1	11,174.87
268	258	Casing Joints	5 1/2	20.00	P-110	Yes	44.90	Yes			4,157.2	11,219.77
269	259	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			4,112.8	11,264.22
270	260	Casing Joints	5 1/2	20.00	P-110	Yes	44.48	Yes			4,068.3	11,308.70
271	261	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			4,023.9	11,353.15
272	262	Casing Joints	5 1/2	20.00	P-110	Yes	42.00	Yes			3,981.9	11,395.15
273	263	Casing Joints	5 1/2	20.00	P-110	Yes	44.73	Yes			3,937.1	11,439.88
274	264	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			3,892.7	11,484.33
275	265	Casing Joints	5 1/2	20.00	P-110	Yes	42.09	Yes			3,850.6	11,526.42
276	266	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			3,806.1	11,570.87
277	267	Casing Joints	5 1/2	20.00	P-110	Yes	43.04	Yes			3,763.1	11,613.91
278	268	Casing Joints	5 1/2	20.00	P-110	Yes	44.47	Yes			3,718.6	11,658.38



Centralizer Depths

Well Name: Hen 21N

Production, Set Depth: 15,377.0ftKB

API 05123517980000		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 9/30/2023 06:15		Rig Release Date 10/4/2023 03:00		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)
279	269	Casing Joints	5 1/2	20.00	P-110	Yes	44.03	Yes			3,674.6	11,702.41
280	270	Casing Joints	5 1/2	20.00	P-110	Yes	42.90	Yes			3,631.7	11,745.31
281	271	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			3,587.2	11,789.76
282	272	Casing Joints	5 1/2	20.00	P-110	Yes	44.90	Yes			3,542.3	11,834.66
283	273	Casing Joints	5 1/2	20.00	P-110	Yes	42.90	Yes			3,499.4	11,877.56
285	274	Casing Joints	5 1/2	20.00	P-110	Yes	44.88	Yes			3,439.5	11,937.54
286	275	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			3,395.0	11,981.97
287	276	Casing Joints	5 1/2	20.00	P-110	Yes	45.01	Yes			3,350.0	12,026.98
288	277	Casing Joints	5 1/2	20.00	P-110	Yes	42.91	Yes			3,307.1	12,069.89
289	278	Casing Joints	5 1/2	20.00	P-110	Yes	44.87	Yes			3,262.2	12,114.76
290	279	Casing Joints	5 1/2	20.00	P-110	Yes	43.07	Yes			3,219.2	12,157.83
291	280	Casing Joints	5 1/2	20.00	P-110	Yes	44.89	Yes			3,174.3	12,202.72
292	281	Casing Joints	5 1/2	20.00	P-110	Yes	43.80	Yes			3,130.5	12,246.52
293	282	Casing Joints	5 1/2	20.00	P-110	Yes	42.91	Yes			3,087.6	12,289.43
294	283	Casing Joints	5 1/2	20.00	P-110	Yes	45.07	Yes			3,042.5	12,334.50
295	284	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			2,998.1	12,378.95
296	285	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			2,953.6	12,423.39
297	286	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			2,909.2	12,467.84
298	287	Casing Joints	5 1/2	20.00	P-110	Yes	43.36	Yes			2,865.8	12,511.20
299	288	Casing Joints	5 1/2	20.00	P-110	Yes	44.45	Yes			2,821.4	12,555.65
300	289	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			2,776.9	12,600.11
301	290	Casing Joints	5 1/2	20.00	P-110	Yes	42.74	Yes			2,734.2	12,642.85
302	291	Casing Joints	5 1/2	20.00	P-110	Yes	44.71	Yes			2,689.4	12,687.56
303	292	Casing Joints	5 1/2	20.00	P-110	Yes	44.63	Yes			2,644.8	12,732.19
304	293	Casing Joints	5 1/2	20.00	P-110	Yes	43.72	Yes			2,601.1	12,775.91
305	294	Casing Joints	5 1/2	20.00	P-110	Yes	42.09	Yes			2,559.0	12,818.00
306	295	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			2,514.6	12,862.44
307	296	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			2,470.1	12,906.90
308	297	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			2,425.7	12,951.34
309	298	Casing Joints	5 1/2	20.00	P-110	Yes	44.88	Yes			2,380.8	12,996.22
310	299	Casing Joints	5 1/2	20.00	P-110	Yes	45.07	Yes			2,335.7	13,041.29



Centralizer Depths

Well Name: Hen 21N

Production, Set Depth: 15,377.0ftKB

API 0512351798000		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 9/30/2023 06:15		Rig Release Date 10/4/2023 03:00		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	44.88	Yes			2,290.8	13,086.17
312	301	Casing Joints	5 1/2	20.00	P-110	Yes	44.72	Yes			2,246.1	13,130.89
313	302	Casing Joints	5 1/2	20.00	P-110	Yes	44.96	Yes			2,201.2	13,175.85
314	303	Casing Joints	5 1/2	20.00	P-110	Yes	42.42	Yes			2,158.7	13,218.27
315	304	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			2,114.3	13,262.71
316	305	Casing Joints	5 1/2	20.00	P-110	Yes	43.65	Yes			2,070.6	13,306.36
317	306	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			2,026.2	13,350.79
318	307	Casing Joints	5 1/2	20.00	P-110	Yes	44.86	Yes			1,981.4	13,395.65
319	308	Casing Joints	5 1/2	20.00	P-110	Yes	38.89	Yes			1,942.5	13,434.54
320	309	Casing Joints	5 1/2	20.00	P-110	Yes	44.46	Yes			1,898.0	13,479.00
321	310	Casing Joints	5 1/2	20.00	P-110	Yes	41.79	Yes			1,856.2	13,520.79
322	311	Casing Joints	5 1/2	20.00	P-110	Yes	43.36	Yes			1,812.9	13,564.15
323	312	Casing Joints	5 1/2	20.00	P-110	Yes	38.92	Yes			1,773.9	13,603.07
324	313	Casing Joints	5 1/2	20.00	P-110	Yes	44.71	Yes			1,729.2	13,647.78
325	314	Casing Joints	5 1/2	20.00	P-110	Yes	42.19	Yes			1,687.0	13,689.97
326	315	Casing Joints	5 1/2	20.00	P-110	Yes	39.35	Yes			1,647.7	13,729.32
327	316	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			1,602.9	13,774.11
328	317	Casing Joints	5 1/2	20.00	P-110	Yes	44.89	Yes			1,558.0	13,819.00
329	318	Casing Joints	5 1/2	20.00	P-110	Yes	44.72	Yes			1,513.3	13,863.72
330	319	Casing Joints	5 1/2	20.00	P-110	Yes	39.50	Yes			1,473.8	13,903.22
331	320	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			1,429.3	13,947.66
332	321	Casing Joints	5 1/2	20.00	P-110	Yes	36.68	Yes			1,392.7	13,984.34
333	322	Casing Joints	5 1/2	20.00	P-110	Yes	40.39	Yes			1,352.3	14,024.73
334	323	Casing Joints	5 1/2	20.00	P-110	Yes	43.40	Yes			1,308.9	14,068.13
335	324	Casing Joints	5 1/2	20.00	P-110	Yes	35.04	Yes			1,273.8	14,103.17
336	325	Casing Joints	5 1/2	20.00	P-110	Yes	41.27	Yes			1,232.6	14,144.44
337	326	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			1,188.1	14,188.88
338	327	Casing Joints	5 1/2	20.00	P-110	Yes	44.71	Yes			1,143.4	14,233.59
339	328	Casing Joints	5 1/2	20.00	P-110	Yes	44.79	Yes			1,098.6	14,278.38
340	329	Casing Joints	5 1/2	20.00	P-110	Yes	44.43	Yes			1,054.2	14,322.81
341	330	Casing Joints	5 1/2	20.00	P-110	Yes	43.44	Yes			1,010.8	14,366.25



Centralizer Depths

Well Name: Hen 21N

Production, Set Depth: 15,377.0ftKB

API 05123517980000		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 9/30/2023 06:15	Rig Release Date 10/4/2023 03:00	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	44.72	Yes			966.0	14,410.97
343	332	Casing Joints	5 1/2	20.00	P-110	Yes	40.04	Yes			926.0	14,451.01
344	333	Casing Joints	5 1/2	20.00	P-110	Yes	36.81	Yes			889.2	14,487.82
345	334	Casing Joints	5 1/2	20.00	P-110	Yes	44.44	Yes			844.7	14,532.26
346	335	Casing Joints	5 1/2	20.00	P-110	Yes	43.31	Yes			801.4	14,575.57
347	336	Casing Joints	5 1/2	20.00	P-110	Yes	39.45	Yes			762.0	14,615.02
348	337	Casing Joints	5 1/2	20.00	P-110	Yes	44.60	Yes			717.4	14,659.62
349	338	Casing Joints	5 1/2	20.00	P-110	Yes	44.69	Yes			672.7	14,704.31
350	339	Casing Joints	5 1/2	20.00	P-110	Yes	38.70	Yes			634.0	14,743.01
351	340	Casing Joints	5 1/2	20.00	P-110	Yes	43.07	Yes			590.9	14,786.08
352	341	Casing Joints	5 1/2	20.00	P-110	Yes	42.55	Yes			548.4	14,828.63
353	342	Casing Joints	5 1/2	20.00	P-110	Yes	44.73	Yes			503.6	14,873.36