SME
Sevee & Maher Engineers, Inc.

ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

June 7, 2016

14101.00
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Ms. Kathy Tarbuck P.E.
Division of Technical Services
Bureau of Hazardous Materials & Solid Waste
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333

Subject: Transmittal of Supplemental Bedrock Borehole Data within Expansion
Juniper Ridge Landfill (JRL), West Old Town, Maine

Dear Kathy:

On behalf of the Maine Bureau of General Services (BGS) and NEWSME Landfill Operations, LLC (NEWSME), Sevee & Maher Engineers, Inc. (SME) is transmitting to the Maine Department of Environmental Protection (MEDEP) the information gathered from the recent drilling of three boreholes located within the proposed JRL Expansion footprint, and the geophysical downhole logging of those boreholes and the water supply wells of the existing office and scale house. The boreholes were drilled and the geophysical logging completed in accordance with the Work Plan for Refining Location of Monitoring Wells submitted to the MEDEP on March 4, 2016, as part of our written response to review comments on the JRL Expansion Application.[1] The installation of the three boreholes and the geophysical logging completed were Phase 1 of the staged approach identified in the Work Plan. The data collected from this investigation help to confirm and fine tune the geologic data that already exists for the Expansion site which, in turn, will assist in implementing the proposed groundwater monitoring network for the Expansion. The explorations focused on depth to bedrock and examination of bedrock fracture distributions and orientations.

The three boreholes (B16-101, B16-102, and B16-103) were drilled at the approximate locations identified in the Work Plan based on drill rig accessibility. The location of each borehole was surveyed for horizontal and vertical positions in relation to site-specific coordinates. Drilling was done between March 16 and 18, 2016 by Goodwin Well & Water

[1] The Work Plan was included in Exhibit B Attachment SME-2 of the March 4, 2016 letter. Concurrence on the approach outlined in the Work Plan was provided by Mr. Richard Behr in his April 1, 2016 memorandum on the JRL's responses to the initial set of review comments on the Expansion.

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Inc. of North Turner, Maine under the direction of a Maine Certified Geologist. The boreholes were developed by pumping and surging them with water upon completion and well yield estimated by the driller. These yields are annotated on the boring logs included in Attachment 1. Water levels were also obtained after the drilling was complete, and on May 24, 2016. The location of the newly drilled boreholes and the two existing wells are shown on the attached Figure 1. Downhole geophysical surveys and water level measurements were completed by Northeast Geophysical Services of Bangor Maine, on the two existing water supply wells on March 1, and 2, 2016, and the three new boreholes on March 23, April 18, and 22, 2016.

Logs for the three boreholes (B16-101, B16-102, and B16-103) completed by SME are included in Attachment 1. Also included in Attachment 1 are borehole logs produced for the scale house and office supply wells. The depth of overburden encountered at the borehole locations is consistent with the soil depths observed in previously completed boreholes within the northeasterly portion of the expansion footprint, and ranged from 31 to 53 feet above the bedrock. The overburden appeared to consist of glacial till, based on cuttings returned during drilling. Bedrock chips returned during drilling were examined and indicate the bedrock to be predominately a gray phyllite, consistent with previous bedrock explorations and outcrops.

The geophysical logging included a suite of downhole geophysical tools as identified in the Work Plan. The Northeast Geophysical Services report is included in Attachment 2. Included in the report are the stereo nets, rose diagrams, and images of the borehole walls. One noteworthy occurrence during the logging was that a blockage was encountered in borehole B16-102 at an approximate depth of 40 to 50 feet below the ground surface. The blockage was the result of a piece of bedrock that had shifted into the borehole annulus. This required the drill rig to be re-mobilized to remove the obstruction prior to the geophysical logging of this borehole.

Water levels obtained from the boreholes are included on the boring logs included in Attachment 1. The water levels were converted to elevations using the site-specific datum. The depth of the groundwater is generally consistent with other site investigations.

In general, the new boreholes encountered conditions similar to those observed from other site explorations. The predominant foliation/bedding strike is northeast/southwest, consistent with previous site investigations. The caliper, resistivity, and spontaneous potential logging indicated several features suggestive of fracture zones in all boreholes and the two water supply wells. Fractures commonly followed the same strike pattern as the foliation, but also varied. In B16-101, fractures were predominantly near-horizontal. Fracture dips were variable. The relatively dense fracturing of the scale house well was erratic over the depth of the well. The downhole flowmeter indicated downward vertical flow along the boreholes under ambient conditions which is consistent with the locations of these boreholes and wells

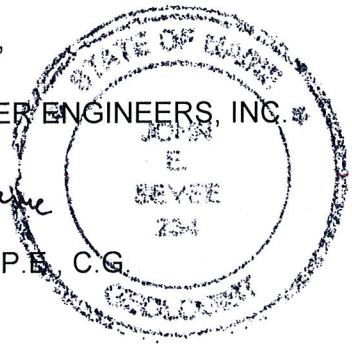
being at the higher elevations of the site, as observed at other locations in the general vicinity of these boreholes. The area drilled represents a precipitation recharge area, while the lower elevations east and west of the drumlin ridge represent groundwater discharge locations. Under pumping conditions, the flowmeter measurements confirmed fractures were capable of transporting groundwater.

Based on the data collected as part of the Phase 1 investigation of the Work Plan, SME recommends proceeding with Phase 2 of the Work Plan. This work will be completed in the time frame identified in the Work Plan. In addition to the Phase 2 tasks: (1) electrical earth resistivity survey, (2) the additional borehole drilling, and (3) downhole geophysical survey, SME is recommending that Phase 2 include pumping groundwater from each of the Phase 1 boreholes for a period of up to eight hours and measuring the response in the Phase 2 boreholes. The proposed pumping would confirm hydraulic interconnections within the Expansion footprint with the proposed identified monitoring locations along the perimeter of the Expansion.

Once MEDEP has had an opportunity to review the enclosed information, NEWSME would like to meet with you to discuss finalizing the specific tasks for Phase 2 of the Work Plan. Please note that as identified in the Work Plan, the Phase 2 work will be completed at least one year before the start of construction of the first Expansion cell.

Very truly yours,

SEVEE & MAHER ENGINEERS, INC.



John E. Sevee, P.E., C.G.

Attachments:

Figure 1 Work Plan Location Figure
Attachment 1 SME Borehole Logs
Attachment 2 Northeast Geophysical Services - Geophysical Log Results of Five Bedrock Boreholes Juniper Ridge Property Old Town Maine, May 2016

cc: Richard Behr, MEDEP
Don Meagher, NEWSME
Michael Barden, BGS

LEGEND

- EXISTING EXPLORATION
- WATER SUPPLY WELL (SEE NOTE 2)
- PHASE 1 BEDROCK BORING LOCATION
- PROPOSED EXPANSION OBSERVATION AND MONITORING WELL LOCATIONS TO BE INSTALLED DURING PHASE 2
- PROPOSED EXPANSION MONITORING WELL LOCATION (SEE NOTE 1)
- PROPOSED EXPANSION OBSERVATION WELL LOCATION (SEE NOTE 1)
- LOW ALTITUDE PHOTOLINEAMENTS (SEVEE & MAHER 1991, UPDATED 2008)
- EXISTING RESISTIVITY TRANSECTS
- PROPOSED RESISTIVITY TRANSECTS (PHASE 2)
- WETLAND BOUNDARIES

LINE 10
LINE 4
LINE 6
LINE 7
LINE 8
LINE 9
LINE 2
LINE 1
LINE S-1
LINE S-2
LINE S-3
LINE S-4
LINE S-5

MW-06-01
MW-501
MW-502
MW-503
OW-607B
OW-606A,B
OW-605A
OW-604A
OW-06-03
OW-603B
OW-602A
OW-601A,B
MW-504A,B
B16-101
B16-102
B16-103
MW-505
OW-04-11A
OW-04-11B
OW-608A,B
OFFICE WELL
SCALE HOUSE WELL
OW-609B
MW-506
OW-610A
MW-507
OW-611A
OW-04-07A
OW-04-07B
MW-508
MW-207
MW-303
MW12-303R

PROPOSED EXPANSION
SOLID WASTE BOUNDARY

150 0 300 FEET

DWG: FIGURES LMN: SITEPLAN-AERIAL CTB: SME-STD REV: 5/27/2016

\\Nserver\cfs\Casella\OldTownLandfillExpansion\9.35MCY-Expansion\Project Regulatory Review\Acad\Figures\FIGURES.dwg, 5/27/2016 8:22:49 AM, paf

FIGURE 1
WORK PLAN LOCATION FIGURE
JUNIPER RIDGE LANDFILL EXPANSION
OLD TOWN, MAINE

NOTES

1. GROUNDWATER MONITORING AND OBSERVATION WELL LOCATIONS ARE SUBJECT TO CHANGE BASED ON PHASE 1 AND 2 FINDINGS.
2. EXISTING WATER SUPPLY WELLS WILL BE TESTED DURING PHASE 1.

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ATTACHMENT 1

SME BOREHOLE LOGS

SME
Sevee & Maher Engineers, Inc.

WELL INSTALLATION LOG

PROJECT: Juniper Ridge Landfill, Old Town, Maine	**JOB NO.:** 14101.00	**BORING NO.** **B16-101**
DATE STARTED: 03/16/2016	**DRILLING METHOD:** Air Rotary w/ 6" dia. casing	
GROUND SURFACE ELEVATION (FT): 198.55 Site Datum		**LOGGED BY:** Sevee & Maher
BOREHOLE DIA.: Soil 8.75", Rock 6"		**SHEET 1 OF 2**

DEPTH (FT)	SAMPLE NO.	MATERIAL DESCRIPTION	Blows per 6" on Sampler	WELL LOG	DEPTH (FT)
				B-16-101	
0		Basal Till Brown, gravely, sandy silt, trace of cobbles and boulders		6" Dia. Black Steel Casing	0
25		Phyllite, gray, moderately weathered			25
50		…increasing hardness to phyllite			50
75		Bedrock			75
100		Fracture at 101', 6 GPM Fracture at 116', 24 GPM			100
125					125

NOTES:

Monitoring Point Elevation for B-16-101= 200.97 ft (top of DI casing)

Water level measured on 3/17/2016: 36.20 ft-below monitoring point, 164.84 ft

Water level measured on 4/18/2016: 36.00 ft-below monitoring point, 165.04 ft

Water level measured on 5/24/2016: 36.50 ft-below monitoring point, 164.47 ft

Soil Key

- Fill
- Marine Clay
- Submarine Sand & Gravel
- Ablation Till
- Basal Till
- Bedrock

WELL INSTALLATION LOG

PROJECT: Juniper Ridge Landfill, Old Town, Maine	**JOB NO.:** 14101.00	**BORING NO.** **B16-101(2)**
DATE STARTED: 03/16/2016	**DRILLING METHOD:** Air Rotary w/ 6" dia. casing	
GROUND SURFACE ELEVATION (FT): 198.55 Site Datum		**LOGGED BY:** Sevee & Maher
BOREHOLE DIA.: Soil 8.75", Rock 6"		**SHEET 2 OF 2**

DEPTH (FT)	SAMPLE NO.	MATERIAL DESCRIPTION	Blows per 6" on Sampler	WELL LOG	DEPTH (FT)
125					125
		Bedrock			
150					150
		161'-165', light brown soft phyllite			
		165'-180', Gray/white phyllite			
		``			
175					175
200		2010'-205' light brown soft phyllite			200
		` ``			
225		220'-240' Gray/white phyllite.			225
		Bottom of boring at 240.0 ft			
		After development flow = 80 gpm			
250					250

NOTES:

Soil Key

- Fill
- Marine Clay
- Submarine Sand & Gravel
- Ablation Till
- Basal Till
- Bedrock

WELL INSTALLATION LOG

PROJECT: Juniper Ridge Landfill, Old Town, Maine	**JOB NO.:** 15030.00	**BORING NO. B-16-102**
DATE STARTED: 03/17/2016	**DRILLING METHOD:** Air Rotary w/ 6" dia. casing	
GROUND SURFACE ELEVATION (FT): 197.64		**LOGGED BY:** Sevee & Maher
BOREHOLE DIA.: Soil 8.75", Rock 6"		**SHEET 1 OF 2**

DEPTH (FT)	SAMPLE NO.	MATERIAL DESCRIPTION	Blows per 6" on Sampler	WELL LOG	DEPTH (FT)
				B-16-102	
0					0
		Basal Till			
		Brown, gravely, sandy silt, trace of cobbles and boulders		6" Dia. Black	
25				Iron Steel Casing	25
		Phyllite, gray, moderately weathered			
		40'-42' Fracture			
50					50
		60'-80' Brown weathered phyllite			
		Dirty fracture zone 70 to 76			
75		4 GPM			75
		Bedrock			
100					100
		…increasing hardness to gray/white phyllite			
125					125

NOTES:

Monitoring Point Elevation for B-16-102 = 199.64 ft-Site Datum (top of DI casing)

Water level measured on 4/18/2016: 16.88 ft-below monitoring point, 182.76 ft

Water level measured on 5/24/2016:) 17.88 ft-below monitoring point, 181.76 ft

Soil Key

- Fill
- Marine Clay
- Submarine Sand & Gravel
- Ablation Till
- Basal Till
- Bedrock

WELL INSTALLATION LOG

PROJECT: Juniper Ridge Landfill, Old Town, Maine	**JOB NO.:** 14101.00	**BORING NO. B16-102 (2)**
DATE STARTED: 03/17/2016	**DRILLING METHOD:** Air Rotary w/ 6" dia. casing	
GROUND SURFACE ELEVATION (FT): 197.64 Site Datum		**LOGGED BY:** Sevee & Maher
BOREHOLE DIA.: Soil 8.75", Rock 6"		**SHEET 2 OF 2**

DEPTH (FT)	SAMPLE NO.	MATERIAL DESCRIPTION	Blows per 6" on Sampler	WELL LOG	DEPTH (FT)
125		140'-240', Gray/white phyllite Bedrock			125
150					150
175					175
200					200
225					225
		Bottom of boring at 240.0 ft 4 GPM			
250					250

NOTES:

Soil Key

- Fill
- Marine Clay
- Submarine Sand & Gravel
- Ablation Till
- Basal Till
- Bedrock

WELL INSTALLATION LOG

PROJECT: Juniper Ridge Landfill, Old Town, Maine		**JOB NO.:** 14101.00	**BORING NO.** **B16-103**
DATE STARTED: 03/18/2016	**DATE FINISHED:** 03/18/2016	**DRILLING METHOD:** Air Rotary w/ 6" dia. casing	
GROUND SURFACE ELEVATION (FT): 209.04 Site Datum	**DRILLING CONTRACTOR:** Goodwin Well & Water, Inc.		**LOGGED BY:** Sevee & Maher
BOREHOLE DIA.: Soil 8.75", Rock 6"	**WELL SCREEN/RISER DIA.:**		**SHEET 1 OF 2**

DEPTH (FT)	SAMPLE NO.	MATERIAL DESCRIPTION	Blows per 6" on Sampler		WELL LOG	DEPTH (FT)
					B-16-103	
0						0
25		Basal Till Brown, gravely, sandy silt, trace of cobbles and boulders			6" Dia. Black Steel Casing	25
50		48'-53' Pocket of gravel				50
		Phyllite, brown, extremely weathered				
75		Bedrock				75
100		100'-120' ….increasing gray phyllite				100
		…increasing hardness to phyllite				
125						125

NOTES:
Monitoring Point Elevation for B-16-103 = 210.61 ft Site Datum (top of DI casing)
Water level measured on 4/22/2016: 32.94 ft-below monitoring point, 177.67 ft
Water level measured on 5/24/2016: 28.24 ft-below monitoring point, 182.37 ft

Soil Key

- Fill
- Marine Clay
- Submarine Sand & Gravel
- Ablation Till
- Basal Till
- Bedrock

WELL INSTALLATION LOG

PROJECT: Juniper Ridge Landfill, Old Town, Maine	**JOB NO.:** 14101.00	**BORING NO. B16-103 (2)**
DATE STARTED: 03/18/2016	**DRILLING METHOD:** Air Rotary w/ 6" dia. casing	
GROUND SURFACE ELEVATION (FT): 209.04 Site Datum		**LOGGED BY:** Sevee & Maher
BOREHOLE DIA.: Soil 8.75", Rock 6"		**SHEET 2 OF 2**

DEPTH (FT)	SAMPLE NO.	MATERIAL DESCRIPTION	Blows per 6" on Sampler	WELL LOG	DEPTH (FT)
125		120'- 220' gray/white phyllite			125
		Bedrock			
150					150
175					175
200					200
		220'-240' Gray/white phyllite.			
225					225
250					250
260		Bottom of boring at 260.0 ft 1.5 GPM			

NOTES:

Soil Key

- Fill
- Marine Clay
- Submarine Sand & Gravel
- Ablation Till
- Basal Till
- Bedrock

WELL INSTALLATION LOG

PROJECT: Juniper Ridge Landfill, Old Town, Maine	**JOB NO.**14101:00	**BORING NO. Main Office Well**
DATE STARTED:	**DRILLING METHOD:** Air Rotary w/ 6" dia. casing	
GROUND SURFACE ELEVATION (FT): 213.50 Site Datum		**PREPARED BY:** Sevee & Maher
BOREHOLE DIA.: Soil 8.75", Rock 6"		**SHEET 1 OF 2**

DEPTH (FT)	SAMPLE NO.	MATERIAL DESCRIPTION	Blows per 6" on Sampler			WELL LOG	DEPTH (FT)
						Main Office	
0		TILL			6" Dia. Black Steel Casing		0
25							25
50							50
75		Bedrock					75
100							100
125							125

NOTES:

Monitoring Point Elevation for Main Office Well = 214.95 ft-Site Datum (top of DI casing)

Water level measured on 3-01-2016: 24.04 ft-below monitoring point, 190.91 ft

Water level measured on 5-24-2016: 27.17 ft-below monitoring point, 187.78 ft

Soil Key

- Fill
- Marine Clay
- Submarine Sand & Gravel
- Ablation Till
- Basal Till
- Bedrock

WELL INSTALLATION LOG

PROJECT: Juniper Ridge Landfill, Old Town, Maine	**JOB NO.:** 14101.00	**BORING NO: Main Office Well**
DATE STARTED:	**DRILLING METHOD:** Air Rotary w/ 6" dia. casing	
GROUND SURFACE ELEVATION (FT): 213.50 Site Datum		**PREPARED BY:** SME
BOREHOLE DIA.: Soil 8.75", Rock 6"		**SHEET 2 OF 2**

DEPTH (FT)	SAMPLE NO.	MATERIAL DESCRIPTION	Blows per 6" on Sampler			WELL LOG	DEPTH (FT)
125		Bedrock					125
150							150
175							175
200							200
		Bottom of boring at 202.0 ft					
225							225
250							250

NOTES:

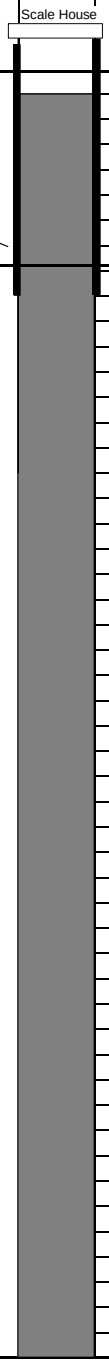
Soil Key

- Fill
- Marine Clay
- Submarine Sand & Gravel
- Ablation Till
- Basal Till
- Bedrock

WELL INSTALLATION LOG

PROJECT: Juniper Ridge Landfill, Old Town, Maine	**JOB NO.:** 14101.00	**BORING NO.** **Scale House**
DATE STARTED:	**DRILLING METHOD:** Air Rotary w/ 6" dia. casing	
GROUND SURFACE ELEVATION (FT): 208.26 Site Datum		**LOGGED BY:**
BOREHOLE DIA.: Soil 8.75", Rock 6"		**SHEET 1 OF 2**

DEPTH (FT)	SAMPLE NO.	MATERIAL DESCRIPTION	Blows per 6" on Sampler	WELL LOG	DEPTH (FT)
0		Till		6" Dia. Black Steel Casing	0
50					50
100		Bedrock			100
150					150
200					200
250					250



NOTES:

Monitoring Point Elevation for Scale House = 211.3 ft Site Datum (top of DI casing)

Water level measured on 3-01-2016: 28.9 ft-below monitoring point = 182.4 ft Site Datum

Water level measured on 5-24-2016: 30.86 ft-below monitoring point = 180.44 ft Site Datum

Soil Key

- Fill
- Marine Clay
- Submarine Sand & Gravel
- Ablation Till
- Basal Till
- Bedrock

WELL INSTALLTION LOG

PROJECT: Juniper Ridge Landfill, Old Town, Maine	**JOB NO.:** 14101.00	**BORING NO:** **Scale House**
DATE STARTED:	**DRILLING METHOD:** Air Rotary w/ 6" dia. casing	
GROUND SURFACE ELEVATION (FT): 208.26 Site Datum		**PREPARED BY:** Sevee & Maher
BOREHOLE DIA.: Soil 8.75", Rock 6"		**SHEET 2 OF 2**

DEPTH (FT)	SAMPLE NO.	MATERIAL DESCRIPTION	Blows per 6" on Sampler	WELL LOG	DEPTH (FT)
250					
		Bedrock			
					300
300					
		Bottom of boring at 322.5 ft			
350					350

NOTES:

Soil Key

- Fill
- Marine Clay
- Submarine Sand & Gravel
- Ablation Till
- Basal Till
- Bedrock

ATTACHMENT 2

NORTHEAST GEOPHYSICAL SERVICES - GEOPHYSICAL LOG RESULTS OF FIVE BEDROCK BOREHOLES JUNIPER RIDGE PROPERTY OLD TOWN MAINE, MAY 2016

SME
Sevee & Maher Engineers, Inc.

GEOPHYSICAL LOG RESULTS
OF FIVE BEDROCK BOREHOLES
JUNIPER RIDGE PROPERTY
OLD TOWN, MAINE

Northeast Geophysical Services
4 Union Street, Suite 3
Bangor, Maine 04401
May, 2016

GEOPHYSICAL LOG RESULTS
OF FIVE BEDROCK BOREHOLES
JUNIPER RIDGE PROPERTY
OLD TOWN, MAINE

Introduction

At the request of Sevee & Maher Engineers, Inc. (SME), five bedrock boreholes (Scale House Well, Main Office Well, B16-101, B16-102 and B16-103) located on the Juniper Ridge Landfill property in Old Town, Maine were geophysically logged. The boreholes were logged in March and April, 2016 by Rudy Rawcliffe of Northeast Geophysical Services (NGS). Geophysical logging was used as one of the means to identify the location and orientation of potential water-bearing fractures in the boreholes. Caliper, temperature, single point resistance (SPR), spontaneous potential (SP), fluid conductivity, natural gamma and flowmeter measurements were collected from each borehole. In addition, optical televiewer (OTV) and acoustical televiewer (ATV) images was also generated for each borehole.

Methods and Instrumentation

The borehole was logged with a Mount Sopris Matrix digital logger. Following is a brief description of each parameter that was measured and how that information is used to locate possible bedrock fractures.

Temperature (in degrees Centigrade [ºC]) is measured with the probe going down each hole. Generally, temperature rises smoothly with depth at a rate of about 1.0º C per 100 feet due to the local geothermal gradient. Areas where water may be entering or exiting the borehole are sometimes revealed on the temperature log as abrupt temperature changes or sometimes as temperature gradient changes. Other factors that can affect the temperature log besides transmissive fractures include variations in the thermal resistivity of the rock with depth along the borehole, surface climatic changes, thermal effects of drilling activity, and localized heat sources such as radionuclides in the rock or cement setting outside the casing.

Single-point-resistance (SPR) measures the electrical resistance (in ohms) between the probe and a surface electrode. Water-filled fractures will often appear as abrupt spikes of relatively low resistance on this log.

Spontaneous potential (SP) measures the natural electrical currents (in milli-volts) in the subsurface. Causes of SP can be due to electrochemical changes or oxidation-reduction potentials that may exist between different layers. Another cause for SP can be streaming potentials caused by fluid movement into or out of a bedrock fracture. Typically SP anomalies appear as spikes towards the left (lower voltage) on the log.

Fluid conductivity measures the conductivity (in micro Siemens) of the water in the borehole. Fluid conductivity can be useful in identifying transmissive fractures because water entering the borehole through fractures sometimes has a different conductivity than the water that is already in the borehole.

Natural gamma measures the gamma radiation in counts per second (cps) that is being emitted from the materials located next to the probe. Natural gamma is generally used as a way to distinguish between different lithologies or soil types. This is because different materials often have different percentages of radioactive elements (mainly potassium-40 and to a lesser extent uranium-238 and thorium-232). For example, shale, because of its higher clay content, is usually higher in radioactivity than sandstone or limestones. Bedrock fractures or fracture zones are

sometimes distinguished by the gamma log because fractures often contain weathered clay minerals which can have higher amounts of potassium or uranium than the unfractured rock.

Caliper measures the borehole diameter. Fractures are often revealed on the caliper log as abrupt widenings of the borehole.

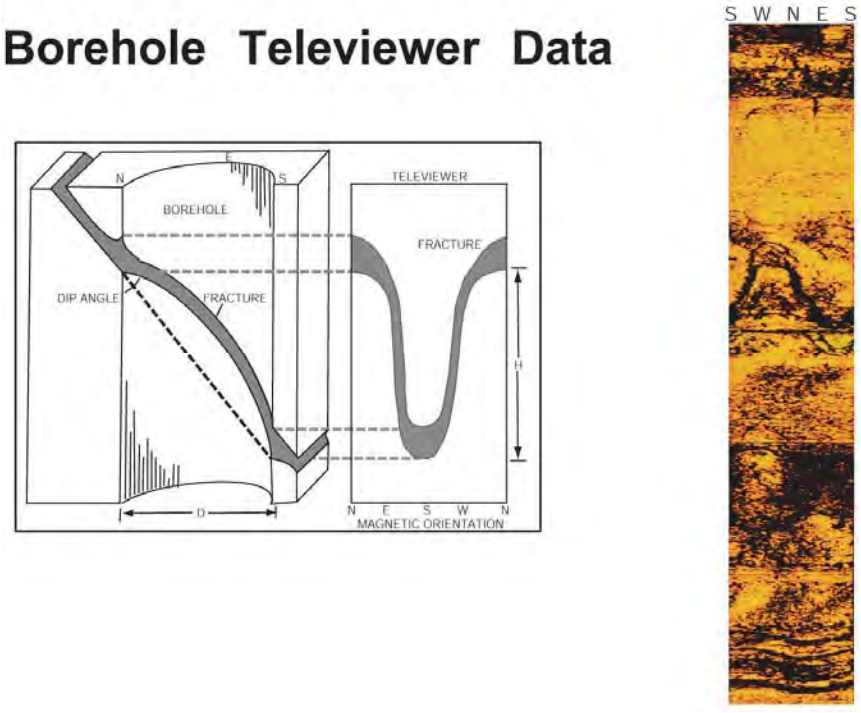
The optical televiewer (OTV) log provides a digital optical image of the borehole walls. The OTV can identify planar features such as fractures, bedding surfaces, and joints and the strike, dip direction and dip angle.

The acoustical televiewer (ATV) log provides an acoustical image of the borehole walls. The ATV works by scanning the borehole wall with an acoustic beam that is produced by a rapidly rotating piezoelectric source. Similar to the optical televiewer, planar features such as fractures, bedding surfaces and joints can be identified with the ATV tool and the strike, dip direction and dip angle of these features can often be determined.

The optical (OTV) and acoustical (ATV) televiewer logs are somewhat duplicative in that they both can provide similar information. However, there are advantages and disadvantages to both tools. The ATV requires the borehole to be water filled and will not provide information above the water level. The OTV can work in air or water but is not effective in cloudy, turbid water whereas the ATV will work fine in cloudy water.

The ATV can be better at discerning voids, cracks and fractures whereas the OTV can be better at discerning lithology. Also, sometimes water-bearing fractures are rust stained, which can be seen by the OTV.

The ATV (and OTV) data are presented as "unwrapped" images of the borehole wall that are oriented to magnetic north. The dip angle and dip direction of any planar feature that intersects the borehole can be measured from this image. The figure below illustrates this.



Each identified feature was digitized using WellCad software which then calculates the dip and dip direction of the features taking into account the borehole tilt and orientation.

The temperature, caliper, SPR, fluid conductivity, ATV and OTV logs were examined and possible bedrock fractures were identified. This information was used to select measurement locations for the flowmeter instrument. Generally, flowmeter measurements were taken in the zone above and below locations where potential fractures might exist in the boreholes.

Flowmeter Measurements

Flowmeter measurements of the vertical water flow were made in the boreholes using a Mount Sopris Heat Pulse Flowmeter. This instrument is capable of measuring flow direction in a borehole (up or down) and has a calibrated measurement range of 1.0 to 0.03 gallons per minute (gpm).

Vertical flow in a borehole is caused when two or more transmissive fractures in the borehole are at hydraulic disequilibrium with one another. When this occurs there is a hydraulic gradient developed and water will flow toward the fracture with the lower hydraulic head. When no vertical flow is measured it can mean that there are less than two transmissive fractures in the borehole or that all the fractures in the borehole are at equilibrium with each other.

Flowmeter measurements are made under ambient (unstressed) conditions and then repeated while stressing the borehole by pumping using a small pump situated near the top of the borehole. The effect of pumping is to cause inflow into the borehole from any transmissive fractures which can be identified by the flowmeter measurements.

Borehole Geophysical Results

Composite geophysical logs of the boreholes are attached to this report (Attachments A to E). The geophysical data for each borehole are presented on a series of plots entitled Plates 1-4. The caliper log is plotted on Plates 1 and 4 for reference. Attachment A contains data for the Scale House Well and Attachment B for the Main Office Well and so forth.

The first plot for each borehole, Plate 1, is a composite log plot containing the caliper log, heat pulse flowmeter, fluid conductivity, temperature, SPR, SP logs and a tadpole plot of the dip and dip direction of the interpreted planar features interpreted from the televiewer logs. The blue colored tadpoles represent possible (light blue) and likely (dark blue) transmissive fractures. The number adjacent to each blue tadpole reference tabulated data for the borehole that provide the strike, dip direction and dip amount of each identified planar feature in the borehole.

One or a combination of anomalous geophysical responses identified physical discontinuities that may represent possible transmissive fractures. These included abrupt widenings in the caliper log, changes in the fluid conductivity log, deflections or gradient changes in the temperature log and the heat pulse flowmeter measurements. The flowmeter log and the temperature and fluid conductivity logs were mainly used to identify transmissive fractures. The areas interpreted to have likely transmissive fractures are high-lighted in yellow on Plate 1. Areas interpreted as possibly transmissive are high-lighted in a light yellow.

Plate 2 is a rose plot of the strike and dip angle of all the interpreted planar features in each borehole.

Plate 3 is an upper hemisphere polar plot of the dip direction and dip amount of planar features in each borehole.

Plate 4 is the televiewer image log plots, caliper log and interpreted structure for each borehole.

Also attached (Table 1) is a table that provides the depth and calculated strike and dip of the planar features in each borehole that have been interpreted from the televiewer logs. These

planar features may be fractures or may represent cleavage, joints or bedding planes. The results in Table 1 have been categorized and also have been color-coded on the logs to provide an interpretative range of the likelihood that the associated feature signifies a transmissive fracture as follows:

- Dark blue symbol (category 107) - multiple distinct borehole geophysical logging responses indicating borehole enlargement (caliper, SPR, acoustic signal), or evident change in the borehole fluid characteristic (temperature, fluid conductivity, discoloration on the optical log or quantified vertical flow) that provides the strongest data that the indicated bedrock feature represents a likely transmissive water-bearing fracture.
- Light blue symbol (category 108) - less amount of corroborating geophysical data to support that the indicated feature will transmit groundwater compared to the dark blue symbol. However, the televiewer logs show a fairly distinct acoustic signal or optical image that perhaps under a higher stress condition (e.g. pumping rate), vertical flow could be induced in the borehole. Less degree of confidence that the feature represents a transmissive feature.
- Black symbol (category 100) - bedrock feature not interpreted to transmit water; more likely to represent planes of foliation, bedding planes, healed or filled fractures, or mechanical breaks in the rock matrix due to drilling advancement.

It is possible that there are other transmissive fractures in the boreholes but the ones indicated on the logs and table are considered the most likely based on the geophysical measurements.

Following is a descriptive summary of the geophysical logging results for each of the boreholes:

Scale House Well:

Total Depth (from top of casing):	322.5 feet
Casing Depth:	45.2 feet
Water Level:	28.9 feet

The caliper log for Scale House Well shows a median borehole diameter of 6.23 inches. There are several locations in the borehole where the borehole diameter abruptly widens and may represent bedrock fractures. The largest of these caliper anomalies occurs at 140 feet (7.79 inches). Other relatively wide anomalies occur at 49 feet (7.24 inches) and 102.4 feet (7.36 inches). In addition to these caliper anomalies there are some smaller caliper deflections that are shown on the log that may also represent bedrock fractures.

The temperature log for Scale House Well shows the median ambient water temperature below the casing of 7.99º C. The temperature log increases with depth from the water table at 28.9 feet until about 64 feet where there is an abrupt increase in temperature. At about 105 feet there is a smaller deflection in the temperature log. These areas of temperature deflections or gradient changes may represent transmissive zones in the borehole.

The fluid conductivity log shows a median conductivity for the borehole fluid below the casing of about 243 µS/cm. The fluid conductivity is fairly constant from the water table at 28.9 feet until about 74 feet where there is an abrupt increase in conductivity. Conductivity remains stable from here to 290 feet where there another abrupt increase in conductivity. These areas of abrupt deflections in the fluid conductivity may represent transmissive zones in the borehole.

The single point resistance (SPR) log shows that the median resistance for Scale House Well is 2,226 ohms for the uncased portion of the borehole. There are some abrupt deflections toward lower resistance that may indicate bedrock fractures. In most instances these resistance anomalies are associated with caliper anomalies. The most prominent SPR anomalies are at 75, 103, 140, 290 and 305 feet. These SPR anomalies also have SP anomalies (deflections to the right) associated with them, which is another indication of a likely bedrock fracture.

The natural gamma log shows a median gamma count rate for the borehole below the casing of 124 counts per second. The gamma count rate is generally between 100 and 175 cps for the entire length of the borehole. There are some subtle areas where the count rate is slightly higher or lower than the median but no obvious changes that would indicate changes in lithology.

The televiewer logs for Scale House Well (Plate A-4) indicates that the planar features (possible fractures, bedding planes, joints or cleavages) have a range of orientations with two predominant directions: one that strikes to the northwest at about 305º true and dips towards the northeast and another one that strikes to the northeast at about 50º true and dips towards the northwest or southeast. This is shown on Plate A-2 Rose plot. The strike and dip of identified planar features including likely and possibly transmissive fractures for Scale House Well are shown on the composite log (Plate A-1) and Plate A-3 (polar plot) and tabulated in the appendix.

The flowmeter measurements for Scale House Well under ambient conditions are quite interesting as there is strong downflow (0.46 gpm) starting within the casing at 43 feet. During the time of logging water could be heard flowing into the borehole. This means that water was flowing into the borehole from above the water table which was at 28.9 feet. This indicates that water is entering the borehole through possibly a crack in the casing or through the pitless adapter. At 72 feet downflow increased to 0.76 gpm. At 108 feet downflow decreased to 0.18 gpm. At 290 feet downflow decreased to 0.03 gpm and at 312 feet there was no measureable flow.

Measurements were then repeated while pumping the borehole at about 1.0 gpm. Under pumping conditions there was no measureable flow at the bottom of the borehole until 285 feet where there was a downflow of 0.04 gpm measured. This was somewhat unexpected because, generally, pumping induces upflow. Downflow measurements continued in the borehole until 131 feet where an upflow of 0.08 gpm was measured. Upflow measurements gradually increased with successive flowmeter measurements going upwards in the borehole until 65 feet where there was a large increase in upflow to 0.49 gpm. At 43 feet, which is within the casing upflow measured 0.57 gpm.

In the Scale House Well, as mentioned previously, there is a significant amount of water that is entering the borehole from above the water table at 28.9 feet presumably through the casing. Under ambient conditions this water is moving downwards in the borehole. Additional water is entering the borehole from just below the casing through fractures located from 45 to 50 feet and through fractures located between 65 and 70 feet. Some water exits the borehole through a fracture or fractures located about 103 feet and also through a fracture located at about 140 feet. These two zones, about 103 feet and 140 feet appear to be the most transmissive fractures. The remaining water continues downwards in the borehole and exits the borehole through fractures located at 290 and 304.6 feet.

The locations of the interpreted likely and possibly transmissive fractures are shown on Plate A-

1 and Plate A-4 and tabulated in Table A-1.

Main Office Well:

Total Depth (TOC):	202.0 feet
Casing Depth:	19 feet
Water Level:	24.04 feet

The caliper log for Main Office Well shows a median borehole diameter of 6.19 inches. There are several locations in the borehole where the borehole diameter abruptly widens and may represent bedrock fractures. The largest of these caliper anomalies occur at 21.4 feet (6.83 inches), 24.5 feet (6.84 inches), 171.1 feet (6.99 inches) and 177 feet (6.77 inches). In addition to these caliper anomalies there are some smaller caliper deflections that are shown on the log that may also represent bedrock fractures.

The temperature log for Main Office Well shows the median ambient water temperature below the casing is 9.51º C. This is about 1.5º C higher than the median temperature for the other boreholes that were logged. The reason for this relative higher temperature may be because the Office Well is closer to the landfill which may be a heat source. The temperature log increases with depth from the water table at 24.04 feet until about 50 feet where the temperature levels and then begins to decline with increasing depth. At about 170 feet there is a gradient change in the temperature log. These areas of temperature gradient changes at 50 feet and 170 feet may represent transmissive zones in the borehole.

The fluid conductivity log for Main Office Well shows a median conductivity for the borehole fluid below the casing of about 172 µS/cm. The fluid conductivity is fairly constant from the water table at 24.04 feet until about 48 feet where there is an abrupt increase in conductivity. Conductivity remains stable from here to 290 feet where there another abrupt increase in conductivity and another at about 58 feet. The conductivity remains fairly constant from here to near the bottom of the borehole at about 187 feet where the conductivity begins to rise with increasing depth. These areas of abrupt deflections in the fluid conductivity may represent transmissive zones in the borehole.

The single point resistance (SPR) log shows that the median resistance for Main Office Well is 3,747 ohms for the uncased portion of the borehole. There are some abrupt deflections toward lower resistance that may indicate bedrock fractures. In most instances these resistance anomalies are associated with caliper anomalies. The most prominent SPR anomalies are at 48, 58, 82, 85, 177 and 190 feet. These SPR anomalies also have SP anomalies (deflections to the right) associated with them, which is another indication of a likely bedrock fracture.

The natural gamma log shows a median gamma count rate for the borehole below the casing of 118 counts per second. The gamma count rate is generally between 100 and 150 cps for the entire length of the borehole. Near the bottom of the borehole at 200 feet there is a spike of gamma radiation to over 200 cps. Other than this there are some subtle areas where the count rate is slightly higher or lower than the median but no obvious changes that would indicate changes in lithology.

The televiewer logs for the Main Office Well (Plate B-4) indicates that the predominant orientation of the planar features (possible fractures, bedding planes, joints or cleavages) one that strikes to the northeast at about 50º true and dips steeply towards the northwest. This most likely represents the

foliation or bedding of the bedrock. This is shown on Plate B-2 Rose plot. The strike and dip of identified planar features including likely and possibly transmissive fractures for the Main Office Well are shown on the composite log (Plate B-1) and Plate B-3 (polar plot) and tabulated in the appendix.

The flowmeter measurements for the Main Office Well under ambient conditions show a strong downflow (0.32 gpm) starting at 30 feet, which is just below the water table. This indicates that water is probably entering the borehole via fractures located at just above the water table between 19 and 25 feet and moving downwards. At 173.5 feet downflow decreased to 0.11 gpm and at 188 feet to 0.03 gpm. At 198 feet there was no measureable flow.

Measurements were then repeated while pumping the borehole at about 1.0 gpm. Under pumping conditions there was no measureable flow at the bottom of the borehole at 198 feet and then a slight upflow (0.02 gpm) at 193.5 feet. Upflow increased to 0.07 gpm at 187.5 feet. At 169 feet upflow measured 0.54 gpm. Upflow measurements were more or less the same for the remainder of the borehole.

Based on the flowmeter measurements and, to a lesser degree, on the other geophysical logs it appears that the most transmissive fractures in the Main Office Well are located near the top of the borehole between 19 and 25 feet or at the bottom of the borehole below 170 feet. The locations of the interpreted likely and possibly transmissive fractures are shown on Plate B-1 and Plate B-4 and tabulated in Table B-1.

B16-101:

Total Depth (from top of casing):	244.0 feet
Casing Depth:	37 feet
Water Level:	36.05 feet

The caliper log for B16-101 shows a median borehole diameter of 6.05 inches. There are several locations in the borehole where the borehole diameter abruptly widens and may represent bedrock fractures. The largest of these caliper anomalies occur at 107.8 feet (6.45 inches), 117.7 feet (6.79 inches), 125.4 feet (6.50 inches), 165 feet (7.09 inches) and 212.7 feet (6.42 inches). In addition to these caliper anomalies there are some smaller caliper deflections that are shown on the log that may also represent bedrock fractures.

The temperature log for B16-101 shows the median ambient water temperature below the casing is 7.67º C with a range of 7.65 to 8.08 º C. There is an abrupt deflection in the temperature log just below the casing from about 42 to 48 feet. Below 48 feet the temperature decreases with depth until about 73 feet where the temperature levels and stays relatively constant to the bottom of the borehole at 244 feet. The area of temperature deflection at 43-48 feet and the gradient change at about 73 may represent transmissive zones in the borehole.

The fluid conductivity log for B16-101 shows a median conductivity for the borehole fluid below the casing of about 255 µS/cm with a range of 106 to 304 µS/cm. There are three areas of abrupt deflections in the fluid conductivity located at about 100 feet, 125 feet and 165 feet. There is also a gradient change at about 215 feet. These areas of abrupt deflections in the fluid conductivity and gradient change may represent transmissive zones in the borehole.

The single point resistance (SPR) log shows that the median resistance for B16-101 is 1,859 ohms for the uncased portion of the borehole. There are some abrupt deflections toward lower

resistance that may indicate bedrock fractures. In most instances these resistance anomalies are associated with caliper anomalies. These SPR anomalies also have SP anomalies (deflections to the right) associated with them, which is another indication of a likely bedrock fracture.

The natural gamma log shows a median gamma count rate for the borehole below the casing of 114 counts per second with a range of 59 to 174 cps. The gamma count rate is generally between 100 and 150 cps for the entire length of the borehole with no obvious changes that would indicate changes in lithology.

The televiewer logs for B16-101 (Plate C-4) indicates that the predominant orientation of the planar features (possible fractures, bedding planes, joints or cleavages) one that strikes to the northeast at about 50º true and dips towards the northwest or southeast. This most likely represents the foliation or bedding of the bedrock. This is shown on Plate C-2 Rose plot. The strike and dip of identified planar features including likely and possibly transmissive fractures for B16-101 are shown on the composite log (Plate C-1) and Plate C-3 (polar plot) and tabulated in the appendix.

The flowmeter measurements for B16-101 under ambient conditions show no flow in the upper part of the borehole until 133.1 feet where a downflow (0.09 gpm) was measured. At 167 feet downflow increased to 0.21 gpm. At 215 feet there was no measurable flow. This indicates that under ambient conditions water is entering the borehole via fractures located at 125 to 129 feet and moving downwards. At about 165 feet more water enters the borehole and moves downward. Water exits the borehole via fractures located at about 210 to 213 feet.

Measurements were then repeated while pumping the borehole at about 0.9 gpm. Under pumping conditions there was no measureable flow at the bottom of the borehole at 198 feet and then a slight downflow (0.02 gpm) at 193.5 feet. At 161 feet an upflow of 0.13 gpm was measured. This shows that pumping at 0.9 gpm could not overcome the head difference between the fractures located at 165 feet and the fractures at 210 to 213 feet. Flowmeter measurements taken above 160 feet generally increased going upwards in the borehole due to contributions from other transmissive fractures.

Based on the flowmeter measurements and, to a lesser degree, on the other geophysical logs it appears that the most transmissive fractures in B16-101 are located at about 103 feet, 118 feet, 125 to 129 feet, 165 feet and 210 to 213 feet. The locations of the interpreted likely and possibly transmissive fractures are shown on Plate C-1 and Plate C-4 and tabulated in Table C-1.

B16-102:

Total Depth (from top of casing):	237.3 feet
Casing Depth:	37.8 feet
Water Level:	16.88 feet

The caliper log for B16-102 shows a median borehole diameter of 6.15 inches. When the borehole was initially logged on March 25, 2016 it was discovered that the zone immediately below the casing from about 40 to 50 feet was highly fractured and had partially collapsed into borehole. This obstruction prevented doing the televiewer and flowmeter logs. Drillers returned to the borehole and cleared the obstruction and the borehole was relogged on April 18, 2016. The second caliper log shows that the upper part of this borehole from the bottom of the casing at 37.8 feet to about 78 feet is extensively fractured and contains the widest caliper anomalies of all the boreholes logged. The largest of these caliper anomalies occur at 42 to 43.5 feet (over 20 inches), 47.3 feet (7.75 inches), 52.6 feet (10.67 inches), 66.5 feet (7.56 inches) and 78.2 feet

(7.18 inches). In addition to these caliper anomalies there are some smaller caliper deflections that are shown on the log that may also represent bedrock fractures.

The temperature log for B16-102 shows the median ambient water temperature below the casing is 8.15º C with a range of 8.12 to 8.60º C. The temperature log shows an abrupt decrease at about 45 feet then decreases gradually from about 45 to 80 feet and then levels and from 90 feet to the bottom of the borehole at 237.3 feet remains fairly constant. This area of temperature deflection at 45 feet may represent a transmissive zone in the borehole.

The fluid conductivity log for B16-102 shows a median conductivity for the borehole fluid below the casing of about 98 µS/cm with a range of 96 to 99 µS/cm. The conductivity remains fairly constant for the entire borehole.

The single point resistance (SPR) log shows that the median resistance for B16-102 is 6,184 ohms for the uncased portion of the borehole. There are some abrupt deflections toward lower resistance that may indicate bedrock fractures. In most instances these resistance anomalies are associated with caliper anomalies.

The natural gamma log shows a median gamma count rate for the borehole below the casing of 112 counts per second with a range of 35 to 196 cps. The gamma count rate is generally between 100 and 150 cps for the entire length of the borehole. The interval from 50 feet to about 150 feet averages about 26 cps higher than the depth interval from 150 to 237.3 feet. This is coincident with a shift in the single point resistance to higher resistance at depth. This may indicate a change in lithology between the upper and lower sections of the borehole.

The televiewer logs for B16-102 (Plate D-4) indicates that the predominant orientation of the planar features (possible fractures, bedding planes, joints or cleavages) one that strikes to the northeast at about 50º true and dips towards the northwest or southeast. This most likely represents the foliation or bedding of the bedrock. This is shown on Plate D-2 Rose plot. The strike and dip of identified planar features including likely and possibly transmissive fractures for B16-102 are shown on the composite log (Plate D-1) and Plate D-3 (polar plot) and tabulated in the appendix.

The flowmeter measurements for B16-102 under ambient conditions show no measurable flow. Measurements were then repeated while pumping the borehole at about 0.9 gpm. Under pumping conditions there was a slight upflow (0.04 gpm) at the bottom of the borehole at 235 feet. At 75 feet upflow increases to 0.20 gpm and upflow generally increases with successive measurements going upwards in the borehole until 36.9 feet, which is within the casing, where upflow measured 0.68 gpm.

Based on the flowmeter measurements and, to a lesser degree, on the other geophysical logs it appears that the most transmissive fractures in the B16-102 are located near the top of the borehole between 40 and 80 feet. There does appear to be a small amount of water coming in at the very bottom of the borehole below 235 feet. The locations of the interpreted likely and possibly transmissive fractures are shown on Plate D-1 and Plate D-4 and tabulated in Table D-1.

B16-103:

Total Depth (from top of casing):	261.1 feet
Casing Depth:	69.3 feet
Water Level:	32.94 feet

The caliper log for B16-103 shows a median borehole diameter of 6.18 inches. There are several locations in the borehole where the borehole diameter abruptly widens and may represent bedrock fractures. The largest of these caliper anomalies occur in the upper part of the borehole between 80 and 95 feet at 83.1 feet (6.99 inches), 86.9 feet (6.71 inches) and 92.6 feet (6.78 inches). In addition to these caliper anomalies there are some smaller caliper deflections that are shown on the log that may also represent bedrock fractures.

The temperature log for B16-103 shows the median ambient water temperature below the casing is 8.80º C with a range of 8.61 to 9.26º C. The temperature log generally decreases with depth from the bottom of casing at 69.3 feet. There is a gradient change at about 90 feet and an abrupt deflection in temperature at about 198 feet. These areas of temperature gradient changes at 50 feet and 170 feet may represent transmissive zones in the borehole.

The fluid conductivity log for B16-103 shows a median conductivity for the borehole fluid below the casing of about 101 µS/cm with a range of 79 to 117 µS/cm. There are three places in the borehole where the fluid conductivity deflects abruptly located at about 100 feet, 120 feet and 200 feet. These areas of abrupt deflections in the fluid conductivity may represent transmissive zones in the borehole.

The single point resistance (SPR) log shows that the median resistance for B16-103 is 2,095 ohms for the uncased portion of the borehole. There are some abrupt deflections toward lower resistance that may indicate bedrock fractures. In most instances these resistance anomalies are associated with caliper anomalies. The most prominent SPR anomalies are at 93, 101 and 197 feet. The SPR anomaly at 197 feet also has an SP anomaly (deflection to the right) associated with it, which is another indication of a likely bedrock fracture.

The natural gamma log shows a median gamma count rate for the borehole below the casing of 120 counts per second with a range of 41 to 204 cps. The gamma count rate is generally between 100 and 150 cps for the entire length of the borehole. Near the bottom of the borehole at 205 feet there is a spike of gamma radiation to over 200 cps. Other than this there are some subtle areas where the count rate is slightly higher or lower than the median but no obvious changes that would indicate changes in lithology.

The televiewer logs for B16-103 (Plate E-4) indicates that the predominant orientation of the planar features (possible fractures, bedding planes, joints or cleavages) one that strikes to the northeast at about 40º true and dips steeply towards the northwest. This most likely represents the foliation or bedding of the bedrock. This is shown on Plate E-2 Rose plot. The strike and dip of identified planar features including likely and possibly transmissive fractures for B16-103 are shown on the composite log (Plate E-1) and Plate E-3 (polar plot) and tabulated in the appendix.

The flowmeter measurements for B16-103 under ambient conditions show no flow in the upper part of the borehole until 86 feet where a downflow (0.07 gpm) was measured. By 115 feet downflow increased to 0.24 gpm. At 200 feet there was no measurable flow. This indicates that under ambient conditions water is entering the borehole via fractures located between 81 and 96 feet and moving downwards. At about 100 feet more water enters the borehole and moves

downward. Water exits the borehole via fractures located at about 197 feet.

Measurements were then repeated while pumping the borehole at about 0.7 gpm. Under pumping conditions there was no measureable flow at the bottom of the borehole until 193 where a downflow of 0.05 gpm was measured. Downflow increased to 0.09 gpm at 183 feet and to 0.12 gpm at 135 feet. At 96 feet the flow reversed to an upflow of 0.03 gpm. This shows that pumping at 0.7 gpm could not overcome the head difference between the fractures located at about 100 feet and the fractures at 197 feet. Flowmeter measurements taken above 96 feet generally increased going upwards in the borehole due to contributions from other transmissive fractures.

Based on the flowmeter measurements and, to a lesser degree, on the other geophysical logs it appears that the most transmissive fractures in the B16-103 are located at about 197 feet, 120 feet, 98 to 102 feet and near the top of the borehole between 93 and 69 feet. The locations of the interpreted likely and possibly transmissive fractures are shown on Plate E-1 and Plate E-4 and tabulated in Table E-1.

ATTACHMENT A

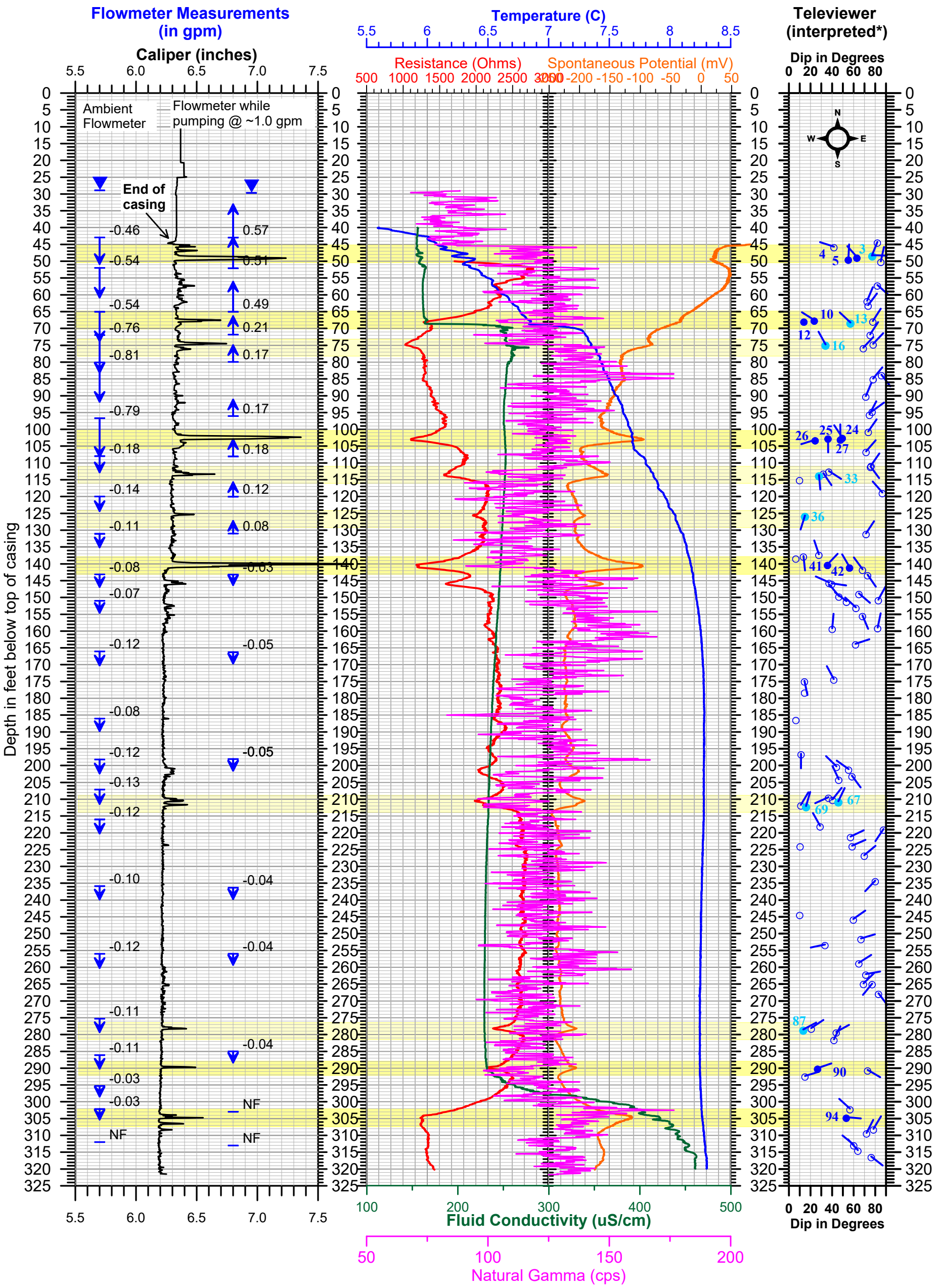
SCALE HOUSE WELL

BOREHOLE GEOPHYSICAL LOGS

Northeast Geophysical Services

Scale House Well
Juniper Ridge Site
Old Town, Maine

Date logged: 3/01/16



= Likely transmissive zone

= possible transmissive zone

The dip direction is indicated by the line extending from the circle. The strike of the feature is 90 degrees from this.

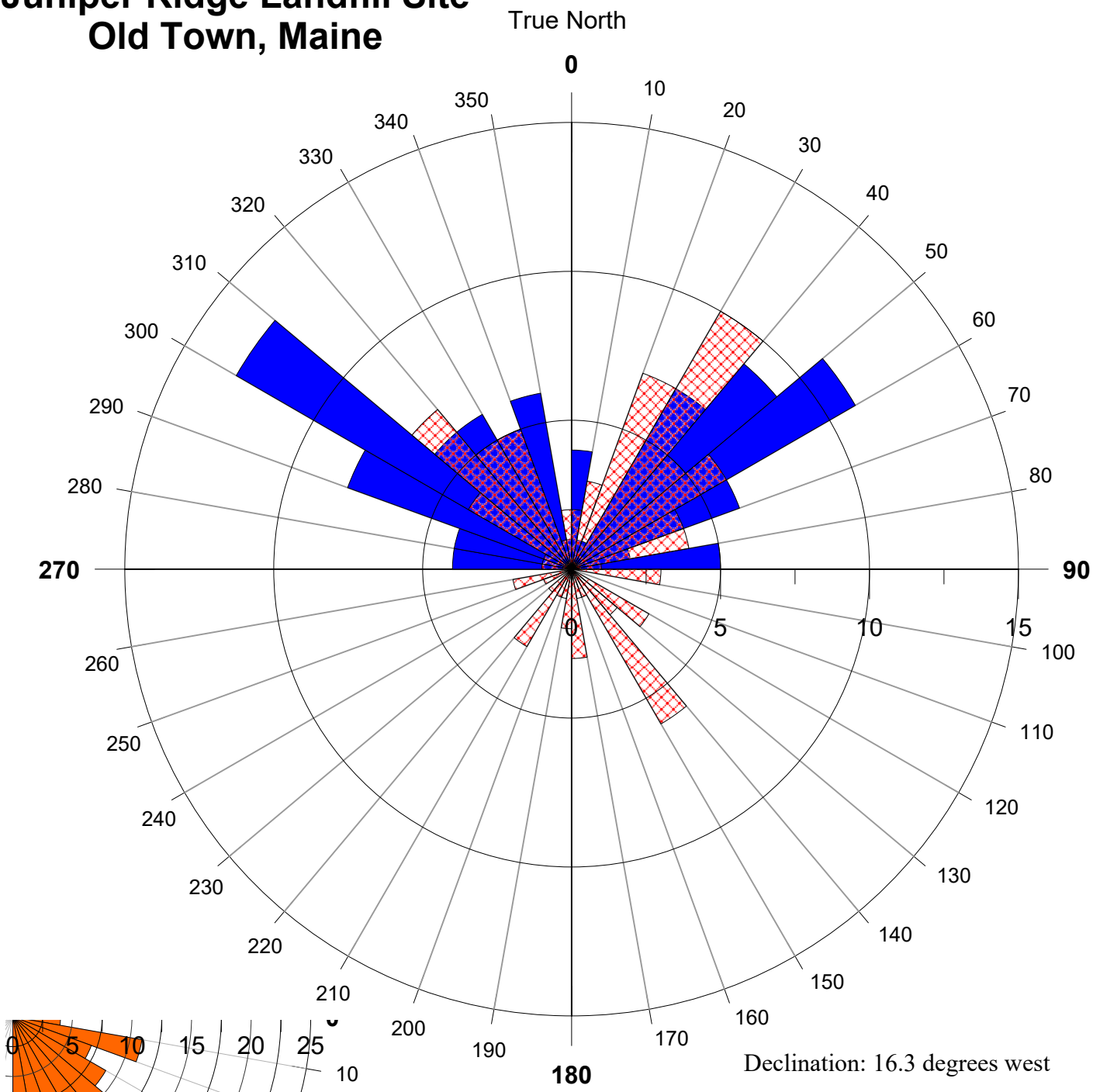
PLATE A-1
Scale House Well
Juniper Ridge Site
Old Town, Maine

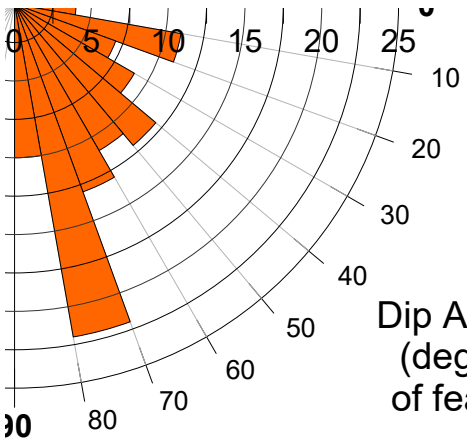
Date logged: 3/01/16

Northeast Geophysical Services

Scale House Well
Juniper Ridge Landfill Site
Old Town, Maine

PLATE A-2
Strike and Dip Direction
of all features





Dip Amount
(degrees)
of features

Declination: 16.3 degrees west

Explanation

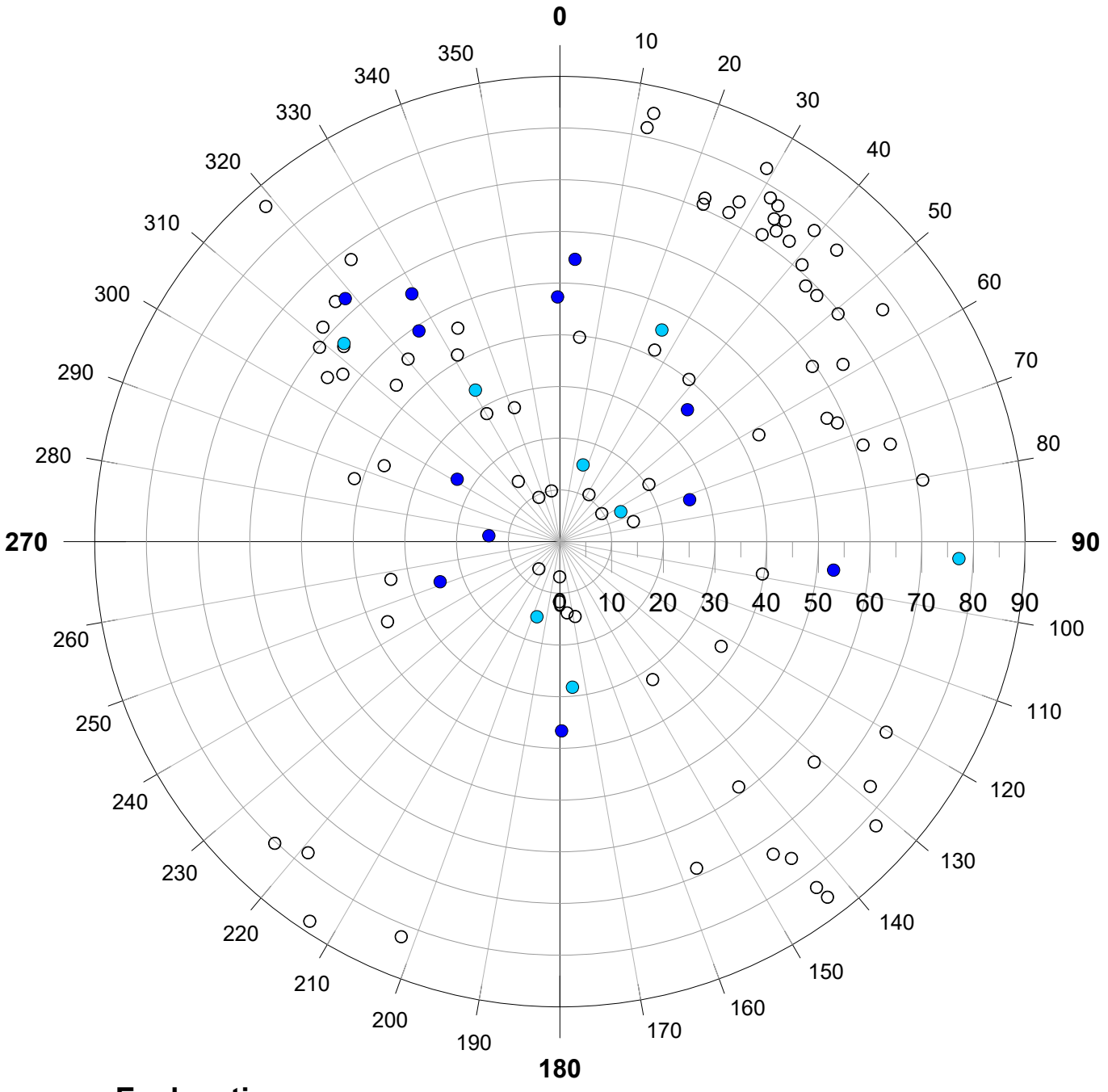
- Dip direction of feature
- Strike of feature
- Dip Amount (Tilt)

Based on 99 measurements

Northeast Geophysical Services

Scale House Well
Juniper Ridge Landfill Site
Old Town, Maine

PLATE A-3
Dip Amount and Dip Azimuth of planar features (upper hemisphere plot)



Explanation -

- Possibly transmissive
- Likely transmissive
- possible joint, fracture, bedding or foliation

Declination: 16.3 degrees west

Based on 99 measurements

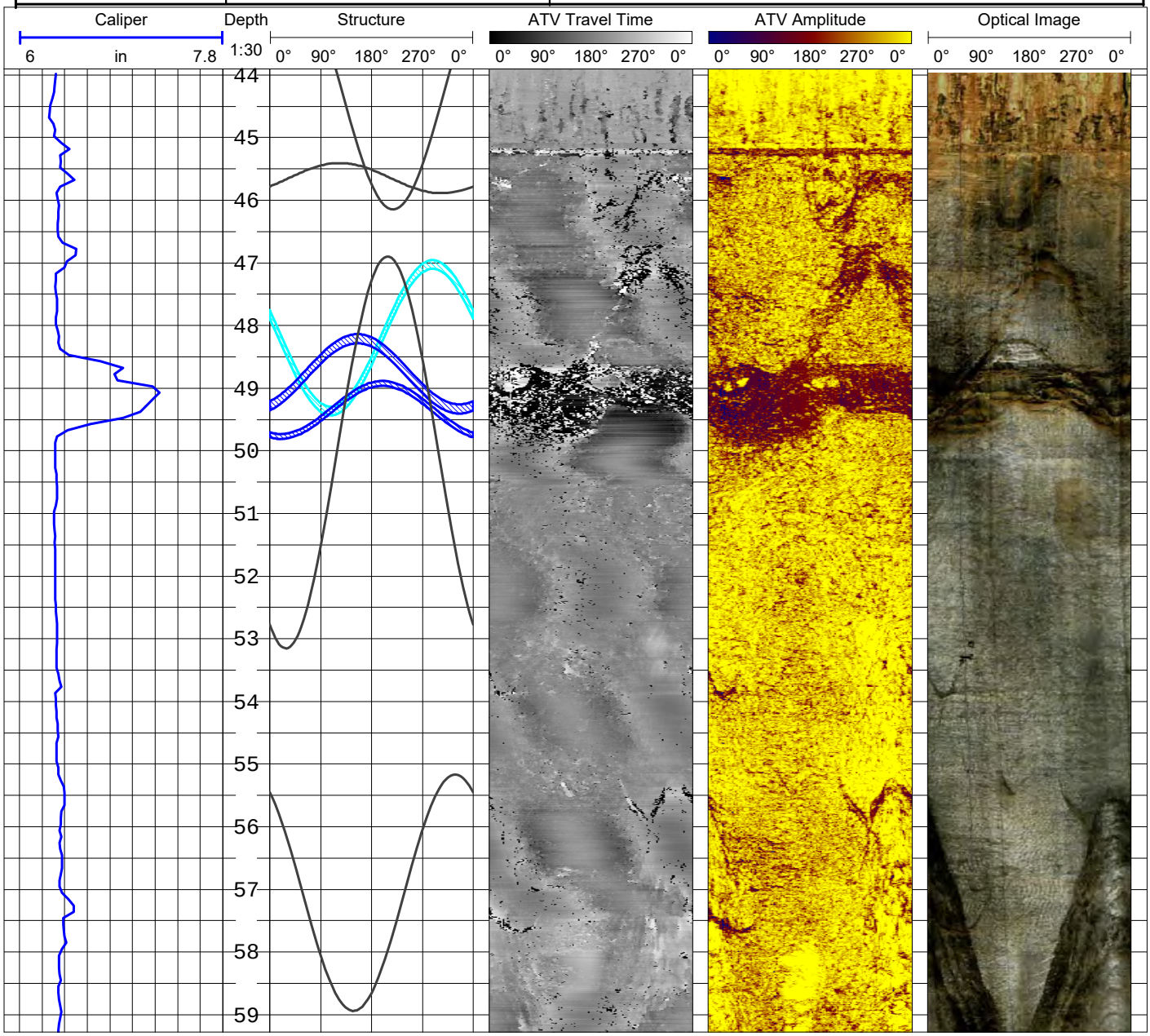
Northeast Geophysical Services
4 Union Street Bangor, Maine 04401
Tel. 207-942-2700
email: ngsinc@negeophysical.com

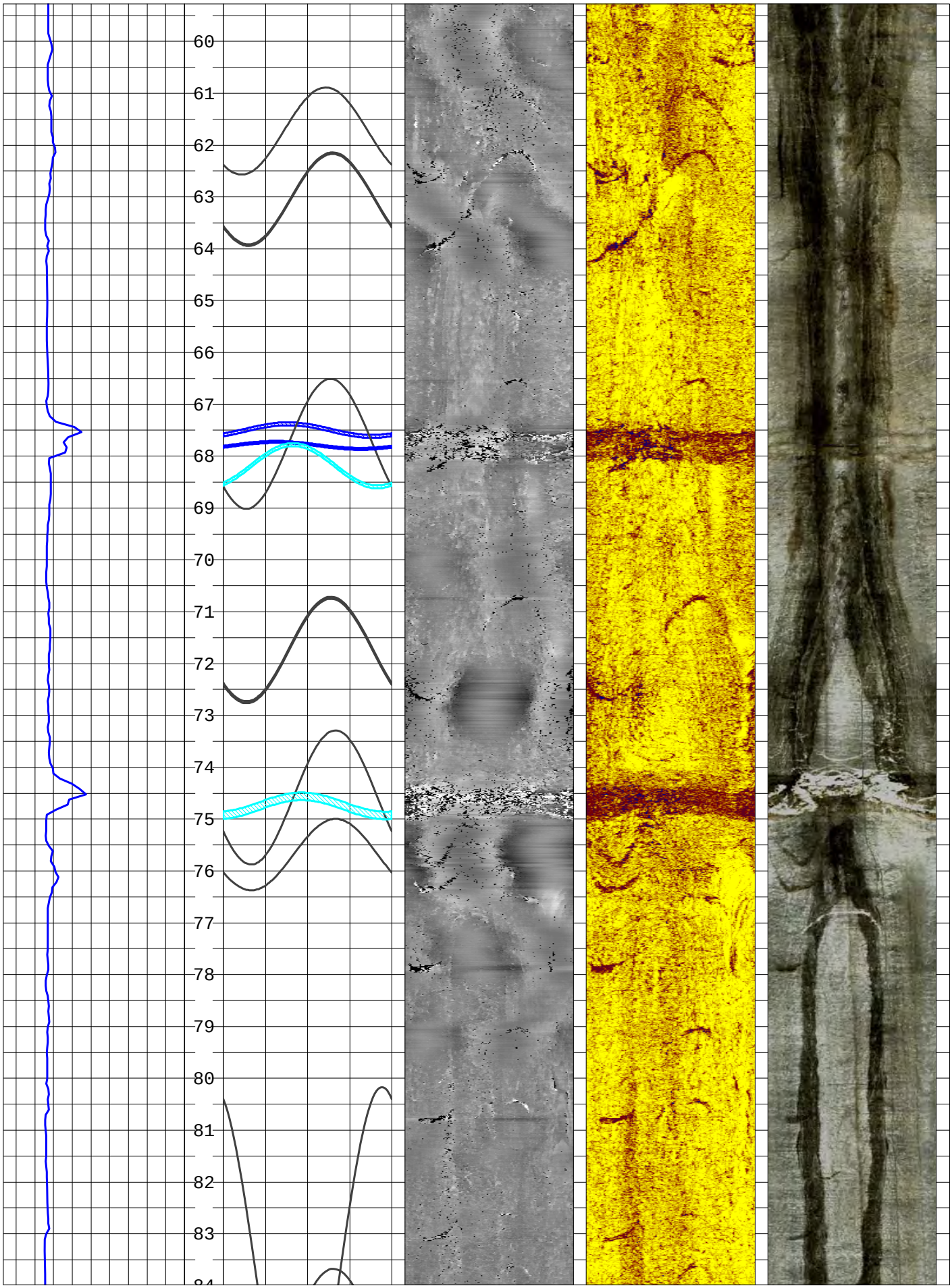
Log: Plate A-4 Caliper & Televiewer Logs

Well: Scale House Well

Site: Juniper Ridge Landfill

Date:	3-1-2016	Location: Old Town, Maine	
Casing Depth:	45 ft	For: SME	
Casing Type:	6 inich	Logged by:	R. Rawcliffe
Boring Depth:	322.5 ft	Orientation:	magnetic
Meas. From:	top of casing	Structure Plots:	
Stickup:	2.80 ft	black = planar features (faults, foliation, bedding, joints, etc)	
Water Level:	28.90 ft	light blue = possibly transmissive fracture	
		dark blue = likely transmissive fracture	

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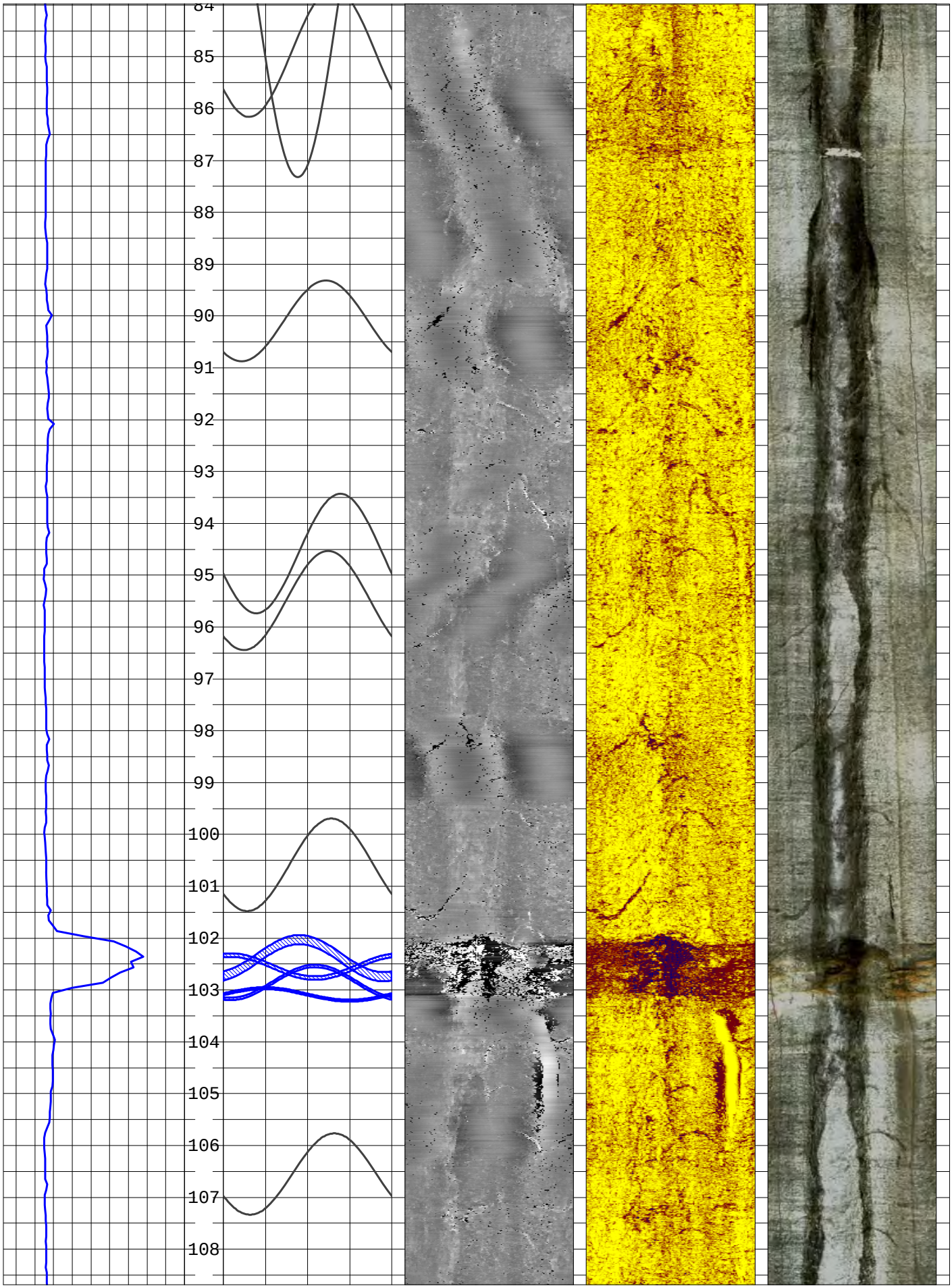
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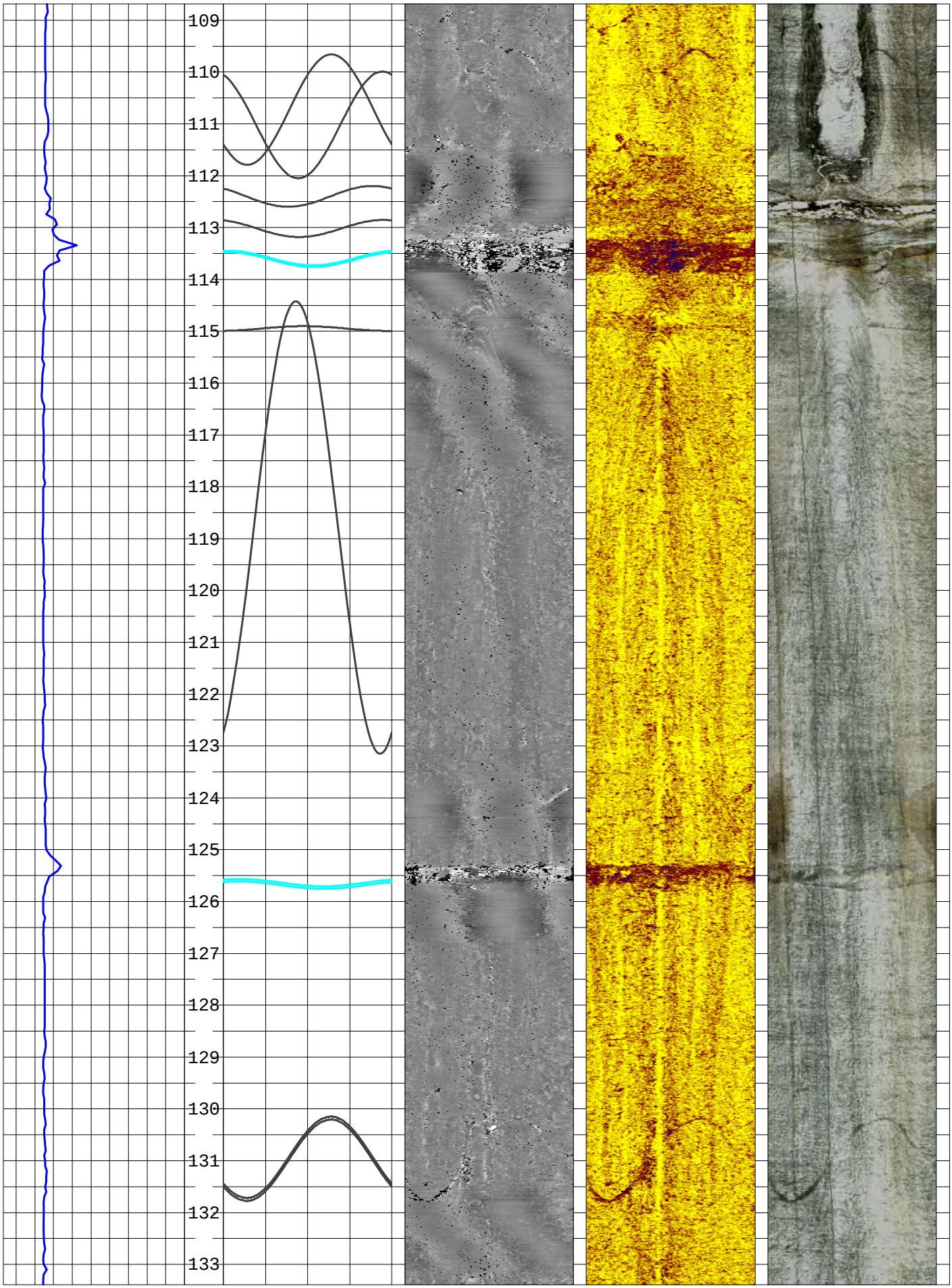
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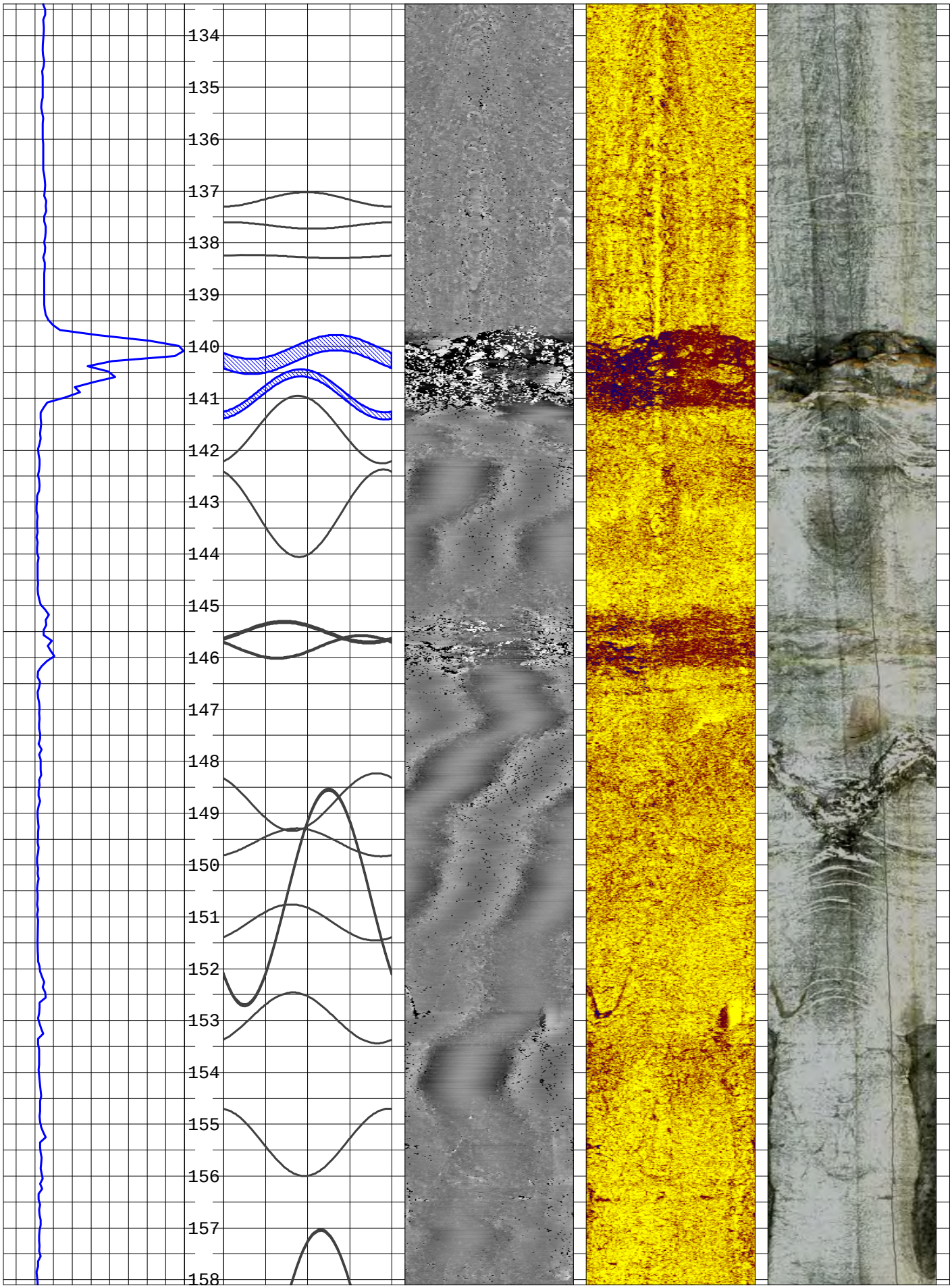
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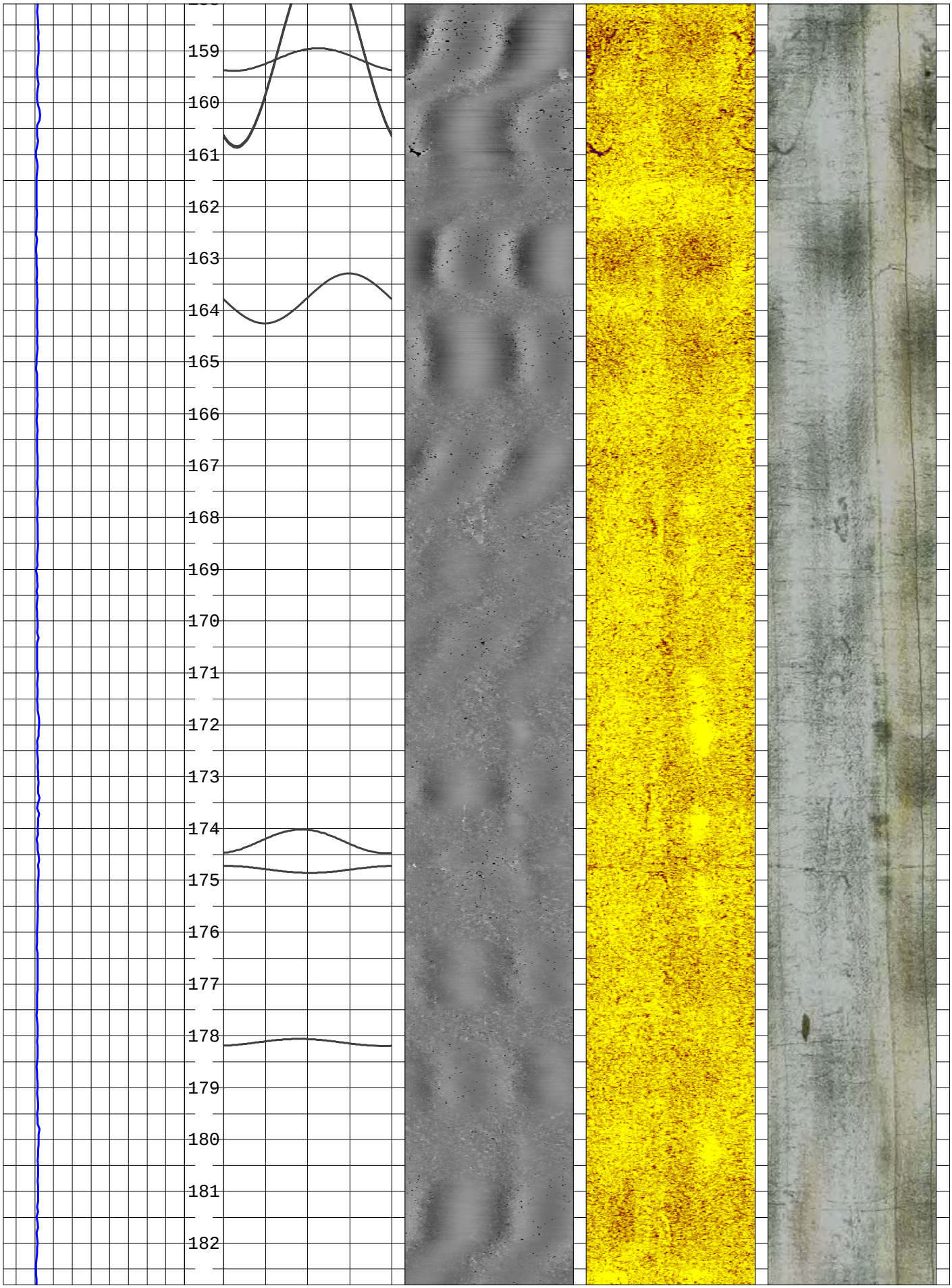
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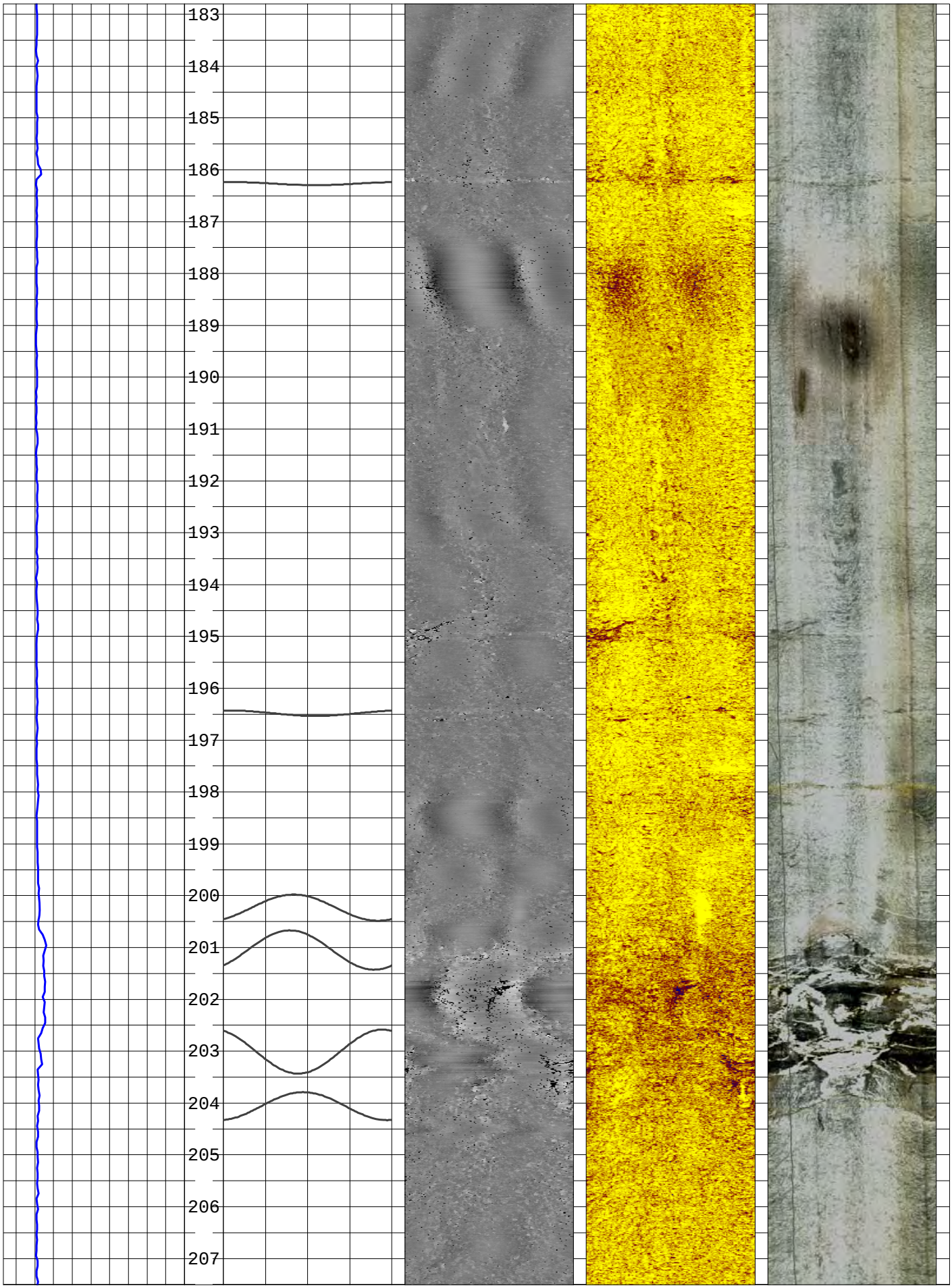
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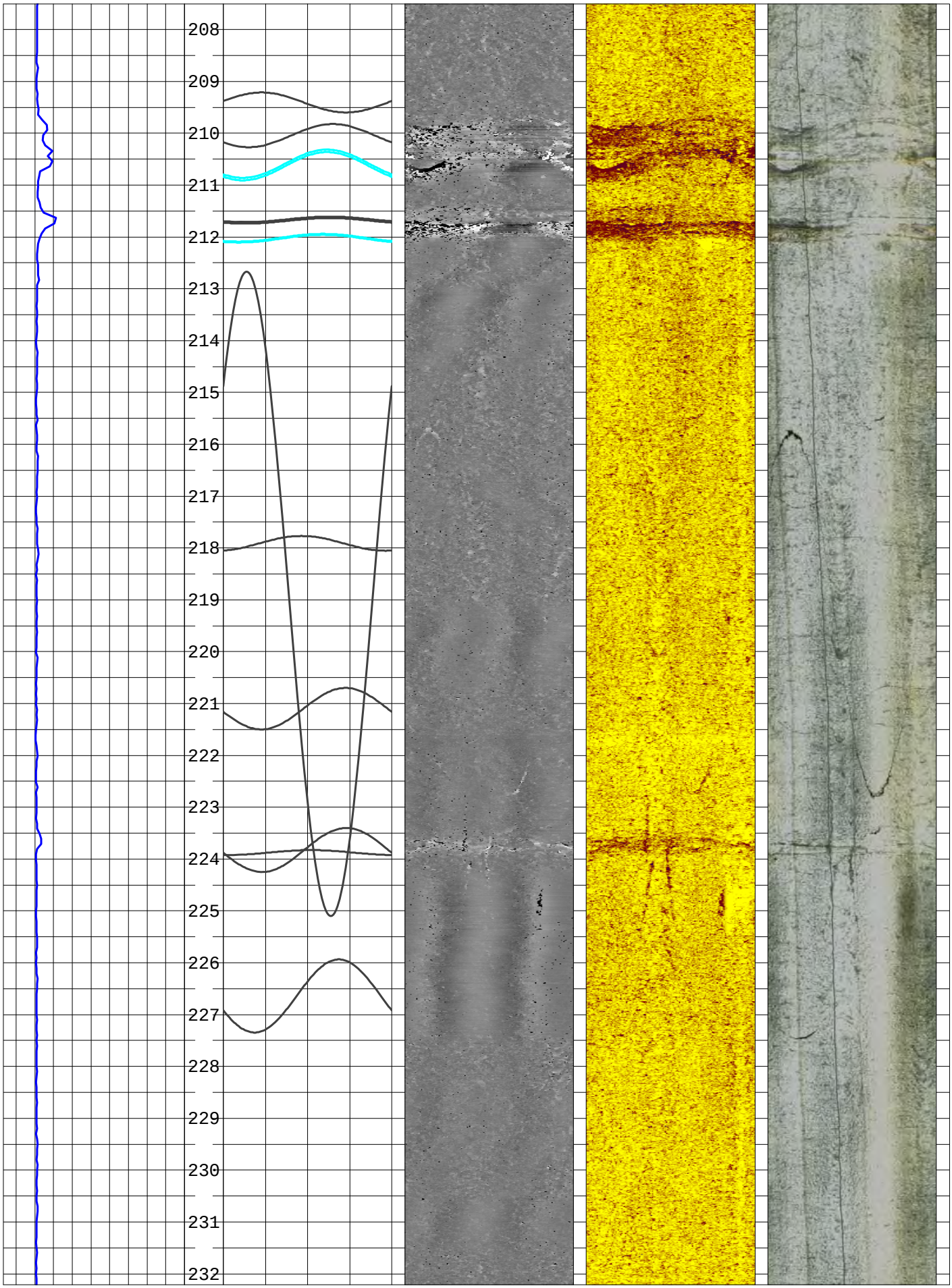
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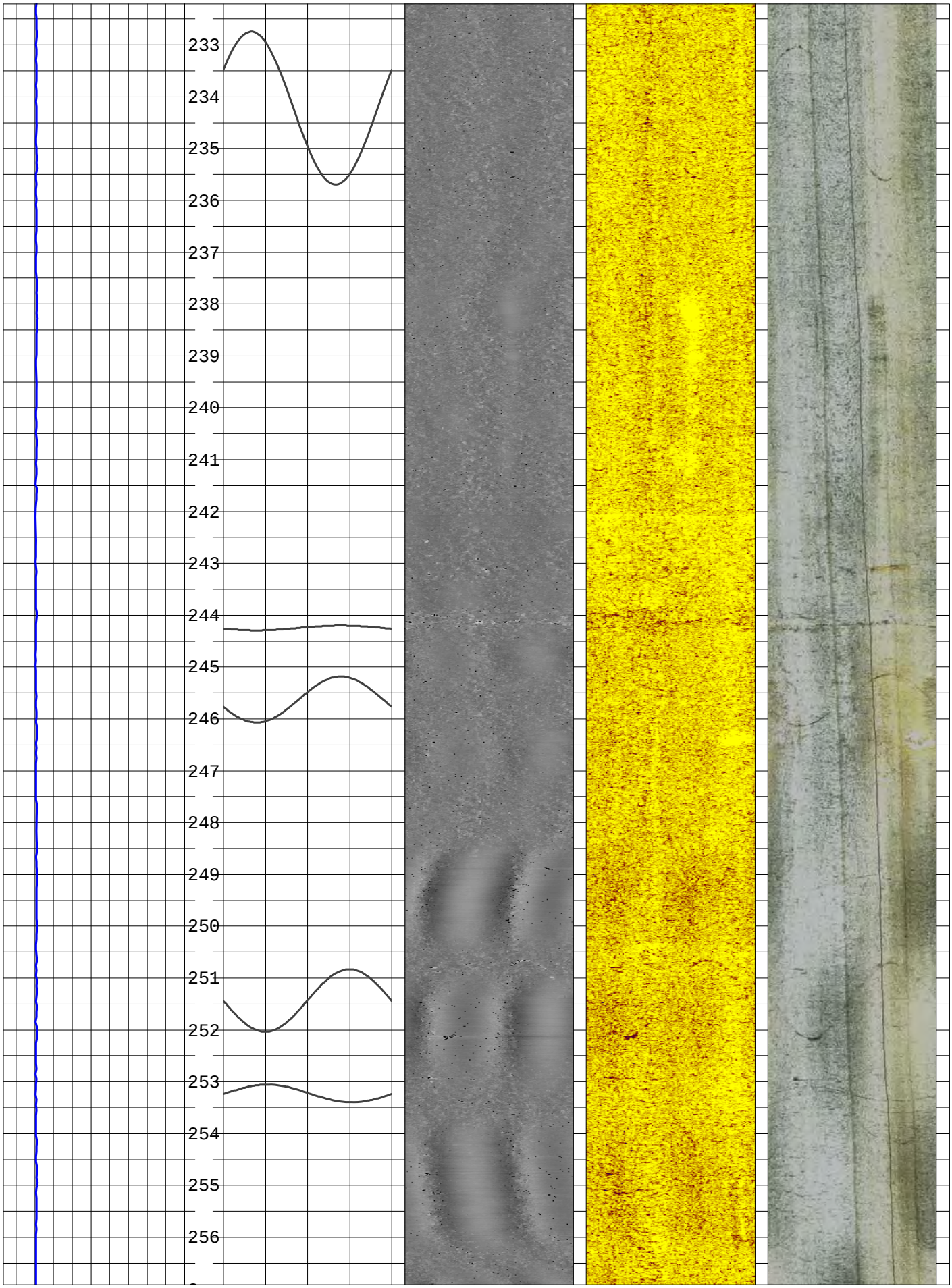
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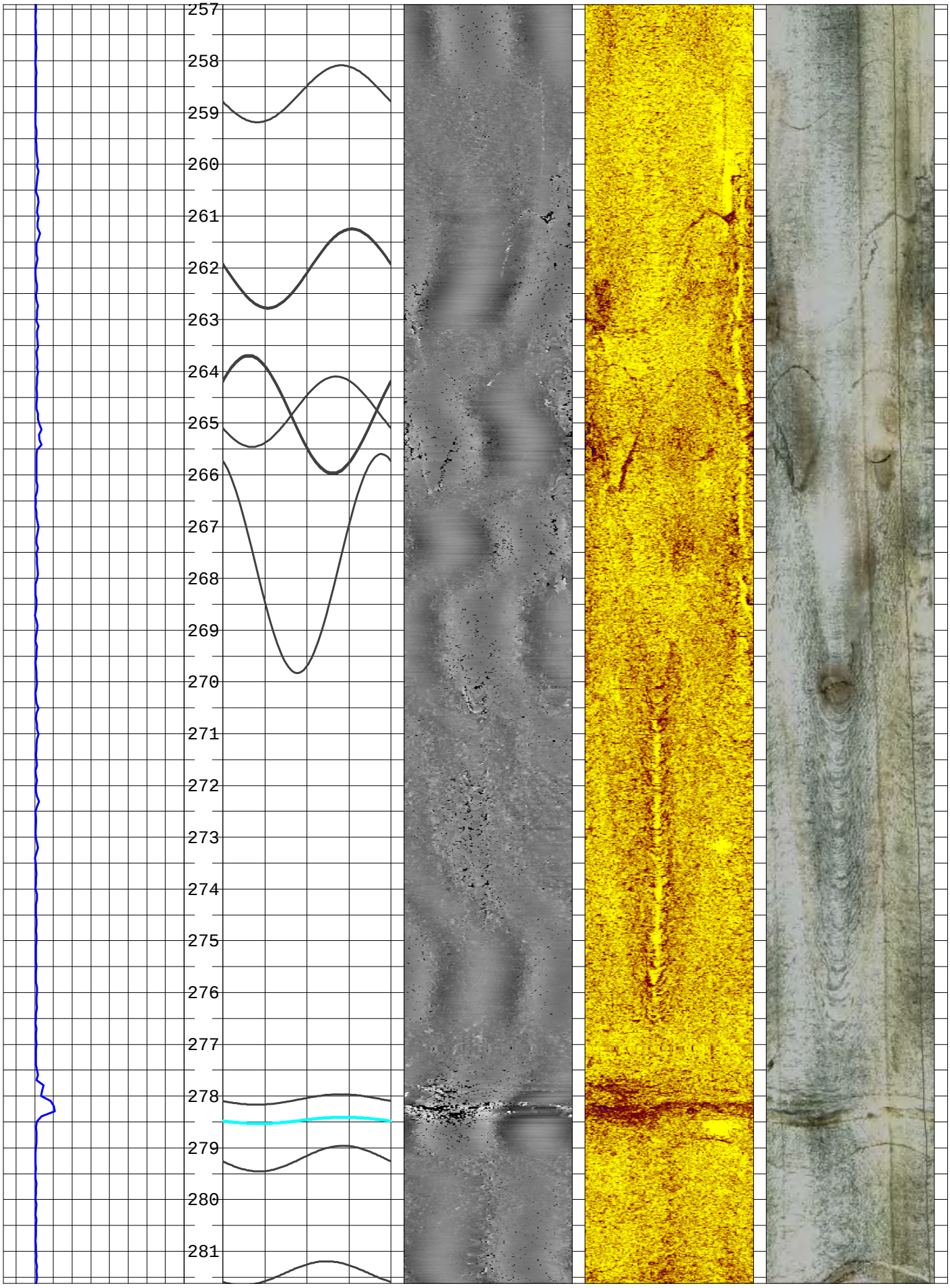
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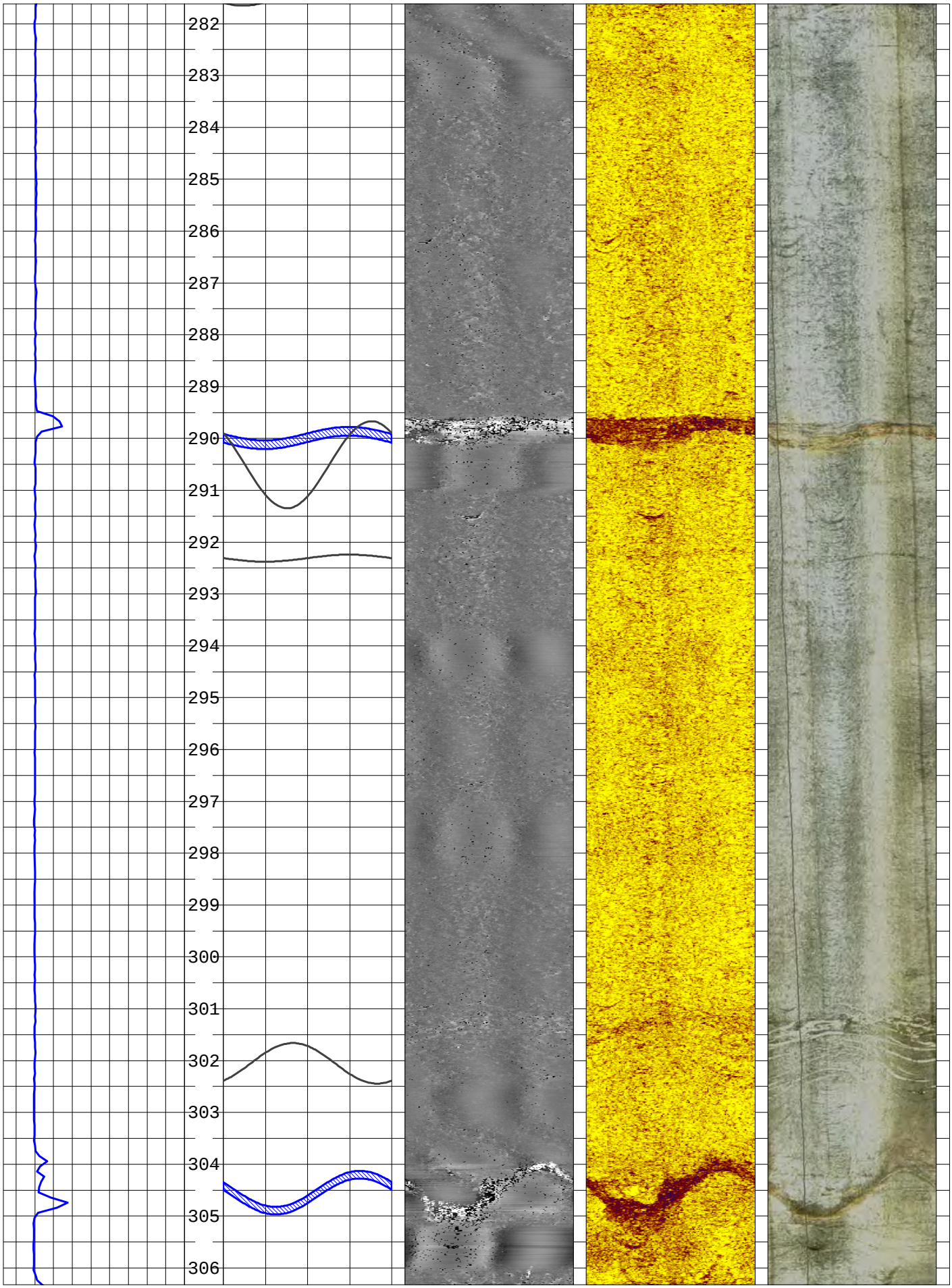
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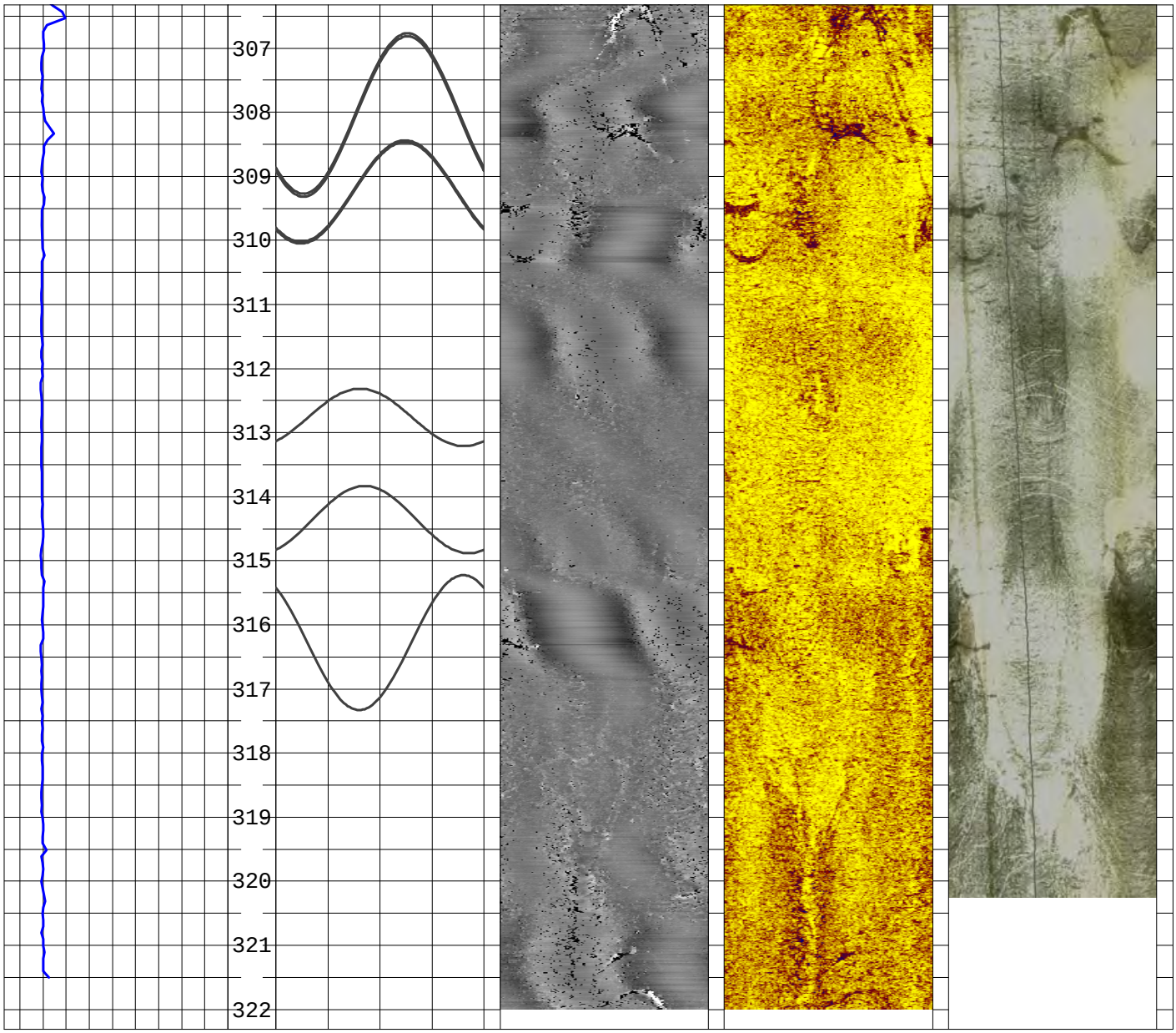
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TABLE A-1 Planar features interpreted from acoustical and optical televiewers
Scale House Well - Juniper Ridge Site - Old Town, Maine **March, 2016**
Declination: 16.3 degrees west

Borehole	Feature # Number	Feature depth Feet	Dip Degrees	Dip Azimuth magnetic	Strike magnetic	Dip Azimuth True	Strike True	Aperture mm	Category Type
Scale House	1	44.3	82	218	308	202	292	<1 mm	100
Scale House	2	45.7	42	304	34	288	18	<1 mm	100
Scale House	3	48.2	77	108	18	92	2	10	108
Scale House	4	48.8	63	335	65	319	49	20	107
Scale House	5	49.3	55	19	289	3	273	13	107
Scale House	6	50.0	85	29	299	12	282	<1 mm	100
Scale House	7	57.1	82	148	58	132	42	<1 mm	100
Scale House	8	61.7	72	39	309	23	293	<1 mm	100
Scale House	9	63.0	73	53	323	37	307	3	100
Scale House	10	67.5	23	318	48	302	32	16	107
Scale House	11	67.8	78	49	319	33	303	<1 mm	100
Scale House	12	67.8	14	293	23	276	6	14	107
Scale House	13	68.2	57	329	59	313	43	10	108
Scale House	14	71.7	75	50	320	33	303	3	100
Scale House	15	74.6	78	60	330	43	313	<1 mm	100
Scale House	16	74.8	34	347	77	331	61	36	108
Scale House	17	75.7	69	60	330	44	314	<1 mm	100
Scale House	18	83.7	86	159	69	143	53	<1 mm	100
Scale House	19	84.9	78	55	325	39	309	<1 mm	100
Scale House	20	90.1	71	39	309	23	293	<1 mm	100
Scale House	21	94.6	77	70	340	54	324	<1 mm	100
Scale House	22	95.5	75	44	314	28	298	<1 mm	100
Scale House	23	100.6	74	51	321	35	305	<1 mm	100
Scale House	24	102.4	49	343	73	326	56	35	107
Scale House	25	102.6	36	196	286	179	89	18	107
Scale House	26	102.9	48	16	286	359	89	10	107
Scale House	27	103.1	24	269	359	252	342	13	107
Scale House	28	106.6	71	57	327	41	311	<1 mm	100
Scale House	29	110.7	76	51	321	35	305	<1 mm	100
Scale House	30	111.0	76	160	70	144	54	<1 mm	100
Scale House	31	112.4	37	139	49	122	32	<1 mm	100
Scale House	32	113.0	32	162	72	146	56	<1 mm	100
Scale House	33	113.6	28	191	281	175	85	9	108
Scale House	34	114.9	10	352	82	336	66	<1 mm	100
Scale House	35	118.8	87	335	65	319	49	<1 mm	100
Scale House	36	125.7	15	214	304	197	287	12	108
Scale House	37	131.0	71	50	320	33	303	6	100
Scale House	38	137.2	28	358	88	342	72	<1 mm	100
Scale House	39	137.7	13	190	280	174	84	<1 mm	100
Scale House	40	138.3	6	236	326	220	310	<1 mm	100
Scale House	41	140.2	36	60	330	44	314	74	107
Scale House	42	140.9	56	346	76	329	59	23	107
Scale House	43	141.6	68	340	70	324	54	<1 mm	100
Scale House	44	143.2	73	162	72	146	56	<1 mm	100
Scale House	45	145.5	37	310	40	294	24	10	100
Scale House	46	145.8	40	115	25	99	9	4	100
Scale House	47	148.8	65	147	57	131	41	<1 mm	100
Scale House	48	149.6	46	337	67	321	51	<1 mm	100
Scale House	49	150.6	83	45	315	29	299	2	100
Scale House	50	151.1	53	324	54	308	38	<1 mm	100
Scale House	51	153.0	62	329	59	312	42	<1 mm	100
Scale House	52	155.3	68	173	83	157	67	<1 mm	100
Scale House	53	159.0	82	28	298	12	282	1	100
Scale House	54	159.2	40	22	292	5	275	<1 mm	100
Scale House	55	163.8	62	88	358	72	342	<1 mm	100
Scale House	56	174.3	42	348	78	332	62	<1 mm	100
Scale House	57	174.8	14	184	274	168	78	<1 mm	100
Scale House	58	178.1	14	343	73	326	56	<1 mm	100
Scale House	59	186.3	6	197	287	180	270	<1 mm	100
Scale House	60	196.5	11	197	287	180	270	<1 mm	100

TABLE A-1 Planar features interpreted from acoustical and optical televiewers
Scale House Well - Juniper Ridge Site - Old Town, Maine **March, 2016**

Declination: 16.3 degrees west

Borehole	Feature # Number	Feature depth Feet	Dip Degrees	Dip Azimuth magnetic	Strike magnetic	Dip Azimuth True	Strike True	Aperture mm	Category Type
Scale House	61	200.2	44	330	60	314	44	<1 mm	100
Scale House	62	201.1	55	322	52	306	36	<1 mm	100
Scale House	63	203.0	58	160	70	144	54	<1 mm	100
Scale House	64	204.1	46	351	81	335	65	<1 mm	100
Scale House	65	209.4	37	262	352	246	336	<1 mm	100
Scale House	66	210.0	40	54	324	38	308	<1 mm	100
Scale House	67	210.6	46	42	312	26	296	10	108
Scale House	68	211.7	11	47	317	31	301	9	100
Scale House	69	212.0	16	33	303	16	286	7	108
Scale House	70	217.9	29	347	77	331	61	<1 mm	100
Scale House	71	218.9	88	230	320	214	304	<1 mm	100
Scale House	72	221.1	57	81	351	65	335	<1 mm	100
Scale House	73	223.8	59	83	353	66	336	<1 mm	100
Scale House	74	223.9	10	7	277	351	81	<1 mm	100
Scale House	75	226.6	70	67	337	50	320	<1 mm	100
Scale House	76	234.2	80	240	330	224	314	<1 mm	100
Scale House	77	244.3	10	71	341	54	324	<1 mm	100
Scale House	78	245.6	60	71	341	55	325	<1 mm	100
Scale House	79	251.4	67	90	360	73	343	<1 mm	100
Scale House	80	253.2	33	274	4	258	348	<1 mm	100
Scale House	81	258.6	65	74	344	58	328	<1 mm	100
Scale House	82	262.0	71	96	6	80	350	1	100
Scale House	83	264.8	69	62	332	46	316	<1 mm	100
Scale House	84	264.8	77	235	325	219	309	2	100
Scale House	85	267.7	83	160	70	143	53	<1 mm	100
Scale House	86	278.1	21	73	343	56	326	<1 mm	100
Scale House	87	278.5	13	79	349	62	332	8	108
Scale House	88	279.2	44	78	348	61	331	<1 mm	100
Scale House	89	281.4	42	42	312	26	296	<1 mm	100
Scale House	90	290.0	27	88	358	71	341	46	107
Scale House	91	290.5	73	136	46	120	30	<1 mm	100
Scale House	92	292.3	15	90	360	73	343	<1 mm	100
Scale House	93	302.1	57	329	59	312	42	<1 mm	100
Scale House	94	304.6	53	112	22	96	6	26	107
Scale House	95	308.0	78	48	318	31	301	3	100
Scale House	96	309.2	72	43	313	27	297	3	100
Scale House	97	312.8	60	326	56	309	39	<1 mm	100
Scale House	98	314.4	64	333	63	317	47	<1 mm	100
Scale House	99	316.3	76	144	54	128	38	<1 mm	100

Category 100 = planar feature (possible fracture, joint, foliation, bedding, etc.)
Category 107 = Likely water bearing feature
Category 108 = Possible water bearing fracture

ATTACHMENT B

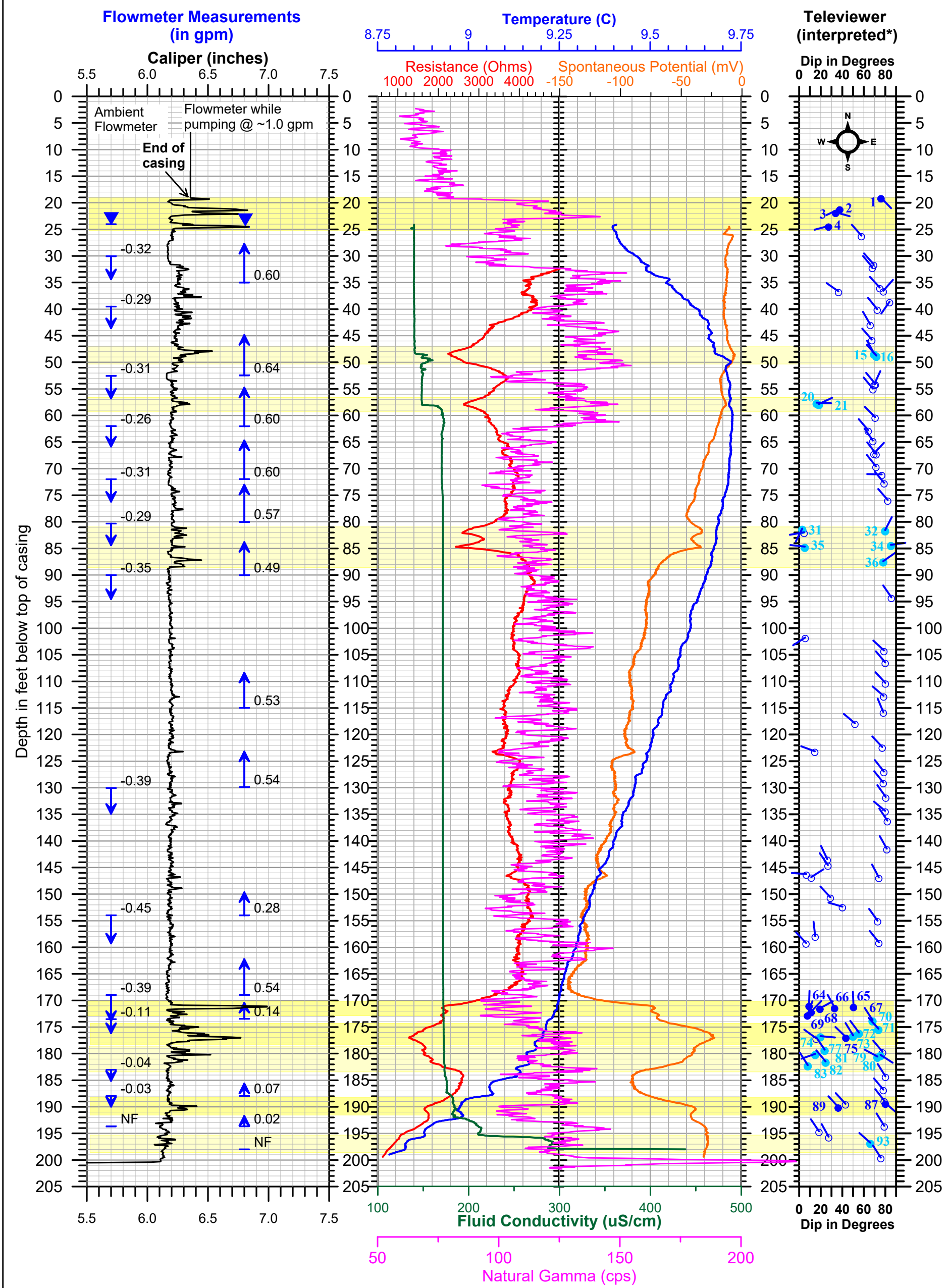
MAIN OFFICE WELL

BOREHOLE GEOPHYSICAL LOGS

Northeast Geophysical Services

Main Office Well
Juniper Ridge Site
Old Town, Maine

Date logged: 3/02/16



= Likely transmissive zone

= possible transmissive zone

PLATE B-1
Main Office Well
Juniper Ridge Site
Old Town, Maine

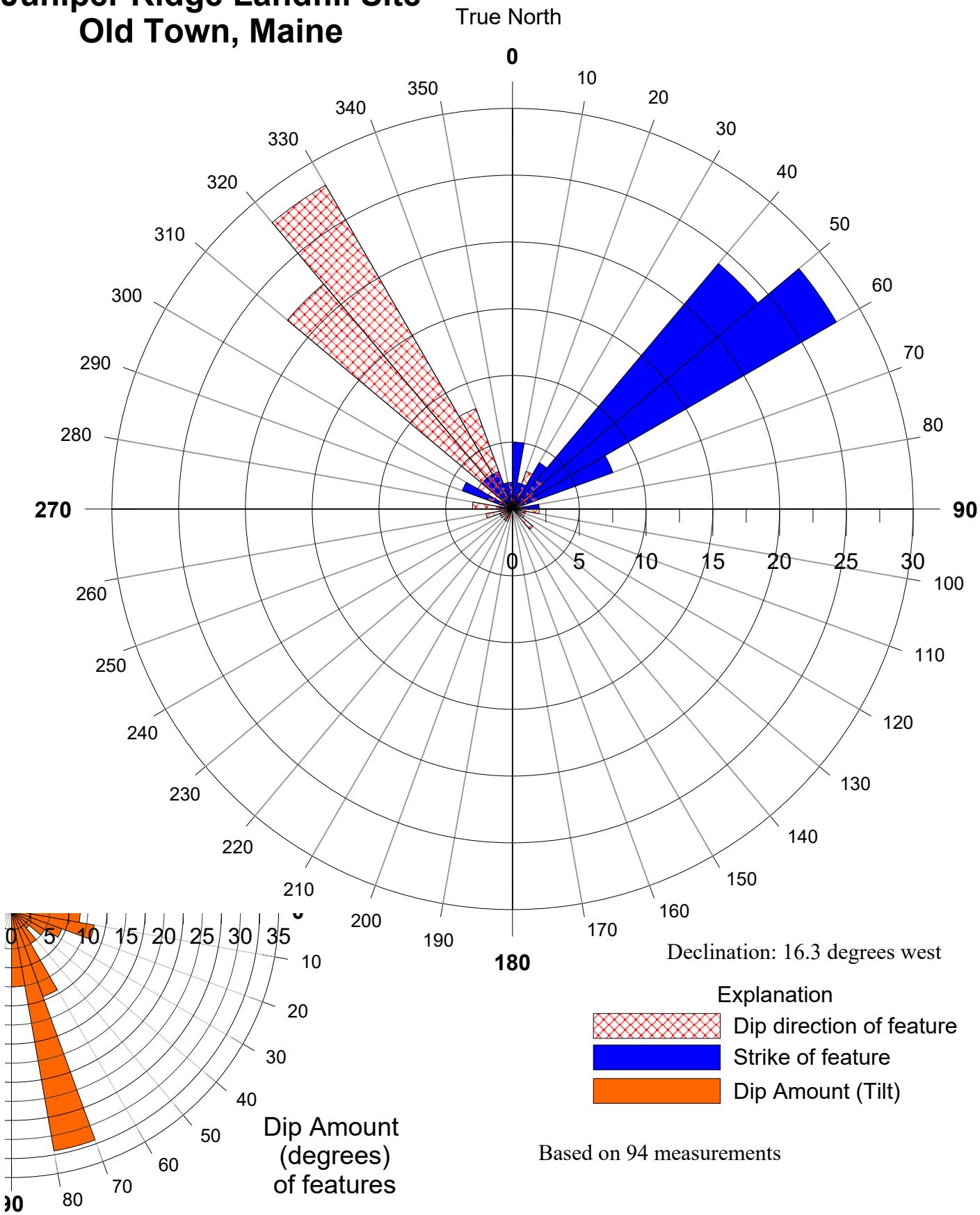
The dip direction is indicated by the line extending from the circle. The strike of the feature is 90 degrees from this.

Date logged: 3/02/16

Northeast Geophysical Services

Main Office Well
Juniper Ridge Landfill Site
Old Town, Maine

PLATE B-2
Strike and Dip Direction
of all features

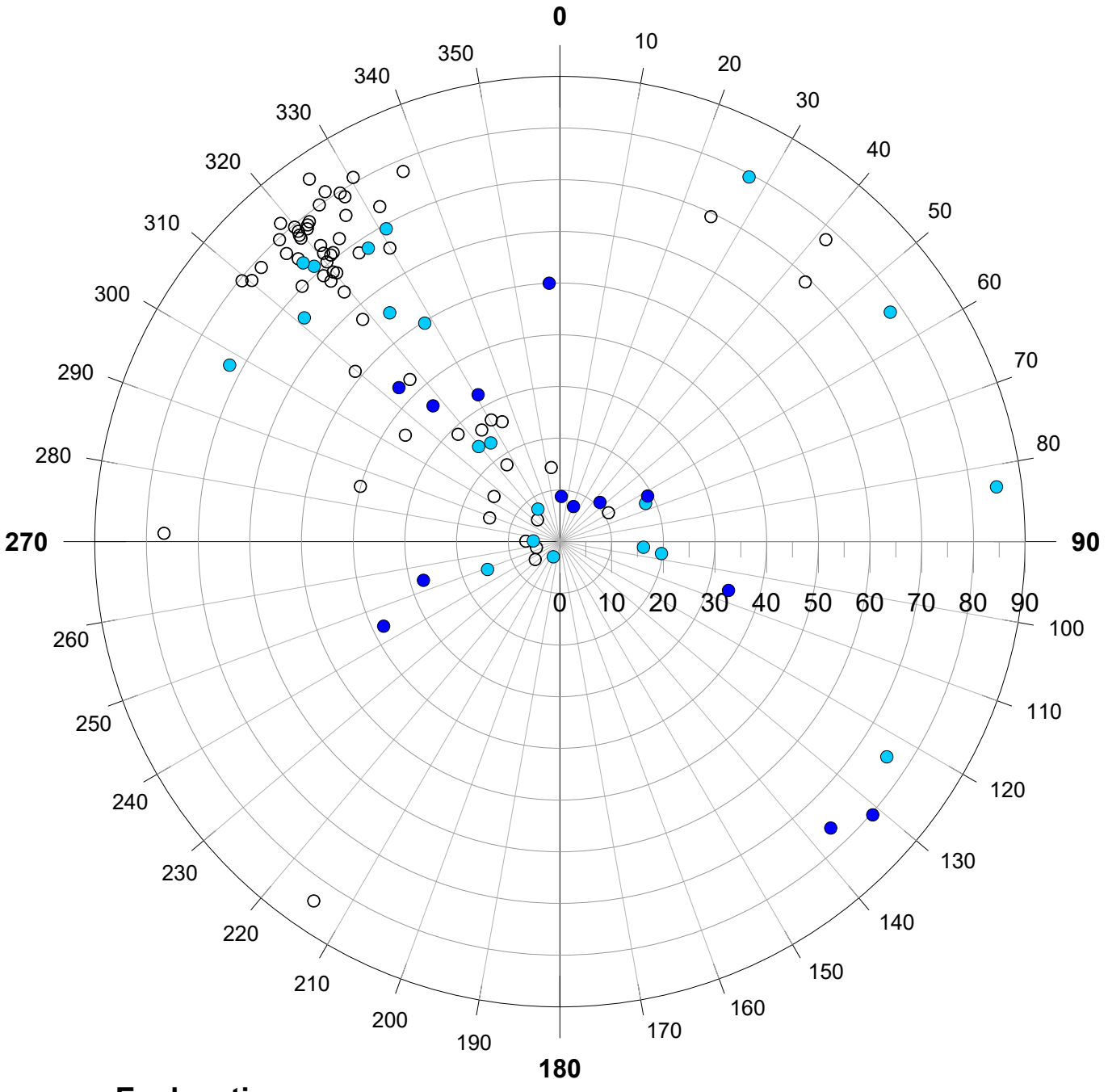


Based on 94 measurements

Northeast Geophysical Services

Main Office Well
Juniper Ridge Landfill Site
Old Town, Maine

PLATE B-3
Dip Amount and Dip Azimuth of planar features (upper hemisphere plot)



Explanation -

- Possibly transmissive
- Likely transmissive
- possible joint, fracture, bedding or foliation

Declination: 16.3 degrees west

Based on 94 measurements

Northeast Geophysical Services
4 Union Street Bangor, Maine 04401
Tel. 207-942-2700
email: ngsinc@negeophysical.com

Log: Plate B-4 Caliper & Televiewer Logs

Well: Main Office Well

Site: Juniper Ridge Site

Location: Old Town, Maine

Date:	3/2/2016
Casing Depth:	19 ft
Casing Type:	6 in
Boring Depth:	202.0 ft
Meas. From:	top of casing
Stickup:	1.55 ft
Water Level:	24.04 ft

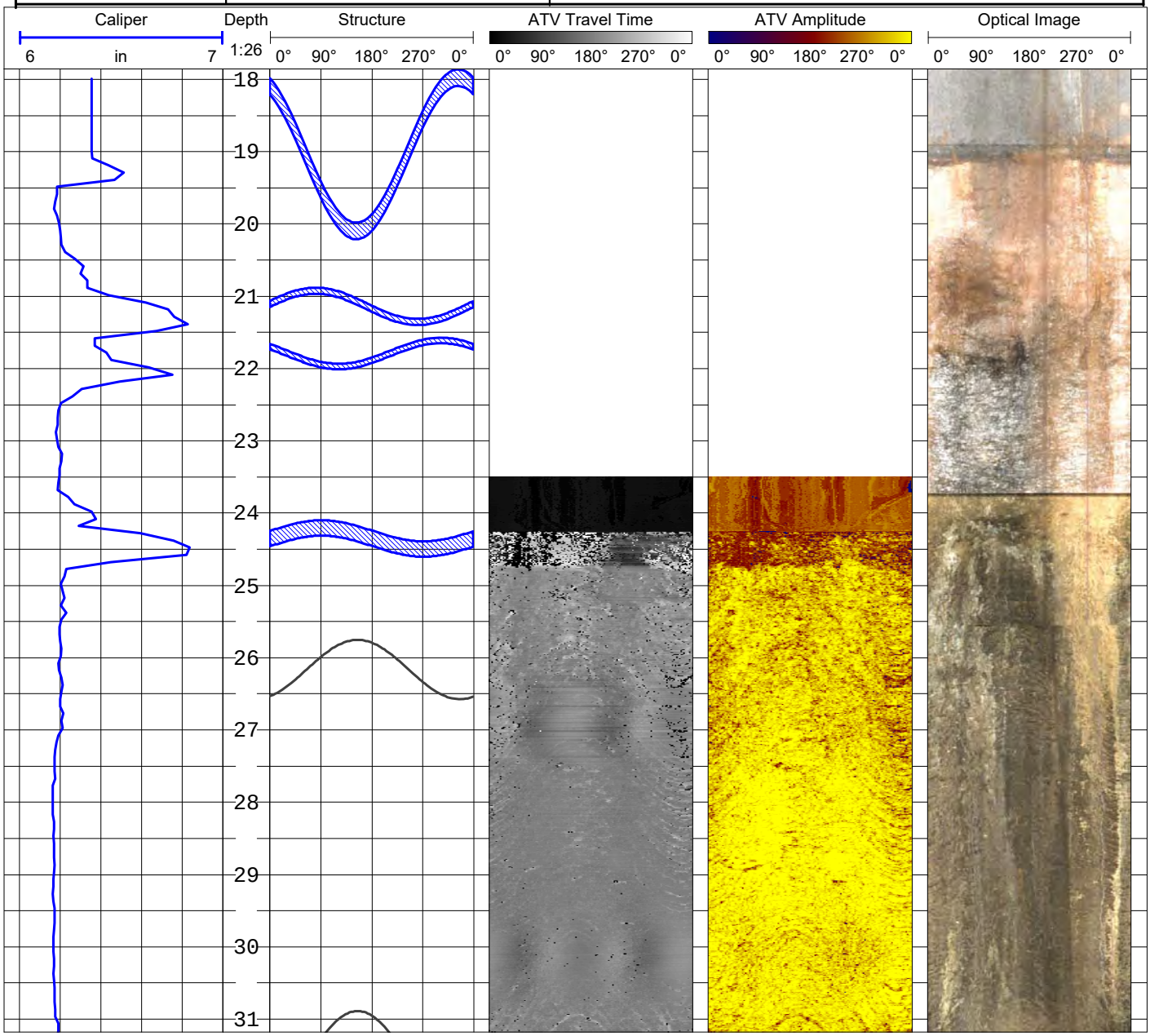
For: Sevee & Maher Engineers

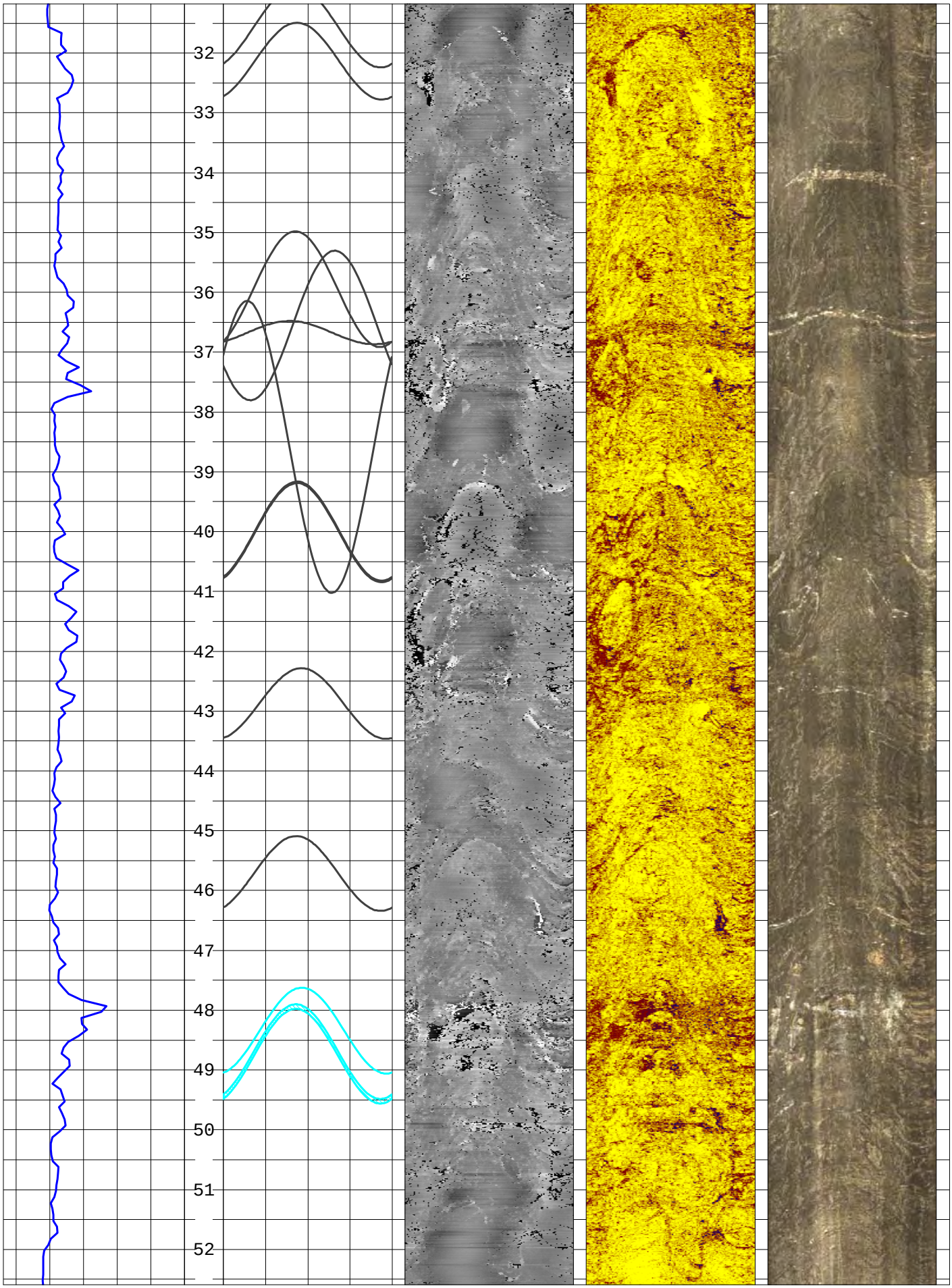
Logged by: R. Rawcliffe

Orientation: magnetic

Structure Plots:

black = planar features (faults, foliation, bedding, joints, etc)
light blue = possibly transmissive fracture
dark blue = likely transmissive fracture

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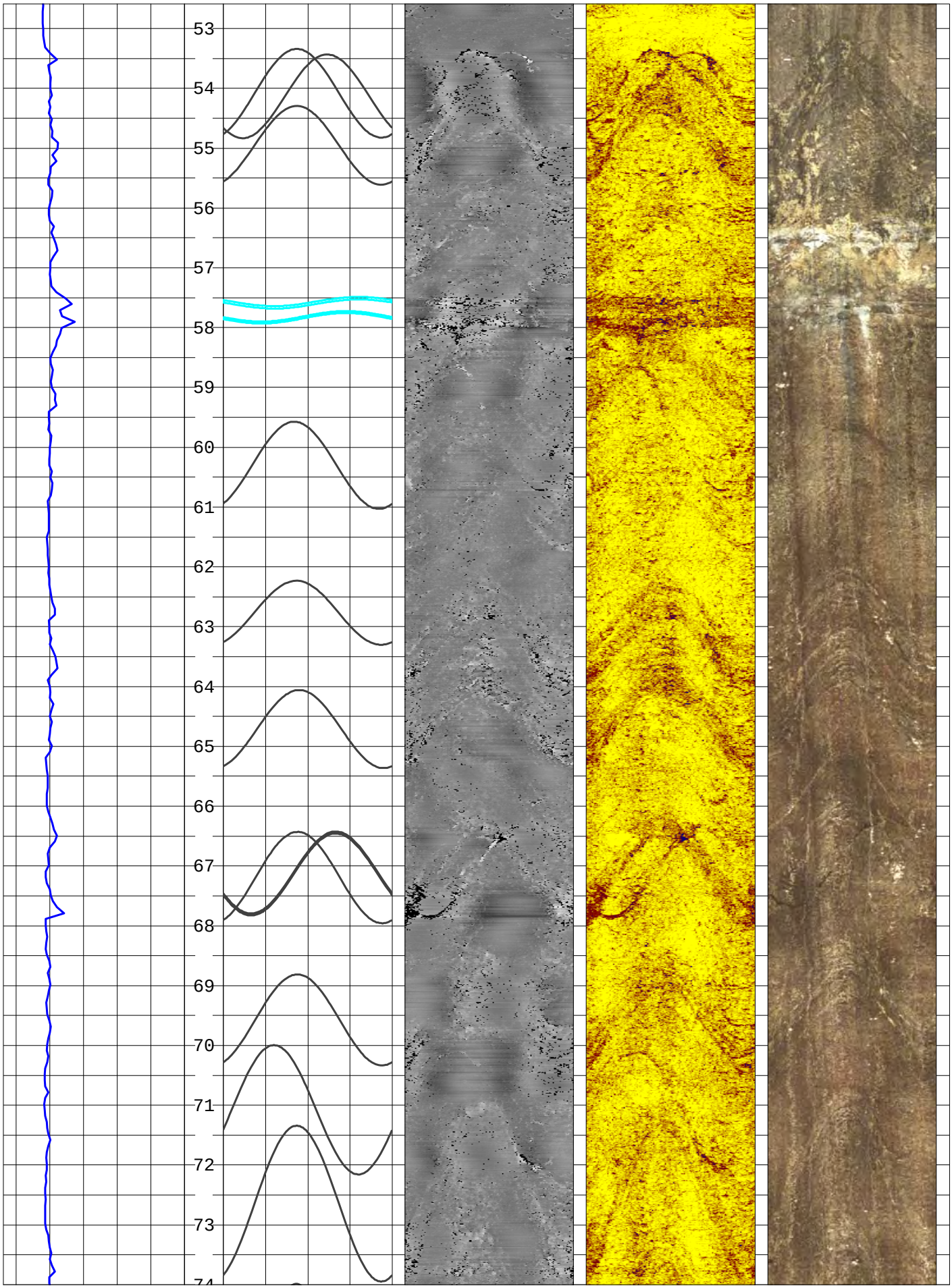
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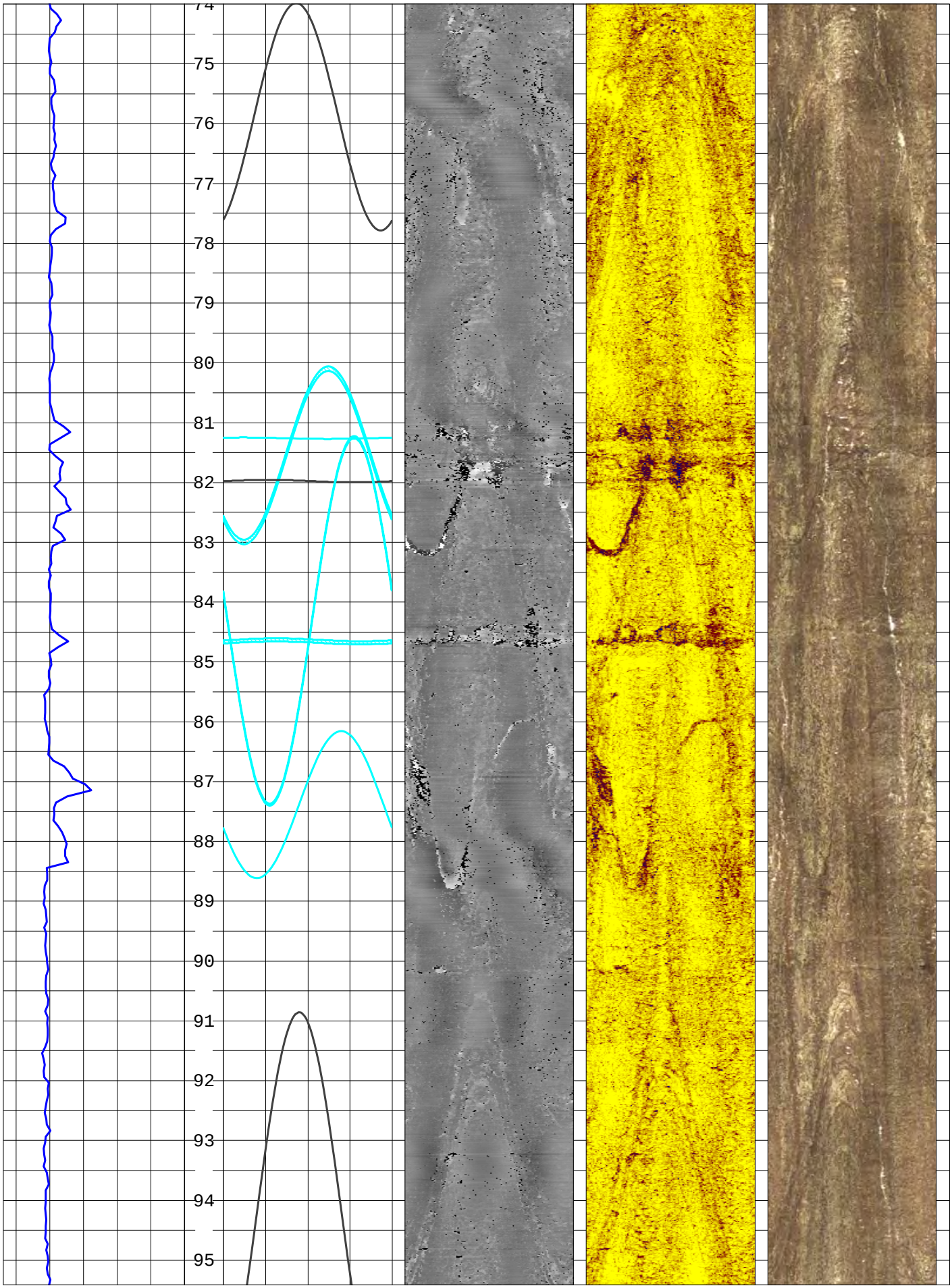
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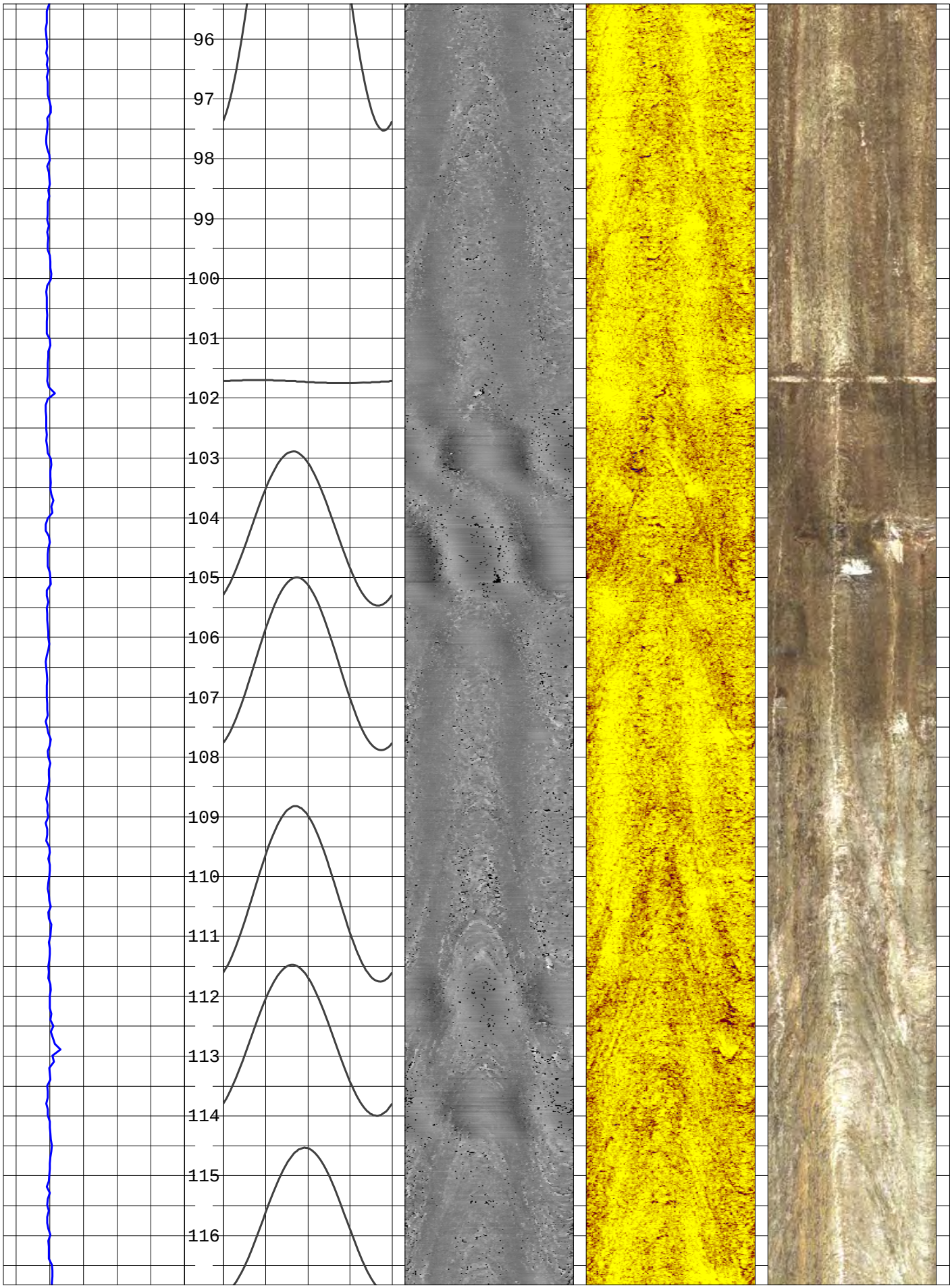
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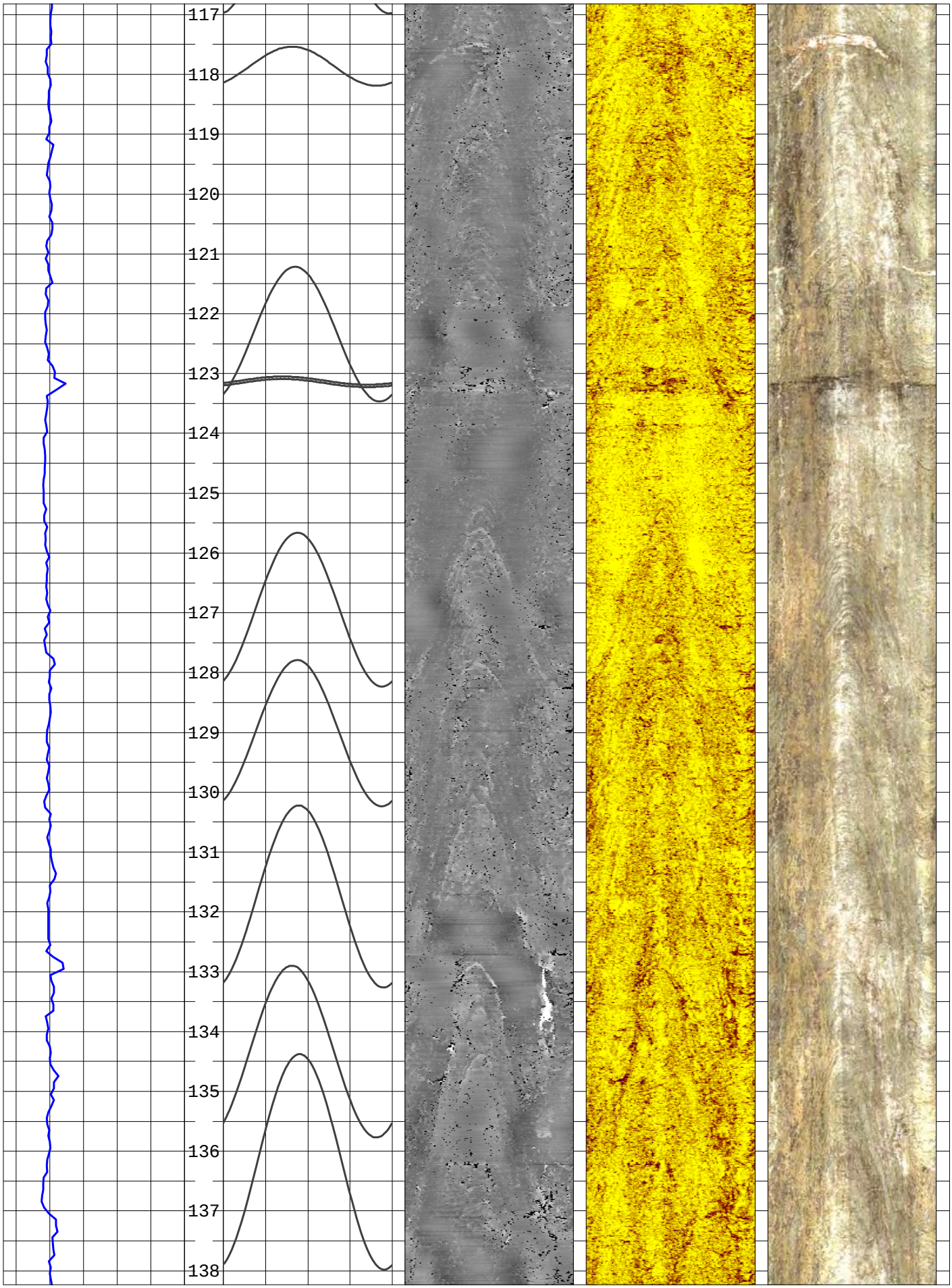
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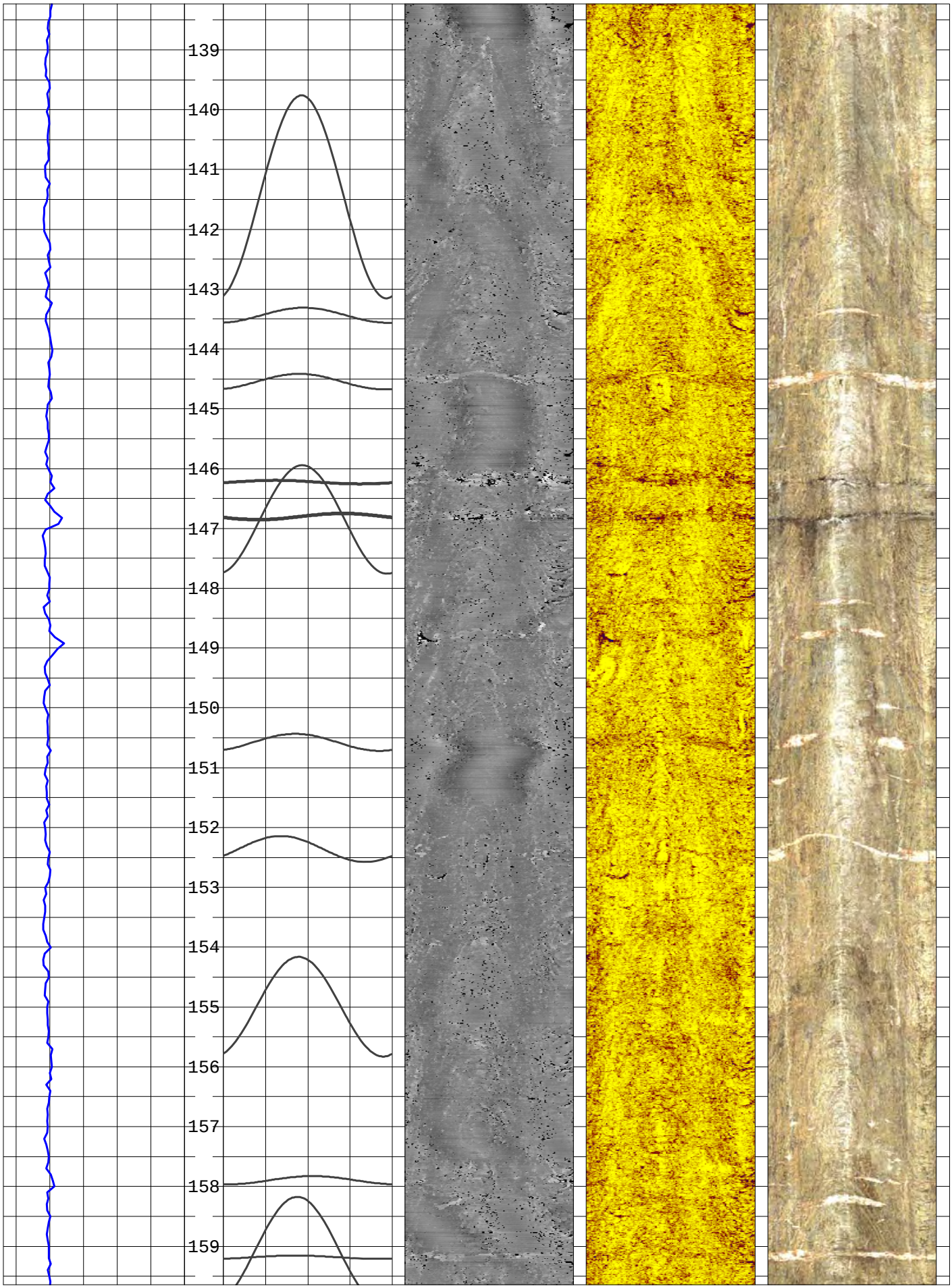
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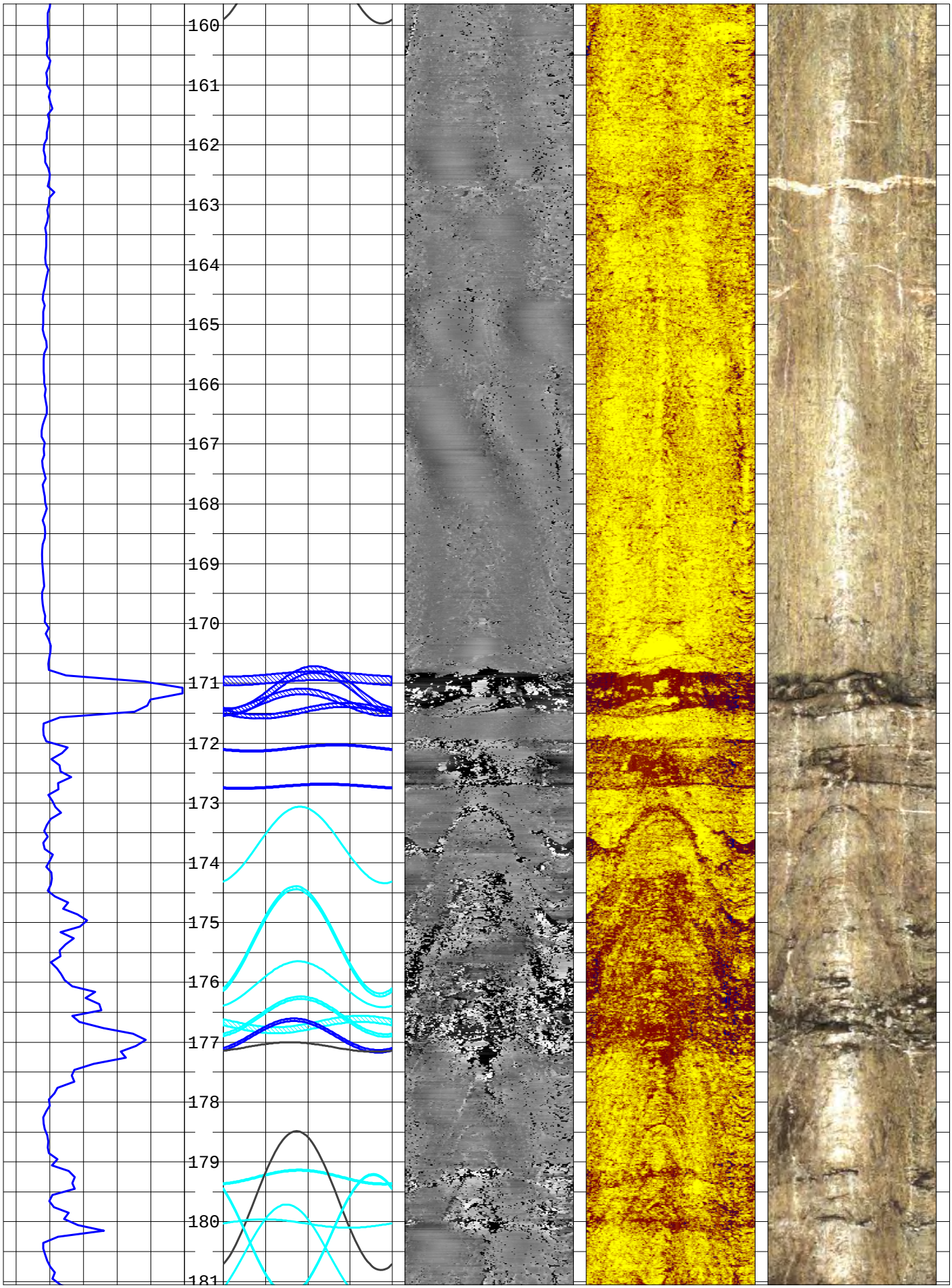
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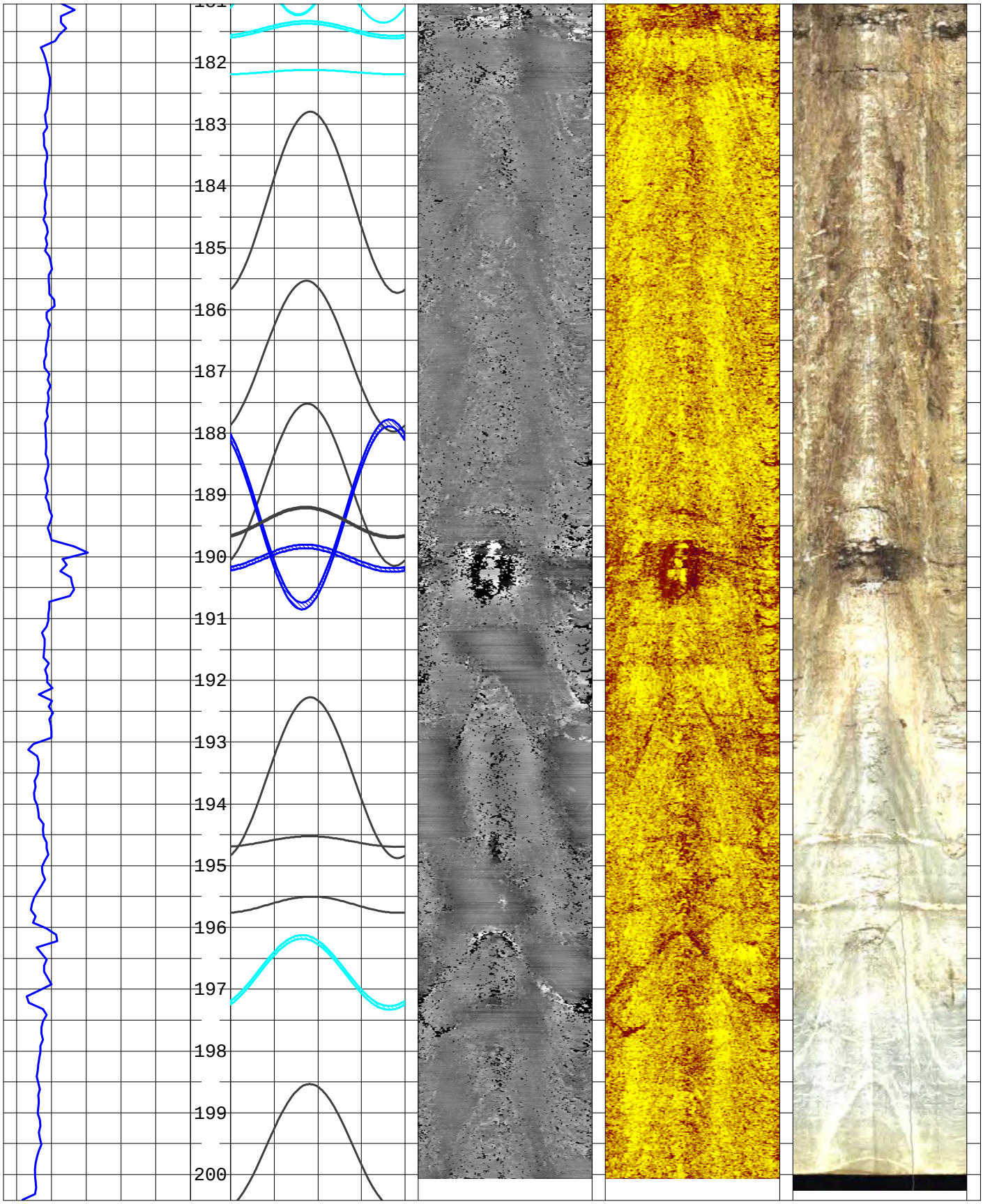
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TABLE B-1 Planar features interpreted from acoustical and optical televiewers
Main Office Well - Juniper Ridge Site - Old Town, Maine **March, 2016**
Declination: 16.3 degrees west

Borehole	Feature # Number	Feature depth Feet	Dip Degrees	Dip Azimuth magnetic	Strike magnetic	Dip Azimuth True	Strike True	Aperture mm	Category Type
Office Well	1	19.0	76	153	63	136	46	17	107
Office Well	2	21.1	38	261	351	245	335	19	107
Office Well	3	21.8	34	122	32	106	16	20	107
Office Well	4	24.4	27	271	1	255	345	58	107
Office Well	5	26.2	58	335	65	319	49	<1 mm	100
Office Well	6	31.6	69	335	65	319	49	<1 mm	100
Office Well	7	32.1	68	337	67	321	51	<1 mm	100
Office Well	8	35.9	75	334	64	317	47	<1 mm	100
Office Well	9	36.6	78	57	327	41	311	<1 mm	100
Office Well	10	36.7	37	321	51	305	35	<1 mm	100
Office Well	11	38.6	84	231	321	215	305	<1 mm	100
Office Well	12	40.0	72	337	67	321	51	2	100
Office Well	13	42.9	66	346	76	330	60	<1 mm	100
Office Well	14	45.7	67	335	65	319	49	<1 mm	100
Office Well	15	48.3	70	347	77	331	61	<1 mm	108
Office Well	16	48.7	72	335	65	318	48	8	108
Office Well	17	54.1	71	337	67	320	50	<1 mm	100
Office Well	18	54.1	70	41	311	25	295	<1 mm	100
Office Well	19	55.0	68	336	66	320	50	<1 mm	100
Office Well	20	57.6	16	109	19	92	2	11	108
Office Well	21	57.8	18	81	351	65	335	10	108
Office Well	22	60.3	70	331	61	315	45	<1 mm	100
Office Well	23	62.8	64	336	66	319	49	<1 mm	100
Office Well	24	64.7	68	342	72	325	55	<1 mm	100
Office Well	25	67.1	69	59	329	43	313	4	100
Office Well	26	67.2	71	338	68	322	52	<1 mm	100
Office Well	27	69.6	71	338	68	322	52	<1 mm	100
Office Well	28	71.1	77	288	18	272	2	<1 mm	100
Office Well	29	72.7	79	336	66	320	50	<1 mm	100
Office Well	30	75.9	82	335	65	319	49	<1 mm	100
Office Well	31	81.3	3	223	313	207	297	<1 mm	108
Office Well	32	81.5	80	44	314	27	297	4	108
Office Well	33	82.0	5	277	7	260	350	<1 mm	100
Office Well	34	84.3	85	99	9	83	353	1	108
Office Well	35	84.7	5	292	22	276	6	16	108
Office Well	36	87.4	78	71	341	55	325	<1 mm	108
Office Well	37	94.2	86	342	72	326	56	<1 mm	100
Office Well	38	101.7	6	254	344	237	327	<1 mm	100
Office Well	39	104.2	79	329	59	313	43	<1 mm	100
Office Well	40	106.4	80	336	66	320	50	<1 mm	100
Office Well	41	110.3	80	334	64	317	47	<1 mm	100
Office Well	42	112.7	78	327	57	311	41	<1 mm	100
Office Well	43	115.8	78	353	83	337	67	<1 mm	100
Office Well	44	117.9	52	326	56	310	40	<1 mm	100
Office Well	45	122.3	77	333	63	317	47	<1 mm	100
Office Well	46	123.1	14	306	36	290	20	13	100
Office Well	47	127.0	79	338	68	322	52	<1 mm	100
Office Well	48	129.0	78	338	68	321	51	<1 mm	100
Office Well	49	131.7	80	341	71	325	55	<1 mm	100
Office Well	50	134.3	80	326	56	310	40	<1 mm	100
Office Well	51	136.2	82	343	73	326	56	<1 mm	100
Office Well	52	141.5	81	347	77	331	61	<1 mm	100
Office Well	53	143.4	26	351	81	335	65	<1 mm	100
Office Well	54	144.5	27	342	72	325	55	<1 mm	100
Office Well	55	146.2	7	291	21	274	4	5	100
Office Well	56	146.8	11	74	344	58	328	8	100
Office Well	57	146.9	74	348	78	332	62	<1 mm	100
Office Well	58	150.6	29	333	63	317	47	<1 mm	100
Office Well	59	152.4	40	302	32	286	16	<1 mm	100
Office Well	60	155.0	73	340	70	324	54	<1 mm	100

TABLE B-1 Planar features interpreted from acoustical and optical televiewers
Main Office Well - Juniper Ridge Site - Old Town, Maine **March, 2016**

Declination: 16.3 degrees west

Borehole	Feature # Number	Feature depth Feet	Dip Degrees	Dip Azimuth magnetic	Strike magnetic	Dip Azimuth True	Strike True	Aperture mm	Category Type
Office Well	61	157.9	15	10	280	354	84	<1 mm	100
Office Well	62	159.1	74	338	68	321	51	<1 mm	100
Office Well	63	159.2	6	333	63	317	47	<1 mm	100
Office Well	64	170.9	9	18	288	2	272	45	107
Office Well	65	171.1	50	14	284	358	88	21	107
Office Well	66	171.3	33	348	78	331	61	23	107
Office Well	67	171.5	19	78	348	62	332	18	107
Office Well	68	172.1	11	60	330	44	314	5	107
Office Well	69	172.7	8	36	306	20	290	5	107
Office Well	70	173.7	68	343	73	327	57	<1 mm	108
Office Well	71	175.3	74	334	64	318	48	5	108
Office Well	72	176.0	55	340	70	324	54	<1 mm	108
Office Well	73	176.6	50	345	75	329	59	7	108
Office Well	74	176.7	20	112	22	96	6	31	108
Office Well	75	176.9	43	330	60	314	44	9	107
Office Well	76	177.1	16	322	52	306	36	<1 mm	100
Office Well	77	179.3	24	342	72	326	56	5	108
Office Well	78	179.7	77	336	66	320	50	<1 mm	100
Office Well	79	180.0	15	267	357	250	340	<1 mm	108
Office Well	80	180.2	76	139	49	123	33	1	108
Office Well	81	180.5	73	315	45	298	28	<1 mm	108
Office Well	82	181.5	25	336	66	320	50	11	108
Office Well	83	182.2	8	344	74	328	58	<1 mm	108
Office Well	84	184.3	80	344	74	328	58	<1 mm	100
Office Well	85	186.8	78	336	66	320	50	<1 mm	100
Office Well	86	188.8	79	338	68	322	52	<1 mm	100
Office Well	87	189.3	80	147	57	131	41	6	107
Office Well	88	189.4	43	334	64	318	48	6	100
Office Well	89	190.0	36	334	64	317	47	16	107
Office Well	90	193.6	79	345	75	328	58	<1 mm	100
Office Well	91	194.6	18	342	72	326	56	<1 mm	100
Office Well	92	195.6	27	347	77	331	61	<1 mm	100
Office Well	93	196.7	66	328	58	311	41	8	108
Office Well	94	199.6	76	343	73	327	57	<1 mm	100

Category 100 = planar feature (possible fracture, joint, foliation, bedding, etc.)
Category 107 = Likely water bearing feature
Category 108 = Possible water bearing fracture

ATTACHMENT C

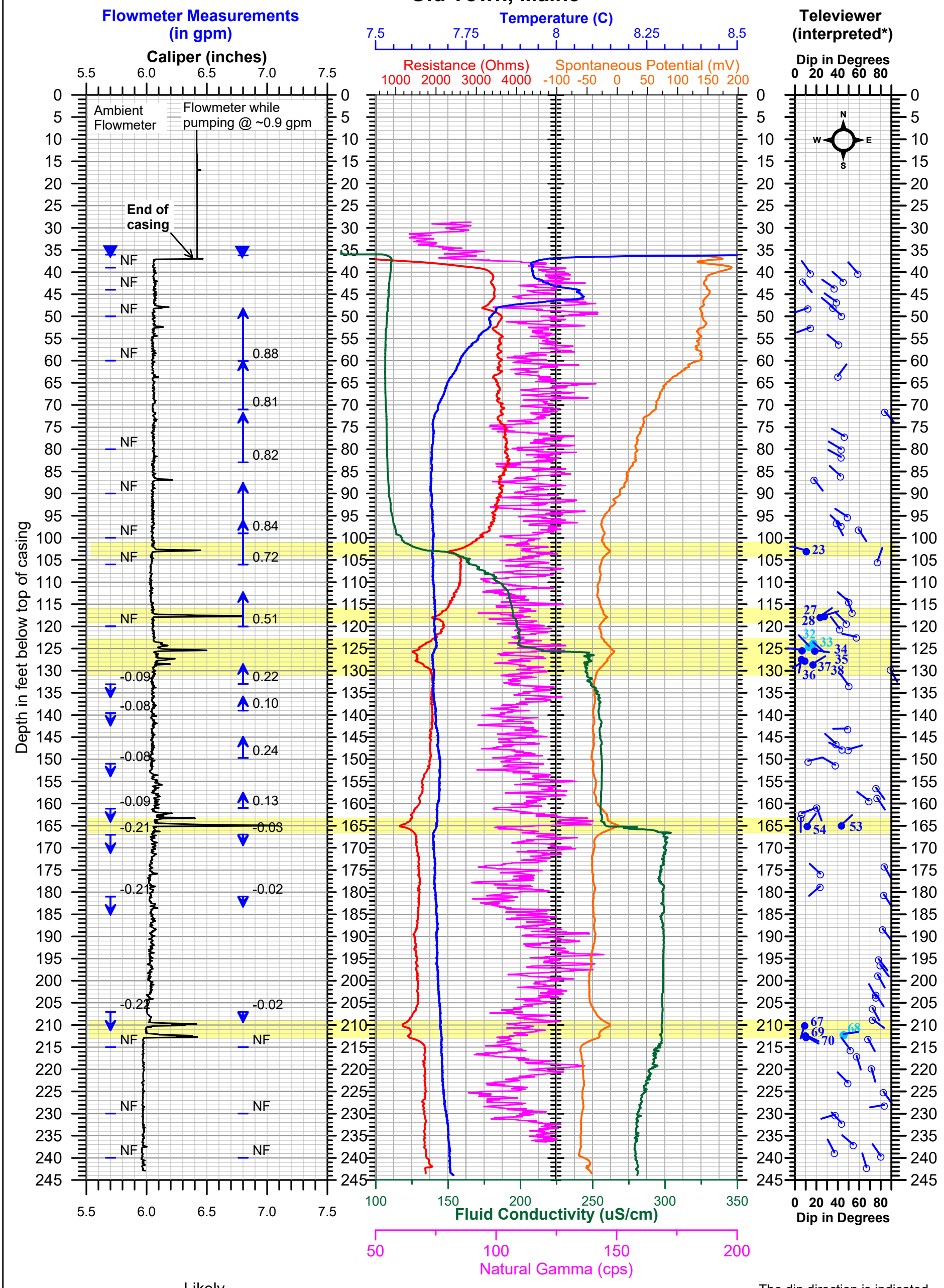
B16-101

BOREHOLE GEOPHYSICAL LOGS

Northeast Geophysical Services

Plate C-1
B16-101
Juniper Ridge Site
Old Town, Maine

Date logged: 3/23/16



= Likely transmissive zone

= possible transmissive zone

The dip direction is indicated by the line extending from the circle. The strike of the feature is 90 degrees from this.

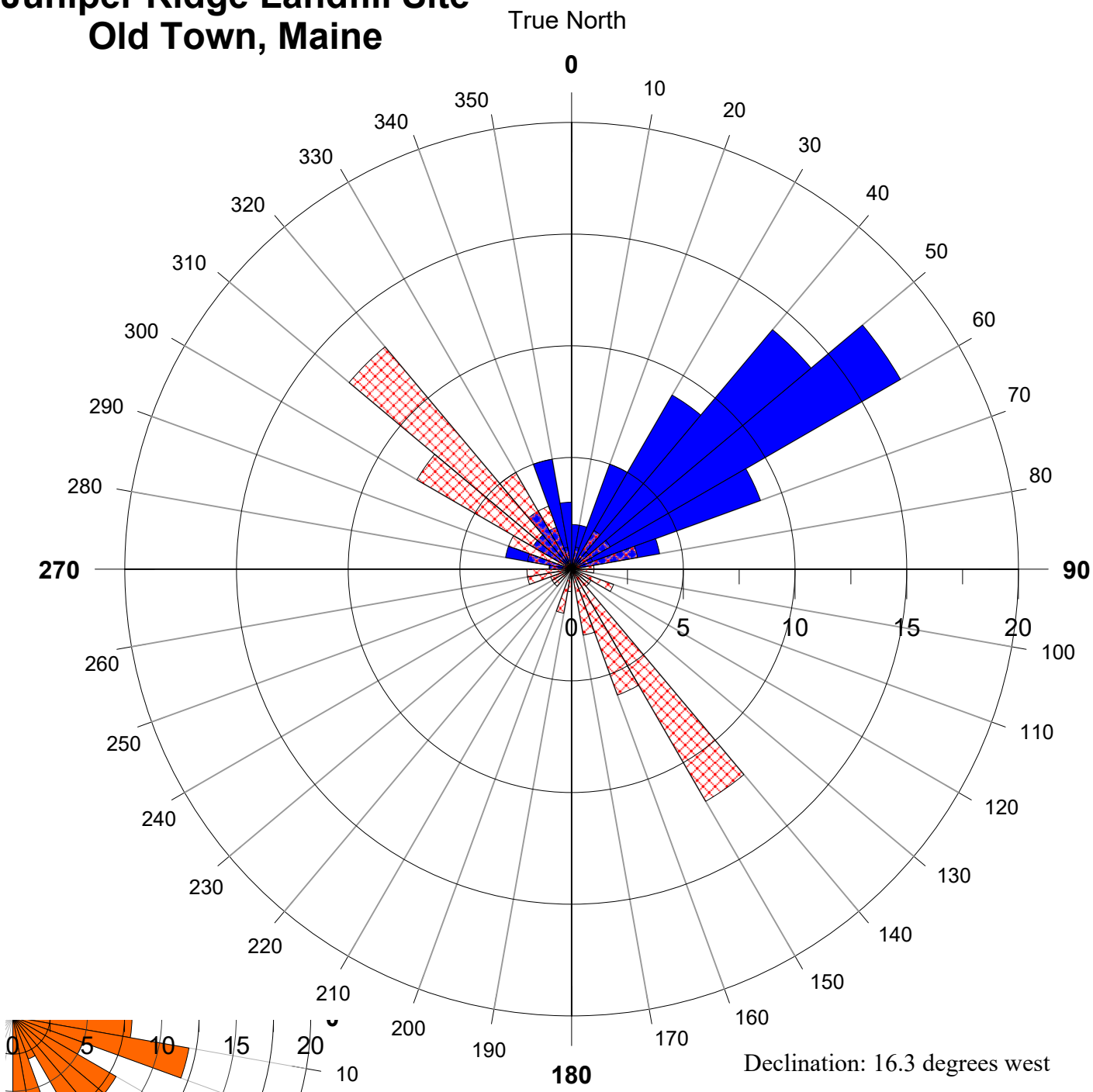
Plate C-1
B16-101
Juniper Ridge Site
Old Town, Maine

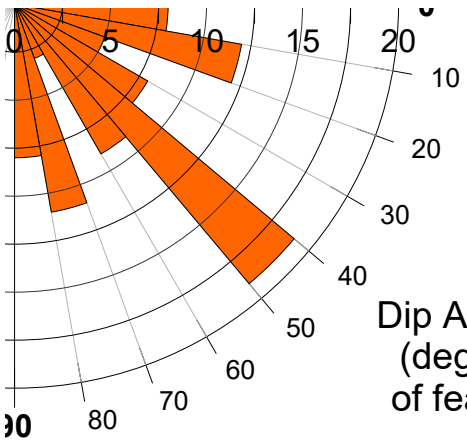
Date logged: 3/23/16

Northeast Geophysical Services

B16-101
Juniper Ridge Landfill Site
Old Town, Maine

PLATE C-2
Strike and Dip Direction
of all features





Dip Amount
(degrees)
of features

Declination: 16.3 degrees west

Explanation

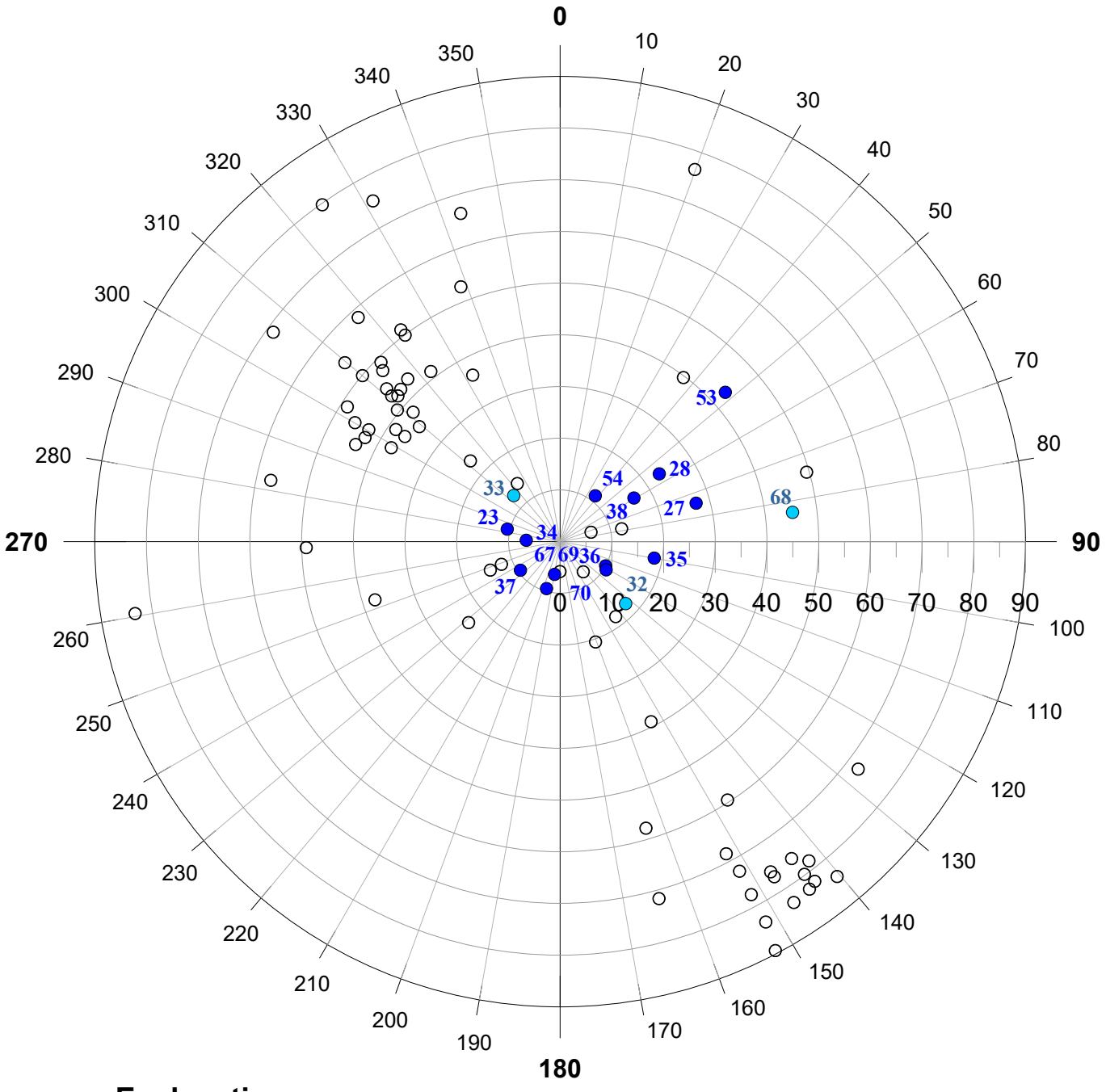
- Dip direction of feature
- Strike of feature
- Dip Amount (Tilt)

Based on 83 measurements

Northeast Geophysical Services

B16-101
Juniper Ridge Landfill Site
Old Town, Maine

PLATE C-3
Dip Amount and Dip Azimuth of planar features (upper hemisphere plot)



Explanation -

- Possibly transmissive
- Likely transmissive
- possible joint, fracture, bedding or foliation

Declination: 16.3 degrees west

Based on 83 measurements

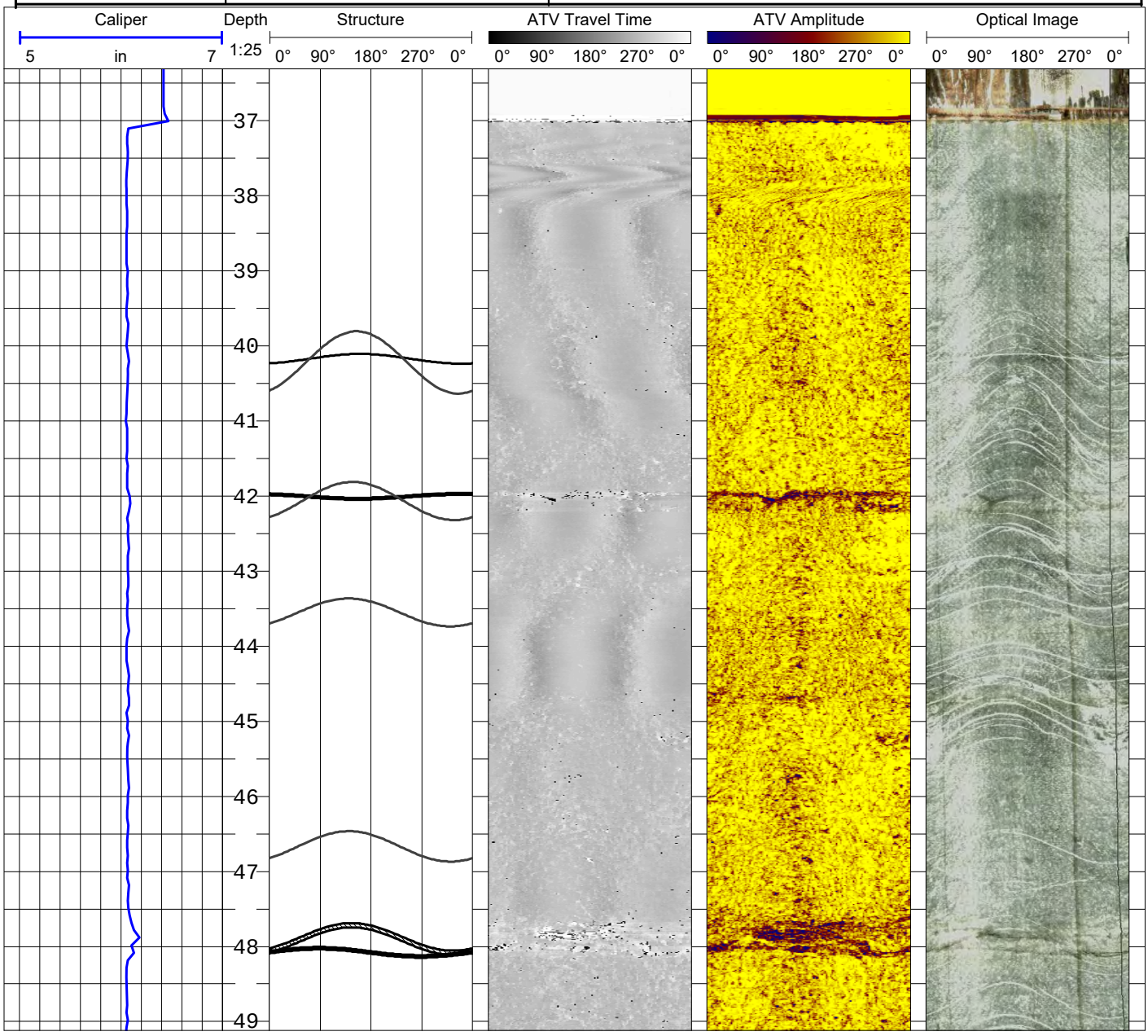
Northeast Geophysical Services
4 Union Street Bangor, Maine 04401
Tel. 207-942-2700
email: ngsinc@negeophysical.com

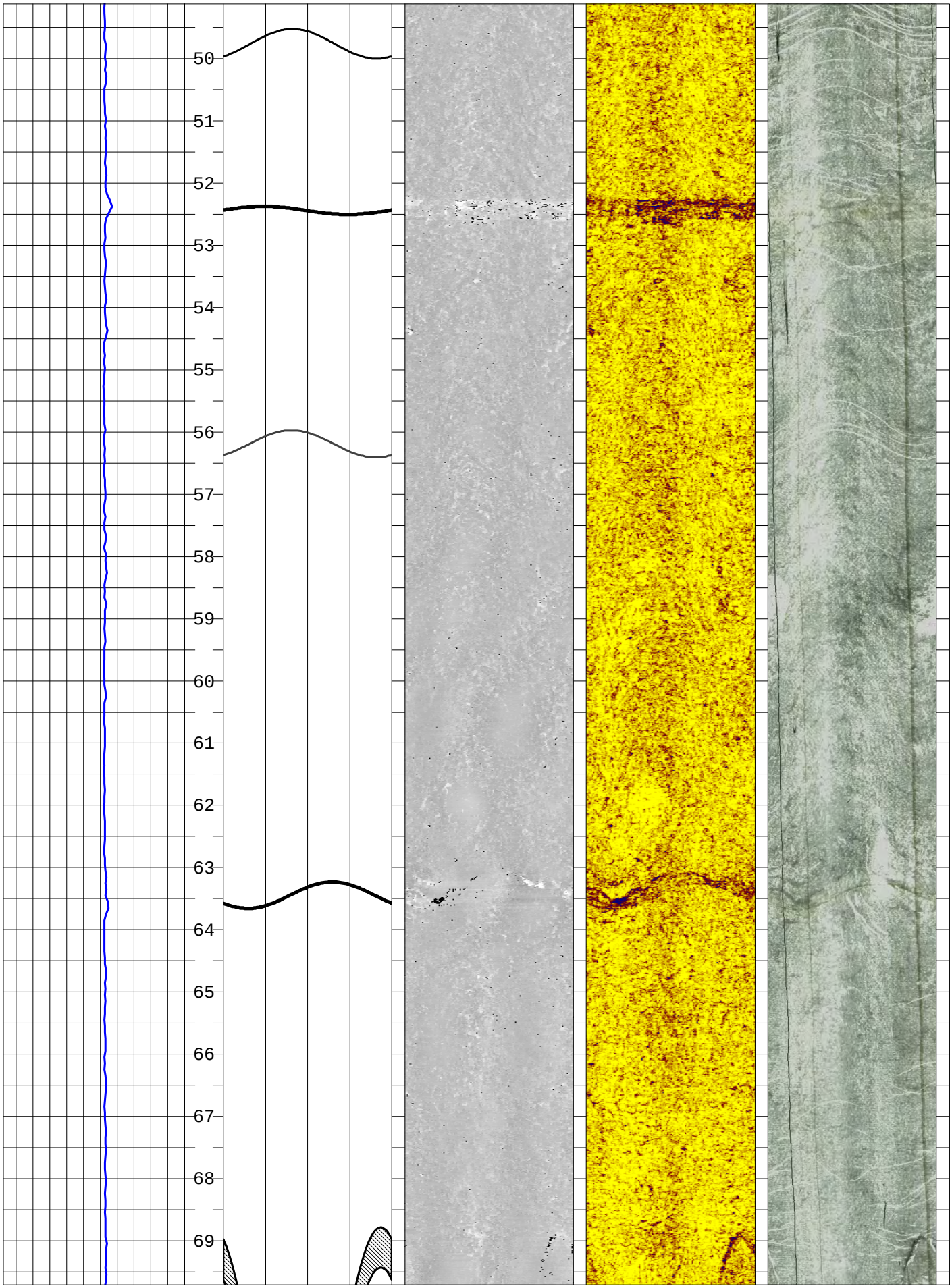
Log: Plate C-4 Televiewer & Caliper Logs

Well: B16-101

Site: Juniper Ridge

Date:	3/23/2016	Location: Old Town, Maine	
Casing Depth:	37 ft	For: SME	
Casing Type:	6 inch	Logged by:	R. Rawcliffe
Boring Depth:	244.0 ft	Orientation:	magnetic
Meas. From:	top of casing	Structure Plots:	
Stickup:	2.2 ft	black = planar features (faults, foliation, bedding, joints, etc)	
Water Level:	36.05 ft	light blue = possibly transmissive fracture	
		dark blue = likely transmissive fracture	

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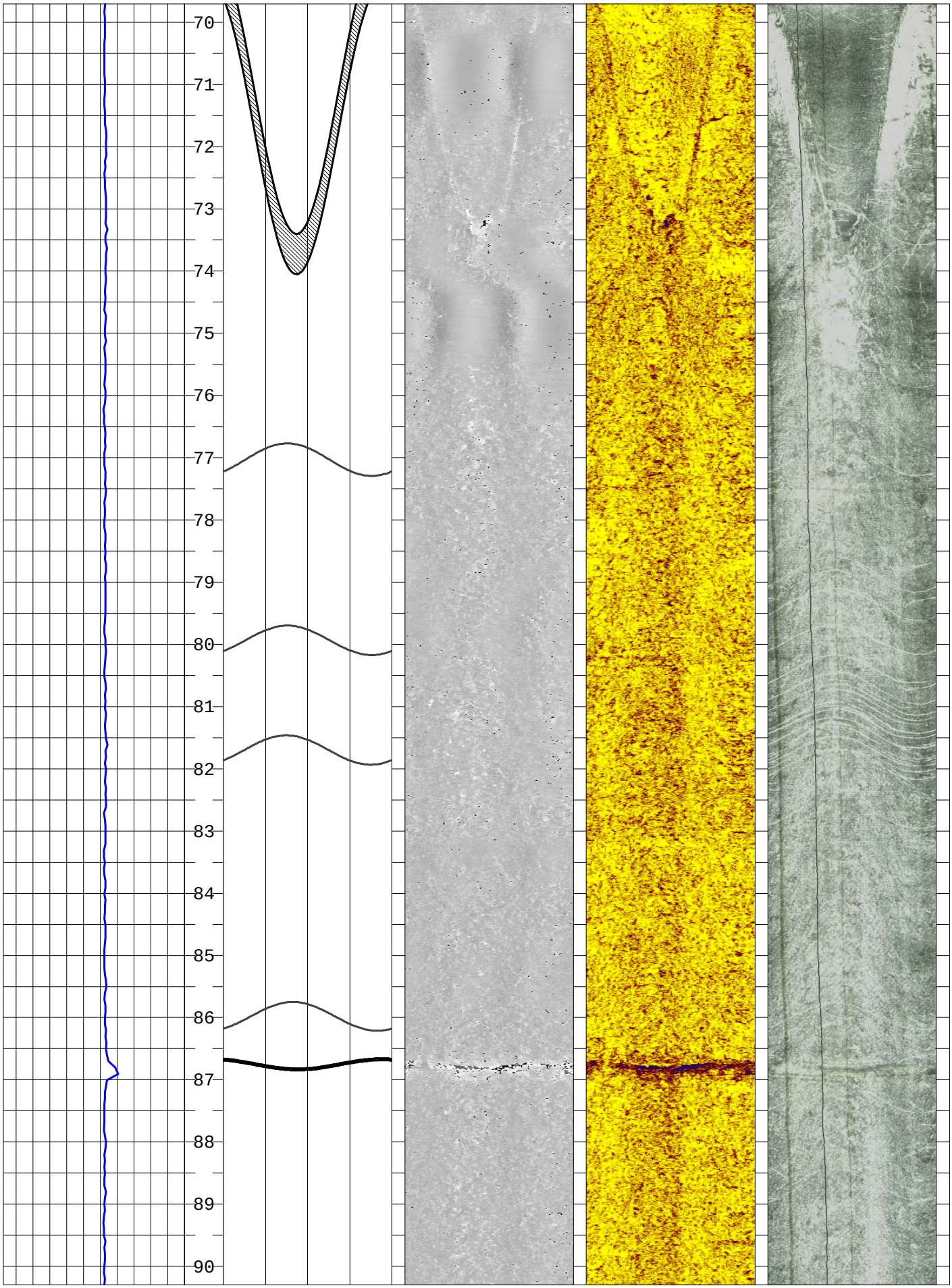
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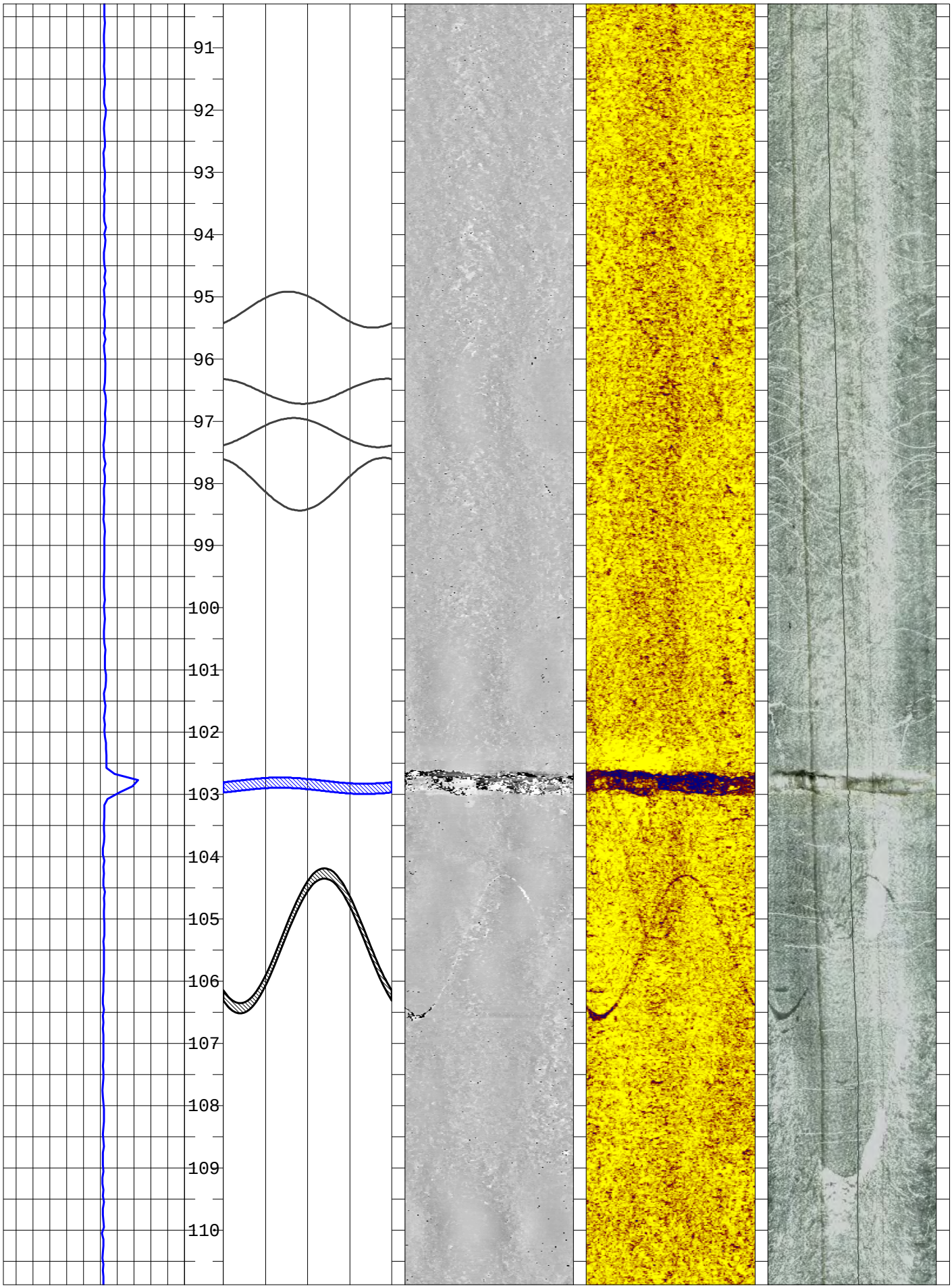
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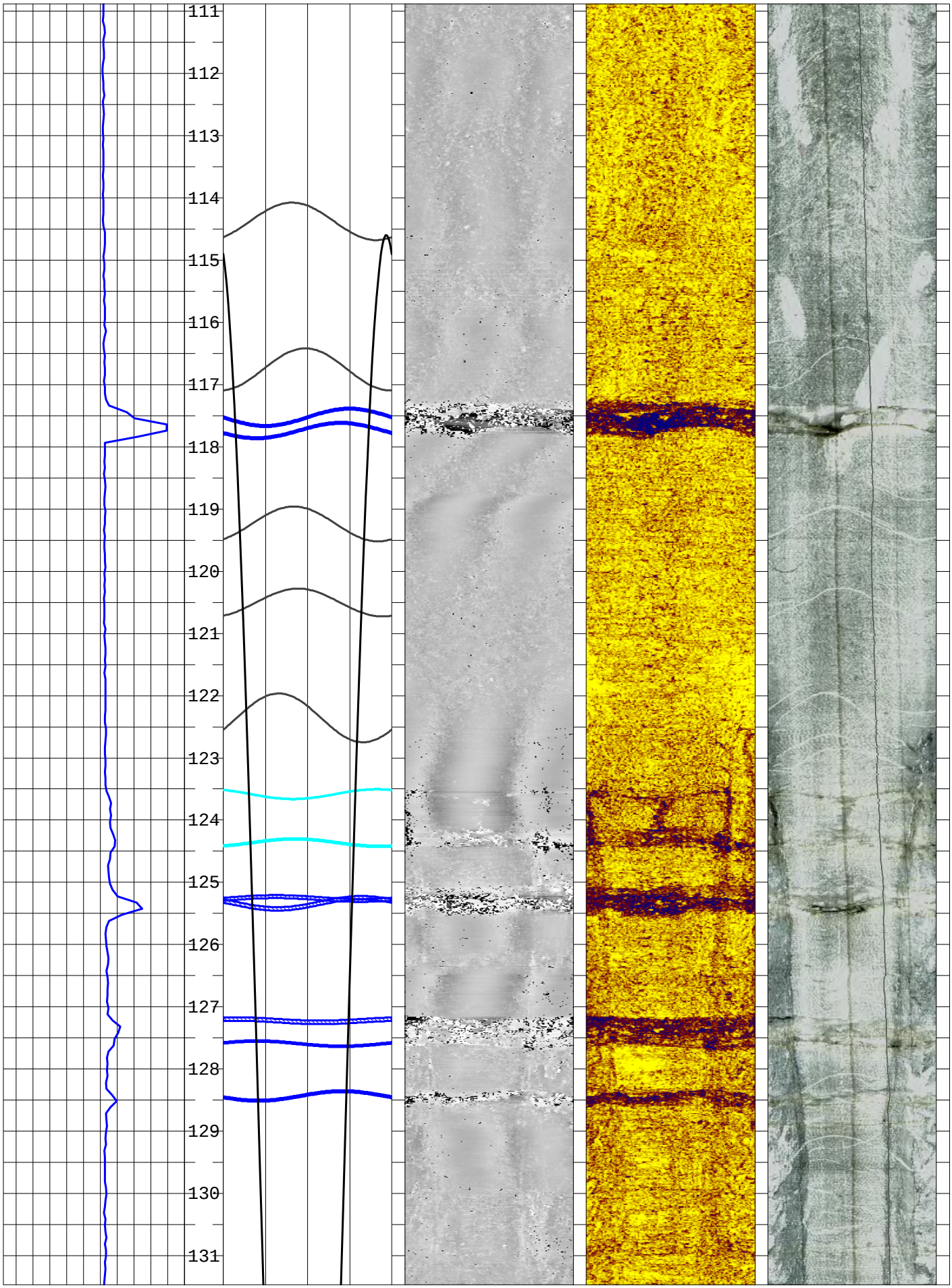
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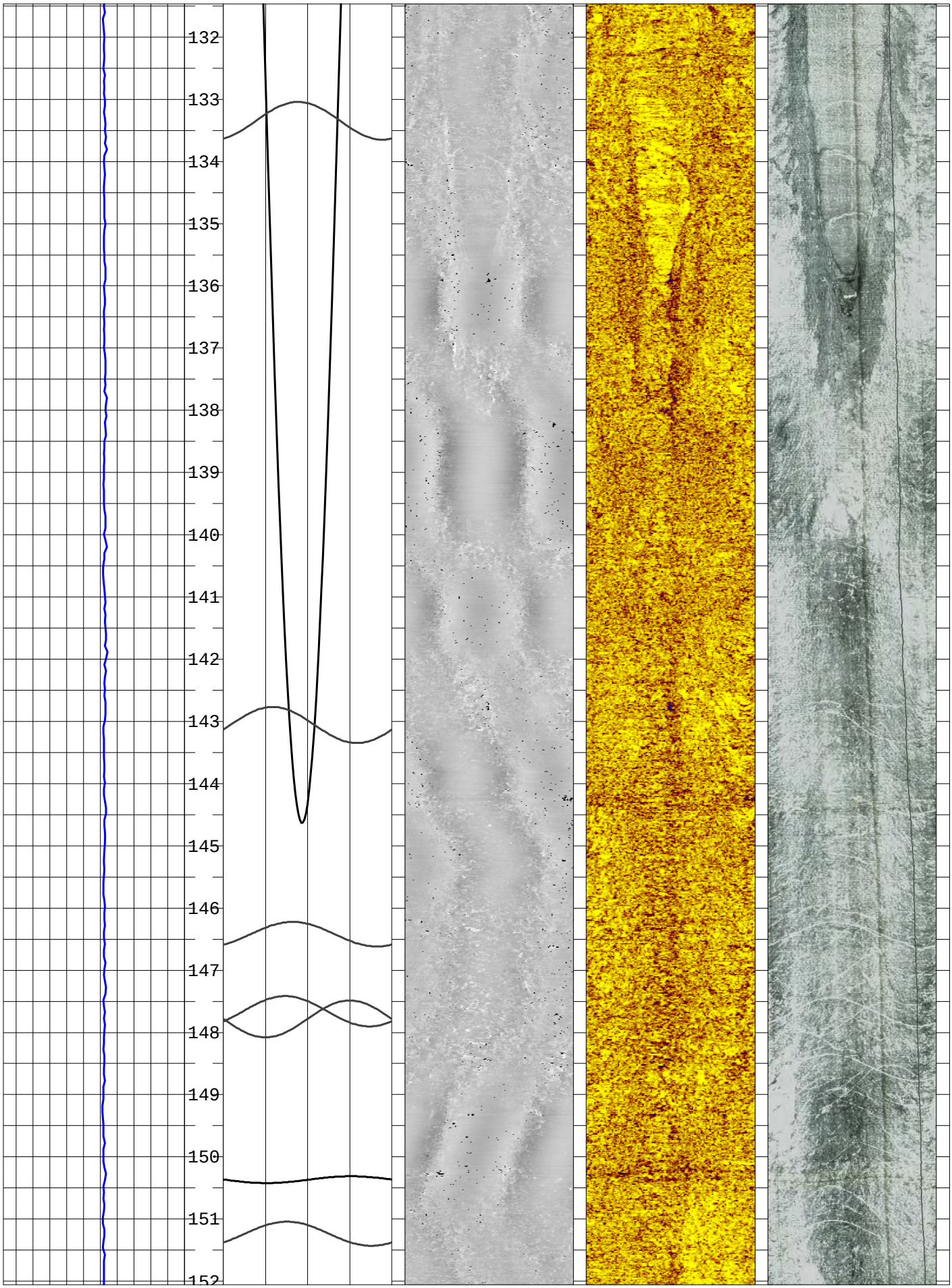
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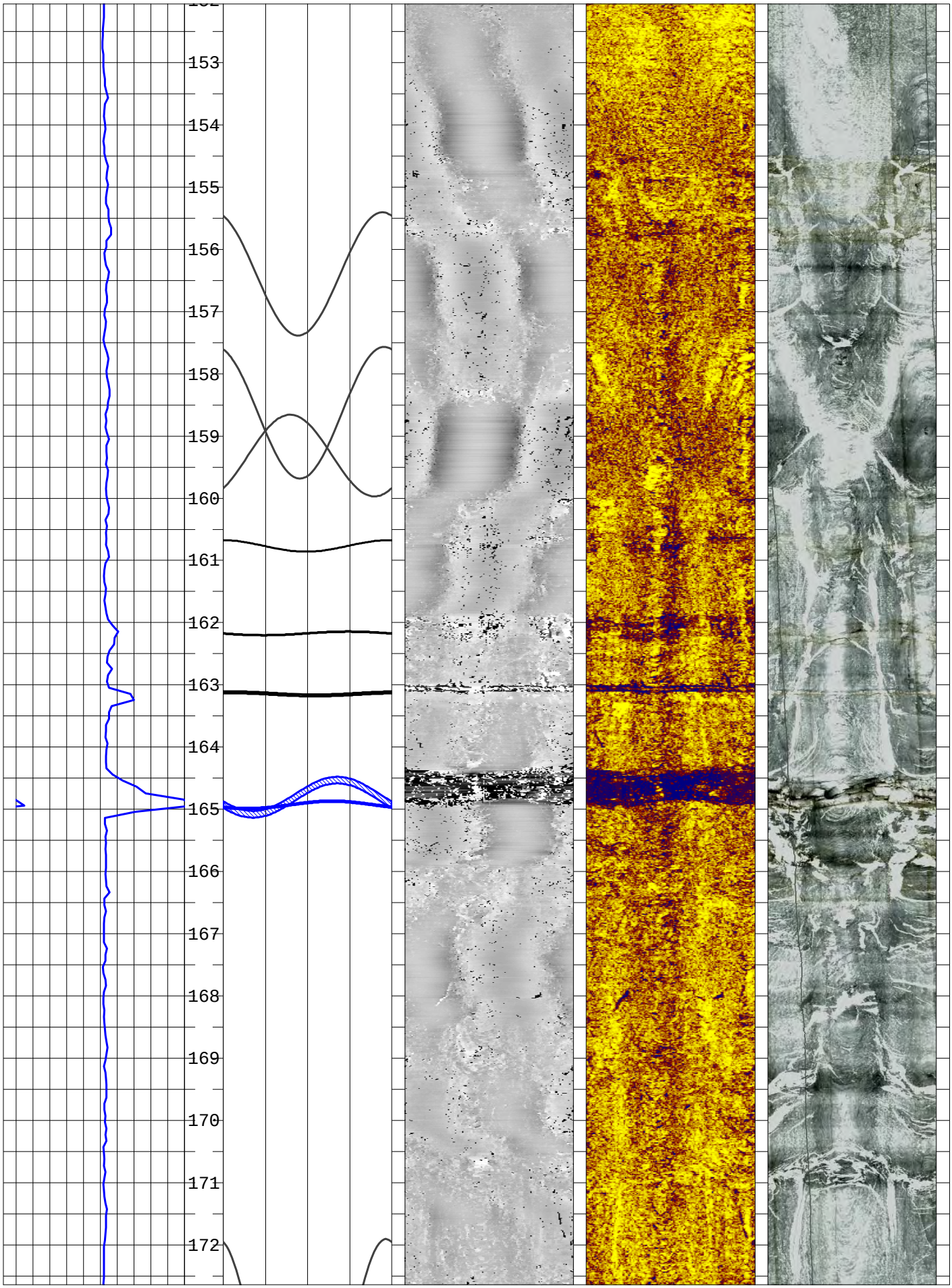
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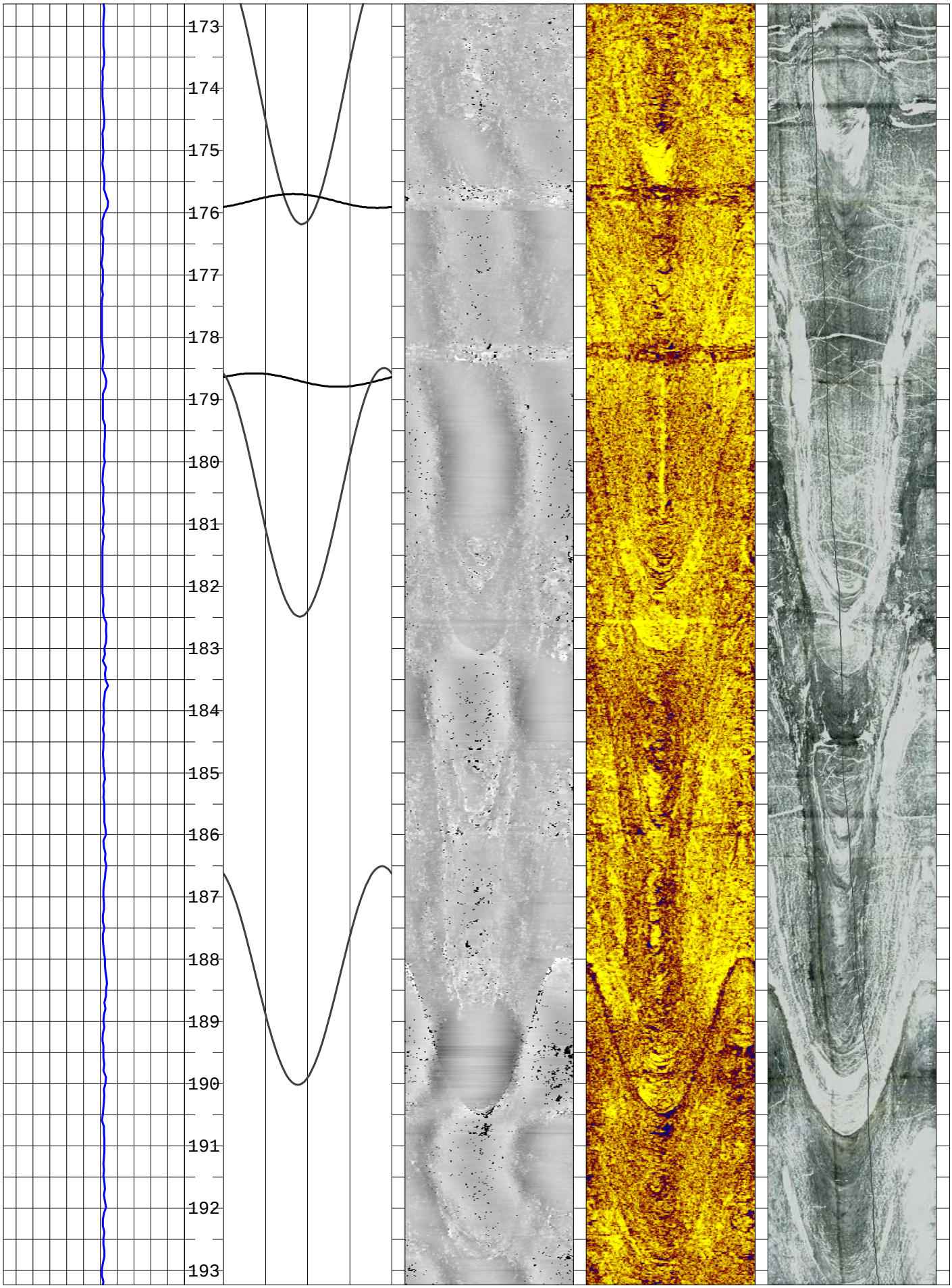
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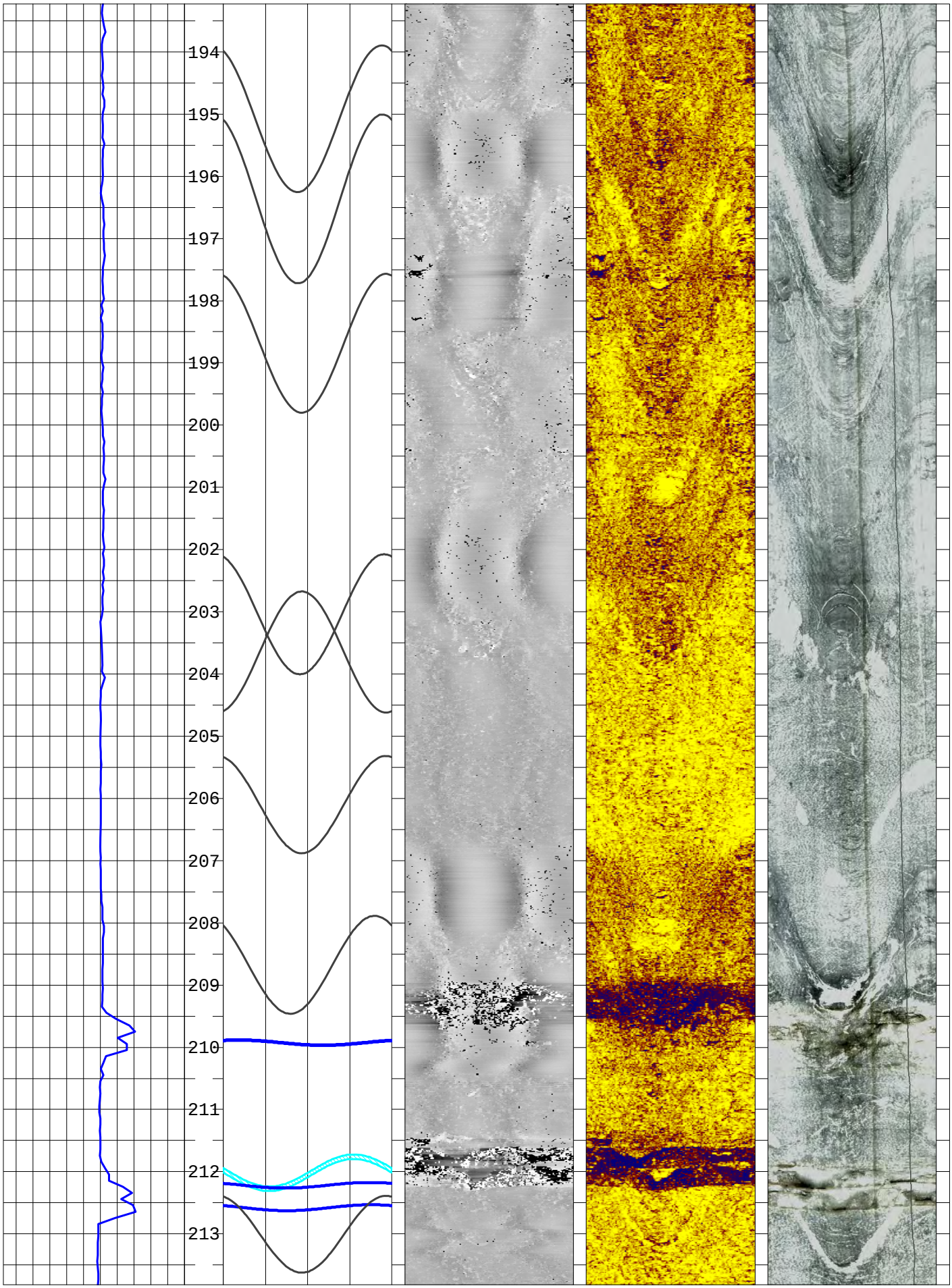
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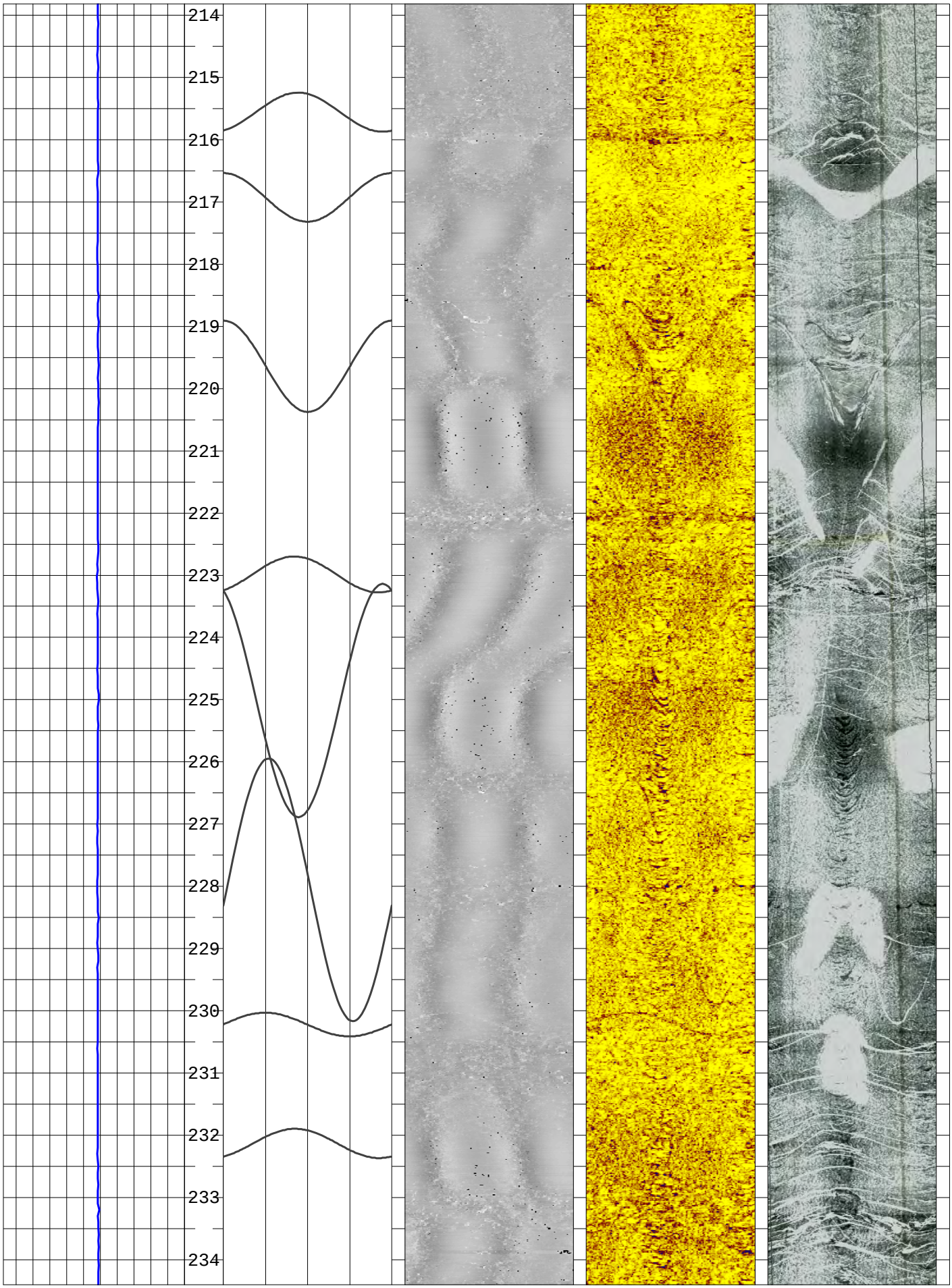
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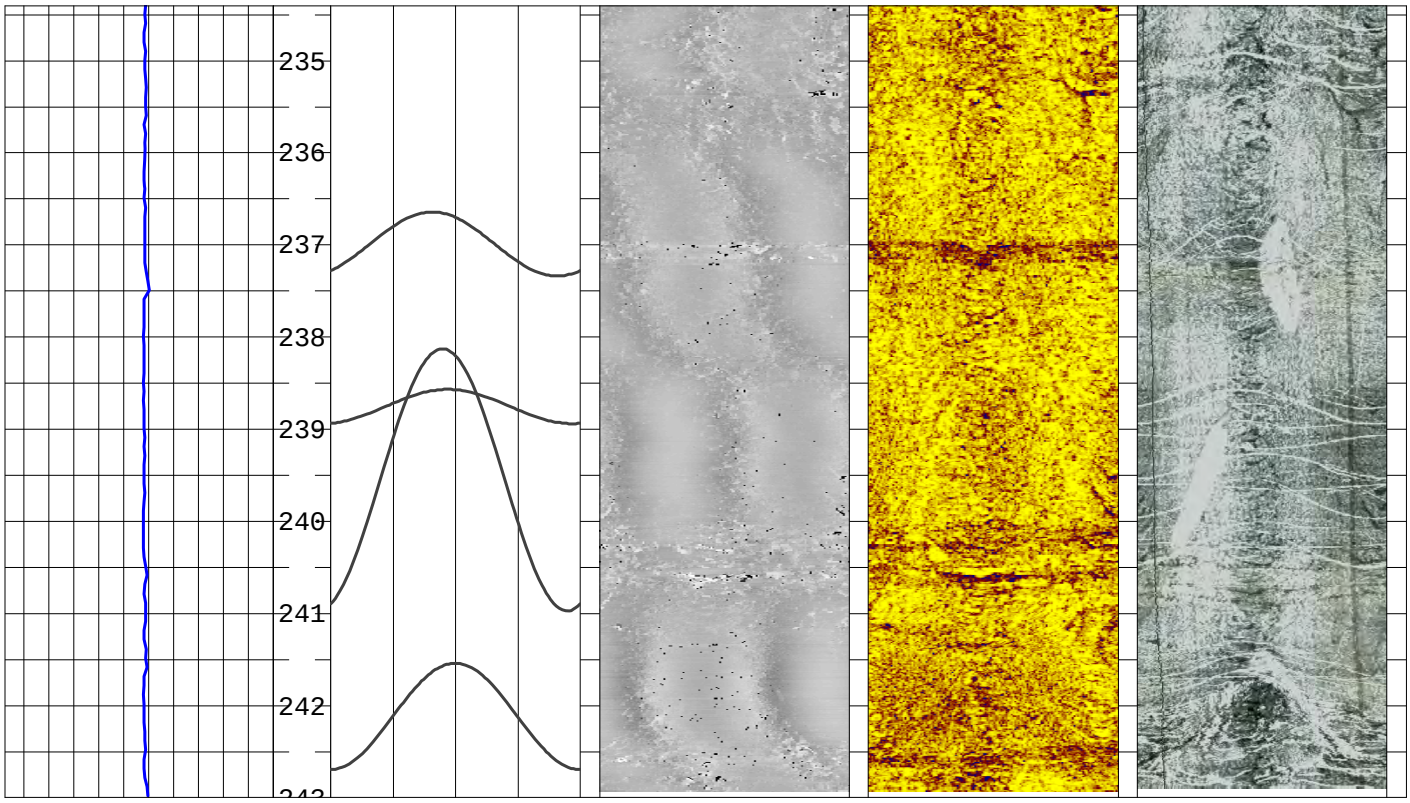
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TABLE C-1 Planar features interpreted from acoustical and optical televiewers
B16-101- Juniper Ridge Site - Old Town, Maine **March, 2016**
Declination: 16.3 degrees west

Borehole	Feature # Number	Feature depth Feet	Dip Degrees	Dip Azimuth magnetic	Strike magnetic	Dip Azimuth True	Strike True	Aperture mm	Category Type
B16-101	1	40.2	14	341	71	325	55	<1 mm	100
B16-101	2	40.2	59	335	65	318	48	<1 mm	100
B16-101	3	42.0	7	157	67	141	51	8	100
B16-101	4	42.1	45	328	58	312	42	<1 mm	100
B16-101	5	43.6	36	321	51	305	35	<1 mm	100
B16-101	6	46.7	39	321	51	305	35	<1 mm	100
B16-101	7	47.9	35	326	56	310	40	13	100
B16-101	8	48.1	12	267	357	251	341	9	100
B16-101	9	49.8	43	328	58	311	41	<1 mm	100
B16-101	10	52.4	14	266	356	249	339	7	100
B16-101	11	56.2	41	326	56	309	39	<1 mm	100
B16-101	12	63.5	40	53	323	37	307	7	100
B16-101	13	71.4	84	157	67	140	50	22	100
B16-101	14	77.0	46	317	47	301	31	<1 mm	100
B16-101	15	79.9	43	317	47	301	31	<1 mm	100
B16-101	16	81.7	43	315	45	299	29	<1 mm	100
B16-101	17	86.0	42	329	59	312	42	<1 mm	100
B16-101	18	86.8	18	159	69	143	53	11	100
B16-101	19	95.2	49	319	49	303	33	<1 mm	100
B16-101	20	96.5	39	169	79	153	63	<1 mm	100
B16-101	21	97.2	43	330	60	314	44	<1 mm	100
B16-101	22	98.0	59	163	73	147	57	<1 mm	100
B16-101	23	102.9	11	302	32	285	15	50	107
B16-101	24	105.4	77	36	306	20	290	12	100
B16-101	25	114.4	50	327	57	310	40	<1 mm	100
B16-101	26	116.8	53	355	85	339	69	<1 mm	100
B16-101	27	117.5	27	90	360	73	343	8	107
B16-101	28	117.7	23	71	341	55	325	10	107
B16-101	29	119.2	48	331	61	314	44	<1 mm	100
B16-101	30	120.5	42	339	69	323	53	<1 mm	100
B16-101	31	122.4	57	299	29	282	12	<1 mm	100
B16-101	32	123.6	17	149	59	132	42	4	108
B16-101	33	124.4	13	332	62	316	46	7	108
B16-101	34	125.3	7	292	22	276	6	16	107
B16-101	35	125.3	18	115	25	99	9	16	107
B16-101	36	127.2	6	206	296	190	280	18	107
B16-101	37	127.6	9	252	342	236	326	9	107
B16-101	38	128.4	17	75	345	58	328	11	107
B16-101	39	129.6	89	168	78	152	62	<1 mm	100
B16-101	40	133.3	50	340	70	323	53	<1 mm	100
B16-101	41	143.1	49	285	15	269	359	<1 mm	100
B16-101	42	146.4	38	328	58	312	42	<1 mm	100
B16-101	43	147.7	44	312	42	296	26	<1 mm	100
B16-101	44	147.8	50	90	0	74	344	<1 mm	100
B16-101	45	150.4	12	93	3	76	346	<1 mm	100
B16-101	46	151.2	38	316	46	300	30	<1 mm	100
B16-101	47	156.4	76	160	70	144	54	<1 mm	100
B16-101	48	158.6	77	164	74	147	57	<1 mm	100
B16-101	49	159.3	69	323	53	306	36	<1 mm	100
B16-101	50	160.8	20	176	86	160	70	<1 mm	100
B16-101	51	162.2	6	86	356	70	340	4	100
B16-101	52	163.1	5	197	287	180	270	9	100
B16-101	53	164.8	43	64	334	47	317	23	107

TABLE C-1 Planar features interpreted from acoustical and optical televiewers
B16-101- Juniper Ridge Site - Old Town, Maine **March, 2016**

Declination: 16.3 degrees west

Borehole	Feature # Number	Feature depth Feet	Dip Degrees	Dip Azimuth magnetic	Strike magnetic	Dip Azimuth True	Strike True	Aperture mm	Category Type
B16-101	54	164.9	11	53	323	36	306	8	107
B16-101	55	174.1	83	168	78	151	61	<1 mm	100
B16-101	56	175.8	24	329	59	313	43	<1 mm	100
B16-101	57	178.7	23	246	336	229	319	<1 mm	100
B16-101	58	180.5	83	163	73	147	57	<1 mm	100
B16-101	59	188.3	82	159	69	143	53	<1 mm	100
B16-101	60	195.1	78	158	68	142	52	<1 mm	100
B16-101	61	196.4	80	160	70	144	54	<1 mm	100
B16-101	62	198.7	77	168	78	151	61	<1 mm	100
B16-101	63	203.0	75	164	74	147	57	<1 mm	100
B16-101	64	203.6	76	348	78	331	61	<1 mm	100
B16-101	65	206.1	72	168	78	151	61	<1 mm	100
B16-101	66	208.7	72	143	53	127	37	<1 mm	100
B16-101	67	209.9	9	213	303	197	287	6	107
B16-101	68	212.0	45	99	9	82	352	16	108
B16-101	69	212.2	10	132	42	116	26	5	107
B16-101	70	212.6	10	136	46	120	30	6	107
B16-101	71	213.0	68	168	78	152	62	<1 mm	100
B16-101	72	215.6	52	340	70	323	53	<1 mm	100
B16-101	73	216.9	58	180	90	163	73	<1 mm	100
B16-101	74	219.6	71	181	271	164	74	<1 mm	100
B16-101	75	223.0	49	332	62	315	45	<1 mm	100
B16-101	76	225.0	82	160	70	144	54	<1 mm	100
B16-101	77	228.1	83	277	7	261	351	<1 mm	100
B16-101	78	230.2	37	269	359	253	343	<1 mm	100
B16-101	79	232.1	43	334	64	317	47	<1 mm	100
B16-101	80	237.0	54	326	56	310	40	<1 mm	100
B16-101	81	238.8	37	349	79	333	63	<1 mm	100
B16-101	82	239.6	80	341	71	325	55	<1 mm	100
B16-101	83	242.1	67	360	90	343	73	<1 mm	100

Category 100 = planar feature (possible fracture, joint, foliation, bedding, etc.)
Category 107 = Likely water bearing feature
Category 108 = Possible water bearing fracture

ATTACHMENT D

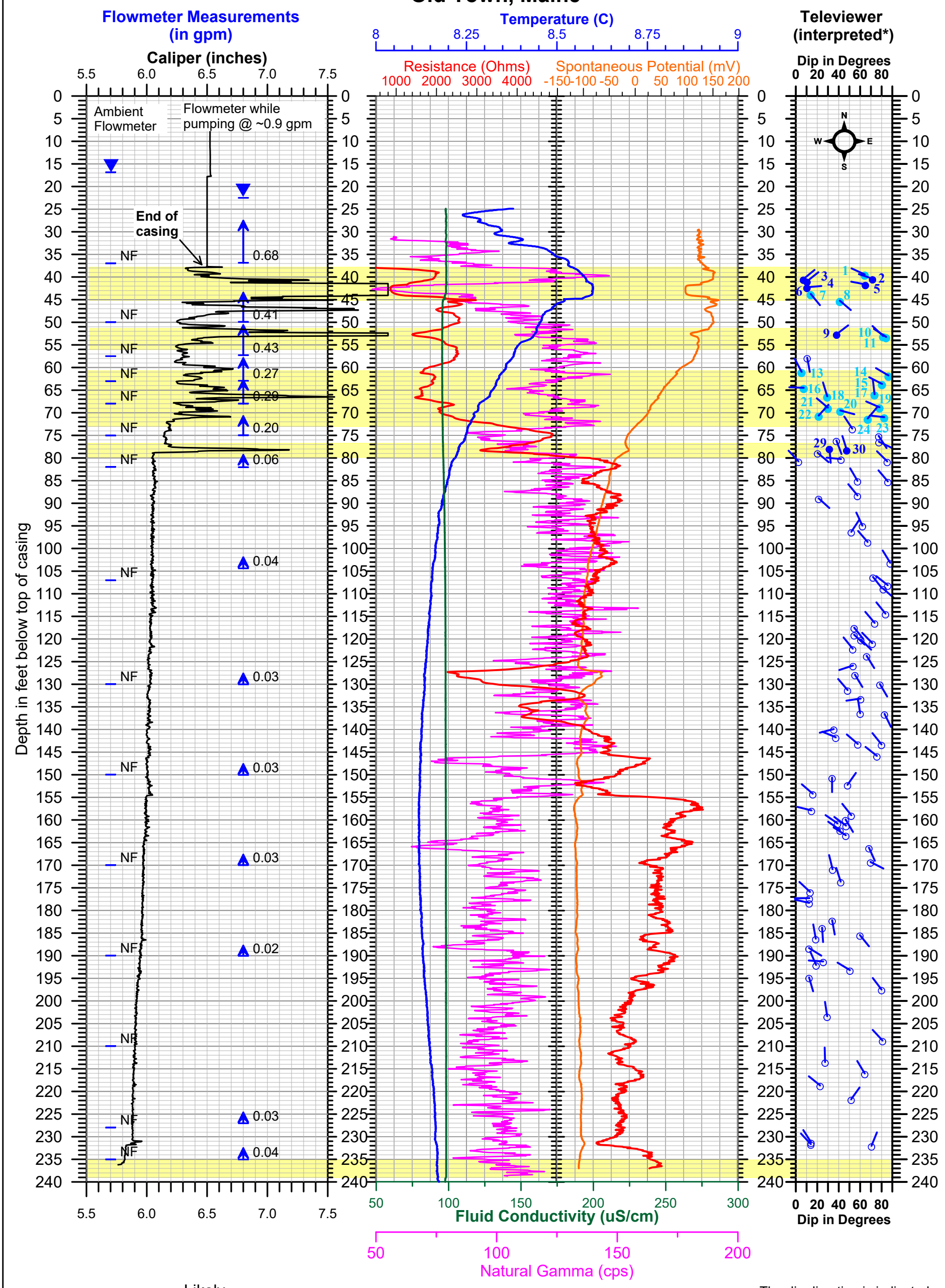
B16-102

BOREHOLE GEOPHYSICAL LOGS

Northeast Geophysical Services

Plate D-1
B16-102
Juniper Ridge Site
Old Town, Maine

Date logged: 3/25/16
4/18/16



= Likely transmissive zone

= possible transmissive zone

The dip direction is indicated by the line extending from the circle. The strike of the feature is 90 degrees from this.

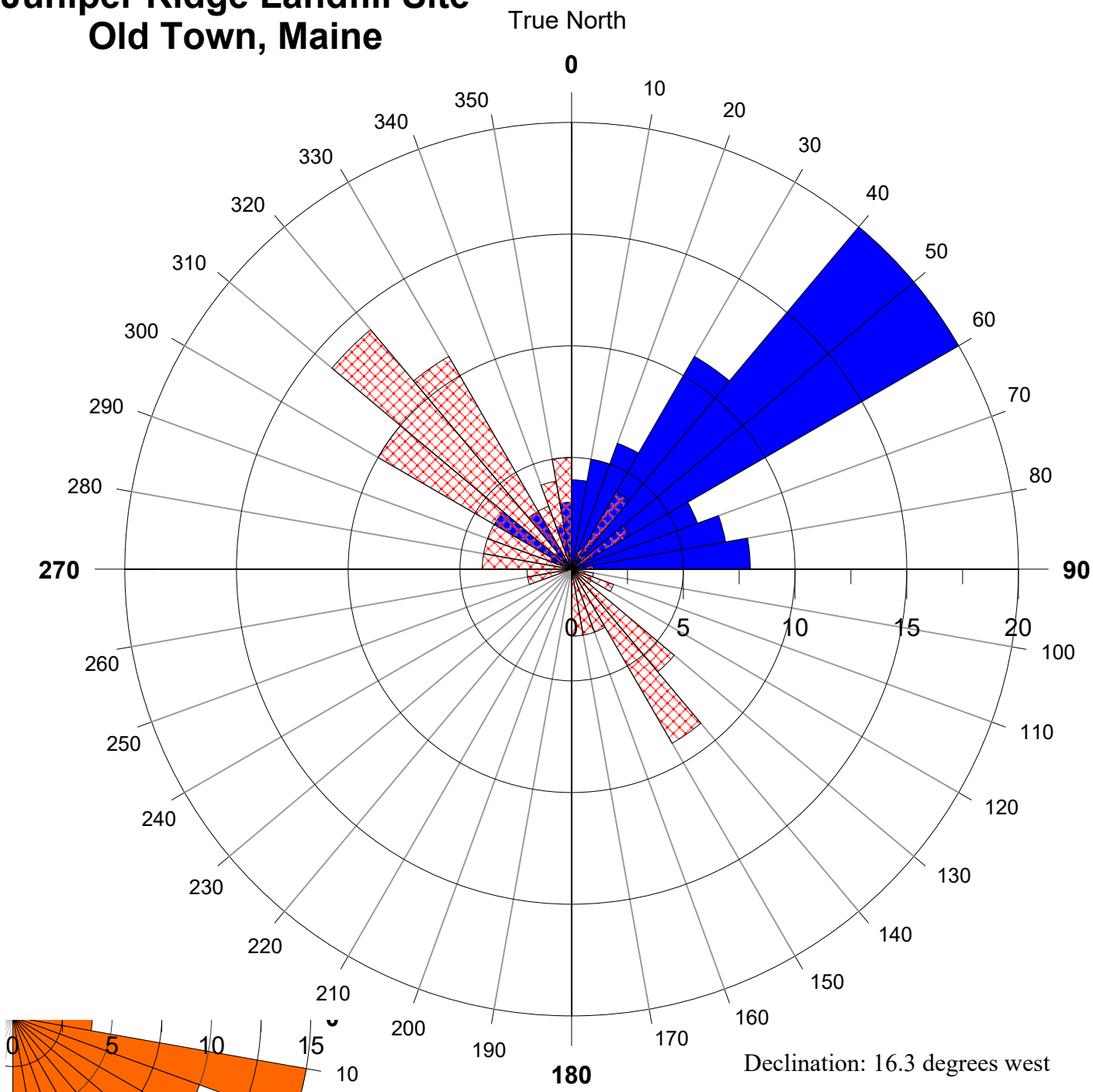
Plate D-1
B16-102
Juniper Ridge Site
Old Town, Maine

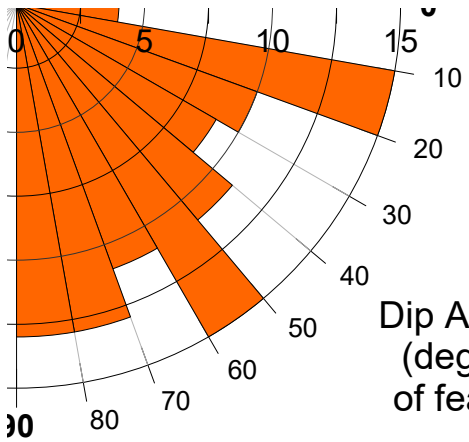
Date logged: 3/25/16
4/18/16

Northeast Geophysical Services

B16-102
Juniper Ridge Landfill Site
Old Town, Maine

PLATE D-2
Strike and Dip Direction
of all features





Dip Amount
(degrees)
of features

Declination: 16.3 degrees west

Explanation

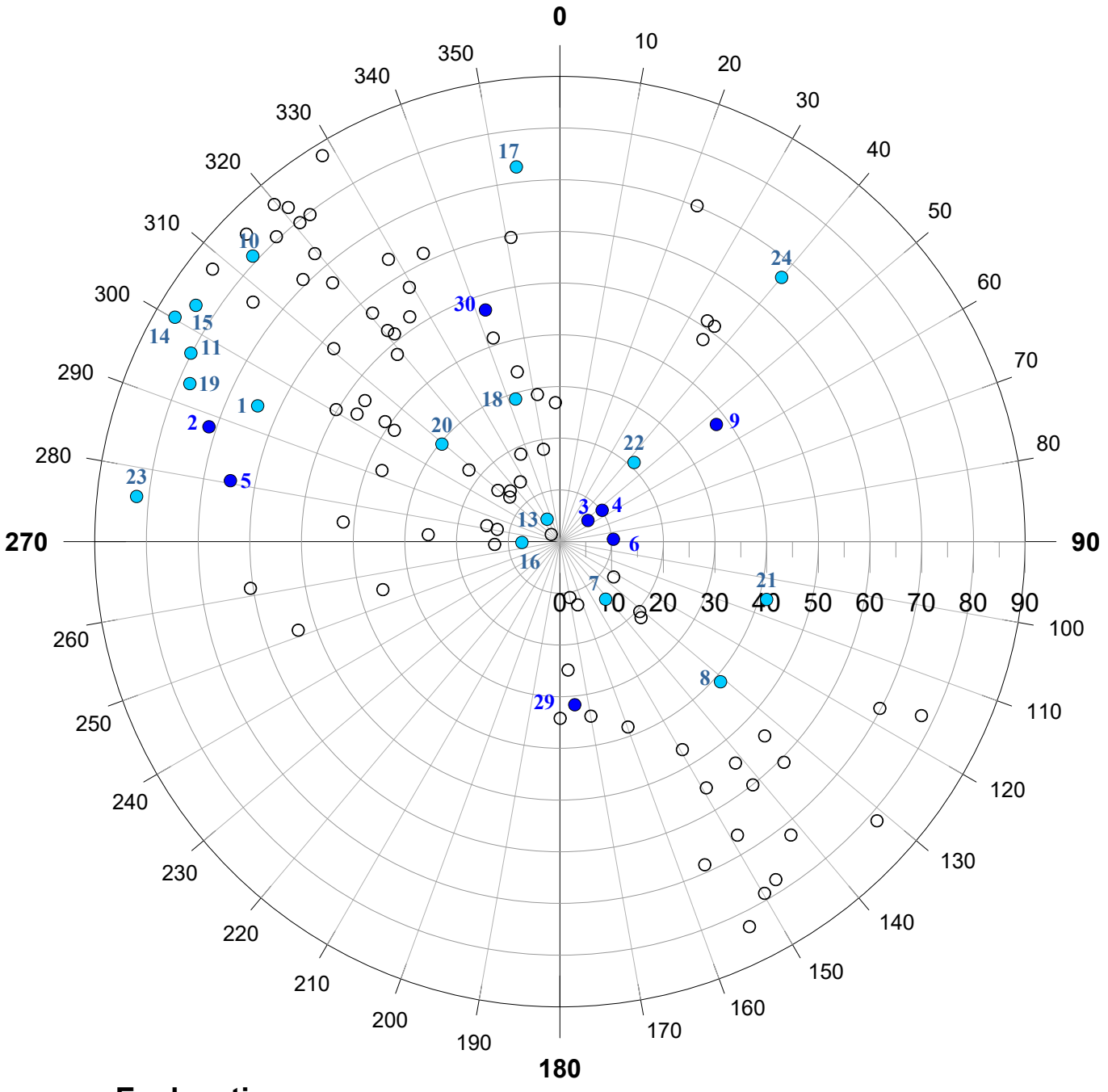
- Dip direction of feature
- Strike of feature
- Dip Amount (Tilt)

Based on 101 measurements

Northeast Geophysical Services

B16-102
Juniper Ridge Landfill Site
Old Town, Maine

PLATE D-3
Dip Amount and Dip Azimuth of planar features (upper hemisphere plot)



Explanation -

- Possibly transmissive
- Likely transmissive
- possible joint, fracture, bedding or foliation

Declination: 16.3 degrees west

Based on 101 measurements

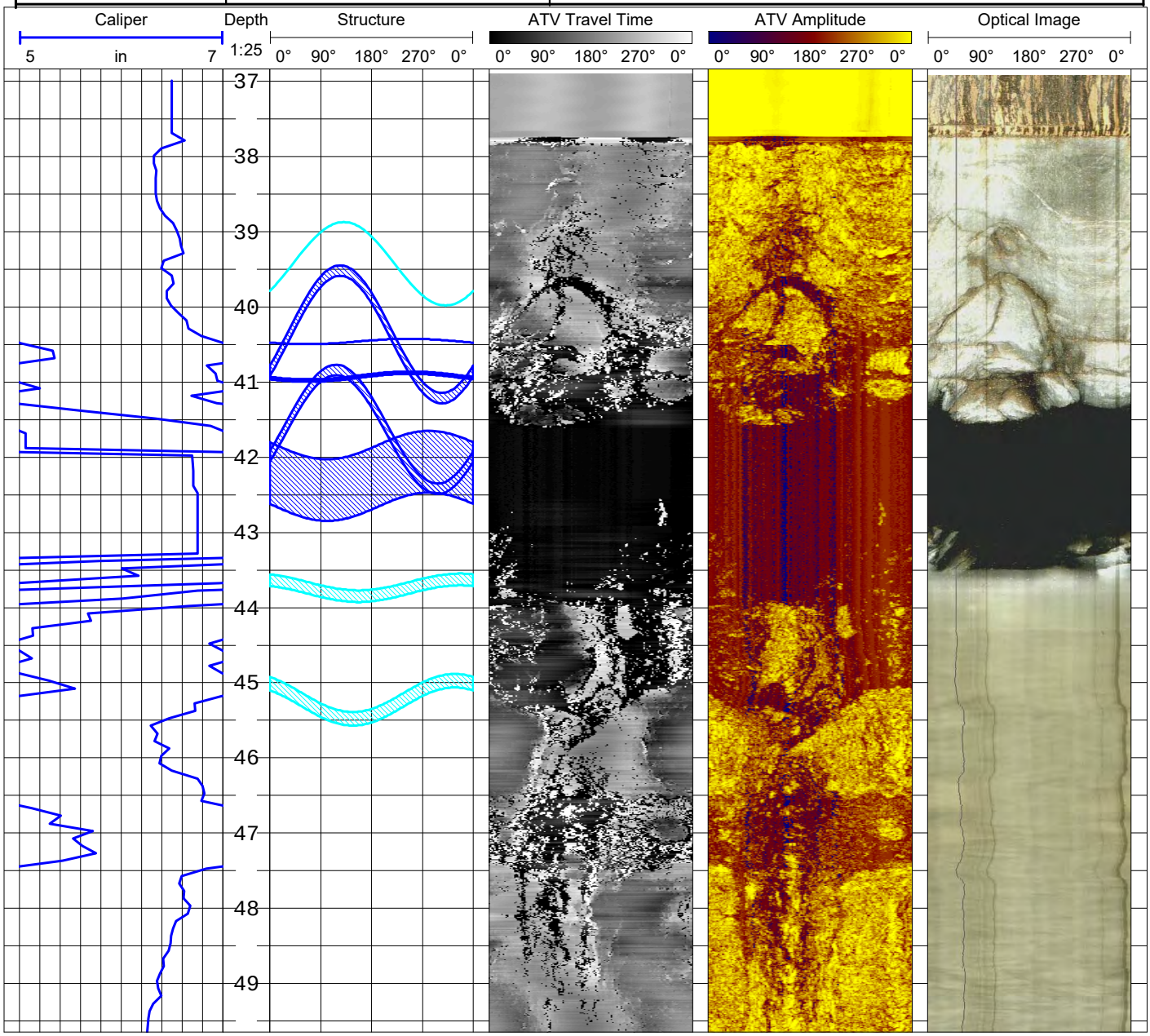
Northeast Geophysical Services
4 Union Street Bangor, Maine 04401
Tel. 207-942-2700
email: ngsinc@negeophysical.com

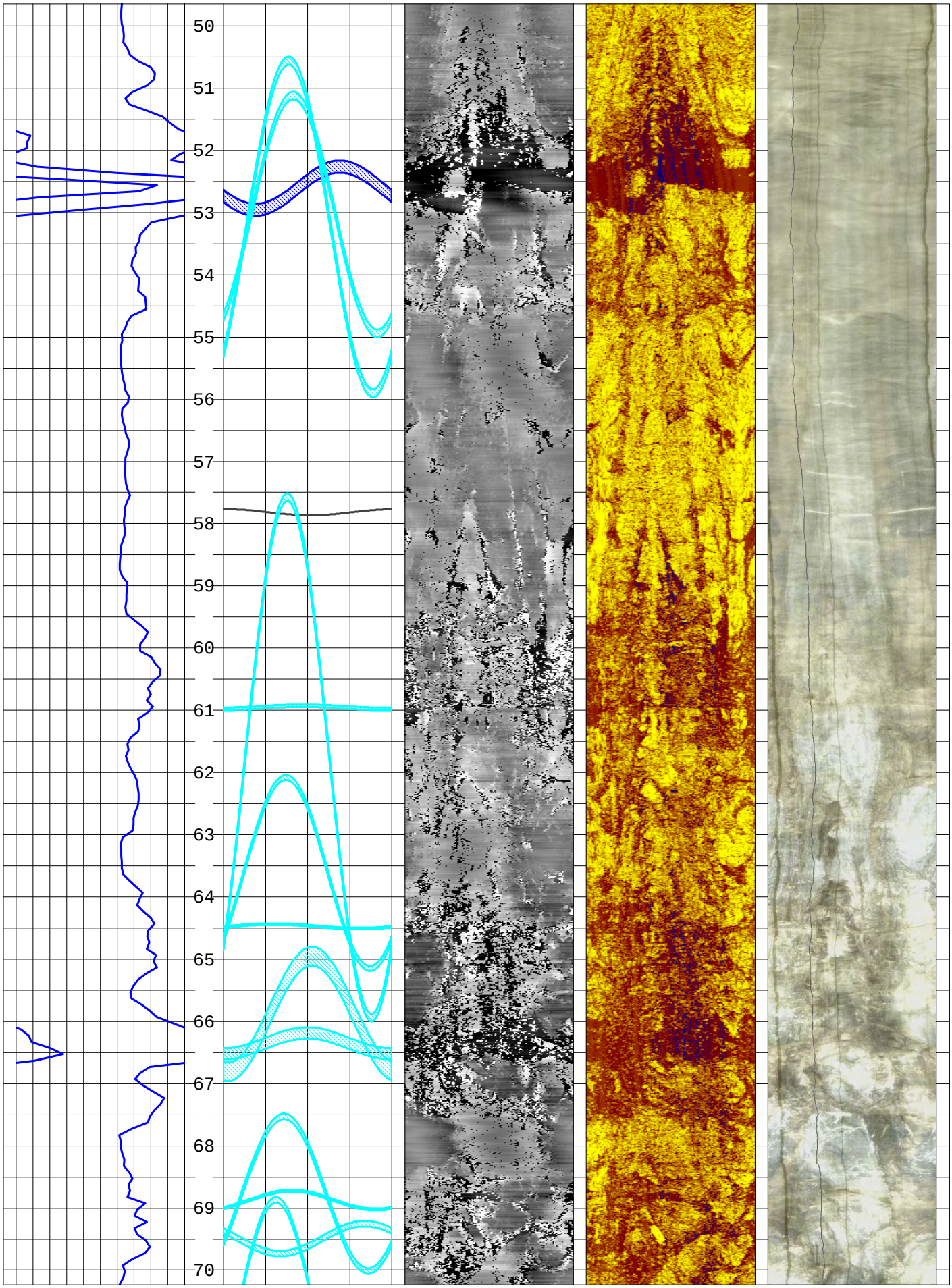
Log: Plate D-4 Televiewer & Caliper Logs

Well: B16-102

Site: Juniper Ridge

Date:	4/18/2016	Location: Old Town, Maine	
Casing Depth:	38 ft	For: Sevee & Maher	
Casing Type:	6 inch	Logged by: R. Rawcliffe	
Boring Depth:	237.3 ft	Orientation: magnetic	
Meas. From:	top of casing	Structure Plots:	
Stickup:	2.05 ft	black = planar features (faults, foliation, bedding, joints, etc)	
Water Level:	16.88 ft	light blue = possibly transmissive fracture	
		dark blue = likely transmissive fracture	

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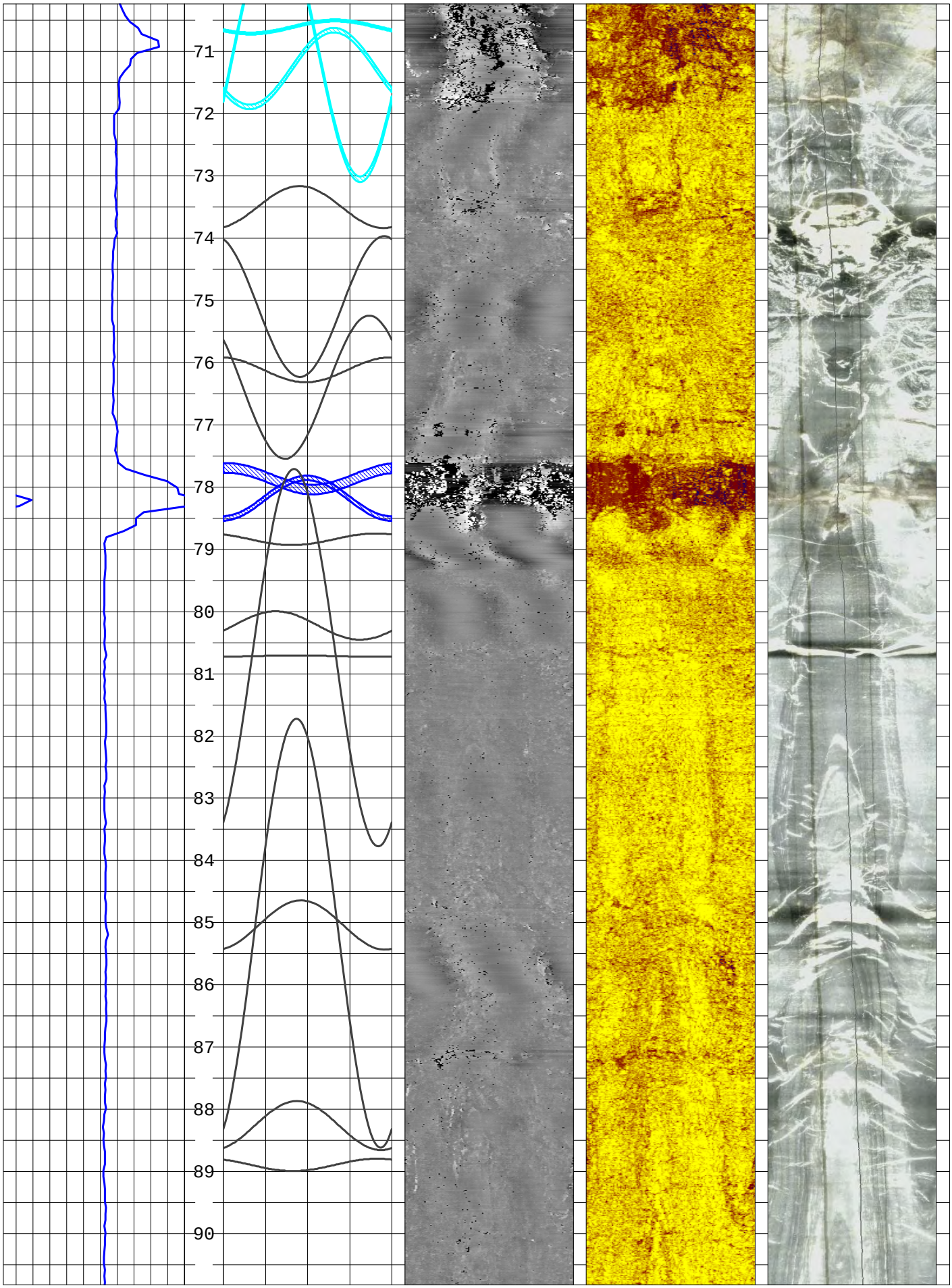
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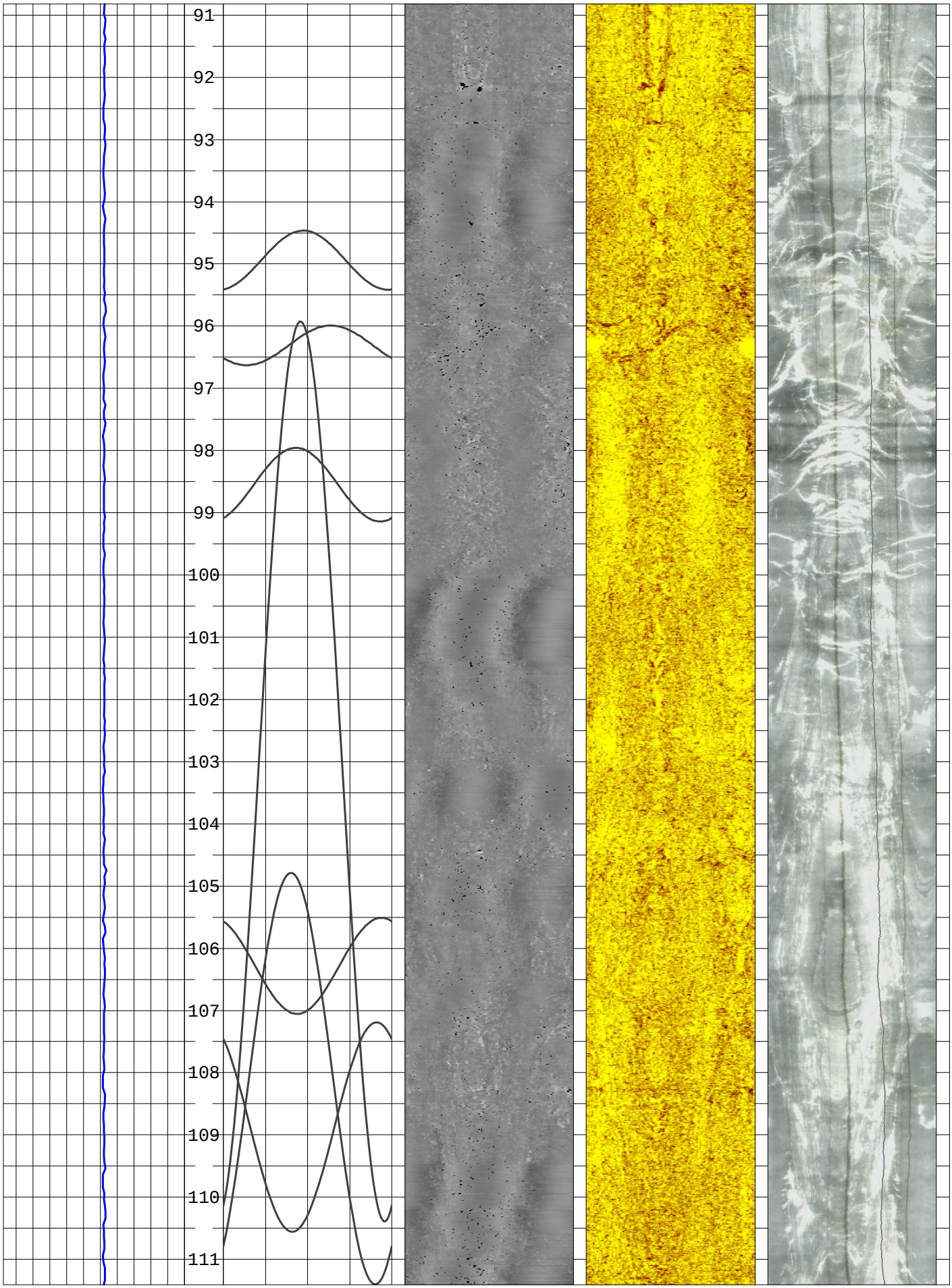
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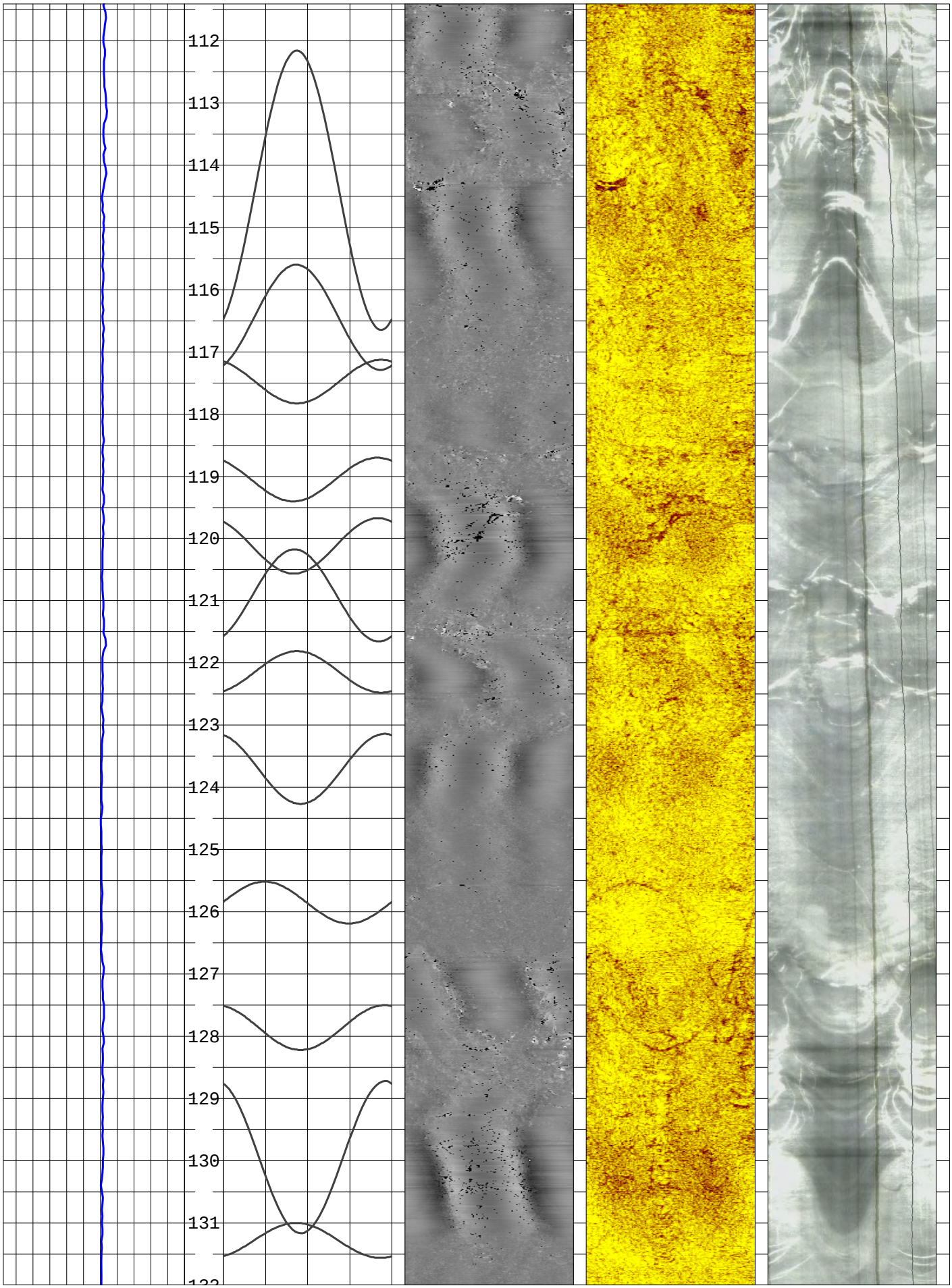
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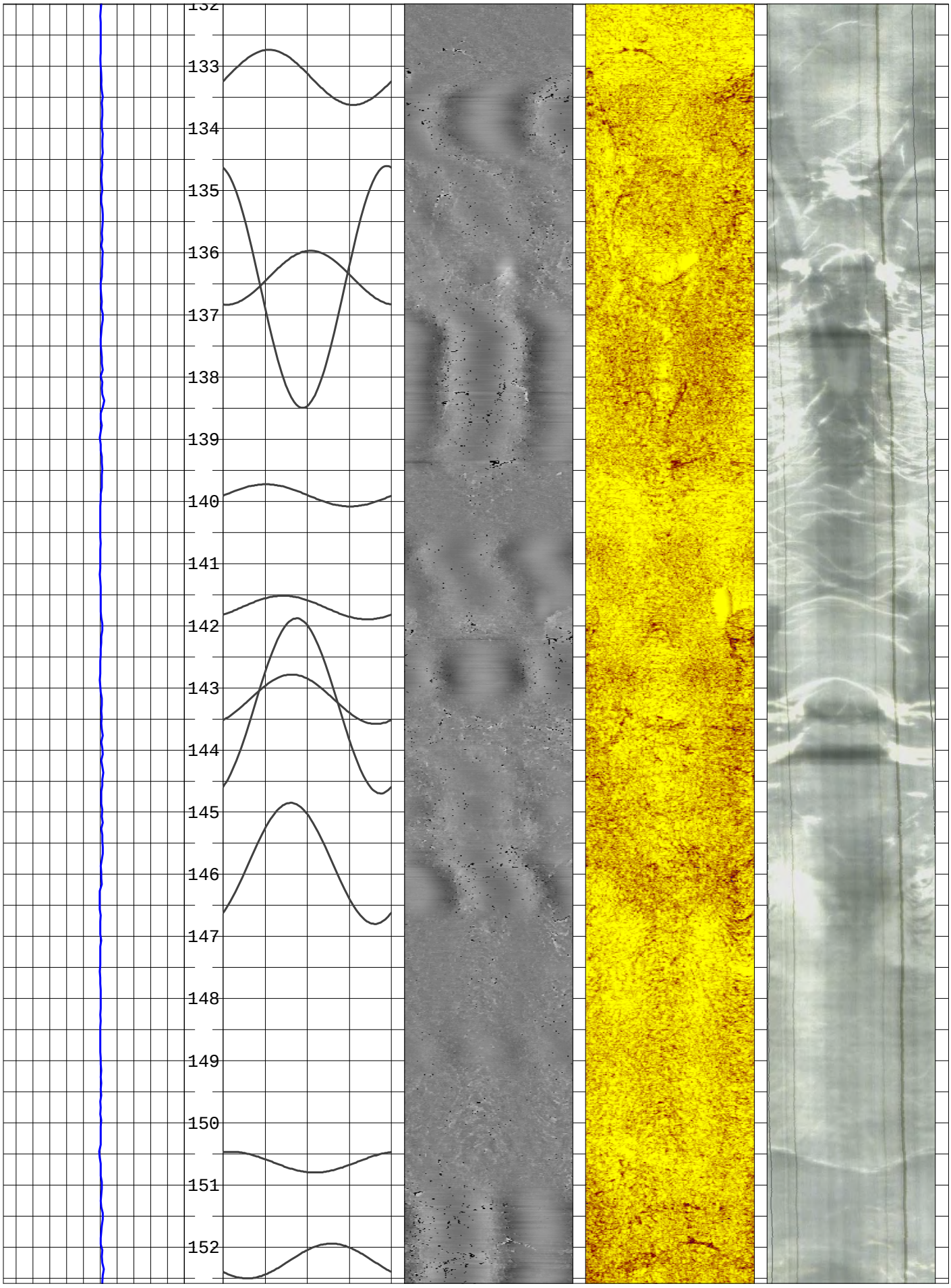
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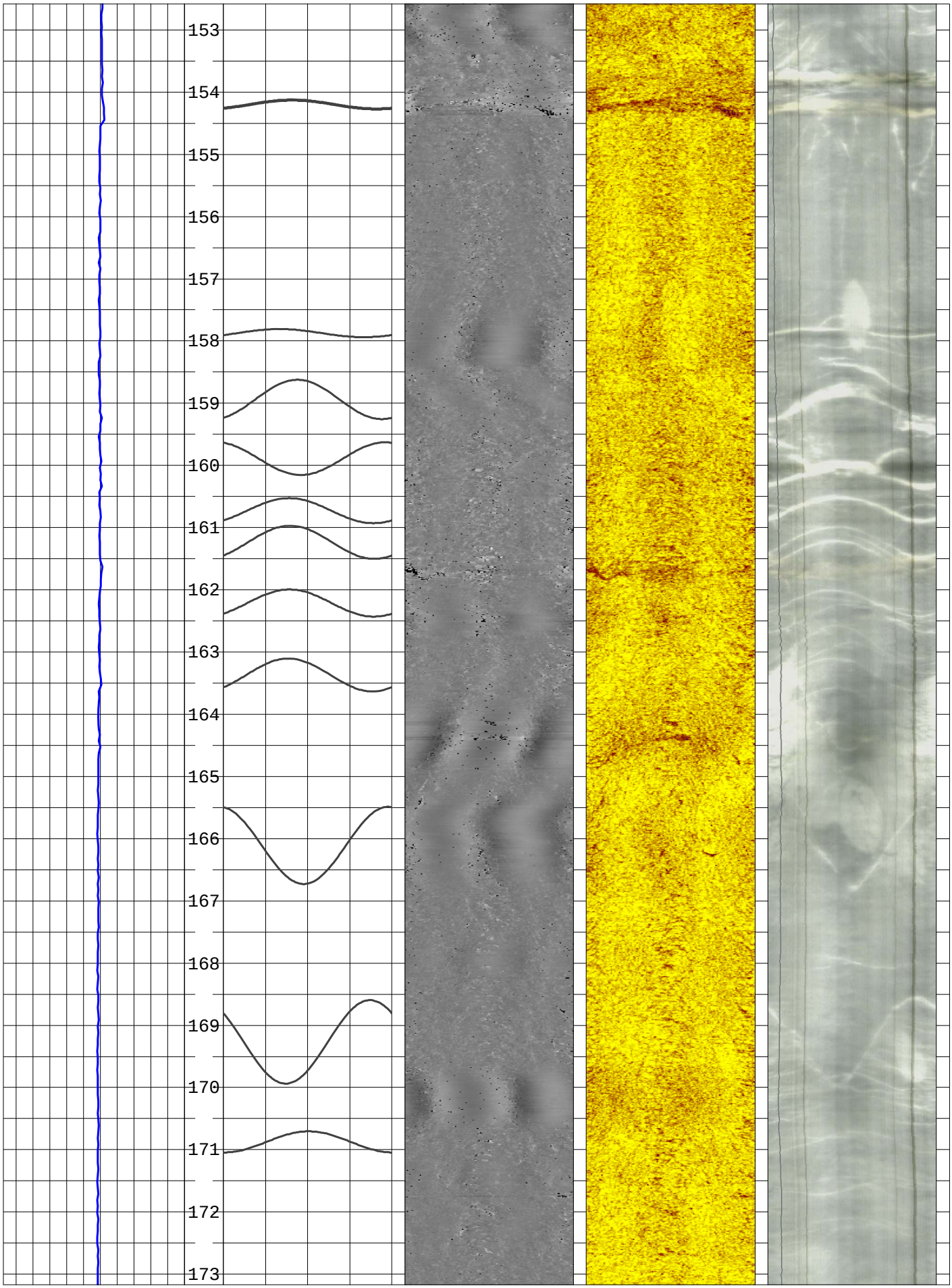
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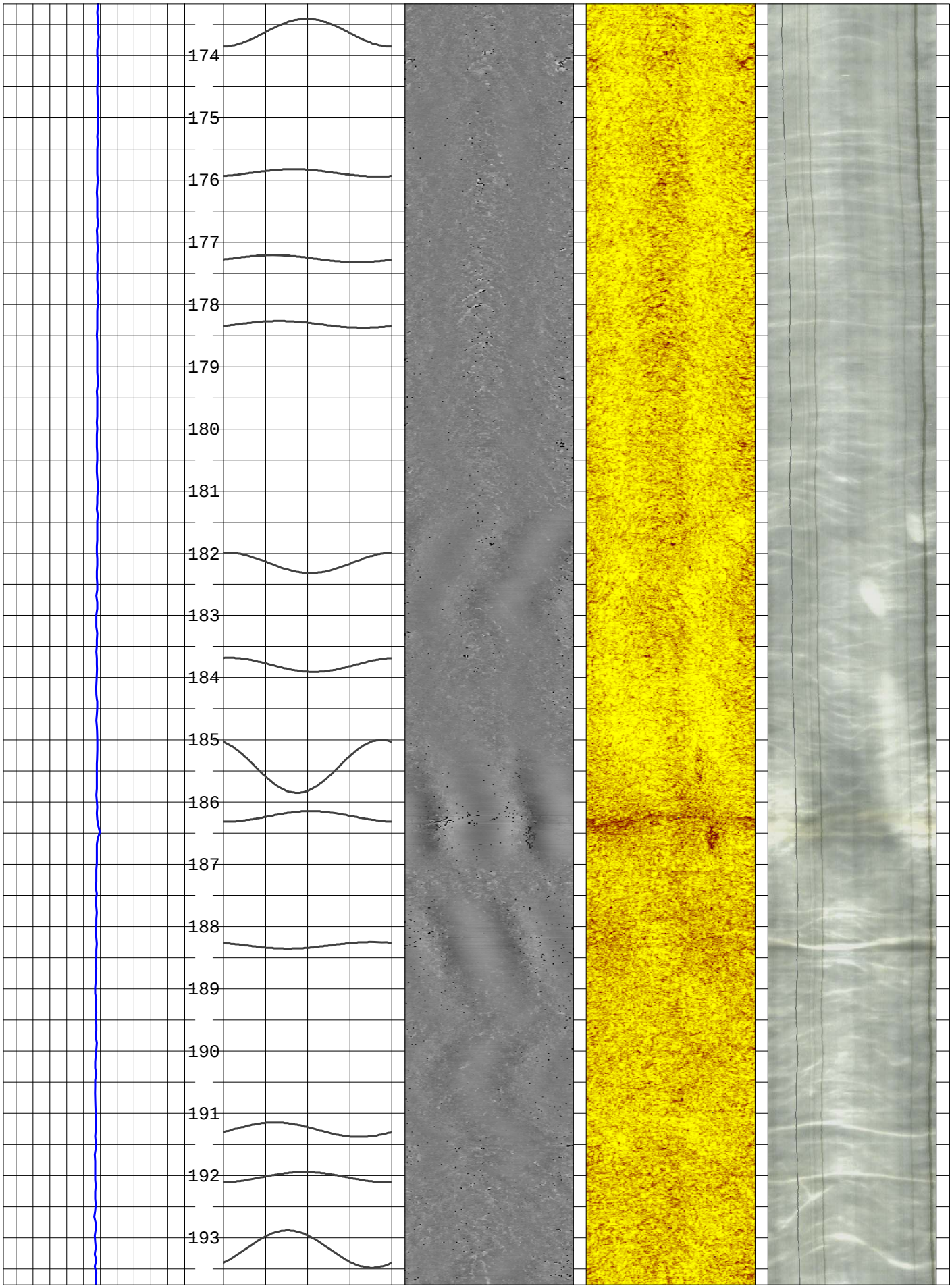
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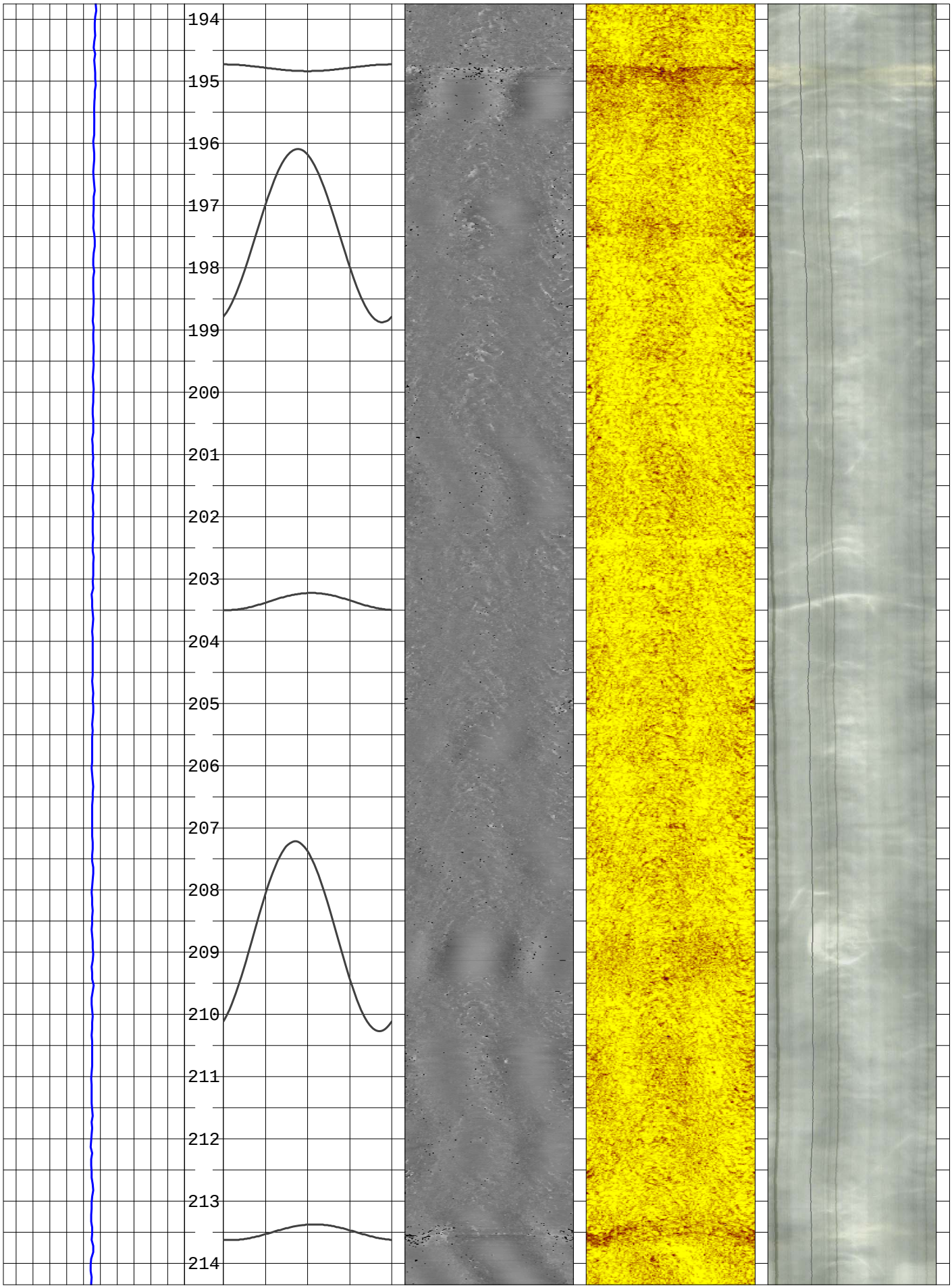
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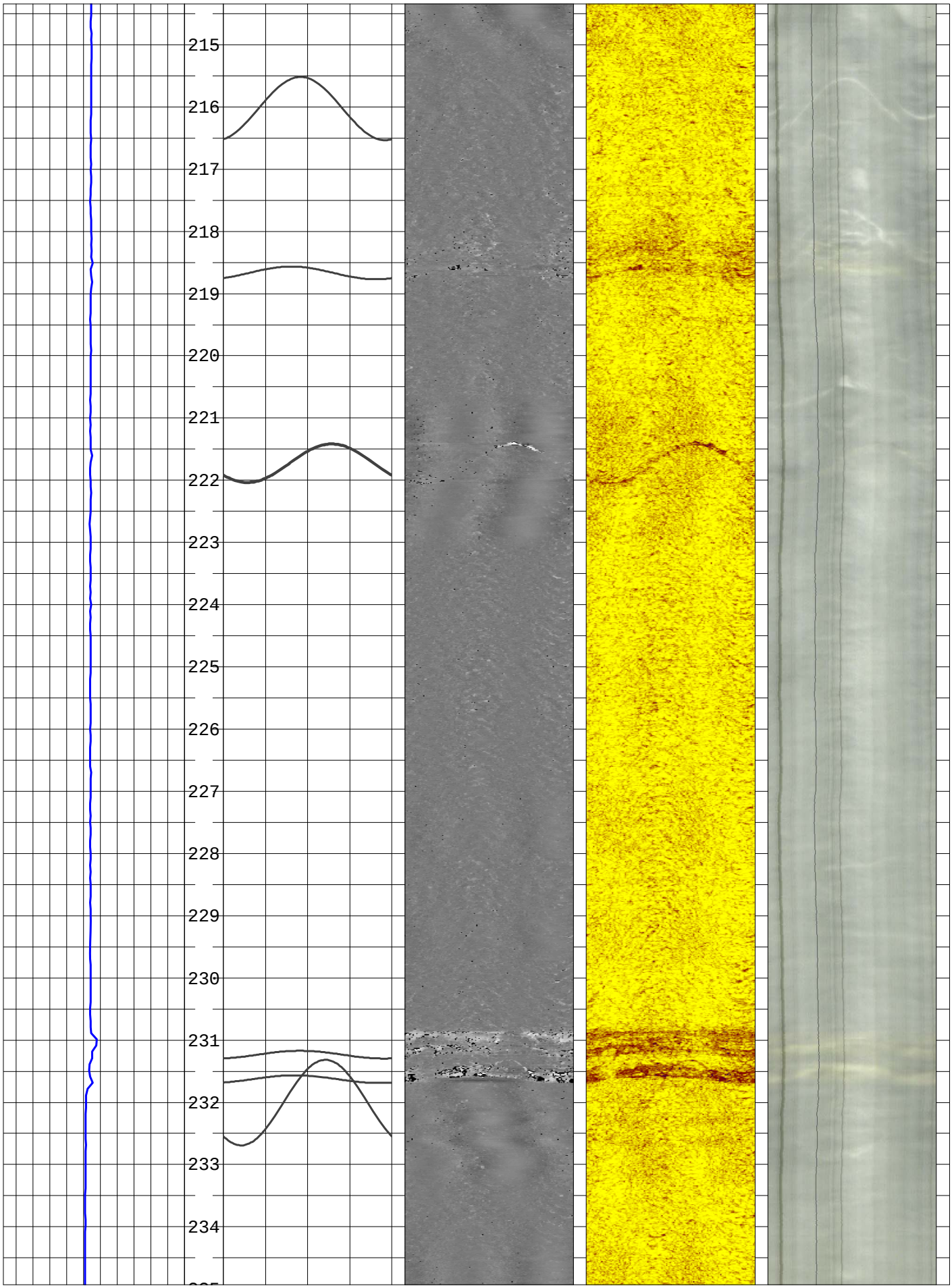
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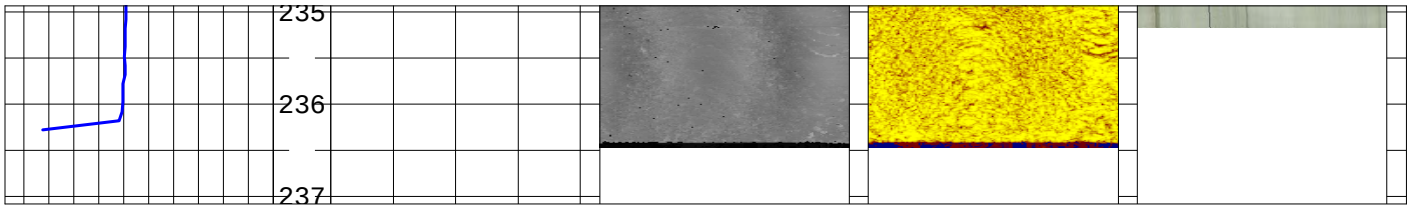
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TABLE D-1 Planar features interpreted from acoustical and optical televiewers
B16-102- Juniper Ridge Site - Old Town, Maine **April, 2016**
Declination: 16.3 degrees west

Borehole	Feature # Number	Feature depth Feet	Dip Degrees	Dip Azimuth magnetic	Strike magnetic	Dip Azimuth True	Strike True	Aperture mm	Category Type
B16-102	1	39.4	64	311	41	295	25	<1 mm	108
B16-102	2	40.4	72	305	35	288	18	13	107
B16-102	3	40.5	7	67	337	50	320	<1 mm	107
B16-102	4	40.9	10	68	338	52	322	9	107
B16-102	5	41.6	65	297	27	281	11	18	107
B16-102	6	42.3	10	102	12	85	355	247	107
B16-102	7	43.7	14	157	67	141	51	47	108
B16-102	8	45.2	41	147	57	131	41	41	108
B16-102	9	52.6	38	69	339	53	323	49	107
B16-102	10	53.0	81	329	59	313	43	6	108
B16-102	11	53.2	84	320	50	303	33	4	108
B16-102	12	57.8	11	186	276	170	80	<1 mm	100
B16-102	13	61.0	5	349	79	332	62	12	108
B16-102	14	61.8	86	317	47	300	30	2	108
B16-102	15	63.6	80	314	44	297	27	4	108
B16-102	16	64.5	7	288	18	272	2	8	108
B16-102	17	65.9	73	10	280	353	83	27	108
B16-102	18	66.4	29	359	89	343	73	49	108
B16-102	19	68.8	78	310	40	293	23	6	108
B16-102	20	68.9	30	326	56	310	40	9	108
B16-102	21	69.5	41	121	31	105	15	20	108
B16-102	22	70.6	21	59	329	42	312	9	108
B16-102	23	71.0	82	293	23	276	6	4	108
B16-102	24	71.3	67	56	326	40	310	9	108
B16-102	25	73.5	53	343	73	326	56	<1 mm	100
B16-102	26	75.1	77	164	74	147	57	<1 mm	100
B16-102	27	76.1	38	176	86	160	70	<1 mm	100
B16-102	28	76.4	77	132	42	115	25	<1 mm	100
B16-102	29	77.9	31	191	281	175	85	40	107
B16-102	30	78.2	47	359	89	342	72	15	107
B16-102	31	78.8	20	147	57	130	40	<1 mm	100
B16-102	32	80.2	42	292	22	276	6	<1 mm	100
B16-102	33	80.7	2	333	63	317	47	<1 mm	100
B16-102	34	80.7	85	331	61	315	45	<1 mm	100
B16-102	35	85.0	58	346	76	330	60	<1 mm	100
B16-102	36	85.2	86	336	66	320	50	<1 mm	100
B16-102	37	88.3	57	337	67	321	51	<1 mm	100
B16-102	38	88.9	21	149	59	132	42	<1 mm	100
B16-102	39	94.9	62	351	81	335	65	<1 mm	100
B16-102	40	96.3	52	50	320	34	304	<1 mm	100
B16-102	41	98.6	67	335	65	319	49	<1 mm	100
B16-102	42	103.2	88	345	75	329	59	<1 mm	100
B16-102	43	106.3	72	158	68	142	52	<1 mm	100
B16-102	44	108.1	86	325	55	308	38	<1 mm	100
B16-102	45	108.9	81	147	57	131	41	<1 mm	100
B16-102	46	114.4	84	337	67	321	51	<1 mm	100
B16-102	47	116.4	73	336	66	320	50	<1 mm	100
B16-102	48	117.5	54	158	68	141	51	<1 mm	100
B16-102	49	119.1	54	149	59	133	43	<1 mm	100
B16-102	50	120.1	61	151	61	134	44	<1 mm	100
B16-102	51	120.9	71	332	62	316	46	<1 mm	100
B16-102	52	122.2	53	337	67	321	51	<1 mm	100
B16-102	53	123.7	66	165	75	149	59	<1 mm	100
B16-102	54	125.9	53	268	358	252	342	<1 mm	100
B16-102	55	127.9	55	165	75	149	59	<1 mm	100

TABLE D-1 Planar features interpreted from acoustical and optical televiewers
B16-102- Juniper Ridge Site - Old Town, Maine **April, 2016**

Declination: 16.3 degrees west

Borehole	Feature # Number	Feature depth Feet	Dip Degrees	Dip Azimuth magnetic	Strike magnetic	Dip Azimuth True	Strike True	Aperture mm	Category Type
B16-102	56	130.0	78	166	76	150	60	<1 mm	100
B16-102	57	131.3	48	336	66	319	49	<1 mm	100
B16-102	58	133.2	60	278	8	262	352	<1 mm	100
B16-102	59	136.4	60	7	277	351	81	<1 mm	100
B16-102	60	136.6	83	170	80	154	64	<1 mm	100
B16-102	61	139.9	35	272	2	255	345	<1 mm	100
B16-102	62	141.7	37	309	39	292	22	<1 mm	100
B16-102	63	143.2	58	327	57	311	41	<1 mm	100
B16-102	64	143.3	80	337	67	321	51	<1 mm	100
B16-102	65	145.8	76	325	55	308	38	<1 mm	100
B16-102	66	150.6	34	196	286	180	90	<1 mm	100
B16-102	67	152.2	48	51	321	35	305	<1 mm	100
B16-102	68	154.2	16	327	57	311	41	4	100
B16-102	69	157.9	15	300	30	284	14	<1 mm	100
B16-102	70	158.9	52	338	68	322	52	<1 mm	100
B16-102	71	159.9	46	166	76	149	59	<1 mm	100
B16-102	72	160.7	39	321	51	304	34	<1 mm	100
B16-102	73	161.2	47	323	53	306	36	<1 mm	100
B16-102	74	162.2	41	321	51	305	35	<1 mm	100
B16-102	75	163.4	47	319	49	303	33	<1 mm	100
B16-102	76	166.1	68	172	82	156	66	<1 mm	100
B16-102	77	169.3	70	134	44	117	27	<1 mm	100
B16-102	78	170.9	34	2	272	346	76	<1 mm	100
B16-102	79	173.6	42	358	88	342	72	<1 mm	100
B16-102	80	175.9	13	329	59	313	43	<1 mm	100
B16-102	81	177.3	13	286	16	269	359	<1 mm	100
B16-102	82	178.3	12	299	29	283	13	<1 mm	100
B16-102	83	182.2	34	186	276	170	80	<1 mm	100
B16-102	84	183.8	24	193	283	176	86	<1 mm	100
B16-102	85	185.4	60	158	68	141	51	<1 mm	100
B16-102	86	186.2	19	6	276	350	80	<1 mm	100
B16-102	87	188.3	12	138	48	122	32	<1 mm	100
B16-102	88	191.3	26	290	20	274	4	<1 mm	100
B16-102	89	192.0	19	353	83	336	66	<1 mm	100
B16-102	90	193.2	50	317	47	301	31	<1 mm	100
B16-102	91	194.8	12	180	270	164	74	<1 mm	100
B16-102	92	197.5	80	339	69	323	53	<1 mm	100
B16-102	93	203.4	29	8	278	351	81	<1 mm	100
B16-102	94	208.7	81	334	64	317	47	<1 mm	100
B16-102	95	213.5	27	14	284	358	88	<1 mm	100
B16-102	96	216.0	64	345	75	329	59	<1 mm	100
B16-102	97	218.7	23	325	55	309	39	<1 mm	100
B16-102	98	221.7	52	52	322	35	305	3	100
B16-102	99	231.2	14	344	74	327	57	<1 mm	100
B16-102	100	231.6	14	333	63	317	47	<1 mm	100
B16-102	101	232.0	71	38	308	22	292	<1 mm	100

Category 100 = planar feature (possible fracture, joint, foliation, bedding, etc.)
Category 107 = Likely water bearing feature
Category 108 = Possible water bearing fracture

ATTACHMENT E

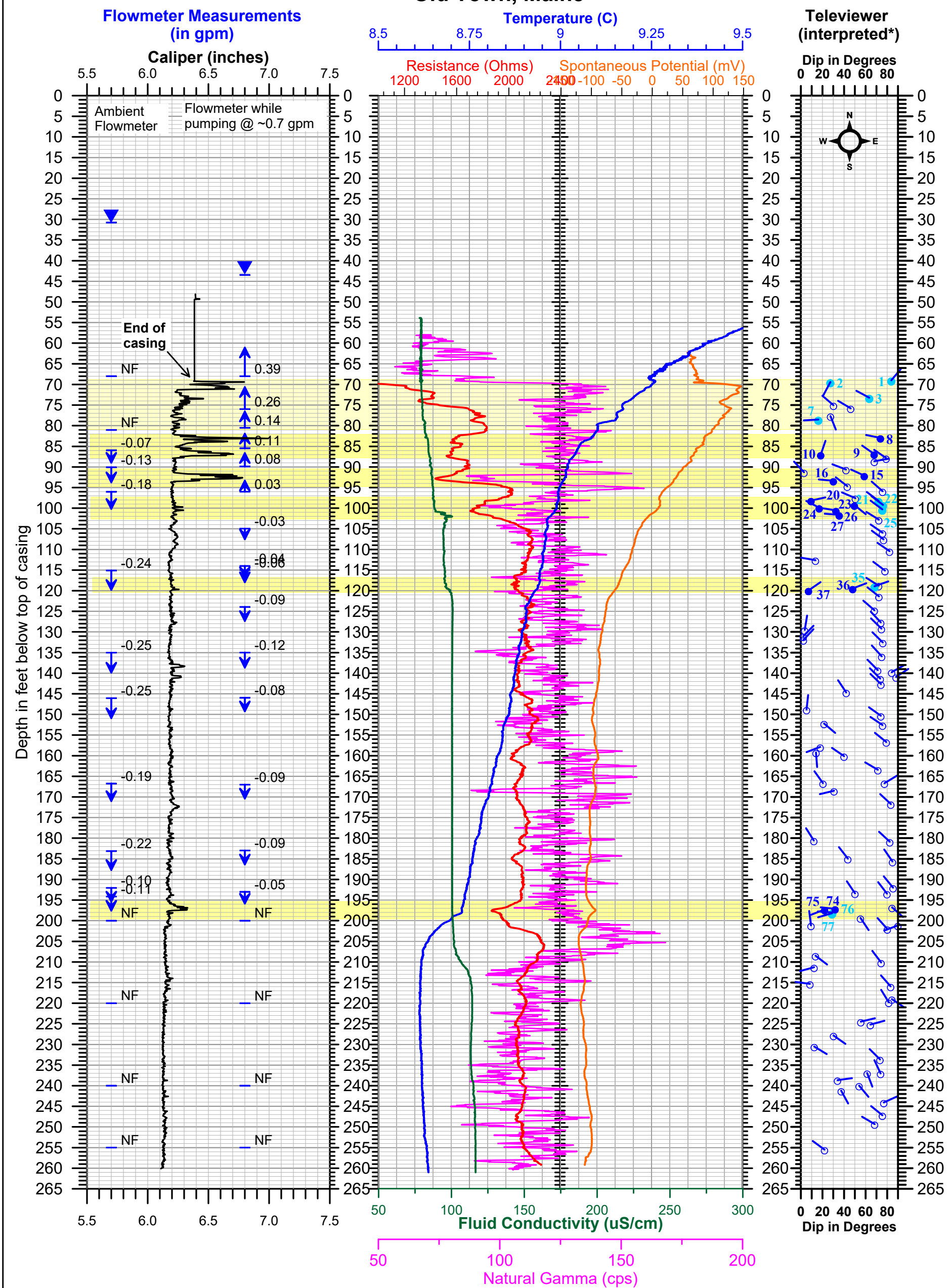
B16-103

BOREHOLE GEOPHYSICAL LOGS

Northeast Geophysical Services

Plate E-1
B16-103
Juniper Ridge Site
Old Town, Maine

Date logged: 3/22/16



= Likely transmissive zone

= possible transmissive zone

The dip direction is indicated by the line extending from the circle. The strike of the feature is 90 degrees from this.

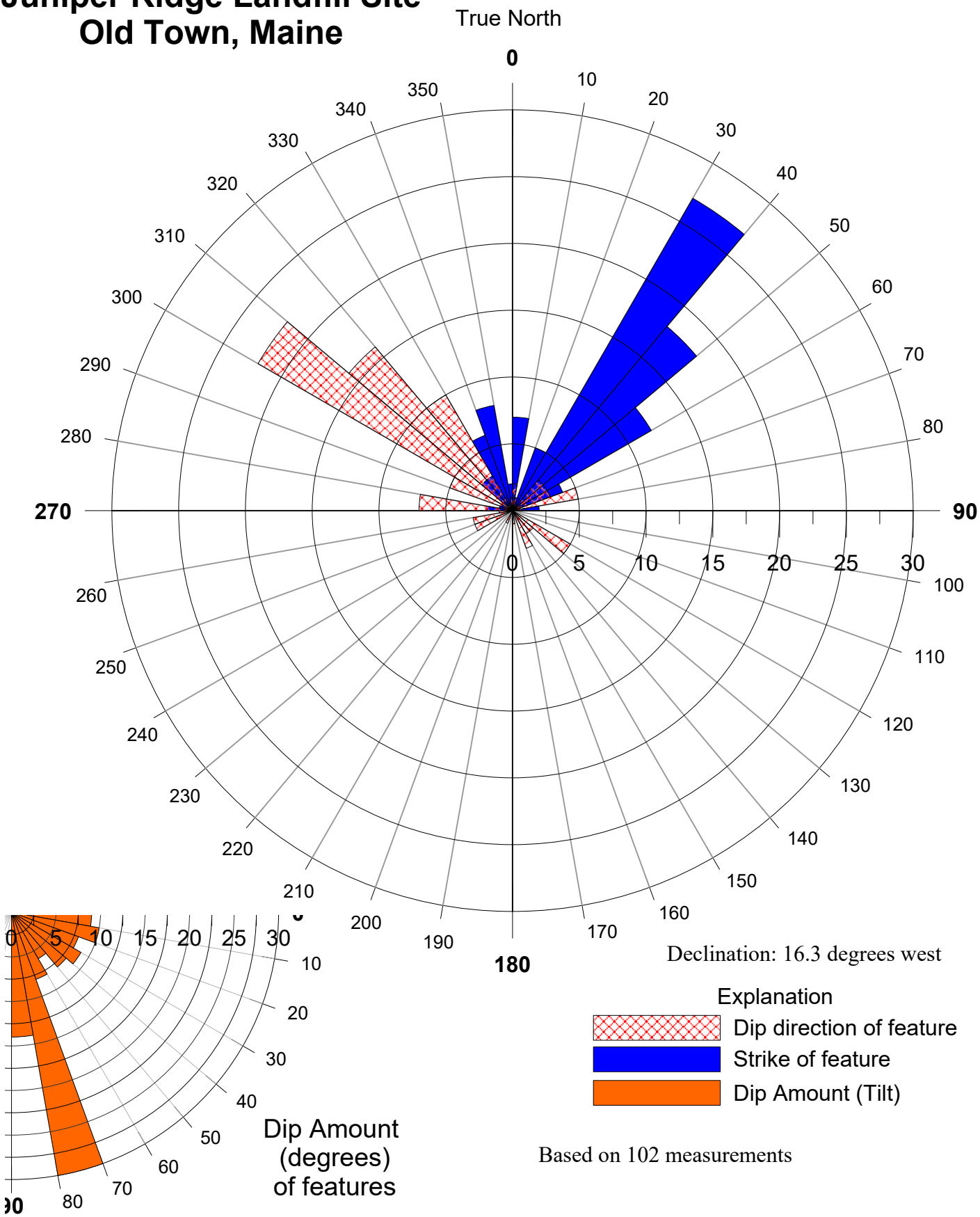
Plate E-1
B16-103
Juniper Ridge Site
Old Town, Maine

Date logged: 3/22/16

Northeast Geophysical Services

B16-103
Juniper Ridge Landfill Site
Old Town, Maine

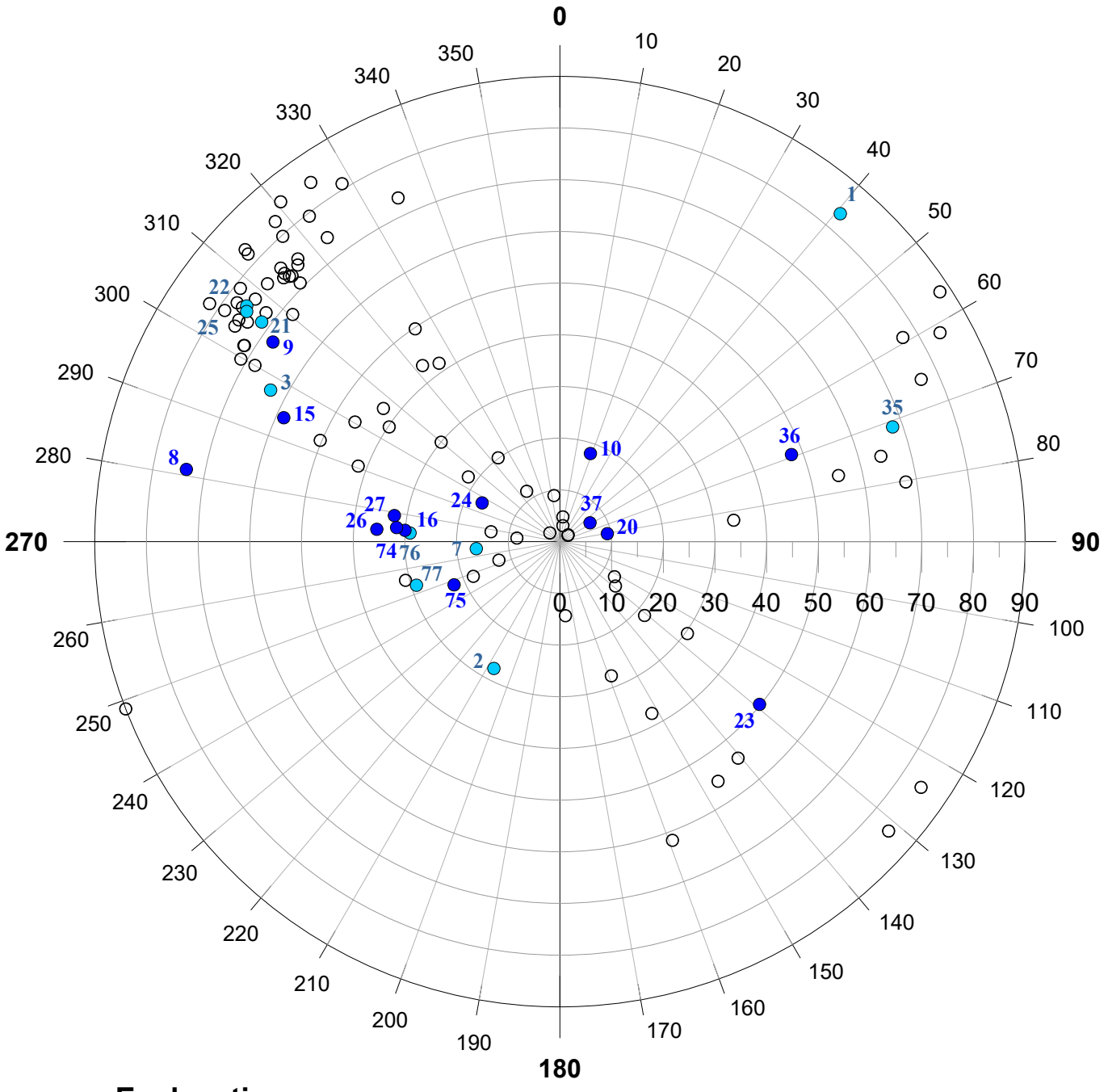
PLATE E-2
Strike and Dip Direction
of all features



Northeast Geophysical Services

B16-103
Juniper Ridge Landfill Site
Old Town, Maine

PLATE E-3
Dip Amount and Dip Azimuth of planar features (upper hemisphere plot)



Explanation -

- Possibly transmissive
- Likely transmissive
- possible joint, fracture, bedding or foliation

Declination: 16.3 degrees west

Based on 102 measurements

Northeast Geophysical Services
4 Union Street Bangor, Maine 04401
Tel. 207-942-2700
email: ngsinc@negeophysical.com

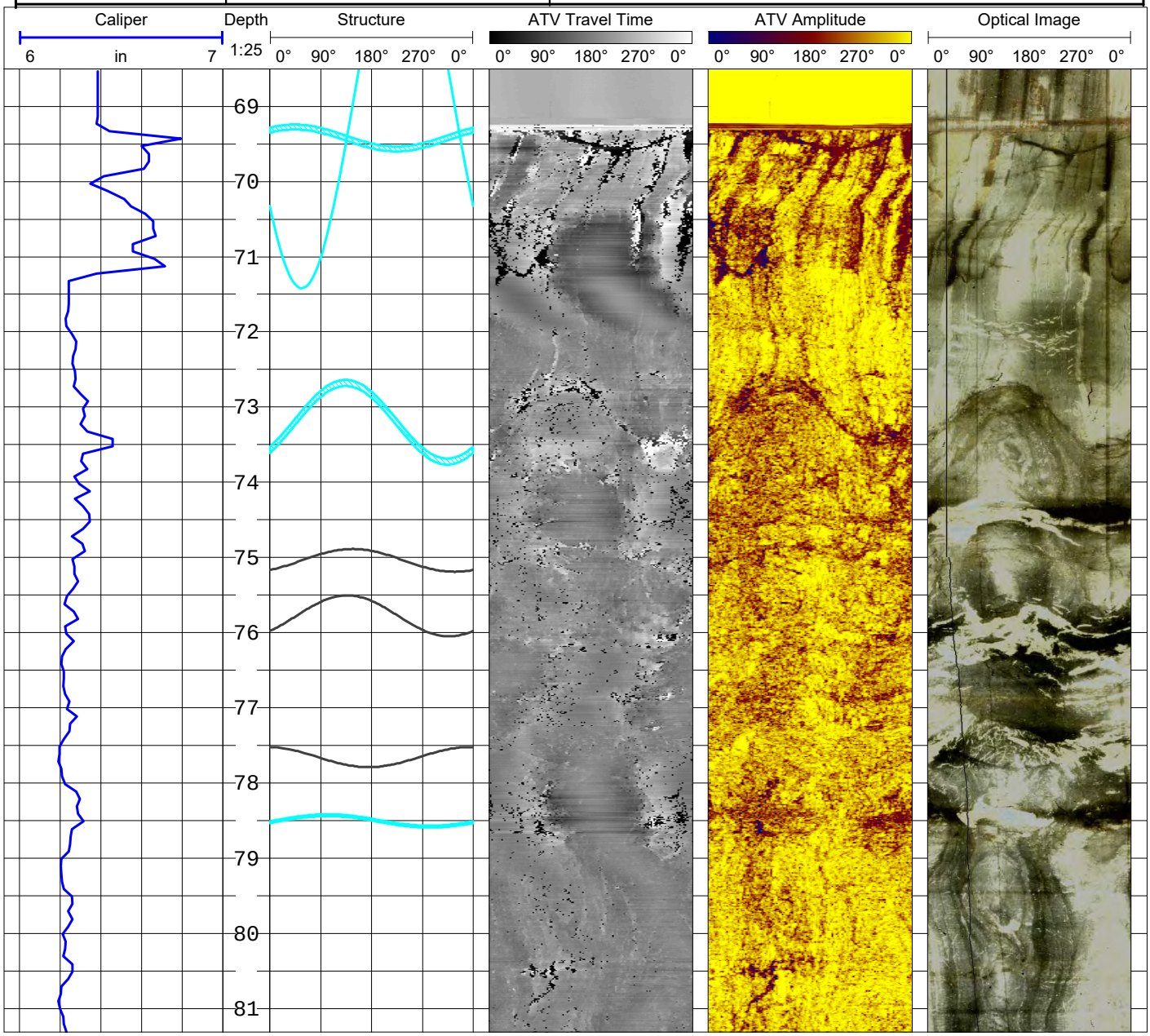
Log: Plate E-4 Televiewer & Caliper Logs

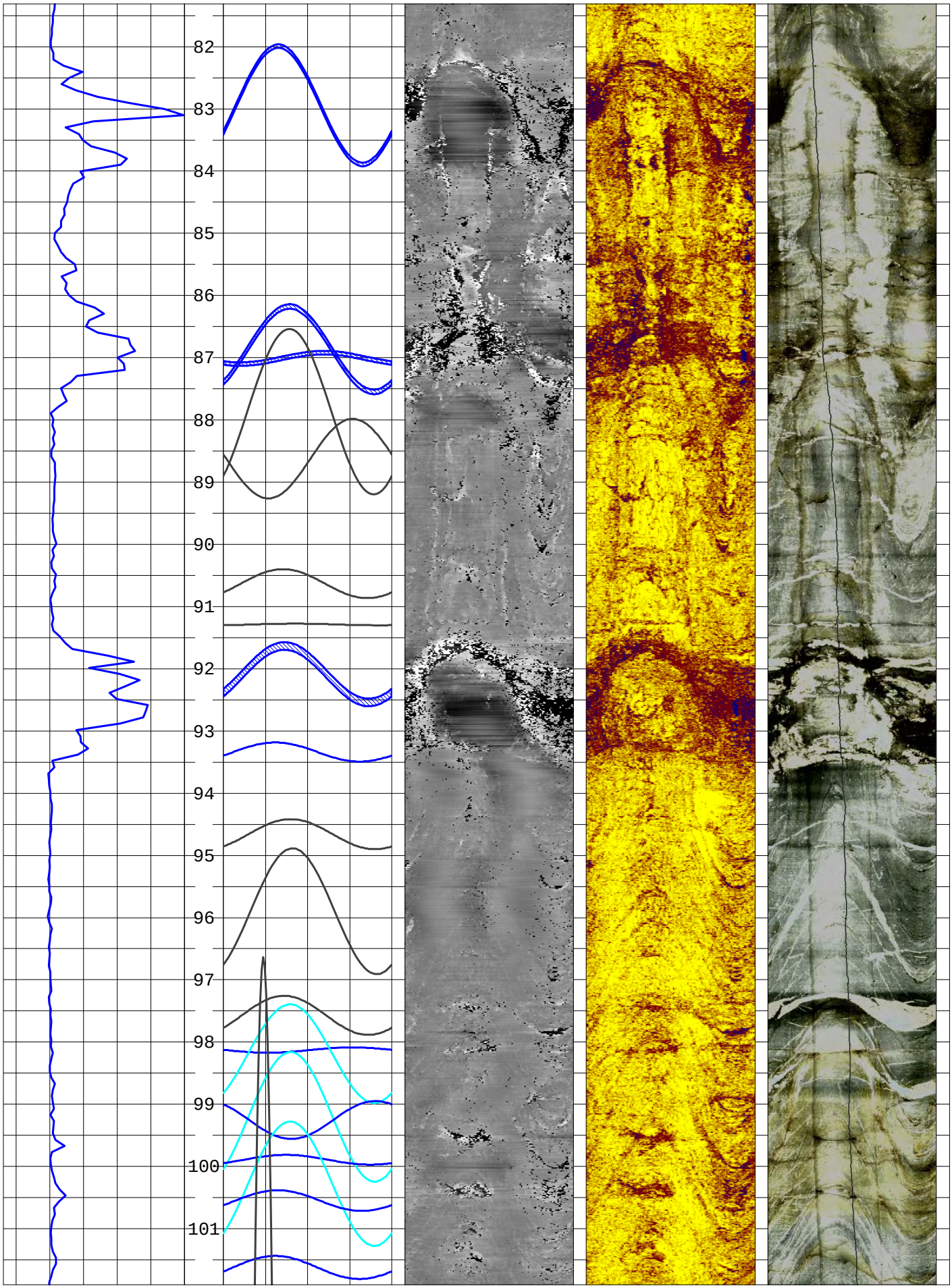
Well: B16-103

Site: Juniper Ridge Site

Location: Old Town, Maine

Date:	3/22/2016		
Casing Depth:	69.0 ft	For:	SME
Casing Type:	6 in	Logged by:	R. Rawcliffe
Boring Depth:	261.10 ft	Orientation:	magnetic
Meas. From:	top of casing	Structure Plots:	
Stickup:	1.52 ft	black = planar features (faults, foliation, bedding, joints, etc) light blue = possibly transmissive fracture dark blue = likely transmissive fracture	
Water Level:	32.94 ft		

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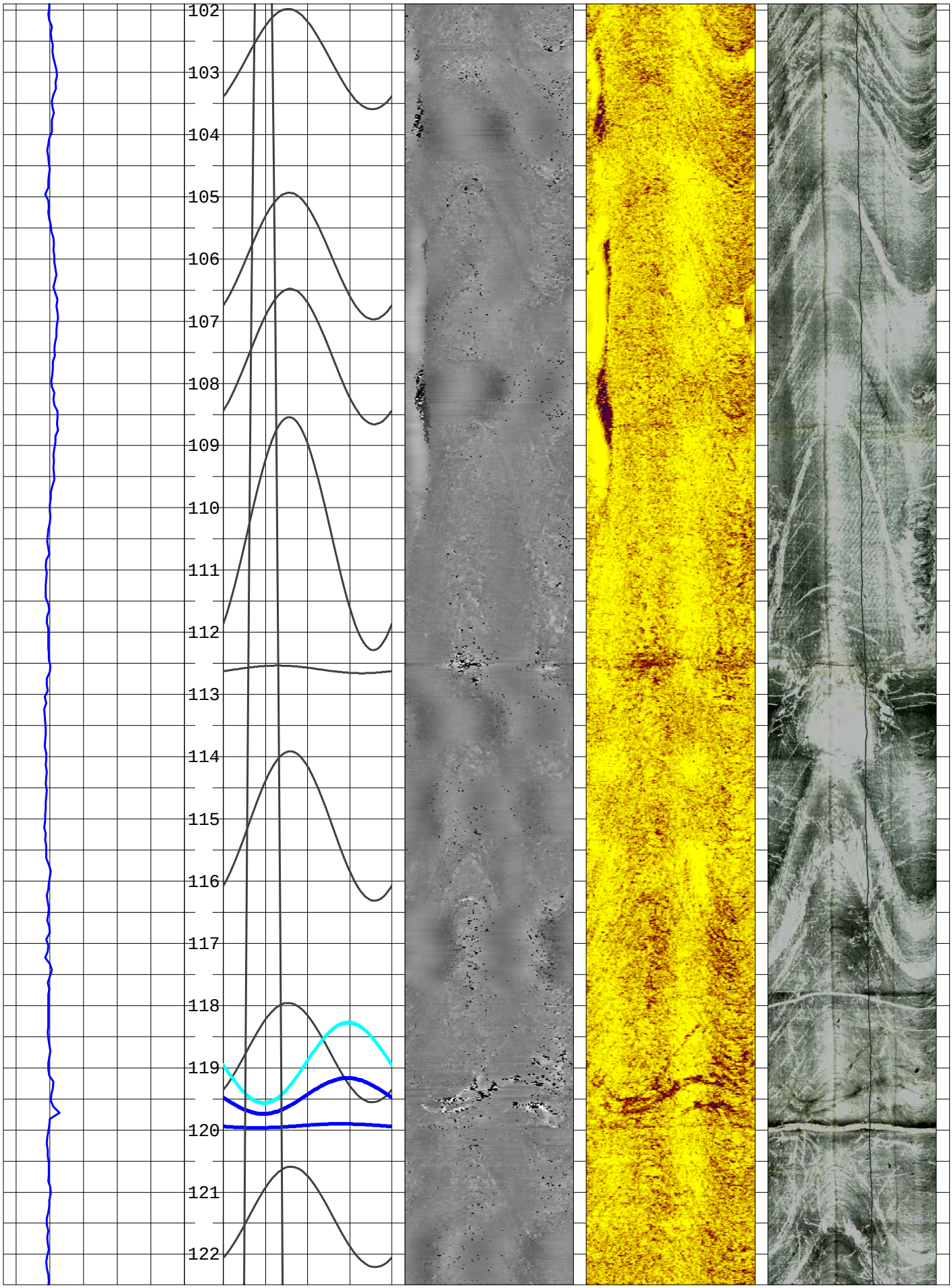
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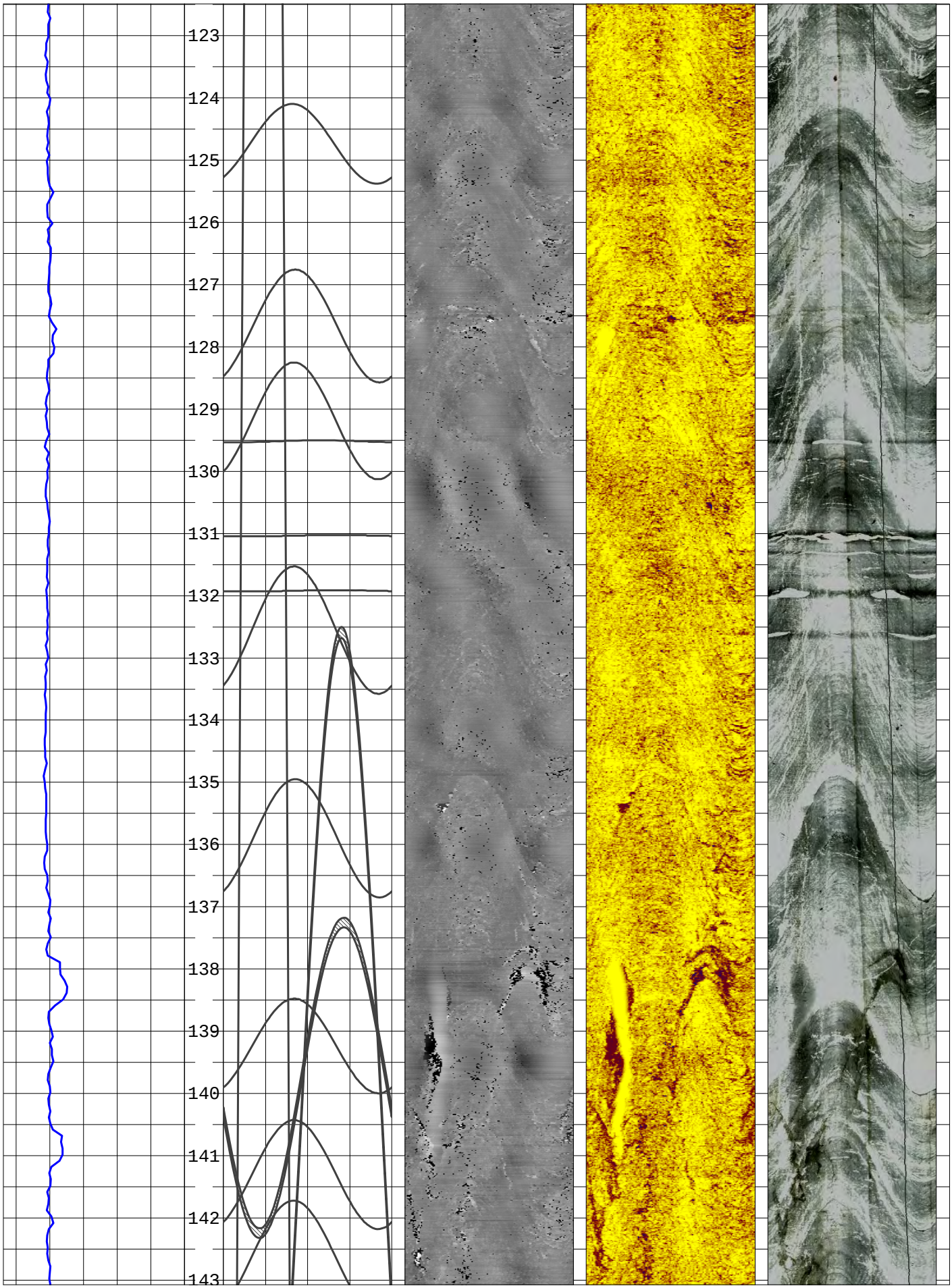
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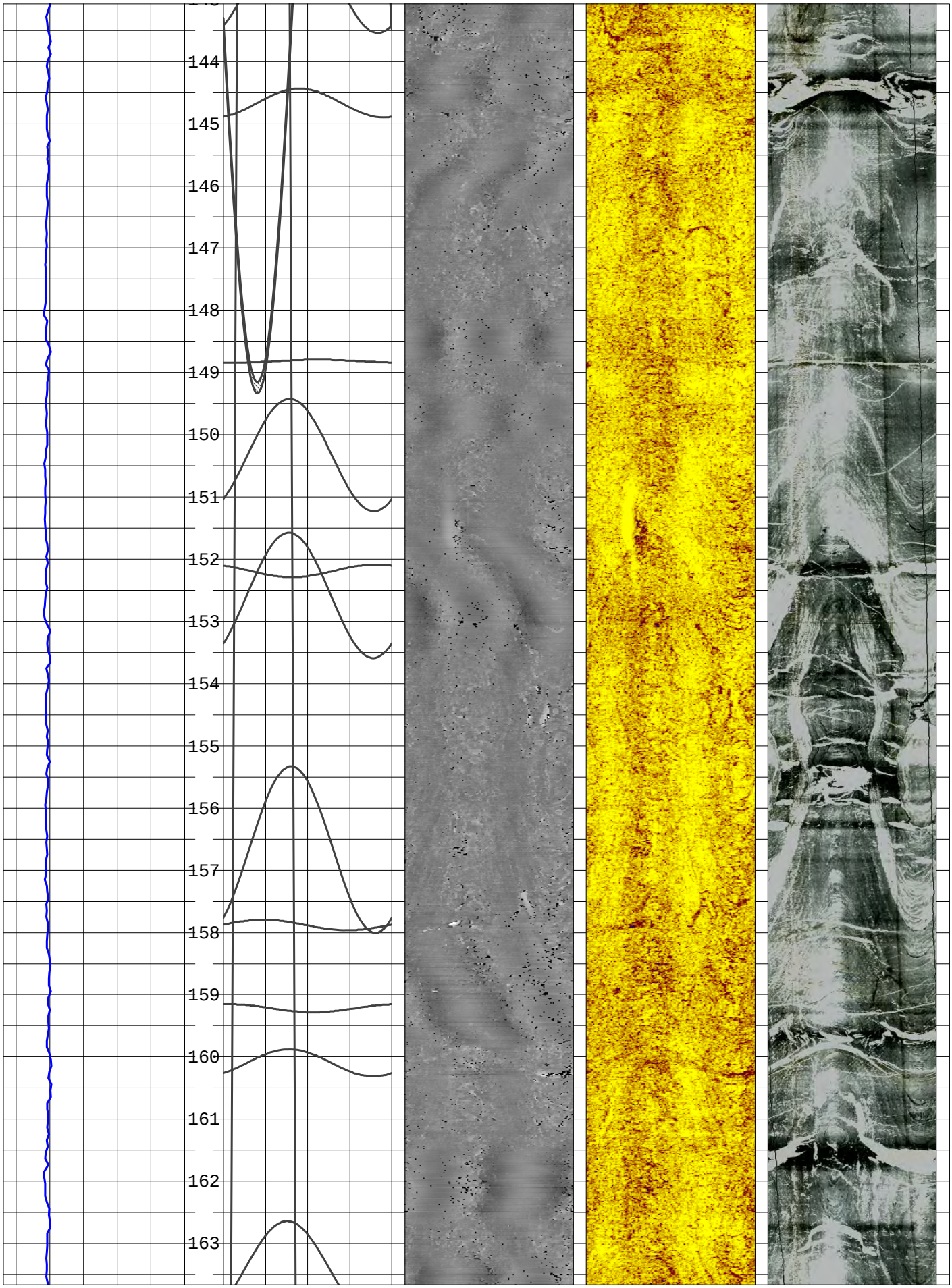
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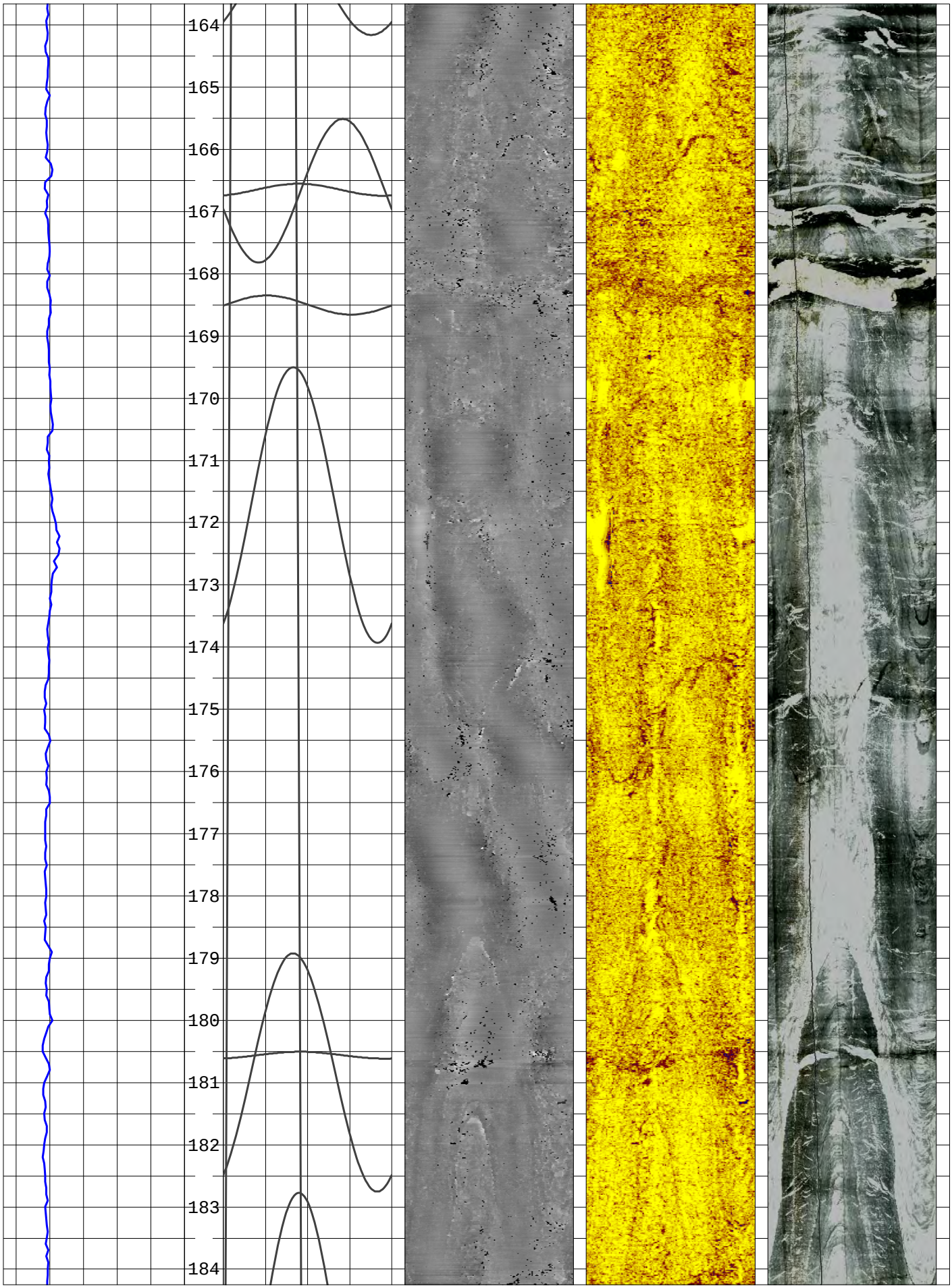
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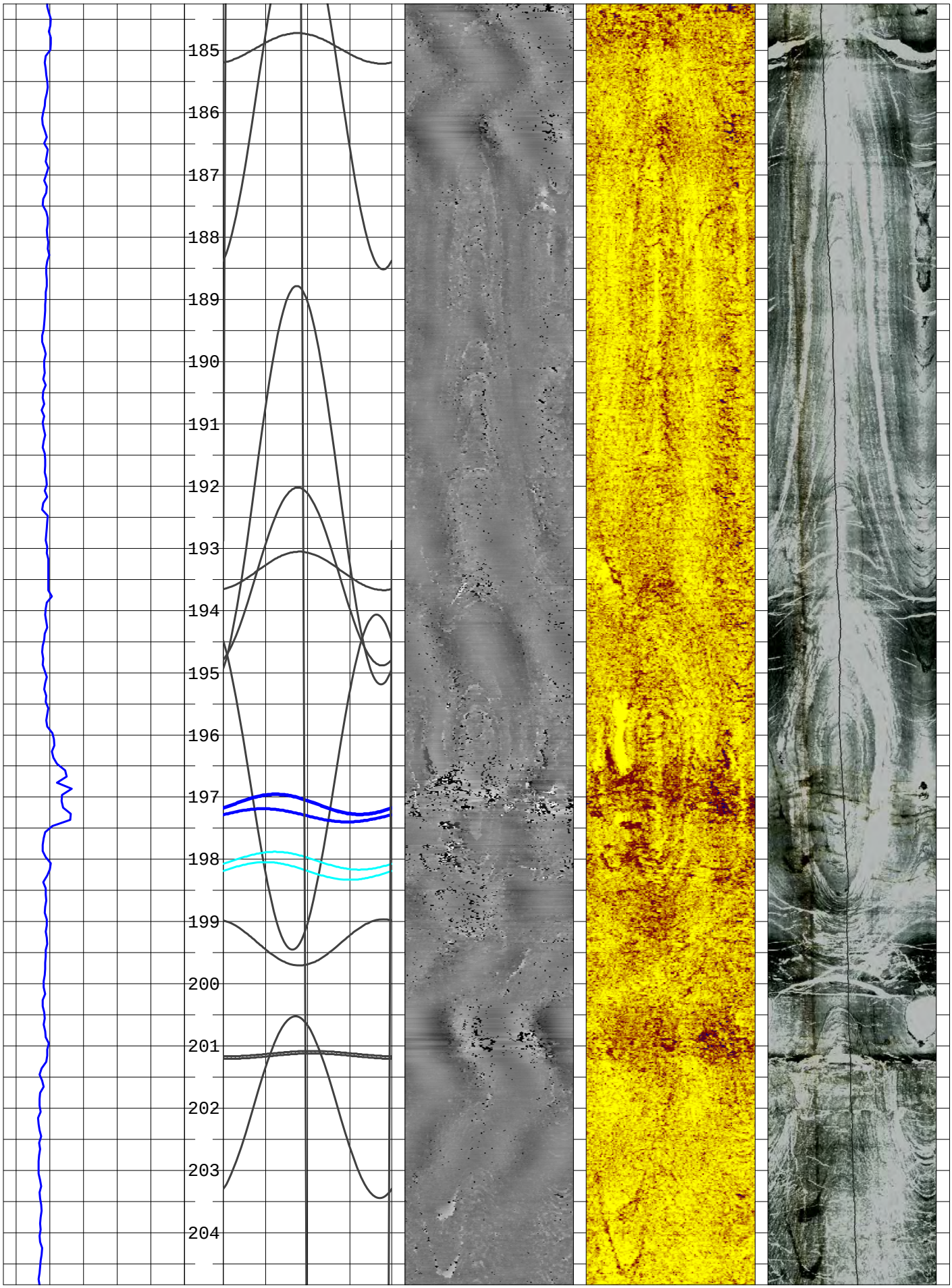
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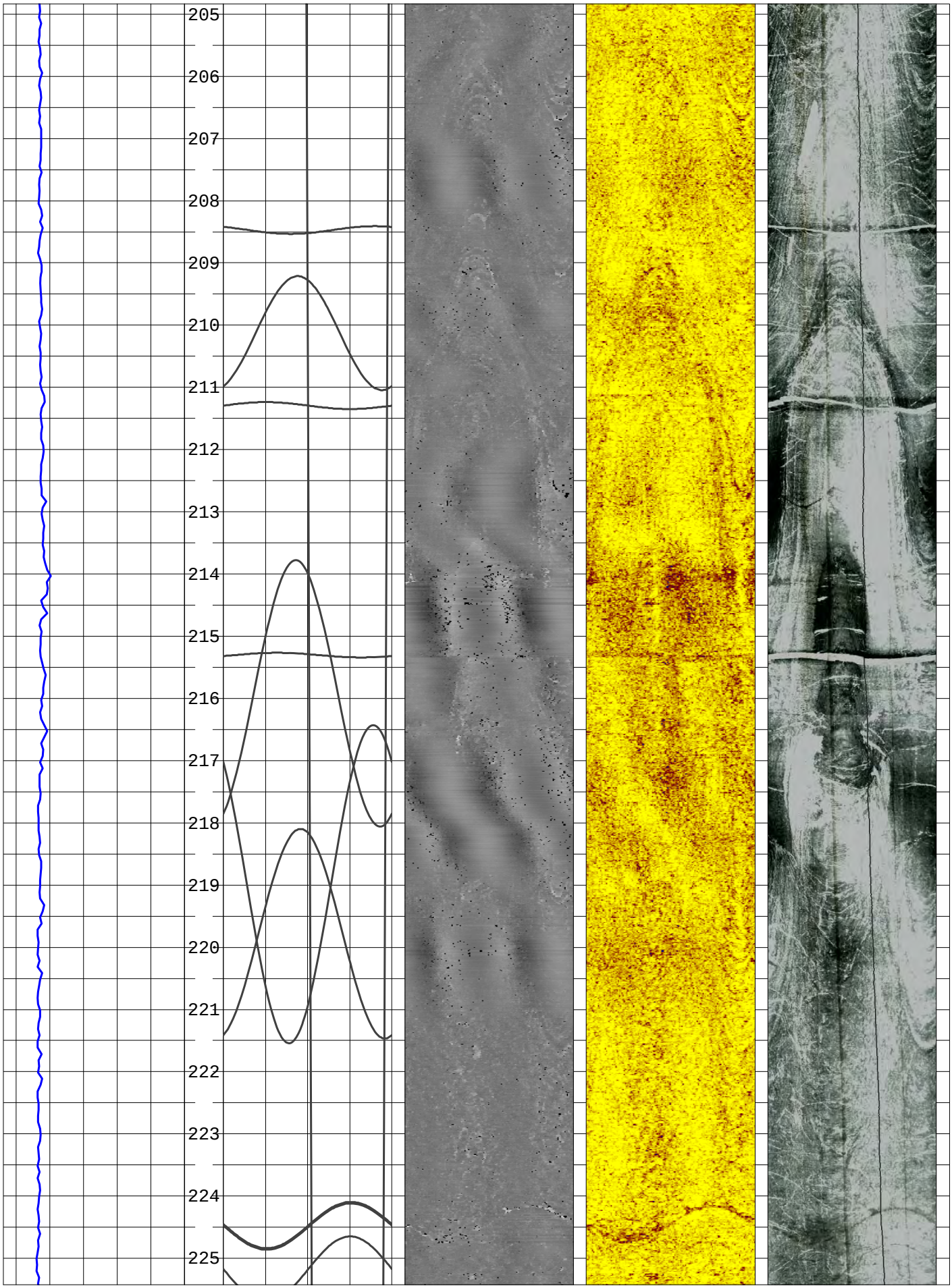
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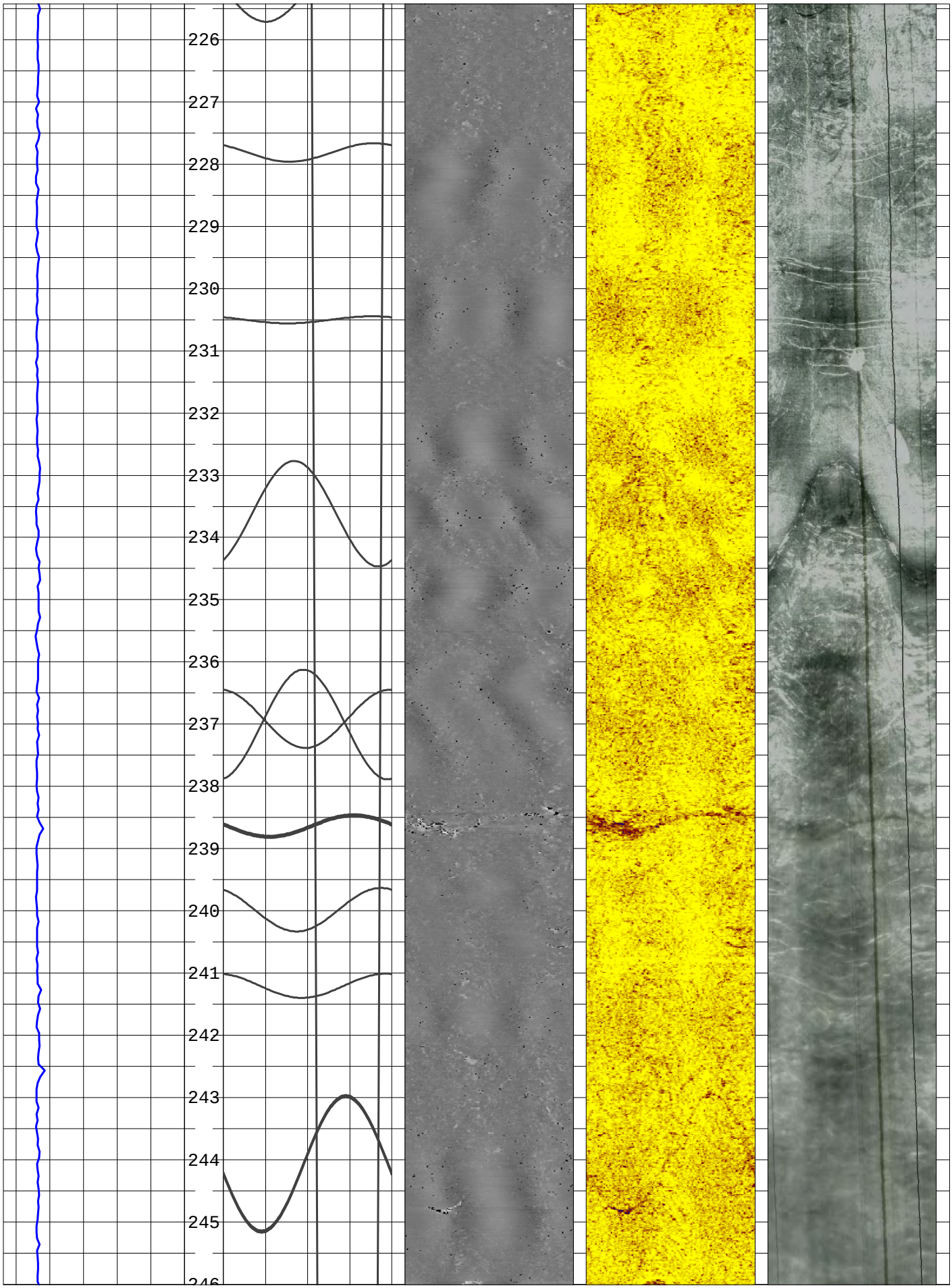
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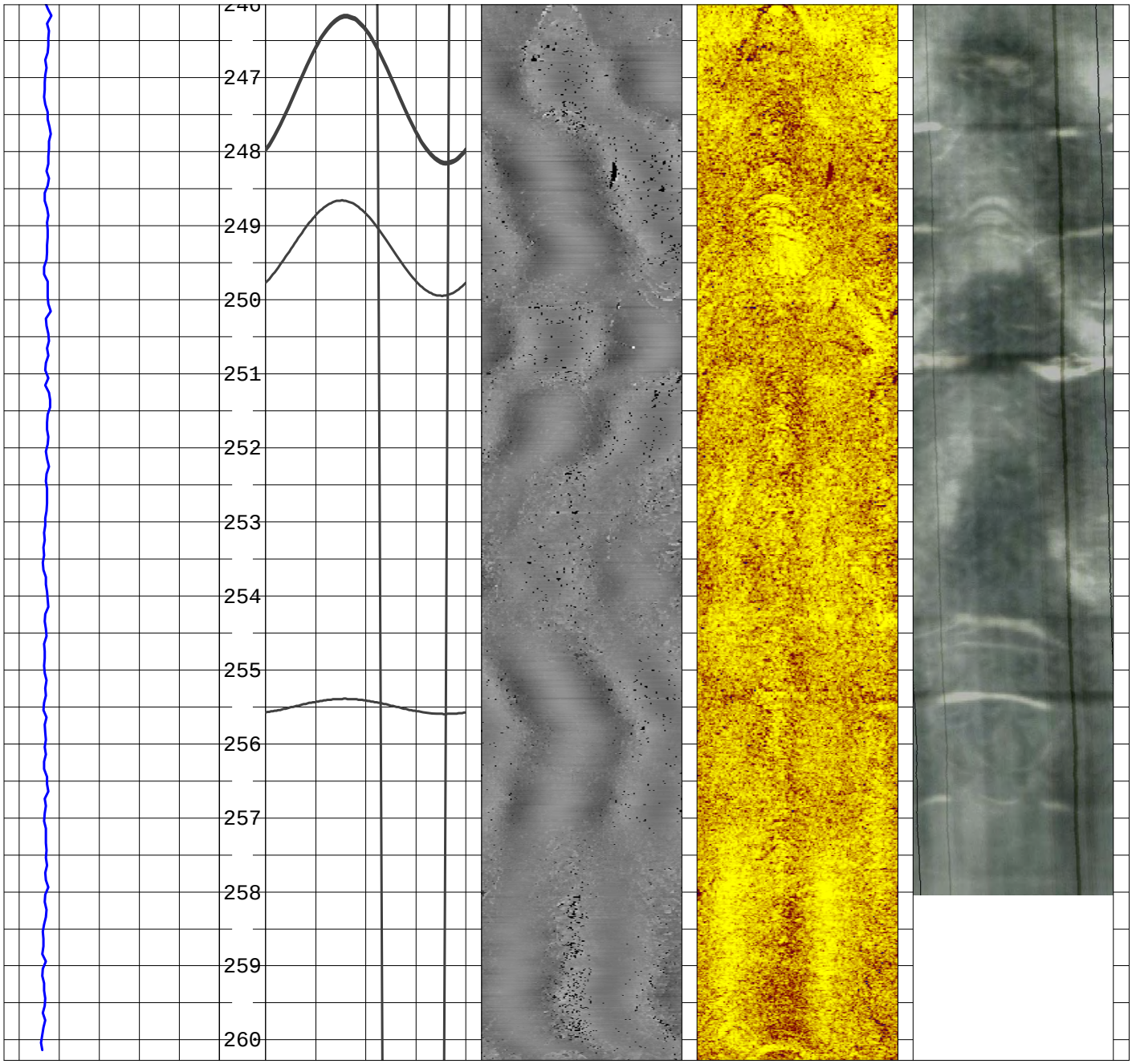
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TABLE E-1 Planar features interpreted from acoustical and optical televiewers
B16-103- Juniper Ridge Site - Old Town, Maine **March, 2016**
Declination: 16.3 degrees west

Borehole	Feature # Number	Feature depth Feet	Dip Degrees	Dip Azimuth magnetic	Strike magnetic	Dip Azimuth True	Strike True	Aperture mm	Category Type
B16-103	1	69.0	84	57	327	40	310	<1 mm	108
B16-103	2	69.4	27	224	314	208	298	18	108
B16-103	3	73.2	63	314	44	298	28	11	108
B16-103	4	75.0	30	327	57	311	41	<1 mm	100
B16-103	5	75.8	46	317	47	301	31	<1 mm	100
B16-103	6	77.7	27	175	85	159	69	<1 mm	100
B16-103	7	78.5	16	283	13	267	357	8	108
B16-103	8	82.9	74	298	28	281	11	5	107
B16-103	9	86.9	68	321	51	305	35	8	107
B16-103	10	87.0	18	35	305	19	289	15	107
B16-103	11	87.9	79	321	51	305	35	<1 mm	100
B16-103	12	88.6	68	96	6	80	350	<1 mm	100
B16-103	13	90.6	42	307	37	291	21	<1 mm	100
B16-103	14	91.3	3	333	63	317	47	<1 mm	100
B16-103	15	92.1	59	311	41	295	25	20	107
B16-103	16	93.3	30	291	21	275	5	<1 mm	107
B16-103	17	94.7	43	324	54	307	37	<1 mm	100
B16-103	18	95.9	76	328	58	312	42	<1 mm	100
B16-103	19	97.6	51	310	40	293	23	<1 mm	100
B16-103	20	98.1	9	94	4	78	348	<1 mm	107
B16-103	21	98.2	72	323	53	307	37	<1 mm	108
B16-103	22	99.2	76	323	53	307	37	<1 mm	108
B16-103	23	99.3	50	145	55	129	39	<1 mm	107
B16-103	24	99.9	17	314	44	298	28	<1 mm	107
B16-103	25	100.3	75	323	53	307	37	<1 mm	108
B16-103	26	100.6	32	296	26	280	10	<1 mm	107
B16-103	27	101.6	36	291	21	274	4	<1 mm	107
B16-103	28	102.8	72	318	48	302	32	<1 mm	100
B16-103	29	106.0	76	321	51	305	35	<1 mm	100
B16-103	30	107.6	77	323	53	307	37	<1 mm	100
B16-103	31	110.4	82	321	51	304	34	<1 mm	100
B16-103	32	112.6	14	296	26	280	10	<1 mm	100
B16-103	33	115.1	78	323	53	307	37	<1 mm	100
B16-103	34	118.8	72	318	48	302	32	<1 mm	100
B16-103	35	118.9	68	87	357	71	341	4	108
B16-103	36	119.5	48	85	355	69	339	6	107
B16-103	37	119.9	7	72	342	55	325	6	107
B16-103	38	121.4	72	324	54	308	38	<1 mm	100
B16-103	39	124.7	68	327	57	311	41	<1 mm	100
B16-103	40	127.7	74	333	63	317	47	<1 mm	100
B16-103	41	129.2	75	331	61	314	44	<1 mm	100
B16-103	42	129.5	4	26	296	9	279	<1 mm	100
B16-103	43	131.0	2	60	330	44	314	<1 mm	100
B16-103	44	131.9	2	60	330	43	313	<1 mm	100
B16-103	45	132.6	76	331	61	315	45	<1 mm	100
B16-103	46	135.9	75	334	64	317	47	<1 mm	100
B16-103	47	139.2	71	331	61	315	45	<1 mm	100
B16-103	48	139.8	84	77	347	61	331	5	100
B16-103	49	140.9	88	73	343	56	326	2	100
B16-103	50	141.3	74	331	61	315	45	<1 mm	100
B16-103	51	142.6	74	330	60	314	44	<1 mm	100
B16-103	52	144.7	42	343	73	326	56	<1 mm	100
B16-103	53	148.8	5	23	293	6	276	<1 mm	100
B16-103	54	150.3	74	322	52	305	35	<1 mm	100
B16-103	55	152.2	21	147	57	130	40	<1 mm	100

TABLE E-1 Planar features interpreted from acoustical and optical televiewers
B16-103- Juniper Ridge Site - Old Town, Maine **March, 2016**

Declination: 16.3 degrees west

Borehole	Feature # Number	Feature depth Feet	Dip Degrees	Dip Azimuth magnetic	Strike magnetic	Dip Azimuth True	Strike True	Aperture mm	Category Type
B16-103	56	152.6	76	320	50	304	34	<1 mm	100
B16-103	57	156.7	79	325	55	309	39	<1 mm	100
B16-103	58	157.9	18	266	356	249	339	<1 mm	100
B16-103	59	159.2	14	192	282	176	86	<1 mm	100
B16-103	60	160.1	40	321	51	304	34	<1 mm	100
B16-103	61	163.4	71	316	46	300	30	<1 mm	100
B16-103	62	166.7	20	341	71	324	54	<1 mm	100
B16-103	63	166.7	77	75	345	59	329	<1 mm	100
B16-103	64	168.5	31	273	3	257	347	<1 mm	100
B16-103	65	171.7	83	329	59	313	43	<1 mm	100
B16-103	66	180.6	12	344	74	328	58	<1 mm	100
B16-103	67	180.8	82	329	59	313	43	<1 mm	100
B16-103	68	185.0	44	339	69	322	52	<1 mm	100
B16-103	69	185.7	85	342	72	325	55	<1 mm	100
B16-103	70	192.0	85	337	67	321	51	<1 mm	100
B16-103	71	193.4	50	342	72	326	56	<1 mm	100
B16-103	72	193.5	80	339	69	323	53	<1 mm	100
B16-103	73	196.8	84	147	57	131	41	<1 mm	100
B16-103	74	197.1	32	292	22	276	6	6	107
B16-103	75	197.3	22	265	355	249	339	6	107
B16-103	76	198.0	29	290	20	274	4	<1 mm	108
B16-103	77	198.2	29	270	0	254	344	<1 mm	108
B16-103	78	199.3	55	163	73	146	56	<1 mm	100
B16-103	79	201.1	90	265	355	249	339	<1 mm	100
B16-103	80	201.1	9	9	279	353	83	13	100
B16-103	81	202.0	80	334	64	318	48	<1 mm	100
B16-103	82	208.5	14	144	54	127	37	<1 mm	100
B16-103	83	210.1	74	339	69	323	53	<1 mm	100
B16-103	84	211.3	12	271	1	255	345	<1 mm	100
B16-103	85	215.3	8	294	24	277	7	<1 mm	100
B16-103	86	215.9	83	335	65	319	49	<1 mm	100
B16-103	87	219.0	84	140	50	124	34	<1 mm	100
B16-103	88	219.8	81	345	75	329	59	<1 mm	100
B16-103	89	224.5	56	93	3	76	346	4	100
B16-103	90	225.2	64	91	1	75	345	<1 mm	100
B16-103	91	227.8	30	141	51	125	35	<1 mm	100
B16-103	92	230.5	12	137	47	121	31	<1 mm	100
B16-103	93	233.6	73	331	61	315	45	<1 mm	100
B16-103	94	236.9	61	176	86	159	69	<1 mm	100
B16-103	95	237.0	74	351	81	335	65	<1 mm	100
B16-103	96	238.6	34	99	9	82	352	8	100
B16-103	97	240.0	54	157	67	140	50	<1 mm	100
B16-103	98	241.2	37	168	78	152	62	<1 mm	100
B16-103	99	244.1	77	82	352	66	336	3	100
B16-103	100	247.2	76	325	55	309	39	3	100
B16-103	101	249.3	68	317	47	300	30	<1 mm	100
B16-103	102	255.5	22	322	52	306	36	<1 mm	100

Category 100 = planar feature (possible fracture, joint, foliation, bedding, etc.)
Category 107 = Likely water bearing feature
Category 108 = Possible water bearing fracture