APPENDIX F

GL&V NEW WELLS INSTALLATION

Contents of Appendix F

MONITORING WELL INSTALLATION

Three new monitoring wells were installed on the GL&V facility directly south of the GE site (refer to figure 4-5). One new well, V-114, was drilled in the V-14BD, V-214 cluster and two multilevel wells were installed in two former water production wells, PW-1 and PW-2. The details of the well installation, well construction diagrams, drilling core logs and geophysical borehole logs of all three new wells is contained herein.

WELL V-114 INSTALLATION

Monitoring well V-114 is located south of the TDCS on GL&V property near existing wells V-14BD and V-214. A 4-inch hole was drilled to a depth of 216 feet below ground surface (bgs) between June 14 and 22, 2010, and 4-inch steel casing was installed to a depth of approximately 20 feet bgs. The borehole was drilled to the bedrock surface, at 13.5 feet, using augers. From the bedrock surface to 110 feet the borehole was drilled, without sampling, using down-hole air hammer. Core drilling was completed using HQ-size bit and rock core was collected and logged from 110 feet to the bottom of the bore hole. Geophysical borehole logging was performed on June 29, 2010. The geophysical logs included: acoustic televiewer, caliper log, natural gamma, borehole flow meter, fluid temperature, and fluid resistivity. Refer to core logs, geophysical logs, and well construction diagrams for additional details. The open interval for the monitoring well was selected using the rock core and geophysical logs. A 2-inch PVC monitoring well was installed to a depth of 216 feet bgs on September 13 and 14, 2010, with an open and screened interval located between 176 to 216 feet bgs. A sand pack was installed around the 2-inch PVC casing from 170 to 216 feet bgs. A bentonite seal was placed above the sand pack at 164 to 170 feet bgs and was then grouted between 4 to 164 feet bgs.

MULTI-LEVEL WELLS PW-1 AND PW-2 INSTALLATION

The two former production wells located on GL&V property were converted into multi-level monitoring wells. Production Well 1 (PW-1) and Production Well 2 (PW-2) were installed prior to the 1970s, the exact date is unknown. The use of the production wells ceased in the mid-1970s. In the Bedrock Feasibility Study report (GeoTrans, 2001), it was recommended that the two former GL&V production wells be converted to multi-level monitoring wells.

Well PW-1 is located in the boiler room about five feet northwest of the masonry chimney stack. Well PW-2 is located in the sub-floor of a high-bay garage building on the north

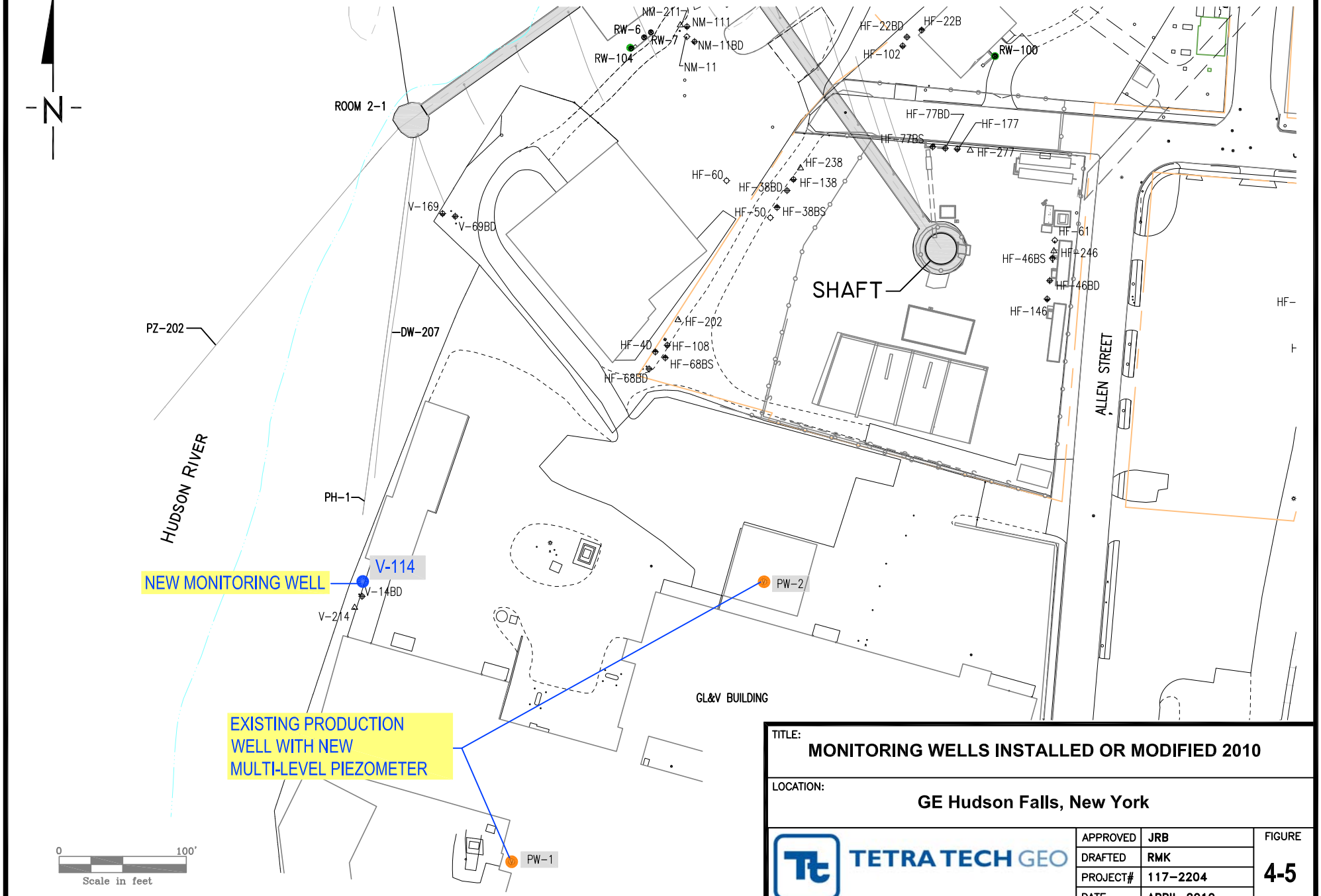
end of the GL&V property. Access to the original well head of PW-2 is through a 23 inch diameter hole in the main floor, however, to avoid the potentially difficult access, the new multi-level well pipes were installed up to the main floor level directly underneath the steel plate cover in the floor. The depths of PW-1 and PW-2 recorded by the geophysical logs were 283 feet and 303 feet, respectively.

The existing pump in PW-1 and was removed on July 23, 2010, and properly disposed of off-site. A suite of geophysical logs was performed and data collected from PW-1 on June 30, 2010, and from PW-2 on August 2, 2010. The geophysical logs included: acoustic televiewer, caliper log, natural gamma, borehole flow meter, fluid temperature, and fluid resistivity. The geophysical logs were analyzed to locate potential open fractures and to select the depths of each of the intervals to be monitored. The individual monitoring well screened intervals were selected to monitor hydraulically active fractures within each formation penetrated by the borehole.

Multi-level standpipe piezometers were installed between September 14 and 21, 2010. Five, one and a quarter inch PVC wells were installed in PW-1 at the following depths bgs: 30-45 feet, 85-100 feet, 135-150 feet, 195-210 feet, and 265-280 feet. Six, one and a quarter inch PVC wells were installed in PW-2 at the following depths: 45-60 feet, 75-90 feet, 147-162 feet, 205-220 feet, 250-260 feet, and 285-300 feet. A sand pack was placed in the annular space between the wells and borehole wall and bentonite seals were placed between each of the open intervals. Refer to well construction diagrams for details. From September 29 to October 1, 2010, each well was developed using a Waterra™ or airlift pump to clear any debris which may have fallen within each screen during installation. Development was performed by purging each well until the water was clear.

On November 3, 2010, the location and elevations of wells PW-1, PW-2, V-114, V-214, and V-14BD were surveyed, relative to the North American datum of 1927 NAD 1927 and national geodetic vertical datum of 1929 (NGVD), by Van Dusen and Steves Land Surveyors (Van Dusen). Each of the wells was surveyed at the north point on the PVC or steel well casing. The survey data are included on the well construction diagrams.

G:\GE_HUDS\2011\4-11_HYRO_MON_RPT\MON-WELLS-INSTALLED-2010.DWG



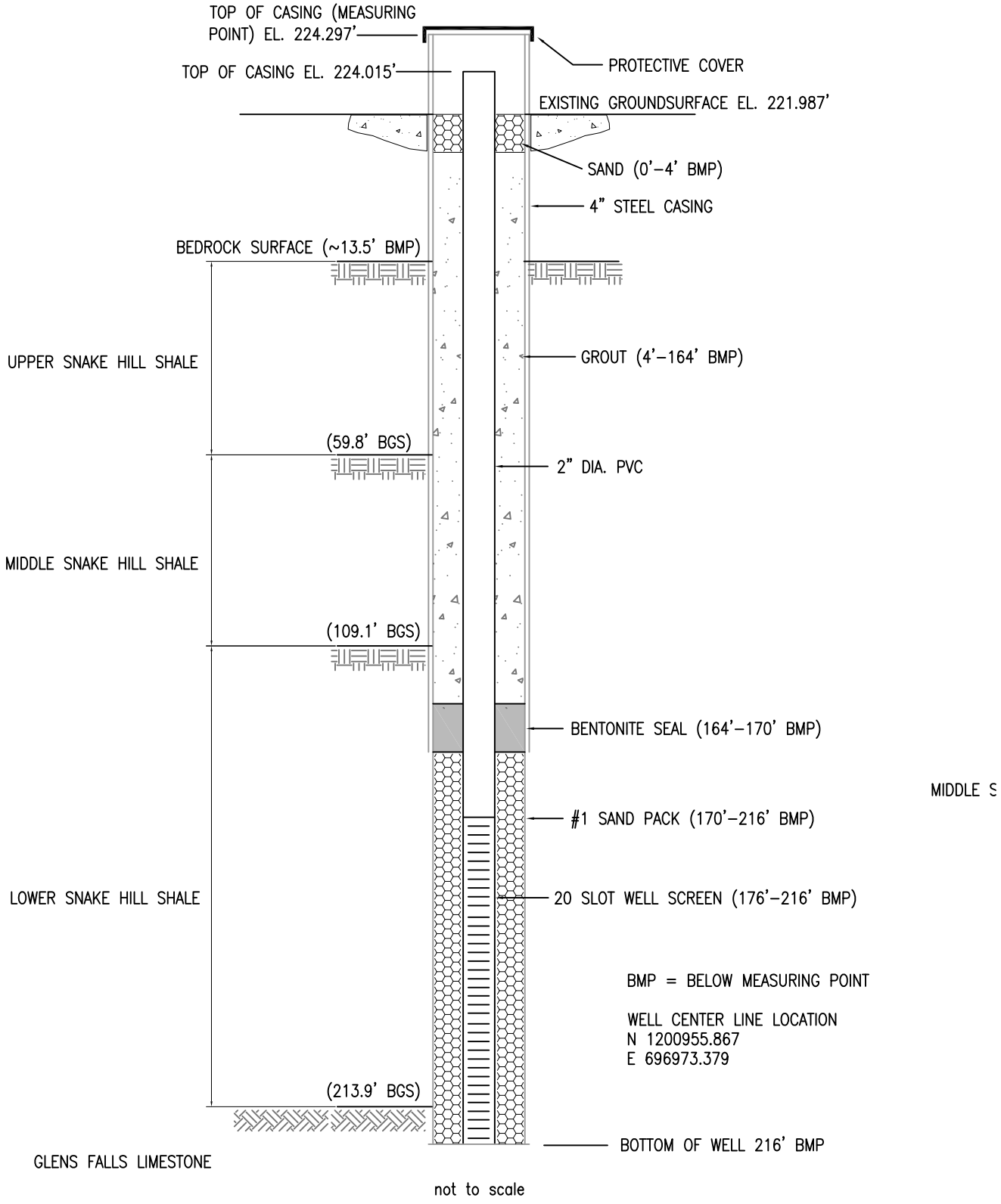
TITLE:
MONITORING WELLS INSTALLED OR MODIFIED 2010

LOCATION:
GE Hudson Falls, New York

TETRA TECH GEO

APPROVED	JRB
DRAFTED	RMK
PROJECT#	117-2204
DATE	APRIL 2010

FIGURE
4-5



TITLE: **V-114 WELL CONSTRUCTION DIAGRAM**

LOCATION: **GE Hudson Falls, New York**

TETRA TECH GEO

APPROVED	JFB
DRAFTED	RMK
PROJECT#	117–2204
DATE	APRIL 2011

FIGURE **V-114**

G:\GE_HUDS\2011\4-11_HYRO_MON_RPT\APPENDIX-FIGS\WELL_DIAGRAMS_V114-PW1-PW2.DWG

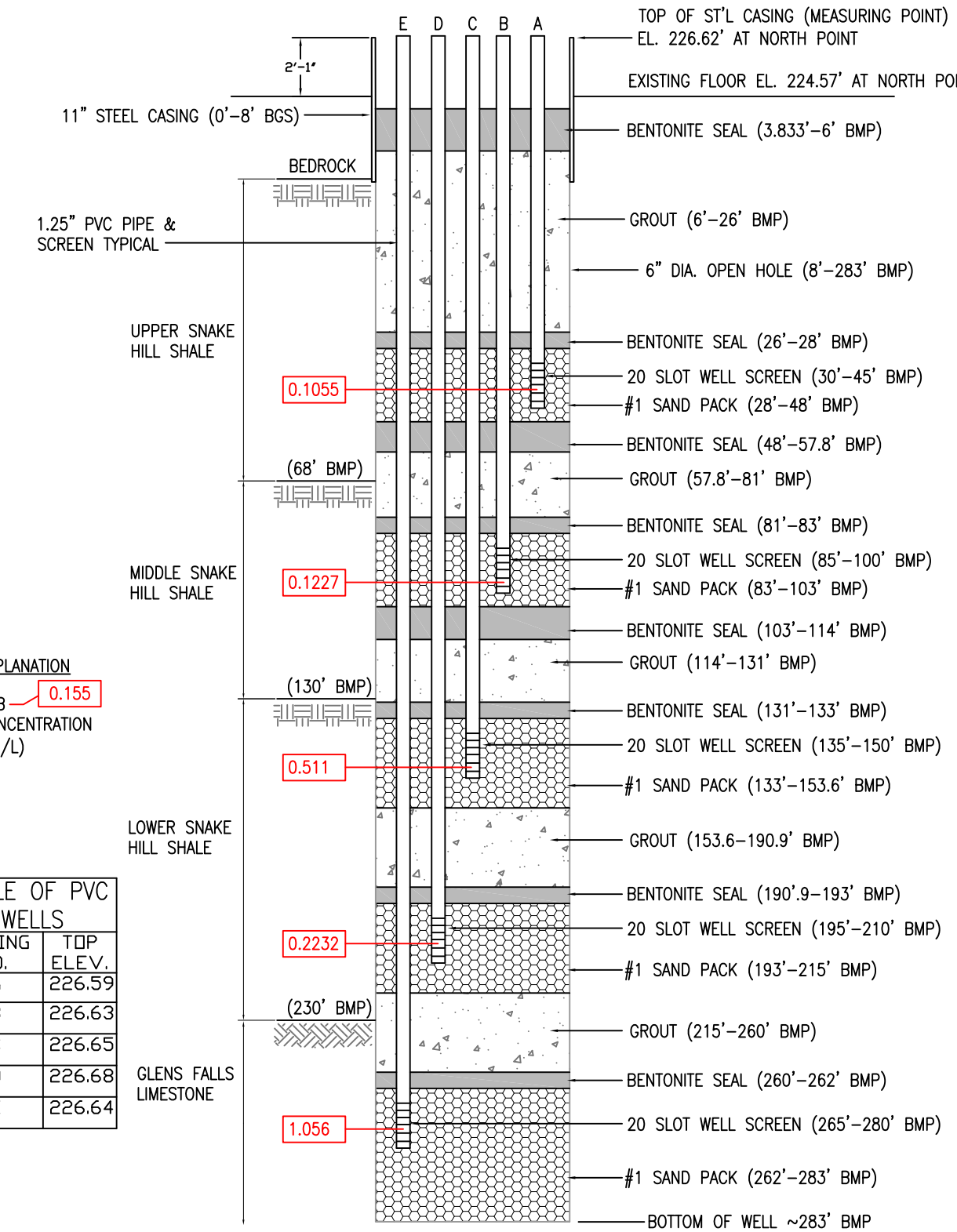
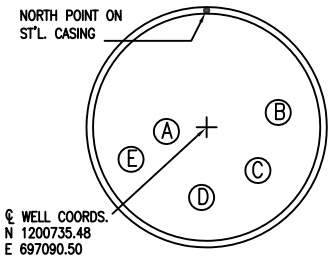


TABLE OF PVC WELLS	
CASING ID.	TOP ELEV.
A	226.59
B	226.63
C	226.65
D	226.68
E	226.64



WELL PLAN VIEW

TITLE: **PW-1 WELL CONSTRUCTION DIAGRAM**

LOCATION: **GE Hudson Falls, New York**

TETRA TECH GEO

APPROVED	JFB
DRAFTED	RMK
PROJECT#	117-2204
DATE	APRIL 2011

FIGURE **PW-1**

G:\GE_HUDS\2011\4-11_HYRO_MON_RPT\APPENDIX-FIGS\WELL_DIAGRAMS_V11\4-PW1-PW2.DWG

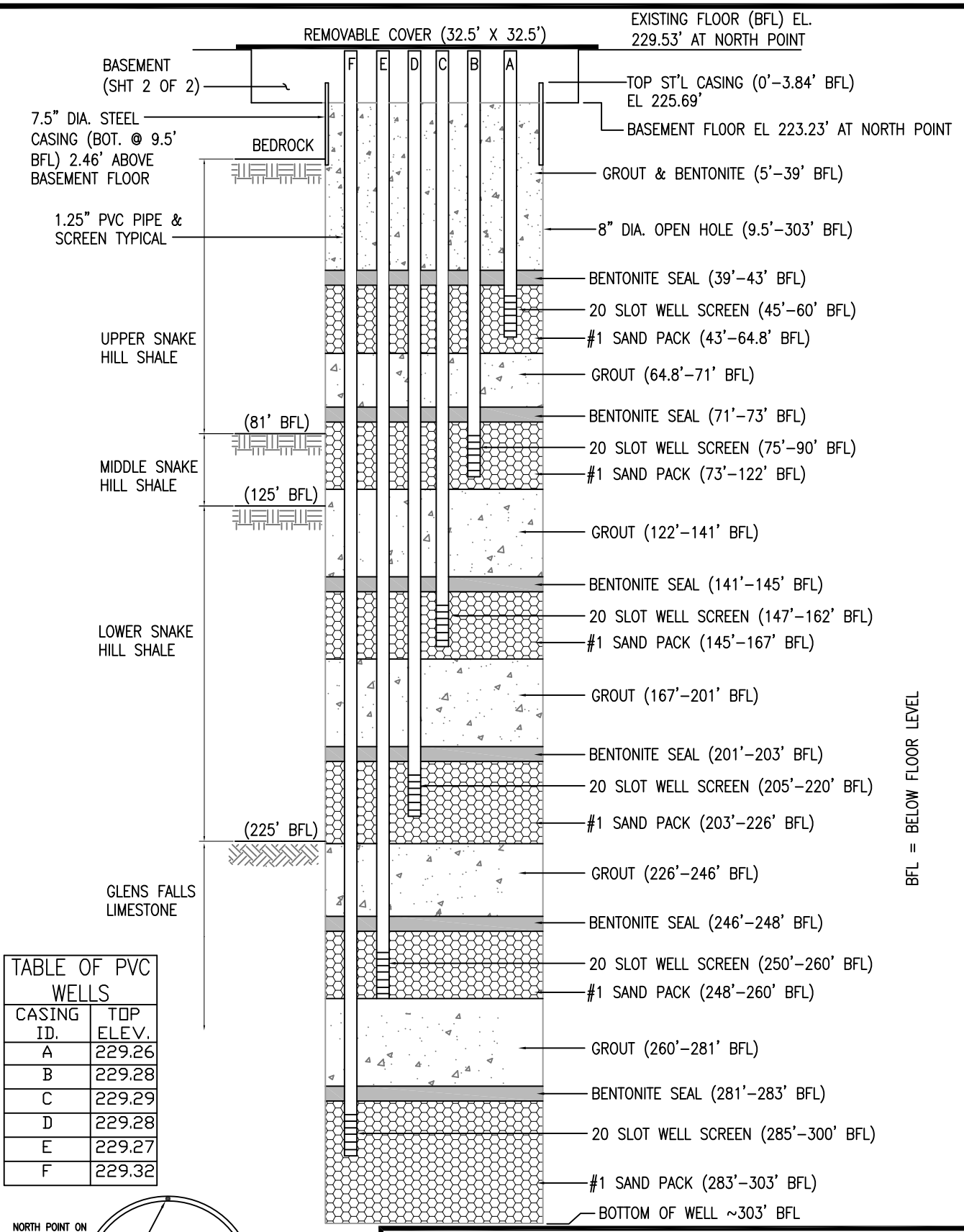
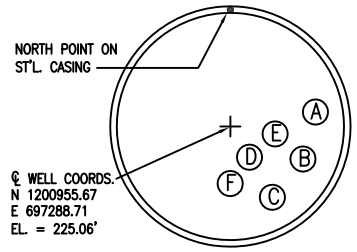


TABLE OF PVC WELLS	
CASING ID.	TOP ELEV.
A	229.26
B	229.28
C	229.29
D	229.28
E	229.27
F	229.32



WELL PLAN VIEW

not to scale

TITLE: **PW-2 WELL CONSTRUCTON DIAGRAM**

LOCATION: **GE Hudson Falls, New York**

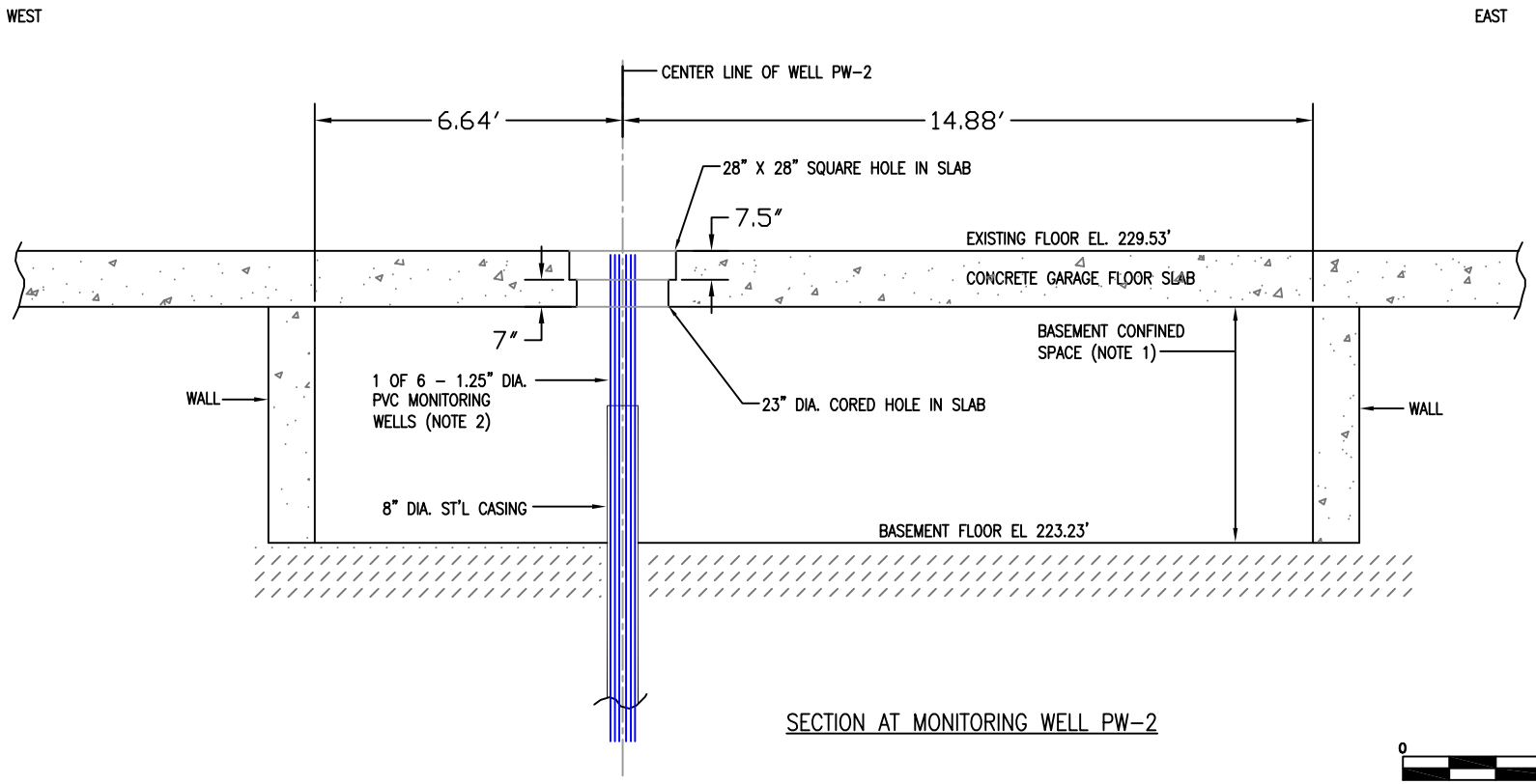
TETRA TECH GEO

APPROVED	JFB
DRAFTED	RMK
PROJECT#	117–2204
DATE	APRIL 2011

FIGURE **PW-2** SHT 1 OF 2

G:\GE_HUDS\2011\4-11_HYRO_MON_RPT\APPENDIX-FIGS\WELL_DIAGRAMS_V11.4-PW1-PW2.DWG

G:\GE_HUDS\2011\4-11_HYRO_MON_RPT\APPENDIX-FIGS\WELL_DIAGRAMS_V114-PW1-PW2.DWG



SECTION AT MONITORING WELL PW-2

0 4 FT.
Scale in feet
APPROXIMATE

NOTE:

1. BASEMENT EXTENDS 9.16' TO THE NORTH AND 7.13' TO THE SOUTH
2. REFER TO SHEET 1 OF 2 FOR PW-2 FOR WELL CONSTRUCTION INFORMATION

TITLE: **BASEMENT SECTION AT MONITORING WELL PW-2**

LOCATION: **GE Hudson Falls, New York**

TETRA TECH GEO

APPROVED	JFB
DRAFTED	RMK
PROJECT#	117-2204
DATE	APRIL 2011

FIGURE **PW-2** SHT 2 OF 2

CORE BORING REPORT

BORING NO. **V-114**

PROJECT: **Hudson Falls, NY**
CLIENT: **General Electric**
CONTRACTOR: **GeoTrans, Inc.**
EQUIPMENT USED: **CME75**

JOB NO.: **117-2204**
PAGE NO.: **1 of 7**
ELEVATION:
DATE START: **6/14/2010**
DATE FINISH: **6/22/2010**
DRILLER: **Parratt-Wolff**
PREPARED BY: **JAL**
LOCATION: GL&V

GROUND WATER		DEPTH TO:			ORIENTATION		CORE BARREL	
DATE	HRS AFT COMP	WATER	BOT. OF CASING	BOT. OF HOLE	**X**	VERTICAL	TYPE	**HQ**
						HORIZONTAL	SIZE	**5.2**
						INCLINED	Bit (ft)	
						BEARING	Barrel (ft)	
					0	ANG. FROM VERT.	Total (ft)	

DEPTH IN FEET	DRILL RATE MIN/FT	CORE NO. DEPTH RANGE	SAMPLE NUMBER	RECOVERY FT	RECOVERY %	RQD (%)	FIELD CLASSIFICATION AND REMARKS
							Augered to 20 feet. Air hammered; Bedrock at 13.5 feet
5							
10							
15							
20							
25							

(Continued)

FIELD HARDNESS		BEDDING		ATTITUDE AND ANGLE	JOINTS / SHEAR / FRACTURE		WEATHERING
V. HARD	- KNIFE CAN'T SCRATCH	V. THIN	<2"	HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH
HARD	- SCRATCHES DIFFICULT	THIN	2"-12"	SHALLOW OR LOW ANGLE (5-35°)	CLOSE	2"-12"	V. SLIGHT
MOD. HARD	- SCRATCHES EASILY	MEDIUM	12"-36"	MODERATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	SLIGHT
SOFT	- GROVES	THICK	36"-120"	STEEP OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE
V. SOFT	- CARVES	V. THICK	>120"	VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE
							V. SEVERE
							COMPLETE

DEPTH IN FEET	DRILL RATE MIN/FT	CORE NO. DEPTH RANGE	SAMPLE NUMBER	RECOVERY FT	RECOVERY %	RQD (%)	FIELD CLASSIFICATION AND REMARKS
							Augered to 20 feet. Air hammered; Bedrock at 13.5 feet *(continued)*
35							
40							
45							
50							
55		0-110					
60							
65							
							(Continued)

FIELD HARDNESS		BEDDING		ATTITUDE AND ANGLE	JOINTS / SHEAR / FRACTURE		WEATHERING
V. HARD	- KNIFE CAN'T SCRATCH	V. THIN	<2"	HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH
HARD	- SCRATCHES DIFFICULT	THIN	2"-12"	SHALLOW OR LOW ANGLE (5-35°)	CLOSE	2"-12"	V. SLIGHT
MOD. HARD	- SCRATCHES EASILY	MEDIUM	12"-36"	MODERATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	SLIGHT
SOFT	- GROVES	THICK	36"-120"	STEEP OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE
V. SOFT	- CARVES	V. THICK	>120"	VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE
							V. SEVERE
							COMPLETE

DEPTH IN FEET	DRILL RATE MIN/FT	CORE NO. DEPTH RANGE	SAMPLE NUMBER	RECOVERY FT	RECOVERY %	RQD (%)	FIELD CLASSIFICATION AND REMARKS
							Augered to 20 feet. Air hammered; Bedrock at 13.5 feet *(continued)*
70							
75							
80							
85							
90							
95							
100							

(Continued)

FIELD HARDNESS		BEDDING		ATTITUDE AND ANGLE	JOINTS / SHEAR / FRACTURE		WEATHERING
V. HARD	- KNIFE CAN'T SCRATCH	V. THIN	<2"	HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH
HARD	- SCRATCHES DIFFICULT	THIN	2"-12"	SHALLOW OR LOW ANGLE (5-35°)	CLOSE	2"-12"	V. SLIGHT
MOD. HARD	- SCRATCHES EASILY	MEDIUM	12"-36"	MODERATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	SLIGHT
SOFT	- GROVES	THICK	36"-120"	STEEP OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE
V. SOFT	- CARVES	V. THICK	>120"	VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE
							V. SEVERE
							COMPLETE

DEPTH IN FEET	DRILL RATE MIN/FT	CORE NO. DEPTH RANGE	SAMPLE NUMBER	RECOVERY FT	RECOVERY %	RQD (%)	FIELD CLASSIFICATION AND REMARKS
105							Augered to 20 feet. Air hammered; Bedrock at 13.5 feet *(continued)*
110		110-111	1	1	100	100	Mod. hard, fresh black SHALE; some pyrite nodules up to 1"; healed fracture at 110.3'; hammer break at 110.9'.
115	36/5	111-116	2	5	100	100	SHALE, similar to above, except some calcite and healed closed fractures; low angle open fracture, smooth, slightly open, polished, slightly weathered, horizontal (0°) @113.95'; low angle open fracture,open, calcite, rough, weathered, slicks, mid-angle (20°) at 114.5'.
120	42/5	116-121	3	5	100	100	Mod. hard, fresh black SHALE with alternating bands of light grey and black throughout. Calcite and pyrite fossils up to 1" throughout; ocassional calcite veins (1mm-2mm) and pyrite nodules up to 1/2" thick.
125	17/5	121-126	4	4.6	92	92	Mod. hard to hard, fresh black SHALE. Calcite and pyrite fossils throughout; ocassional calcite and pyrite veins 1mm-2mm thick, near mid-angle (20°-55°); low angle open fracture, open, slightly weathered, drill induced, near horizontal (<10°) at 121.55'; except low angle open fracture, open, slightly weathered, smooth, mud on face, near horizontal (<10°) at 123.45'; low angle open fractures, open, weathered, rough, calcite vein, near horizontal (<10°) at 124.4-124.75'; low angle open fracture,open, slightly weathered to weathered, rough, mud on face, near horizontal (5-10°) at 125.2'; drill induced fracture, slightly open to tight, fresh, smooth at 126.15'; low angle open fracture, slightly open to tight, fresh, smooth, possibly drill induced, horizontal (0°) at 127.35'; low angle open fracture, slightly open, fresh, slightly weathered, smooth, horizontal (0°) at 129.45'; low angle open fracture, undulating, open, smooth, polished, weathered to slightly weathered, horizontal (0°), at 129.65'; a few healed fractures with some calcite, mid-angle (50-55°) at 130.5'.
130	18/5	126-131	5	4.8	96	96	
135	25/5	131-136	6	2.7	54	54	SHALE, similar to above, except low angle open fractures from 131.25-135.75', open, smooth to rough, weathered to slightly weathered, horizontal (0°); pyrite nodules 1/2-1" thick, calcite veins <1mm.
	17/5	136-141	7	4.9	98	98	SHALE, similar to above, except ocassional pyrite nodules 1/2" thick, trace calcite and pyrite fossils; calcite stringers; low angle open fractures from 138.1-139.8', open, smooth to rough, fresh, slightly weathered, near horizontal (0°- 10°).

(Continued)

FIELD HARDNESS		BEDDING		ATTITUDE AND ANGLE	JOINTS / SHEAR / FRACTURE		WEATHERING
V. HARD	- KNIFE CAN'T SCRATCH	V. THIN	<2"	HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH
HARD	- SCRATCHES DIFFICULT	THIN	2"-12"	SHALLOW OR LOW ANGLE (5-35°)	CLOSE	2"-12"	V. SLIGHT
MOD. HARD	- SCRATCHES EASILY	MEDIUM	12"-36"	MODERATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	SLIGHT
SOFT	- GROVES	THICK	36"-120"	STEEP OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE
V. SOFT	- CARVES	V. THICK	>120"	VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE
							V. SEVERE
							COMPLETE

DEPTH IN FEET	DRILL RATE MIN/FT	CORE NO. DEPTH RANGE	SAMPLE NUMBER	RECOVERY FT	RECOVERY %	RQD (%)	FIELD CLASSIFICATION AND REMARKS
140							
145	21/5	141-146	8	5	100	100	Mod. hard, fresh black SHALE. Trace calcite and pyrite fossils up to 1/4" throughout; ocassional calcite and pyrite veins (1mm-2mm); ocassional pyrite nodules up to 1" thick; low angle open fracture, tight to slightly open, slicks, slightly weathered, rough, near horizontal (10°-15°) at 142.5'.
150	19/5	146-151	9	5	100	100	Healed fracture (50°).
155	19/5	151-156	10	5	100	100	Mod. hard, fresh black SHALE. Calcite and pyrite fossils up to 1" throughout; Calcite and pyrite veins throughout (1mm-3mm); low angle open fractures from 154.5-158', open to slightly open, smooth to rough, slightly weathered, polished, near horizontal (5°- 10°); a few healed fractures with some calcite (30°- 50°).
160	20/5	156-161	11	5	100	100	
165	19/5	161-166	12	4.95	99	99	SHALE, similar to above, except low angle open fracture, open to slightly open, smooth, slightly weathered, slightly polished, slightly undulating, horizontal (0°). SHALE, similar to above, except low angle open fractures, open to slightly open, rough to smooth, fresh, horizontal to mid-angle (0°- 40°).
170	16/5	166-171	13	5	100	100	Hard, fresh black SHALE. Trace calcite and pyrite fossils; calcite and pyrite veins throughout (1mm-3mm); healed fractures throughout from 169-179.6', mid-angle (40°- 60°).
	15/5	171-176	14	5	100	100	

(Continued)

FIELD HARDNESS		BEDDING		ATTITUDE AND ANGLE	JOINTS / SHEAR / FRACTURE		WEATHERING
V. HARD	- KNIFE CAN'T SCRATCH	V. THIN	<2"	HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH
HARD	- SCRATCHES DIFFICULT	THIN	2"-12"	SHALLOW OR LOW ANGLE (5-35°)	CLOSE	2"-12"	V. SLIGHT
MOD. HARD	- SCRATCHES EASILY	MEDIUM	12"-36"	MODERATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	SLIGHT
SOFT	- GROVES	THICK	36"-120"	STEEP OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE
V. SOFT	- CARVES	V. THICK	>120"	VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE
							V. SEVERE
							COMPLETE

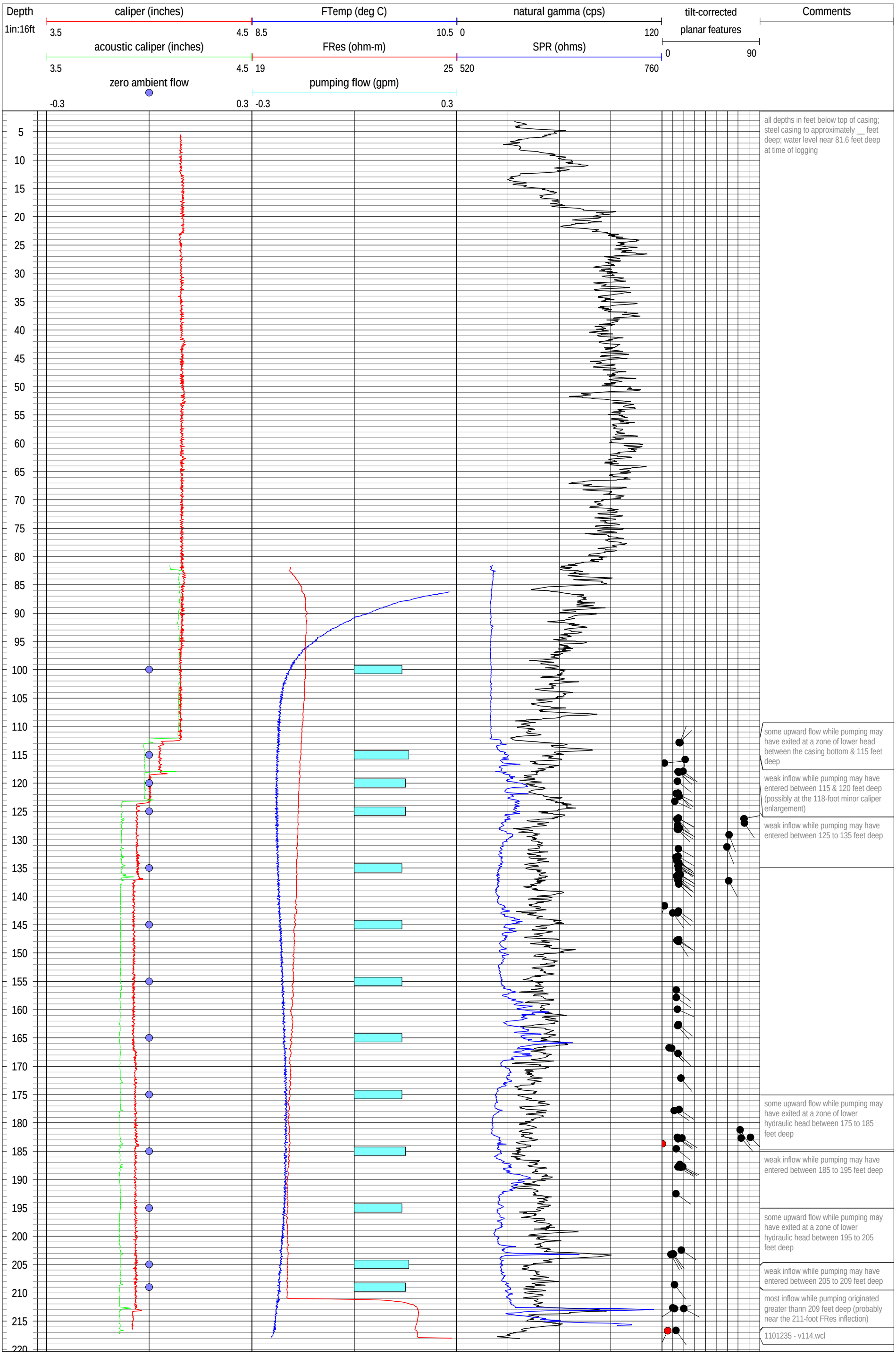
DEPTH IN FEET	DRILL RATE MIN/FT	CORE NO. DEPTH RANGE	SAMPLE NUMBER	RECOVERY FT	RECOVERY %	RQD (%)	FIELD CLASSIFICATION AND REMARKS
							Hard, fresh black SHALE. Trace calcite and pyrite fossils; calcite and pyrite veins throughout (1mm-3mm); healed fractures throughout from 169-179.6', mid-angle (40°- 60°).*(continued)*
	18/5						
		176-181	15	5	100	100	
180							
	20/5						SHALE, similar to above, except low angle open fractures 181.85-185.45' throughout, open, fresh to slightly weathered, rough to smooth, slightly undulating, slicks, calcite, horizontal (0°). Hydraulically active zone at 181.85' and 184.55-185.45'.
		181-186	16	5	100	100	SHALE, similar to above, except high angle open fracture, slightly open to tight, fresh, smooth to rough (50°- 60°).
185							
	27/5						Hard, fresh black SHALE. Calcite and pyrite fossils throughout and fossil bands up to 1/4"; calcite and pyrite veins throughout (1mm-3mm); ocassional pyrite nodule.
		186-191	17	5	100	100	
190							Healed fracture (30°)
	22/5						
		191-196	18	5	100	100	
195							
	21/5						Mod. hard, fresh black SHALE. Calcite and pyrite fossils throughout and fossil bands up to 1/2"; calcite and pyrite veins throughout (1mm-3mm); ocassional pyrite nodule.
		196-201	19	5	100	100	
200							
	19/5						SHALE, similar to above, except low to high angle open fractures throughout in marbelized calcite zone, open to slightly open, fresh to slightly weathered, slicks, upper basal shear fracture, horizontal to mid-angle (0°-50°).
		201-206	20	4.65	93	93	
205							
	20/5						
		206-211	21	5	100	100	
210							
							(Continued)

FIELD HARDNESS		BEDDING		ATTITUDE AND ANGLE	JOINTS / SHEAR / FRACTURE		WEATHERING
V. HARD	- KNIFE CAN'T SCRATCH	V. THIN	<2"	HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH
HARD	- SCRATCHES DIFFICULT	THIN	2"-12"	SHALLOW OR LOW ANGLE (5-35°)	CLOSE	2"-12"	V. SLIGHT
MOD. HARD	- SCRATCHES EASILY	MEDIUM	12"-36"	MODERATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	SLIGHT
SOFT	- GROVES	THICK	36"-120"	STEEP OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE
V. SOFT	- CARVES	V. THICK	>120"	VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE
							V. SEVERE
							COMPLETE

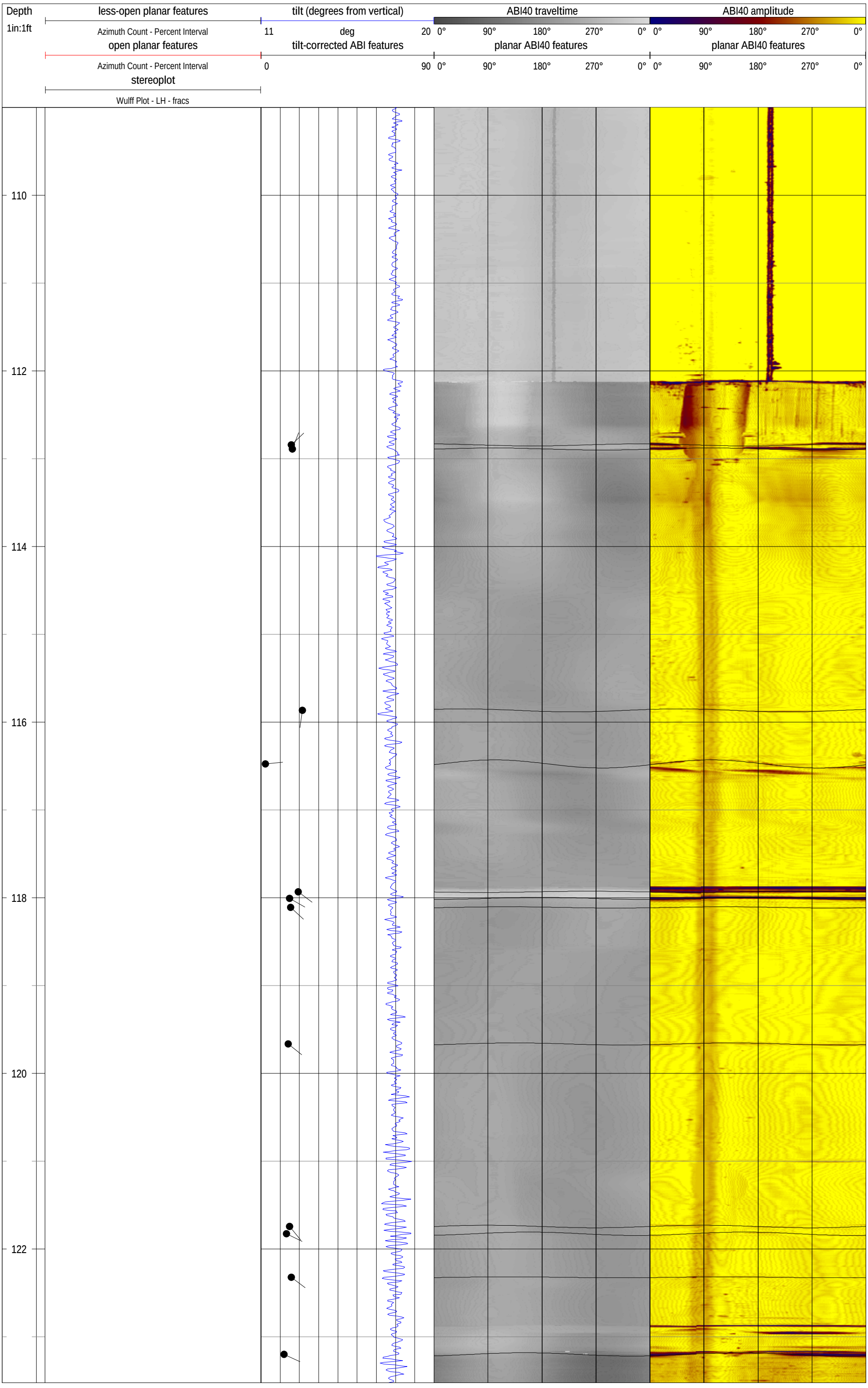
DEPTH IN FEET	DRILL RATE MIN/FT	CORE NO. DEPTH RANGE	SAMPLE NUMBER	RECOVERY FT	RECOVERY %	RQD (%)	FIELD CLASSIFICATION AND REMARKS
	18/5						Mod. hard, fresh black SHALE. Calcite and pyrite fossils throughout and fossil bands up to 1/2"; calcite and pyrite veins throughout (1mm-3mm); ocassional pyrite nodule.*(continued)*
		211-216	22	4.7	94	94	SHALE, similar to above, except heavy calcite and pyrite fossils, alternating grey and black bands, fossil bands througout; 210.9-211.45' Lower Basal shear fractures, low to high angle fractures, marbelized calcite and pyrite, open to slightly open, slicks, rough, slightly weathered (0°- 30°)*(continued)*
215							GLENS FALLS LIMESTONE at 213.9', calcite veins throughout at 1/4-1/2" spacing, <1-3mm, (20°- 30°).
							Bottom of boring at 216 feet.
220							
225							
230							
235							
240							
245							

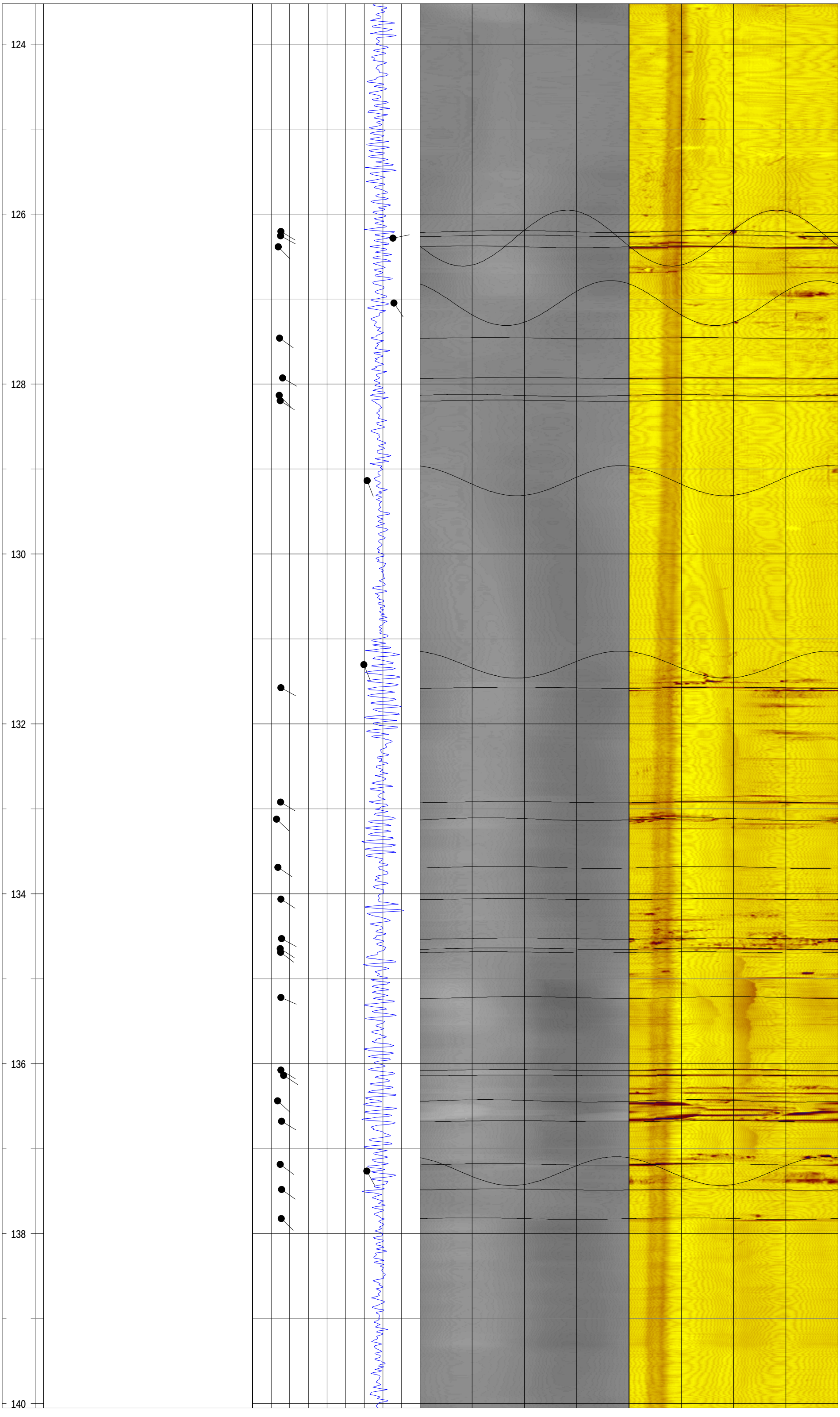
FIELD HARDNESS		BEDDING		ATTITUDE AND ANGLE	JOINTS / SHEAR / FRACTURE		WEATHERING
V. HARD	- KNIFE CAN'T SCRATCH	V. THIN	<2"	HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH
HARD	- SCRATCHES DIFFICULT	THIN	2"-12"	SHALLOW OR LOW ANGLE (5-35°)	CLOSE	2"-12"	V. SLIGHT
MOD. HARD	- SCRATCHES EASILY	MEDIUM	12"-36"	MODERATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	SLIGHT
SOFT	- GROVES	THICK	36"-120"	STEEP OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE
V. SOFT	- CARVES	V. THICK	>120"	VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE
							V. SEVERE
							COMPLETE

GeoTrans / Hudson Falls, NY - V-114 conventional log plot

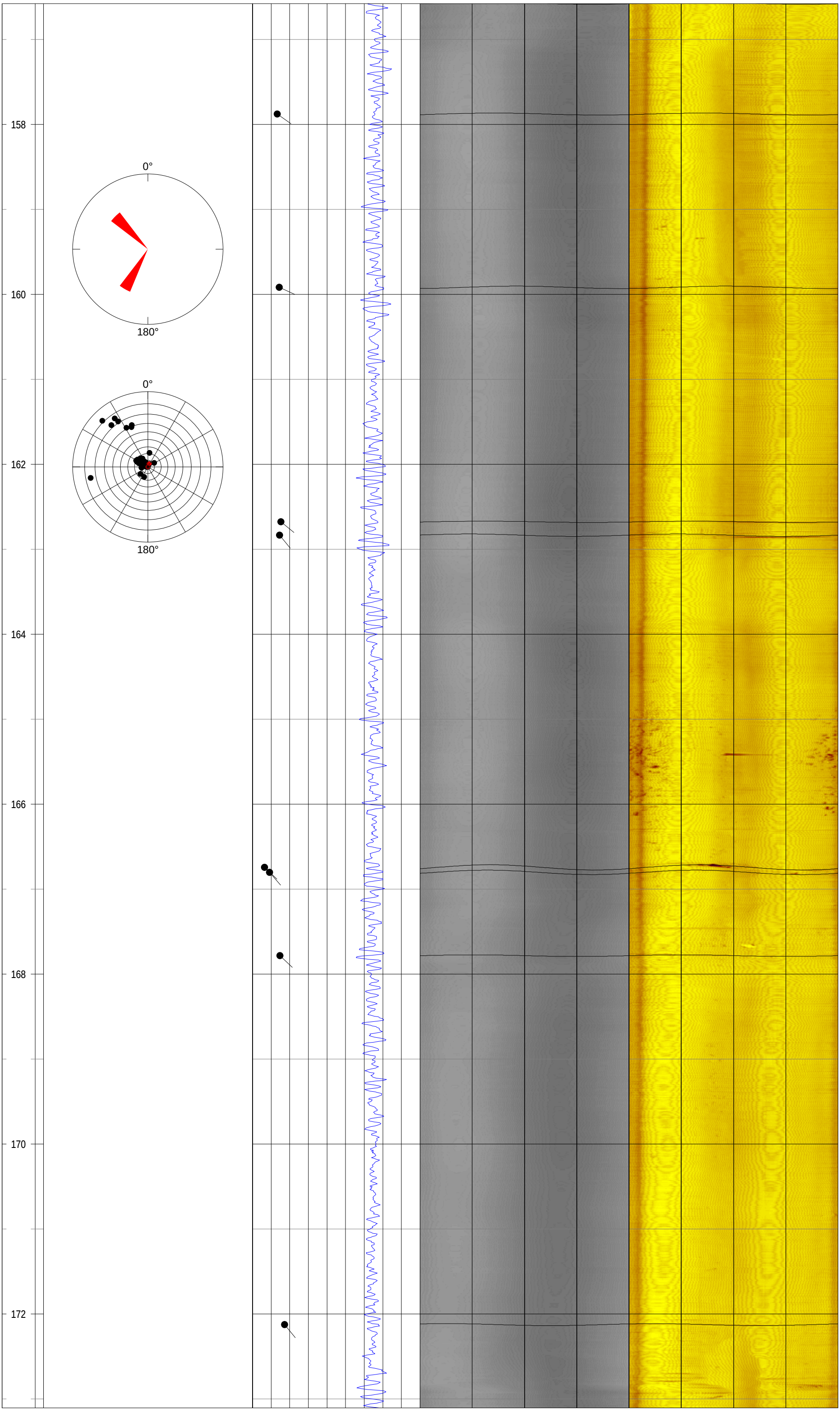


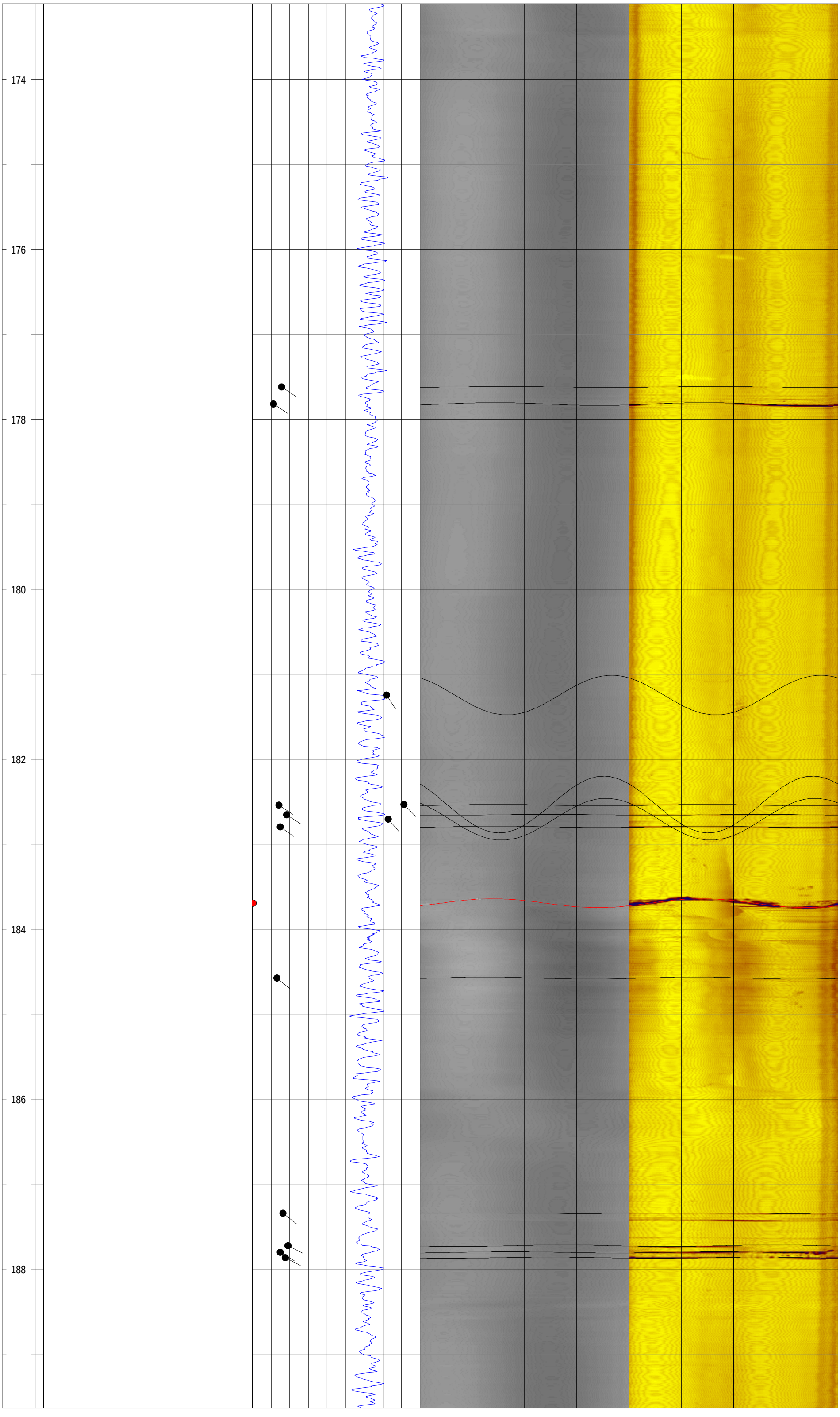
GeoTrans / Hudson Falls, NY - V-114 acoustic televiewer log plot

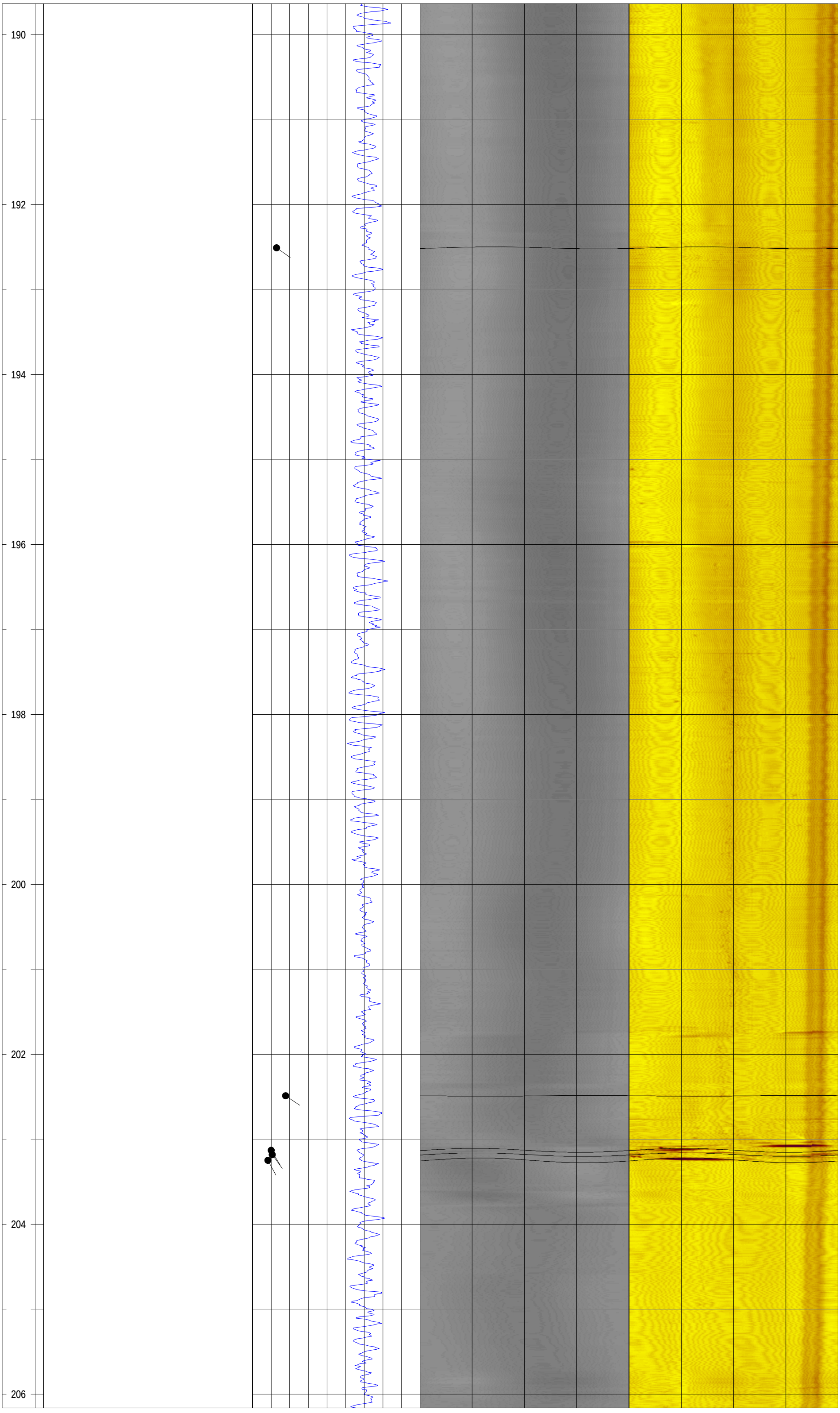


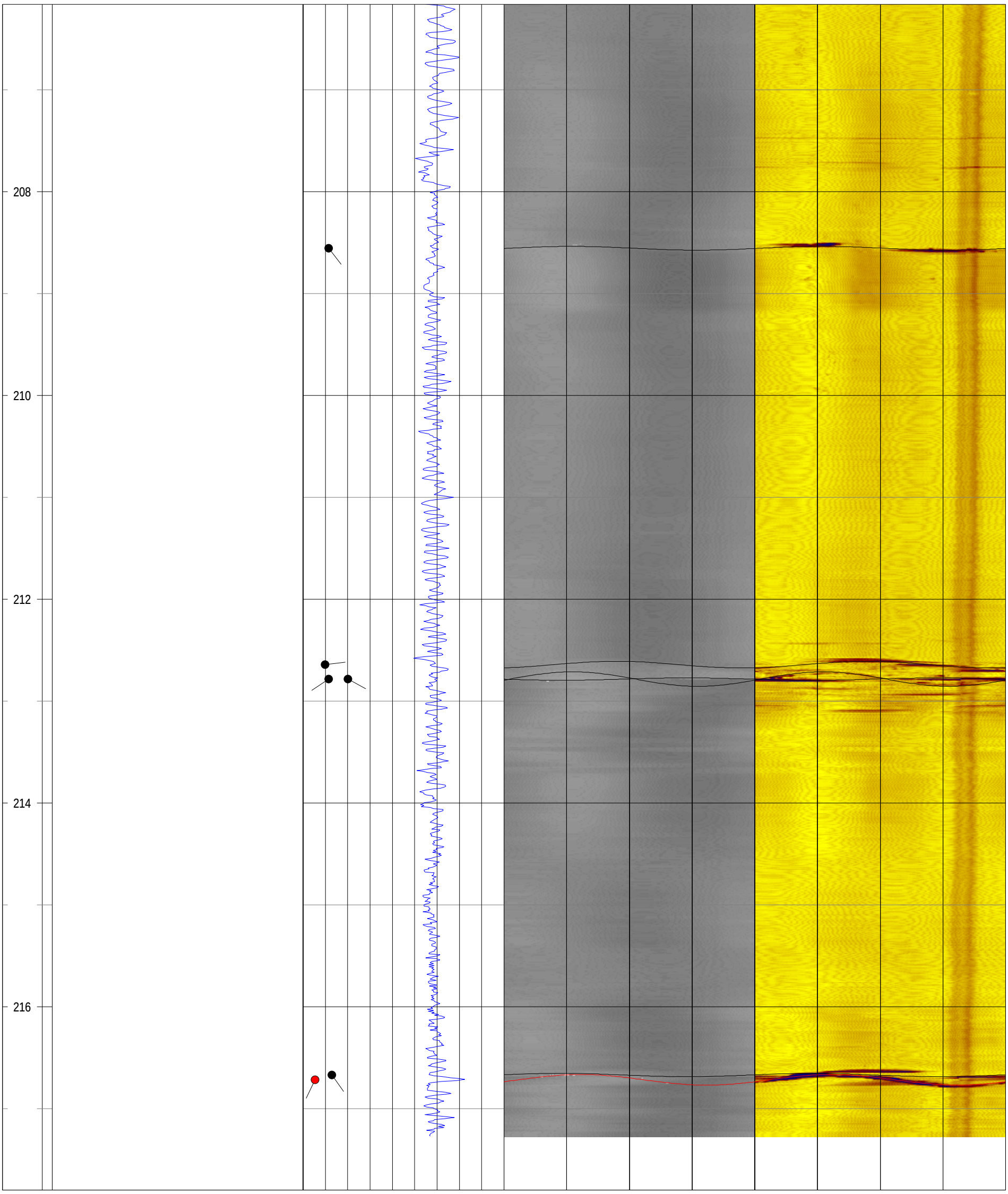

124
126
128
130
132
134
136
138
140

142
144
146
148
150
152
154
156
0°
180°

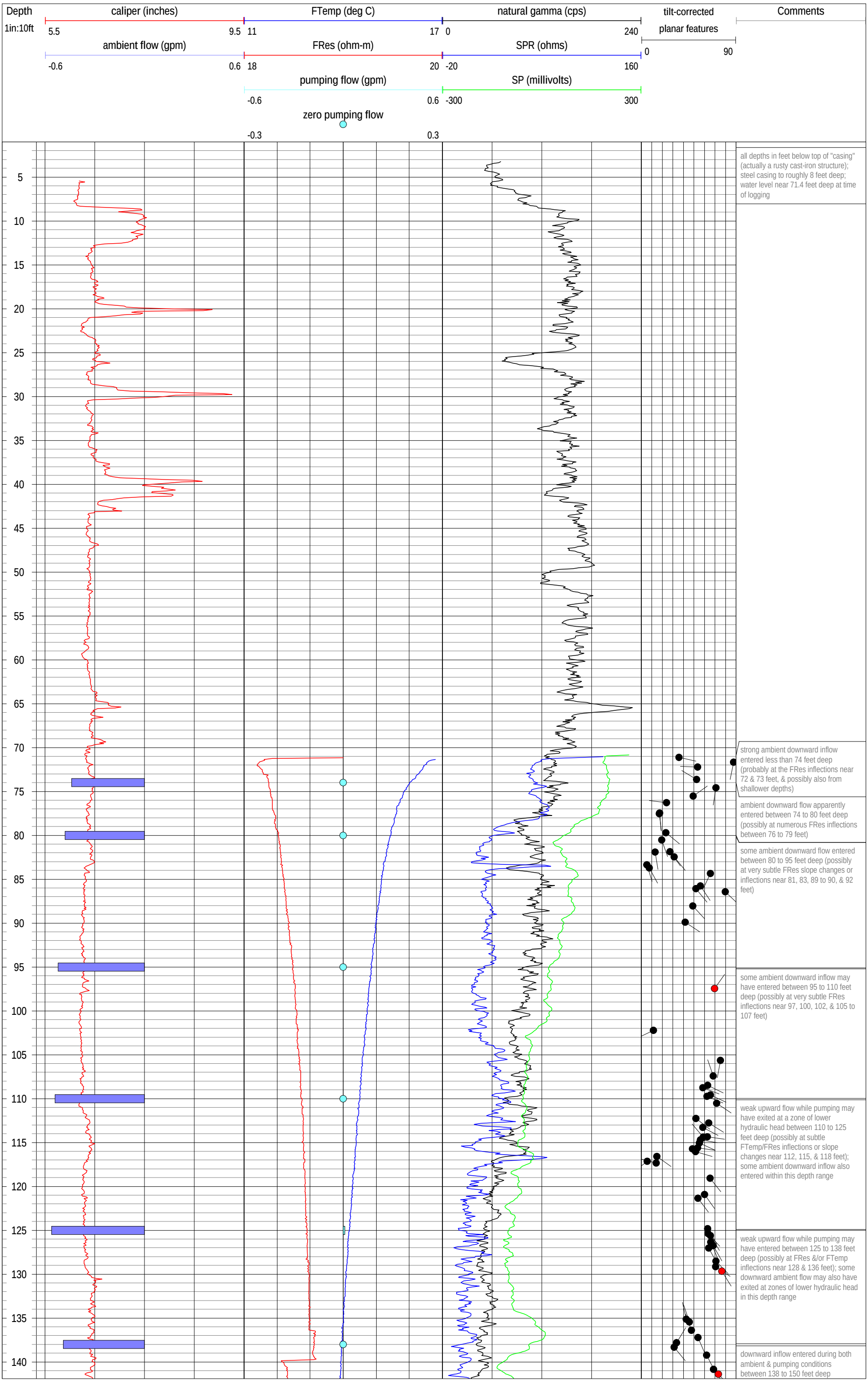

158
160
162
164
166
168
170
172
0°
180°
0°
180°

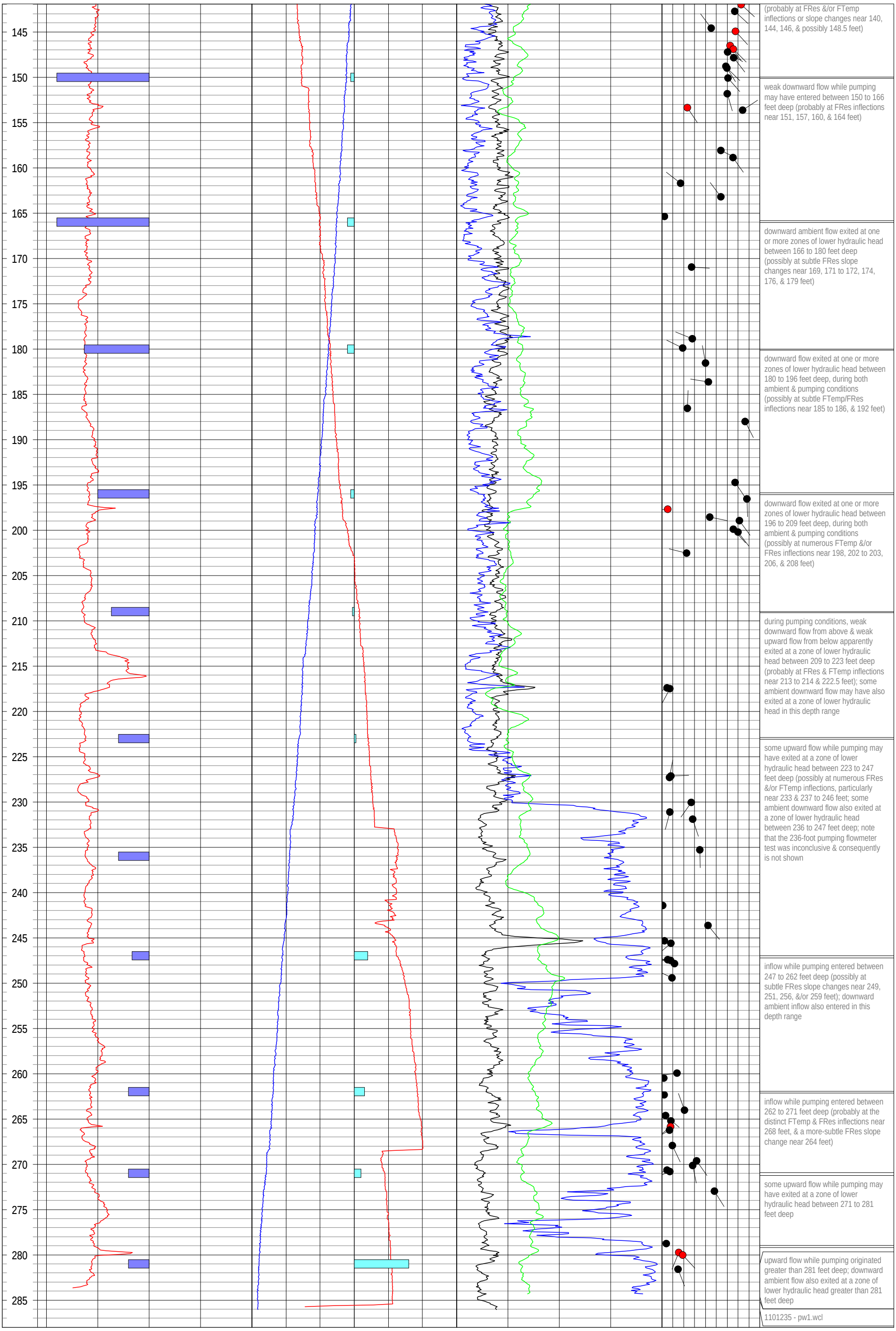

174
176
178
180
182
184
186
188


190
192
194
196
198
200
202
204
206

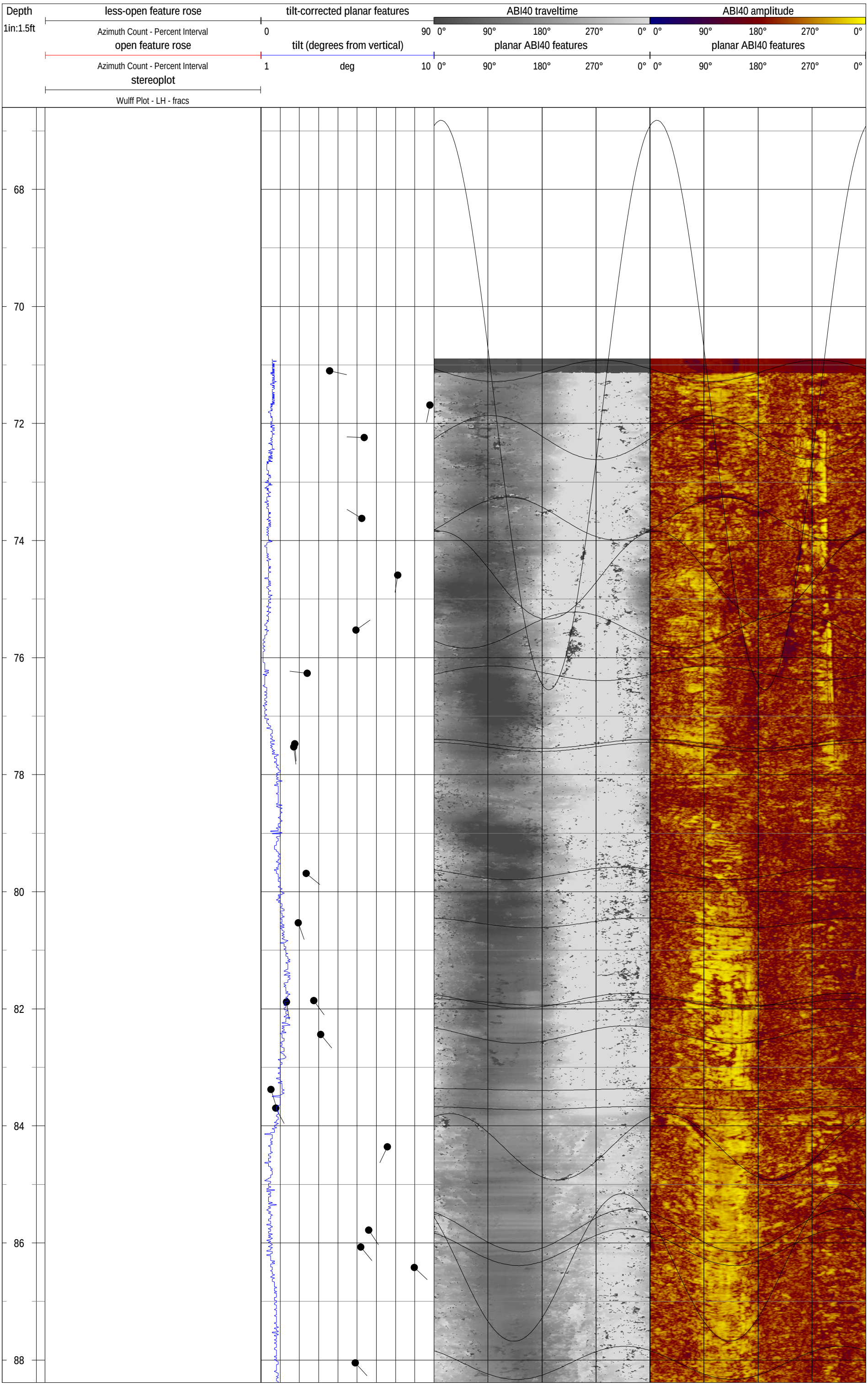

208
210
212
214
216

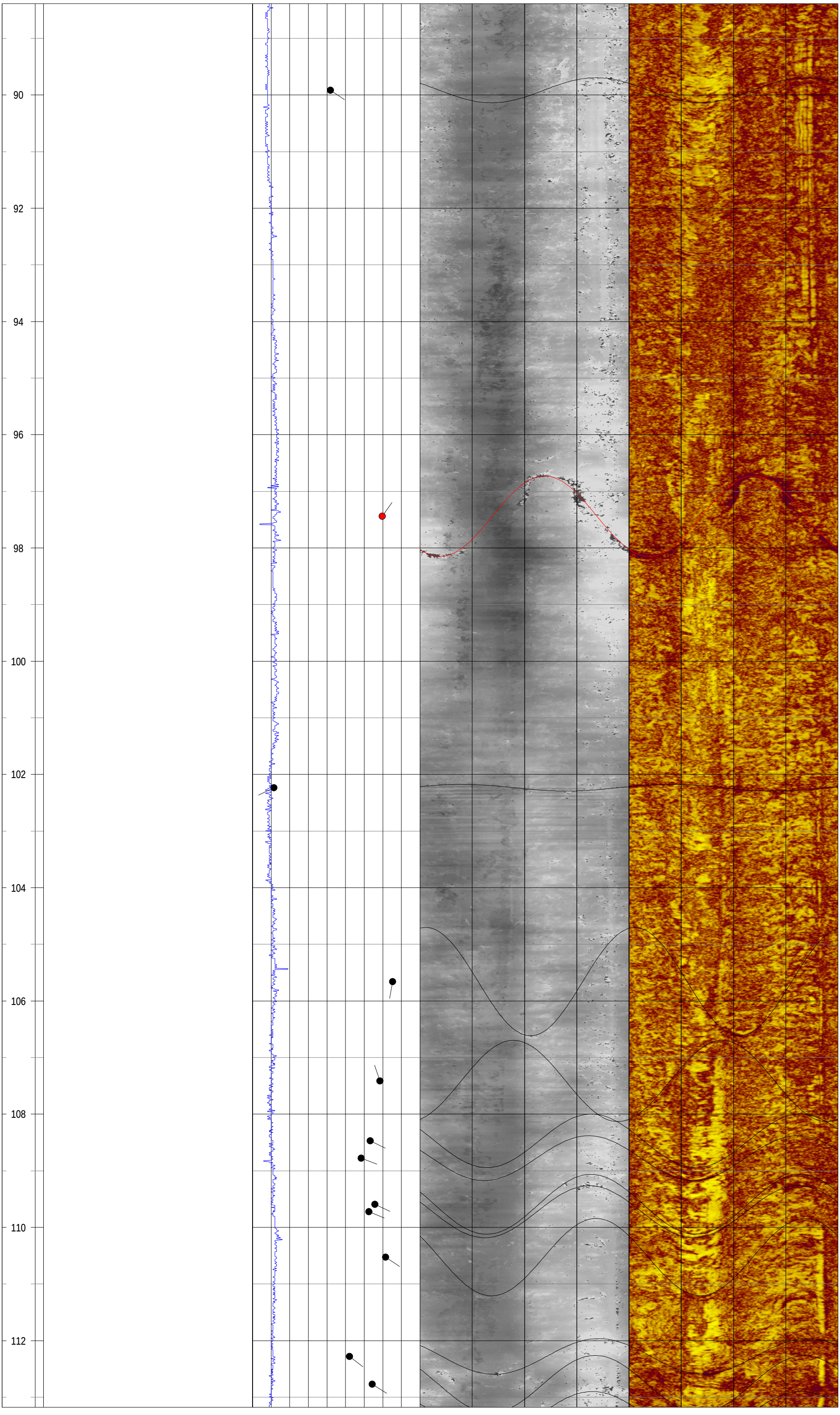
GeoTrans / Hudson Falls, NY - PW-1 conventional log plot

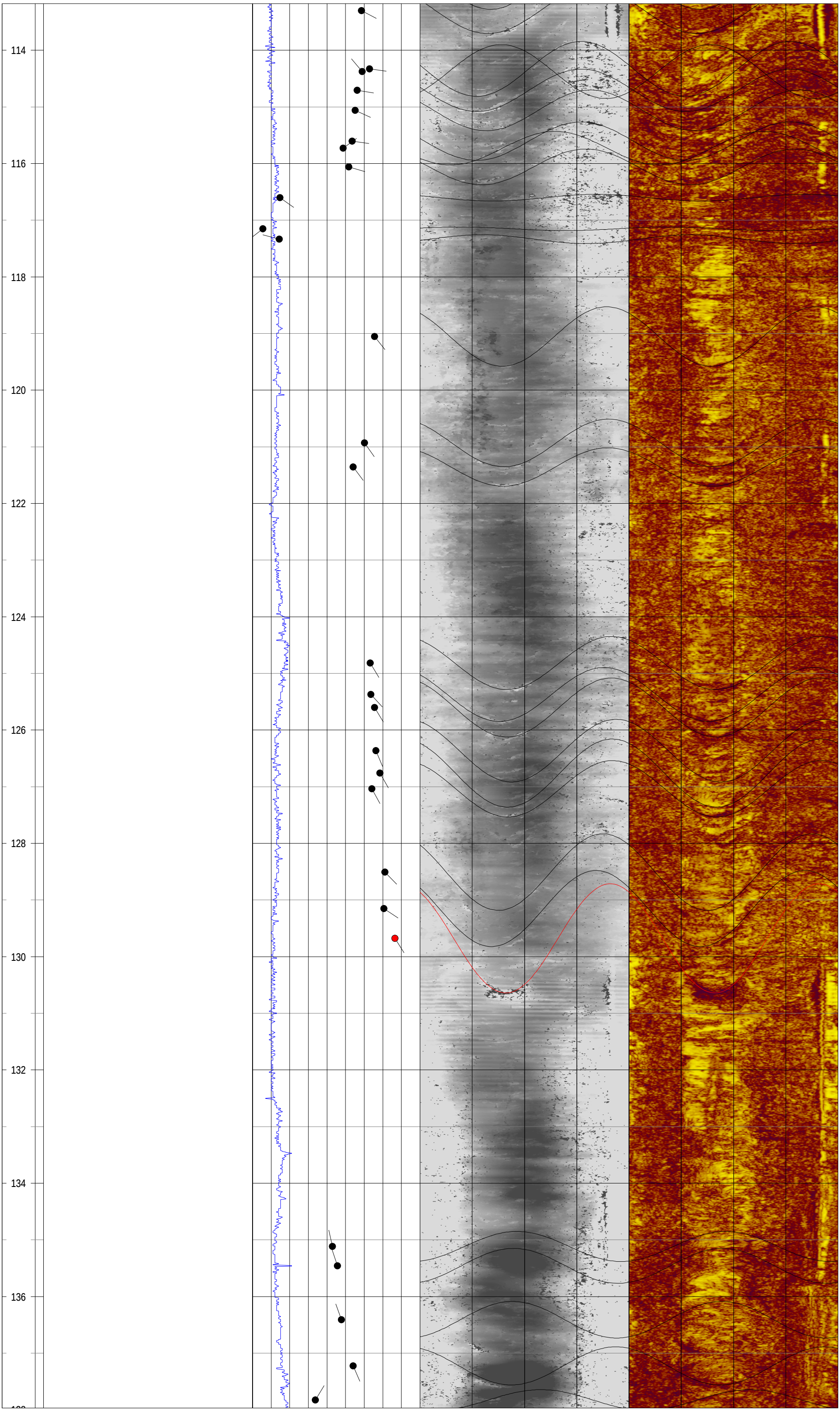


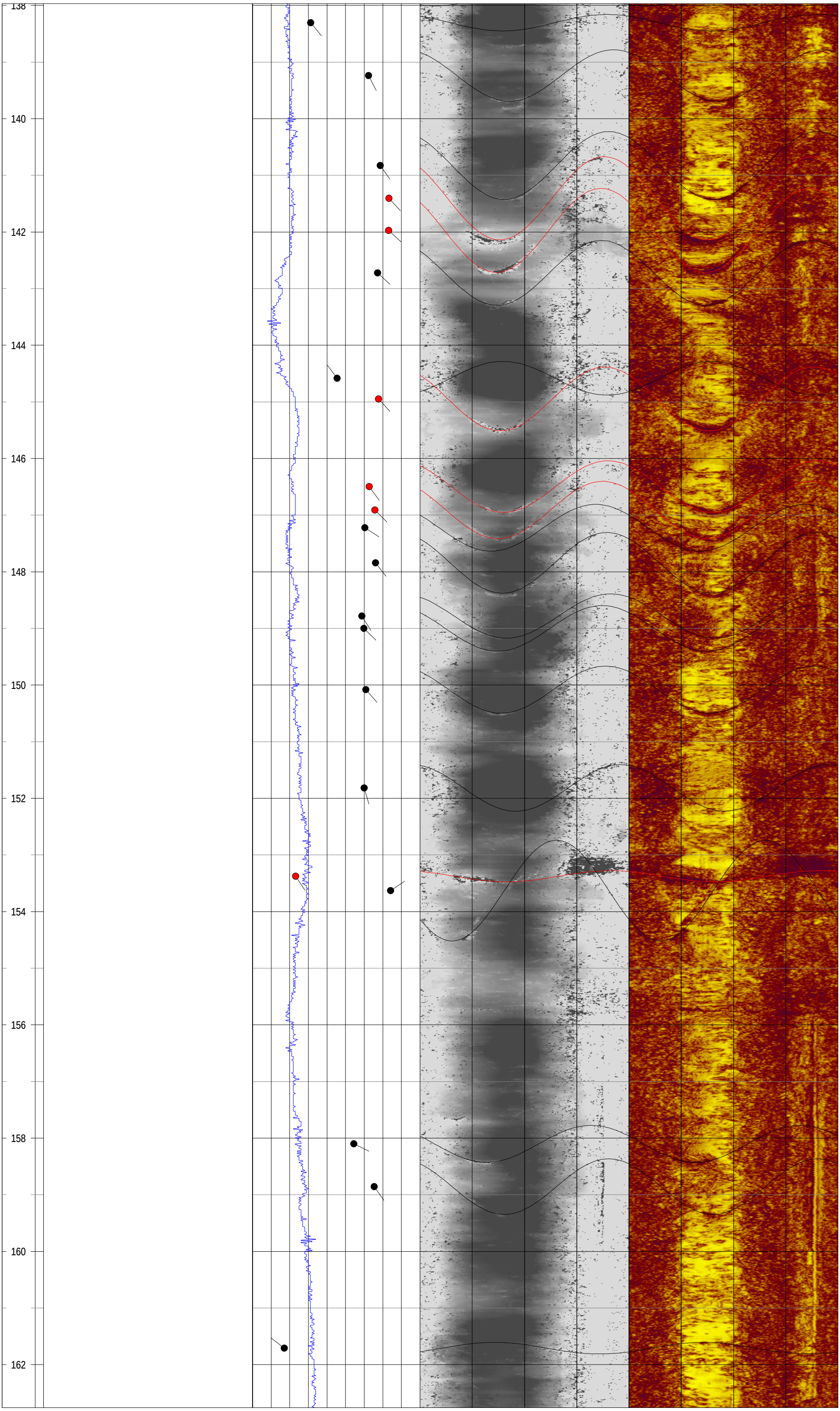

145
150
155
160
165
170
175
180
185
190
195
200
205
210
215
220
225
230
235
240
245
250
255
260
265
270
275
280
285
(probably at FRes &/or FTemp inflections or slope changes near 140, 144, 146, & possibly 148.5 feet)
weak downward flow while pumping may have entered between 150 to 166 feet deep (probably at FRes inflections near 151, 157, 160, & 164 feet)
downward ambient flow exited at one or more zones of lower hydraulic head between 166 to 180 feet deep (possibly at subtle FRes slope changes near 169, 171 to 172, 174, 176, & 179 feet)
downward flow exited at one or more zones of lower hydraulic head between 180 to 196 feet deep, during both ambient & pumping conditions (possibly at subtle FTemp/FRes inflections near 185 to 186, & 192 feet)
downward flow exited at one or more zones of lower hydraulic head between 196 to 209 feet deep, during both ambient & pumping conditions (possibly at numerous FTemp &/or FRes inflections near 198, 202 to 203, 206, & 208 feet)
during pumping conditions, weak downward flow from above & weak upward flow from below apparently exited at a zone of lower hydraulic head between 209 to 223 feet deep (probably at FRes & FTemp inflections near 213 to 214 & 222.5 feet); some ambient downward flow may have also exited at a zone of lower hydraulic head in this depth range
some upward flow while pumping may have exited at a zone of lower hydraulic head between 223 to 247 feet deep (possibly at numerous FRes &/or FTemp inflections, particularly near 233 & 237 to 246 feet; some ambient downward flow also exited at a zone of lower hydraulic head between 236 to 247 feet deep; note that the 236-foot pumping flowmeter test was inconclusive & consequently is not shown
inflow while pumping entered between 247 to 262 feet deep (possibly at subtle FRes slope changes near 249, 251, 256, &/or 259 feet); downward ambient inflow also entered in this depth range
inflow while pumping entered between 262 to 271 feet deep (probably at the distinct FTemp & FRes inflections near 268 feet, & a more-subtle FRes slope change near 264 feet)
some upward flow while pumping may have exited at a zone of lower hydraulic head between 271 to 281 feet deep
upward flow while pumping originated greater than 281 feet deep; downward ambient flow also exited at a zone of lower hydraulic head greater than 281 feet deep
1101235 - pw1.wcl

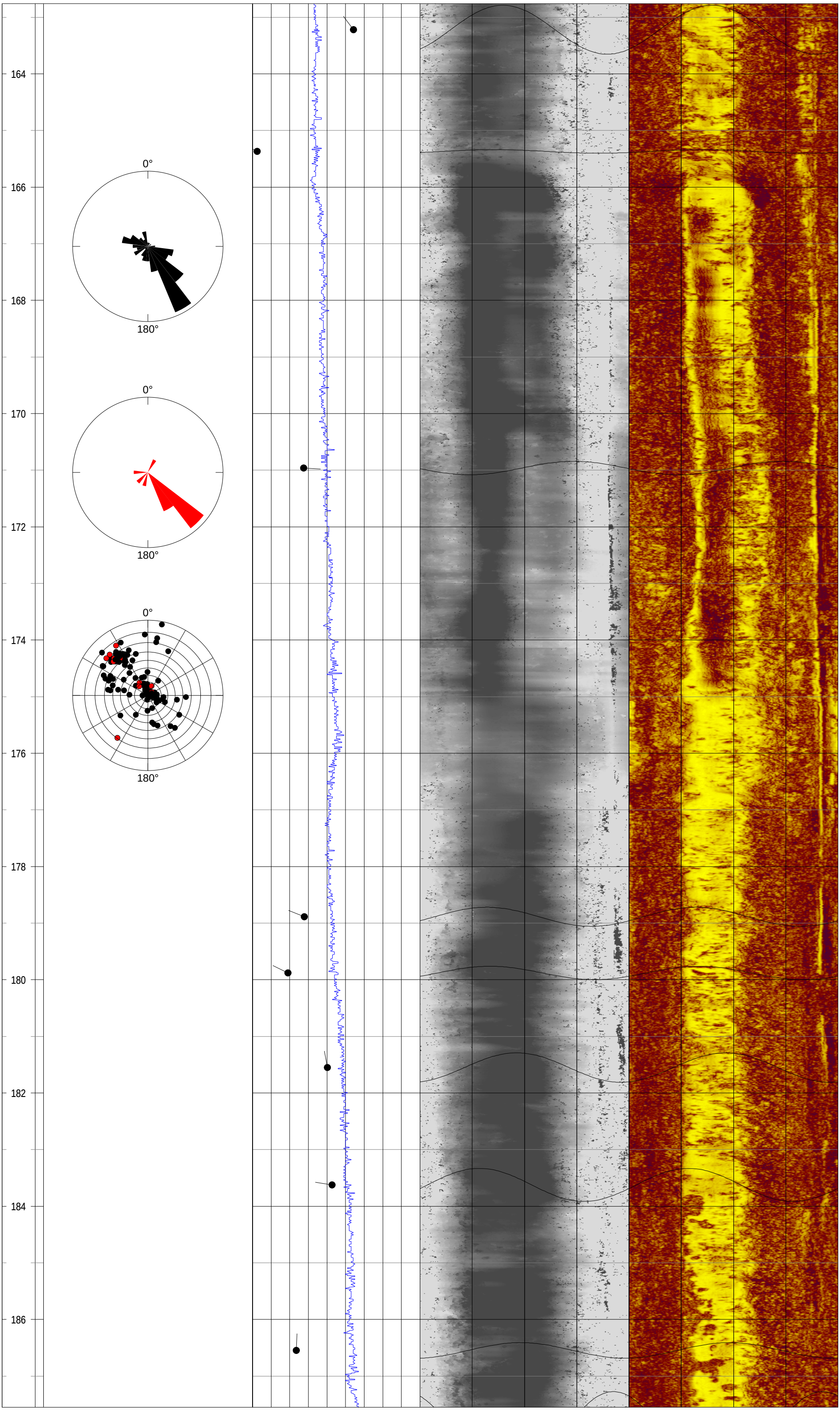
GeoTrans / Hudson Falls, NY - PW-1 acoustic televiewer log plot

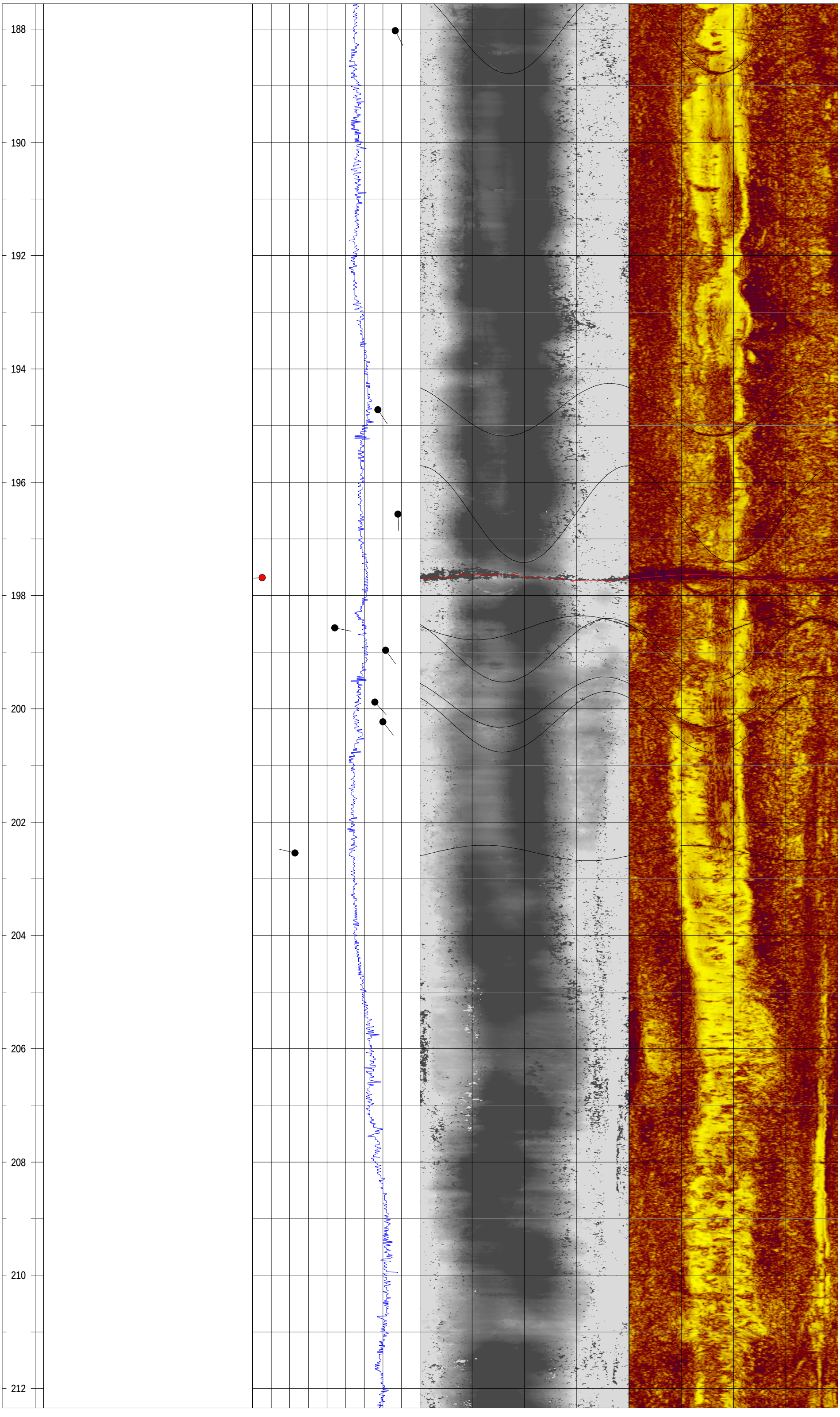


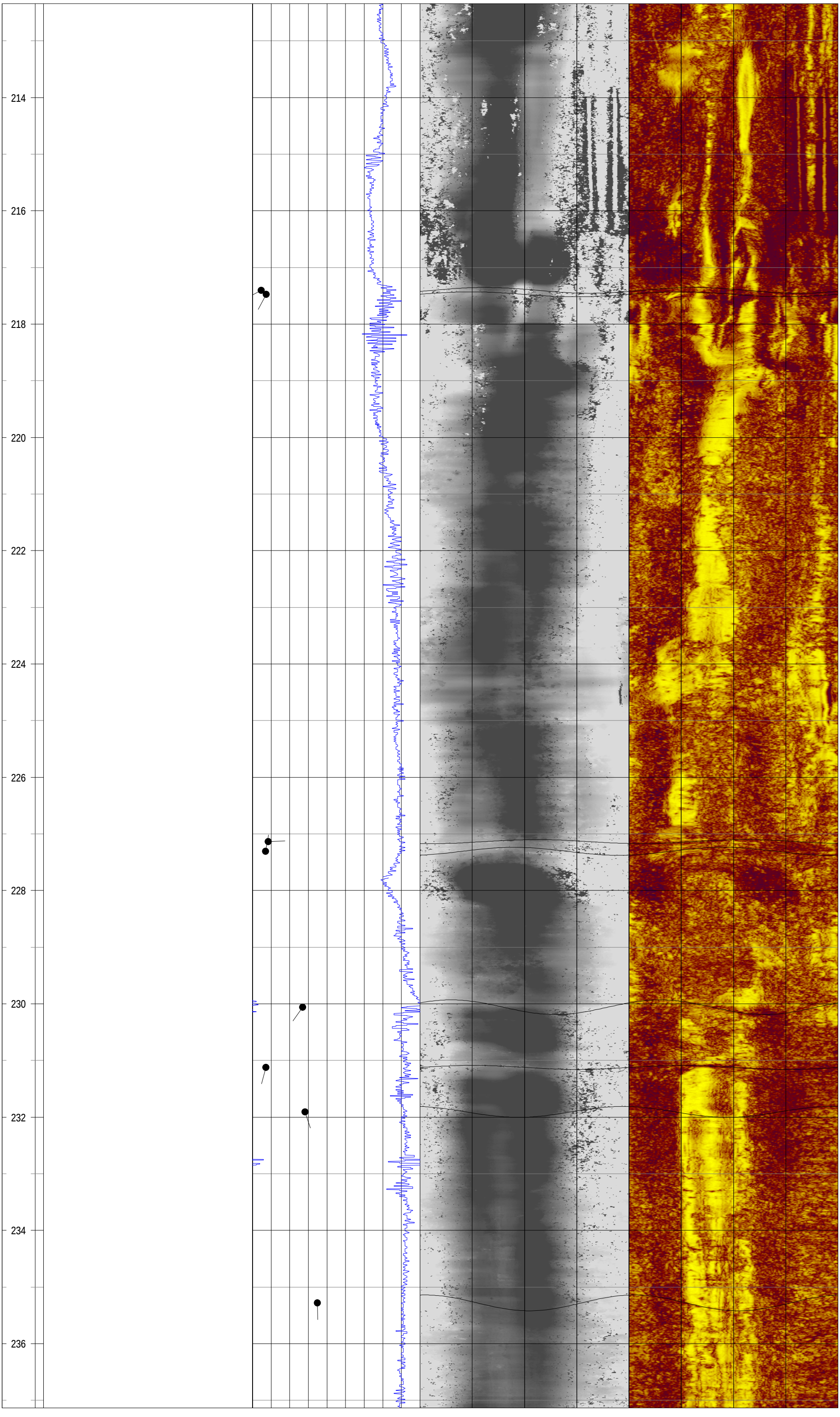

90
92
94
96
98
100
102
104
106
108
110
112

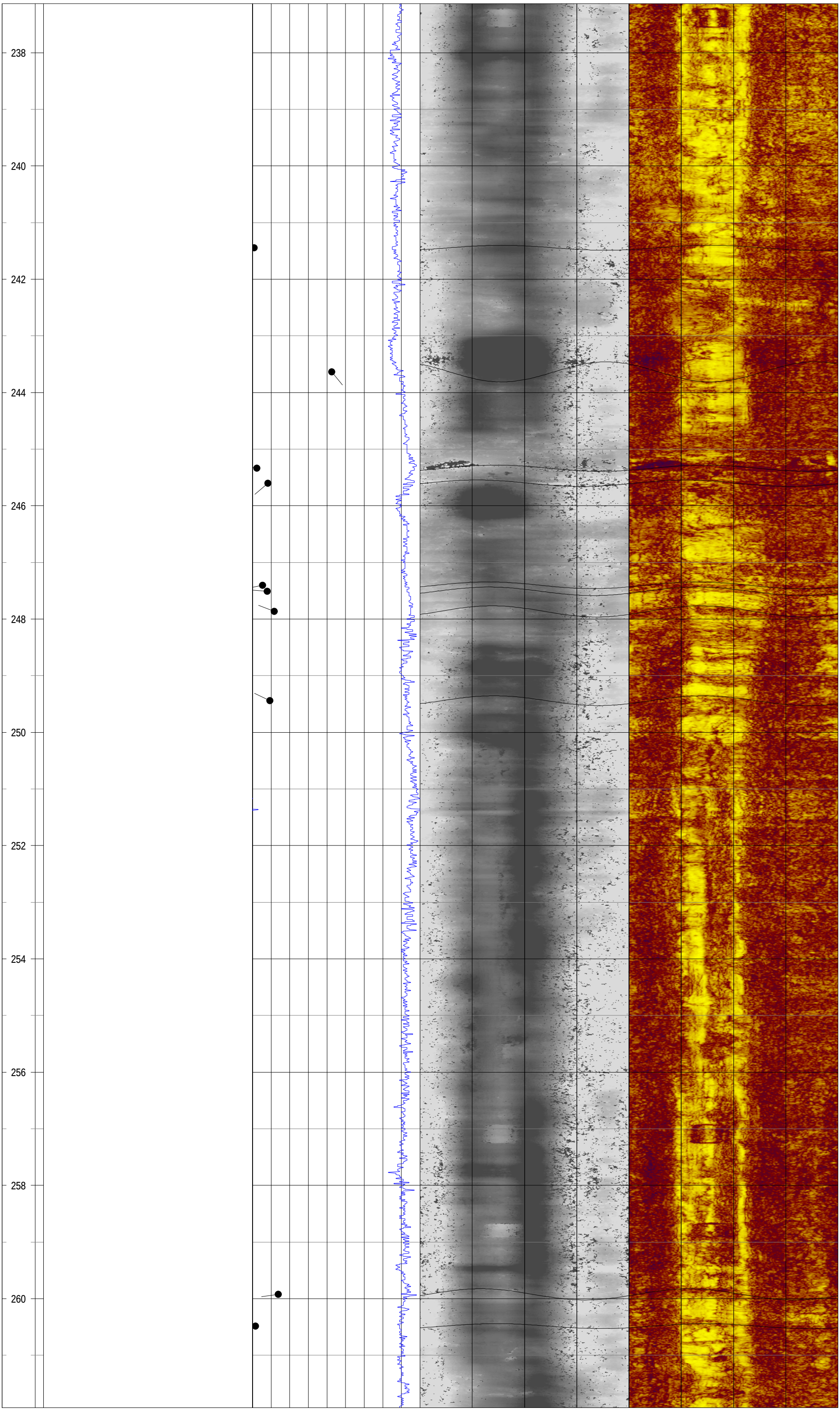

114
116
118
120
122
124
126
128
130
132
134
136

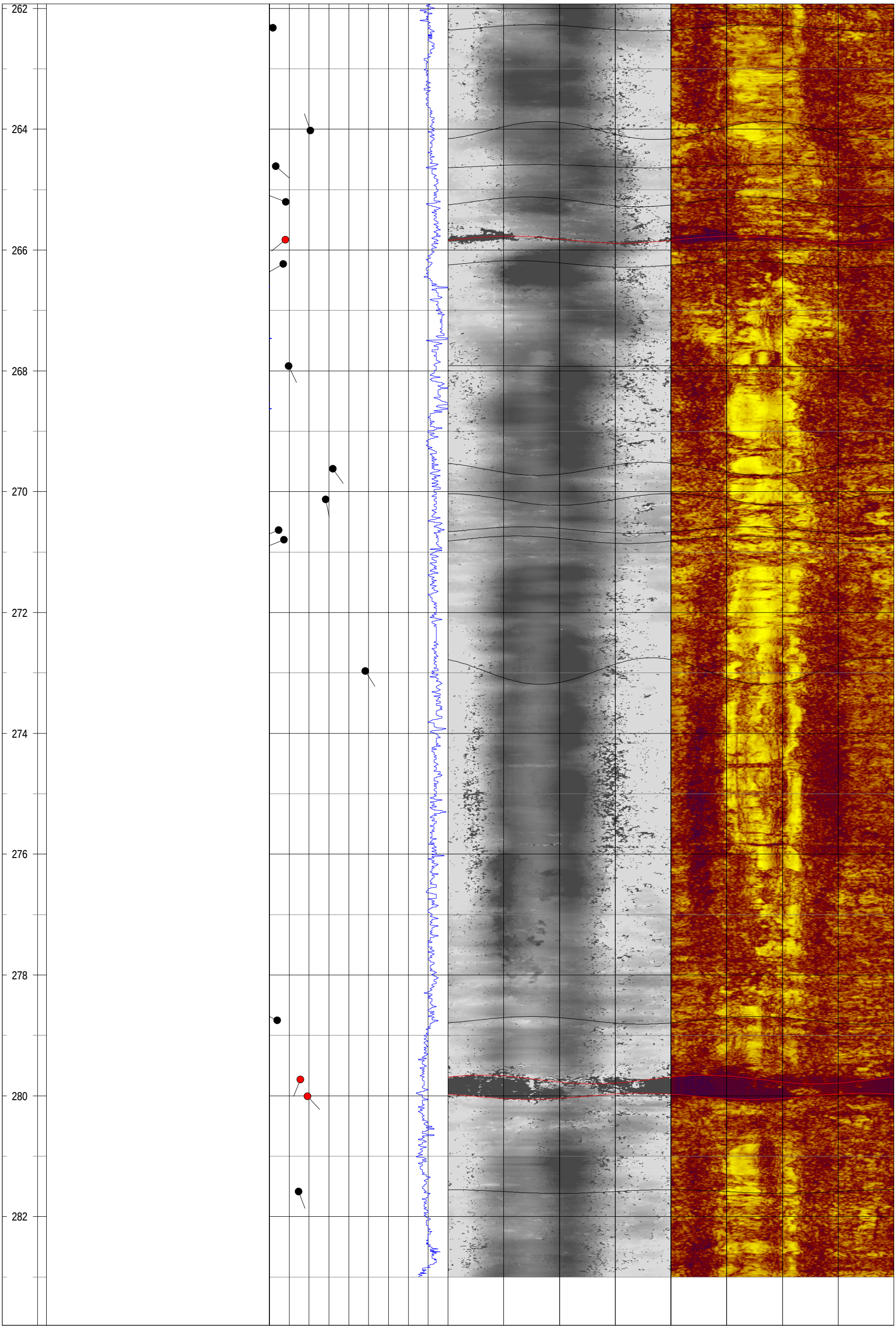

138
140
142
144
146
148
150
152
154
156
158
160
162


164
166
168
170
172
174
176
178
180
182
184
186
0°
180°
0°
180°
0°
180°

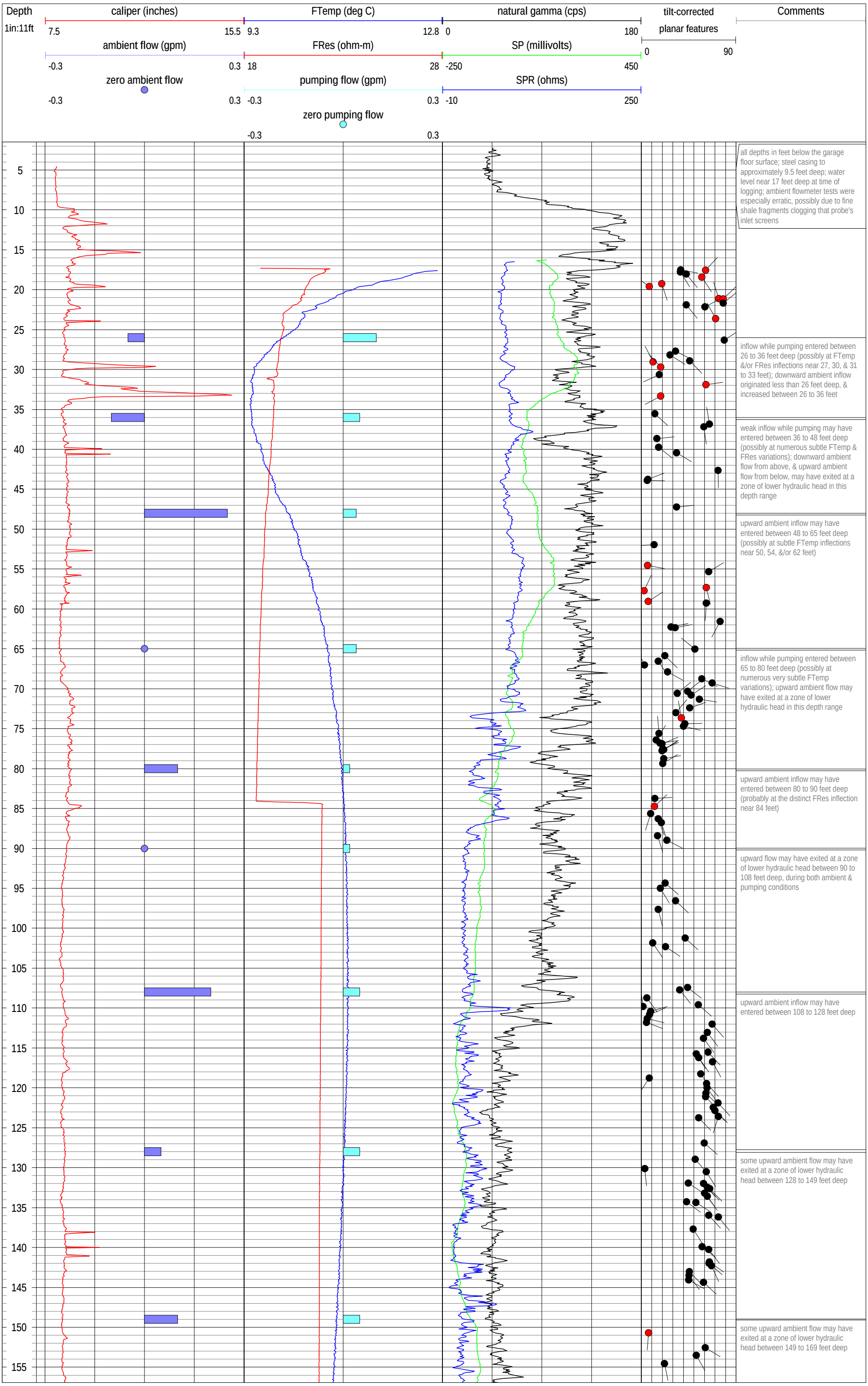

188
190
192
194
196
198
200
202
204
206
208
210
212

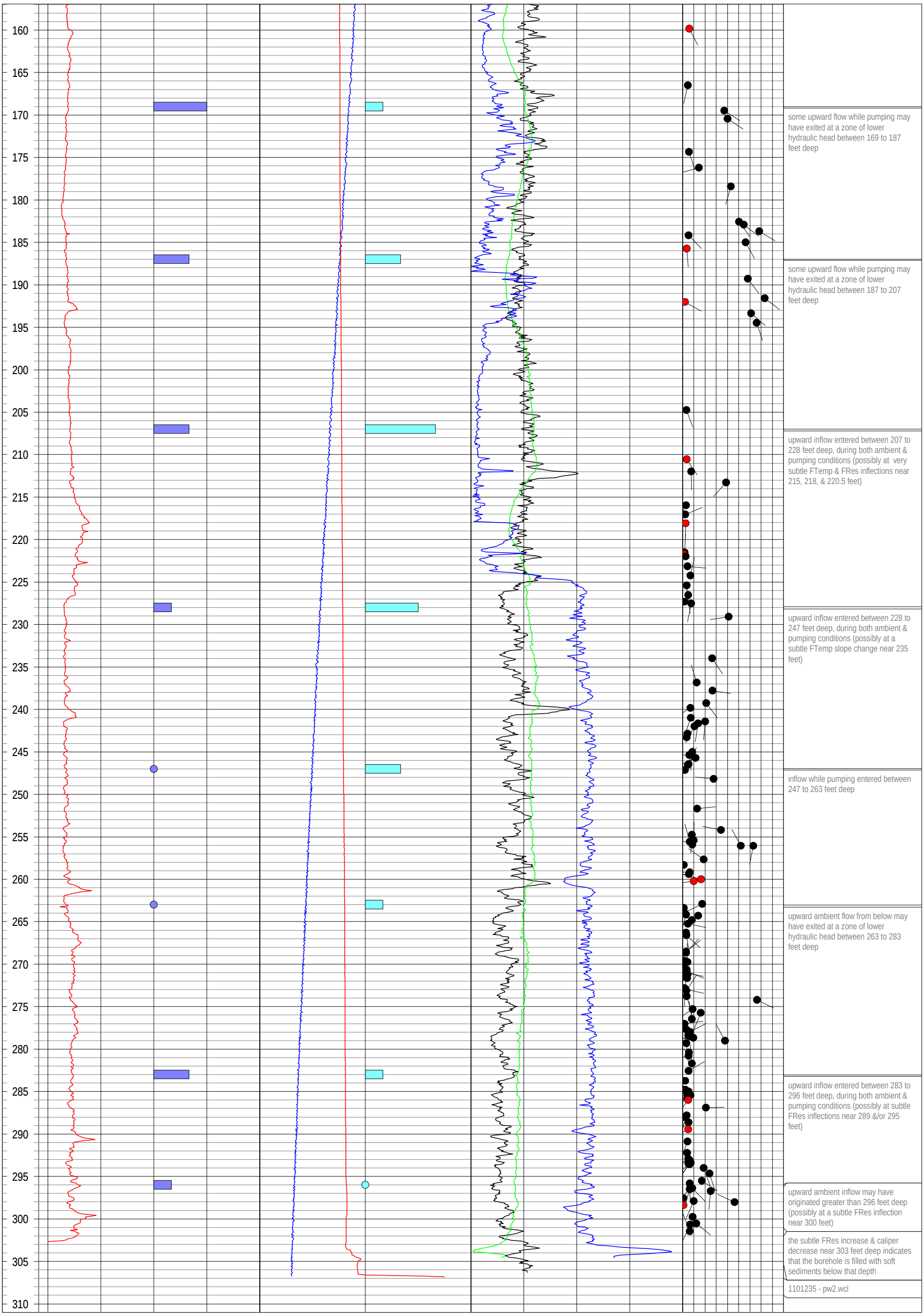

214
216
218
220
222
224
226
228
230
232
234
236


238
240
242
244
246
248
250
252
254
256
258
260

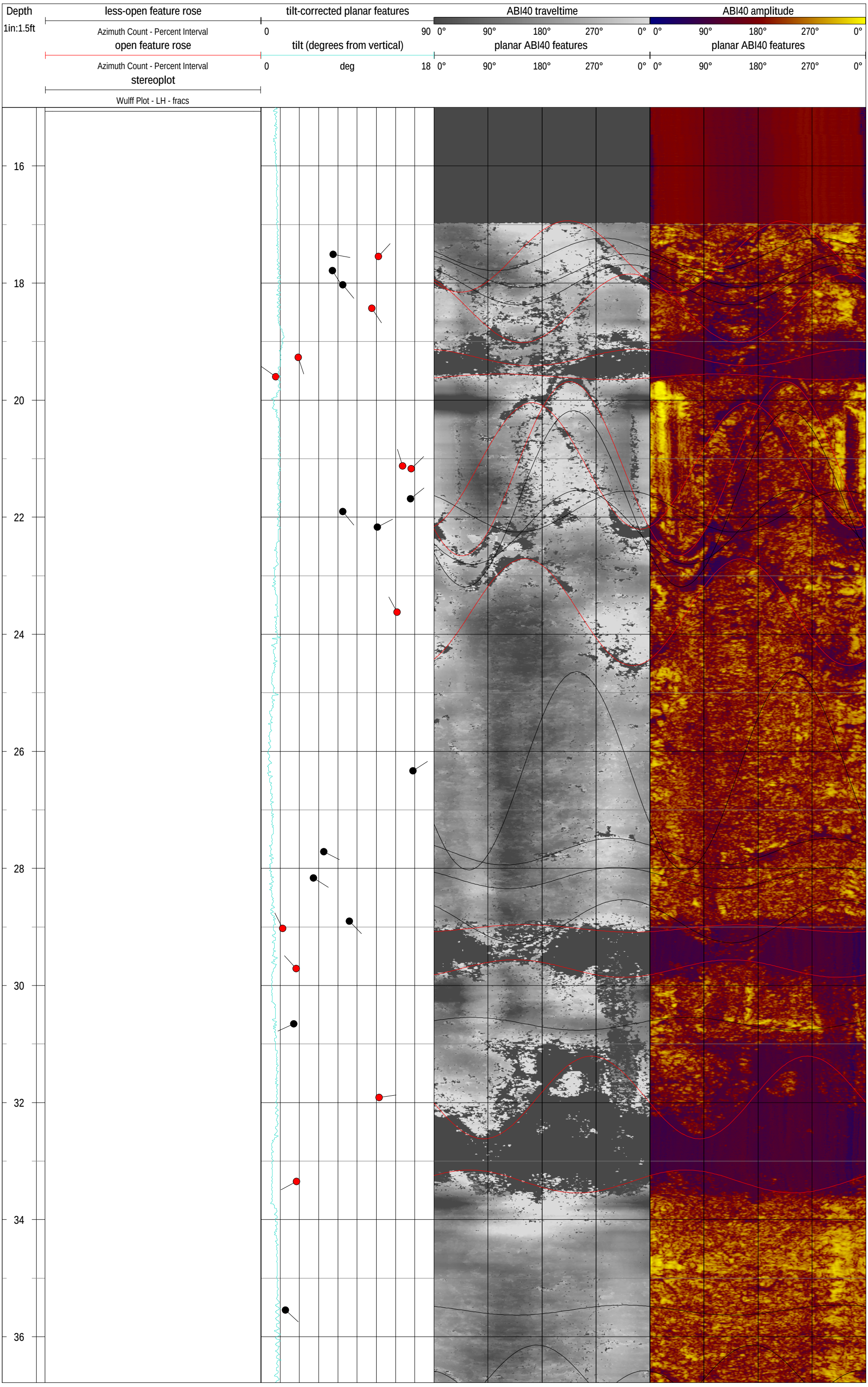

262
264
266
268
270
272
274
276
278
280
282

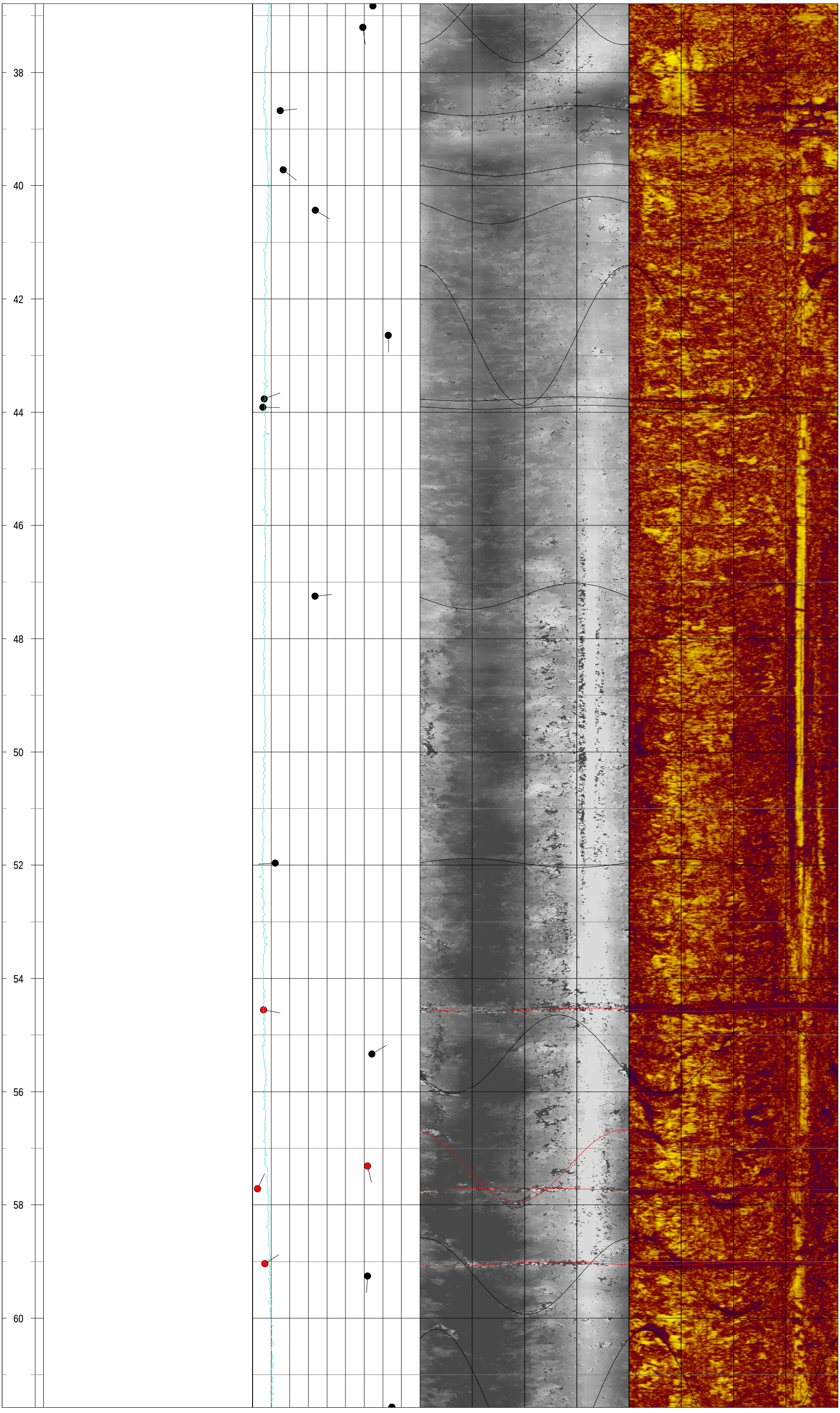
GeoTrans / Hudson Falls, NY - PW-2 conventional log plot

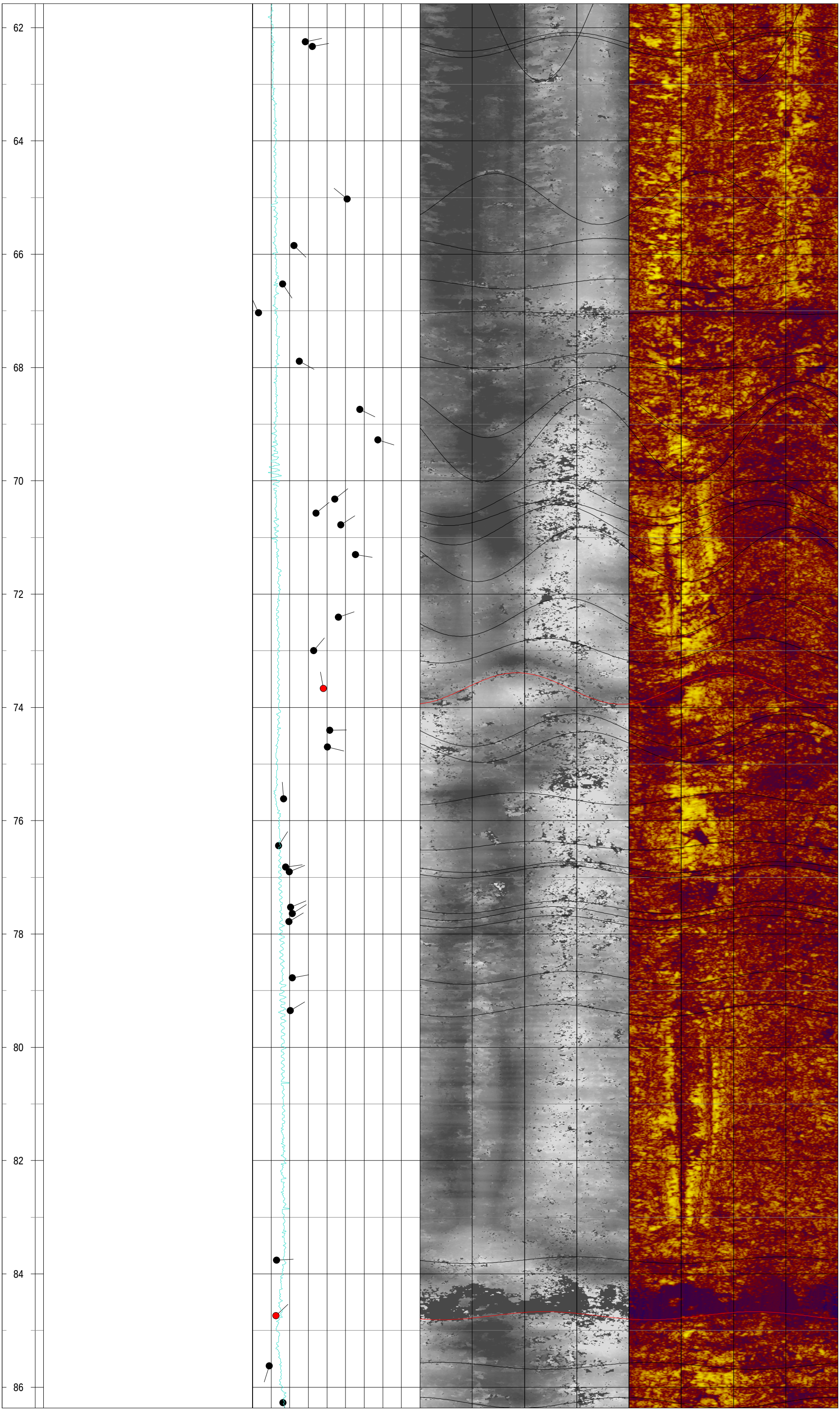


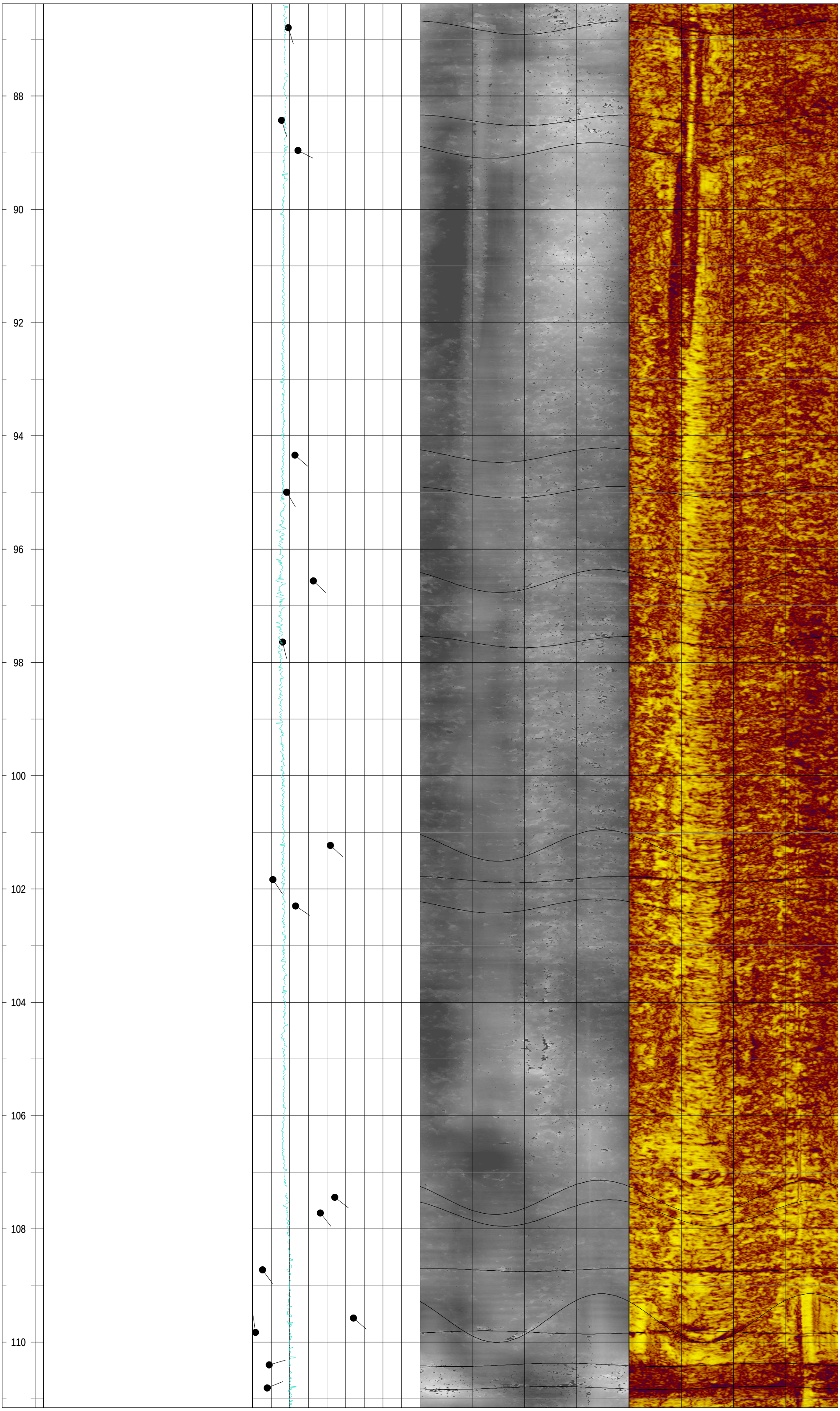

160
165
170
175
180
185
190
195
200
205
210
215
220
225
230
235
240
245
250
255
260
265
270
275
280
285
290
295
300
305
310
some upward flow while pumping may have exited at a zone of lower hydraulic head between 169 to 187 feet deep
some upward flow while pumping may have exited at a zone of lower hydraulic head between 187 to 207 feet deep
upward inflow entered between 207 to 228 feet deep, during both ambient & pumping conditions (possibly at very subtle FTemp & FRes inflections near 215, 218, & 220.5 feet)
upward inflow entered between 228 to 247 feet deep, during both ambient & pumping conditions (possibly at a subtle FTemp slope change near 235 feet)
inflow while pumping entered between 247 to 263 feet deep
upward ambient flow from below may have exited at a zone of lower hydraulic head between 263 to 283 feet deep
upward inflow entered between 283 to 296 feet deep, during both ambient & pumping conditions (possibly at subtle FRes inflections near 289 &/or 295 feet)
upward ambient inflow may have originated greater than 296 feet deep (possibly at a subtle FRes inflection near 300 feet)
the subtle FRes increase & caliper decrease near 303 feet deep indicates that the borehole is filled with soft sediments below that depth
1101235 - pw2.wcl

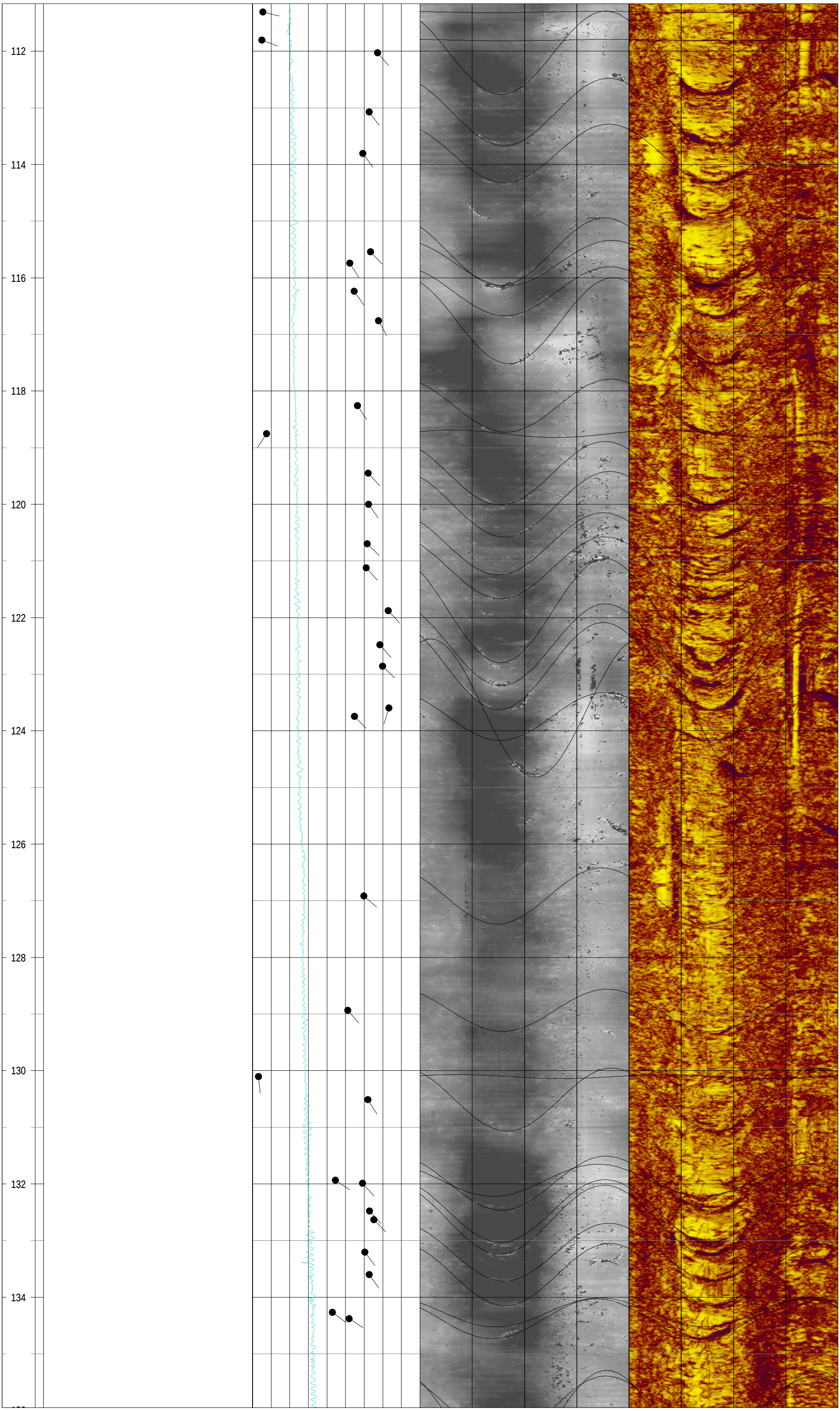
GeoTrans / Hudson Falls, NY - PW-2 acoustic televiewer log plot



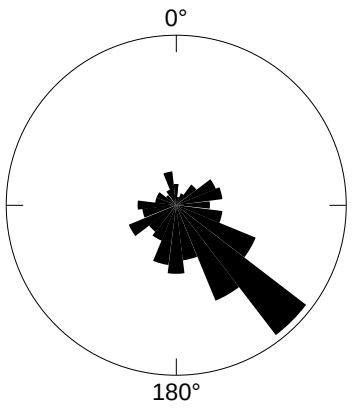

38
40
42
44
46
48
50
52
54
56
58
60

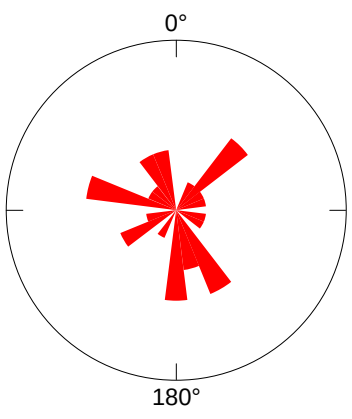

62
64
66
68
70
72
74
76
78
80
82
84
86

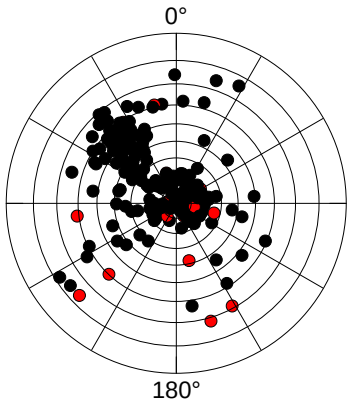

88
90
92
94
96
98
100
102
104
106
108
110


112
114
116
118
120
122
124
126
128
130
132
134

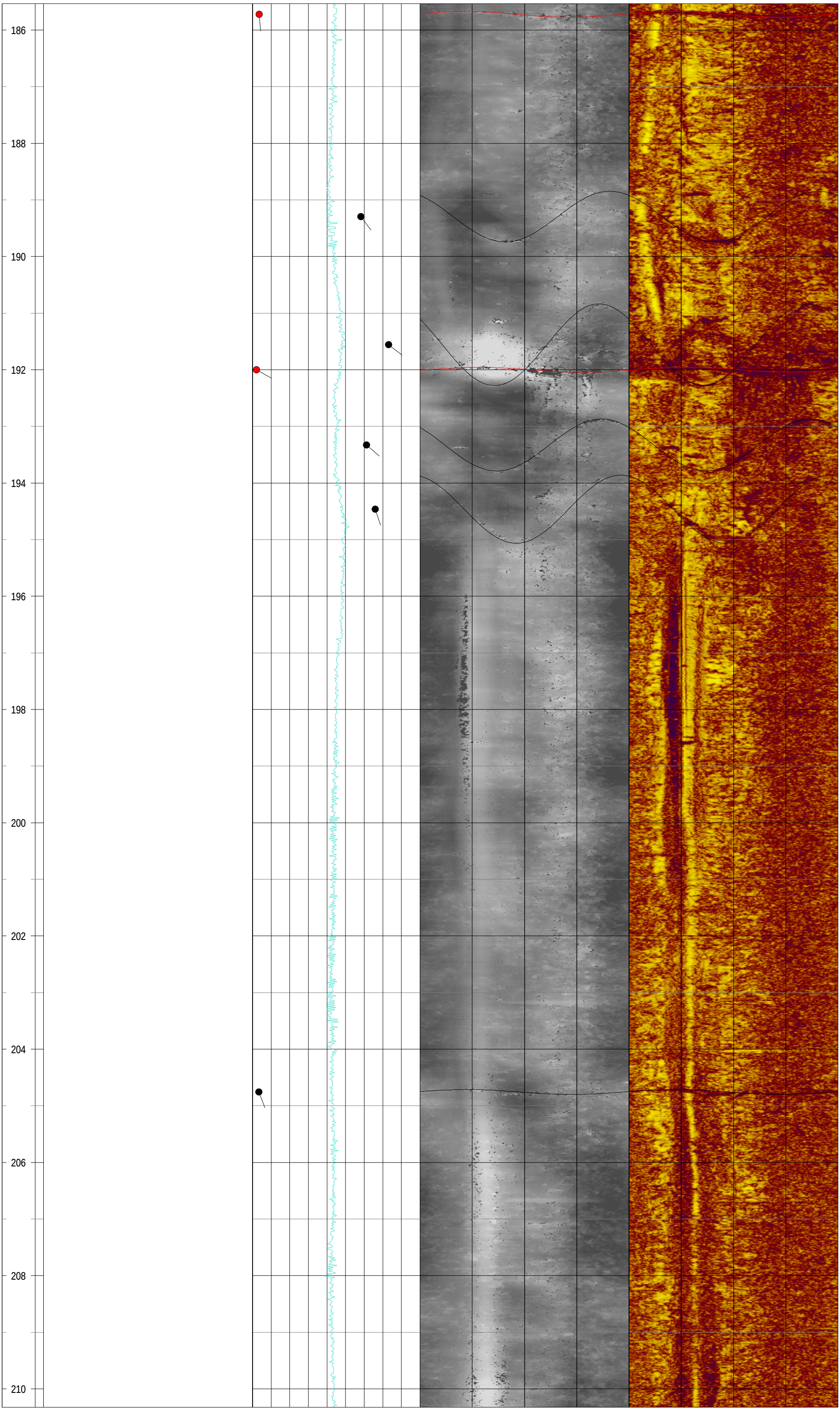
136
138
140
142
144
146
148
150
152
154
156
158
160

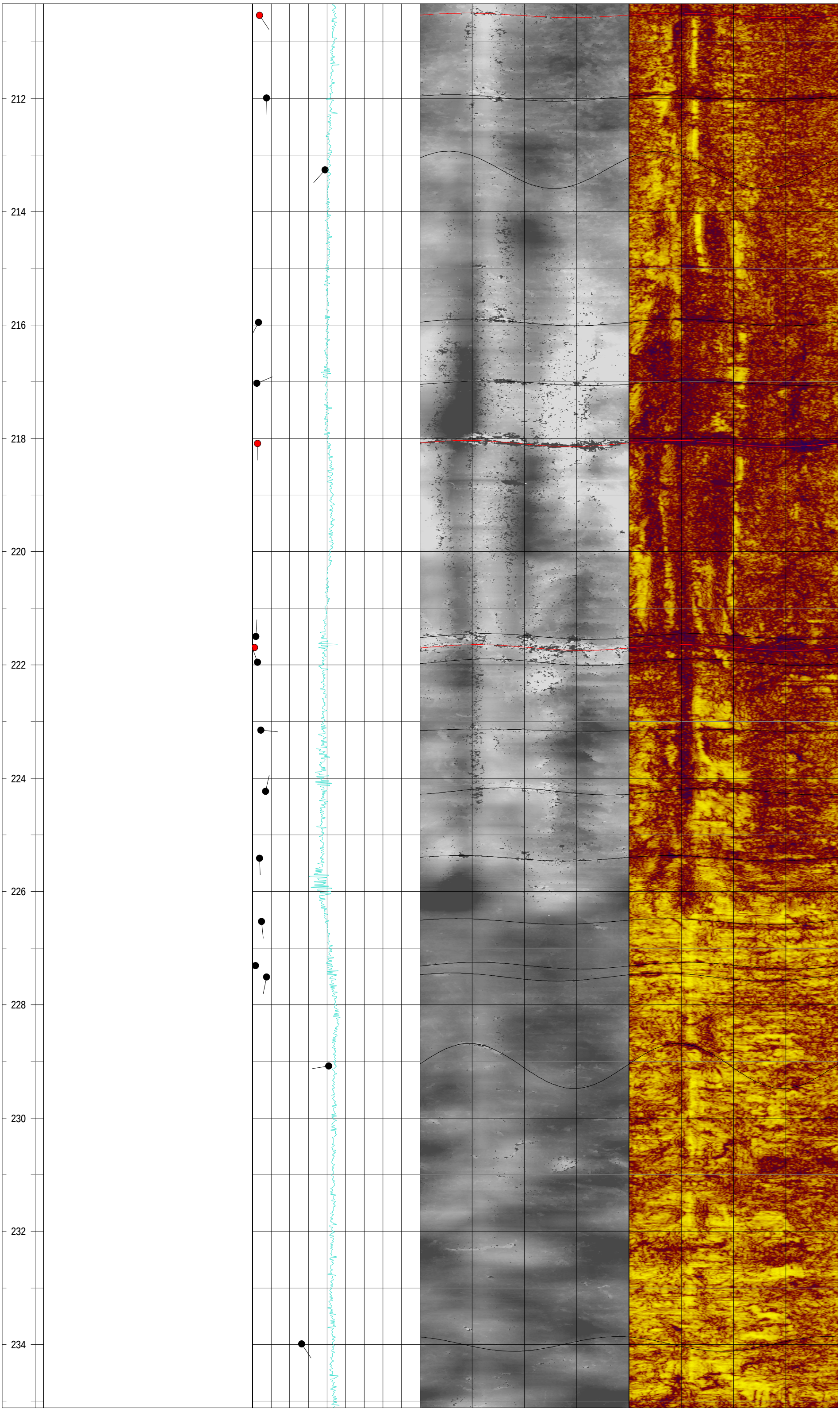


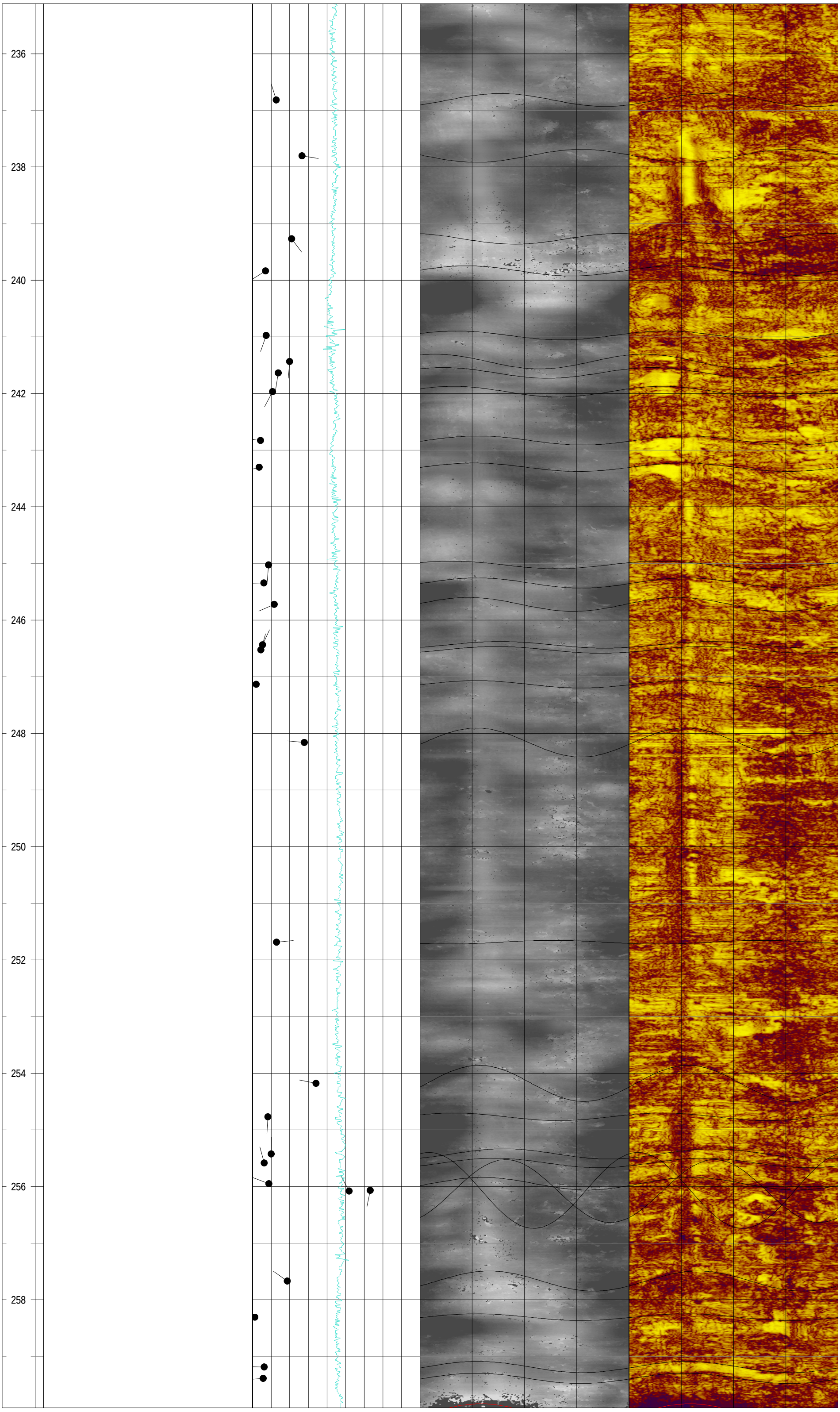


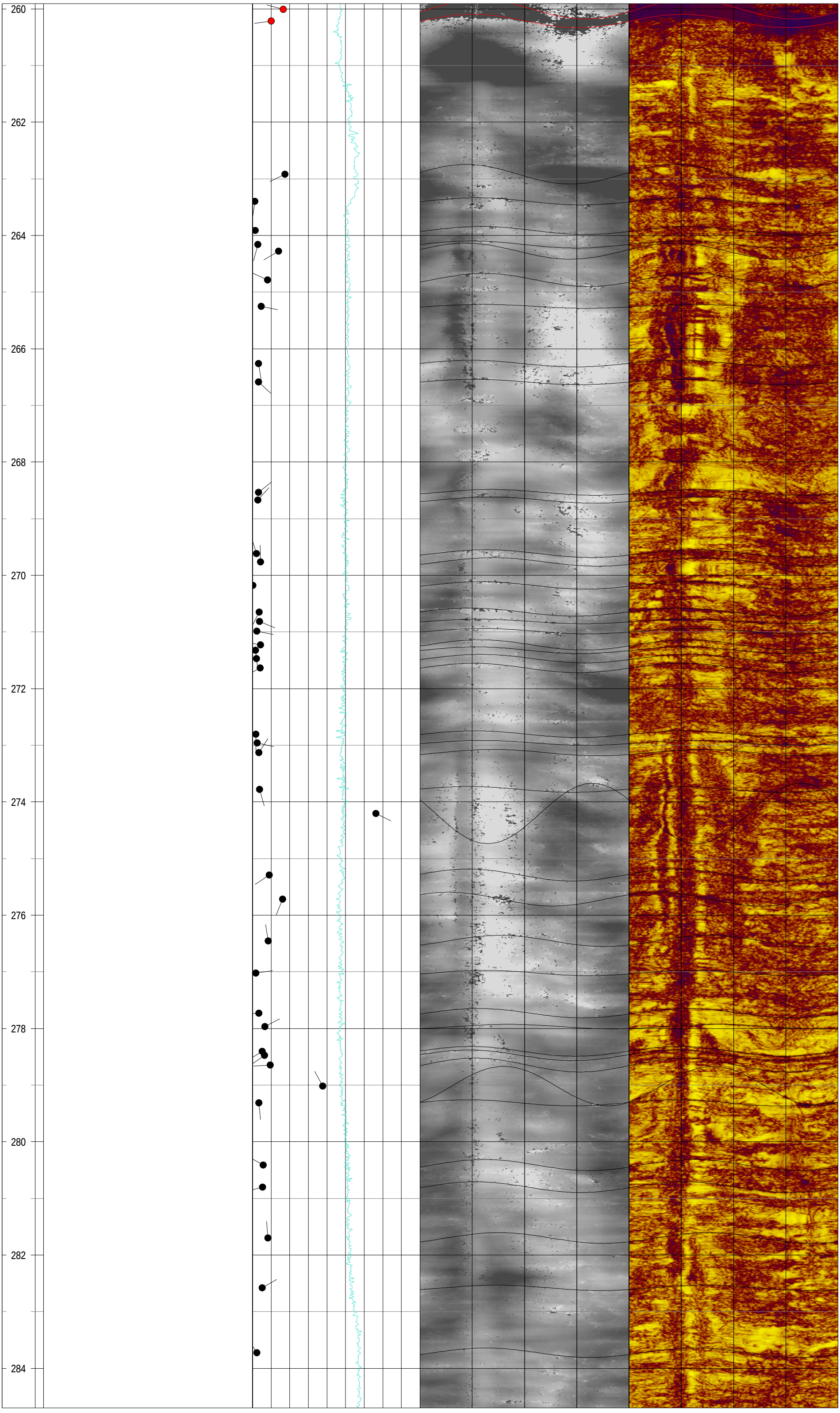


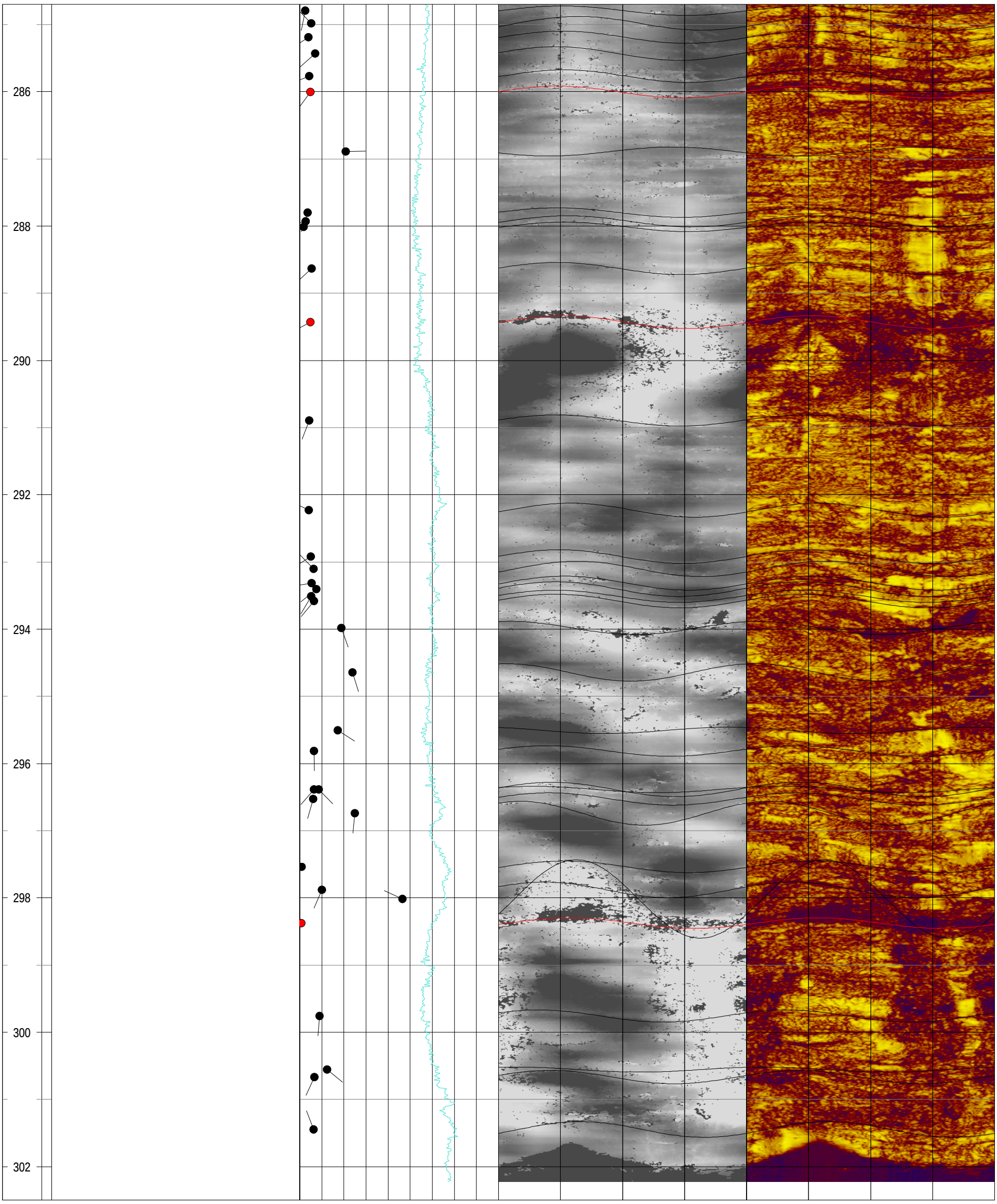
162
164
166
168
170
172
174
176
178
180
182
184


186
188
190
192
194
196
198
200
202
204
206
208
210


212
214
216
218
220
222
224
226
228
230
232
234


236
238
240
242
244
246
248
250
252
254
256
258


260
262
264
266
268
270
272
274
276
278
280
282
284


286
288
290
292
294
296
298
300
302