



# HR Vertilog

## Magnetic Flux Leakage Inspection

Advanced Analysis

Company	Southern California Gas Company
Well	Porter 44
Field	Aliso Canyon
County	Los Angeles
State	California

Location:  
1720' S & 2994' W, From Station 84

Section 28	Township 3N	Range 16W	
Date	Feb. 15, 2016		
Service Order	US105596J		
Recorded by	Sid Gornto		
Witnessed by	Tom McMahon		
API Serial No.	04-037-00731		
Permanent Datum:	GL	Elevation: 2193.500 ft.	Depth 7639.000
Log Measured From:	K.B.	11.000 ft. above Perm. Datum	Btm. Log Interval 7634.480
Drilling Measured From:	K.B.	0.000 ft. above Perm. Datum	Top Log Interval 16.170
			Fluid Type HEC POLYMER

### Casing Data

Size	Weight	Grade	From	To	Length
7 inch	23.0 lb/ft	N-80	0	673	673.0
7 inch	23.0 lb/ft	J-55	673	4615	3942.0
7 inch	23.0 lb/ft	S-95	4615	5019	404.0
7 inch	23.0 lb/ft	N-80	5019	6798	1779.0
7 inch	26.0 lb/ft	N-80	6798	7805	1007.0
5	15.5 lb/ft	N/A	7639	8039	400.0
11 3/4 inch	42.0 lb/ft	H-40	0	530	530.0

Software Version 6.0.0.0

### Equipment Data

Run	Trip	Tool Type	Tool Series	Serial Number	Position
1	1	HRVRT MFL	4997	PA10409816	LOWER
1	1	HRVRT MFL	4997	QA10409824	UPPER
1	1	HRVRT TELEM	4993	1060726	

### Calibration Data

Calibration File Name	4997-7-001-PA10409816-U.CAL
Date of Calibration	04/03/2015 09:27
Calibration Identifier	B7AF82F3-FAAB-4CE0-9570-44283CC7656D
Tool Number	4997-00
Calibrator Number	4997-7-001
Calibrator Size	(7 In - 178 mm)
Calibration Source File	20150403_083948_MEM.MVL
Calibration Software Rev	Microvision 32-bit 7.3.2.2
Comment	RMA1167

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In making interpretations of logs our employees will give customer the benefit of their best judgment. But since all interpretations are opinions based on inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees.

### Remarks

### Interpretation

HRVRT Analysis was depth correlated to SBT/GR logged 16 OCT 2016.  
Top two joints are short joints.  
Seamless pipe noise can be seen in some joint. see example joint # J66.  
Tool responses can be seen throughout the log interval that is possibly a result of manufacturing or metal inclusions. These features were not classified as metal loss. See example at 1190.4 ft.  
Casing Patch indicated on casing record from 3971' - 4012' appears to have been removed.  
Metal loss that was detected for point 3999' to 4002' in joint 95 appears to be external metal loss. The response that is seen on the discriminator sensor is due to severe external metal loss. Although the HRVRT is not a deformation tool, this area appears to have some possible deformation based on the FL response.

17.31 ft Hardware - External Casing Head Response.  
531.61 ft Hardware - Bottom of 11 3/4" External Casing.  
673.26 ft 7" Casing grade change; 23# N80 above, 23# J55 below.  
4283.09 ft Hardware - Possible DV Tool.  
4617.05 ft 7" Casing grade change; 23# N80 above, 23# J55 below.

4617.95 ft 7" Casing grade change; 23# S95 above, 23# S95 below.  
 5022.23 ft 7" Casing grade change; 23# S95 above, 23# N80 below.  
 6800.07 ft 7" Casing weight change; 23# N80 above, 26# N80 below.

There were no Centralizers or Scratchers observed through the recorded interval.

### Joint Interpretation Summary

<u>Joint</u>	<u>From</u>	<u>To</u>	<u>Length</u>	<u>Class</u>	<u>Max Depth</u>	<u>Position</u>	<u>ID/OD</u>
1	16.17	18.89	2.72	Class 1	-	-	-
2	18.89	28.30	9.41	Class 1	-	-	-
3	28.30	70.22	41.92	Class 1	-	-	-
4	70.22	113.46	43.24	Class 1	-	-	-
5	113.46	155.01	41.55	Class 1	-	-	-
6	155.01	196.49	41.48	Class 1	-	-	-
7	196.49	239.80	43.31	Class 1	-	-	-
8	239.80	283.97	44.17	Class 1	-	-	-
9	283.97	326.79	42.82	Class 1	-	-	-
10	326.79	370.13	43.34	Class 1	-	-	-
11	370.13	414.42	44.29	Class 1	-	-	-
12	414.42	457.70	43.28	Class 1	-	-	-
13	457.70	501.47	43.77	Class 1	-	-	-
14	501.47	544.12	42.65	Class 1	-	-	-
15	544.12	586.69	42.57	Class 1	-	-	-
16	586.69	629.28	42.59	Class 1	-	-	-
17	629.28	673.26	43.98	Class 1	-	-	-
18	673.26	711.87	38.61	Class 1	-	-	-
19	711.87	755.17	43.30	Class 1	19.0%	750.84	OD
20	755.17	792.12	36.95	Class 1	-	-	-
21	792.12	834.51	42.39	Class 1	-	-	-
22	834.51	876.99	42.48	Class 1	-	-	-
23	876.99	919.12	42.13	Class 1	-	-	-
24	919.12	962.37	43.25	Class 1	-	-	-
25	962.37	1005.40	43.03	Class 1	-	-	-
26	1005.40	1049.67	44.27	Class 1	-	-	-
27	1049.67	1093.23	43.56	Class 1	-	-	-
28	1093.23	1136.54	43.31	Class 1	-	-	-
29	1136.54	1178.97	42.43	Class 1	-	-	-
30	1178.97	1222.88	43.91	Class 1	-	-	-
31	1222.88	1267.38	44.50	Class 1	18.0%	1265.06	OD
32	1267.38	1311.74	44.36	Class 1	-	-	-
33	1311.74	1354.82	43.08	Class 1	-	-	-
34	1354.82	1398.24	43.42	Class 1	-	-	-
35	1398.24	1443.00	44.76	Class 1	-	-	-
36	1443.00	1486.51	43.51	Class 1	-	-	-
37	1486.51	1529.18	42.67	Class 1	-	-	-
38	1529.18	1573.24	44.06	Class 1	-	-	-
39	1573.24	1616.09	42.85	Class 1	-	-	-
40	1616.09	1657.62	41.53	Class 1	-	-	-
41	1657.62	1699.45	41.83	Class 1	-	-	-
42	1699.45	1743.21	43.76	Class 1	-	-	-
43	1743.21	1786.47	43.26	Class 1	-	-	-
44	1786.47	1830.02	43.55	Class 1	-	-	-
45	1830.02	1873.23	43.21	Class 1	-	-	-
46	1873.23	1916.10	42.87	Class 1	-	-	-
47	1916.10	1958.72	42.62	Class 1	-	-	-
48	1958.72	2002.83	44.11	Class 1	-	-	-
49	2002.83	2045.58	42.75	Class 1	-	-	-

49	2082.00	2045.58	42.75	Class 1	-	-	-	
50	2045.58	2088.79	43.21	Class 1	-	-	-	
51	2088.79	2132.51	43.72	Class 1	-	-	-	
52	2132.51	2176.32	43.81	Class 1	-	-	-	
53	2176.32	2220.54	44.22	Class 1	-	-	-	
54	2220.54	2264.20	43.66	Class 1	-	-	-	
55	2264.20	2305.33	41.13	Class 1	-	-	-	
56	2305.33	2348.53	43.20	Class 1	-	-	-	
57	2348.53	2390.14	41.61	Class 1	-	-	-	
58	2390.14	2432.97	42.83	Class 1	-	-	-	
59	2432.97	2473.73	40.76	Class 1	-	-	-	
60	2473.73	2517.28	43.55	Class 1	-	-	-	
61	2517.28	2559.45	42.17	Class 1	-	-	-	
62	2559.45	2601.64	42.19	Class 1	-	-	-	
63	2601.64	2644.91	43.27	Class 1	-	-	-	
64	2644.91	2688.05	43.14	Class 1	-	-	-	
65	2688.05	2732.97	44.92	Class 1	-	-	-	
66	2732.97	2776.06	43.09	Class 1	-	-	-	
67	2776.06	2819.59	43.53	Class 1	-	-	-	
68	2819.59	2862.17	42.58	Class 1	-	-	-	
69	2862.17	2905.30	43.13	Class 1	-	-	-	
70	2905.30	2948.39	43.09	Class 1	-	-	-	
71	2948.39	2991.67	43.28	Class 1	-	-	-	
72	2991.67	3034.47	42.80	Class 1	-	-	-	
73	3034.47	3078.22	43.75	Class 1	-	-	-	
74	3078.22	3121.31	43.09	Class 1	-	-	-	
75	3121.31	3163.59	42.28	Class 1	-	-	-	
76	3163.59	3207.84	44.25	Class 1	-	-	-	
77	3207.84	3251.69	43.85	Class 1	-	-	-	
78	3251.69	3295.67	43.98	Class 1	20.0%	3261.39	OD	
79	3295.67	3339.35	43.68	Class 1	-	-	-	
80	3339.35	3382.71	43.36	Class 1	-	-	-	
81	3382.71	3426.55	43.84	Class 1	-	-	-	
82	3426.55	3470.35	43.80	Class 1	-	-	-	
83	3470.35	3512.20	41.85	Class 1	-	-	-	
84	3512.20	3553.72	41.52	Class 1	-	-	-	
85	3553.72	3596.38	42.66	Class 1	-	-	-	
86	3596.38	3638.92	42.54	Class 1	-	-	-	
87	3638.92	3681.56	42.64	Class 1	-	-	-	
88	3681.56	3725.73	44.17	Class 1	-	-	-	
89	3725.73	3770.52	44.79	Class 1	-	-	-	
90	3770.52	3814.85	44.33	Class 1	-	-	-	
91	3814.85	3854.92	40.07	Class 1	-	-	-	
92	3854.92	3897.14	42.22	Class 1	-	-	-	
93	3897.14	3939.58	42.44	Class 1	-	-	-	
94	3939.58	3983.15	43.57	Class 1	-	-	-	
95	3983.15	4026.78	43.63	Class 4	88.0%	3999.72	OD	Failed
96	4026.78	4069.37	42.59	Class 1	-	-	-	
97	4069.37	4112.40	43.03	Class 1	-	-	-	
98	4112.40	4155.40	43.00	Class 1	-	-	-	
99	4155.40	4196.65	41.25	Class 1	-	-	-	
100	4196.65	4240.51	43.86	Class 1	-	-	-	
101	4240.51	4284.25	43.74	Class 1	-	-	-	
102	4284.25	4328.92	44.67	Class 1	-	-	-	
103	4328.92	4372.59	43.67	Class 1	-	-	-	
104	4372.59	4414.07	41.48	Class 1	-	-	-	
105	4414.07	4457.05	42.98	Class 1	-	-	-	
106	4457.05	4501.77	44.72	Class 1	-	-	-	
107	4501.77	4539.13	37.36	Class 1	-	-	-	
108	4539.13	4575.63	36.50	Class 1	-	-	-	
109	4575.63	4617.95	42.32	Class 1	-	-	-	
110	4617.95	4664.76	46.81	Class 1	-	-	-	
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112	4711.52	4750.64	39.12	Class 1	-	-	-	

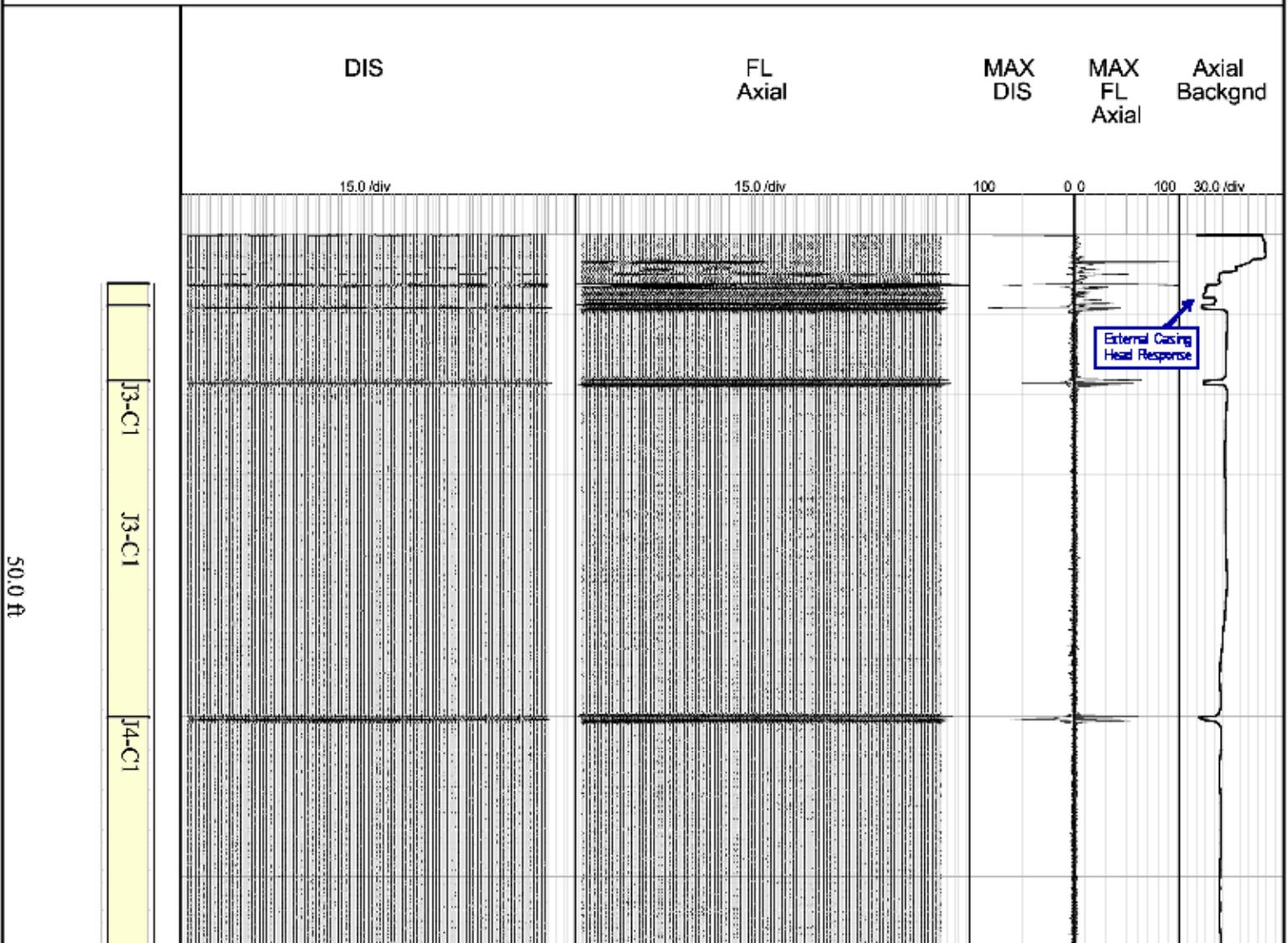
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116	4882.16	4928.69	46.53	Class 1	-	-	-
117	4928.69	4975.12	46.43	Class 1	-	-	-
118	4975.12	5022.23	47.11	Class 1	-	-	-
119	5022.23	5066.33	44.10	Class 1	-	-	-
120	5066.33	5110.22	43.89	Class 1	-	-	-
121	5110.22	5152.24	42.02	Class 1	-	-	-
122	5152.24	5196.52	44.28	Class 1	-	-	-
123	5196.52	5241.30	44.78	Class 1	-	-	-
124	5241.30	5285.42	44.12	Class 1	-	-	-
125	5285.42	5328.86	43.44	Class 1	-	-	-
126	5328.86	5373.11	44.25	Class 1	-	-	-
127	5373.11	5417.58	44.47	Class 1	-	-	-
128	5417.58	5461.40	43.82	Class 1	-	-	-
129	5461.40	5503.40	42.00	Class 1	-	-	-
130	5503.40	5548.43	45.03	Class 1	-	-	-
131	5548.43	5592.05	43.62	Class 1	-	-	-
132	5592.05	5636.14	44.09	Class 1	-	-	-
133	5636.14	5680.17	44.03	Class 1	-	-	-
134	5680.17	5723.44	43.27	Class 1	-	-	-
135	5723.44	5766.12	42.68	Class 1	-	-	-
136	5766.12	5809.92	43.80	Class 1	-	-	-
137	5809.92	5853.52	43.60	Class 1	-	-	-
138	5853.52	5896.25	42.73	Class 1	-	-	-
139	5896.25	5940.23	43.98	Class 1	-	-	-
140	5940.23	5981.32	41.09	Class 1	-	-	-
141	5981.32	6024.93	43.61	Class 1	-	-	-
142	6024.93	6068.05	43.12	Class 1	-	-	-
143	6068.05	6110.73	42.68	Class 1	-	-	-
144	6110.73	6155.25	44.52	Class 1	-	-	-
145	6155.25	6199.46	44.21	Class 1	-	-	-
146	6199.46	6243.54	44.08	Class 1	-	-	-
147	6243.54	6287.67	44.13	Class 1	-	-	-
148	6287.67	6331.94	44.27	Class 1	-	-	-
149	6331.94	6376.31	44.37	Class 1	-	-	-
150	6376.31	6421.68	45.37	Class 1	-	-	-
151	6421.68	6464.95	43.27	Class 1	-	-	-
152	6464.95	6508.88	43.93	Class 1	-	-	-
153	6508.88	6552.72	43.84	Class 1	-	-	-
154	6552.72	6592.15	39.43	Class 1	-	-	-
155	6592.15	6627.45	35.30	Class 1	-	-	-
156	6627.45	6670.67	43.22	Class 1	-	-	-
157	6670.67	6714.27	43.60	Class 1	-	-	-
158	6714.27	6756.70	42.43	Class 1	-	-	-
159	6756.70	6800.07	43.37	Class 1	-	-	-
160	6800.07	6831.54	31.47	Class 1	-	-	-
161	6831.54	6862.81	31.27	Class 1	-	-	-
162	6862.81	6894.11	31.30	Class 1	-	-	-
163	6894.11	6924.93	30.82	Class 1	-	-	-
164	6924.93	6952.66	27.73	Class 1	-	-	-
165	6952.66	6983.73	31.07	Class 1	-	-	-
166	6983.73	7011.45	27.72	Class 1	-	-	-
167	7011.45	7042.55	31.10	Class 1	-	-	-
168	7042.55	7073.95	31.40	Class 1	-	-	-
169	7073.95	7104.29	30.34	Class 1	-	-	-
170	7104.29	7135.22	30.93	Class 1	-	-	-
171	7135.22	7167.18	31.96	Class 1	-	-	-
172	7167.18	7199.38	32.20	Class 1	-	-	-
173	7199.38	7229.58	30.20	Class 1	-	-	-
174	7229.58	7257.84	28.26	Class 1	-	-	-
175	7257.84	7288.31	30.47	Class 1	-	-	-
176	7288.31	7317.53	29.22	Class 1	-	-	-

176	7200.51	7317.55	29.22	Class 1	-	-	-
177	7317.53	7348.68	31.15	Class 1	-	-	-
178	7348.68	7380.22	31.54	Class 1	-	-	-
179	7380.22	7412.30	32.08	Class 1	-	-	-
180	7412.30	7443.76	31.46	Class 1	-	-	-
181	7443.76	7475.02	31.26	Class 1	-	-	-
182	7475.02	7501.69	26.67	Class 1	-	-	-
183	7501.69	7528.38	26.69	Class 1	-	-	-
184	7528.38	7558.21	29.83	Class 2	20.0%	7529.61	ID
185	7558.21	7589.63	31.42	Class 1	-	-	-
186	7589.63	7622.47	32.84	Class 1	-	-	-
187	7622.47	7634.48	12.01	Class 1	-	-	-

Southern California Gas Company Porter 44  
File 20160215\_151731\_RSP\_0\_0\_0\_0\_0\_0\_0\_0\_0\_0.mvl

### Main Log 5" / 100'

Class 1 0 - 20%	Class 2 20 - 40%	Class 3 40 - 60%	Class 4 60 - 100%
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350.0 ft

400.0 ft

450.0 ft

500.0 ft

J10-C1

J10-C1

J11-C1

J11-C1

J12-C1

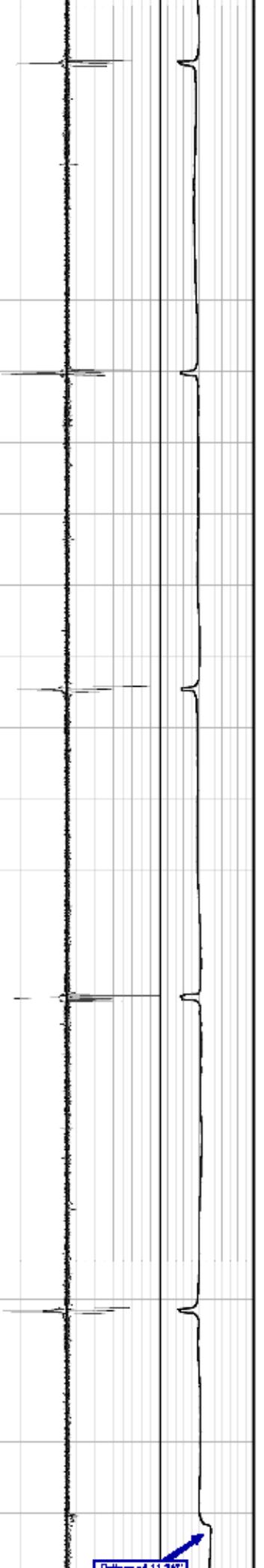
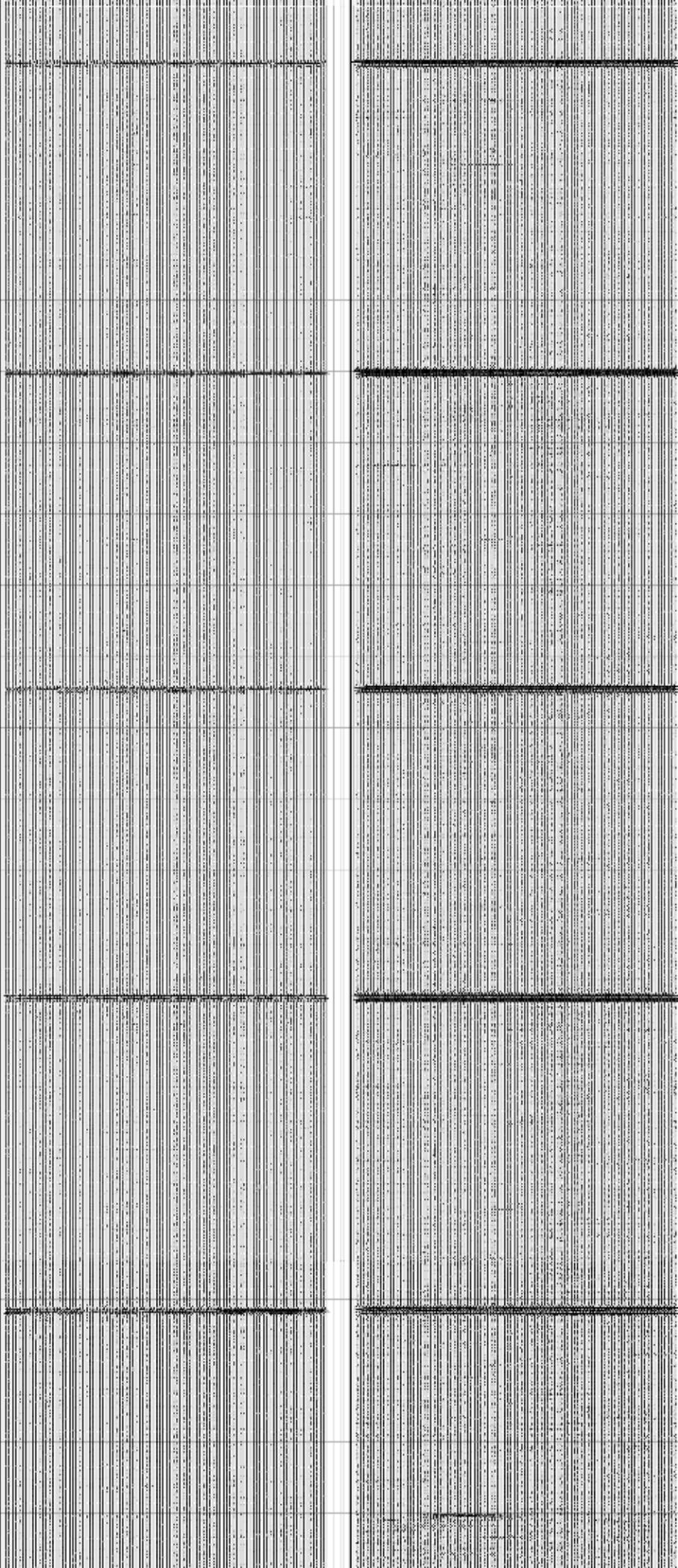
J12-C1

J13-C1

J13-C1

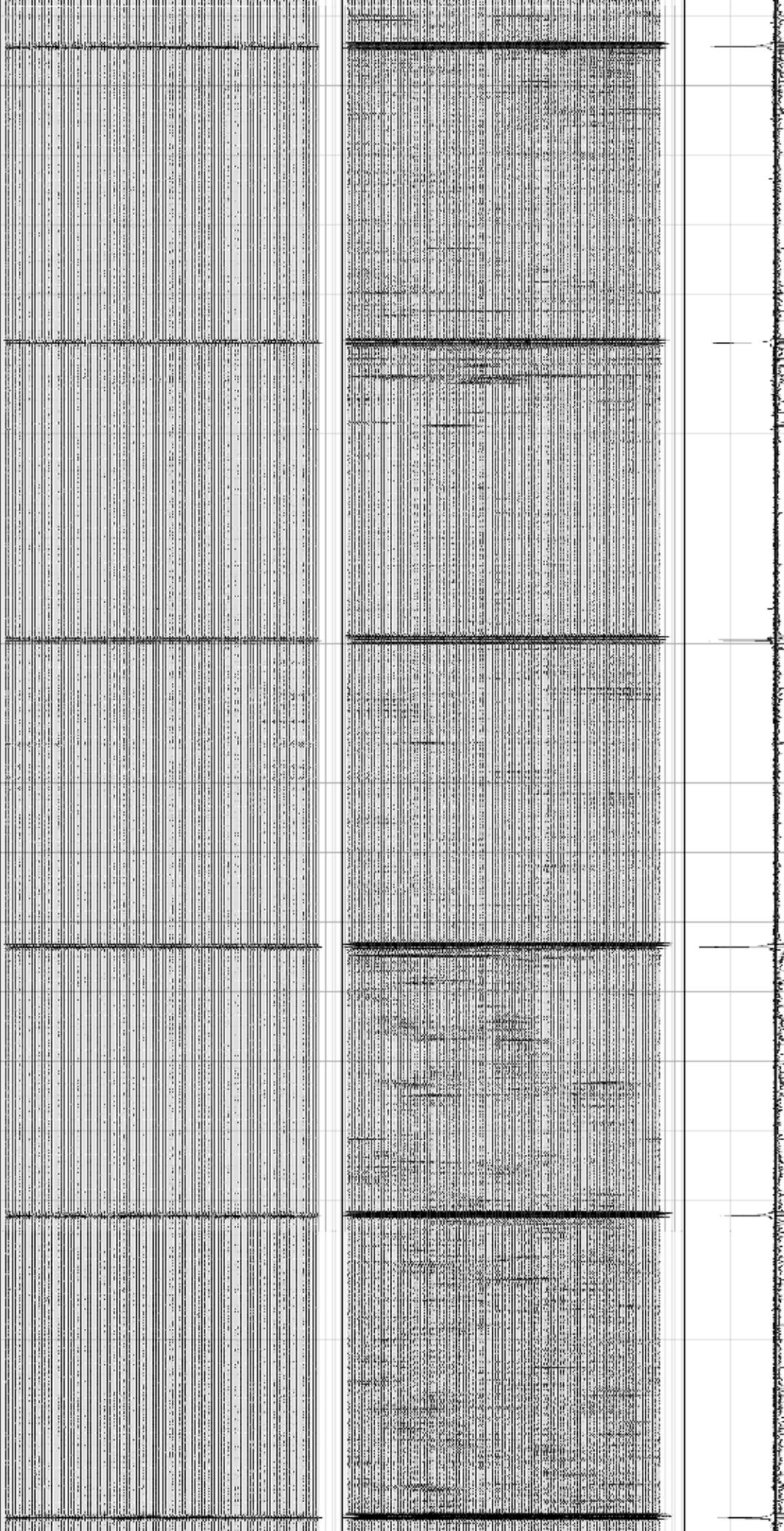
J14-C1

J14-C1



bottom of 11 3/4" External Casing

7" Casing Grade Change: NED Above, JES Below



J15-C1 J15-C1 J16-C1 J16-C1 J17-C1 J17-C1 J18-C1 J18-C1 J19-C1 J19-C1

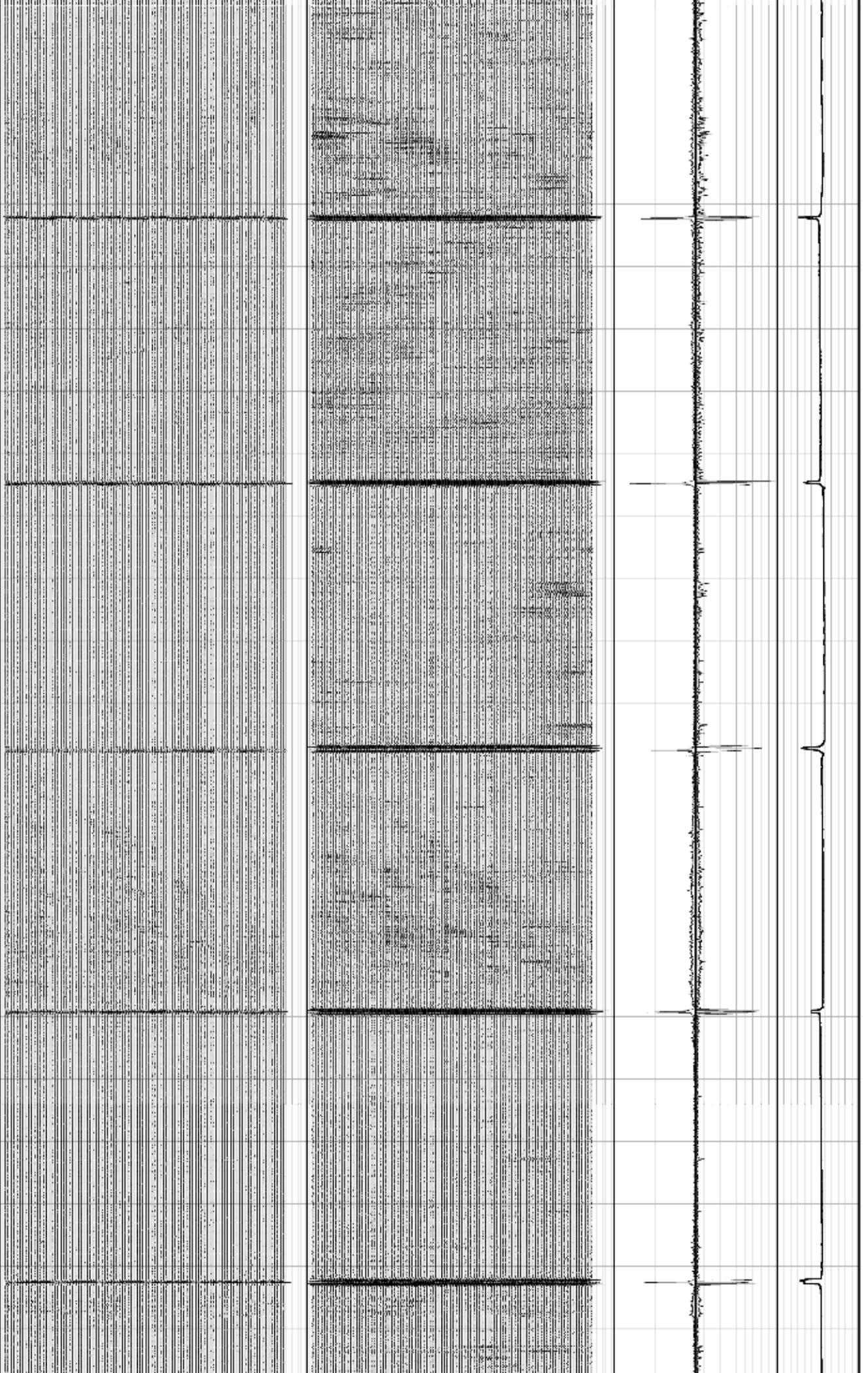
550.0 ft

600.0 ft

650.0 ft

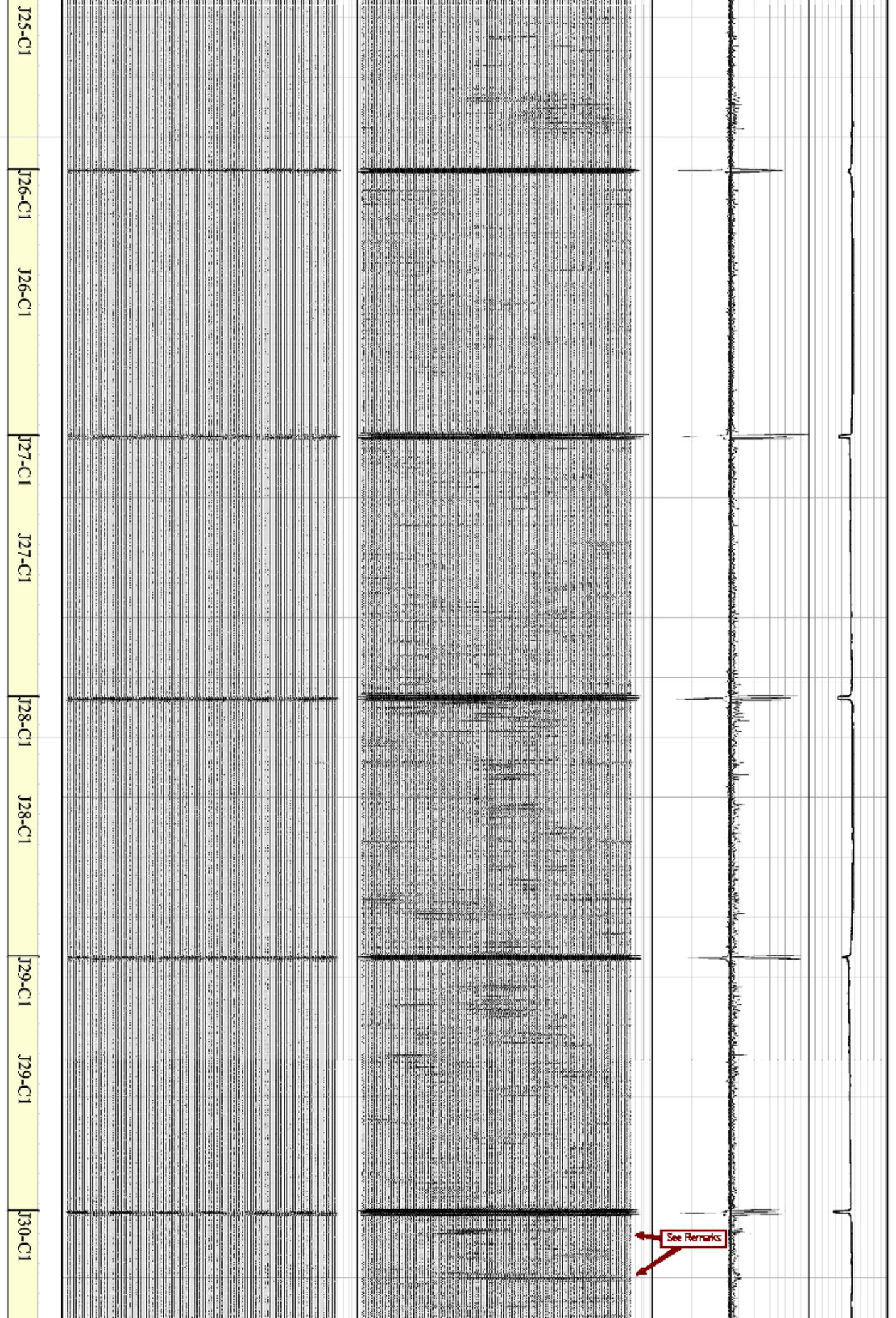
700.0 ft

750.0 ft



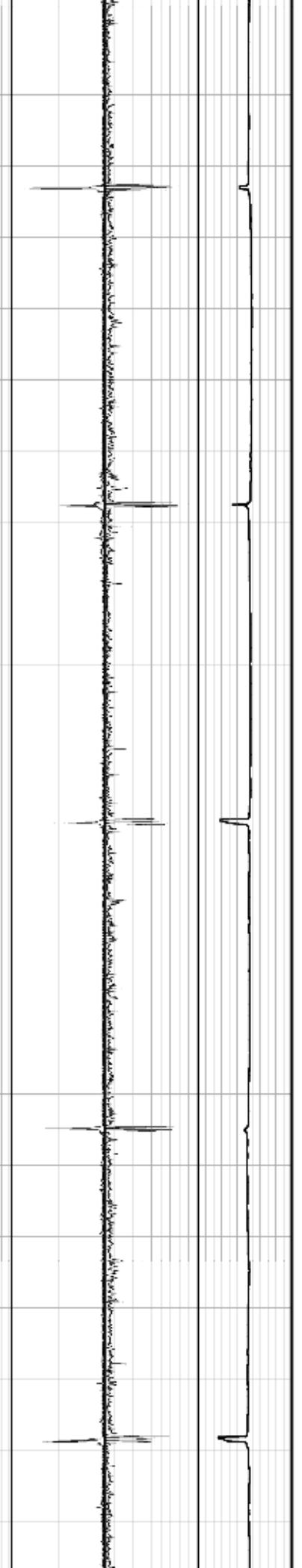
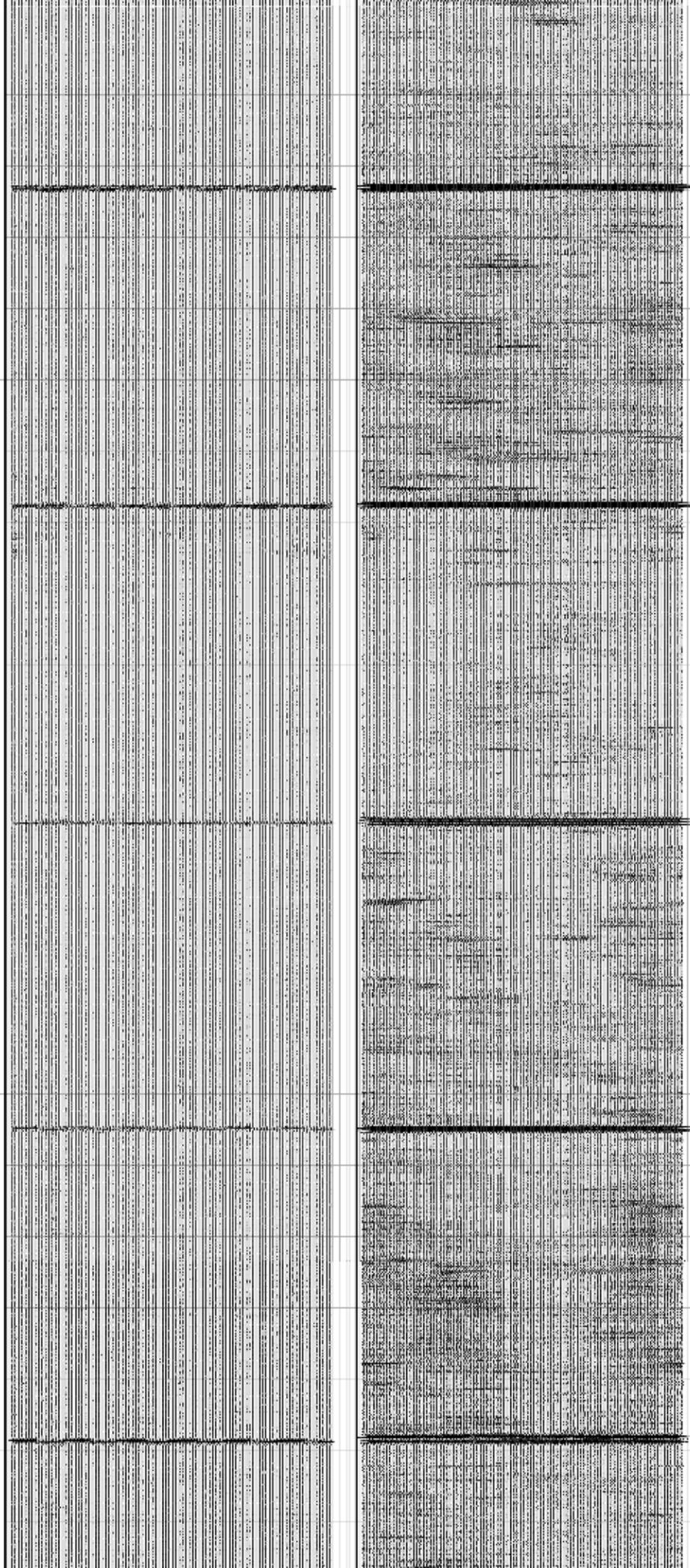
J20-C1 J20-C1 J21-C1 J21-C1 J22-C1 J22-C1 J23-C1 J23-C1 J24-C1 J24-C1

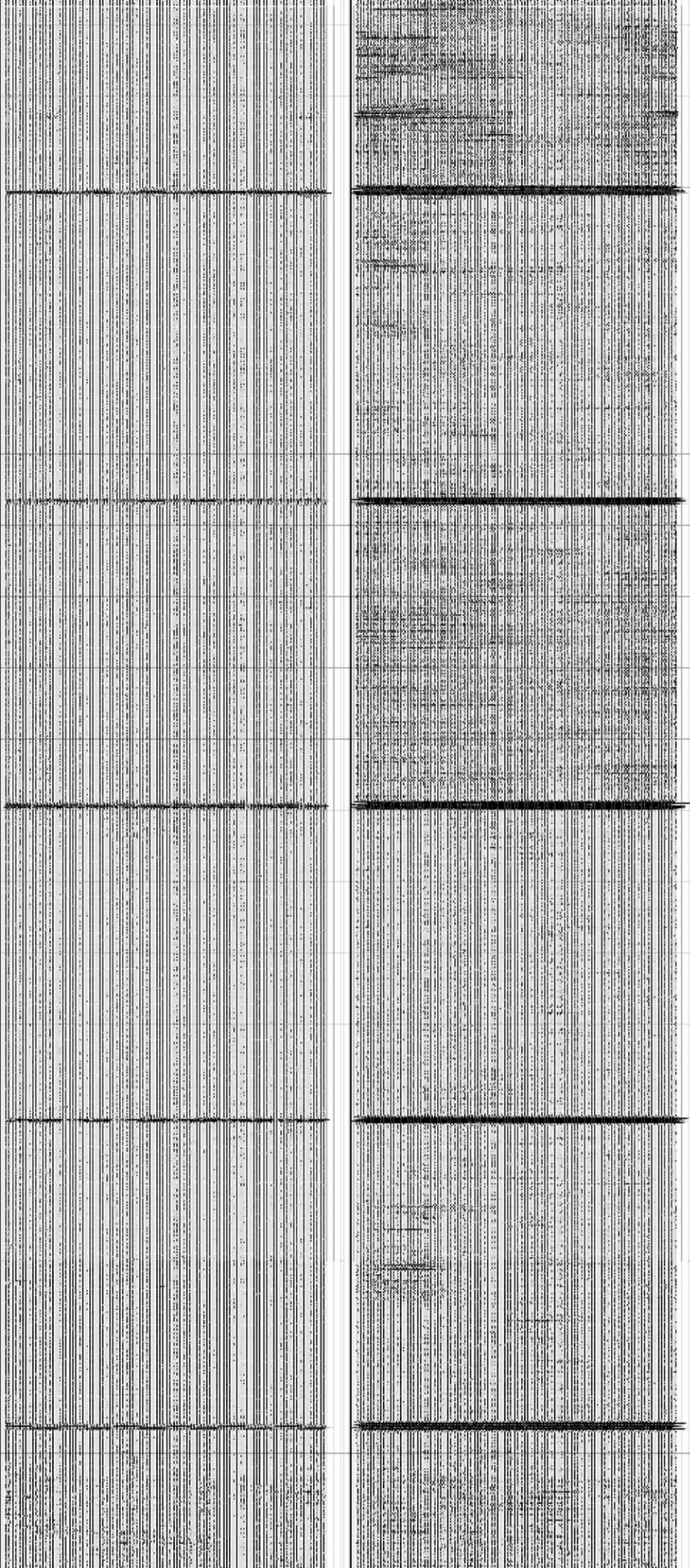
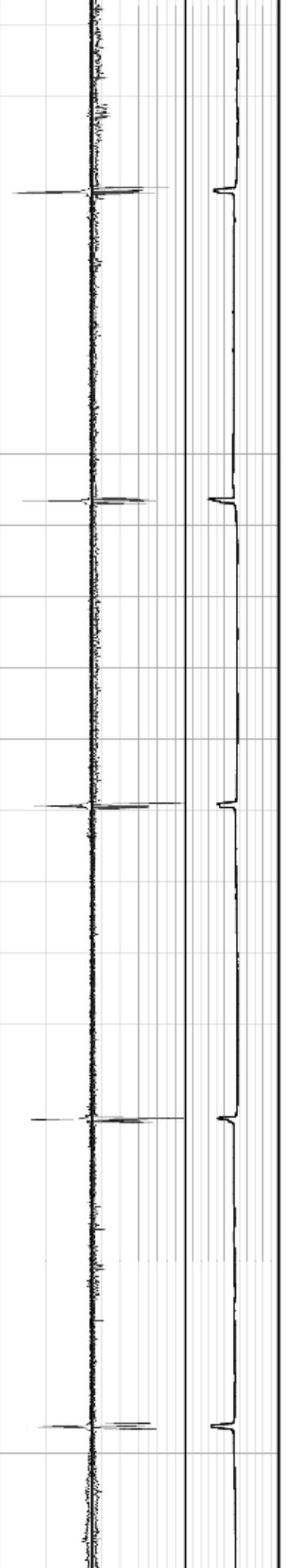
ft 800.0 ft 850.0 ft 900.0 ft 950.0 ft



1200.0 ft      1250.0 ft      1300.0 ft      1350.0 ft      1400.0 ft

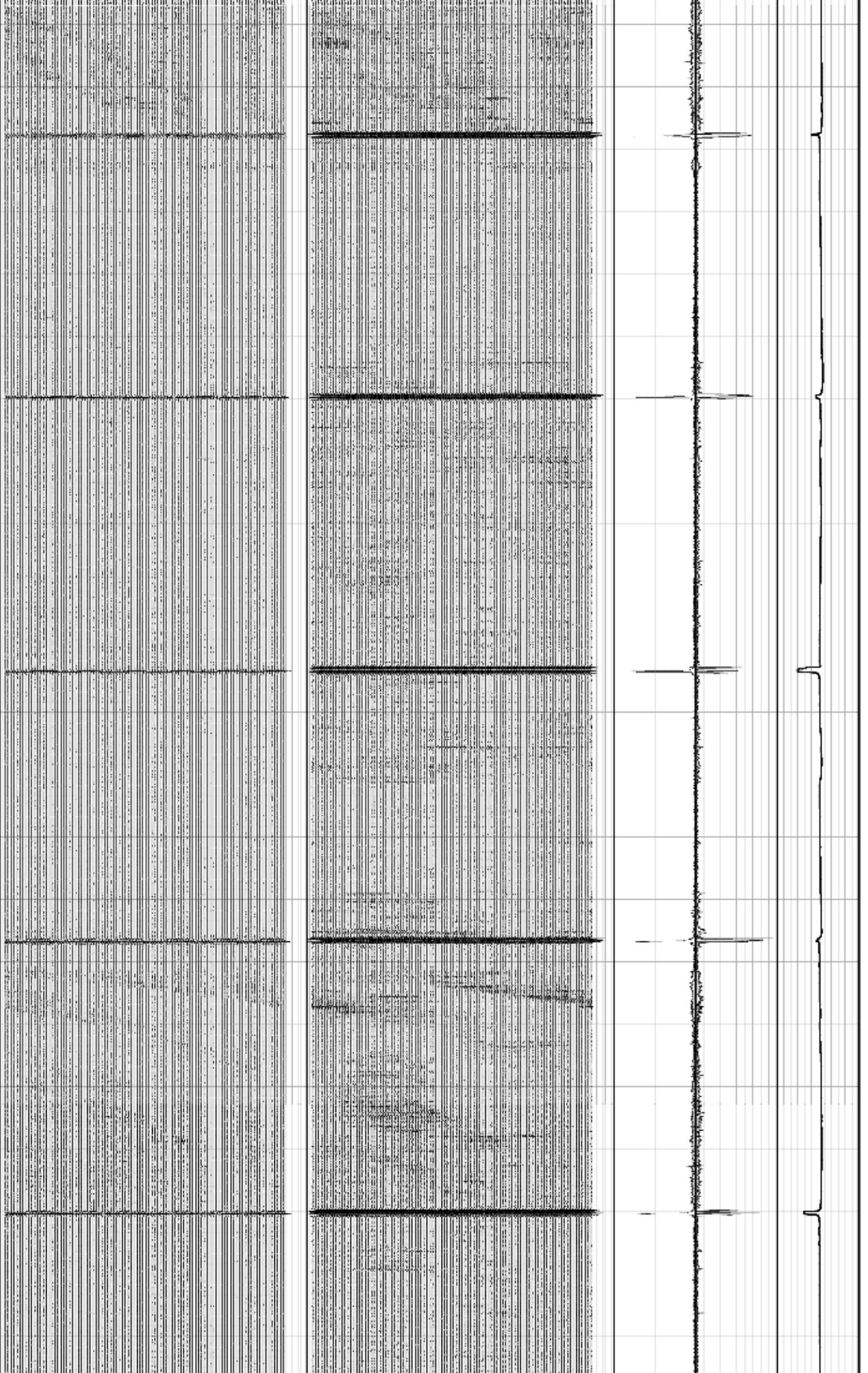
J30-C1    J31-C1    J31-C1    J32-C1    J32-C1    J33-C1    J33-C1    J34-C1    J34-C1    J35-C1





J35-C1    J36-C1    J36-C1    J37-C1    J37-C1    J38-C1    J38-C1    J39-C1    J39-C1    J40-C1

1450.0 Hz                      1500.0 Hz                      1550.0 Hz                      1600.0 Hz



J40-C1

J41-C1

J41-C1

J42-C1

J42-C1

J43-C1

J43-C1

J44-C1

J44-C1

J45-C1

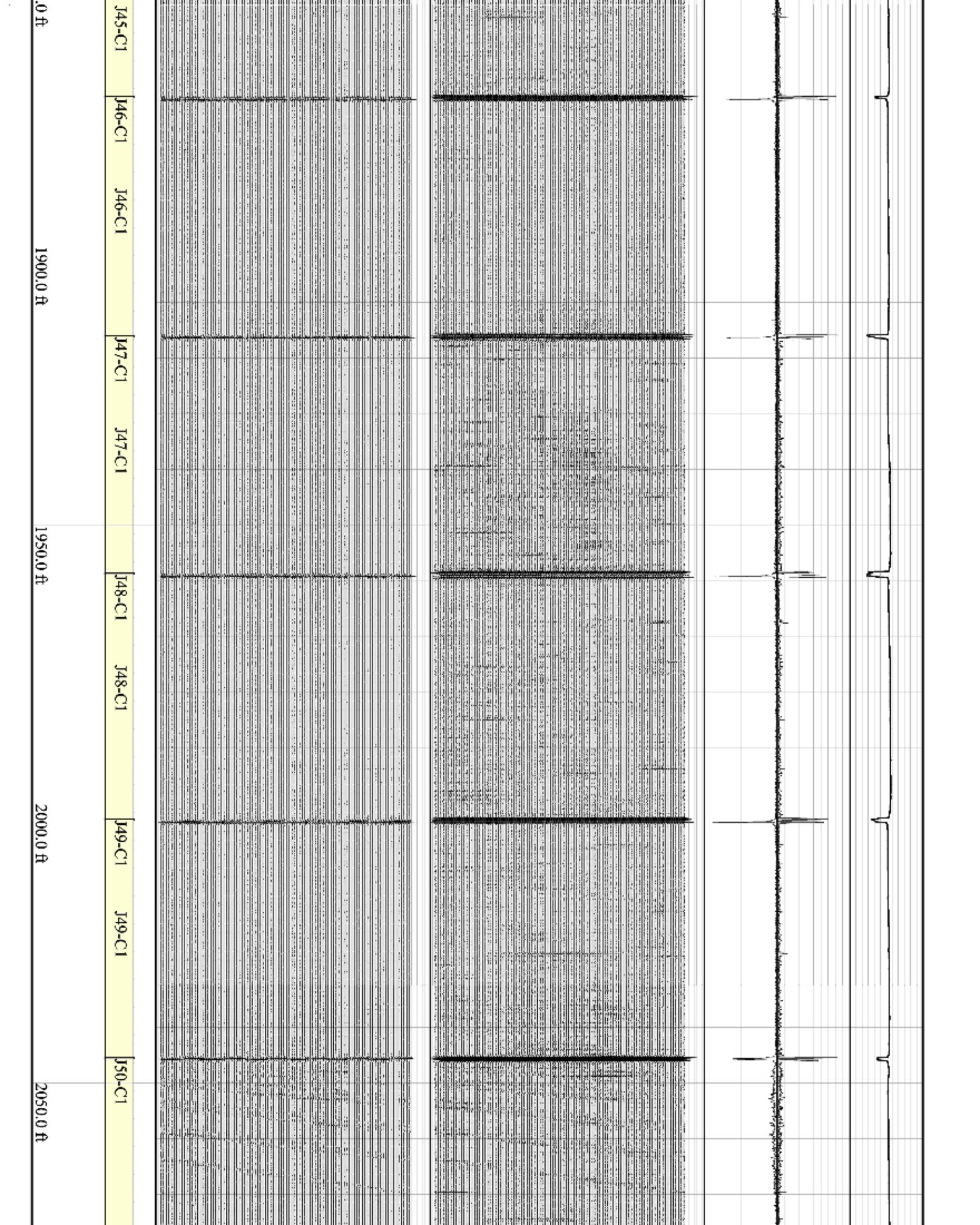
1650.0 ft

1700.0 ft

1750.0 ft

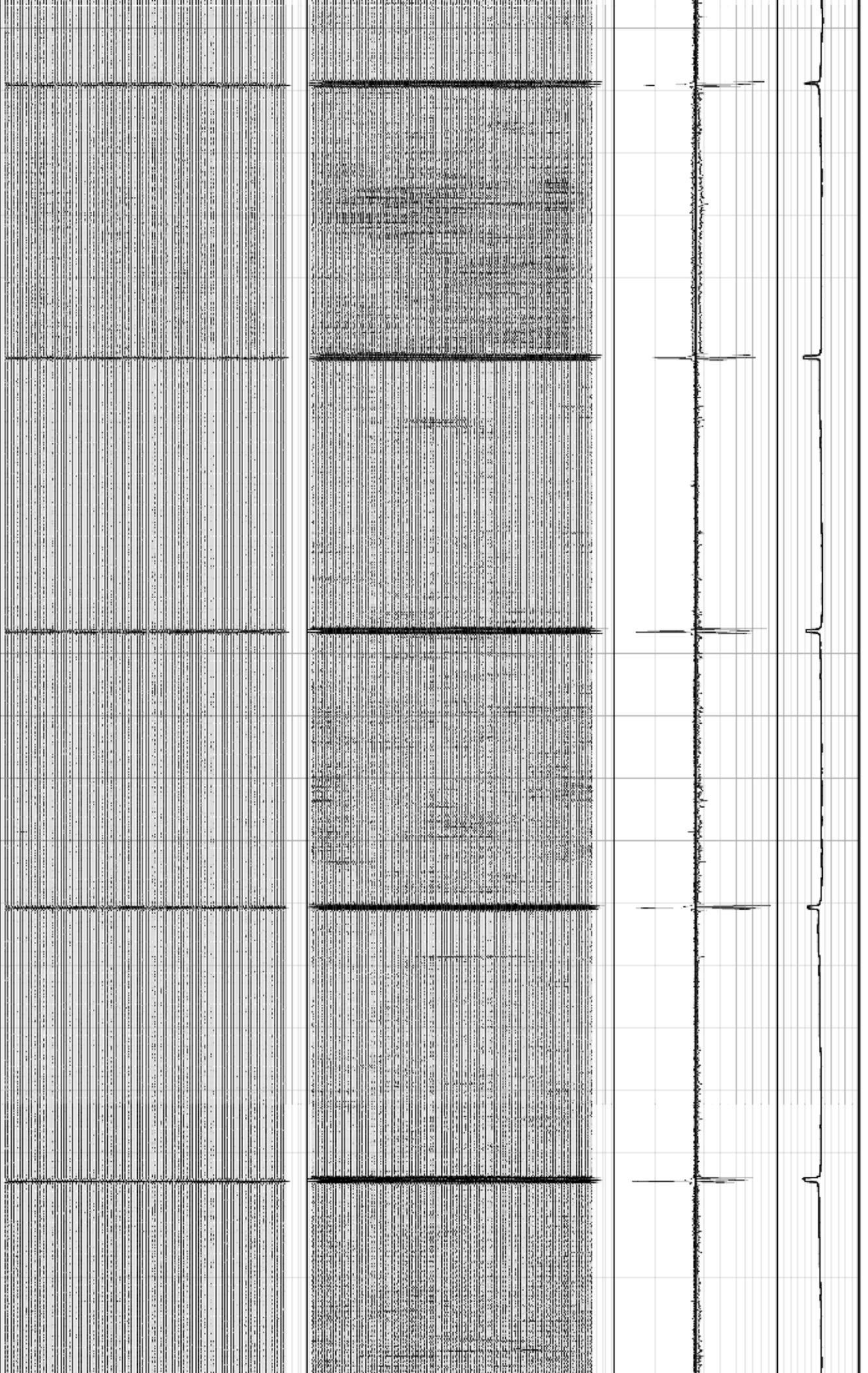
1800.0 ft

1850



J45-C1 J46-C1 J46-C1 J47-C1 J47-C1 J48-C1 J48-C1 J49-C1 J49-C1 J50-C1

0 ft 1900.0 ft 1950.0 ft 2000.0 ft 2050.0 ft



JS1-C1

JS1-C1

JS2-C1

JS2-C1

JS3-C1

JS3-C1

JS4-C1

JS4-C1

JS5-C1

2100.0 ft

2150.0 ft

2200.0 ft

2250.0 ft

2300.0 ft

2350.0 ft

2400.0 ft

2450.0 ft

2500.0 ft

J56-C1

J56-C1

J57-C1

J57-C1

J58-C1

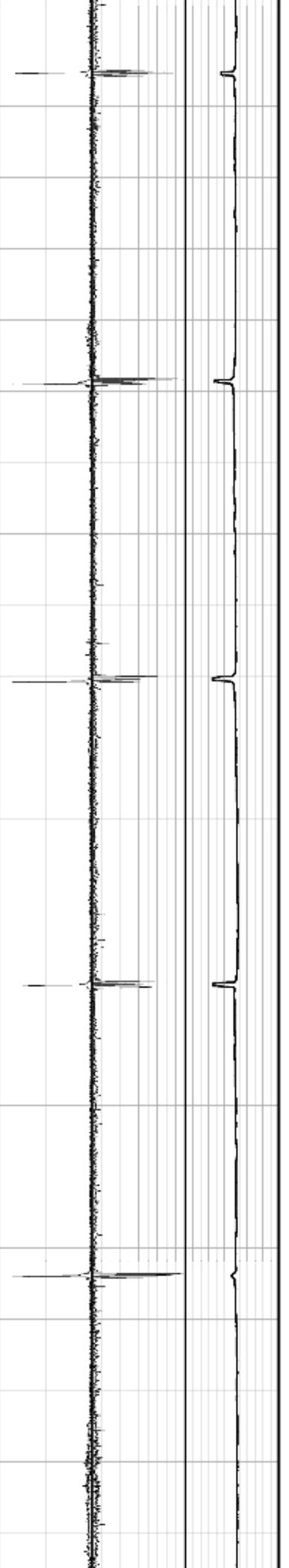
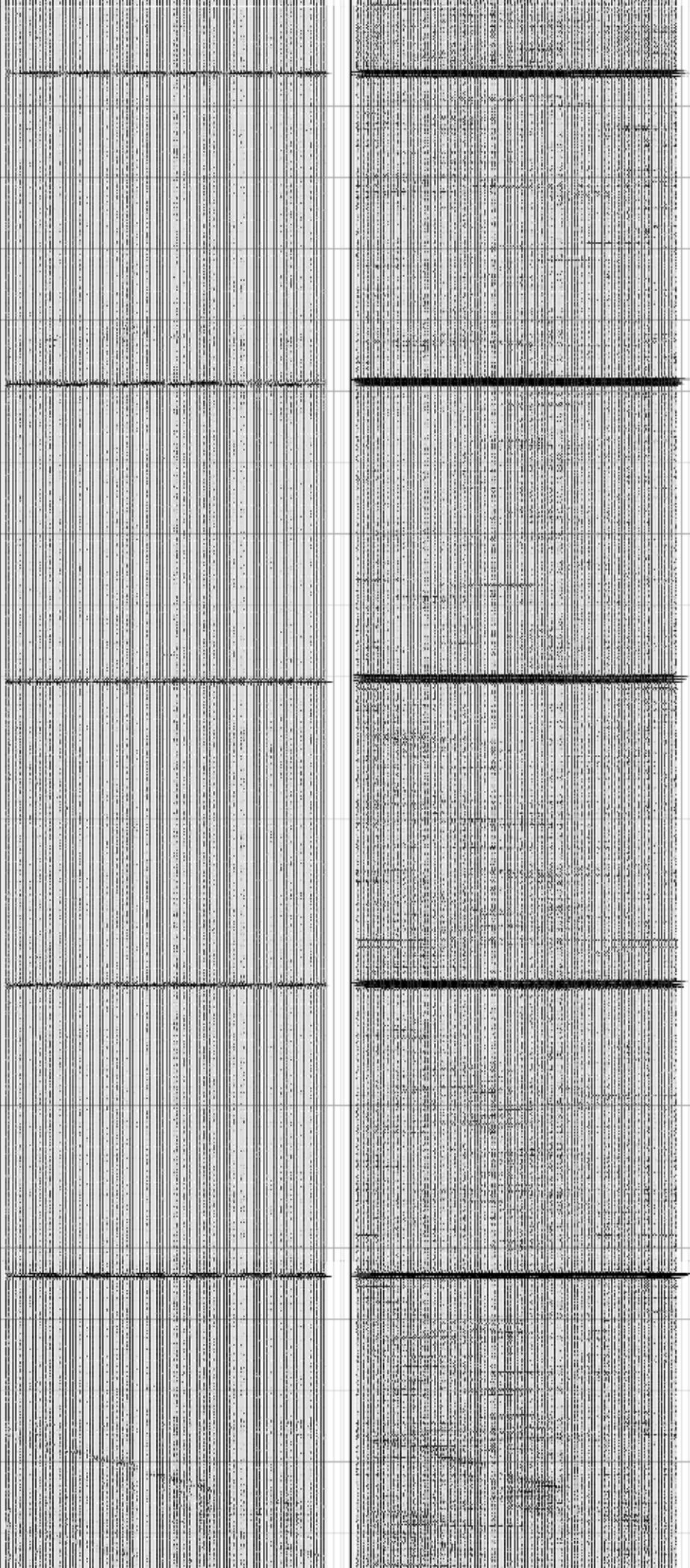
J58-C1

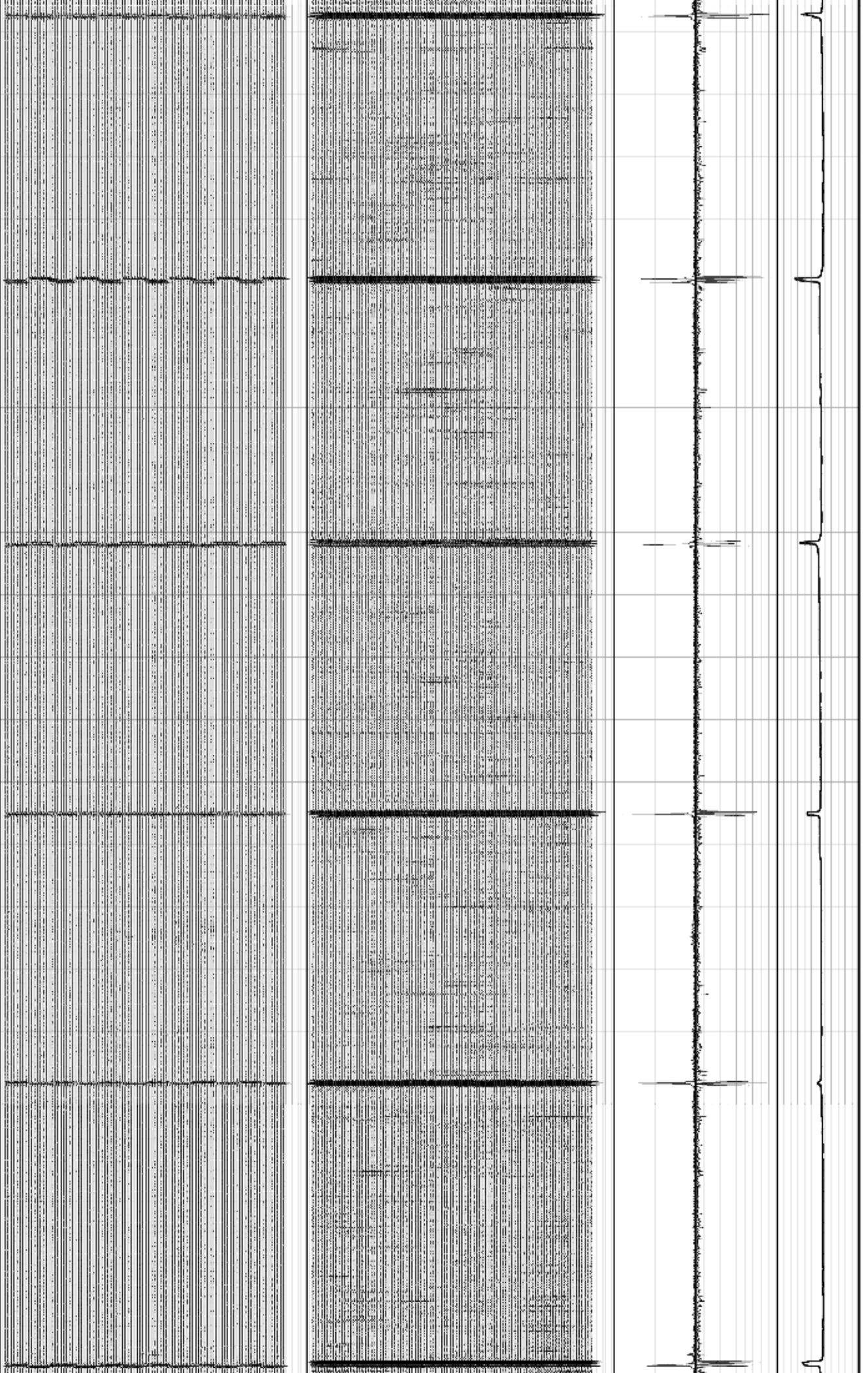
J59-C1

J59-C1

J60-C1

J60-C1

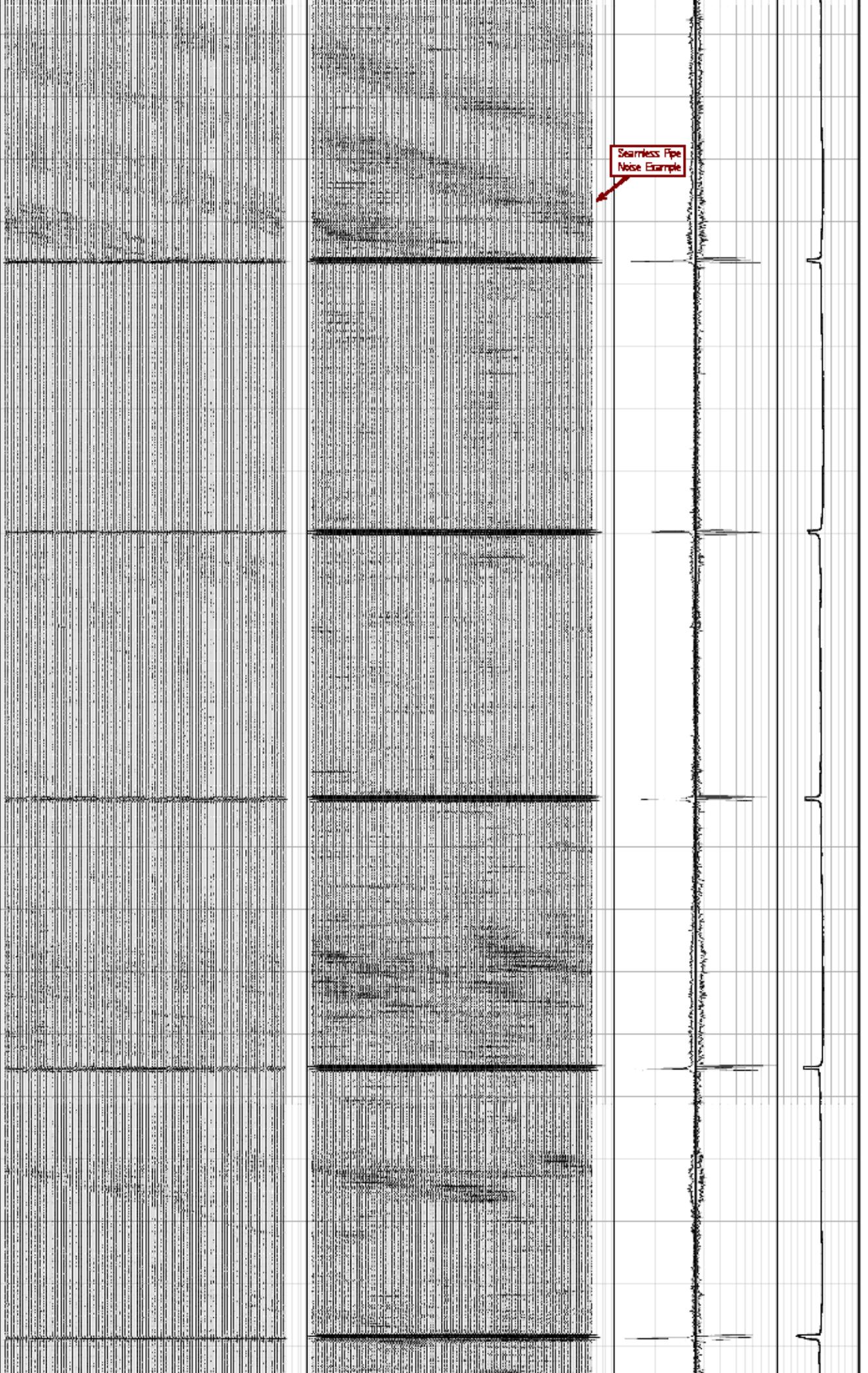




J61-C1 J61-C1 J62-C1 J62-C1 J63-C1 J63-C1 J64-C1 J64-C1 J65-C1 J65-C1

2550.0 ft 2600.0 ft 2650.0 ft 2700.0 ft

Seamless Pipe  
Noise Example



J66-C1 J66-C1 J67-C1 J67-C1 J68-C1 J68-C1 J69-C1 J69-C1 J70-C1 J70-C1

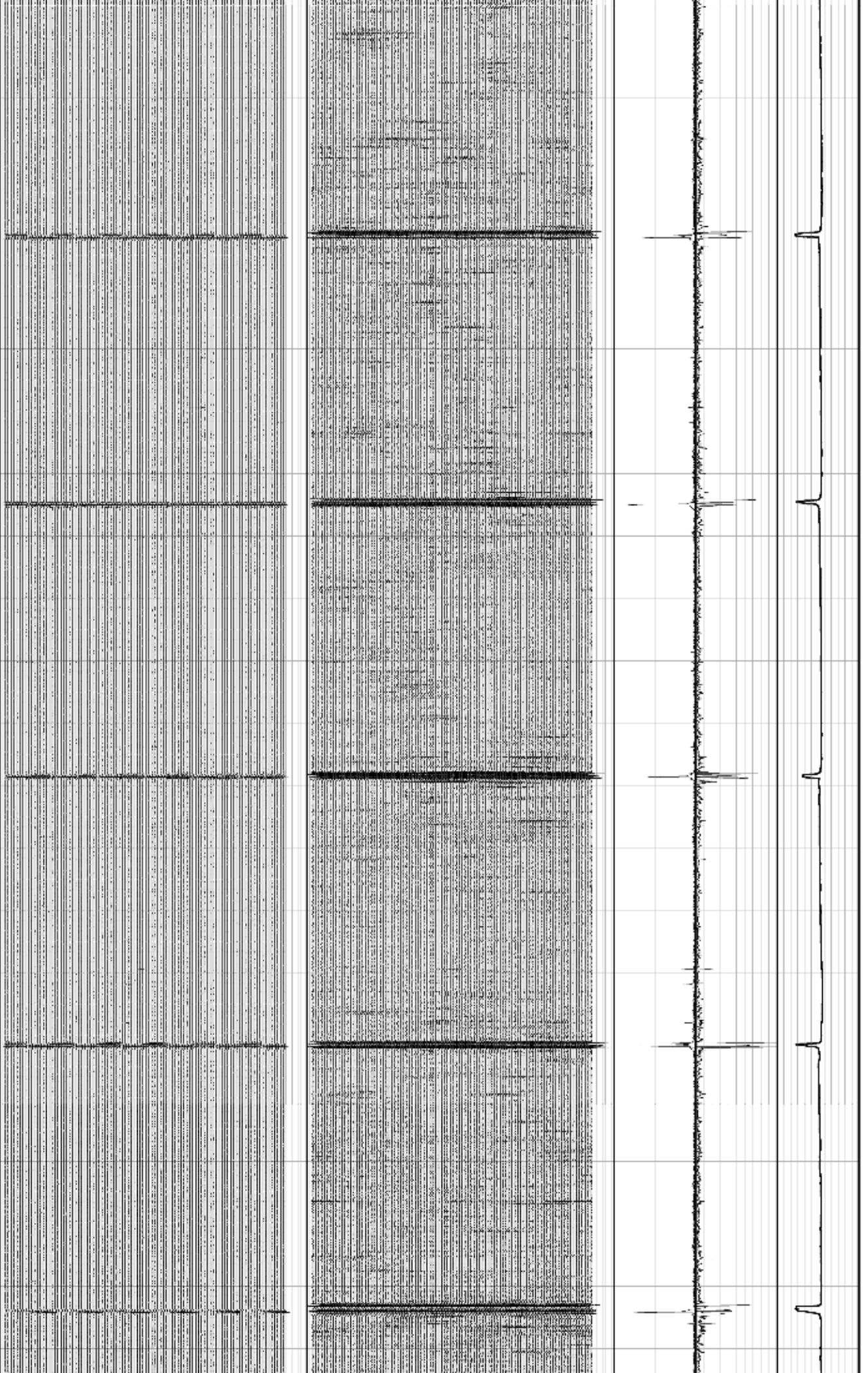
2750.0 ft

2800.0 ft

2850.0 ft

2900.0 ft

2950.0 ft



J71-C1

J71-C1

J72-C1

J72-C1

J73-C1

J73-C1

J74-C1

J74-C1

J75-C1

J75-C1

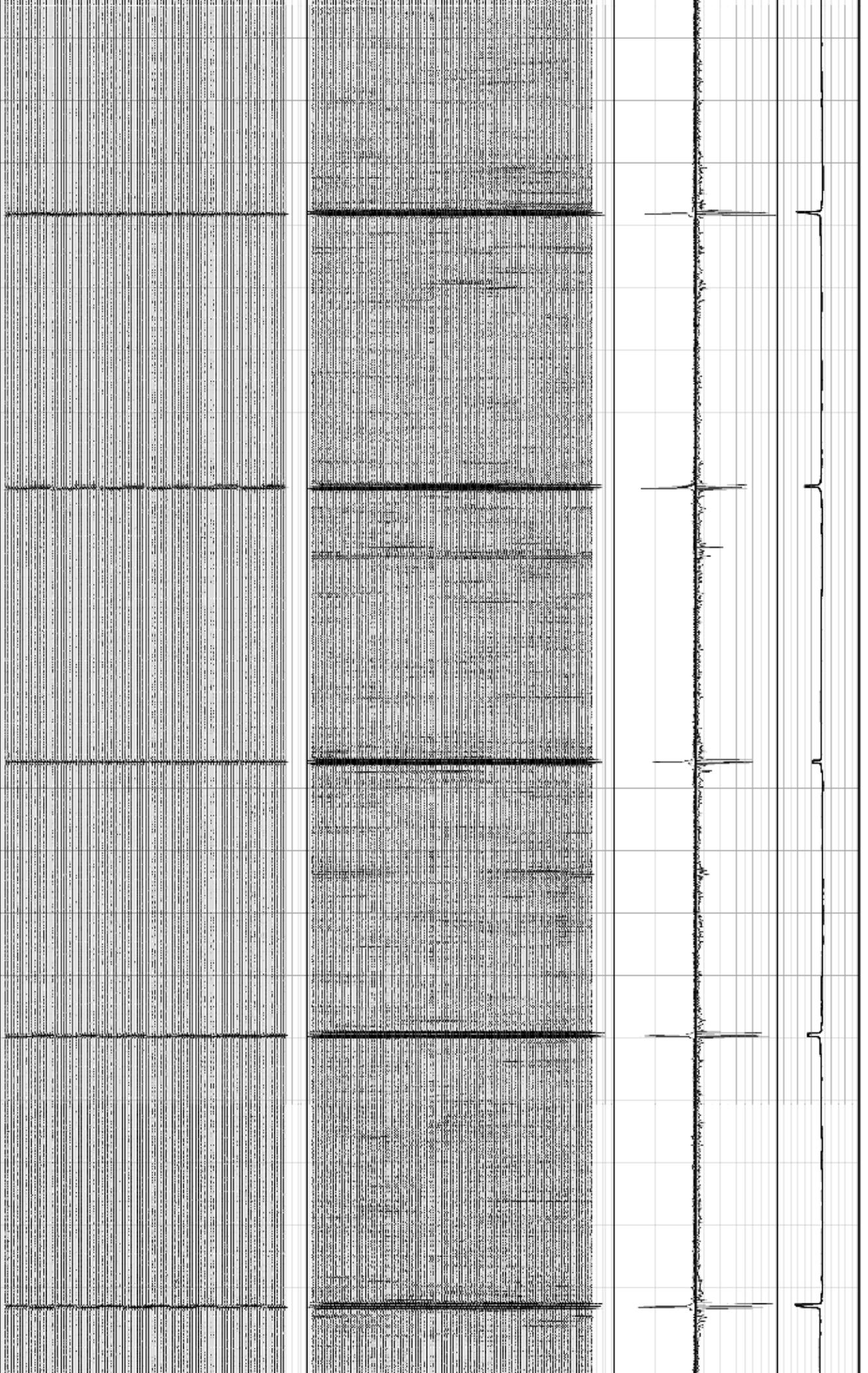
0.0 ft

3000.0 ft

3050.0 ft

3100.0 ft

3150.0 ft



J76-C1

J76-C1

J77-C1

J77-C1

J78-C1

J78-C1

J79-C1

J79-C1

J80-C1

J80-C1

3200.0 ft

3250.0 ft

3300.0 ft

3350.0 ft

3400.0 ft

3450.0 ft

3500.0 ft

3550.0 ft

3600.0 ft

J81-C1

J82-C1

J82-C1

J83-C1

J83-C1

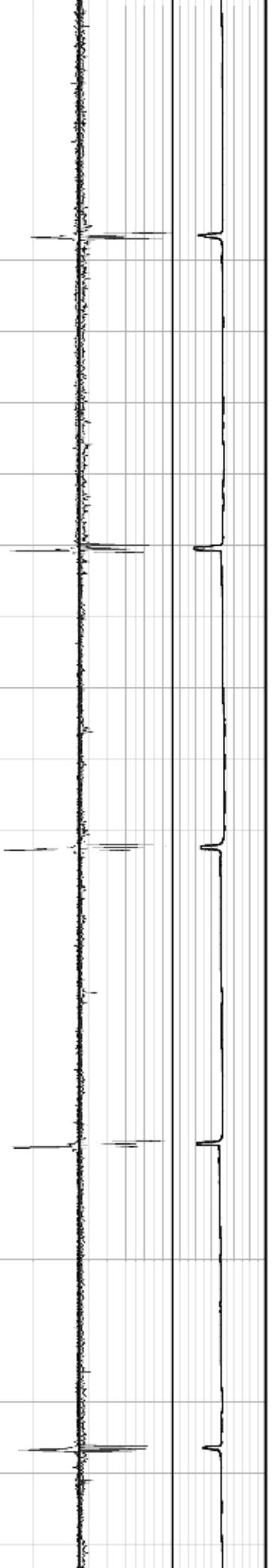
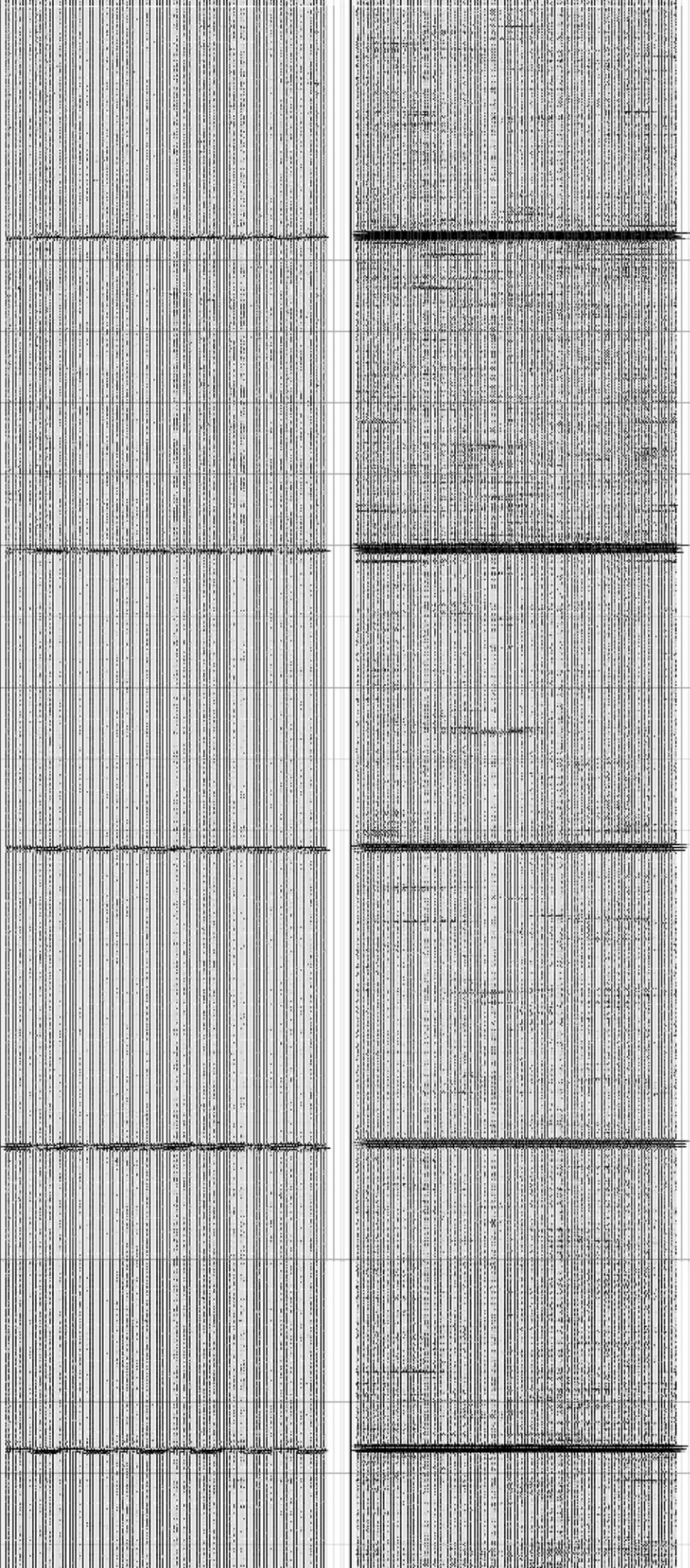
J84-C1

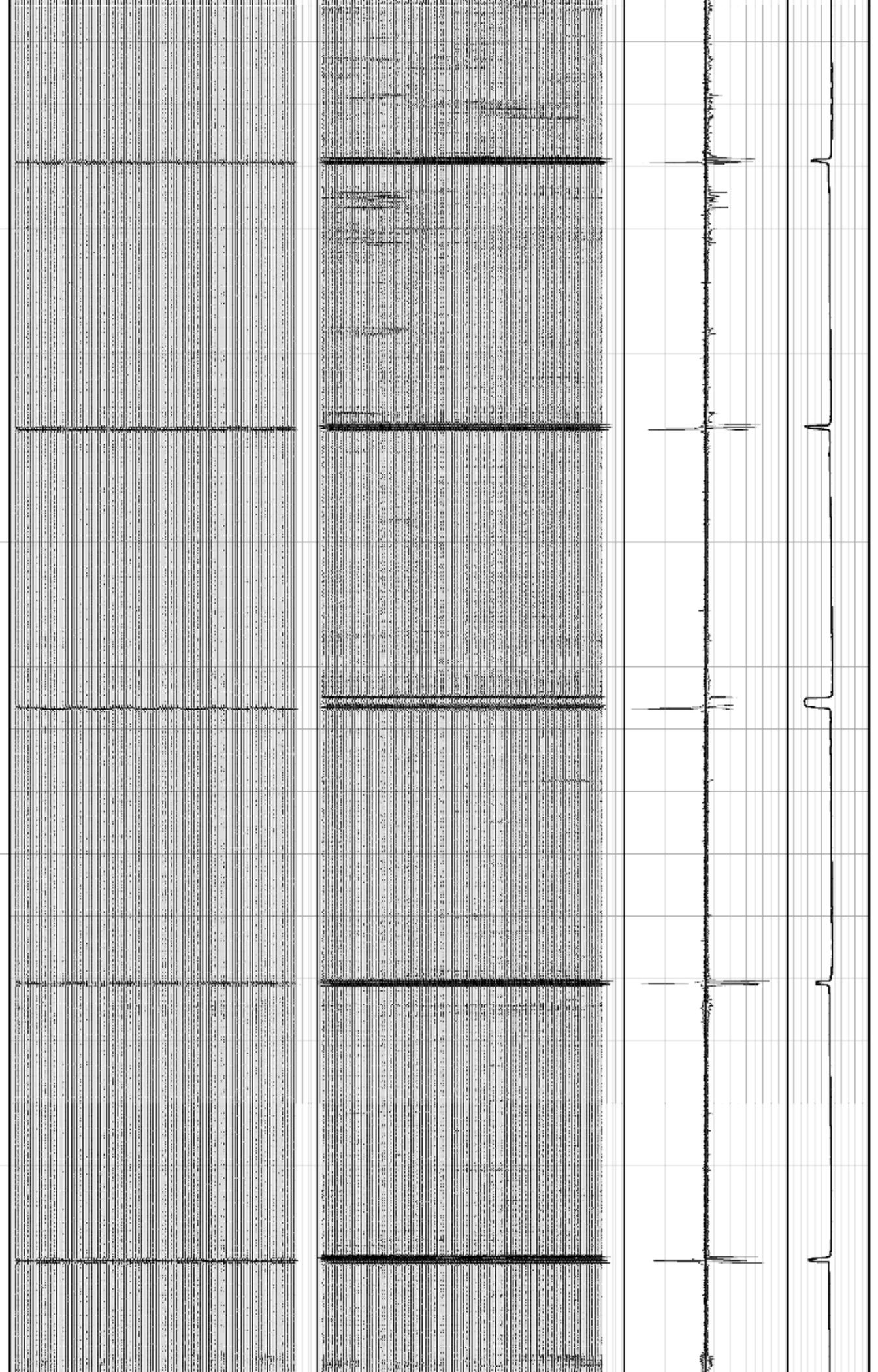
J84-C1

J85-C1

J85-C1

J86-C1





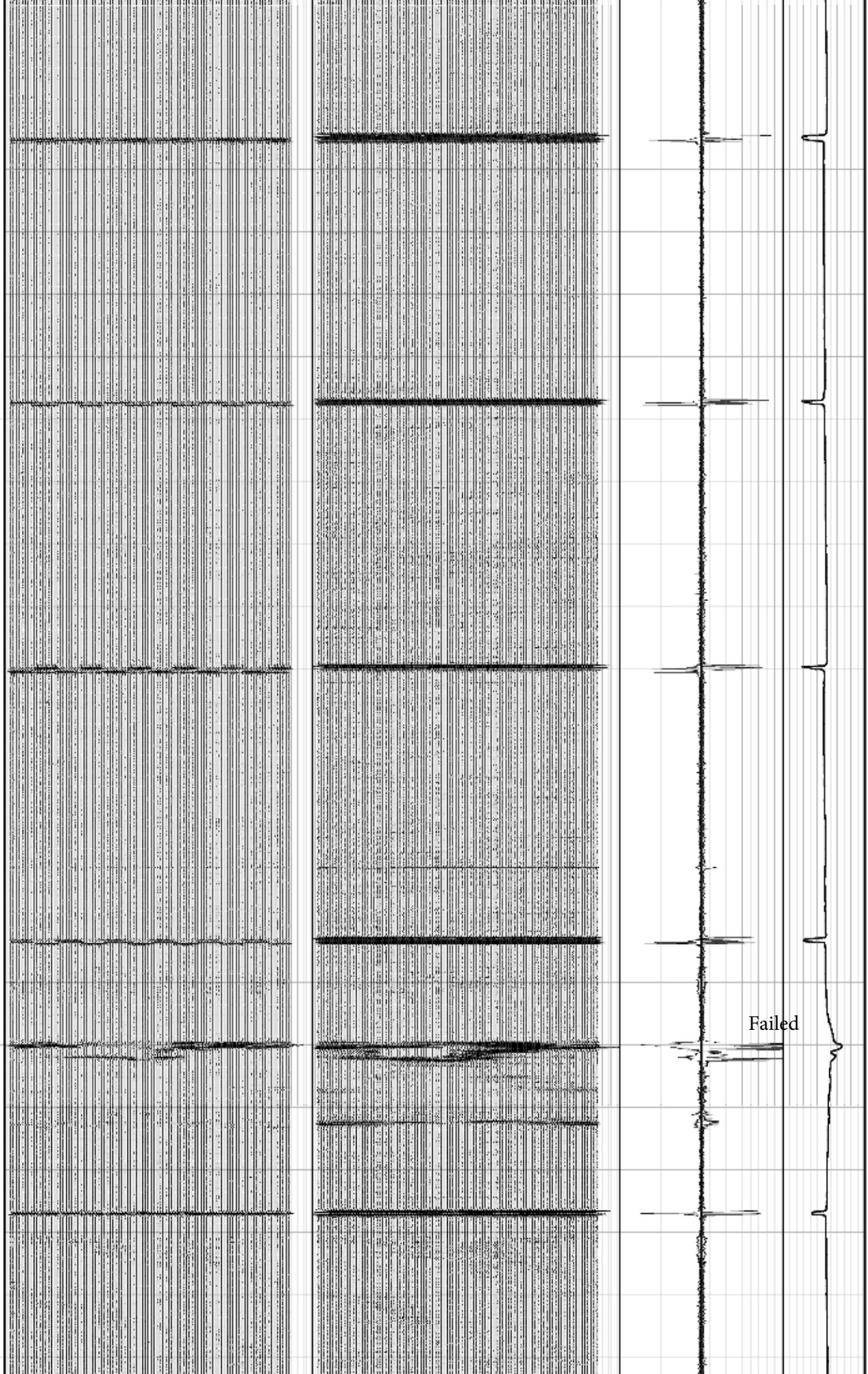
J86-C1 J87-C1 J87-C1 J88-C1 J88-C1 J89-C1 J89-C1 J90-C1 J90-C1 J91-C1

3650.0 ft

3700.0 ft

3750.0 ft

3800.0 ft



J91-C1

J92-C1

J92-C1

J93-C1

J93-C1

J94-C1

J94-C1

J95-C4

J95-C4

J96-C1

Failed

3850.0 ft

3900.0 ft

3950.0 ft

4000.0 ft

40

50.0 ft

4100.0 ft

4150.0 ft

4200.0 ft

4250.0 ft

J97-C1

J97-C1

J98-C1

J98-C1

J99-C1

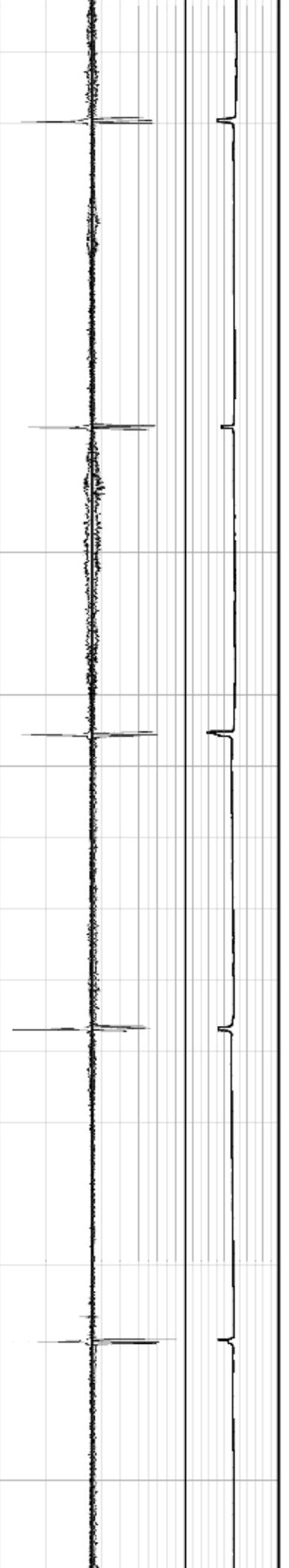
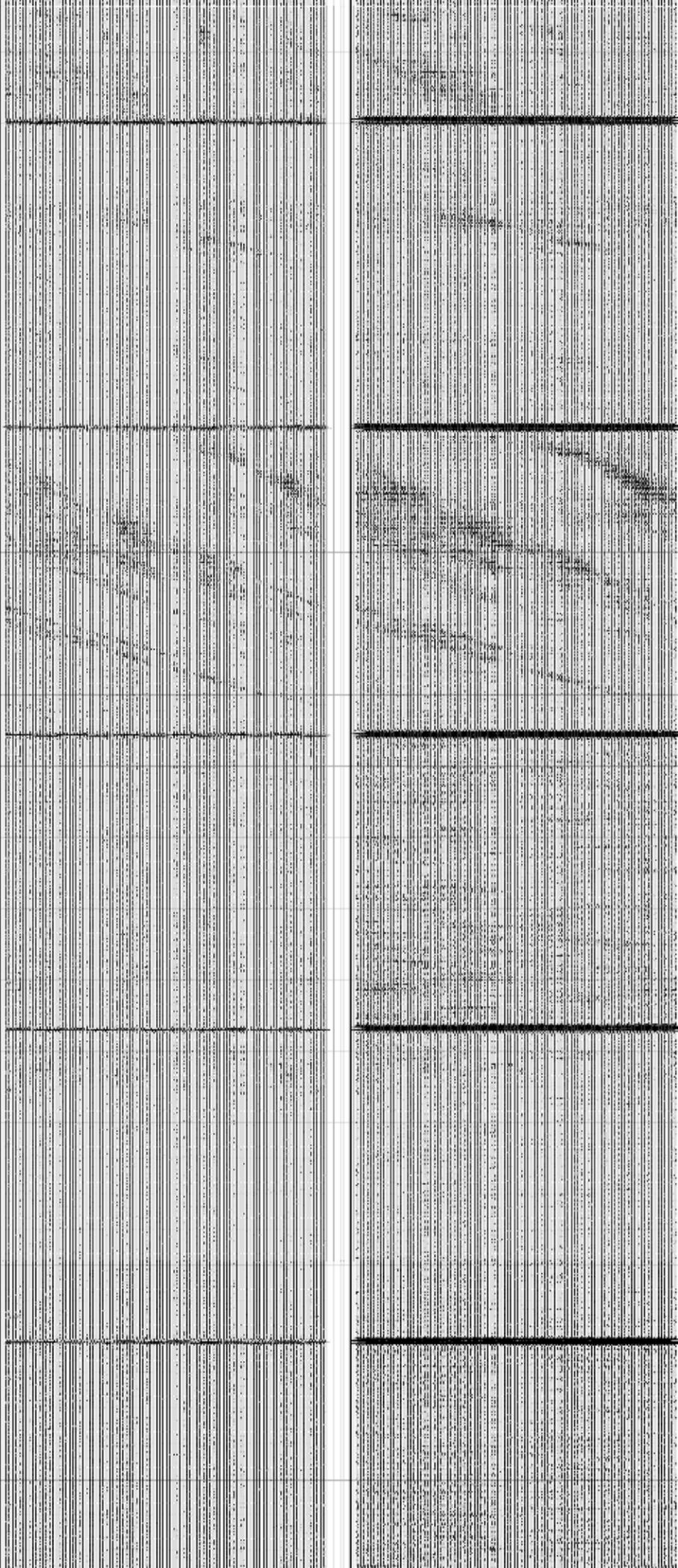
J99-C1

J100-C1

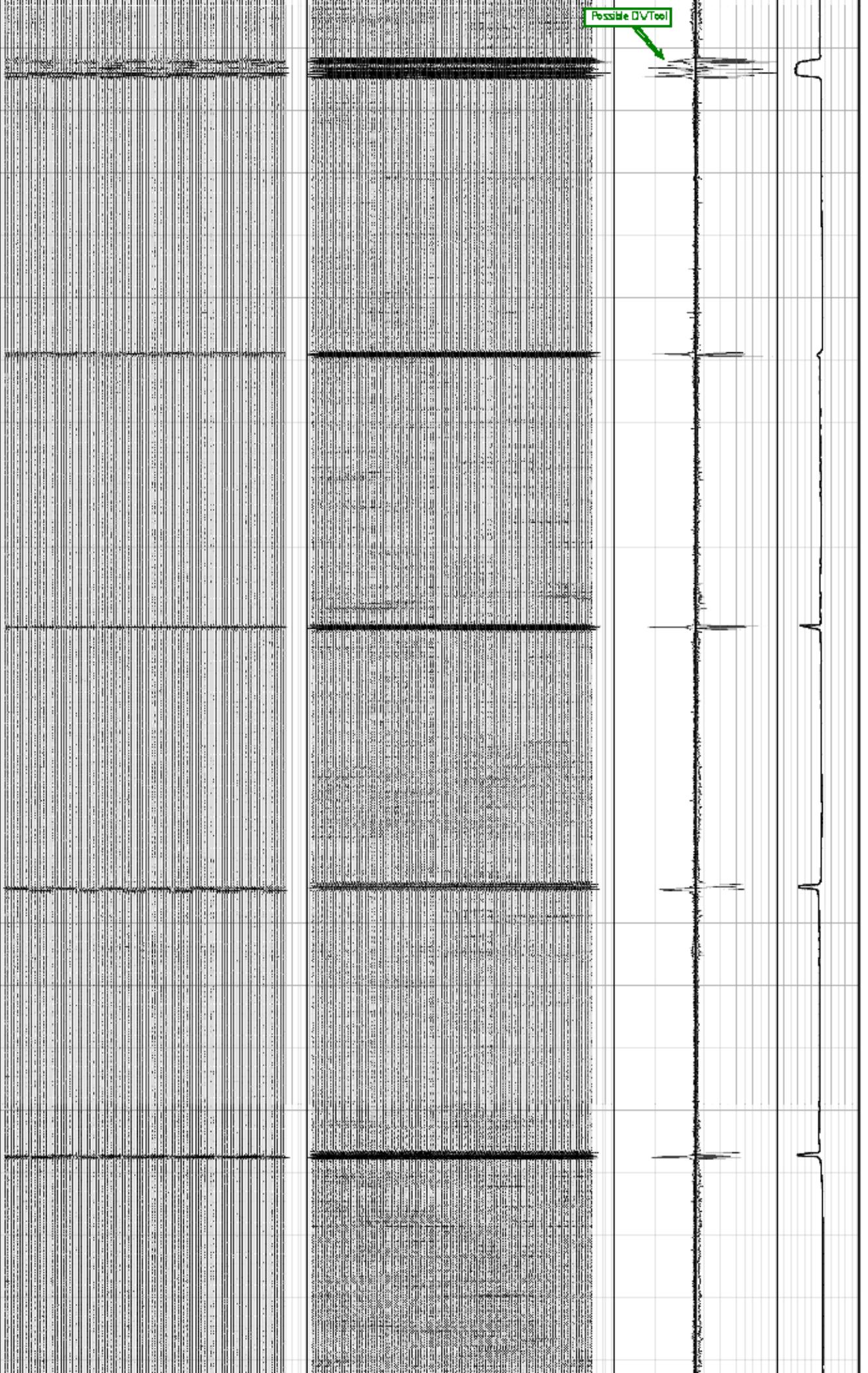
J100-C1

J101-C1

J101-C1



Possible D/V Tool



4300.0 ft

4350.0 ft

4400.0 ft

4450.0 ft

4500.0 ft

J107-C1

J107-C1

J108-C1

J108-C1

J109-C1

J109-C1

J110-C1

J110-C1

J111-C1

J111-C1

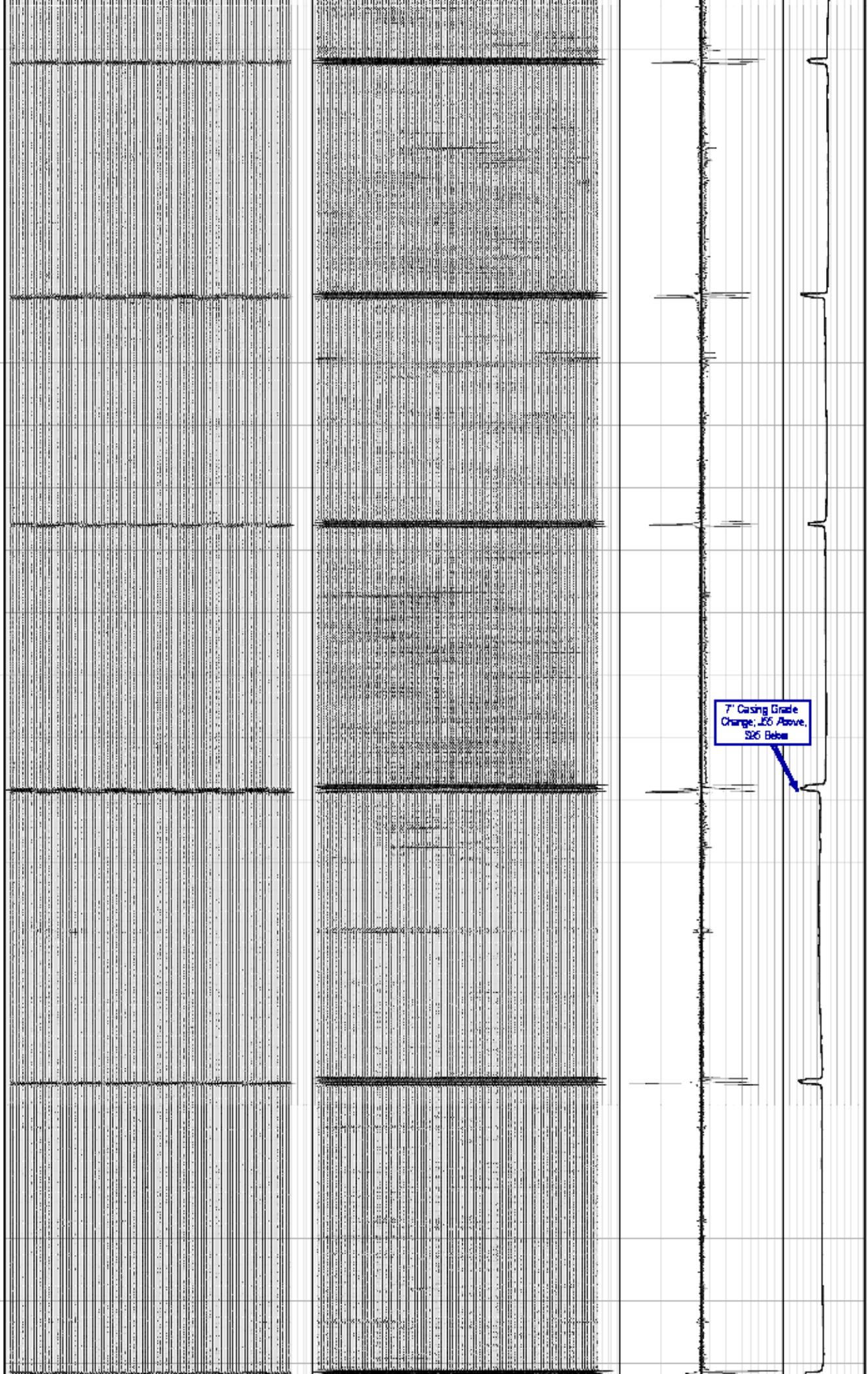
4550.0 ft

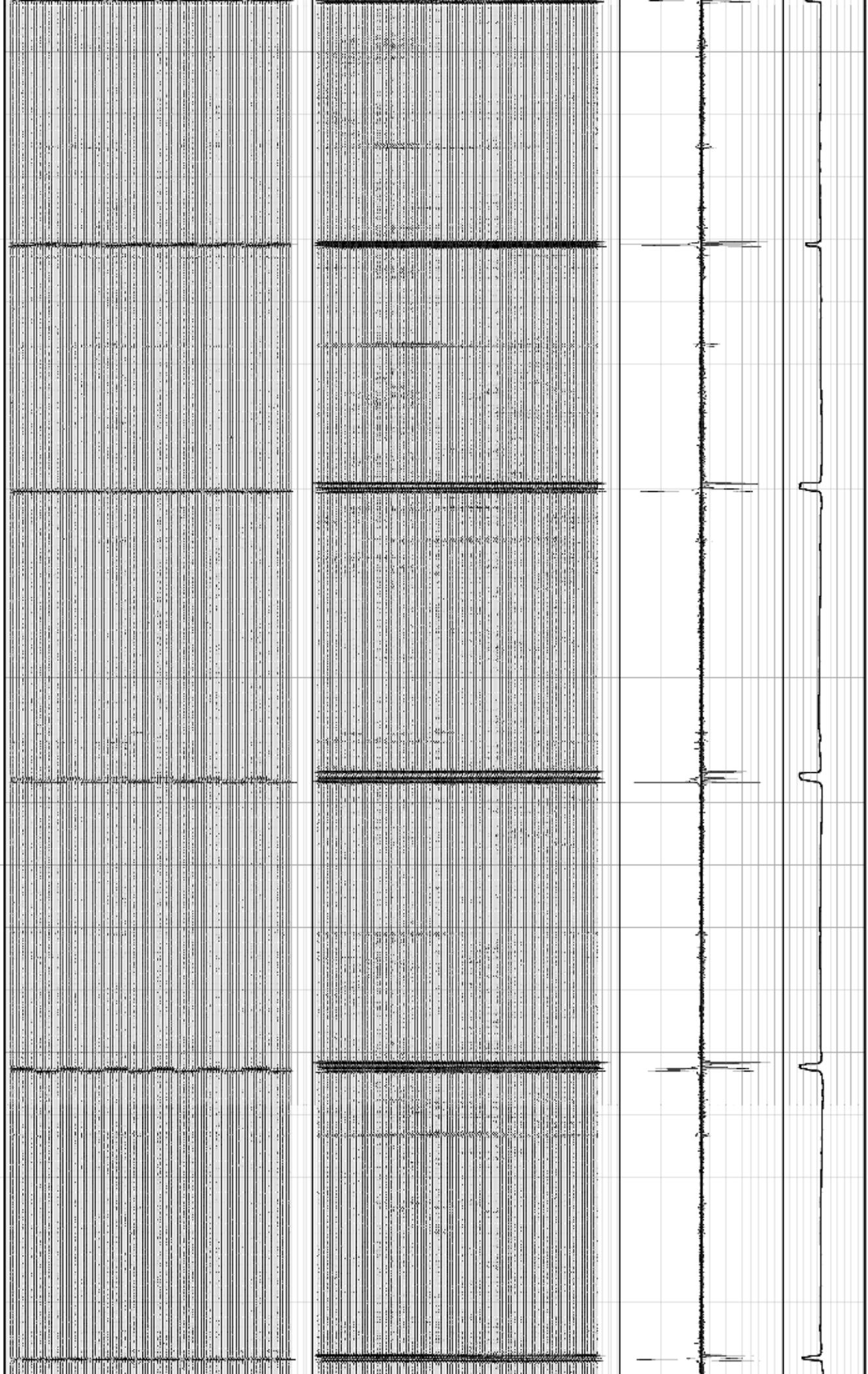
4600.0 ft

4650.0 ft

4700.0 ft

7' Casing Grade Change; .26 Above, .26 Below





J112-C1

J113-C1

J113-C1

J114-C1

J114-C1

J115-C1

J115-C1

J116-C1

J116-C1

4750.0 ft

4800.0 ft

4850.0 ft

4900.0 ft

4950.0 ft

5000.0 ft

5050.0 ft

5100.0 ft

J117-C1

J117-C1

J118-C1

J118-C1

J119-C1

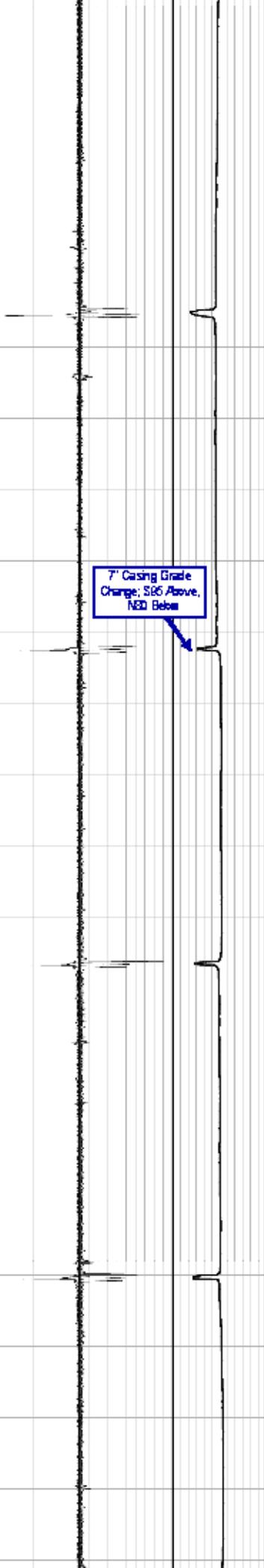
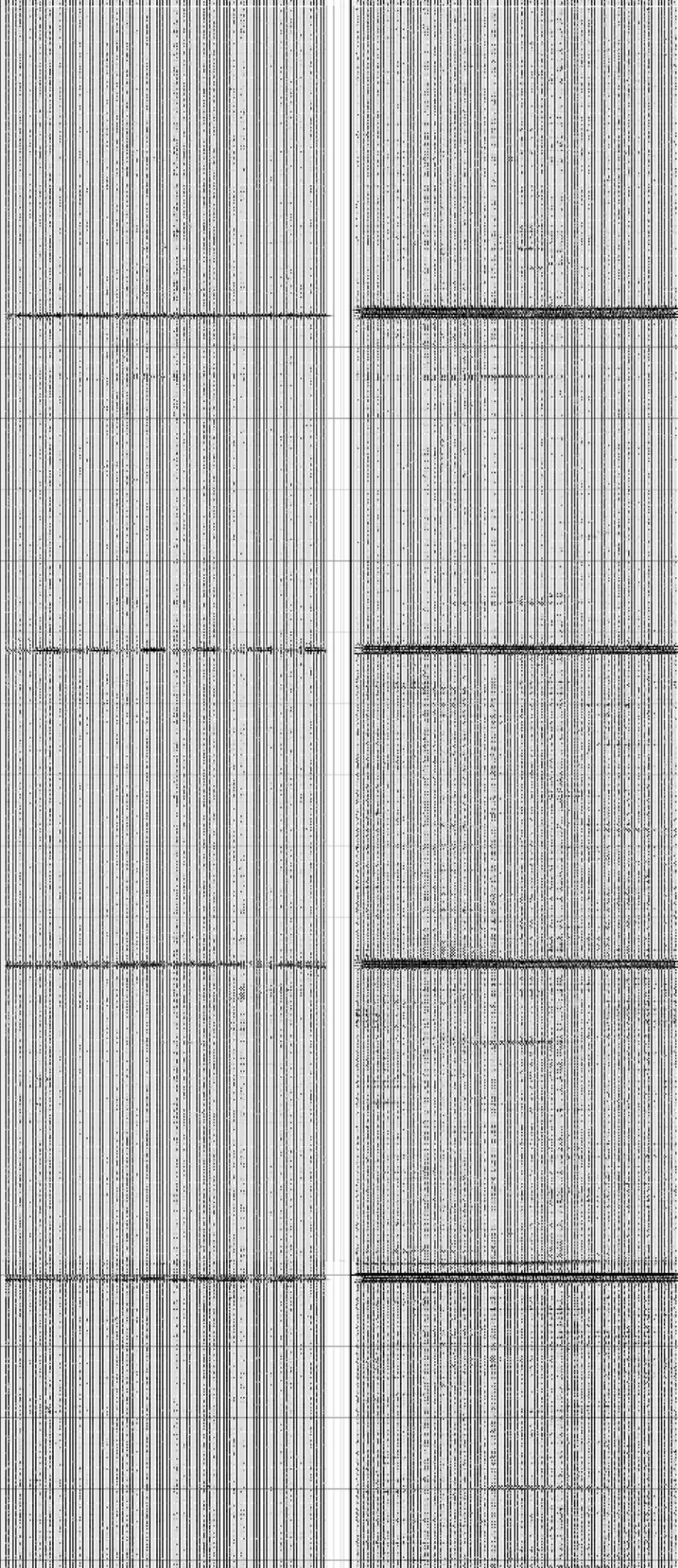
J119-C1

J120-C1

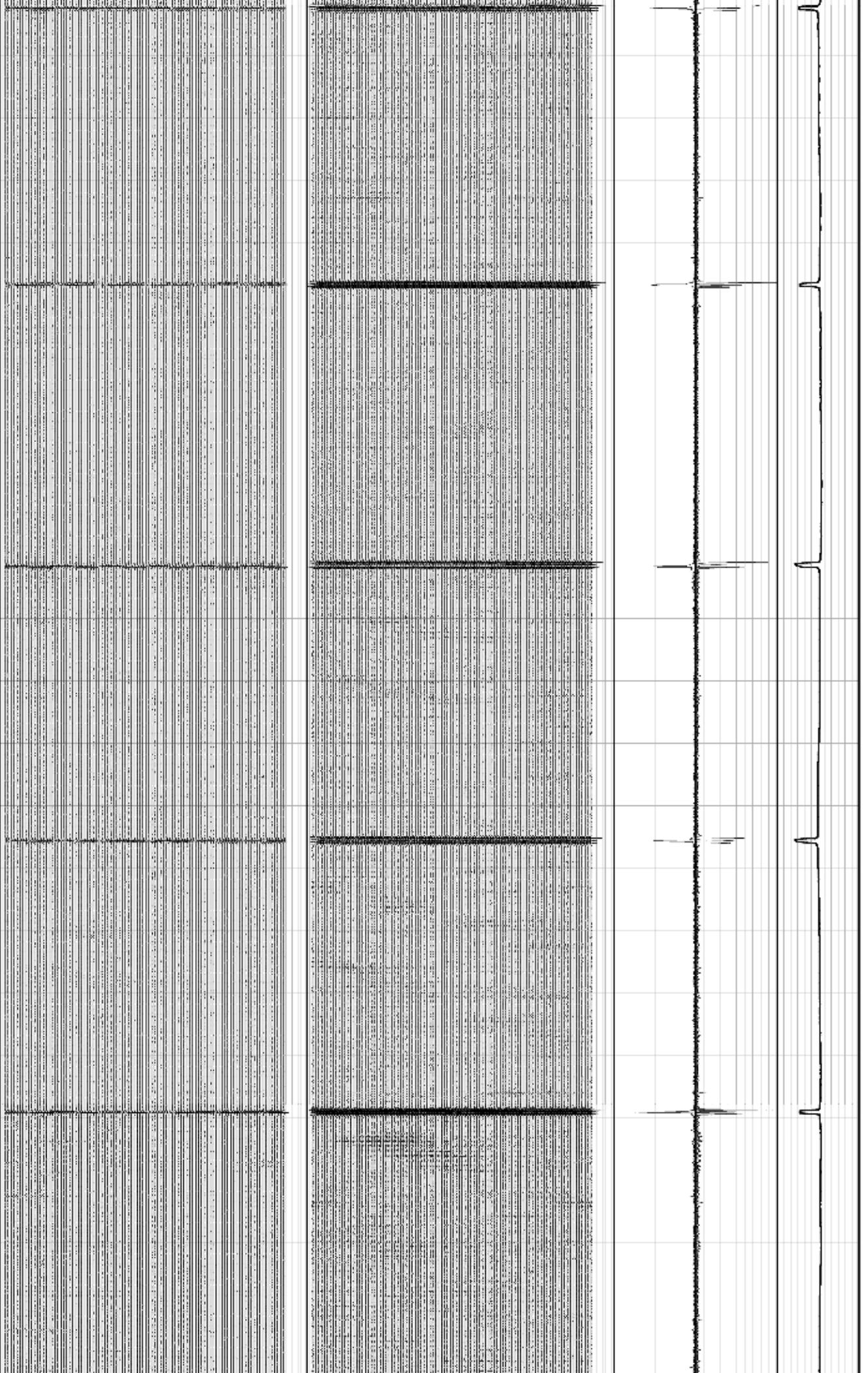
J120-C1

J121-C1

J121-C1

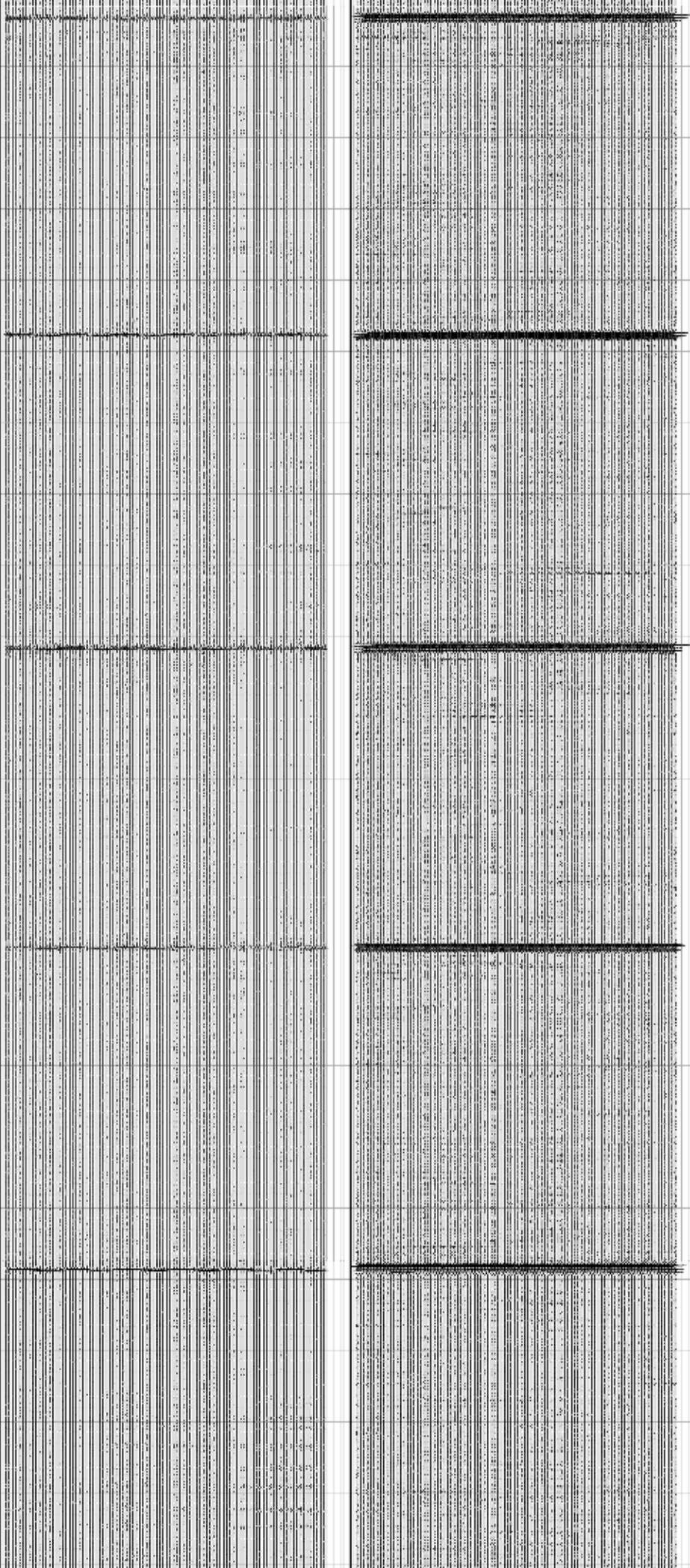
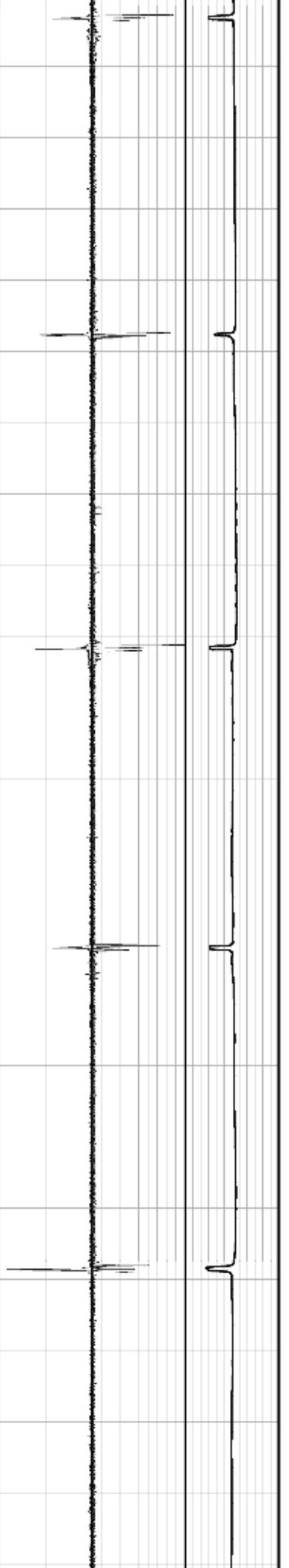


7" Casing Grade  
Change: SSS Above,  
NED Below



J122-C1 J122-C1 J123-C1 J123-C1 J124-C1 J124-C1 J125-C1 J125-C1 J126-C1 J126-C1

5150.0 A 5200.0 A 5250.0 A 5300.0 A 5350.0 A



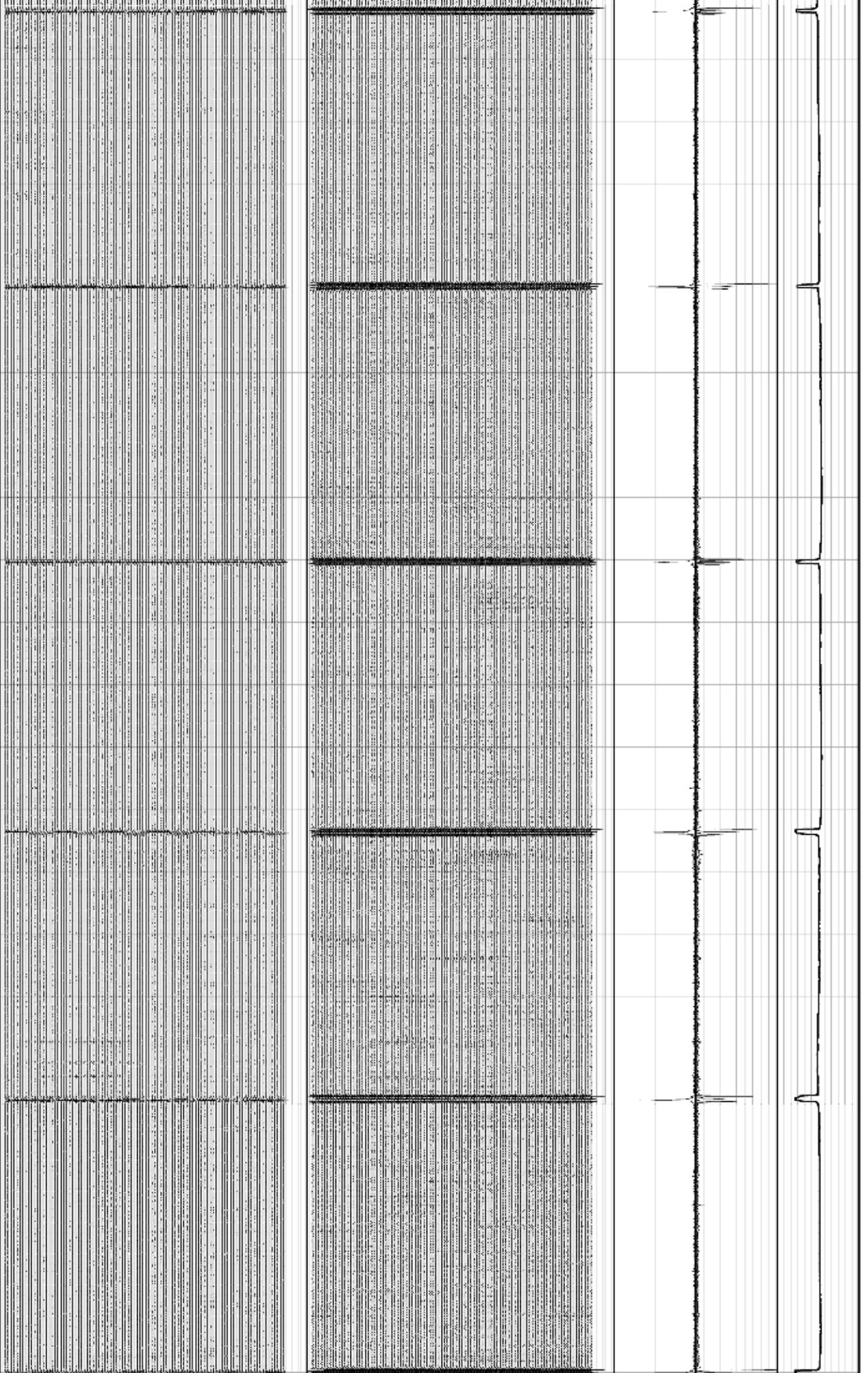
J127-C1 J127-C1 J128-C1 J128-C1 J129-C1 J129-C1 J130-C1 J130-C1 J131-C1 J131-C1

5400.0 ft

5450.0 ft

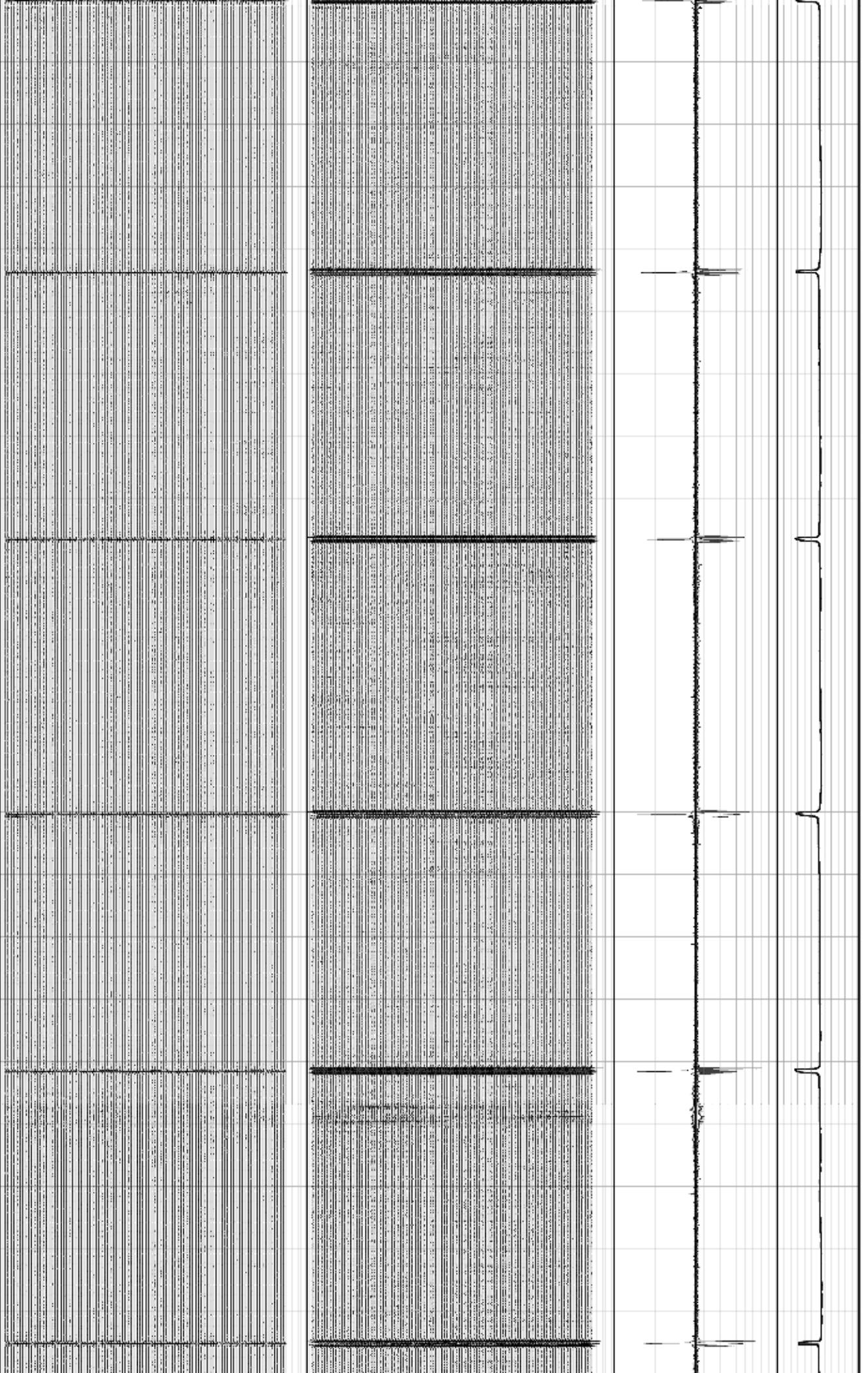
5500.0 ft

5550.0 ft



J132-C1 J132-C1 J133-C1 J133-C1 J134-C1 J134-C1 J135-C1 J135-C1 J136-C1 J136-C1

5600.0 ft 5650.0 ft 5700.0 ft 5750.0 ft 5800.0 ft



J137-C1 J137-C1

J138-C1 J138-C1

J139-C1 J139-C1

J140-C1 J140-C1

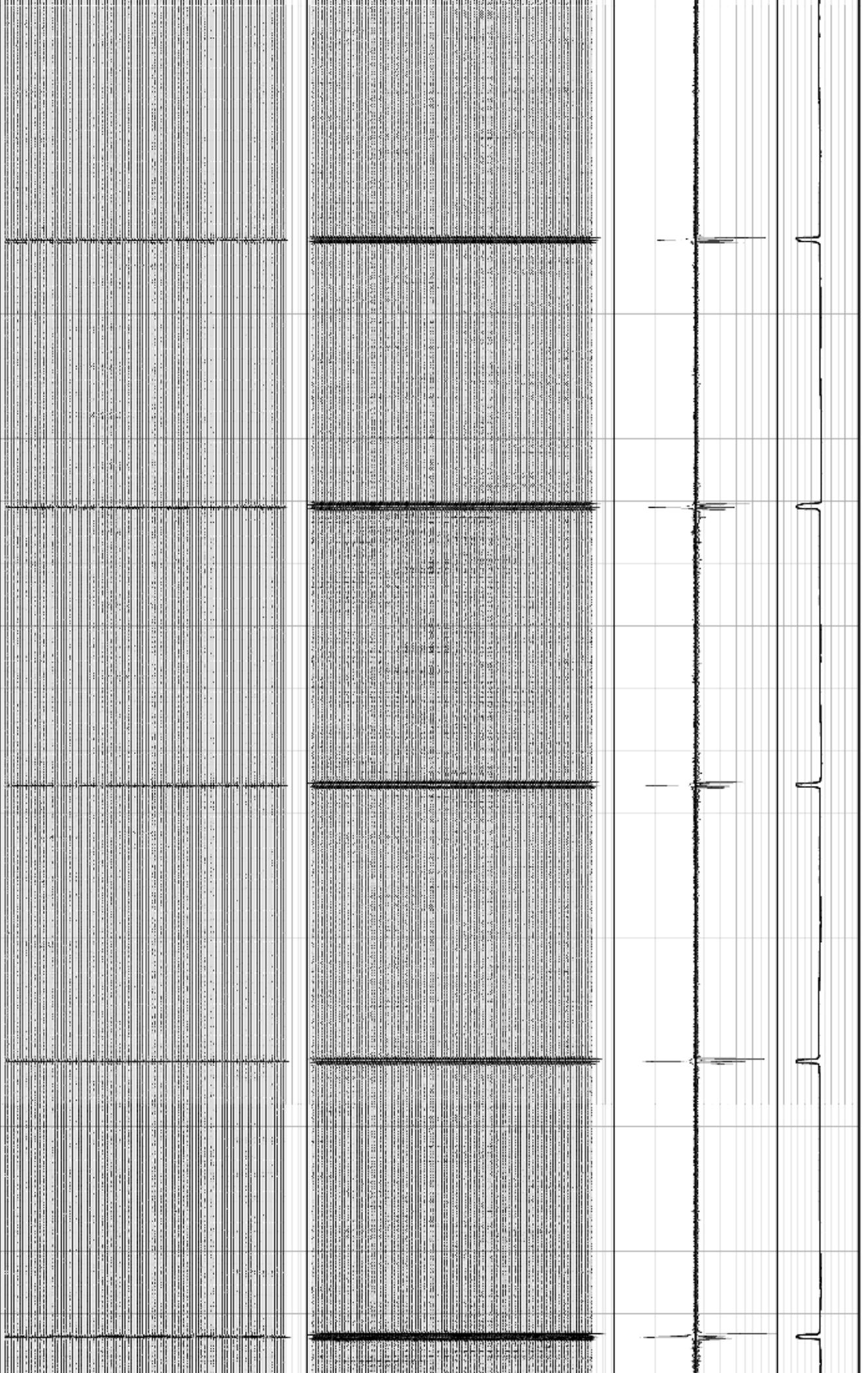
J141-C1 J141-C1

5850.0 ft

5900.0 ft

5950.0 ft

6000.0 ft



J142-C1

J142-C1

J143-C1

J143-C1

J144-C1

J144-C1

J145-C1

J145-C1

J146-C1

J146-C1

6050.0 ft

6100.0 ft

6150.0 ft

6200.0 ft

6250.0 ft

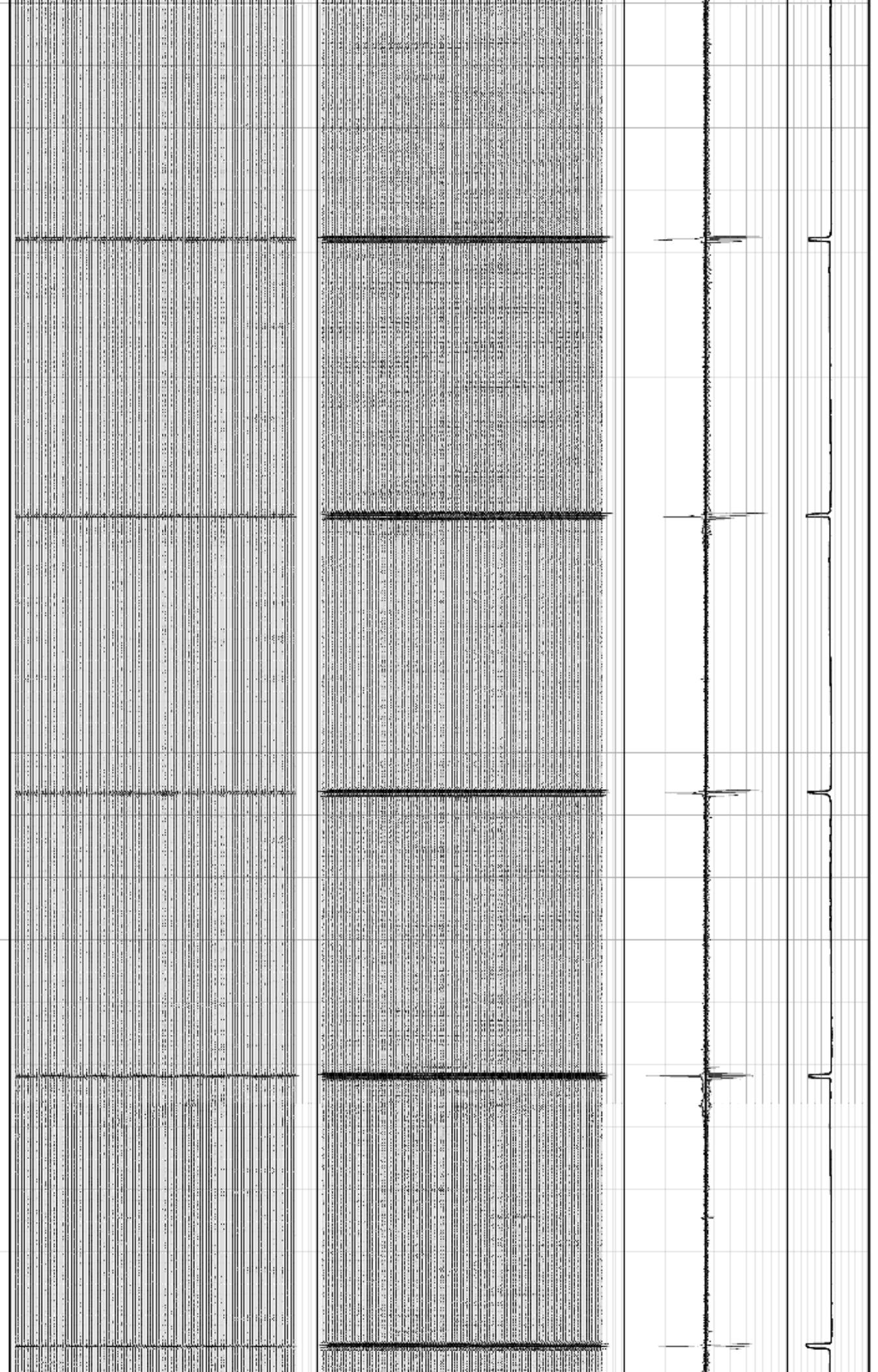
6300.0 ft

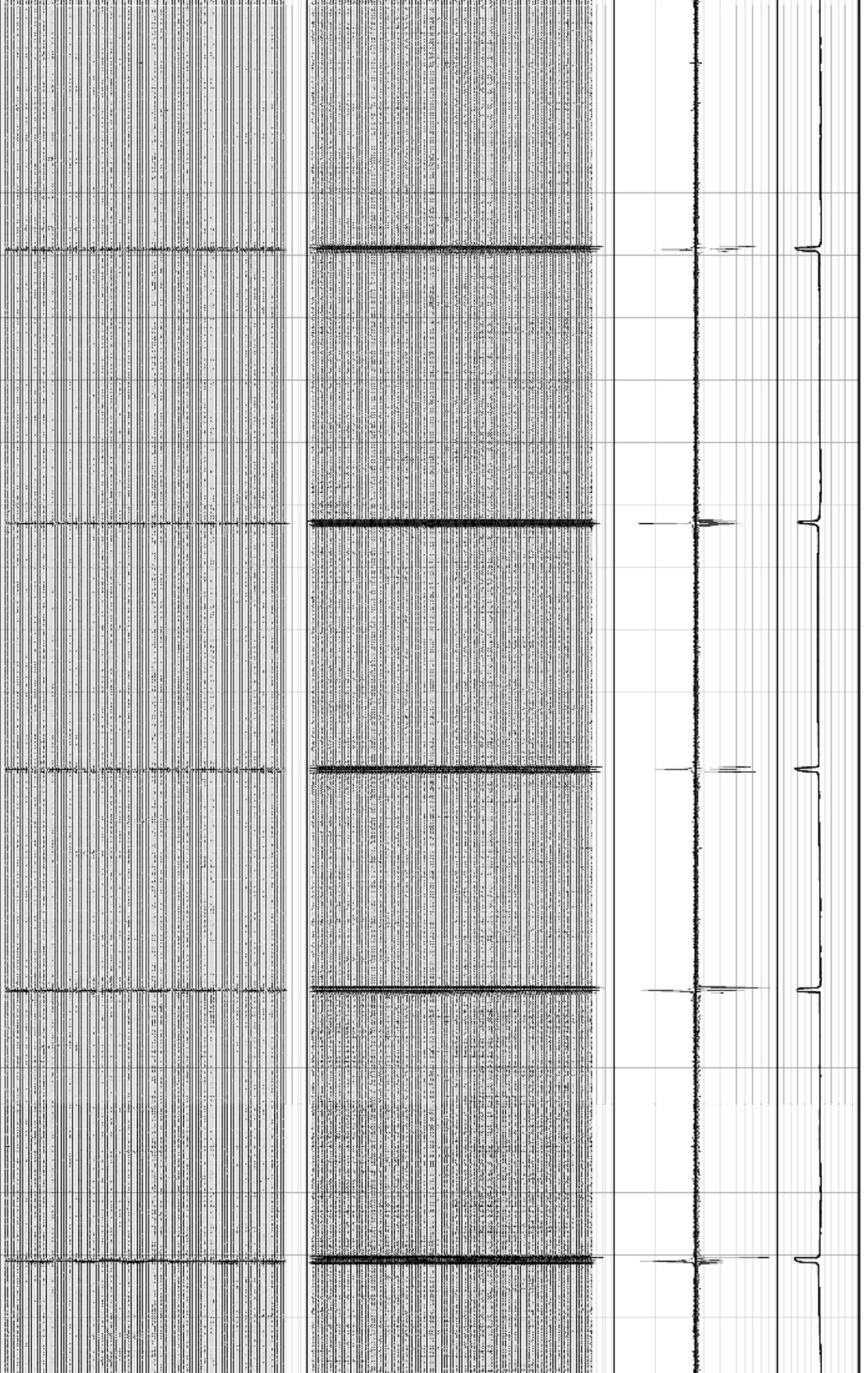
6350.0 ft

6400.0 ft

6450.0 ft

J147-C1	J147-C1	J148-C1	J148-C1	J149-C1	J149-C1	J150-C1	J150-C1	J151-C1	J151-C1
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J152-C1

J153-C1

J153-C1

J154-C1

J154-C1

J155-C1

J155-C1

J156-C1

J156-C1

J157-C1

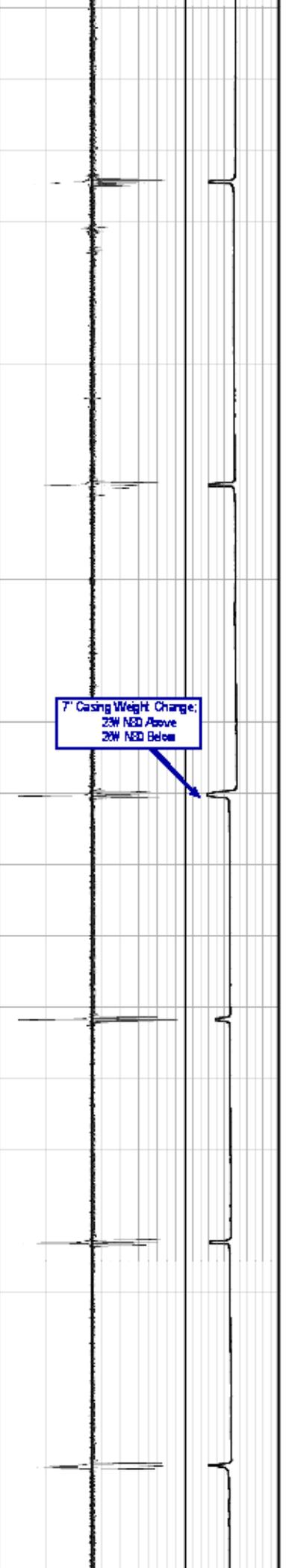
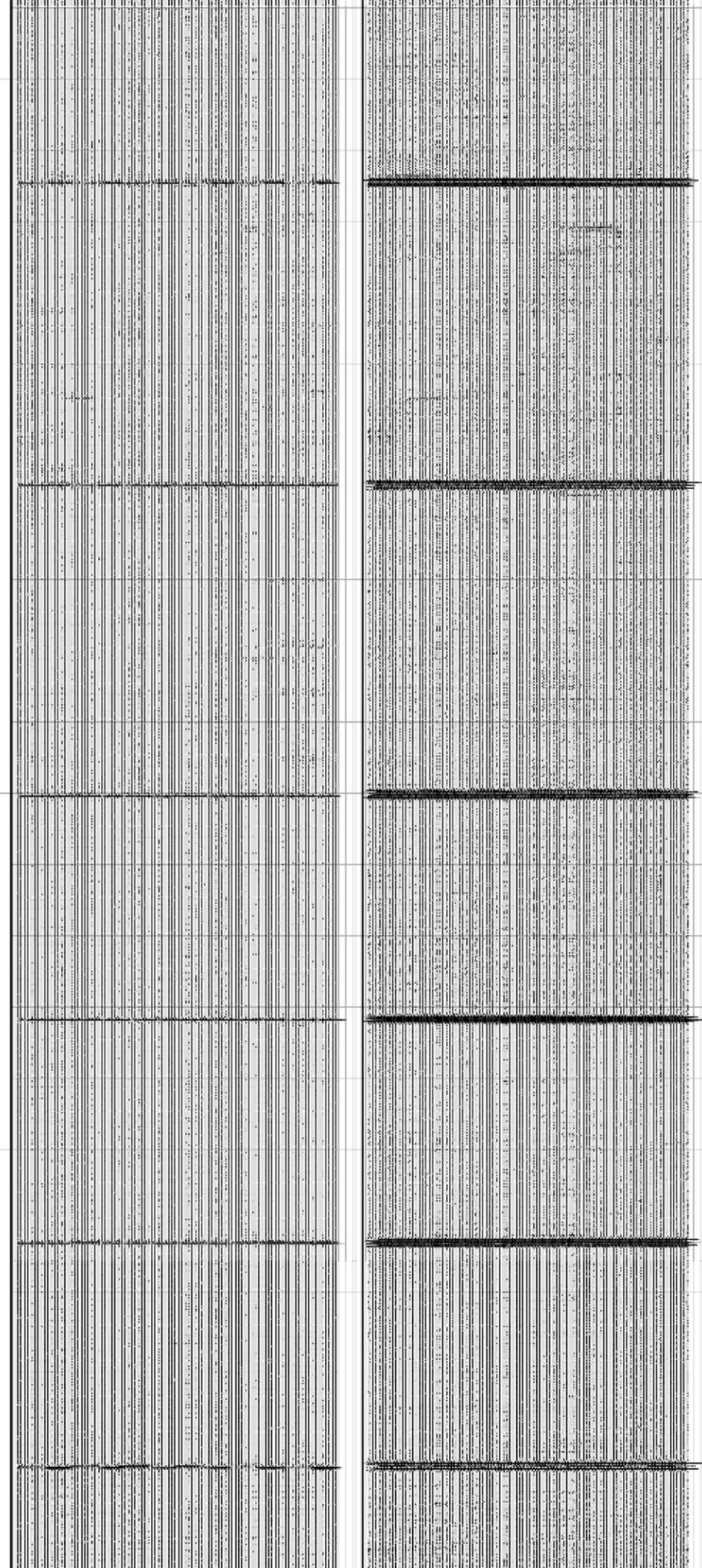
6500.0 ft

6550.0 ft

6600.0 ft

6650.0 ft

J157-C1 6700.0 ft  
J158-C1 6750.0 ft  
J159-C1 6800.0 ft  
J160-C1 6850.0 ft  
J161-C1 6900.0 ft  
J162-C1



7" Casing Weight Change;  
2W NED Above  
2W NED Below

ft

6950.0 ft

7000.0 ft

7050.0 ft

7100.0 ft

J164-C1

J165-C1

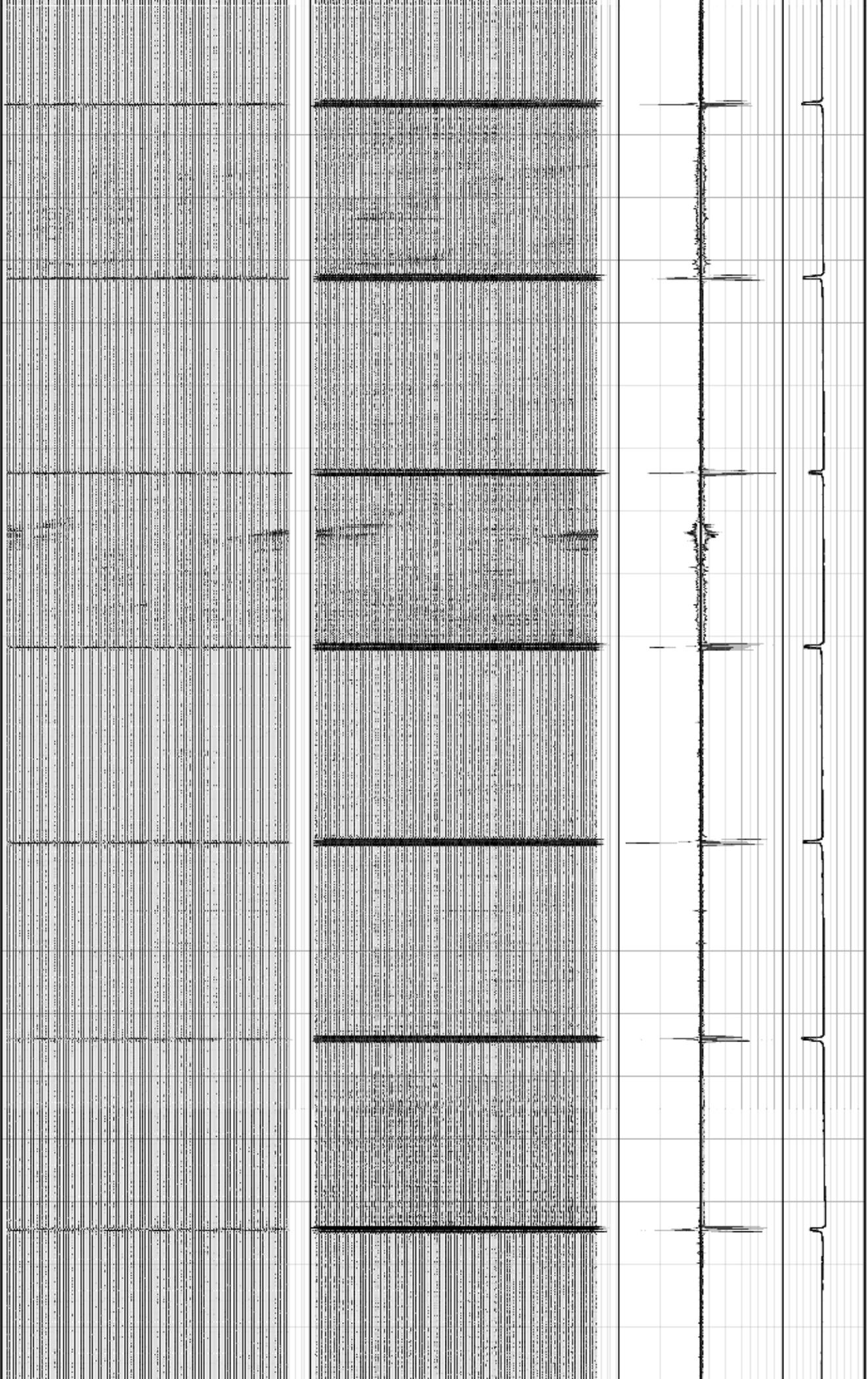
J166-C1

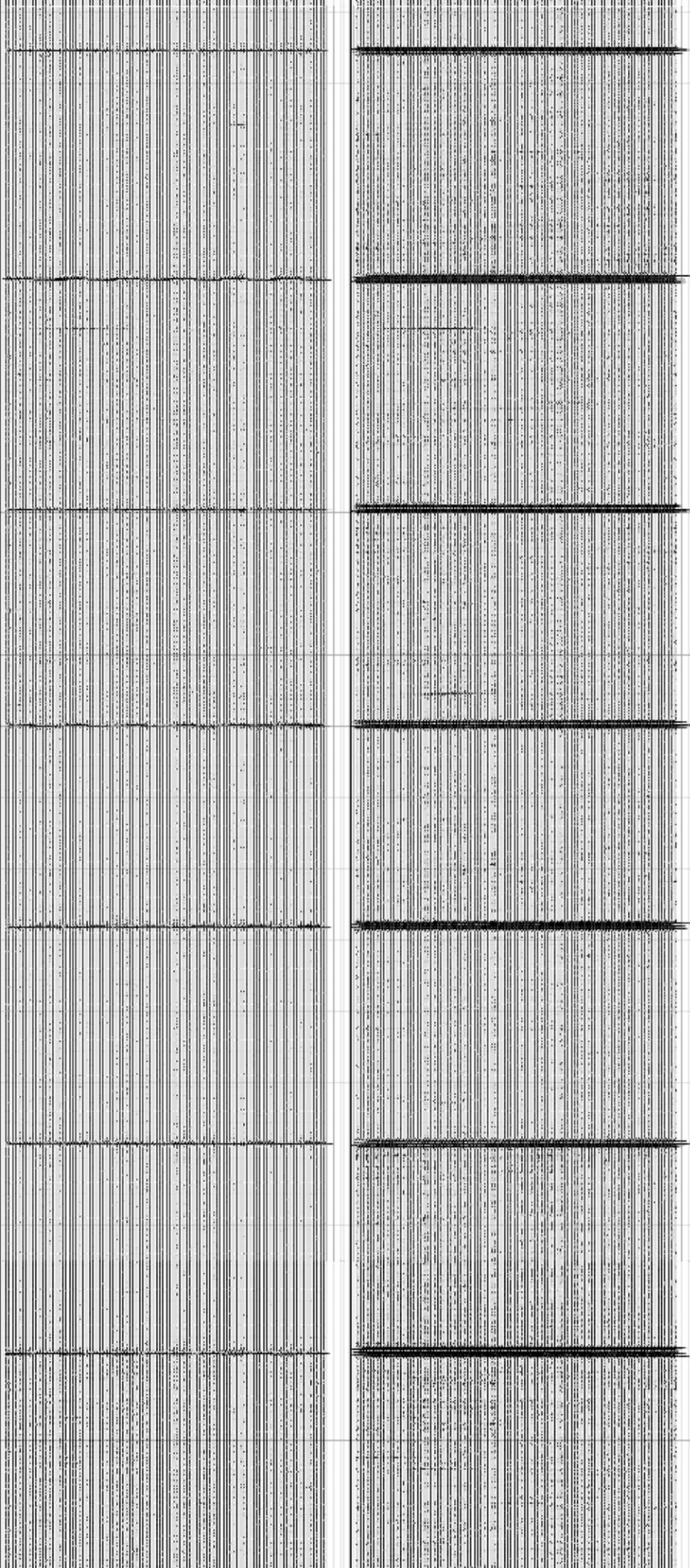
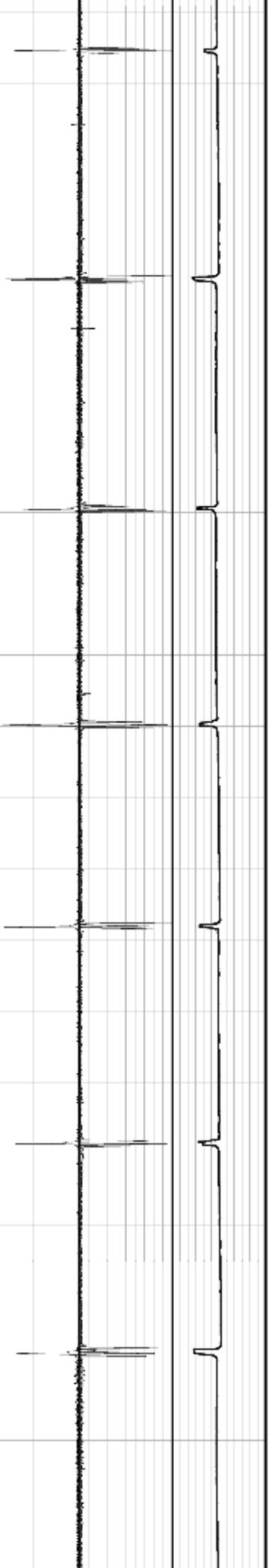
J167-C1

J168-C1

J169-C1

J170-C1





J171-C1

J172-C1

J173-C1

J174-C1

J175-C1

J176-C1

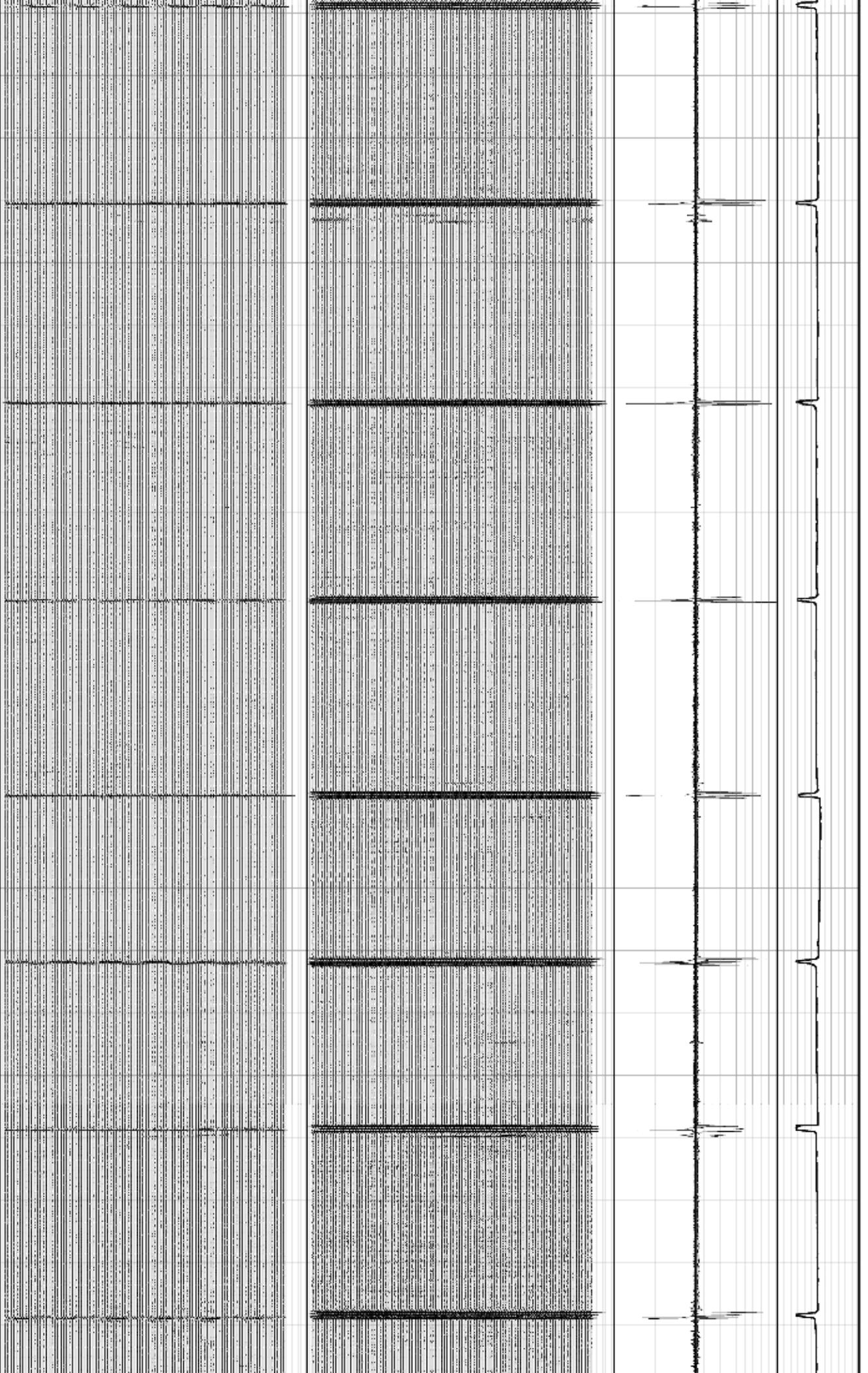
J177-C1

7150.0 ft

7200.0 ft

7250.0 ft

7300.0 ft



J178-C1

J179-C1

J180-C1

J181-C1

J182-C1

J183-C1

J184-C2

7350.0 ft

7400.0 ft

7450.0 ft

7500.0 ft

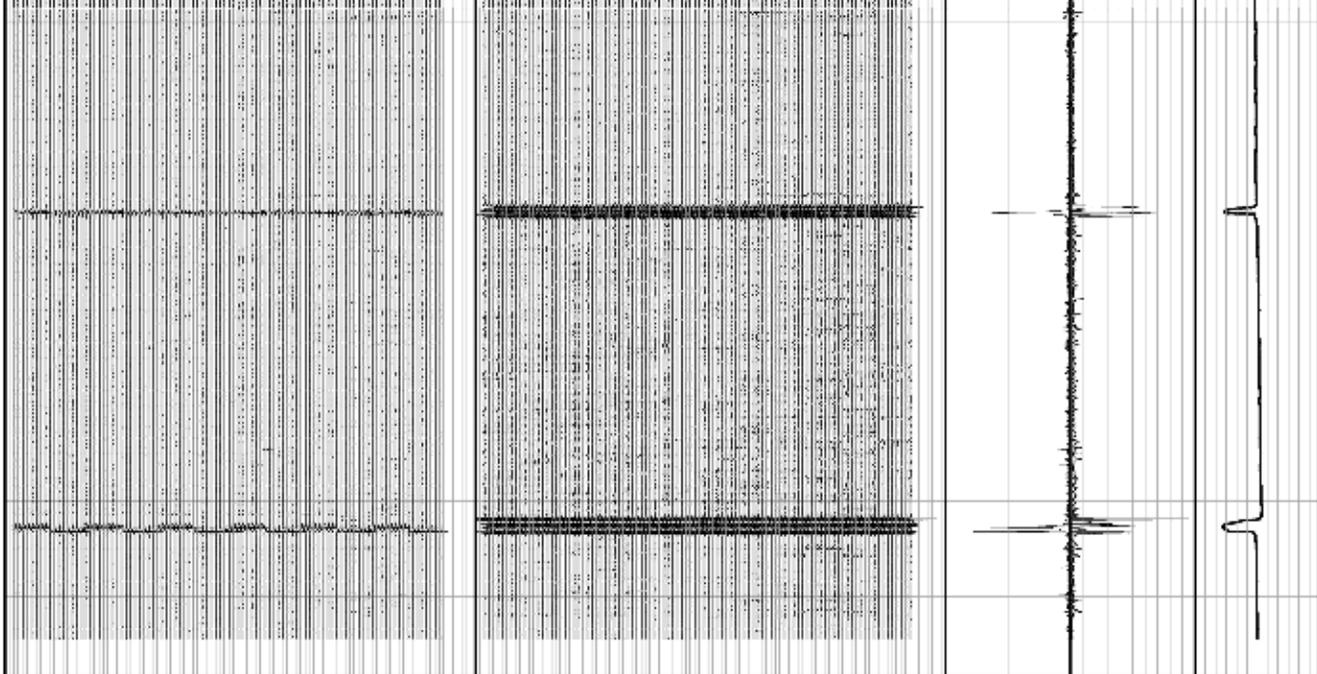
7550.0 ft

J185-C1

J186-C1

J186-C1

7600.0 A



Southern California Gas Company Porter 44  
File 20160215\_151731\_RSP\_0\_0\_0\_0\_0\_0\_0\_0\_0.mvl

