INL Lithologic Core Storage Library

Idaho National Laboratory
Building CFA-663

Operated by the U.S. Geological Survey for the U.S. Department of Energy

Contact:
Linda C. Davis
PO Box 8072
Pocatello, ID.
83209

Official Name: USGS-131

Logged By: Reuben C. Johnson, Dec. 2003

Selected Aliases:

USGS Site ID: 433036112581601	Total Core Recovered (ft):	County & State: Butte Co., ID
Contractor Well ID:	Beginning Depth (ft): 10.1	Quadrangle Name: Circular Butte 3, NW
Drilling Agency: USGS	Ending Depth (ft): 808.5	Lat / Lng: 43° 30' 36.28" 112° 58' 16.05"
Year Drilled: 2003	[X] Continuous Recovery	Tns / Rng / Sec: 2N 29E 11, CCA1
Names of Drillers: Gilbert and Vance	[ ] Selected Intervals Recovered	UTM Coordinates:
Well Status: Complete	Total # of Core Boxes: 159	Altitude (ft): 4,977 NGVD29
Total Depth of Hole (ft): 808.5	Notes:	

Core Geological Profile

Lithologic Patterns

- Basalts
- Rhyolites
- Sedimentary Rock

Soil Patterns

(See Unified Soil Classification System.)

- Gravels - clean
- Gravels with fines
- Sands - clean
- Sands with fines
- Silts and clays

Intervals in Absentia

- Surficial material
- Natural void
- Interval not cored
- Missing interval

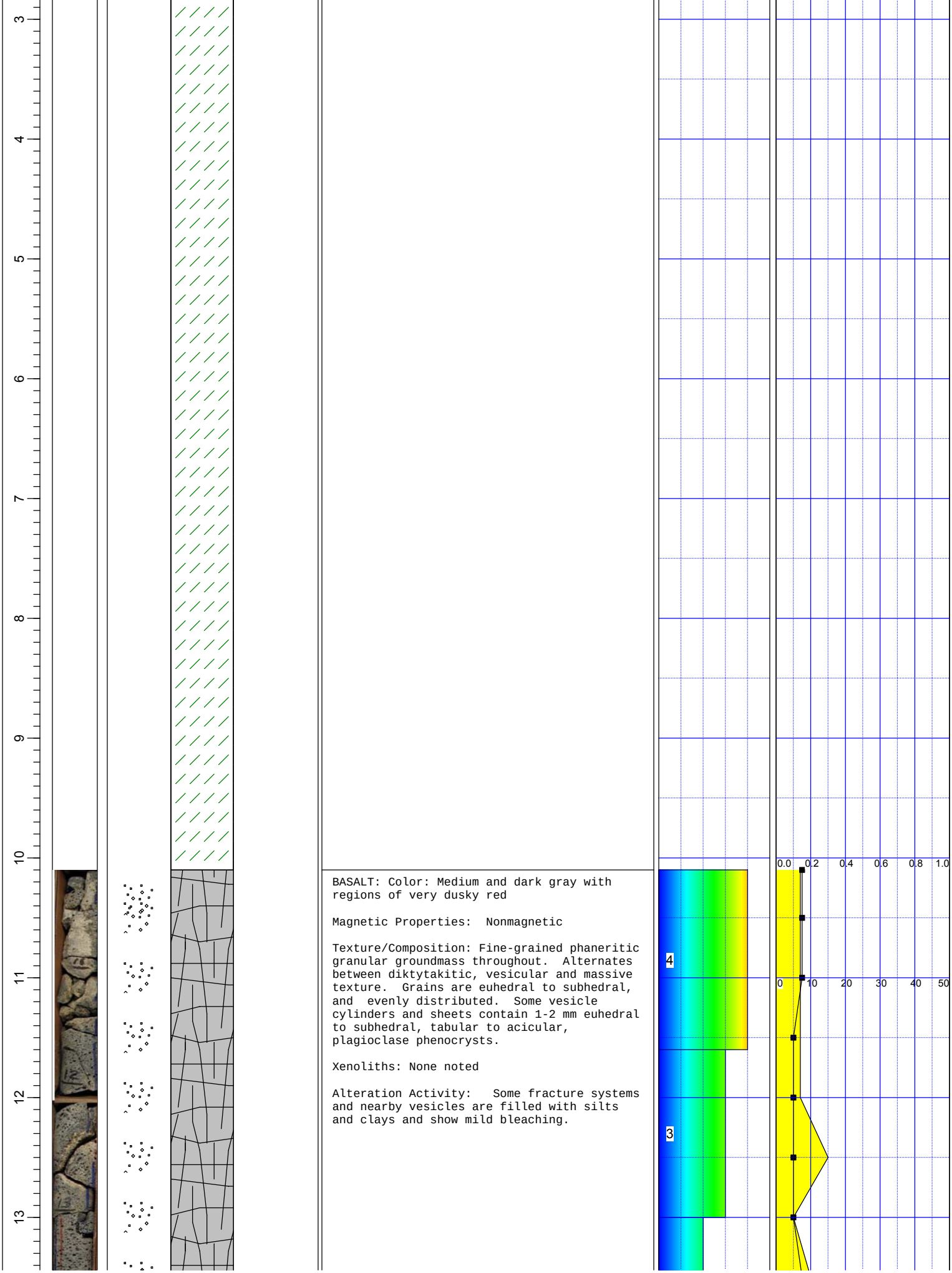
Igneous and Sedimentary Structure Symbols

- Vesicle zone
- Large vesicles
- Vesicle planes
- Mega vesicles
- Vesicle Cylinders
- Pipe vesicles
- Pillows
- Vesicle Sheet
- Flow/Mold
- Spatter feature
- Ripple marks
- Mud cracks
- Imbricated bedding
- Graded bedding
- Cross bedding

Soil Structure Symbols

- Structureless - Single Grained
- Structureless - Massive
- Platy
- Granular
- Blocky
- Prismatic
- Columnar

Depth (feet & tenths)	Core Photo	Igneous, Soil and Sed Structures	Lithology	Description: Miscellaneous Text	Description: Lithologic Description	Fracture Frequency (See fracture classification on website.) 0 1 2 3 4 5	Vesicle Characteristics: Mean Size (in) 0 0.2 0.4 0.6 0.8 1.0; Volume Percentage 0 10 20 30 40 50
0					SURFICIAL MATERIAL: Not Cored. Surficial sediment, modern unconsolidated sands, silts and clays.		
1							
2							



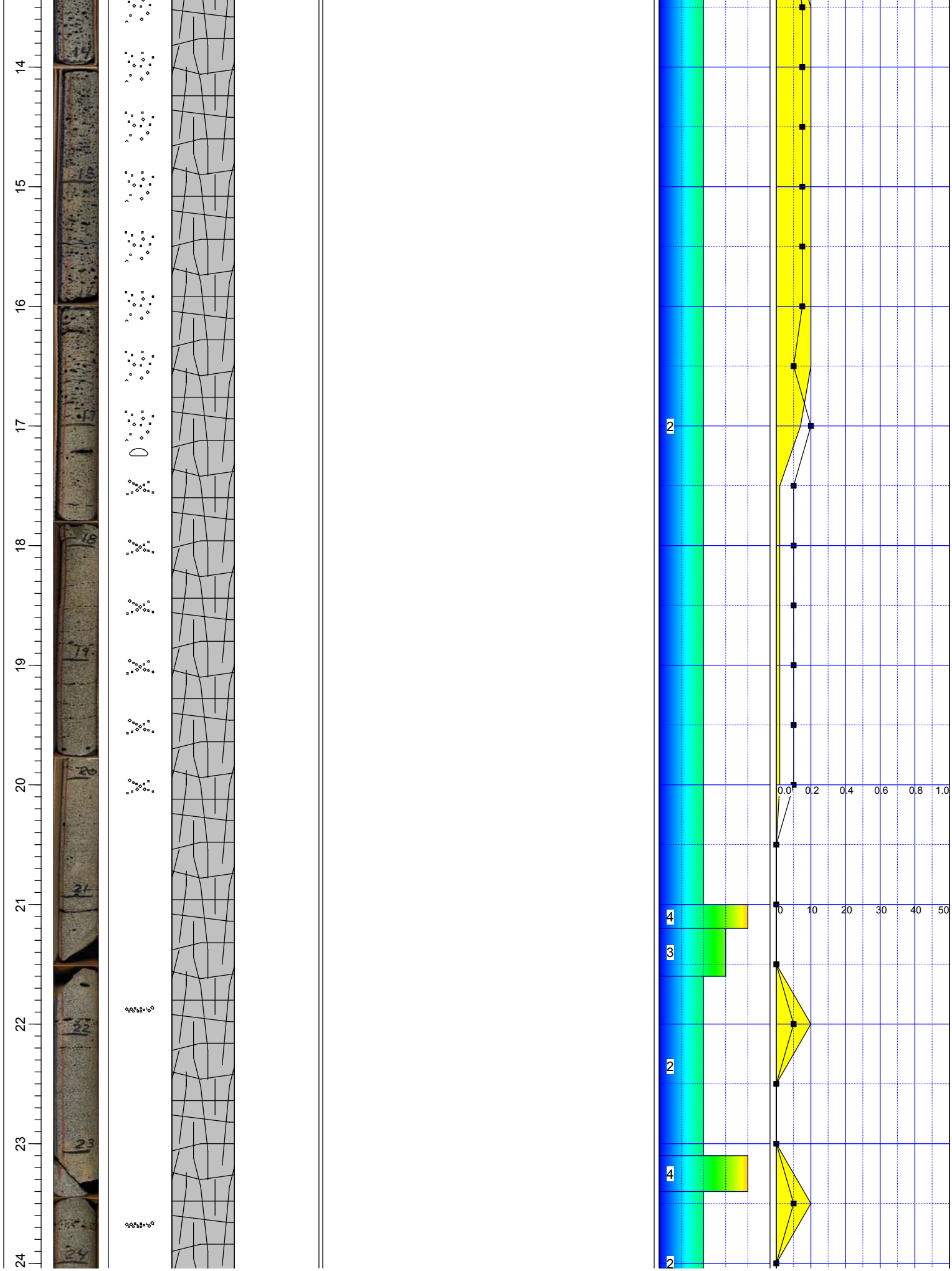
BASALT: Color: Medium and dark gray with regions of very dusky red

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Alternates between diktytakitic, vesicular and massive texture. Grains are euhedral to subhedral, and evenly distributed. Some vesicle cylinders and sheets contain 1-2 mm euhedral to subhedral, tabular to acicular, plagioclase phenocrysts.

Xenoliths: None noted

Alteration Activity: Some fracture systems and nearby vesicles are filled with silts and clays and show mild bleaching.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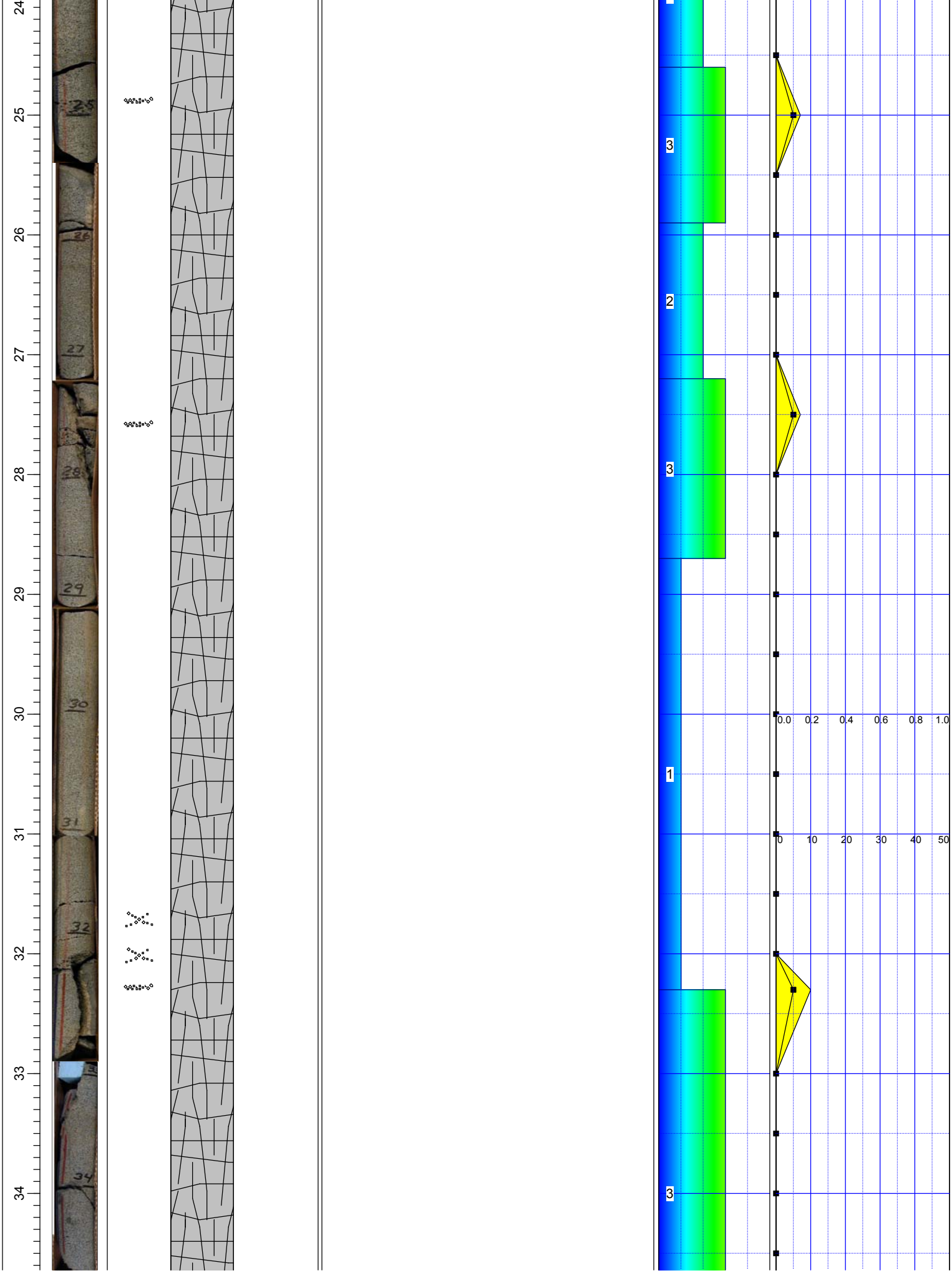
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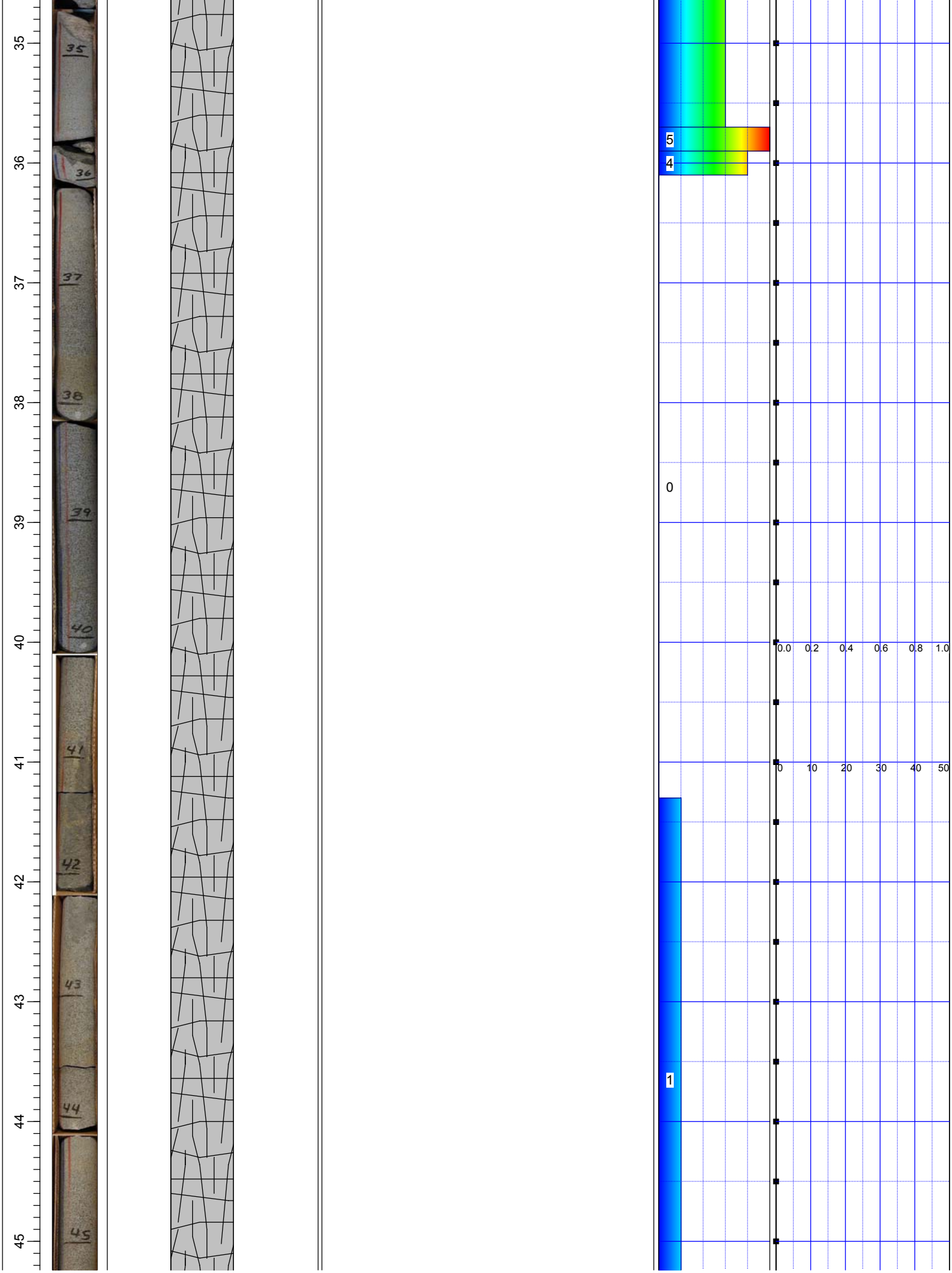
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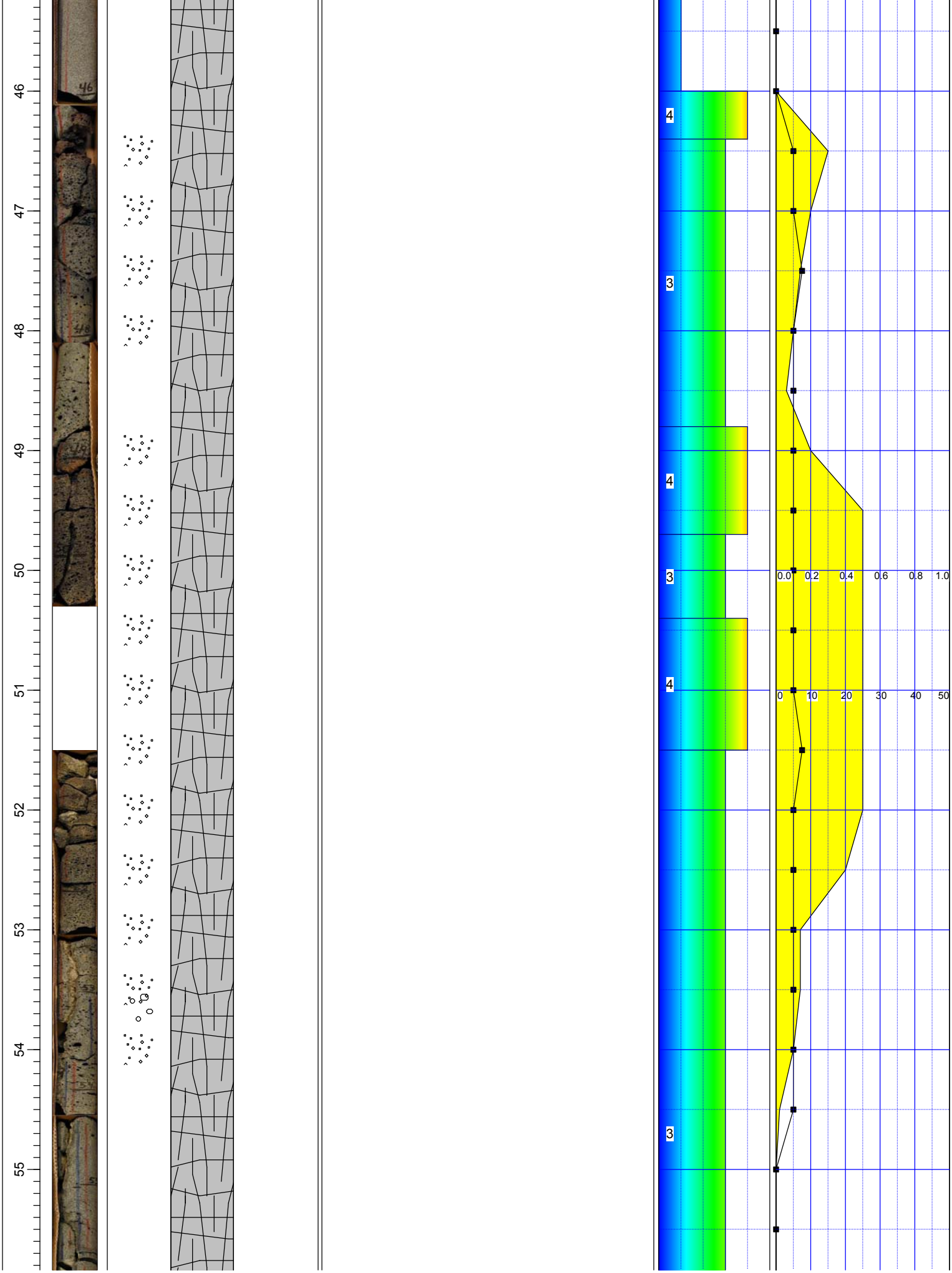
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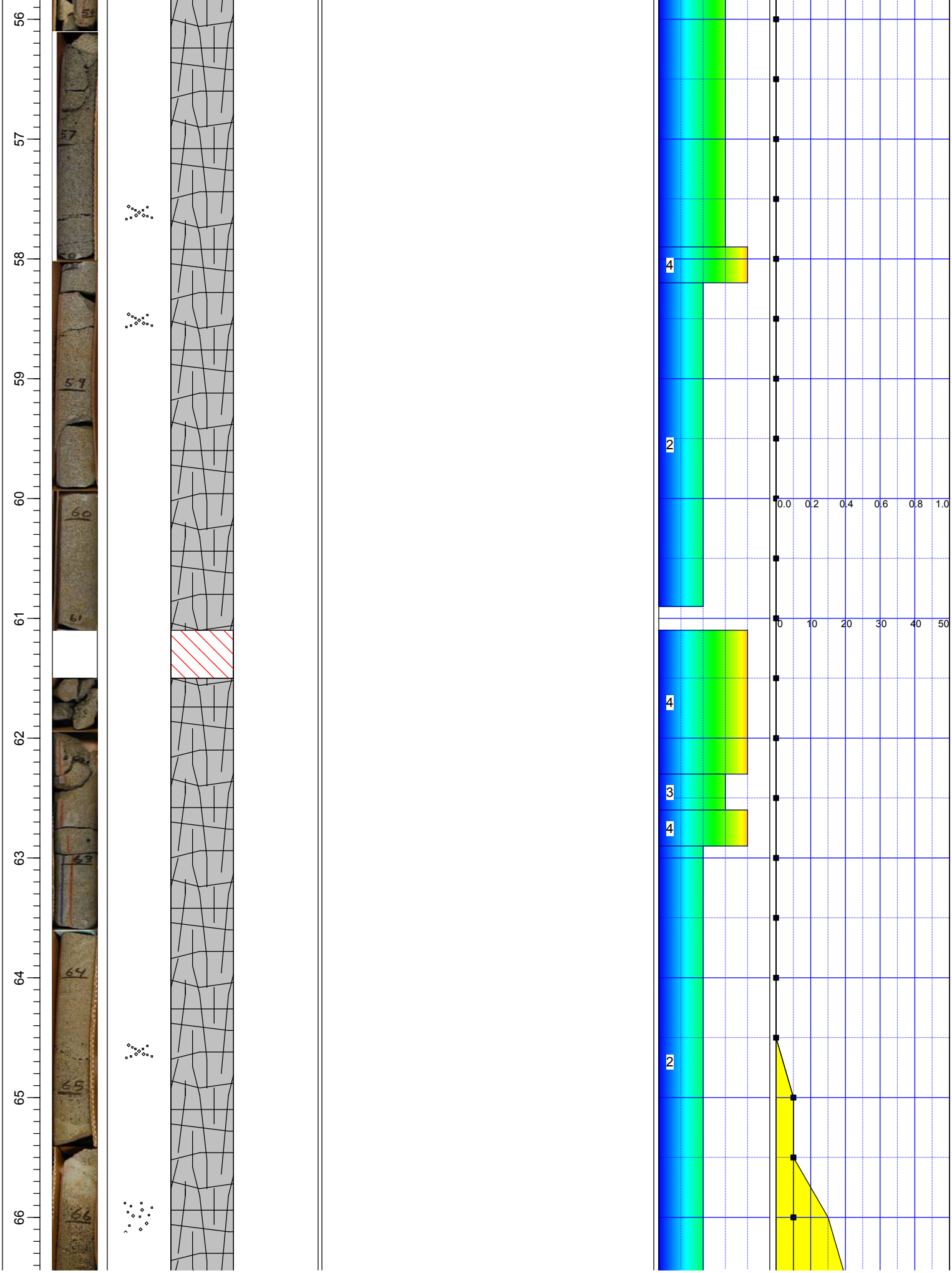
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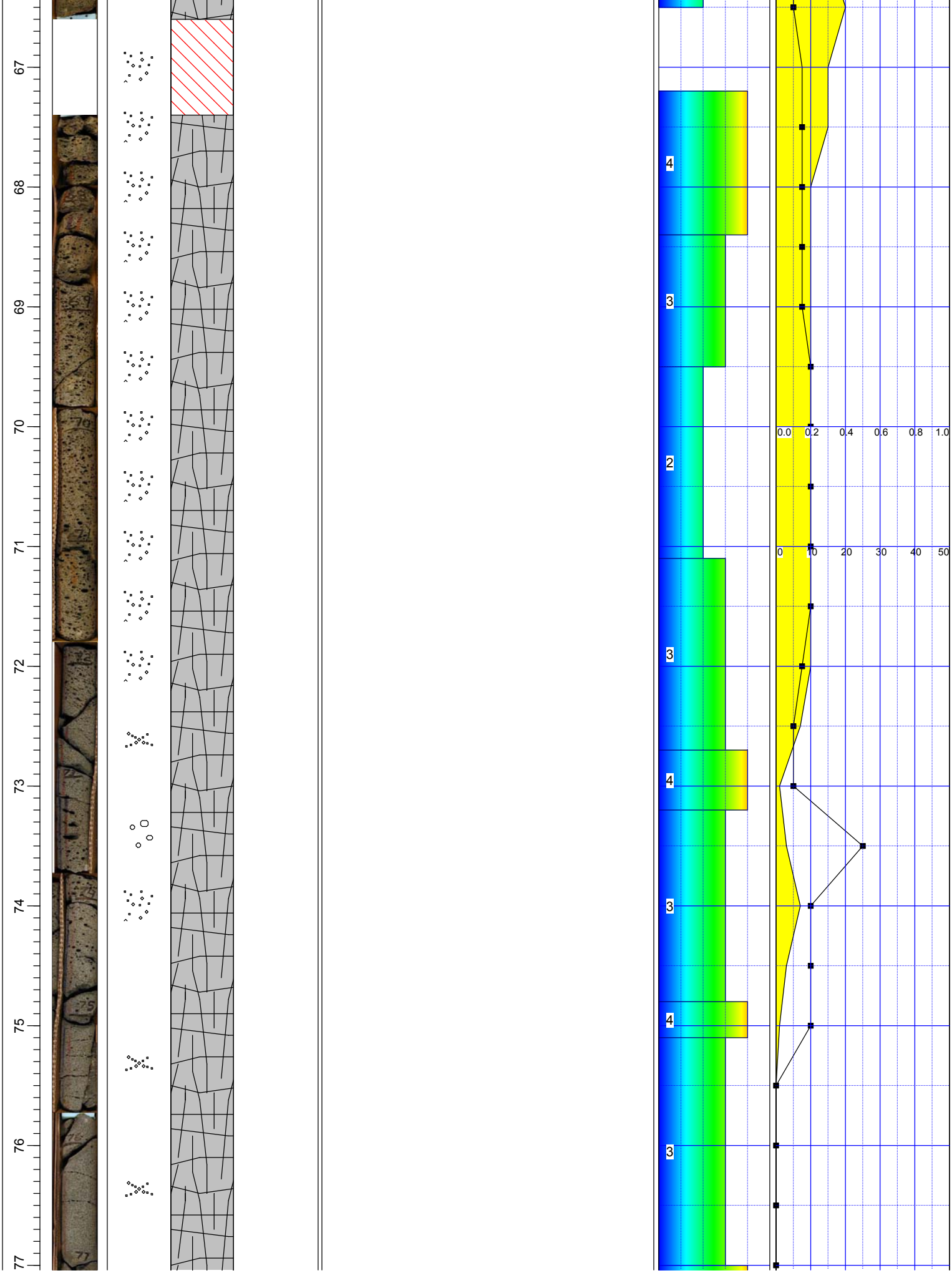
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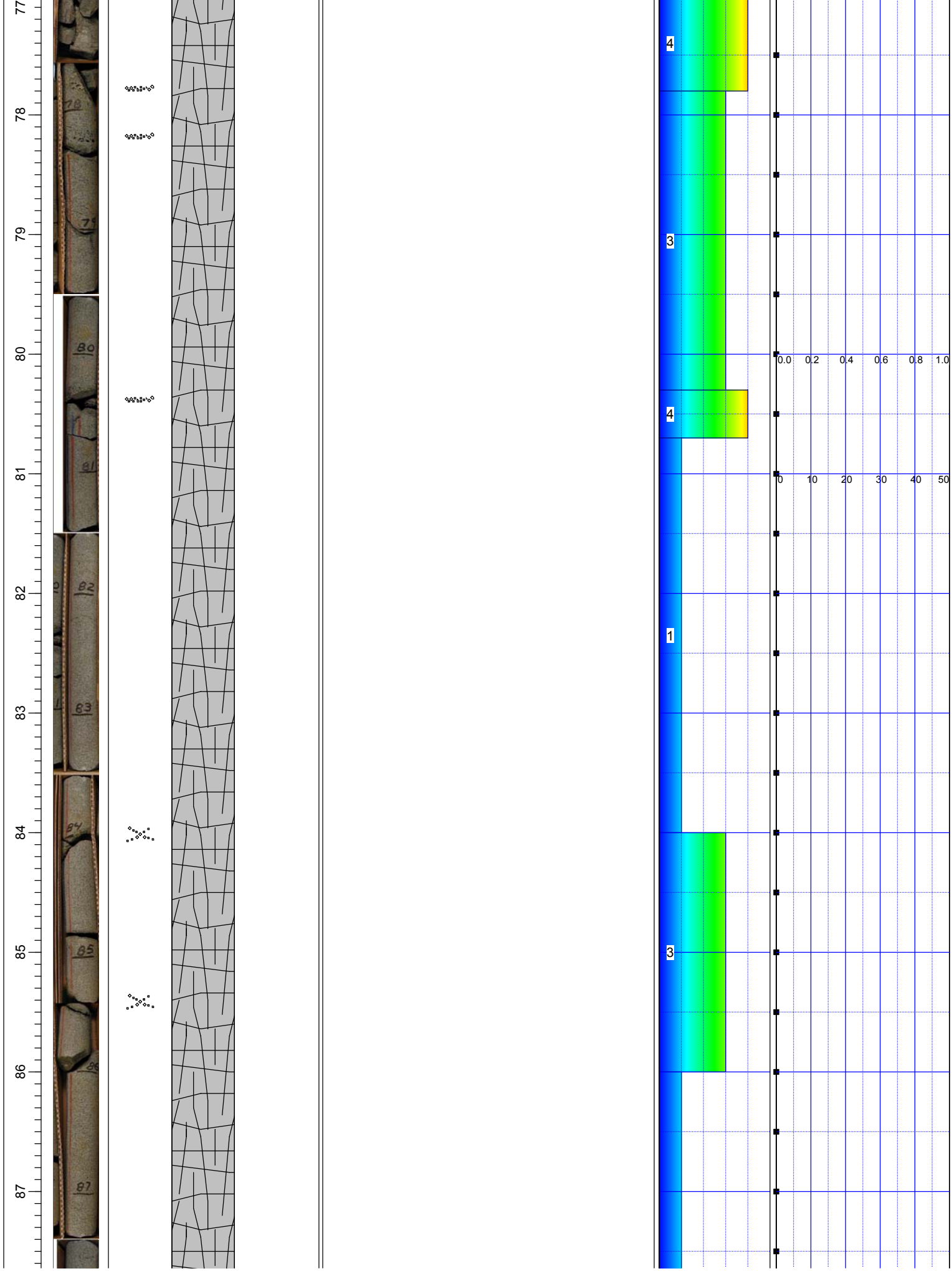
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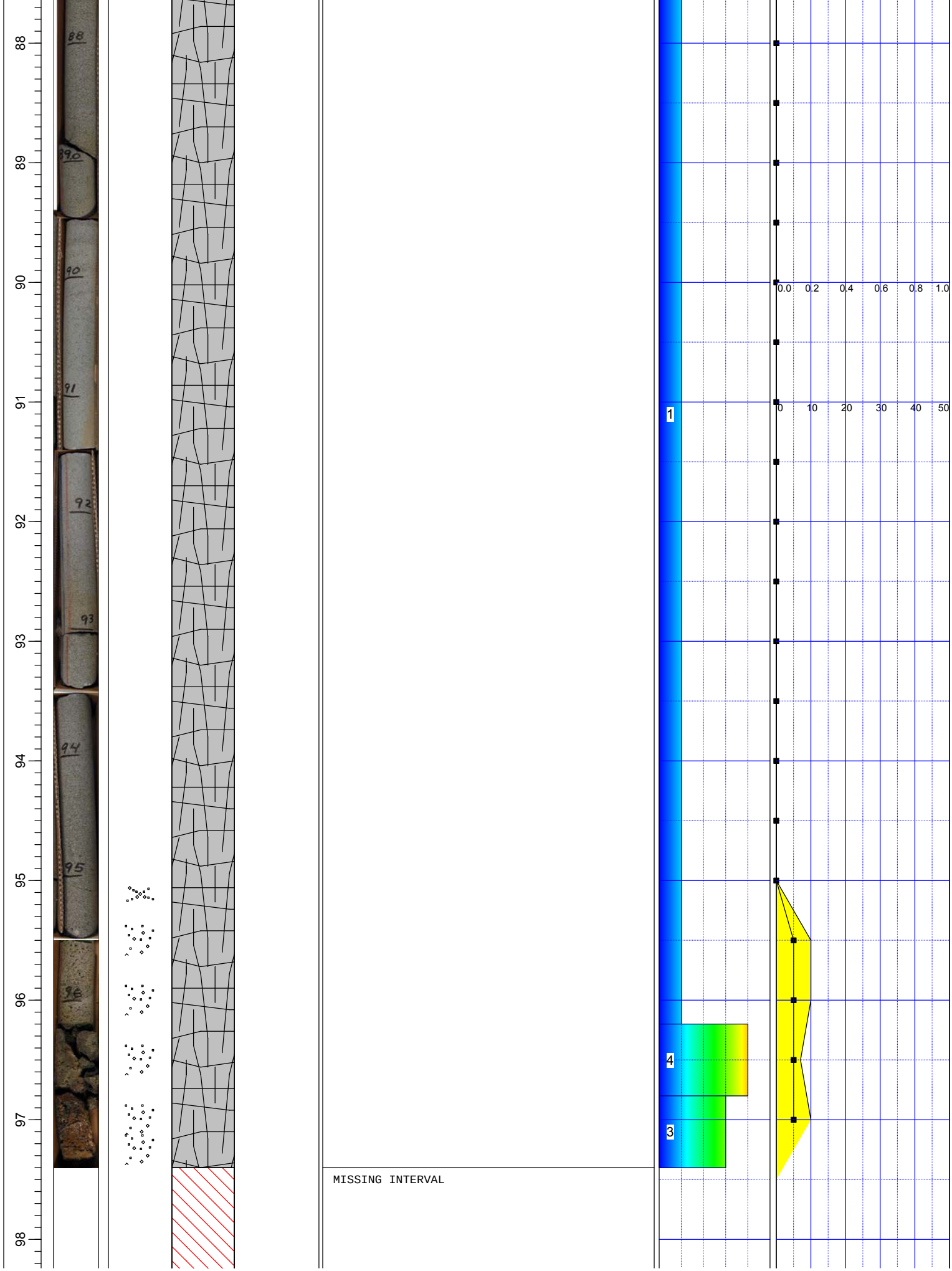
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MISSING INTERVAL
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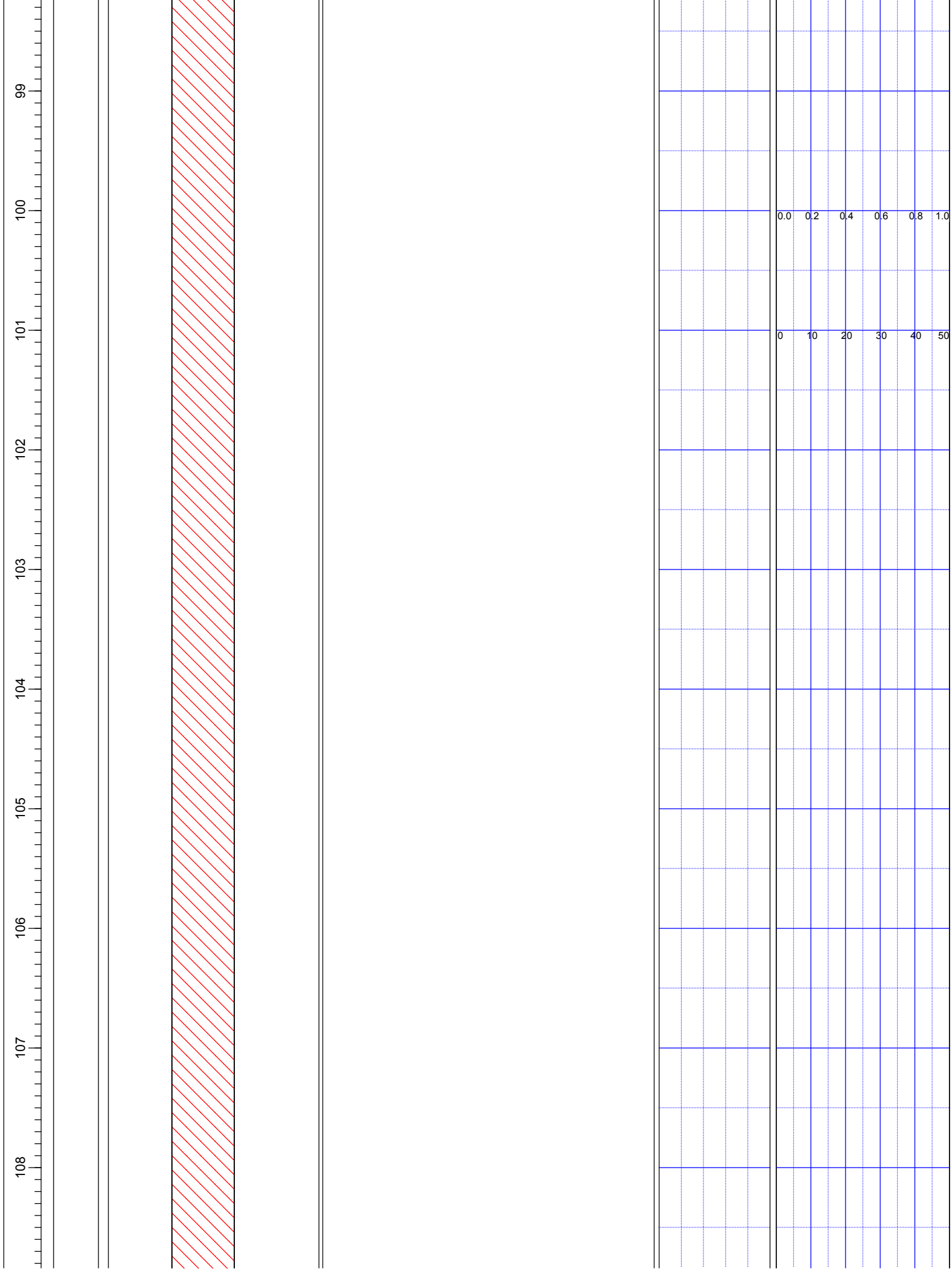
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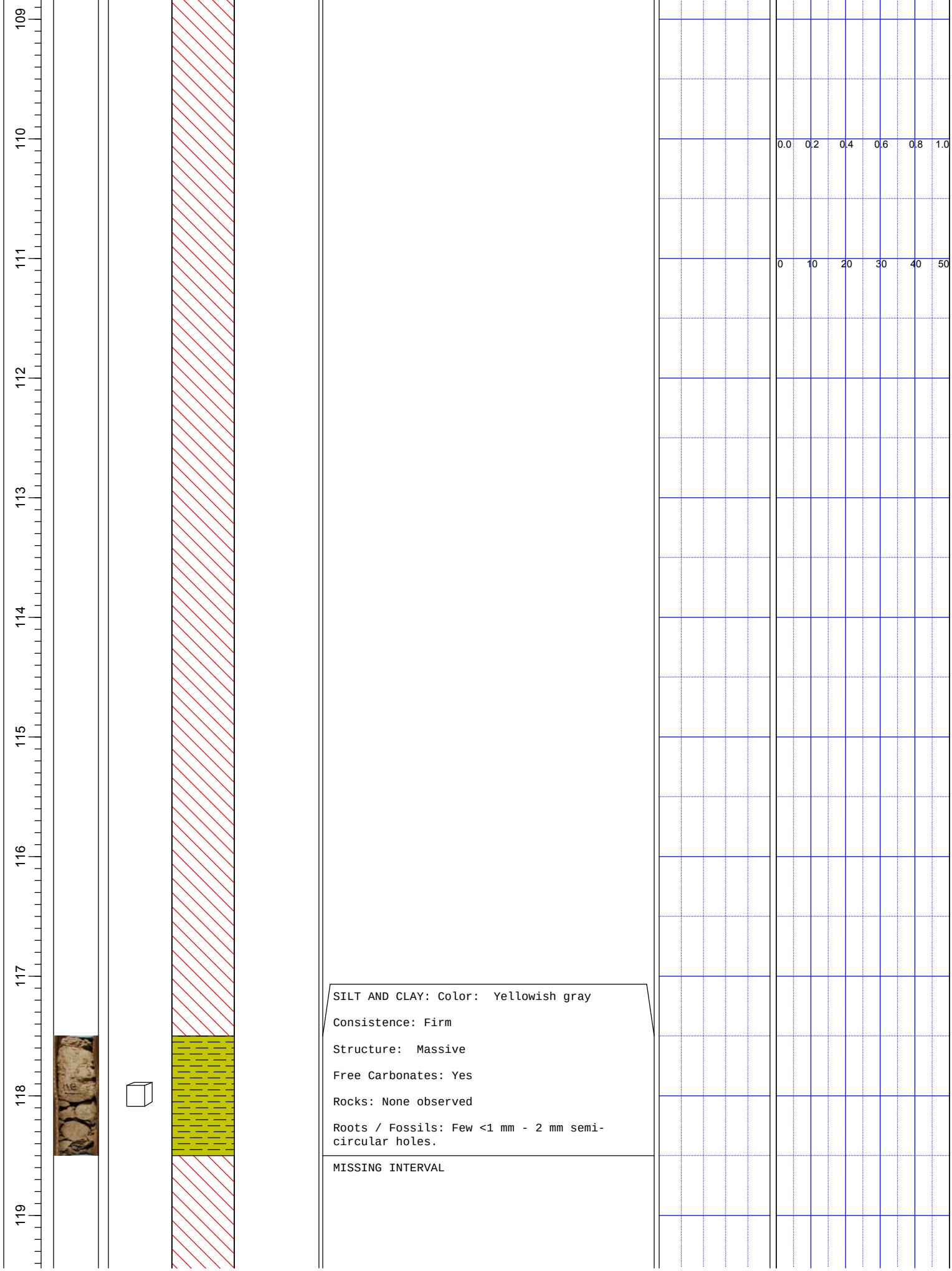


SILT AND CLAY: Color: Yellowish gray

Consistence: Firm

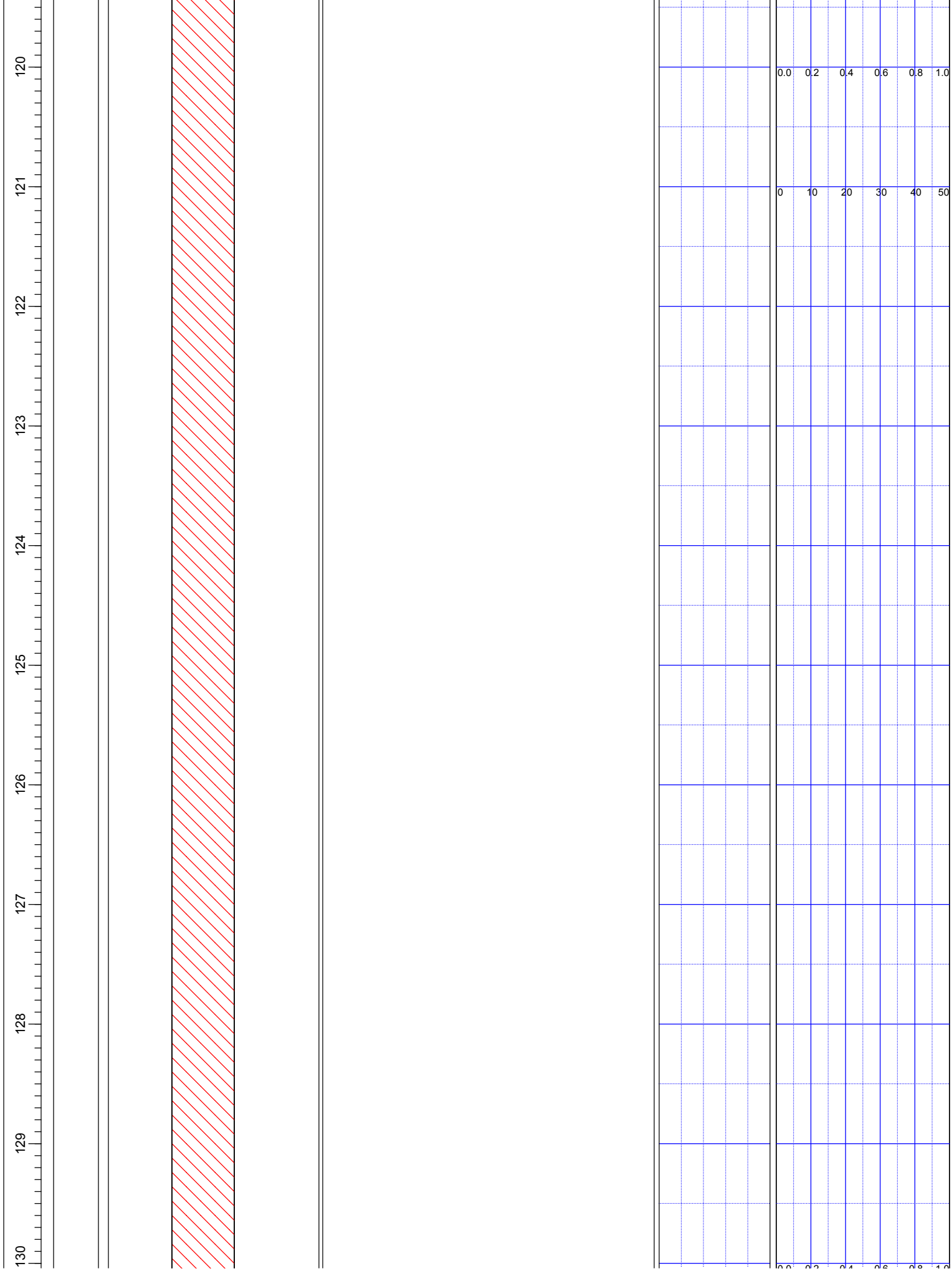
Structure: Massive

Free Carbonates: Yes

Rocks: None observed

Roots / Fossils: Few <1 mm - 2 mm semi-circular holes.

MISSING INTERVAL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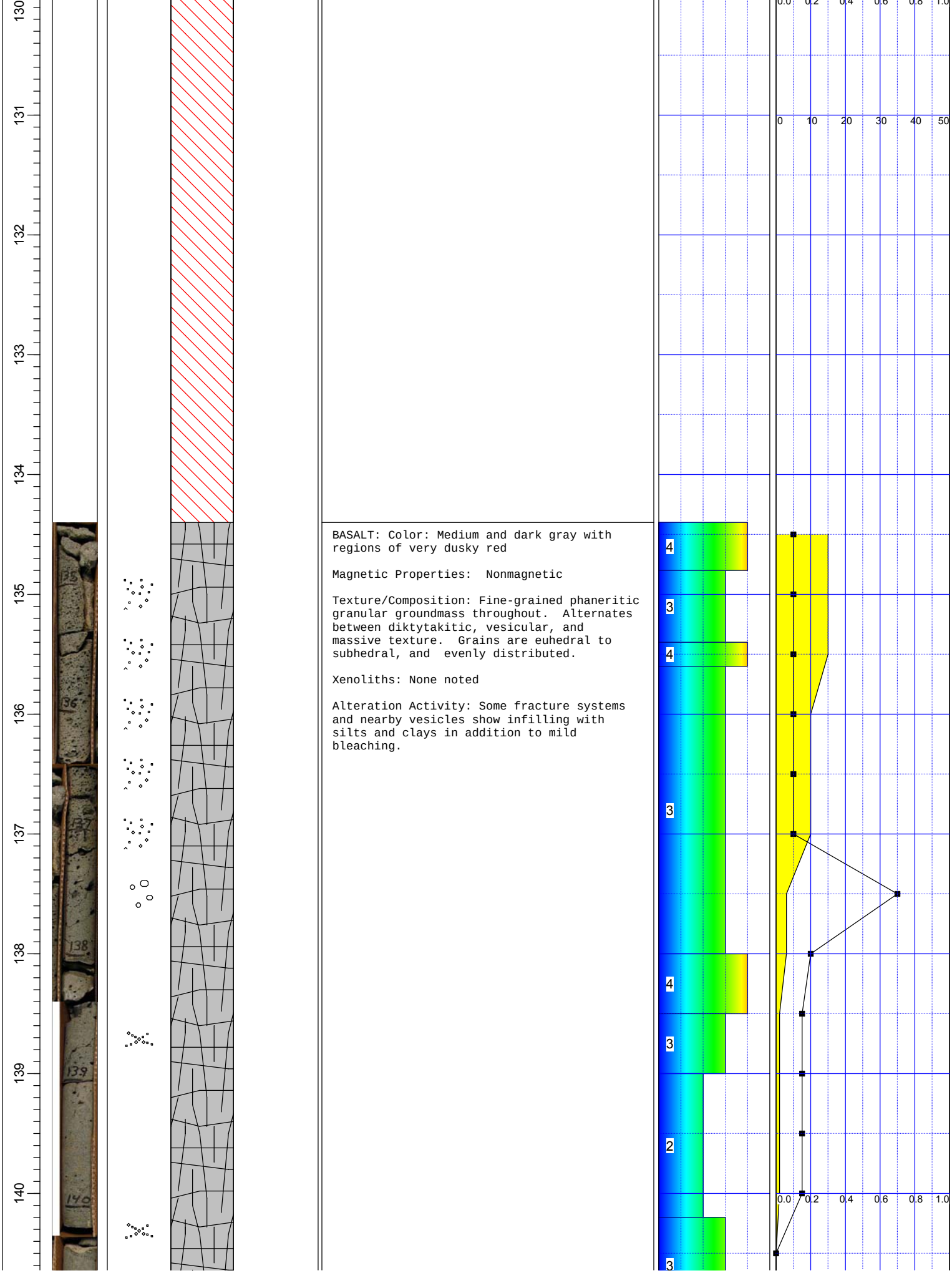


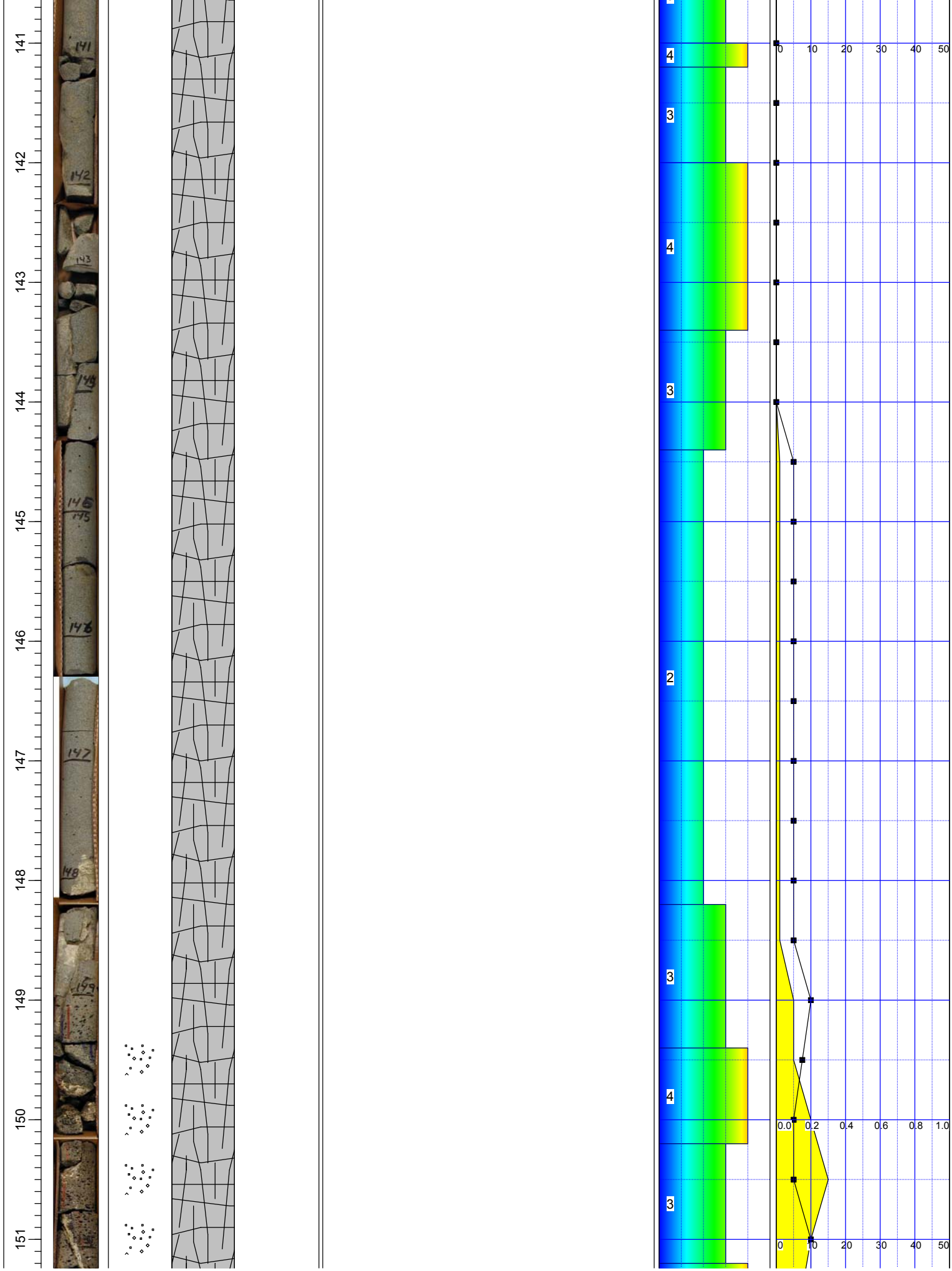
BASALT: Color: Medium and dark gray with regions of very dusky red

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Alternates between diktytakitic, vesicular, and massive texture. Grains are euhedral to subhedral, and evenly distributed.

Xenoliths: None noted

Alteration Activity: Some fracture systems and nearby vesicles show infilling with silts and clays in addition to mild bleaching.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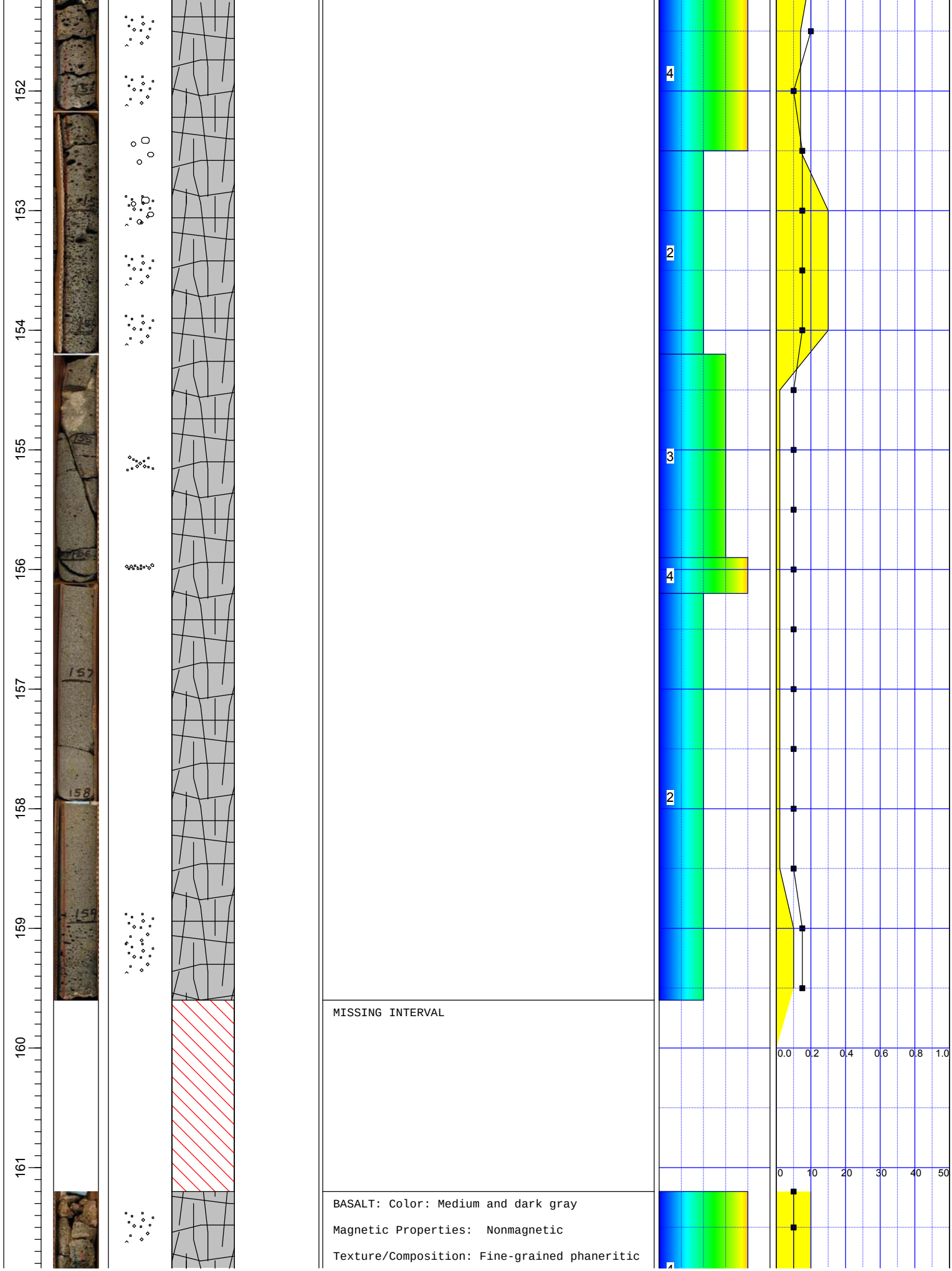
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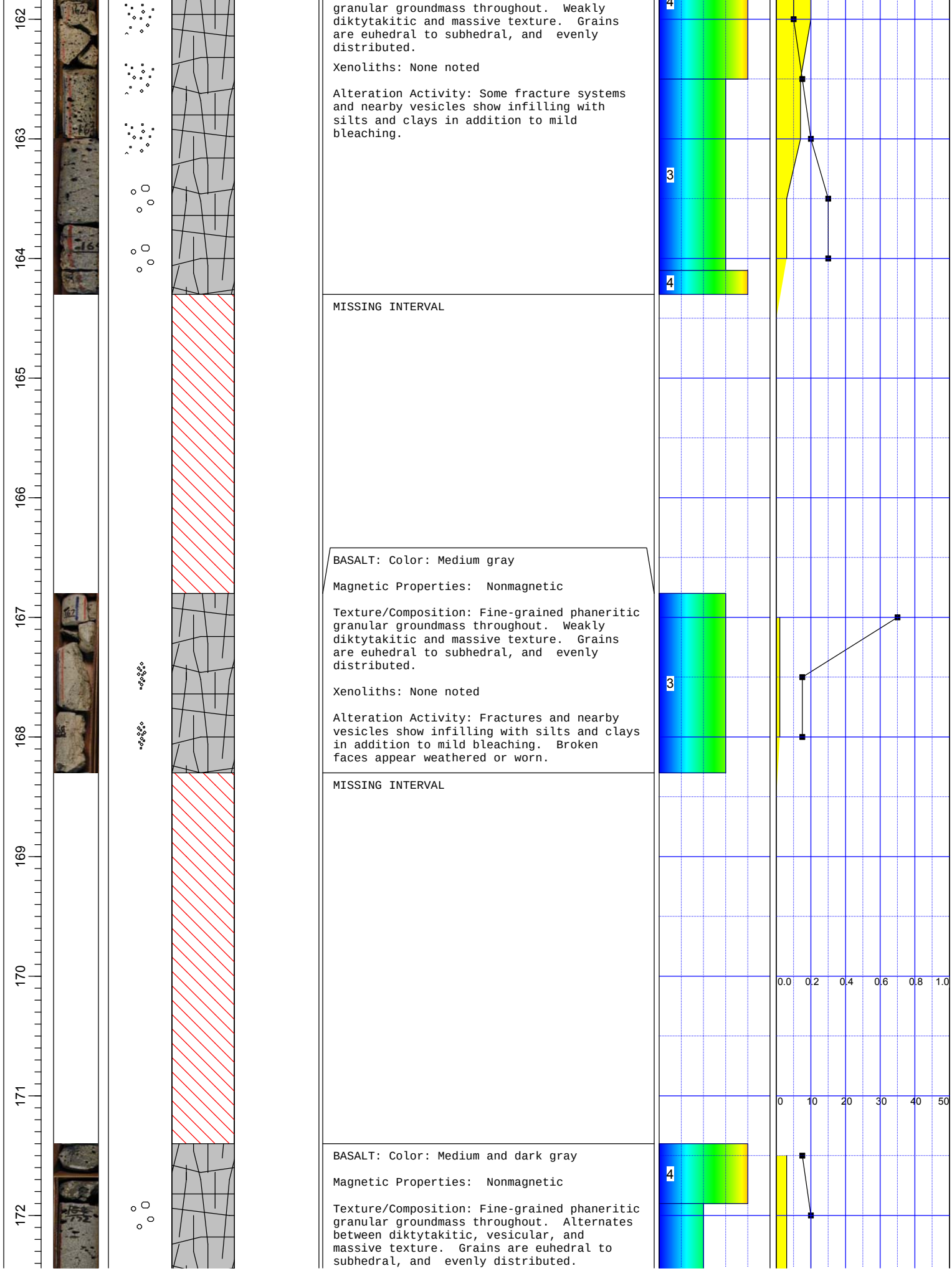
0.0 0.2 0.4 0.6 0.8 1.0
0 10 20 30 40 50
MISSING INTERVAL
BASALT: Color: Medium and dark gray
Magnetic Properties: Nonmagnetic
Texture/Composition: Fine-grained phaneritic



granular groundmass throughout. Weakly diktytakitic and massive texture. Grains are euhedral to subhedral, and evenly distributed.

Xenoliths: None noted

Alteration Activity: Some fracture systems and nearby vesicles show infilling with silts and clays in addition to mild bleaching.

MISSING INTERVAL

BASALT: Color: Medium gray

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Weakly diktytakitic and massive texture. Grains are euhedral to subhedral, and evenly distributed.

Xenoliths: None noted

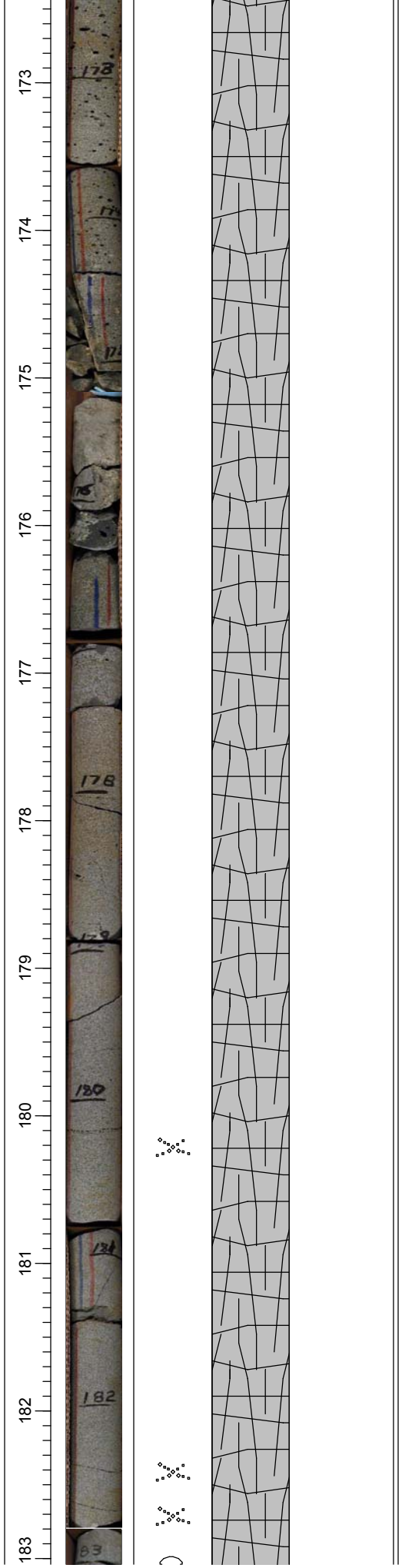
Alteration Activity: Fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching. Broken faces appear weathered or worn.

MISSING INTERVAL

BASALT: Color: Medium and dark gray

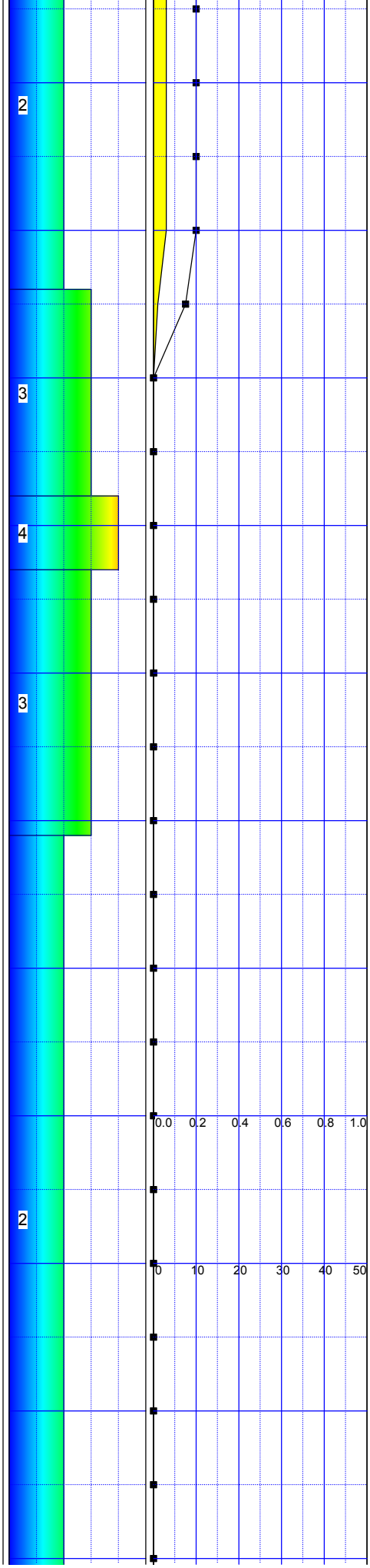
Magnetic Properties: Nonmagnetic

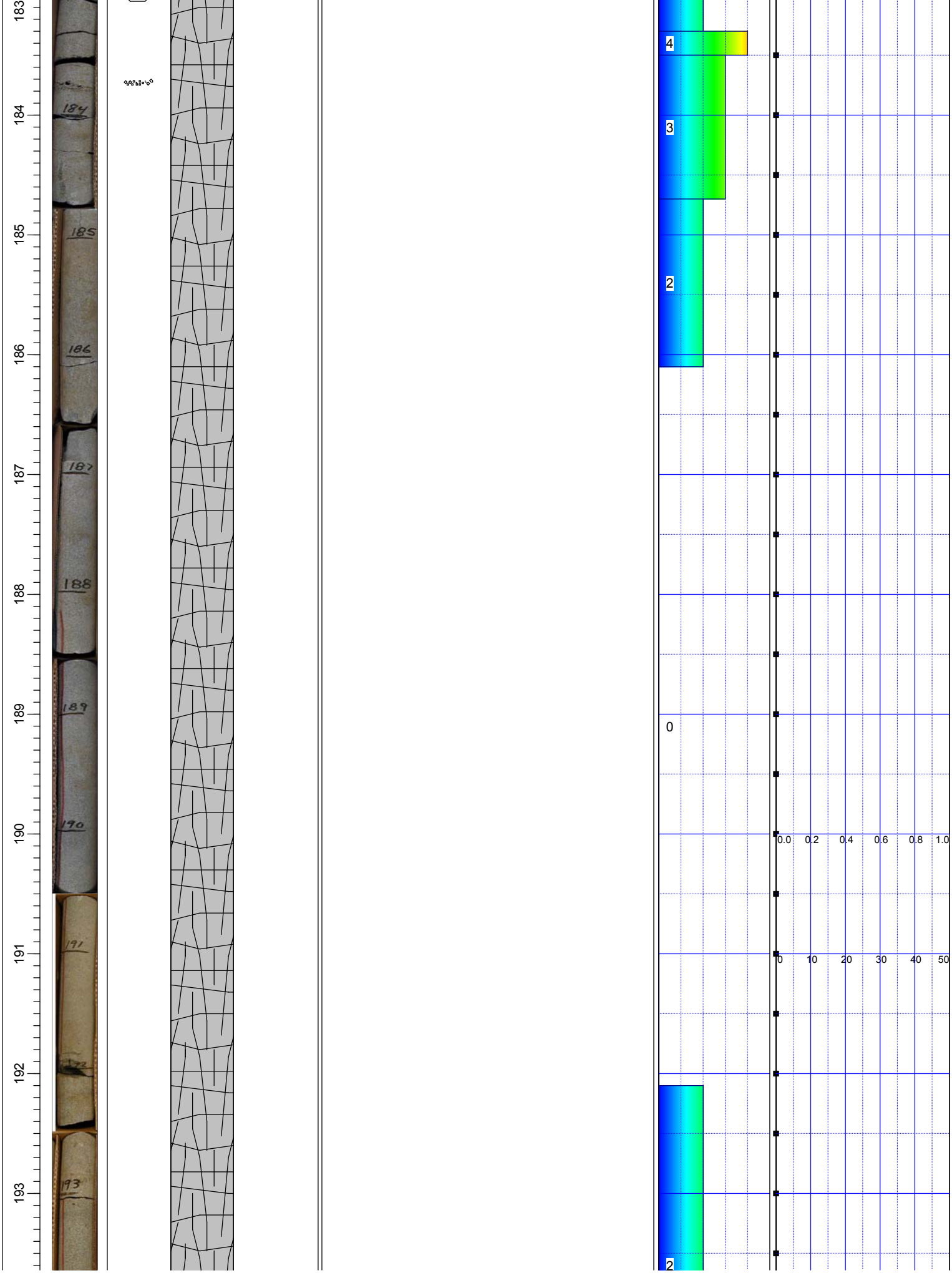
Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Alternates between diktytakitic, vesicular, and massive texture. Grains are euhedral to subhedral, and evenly distributed.



Xenoliths: None noted

Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.

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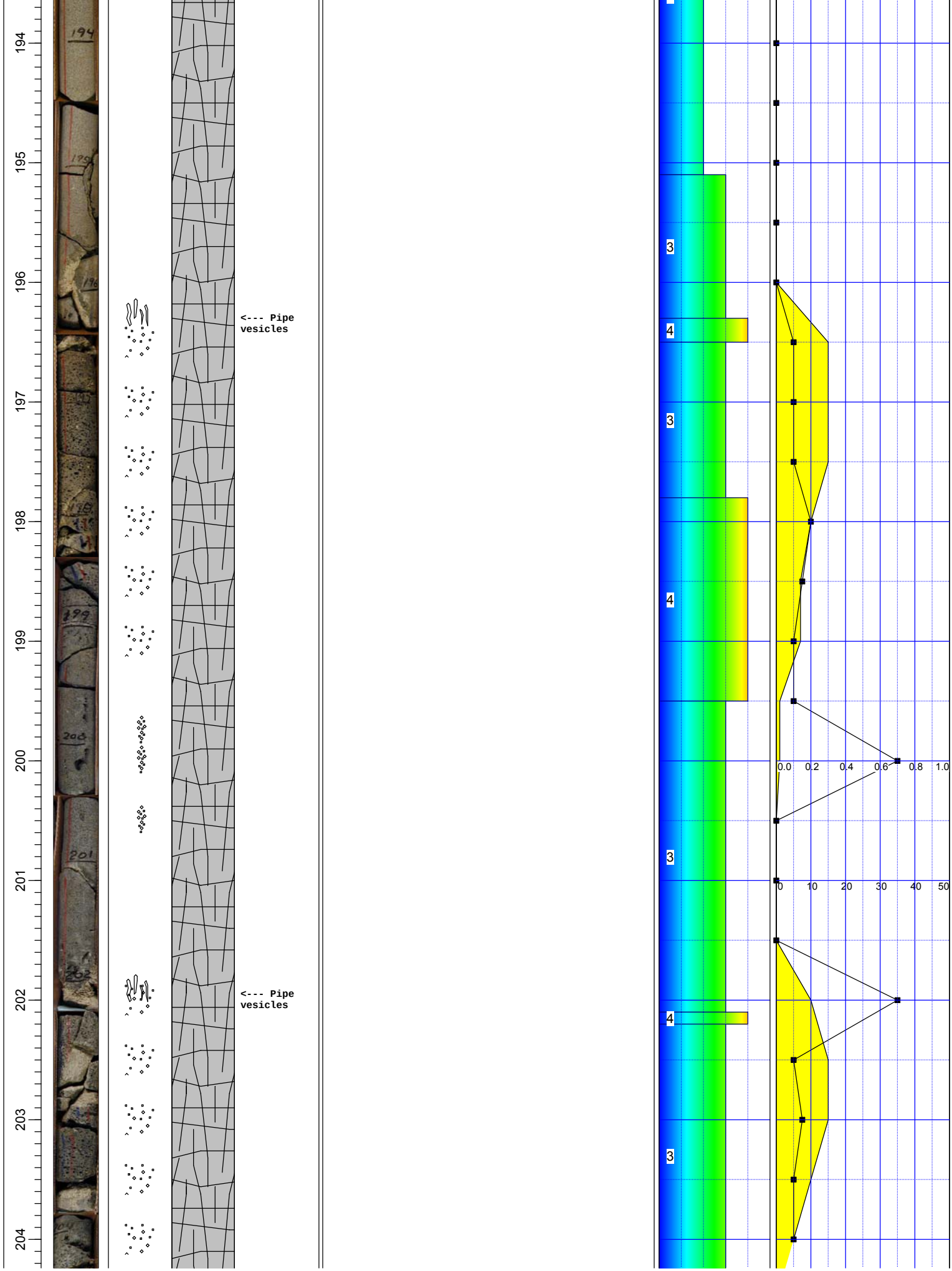
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203
204
<--- Pipe vesicles
<--- Pipe vesicles
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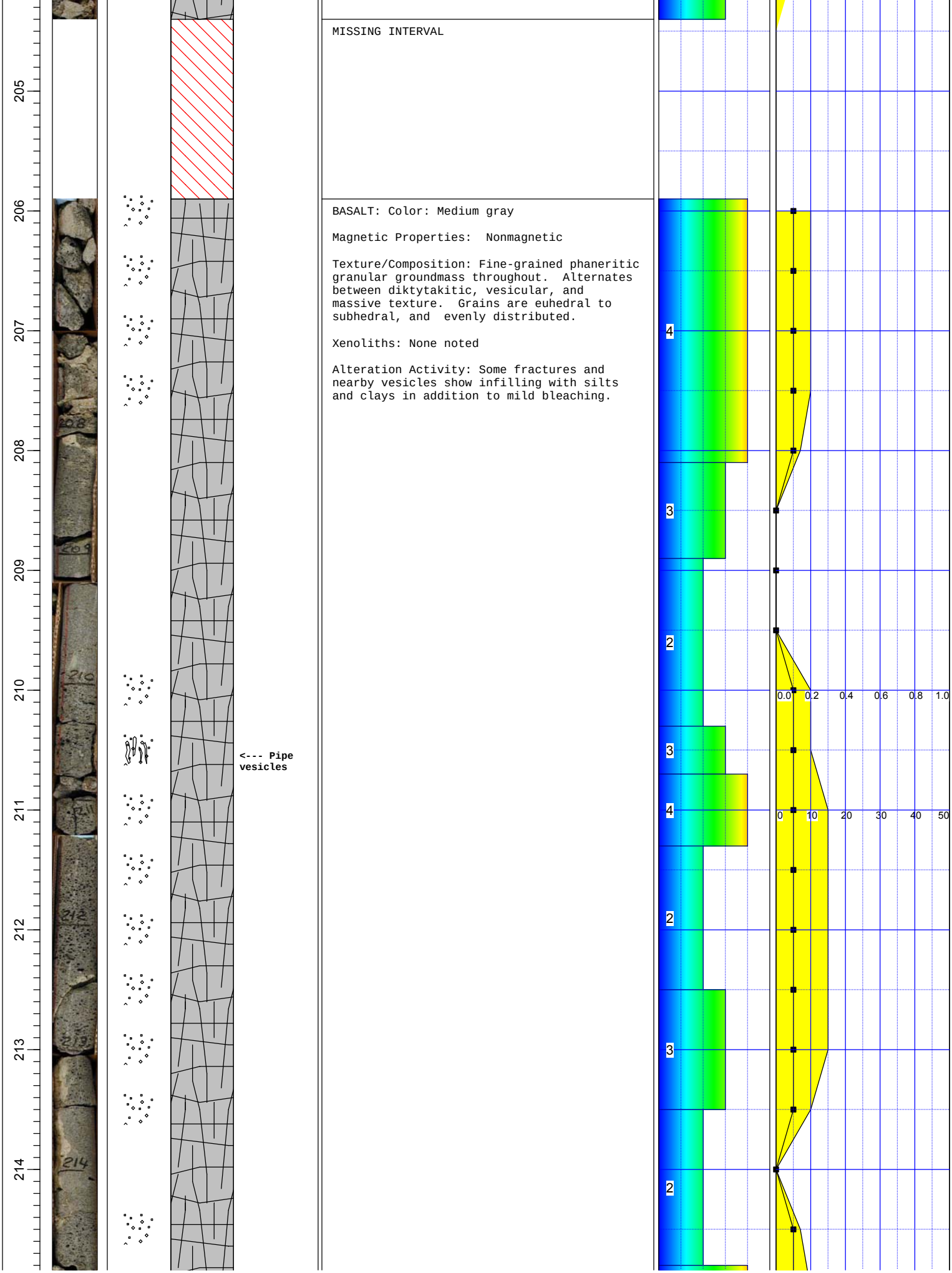


MISSING INTERVAL

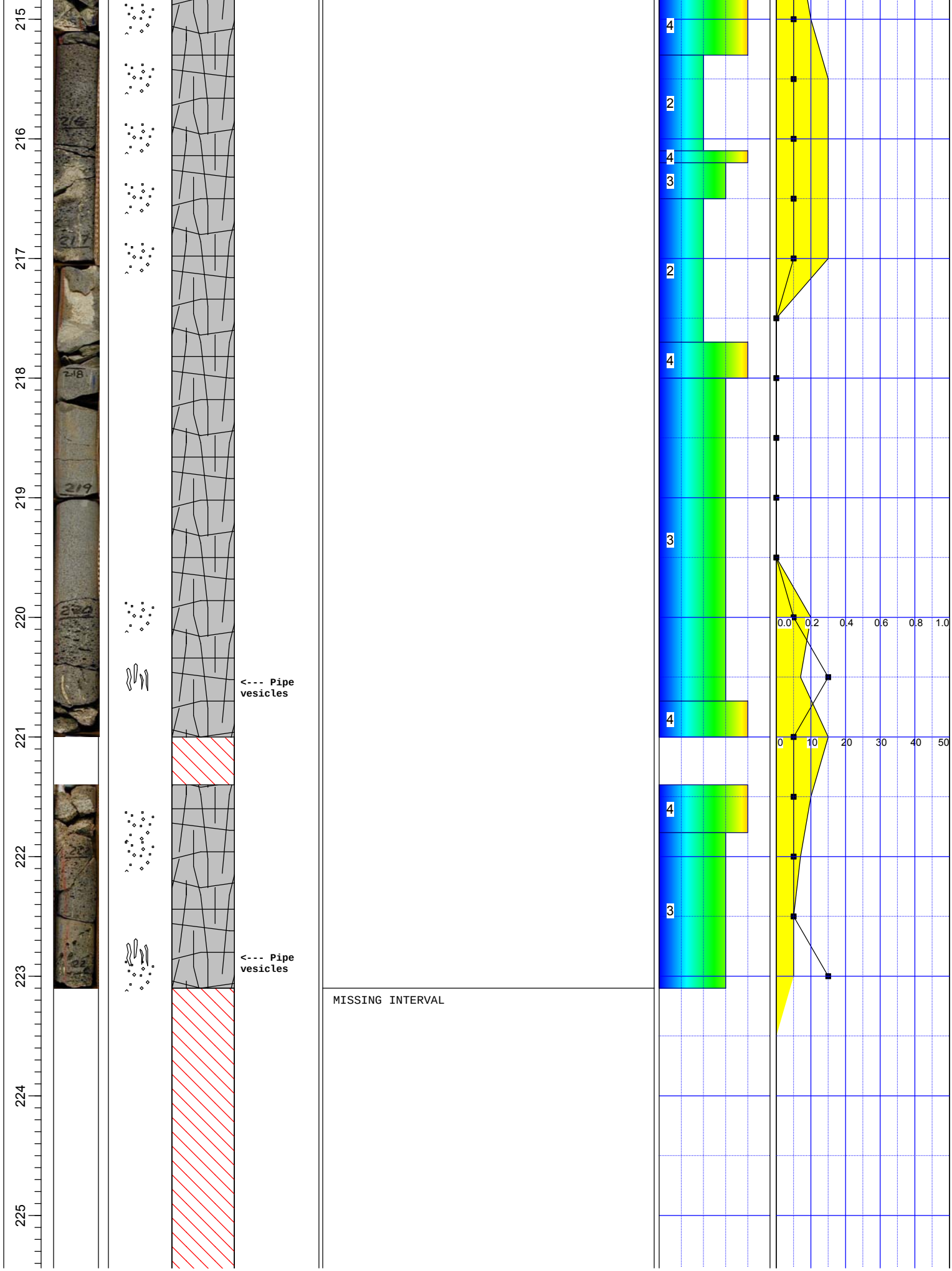
BASALT: Color: Medium gray

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Alternates between diktytakitic, vesicular, and massive texture. Grains are euhedral to subhedral, and evenly distributed.

Xenoliths: None noted

Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.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<--- Pipe vesicles
<--- Pipe vesicles
MISSING INTERVAL
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50

SILT AND CLAY: Color: Light brown to moderate brown

Consistence: Friable

Structure: Single-grained

Free Carbonates: Yes

Rocks: None observed

Roots / Fossils: None observed

MISSING INTERVAL

0.0 0.2 0.4 0.6 0.8 1.0

0 10 20 30 40 50

236
237
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246

SILT AND CLAY: Color: Yellowish gray

Consistence: Friable

Structure: Single-grained

Free Carbonates: Yes

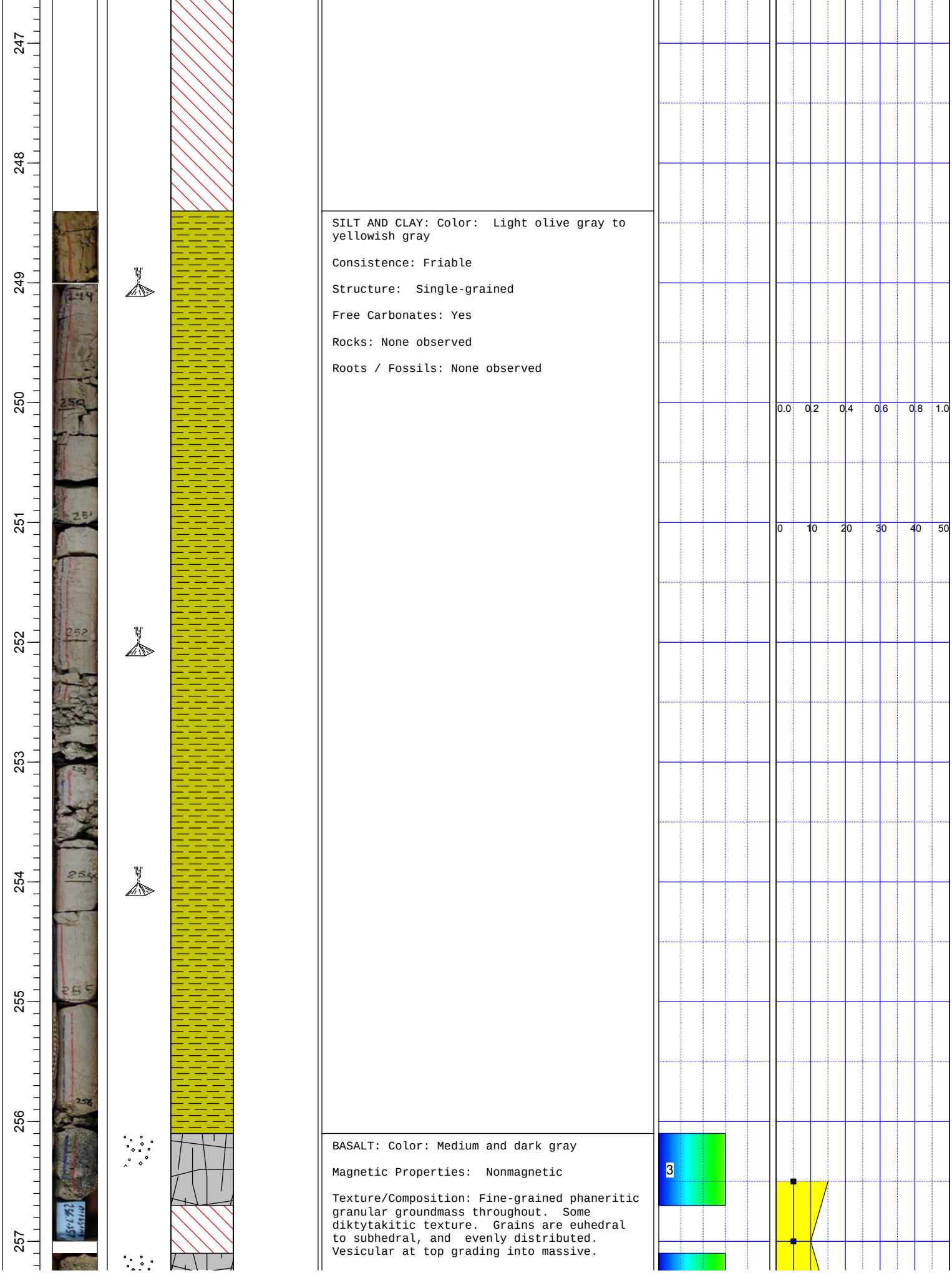
Rocks: None observed

Roots / Fossils: None observed

MISSING INTERVAL

0.0 0.2 0.4 0.6 0.8 1.0

0 10 20 30 40 50



SILT AND CLAY: Color: Light olive gray to yellowish gray

Consistence: Friable

Structure: Single-grained

Free Carbonates: Yes

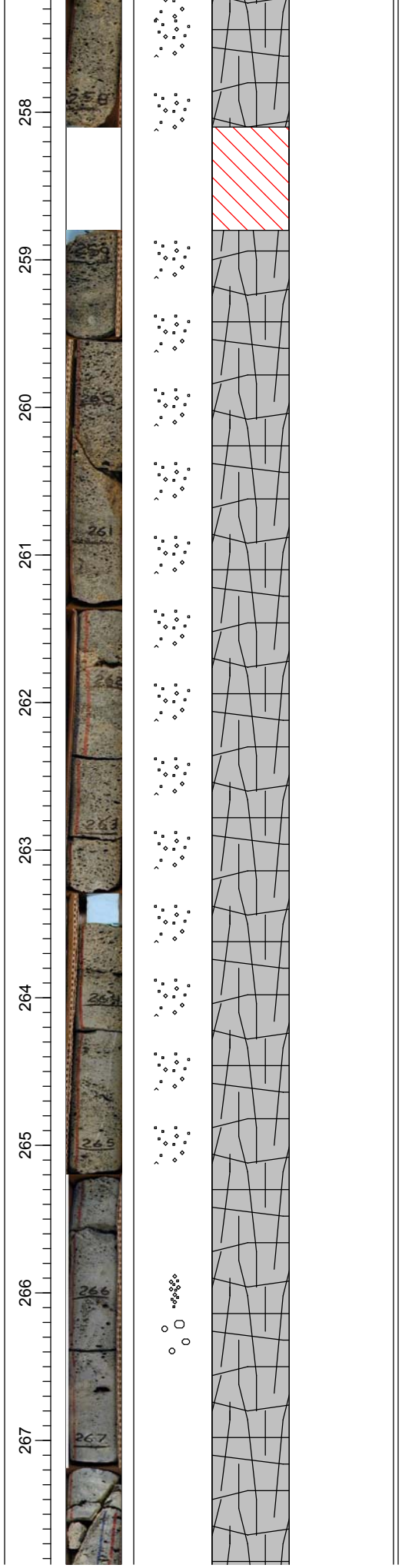
Rocks: None observed

Roots / Fossils: None observed

BASALT: Color: Medium and dark gray

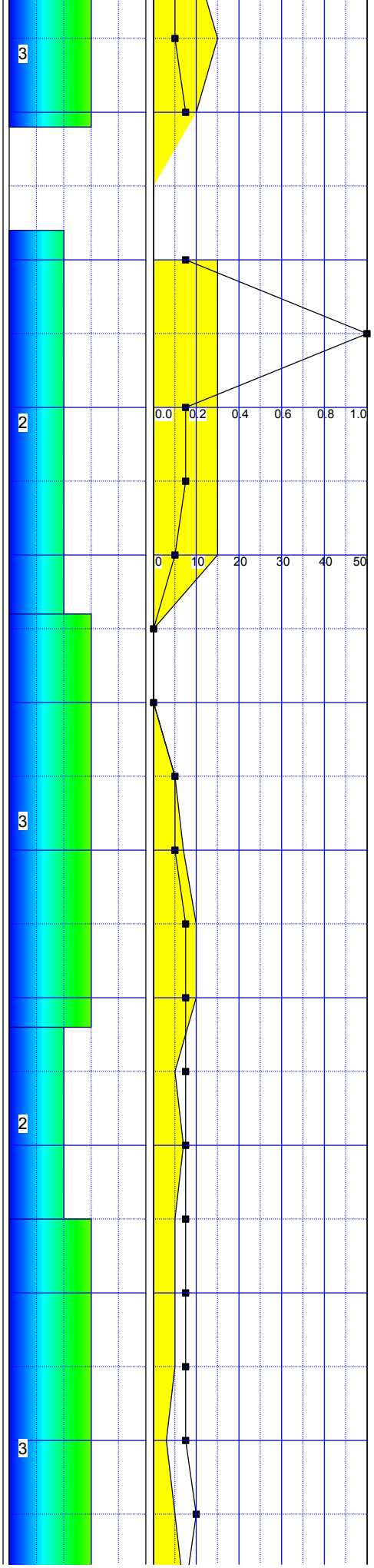
Magnetic Properties: Nonmagnetic

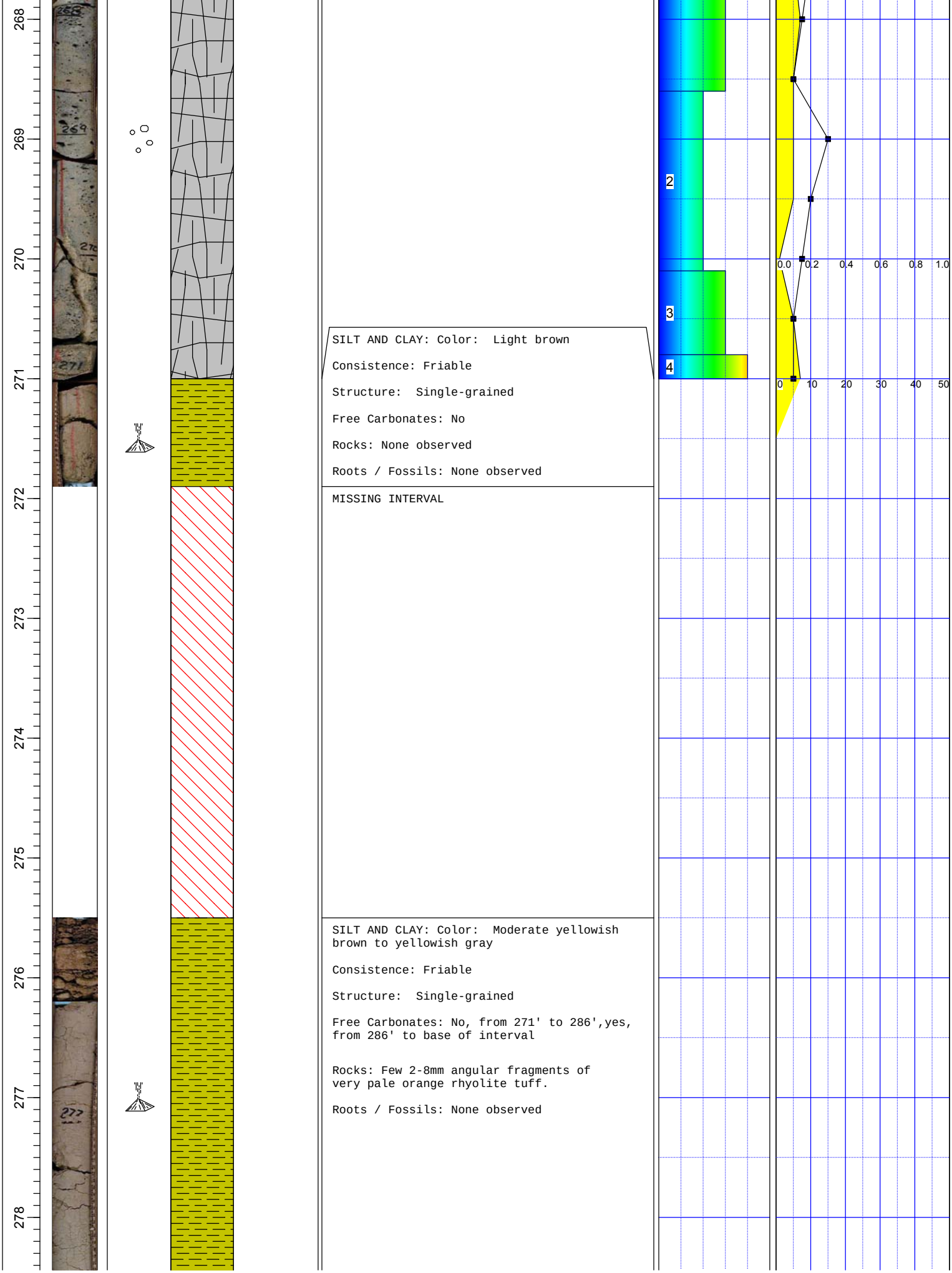
Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Some diktytakitic texture. Grains are euhedral to subhedral, and evenly distributed. Vesicular at top grading into massive.



Xenoliths: None noted

Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.





SILT AND CLAY: Color: Light brown

Consistence: Friable

Structure: Single-grained

Free Carbonates: No

Rocks: None observed

Roots / Fossils: None observed

MISSING INTERVAL

SILT AND CLAY: Color: Moderate yellowish brown to yellowish gray

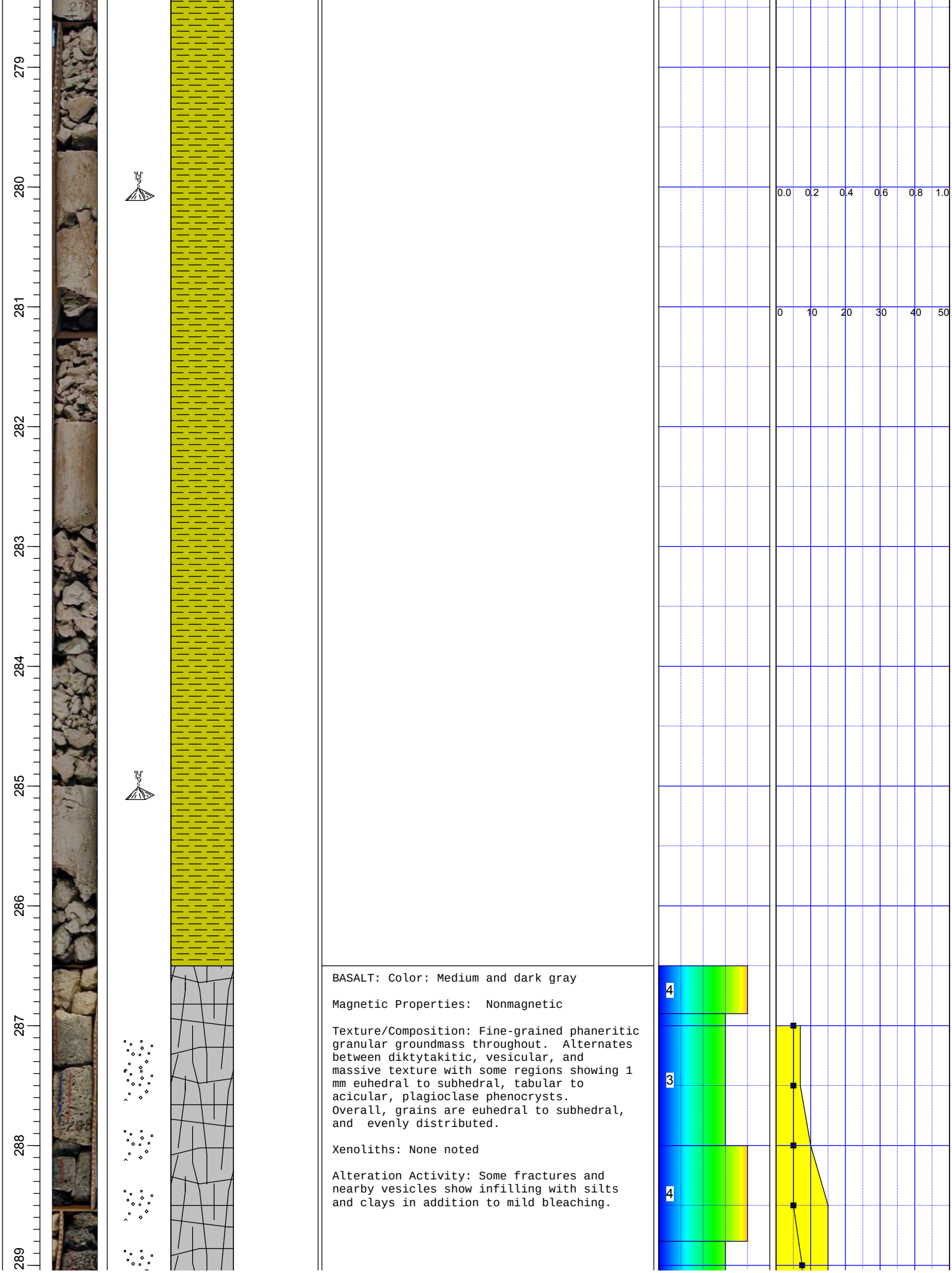
Consistence: Friable

Structure: Single-grained

Free Carbonates: No, from 271' to 286',yes, from 286' to base of interval

Rocks: Few 2-8mm angular fragments of very pale orange rhyolite tuff.

Roots / Fossils: None observed



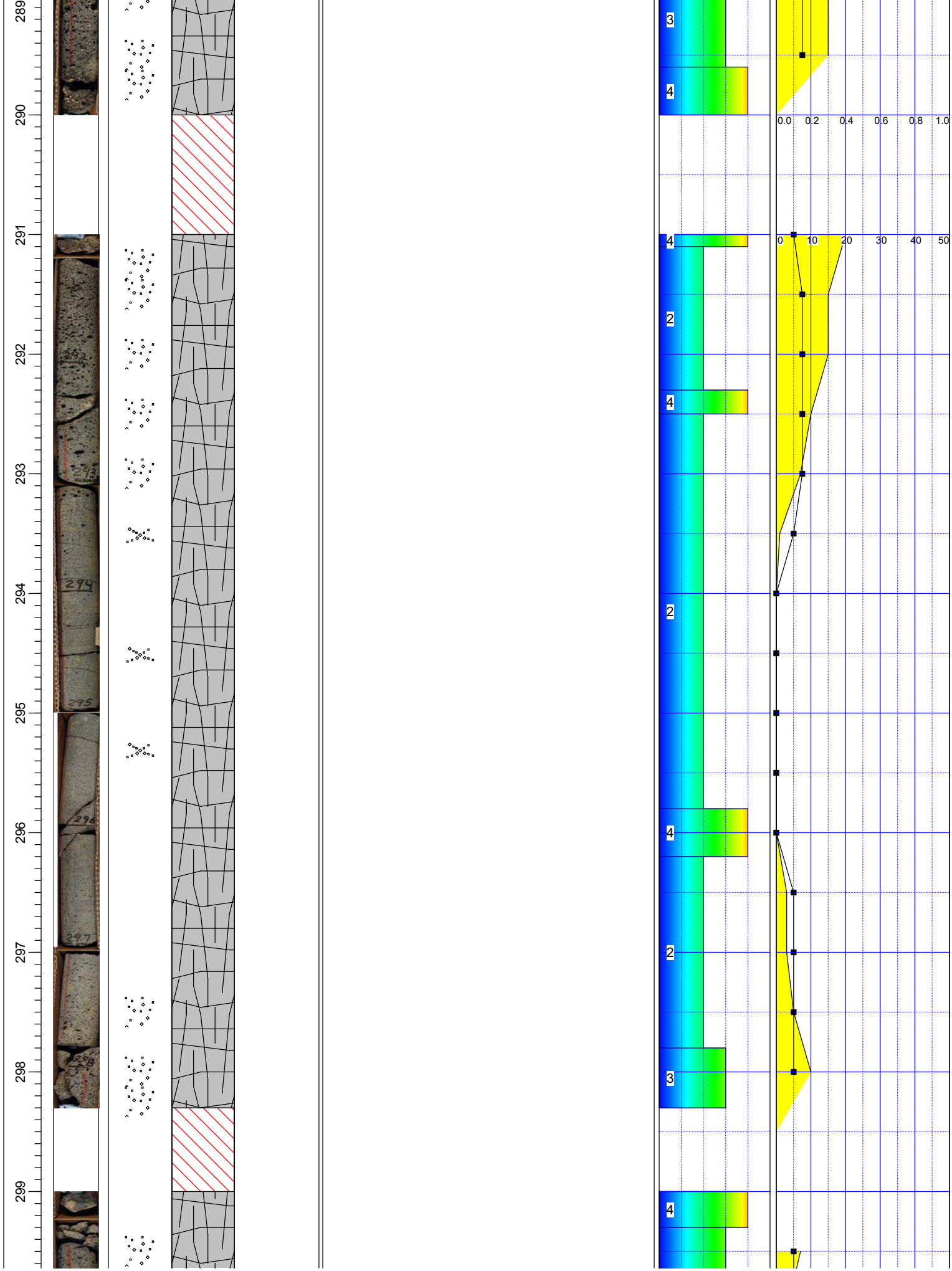
BASALT: Color: Medium and dark gray

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Alternates between diktytakitic, vesicular, and massive texture with some regions showing 1 mm euhedral to subhedral, tabular to acicular, plagioclase phenocrysts. Overall, grains are euhedral to subhedral, and evenly distributed.

Xenoliths: None noted

Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.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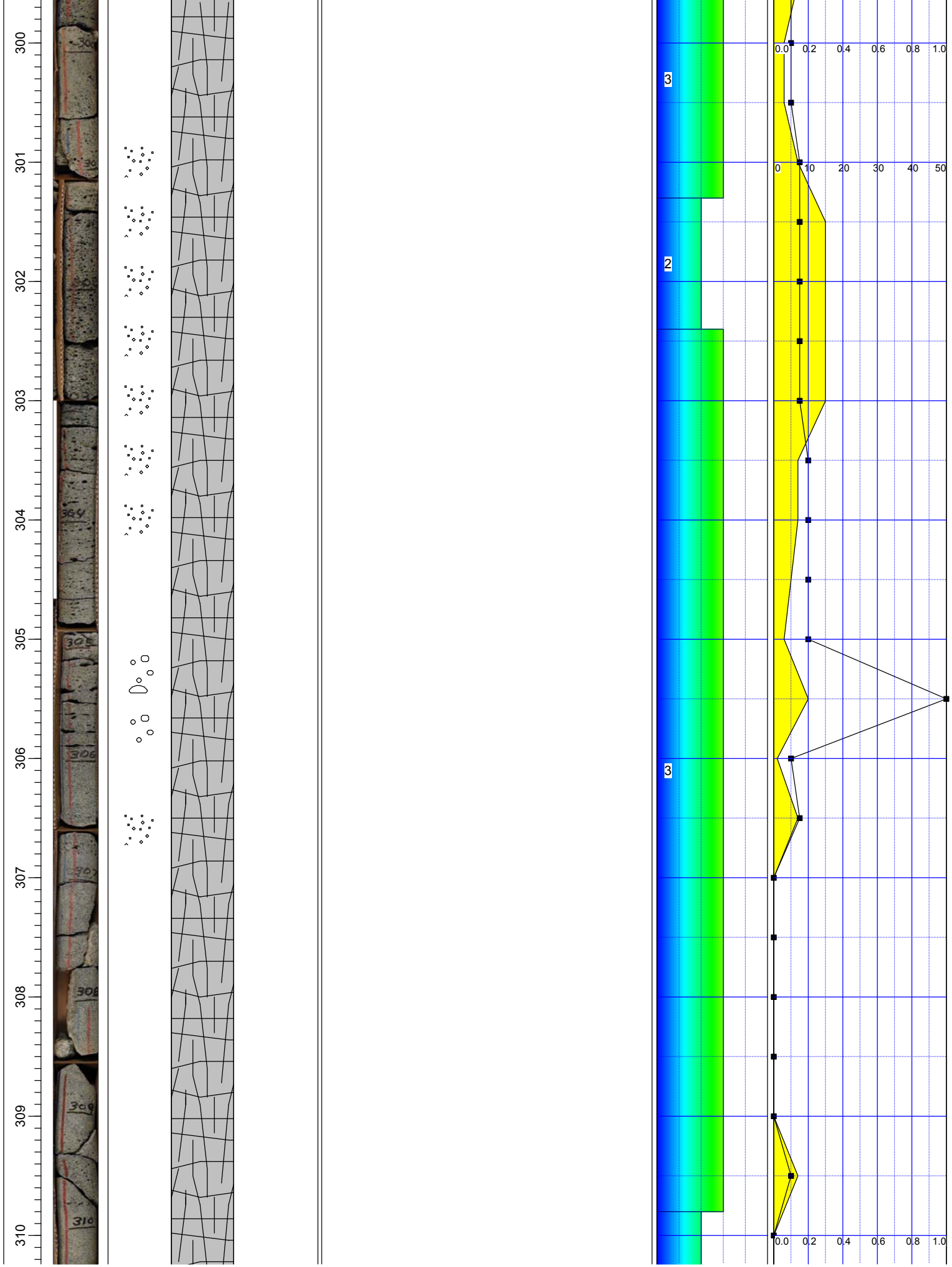
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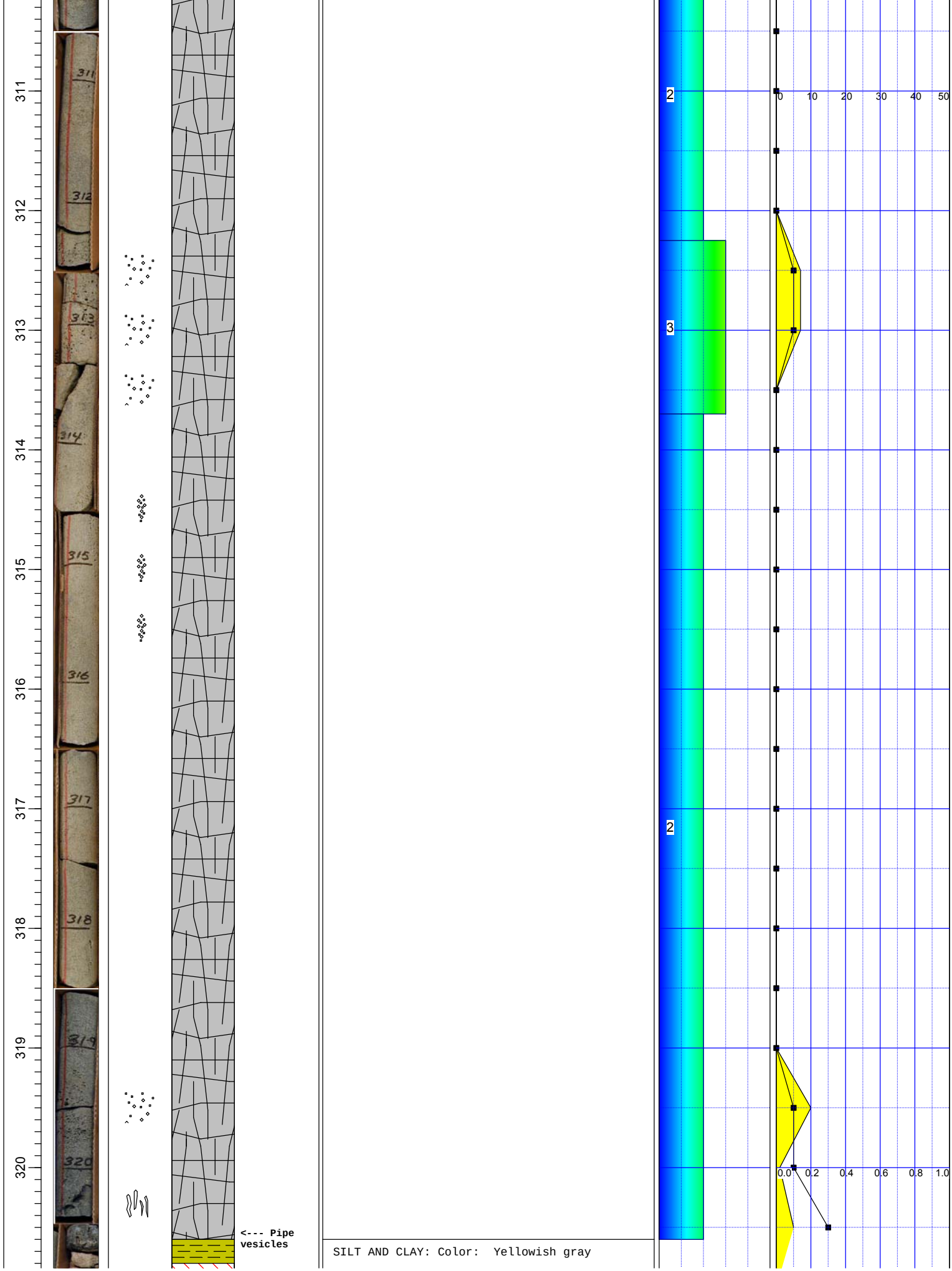
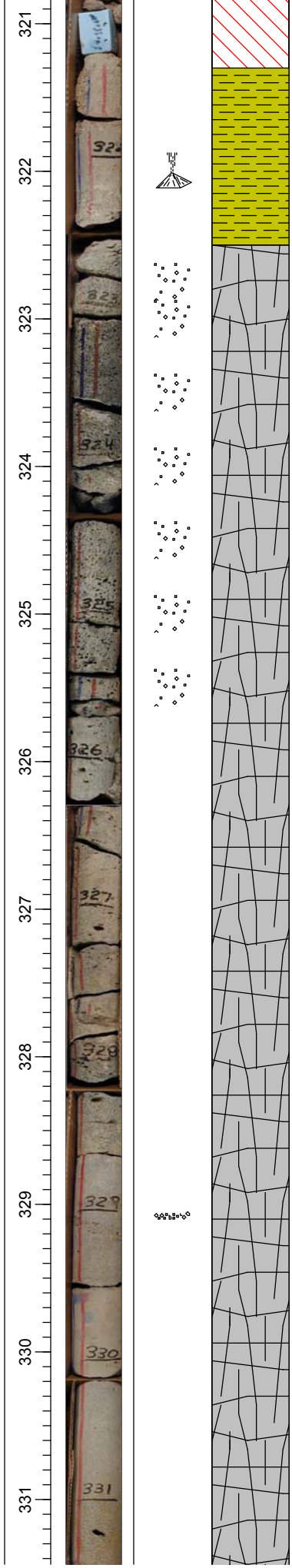


SILT AND CLAY: Color: Yellowish gray



Consistence: Friable

Structure: Single-grained

Free Carbonates: Main part of sediment, no, but lighter colored, finer-grained crack fill contains free carbonates

Rocks: Many 2-4 mm matrix-supported subangular fragments of light brown vesicular basalt, and few 3 cm subangular fragments of light brown vesicular basalt.

Roots / Fossils: None observed

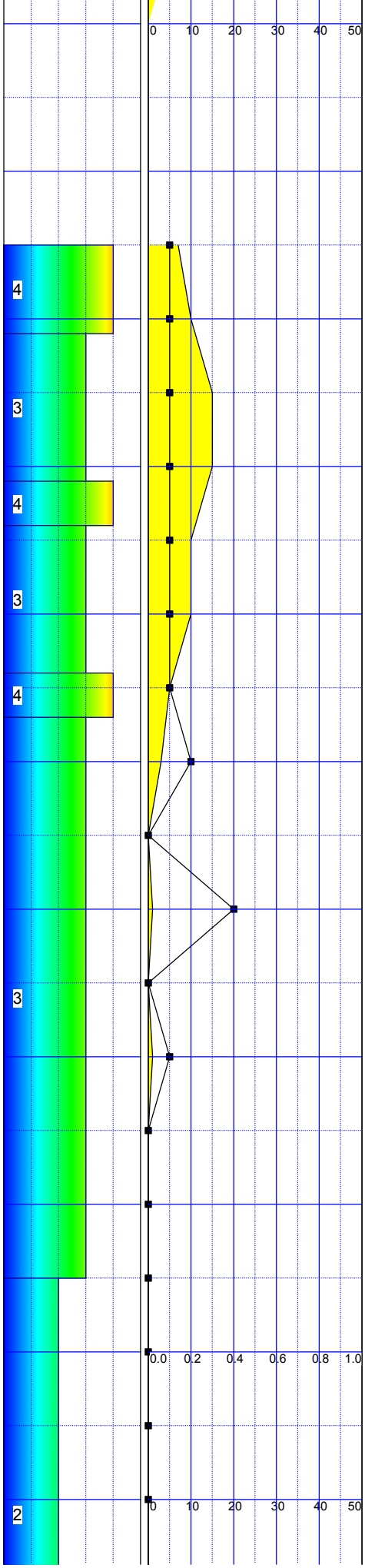
BASALT: Color: Medium dark gray to dark gray and grayish brown

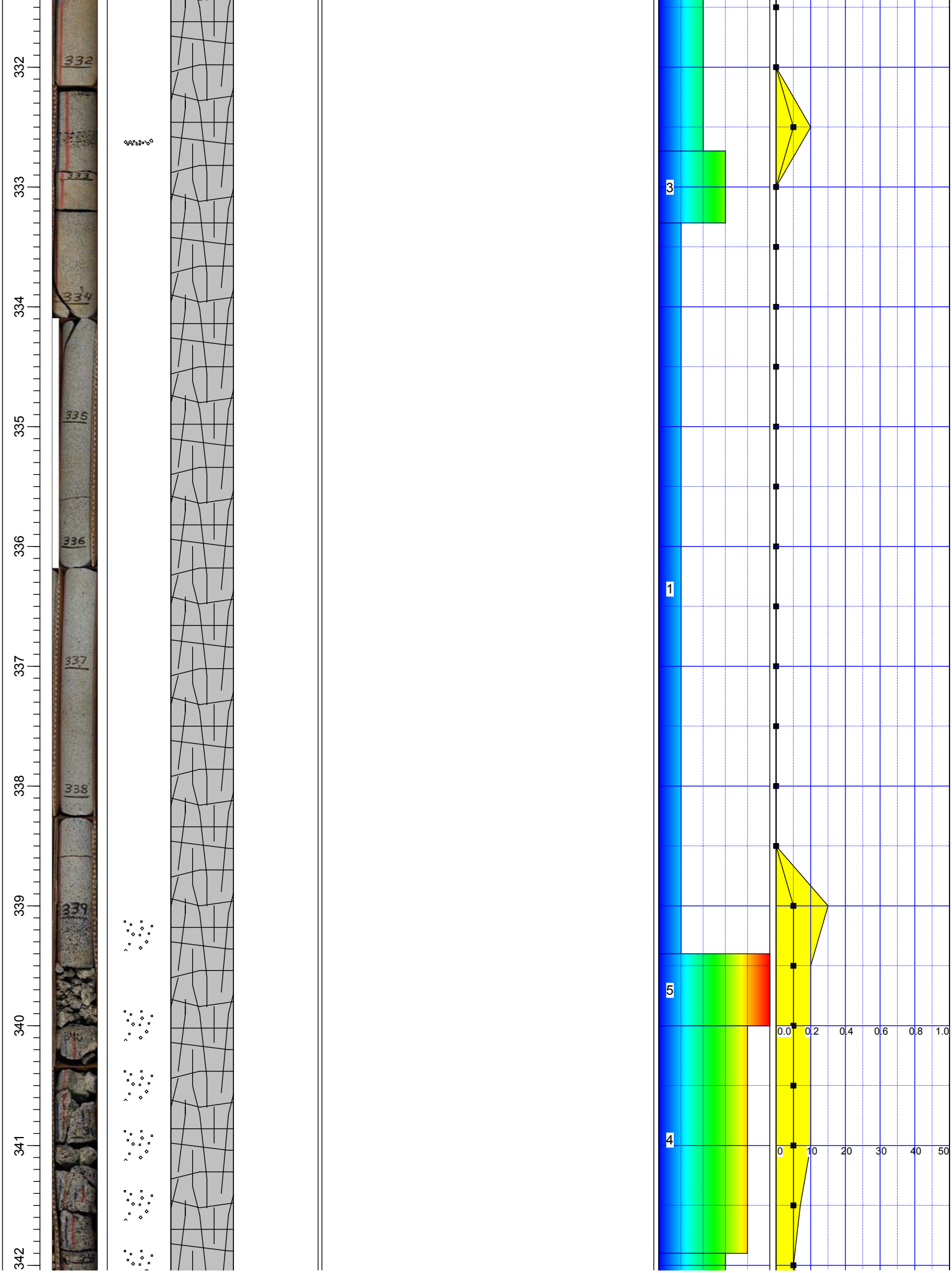
Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Alternates between diktytakitic, vesicular, and massive texture with some regions showing 1 mm euhedral to subhedral, tabular to acicular, plagioclase phenocrysts. Overall, grains are euhedral to subhedral, and evenly distributed.

Xenoliths: None noted

Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.

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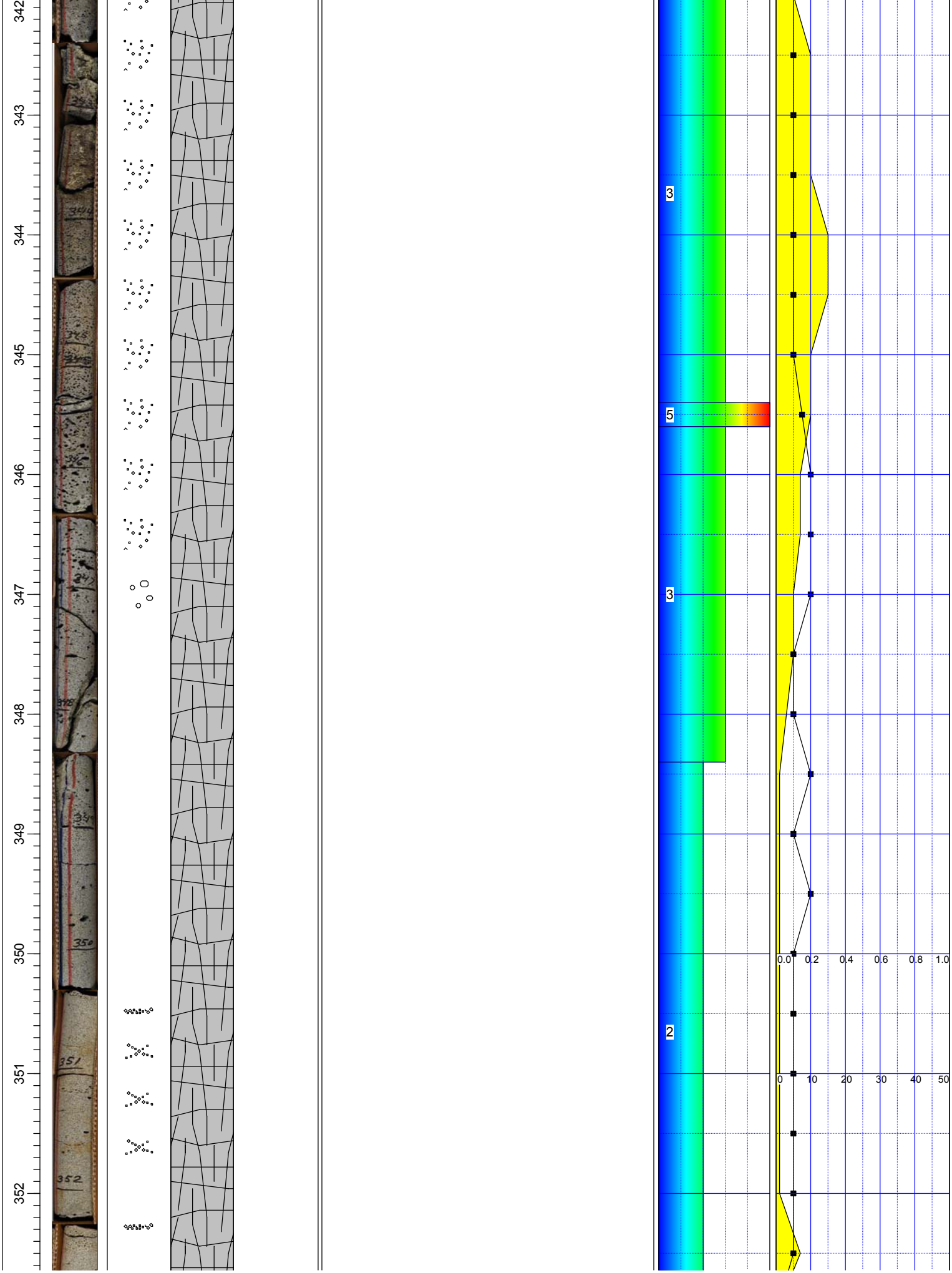
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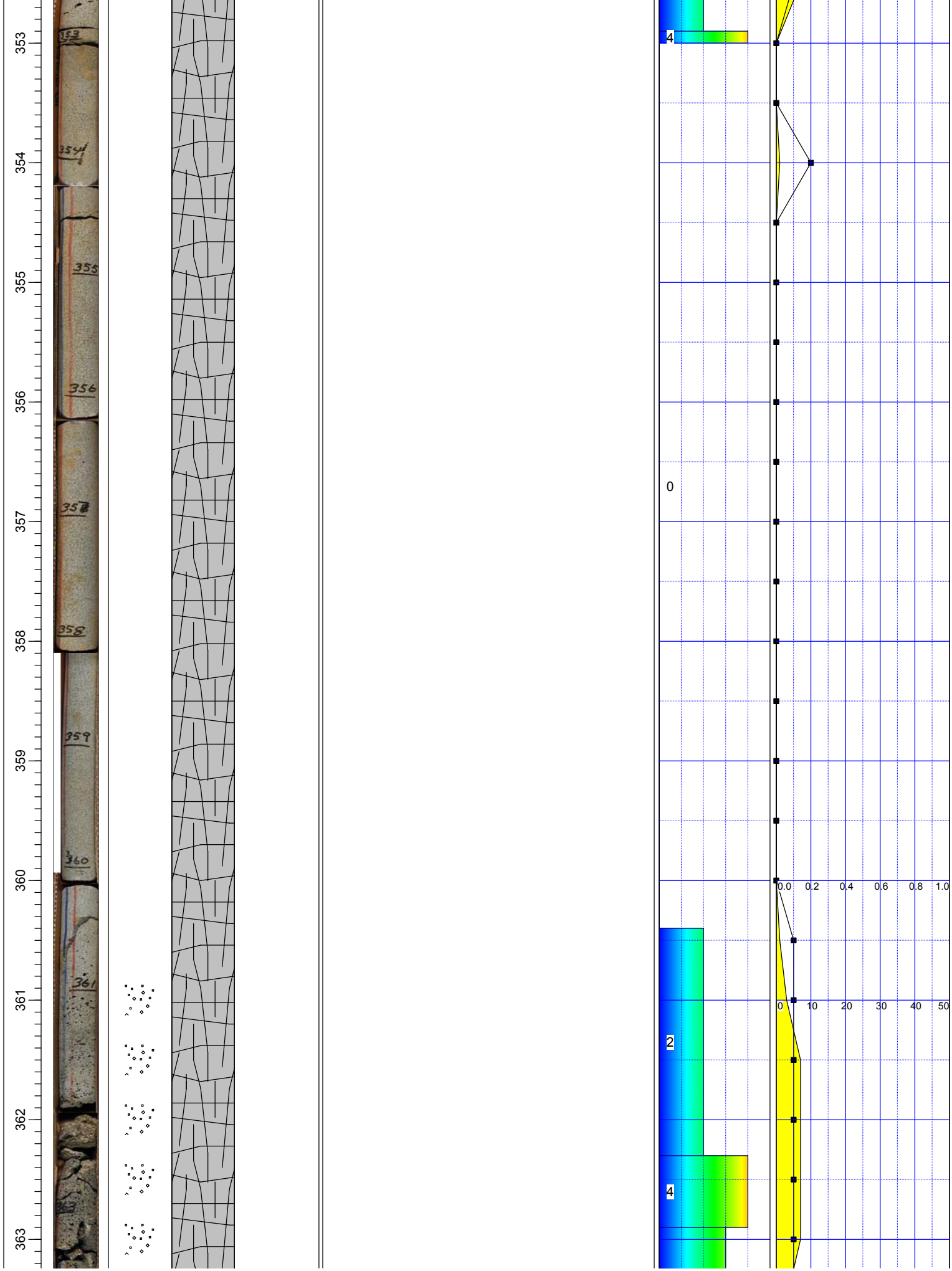
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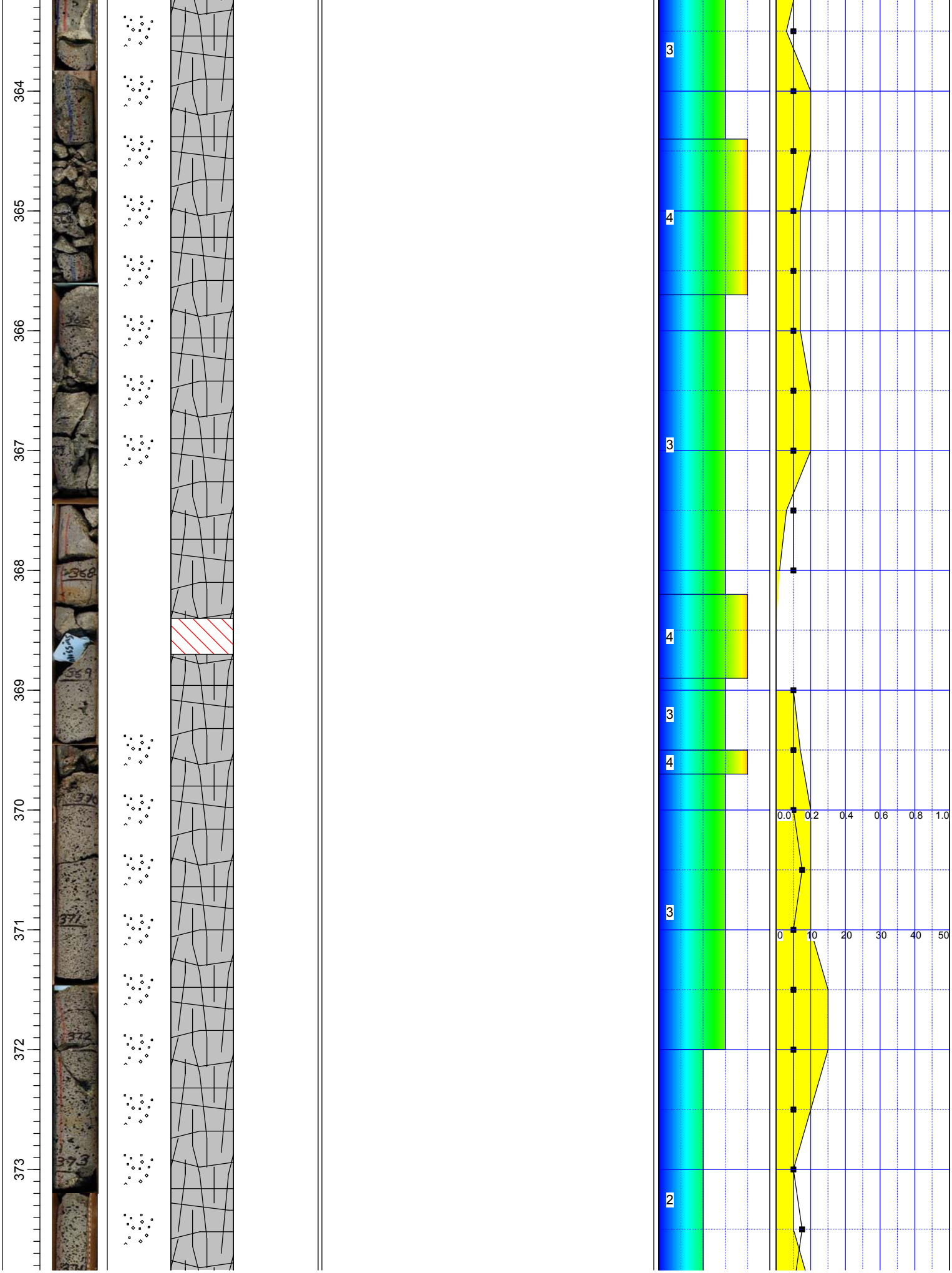
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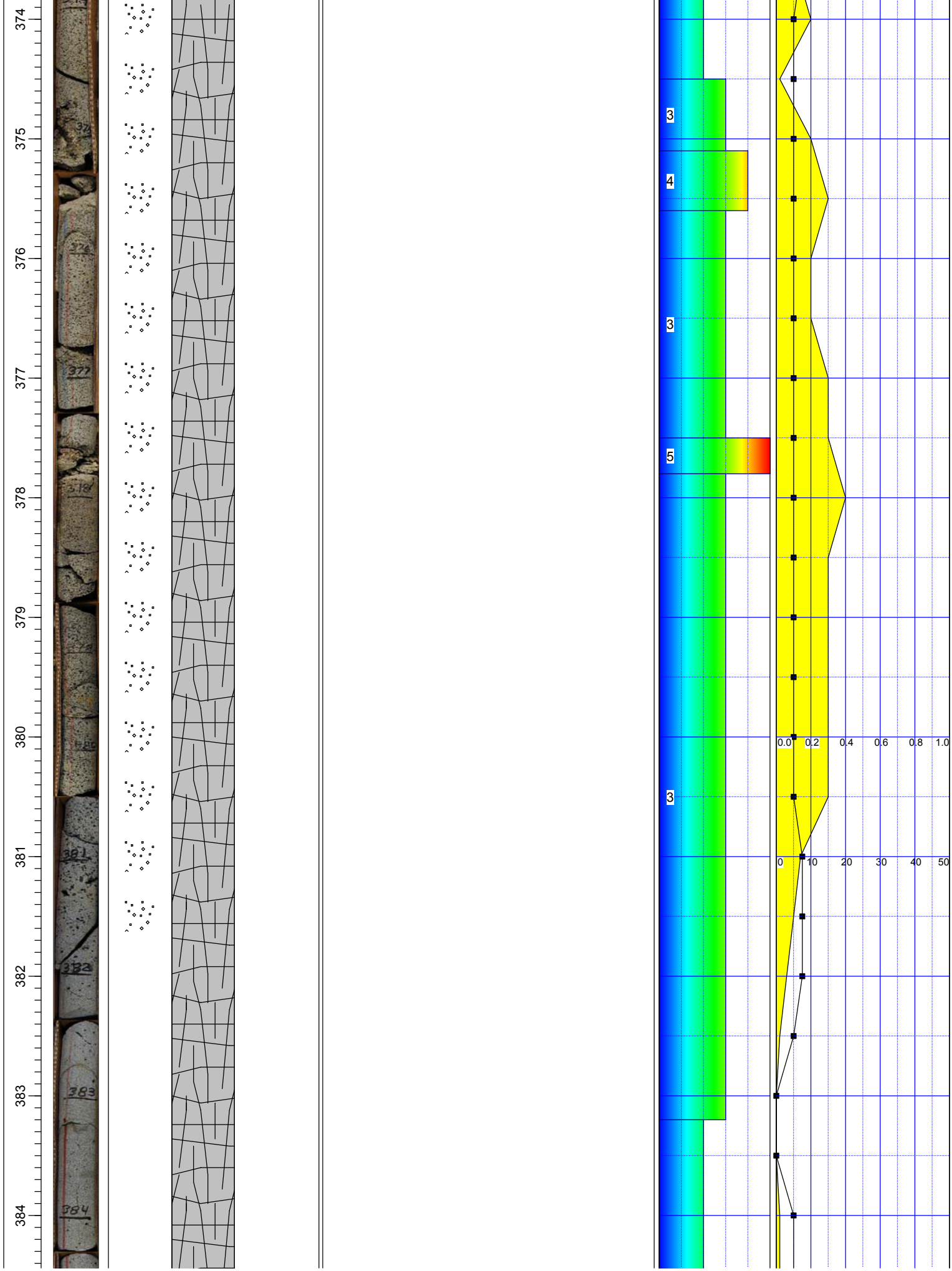
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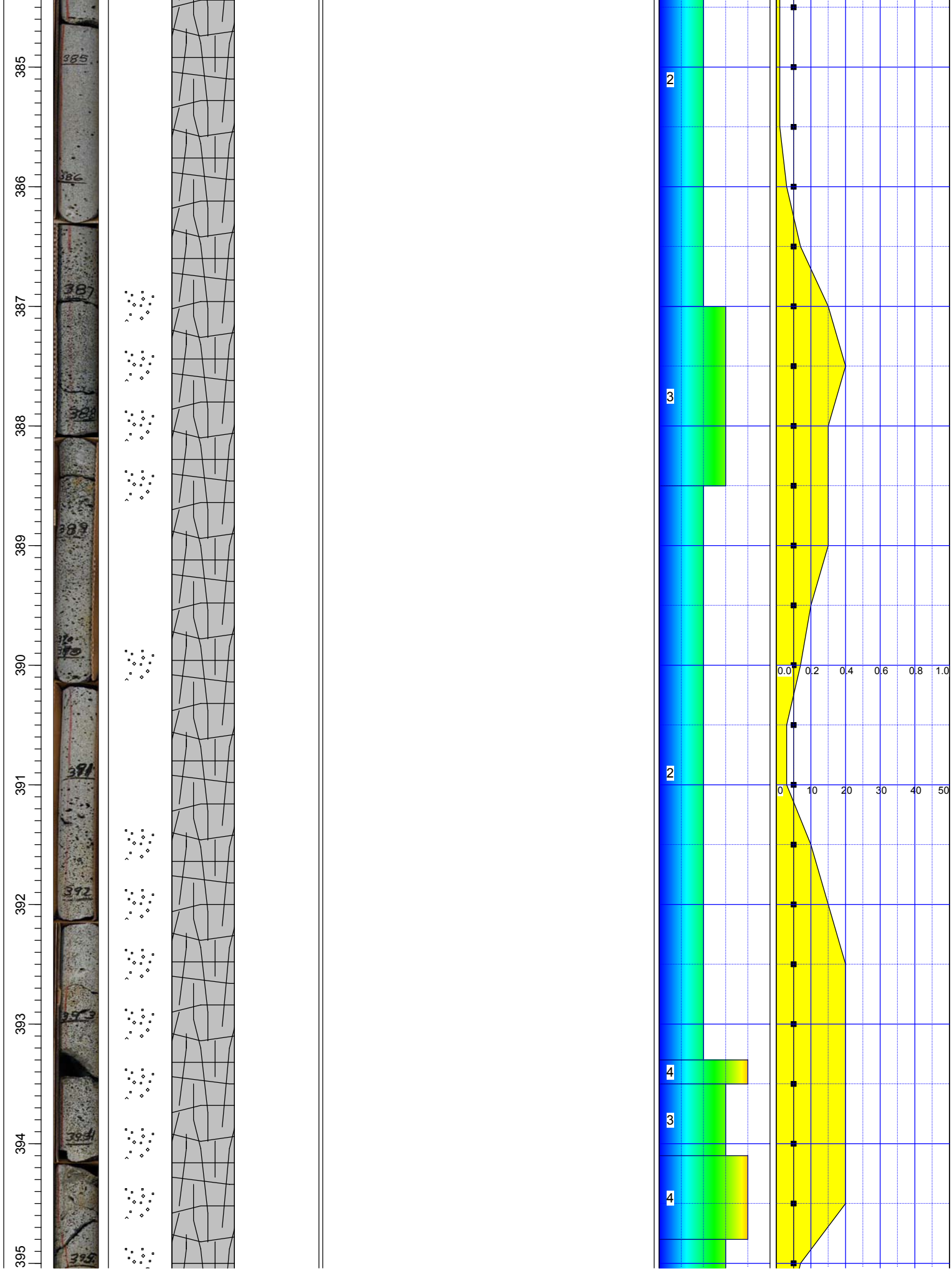
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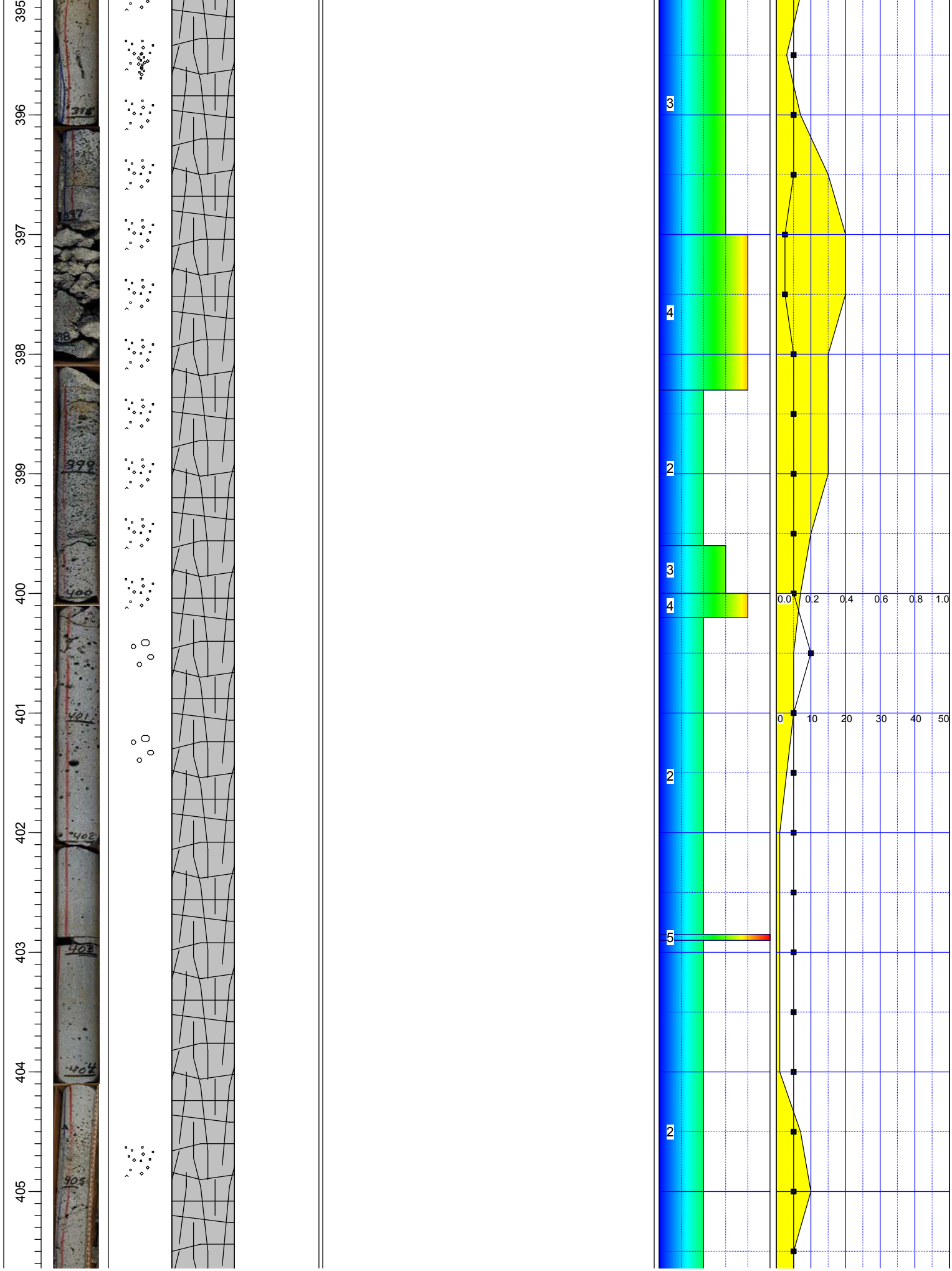
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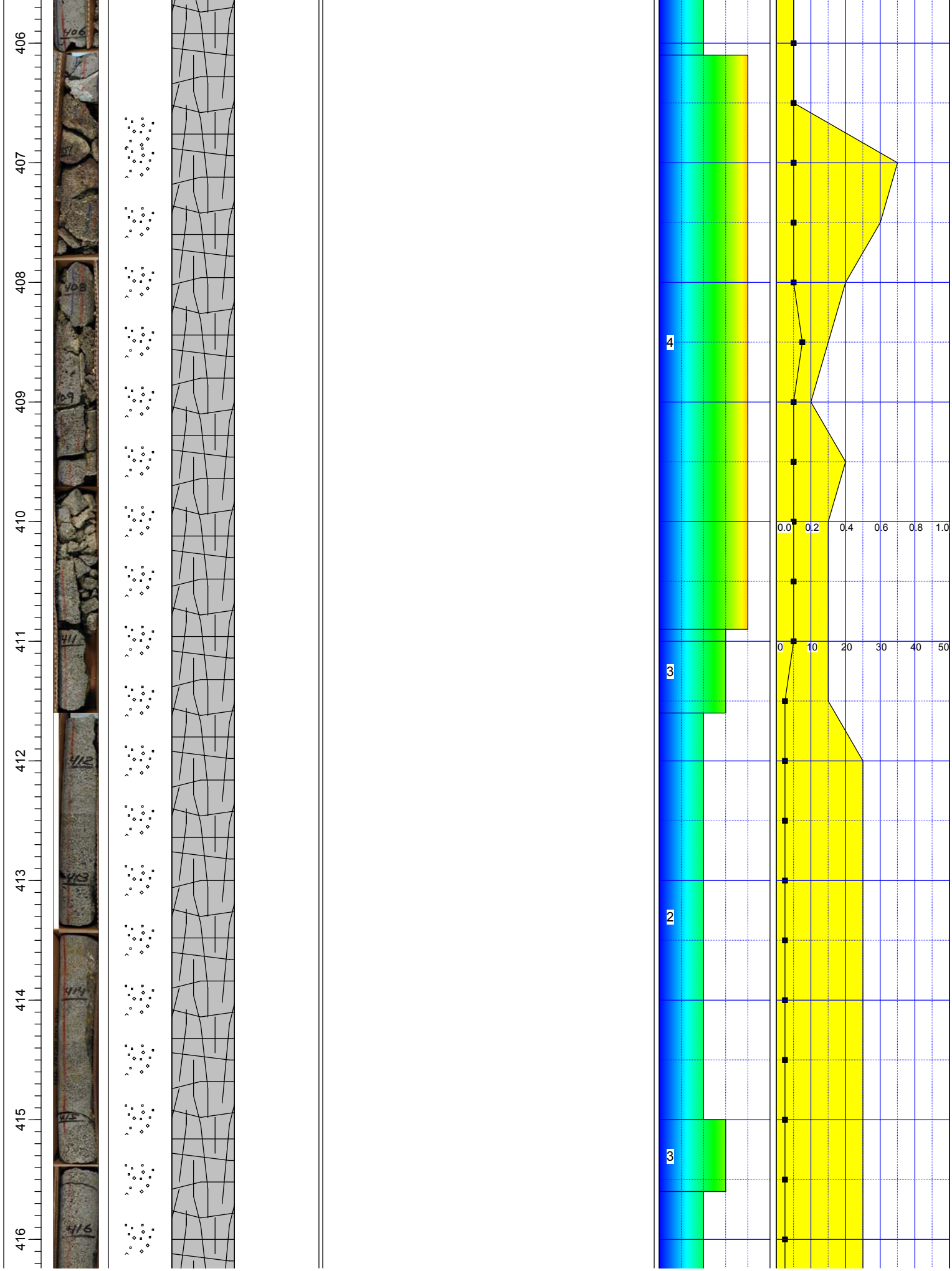
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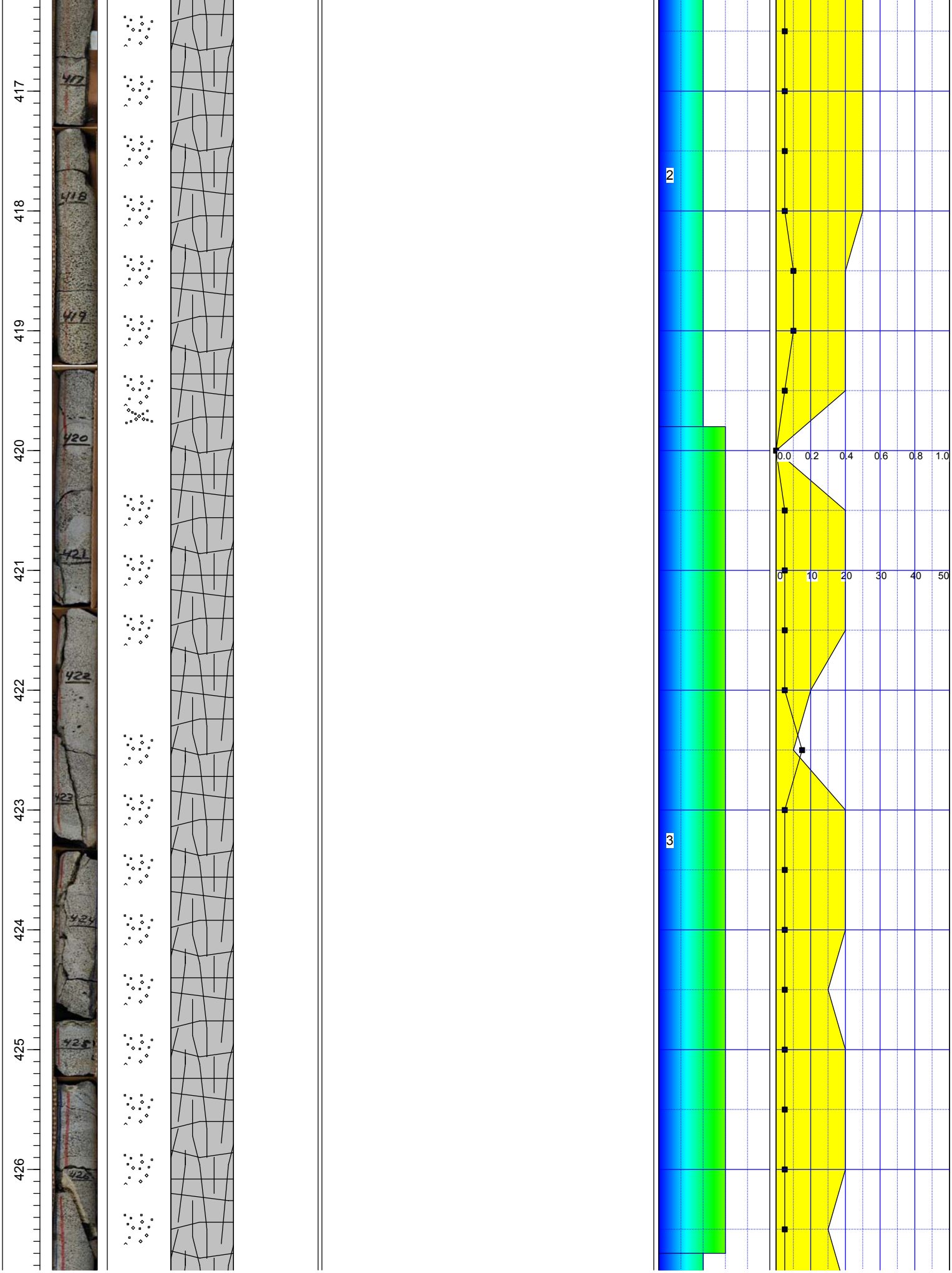
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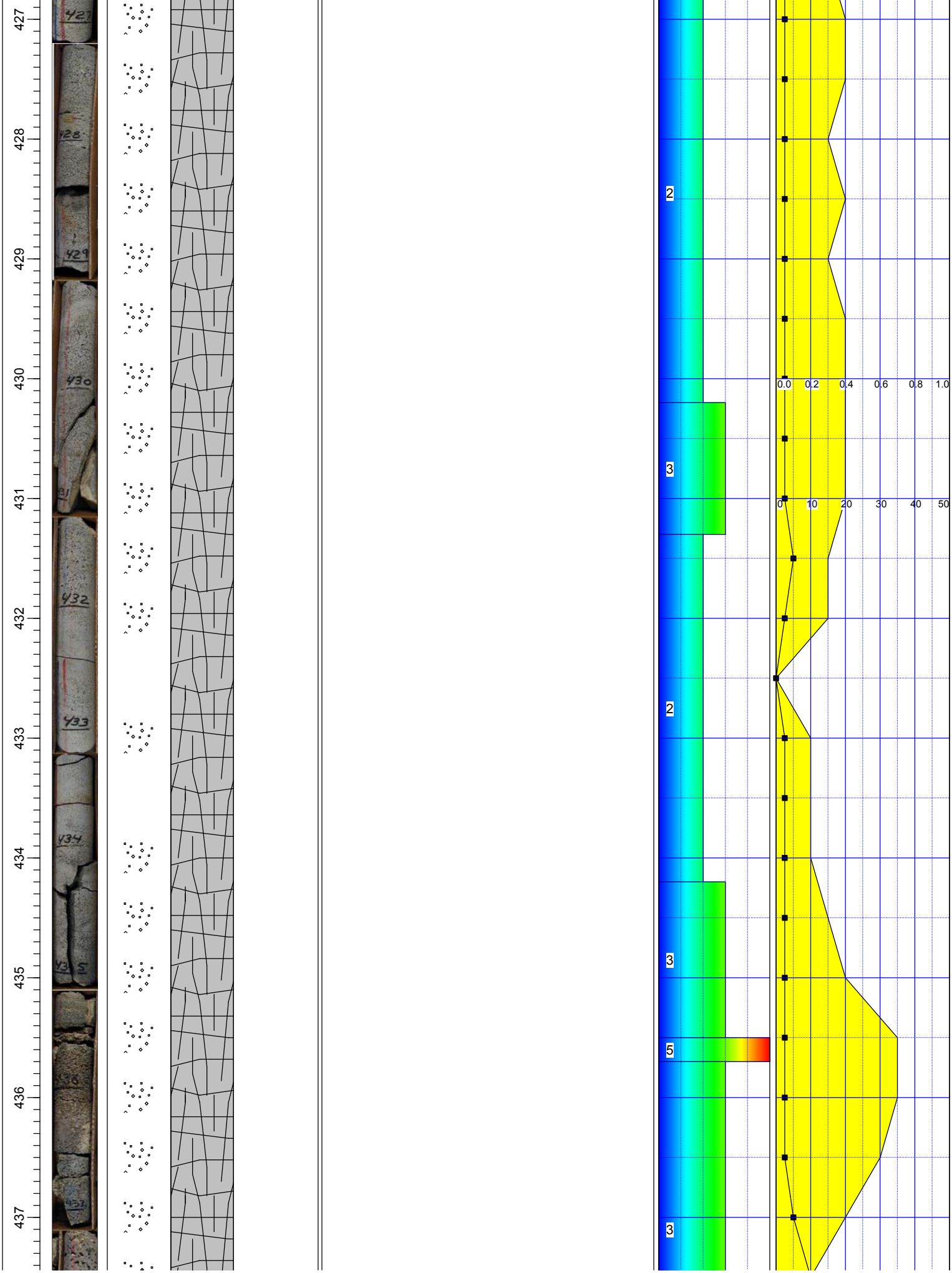
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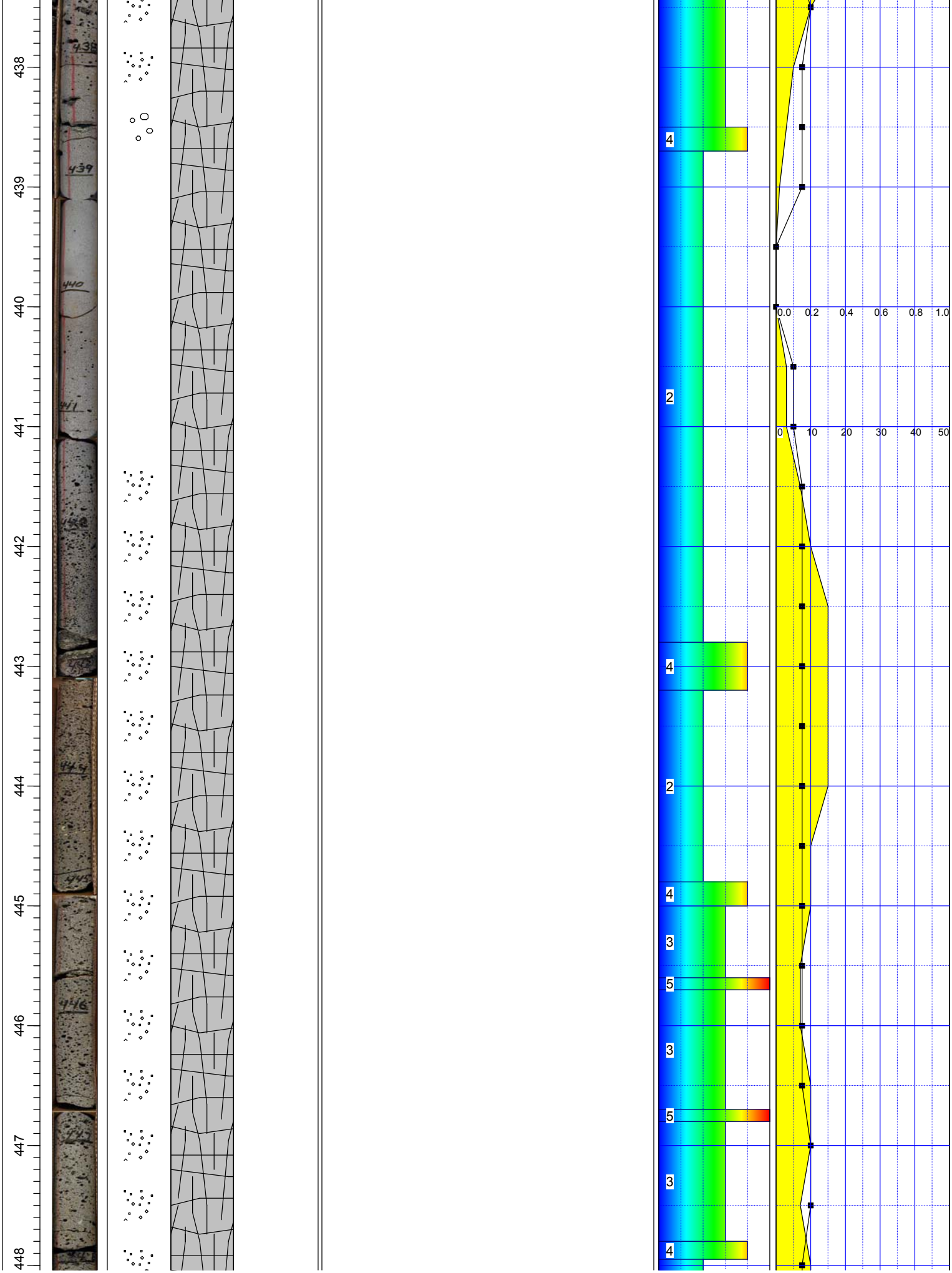
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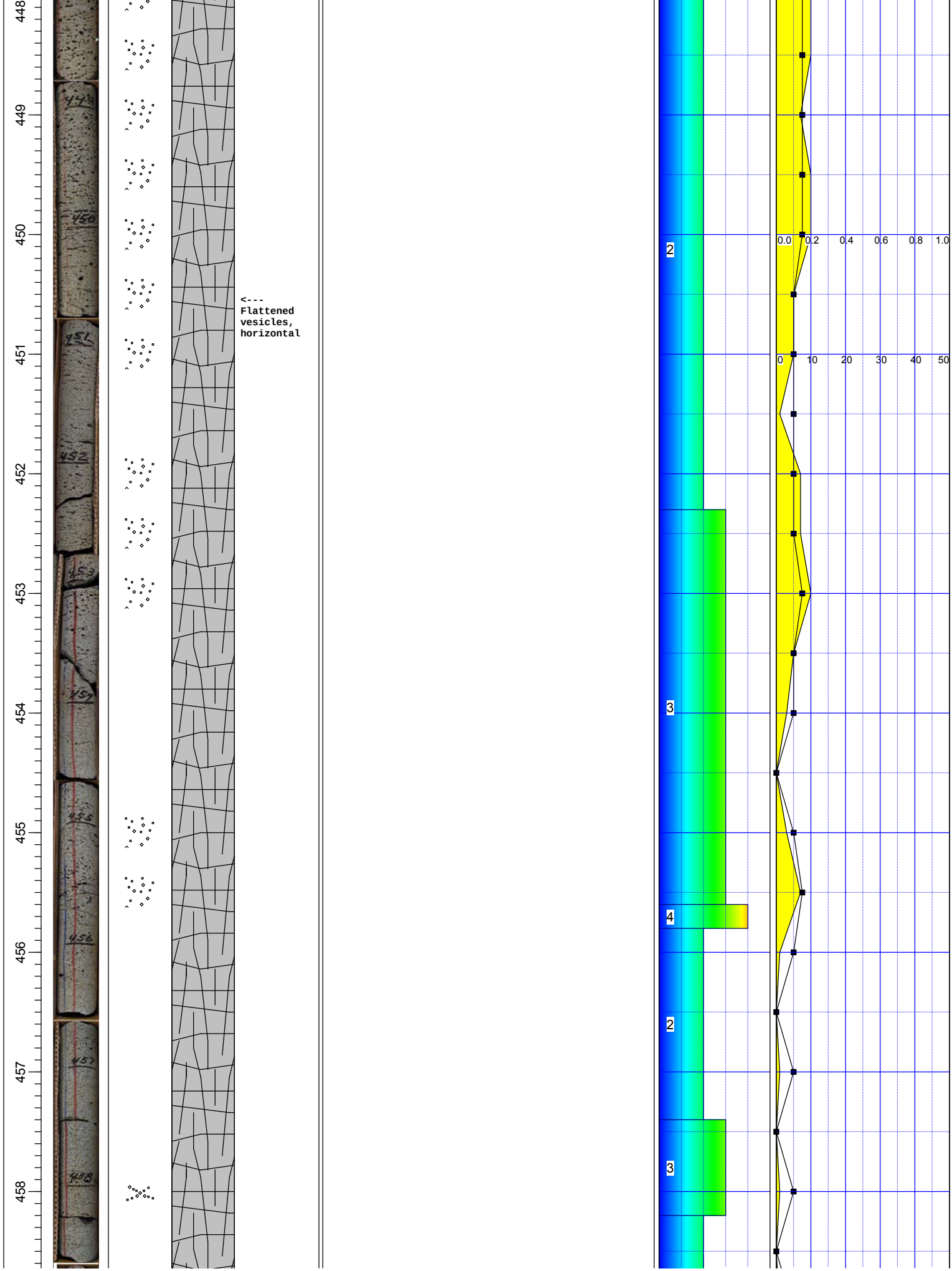
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Flattened
vesicles,
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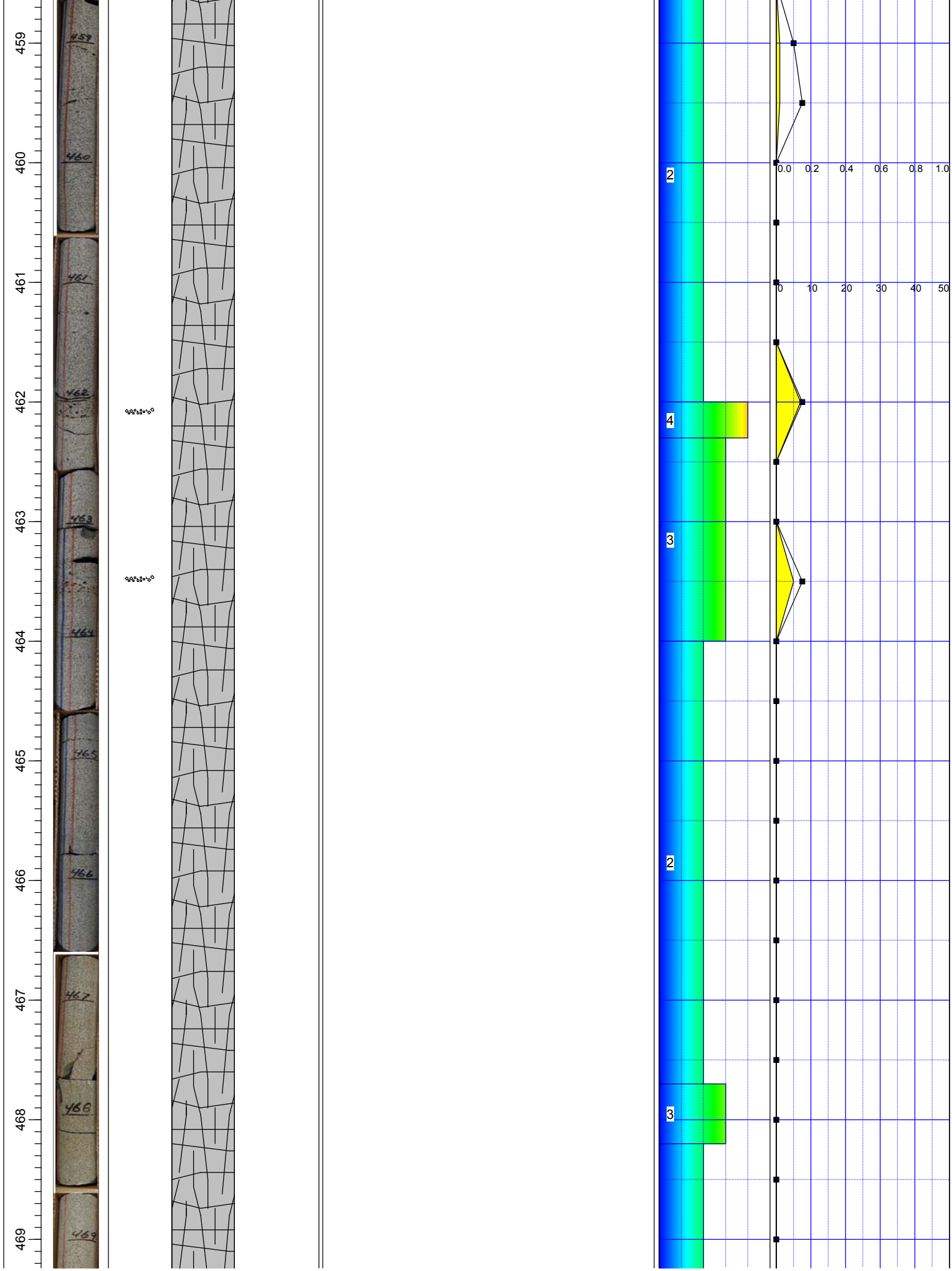
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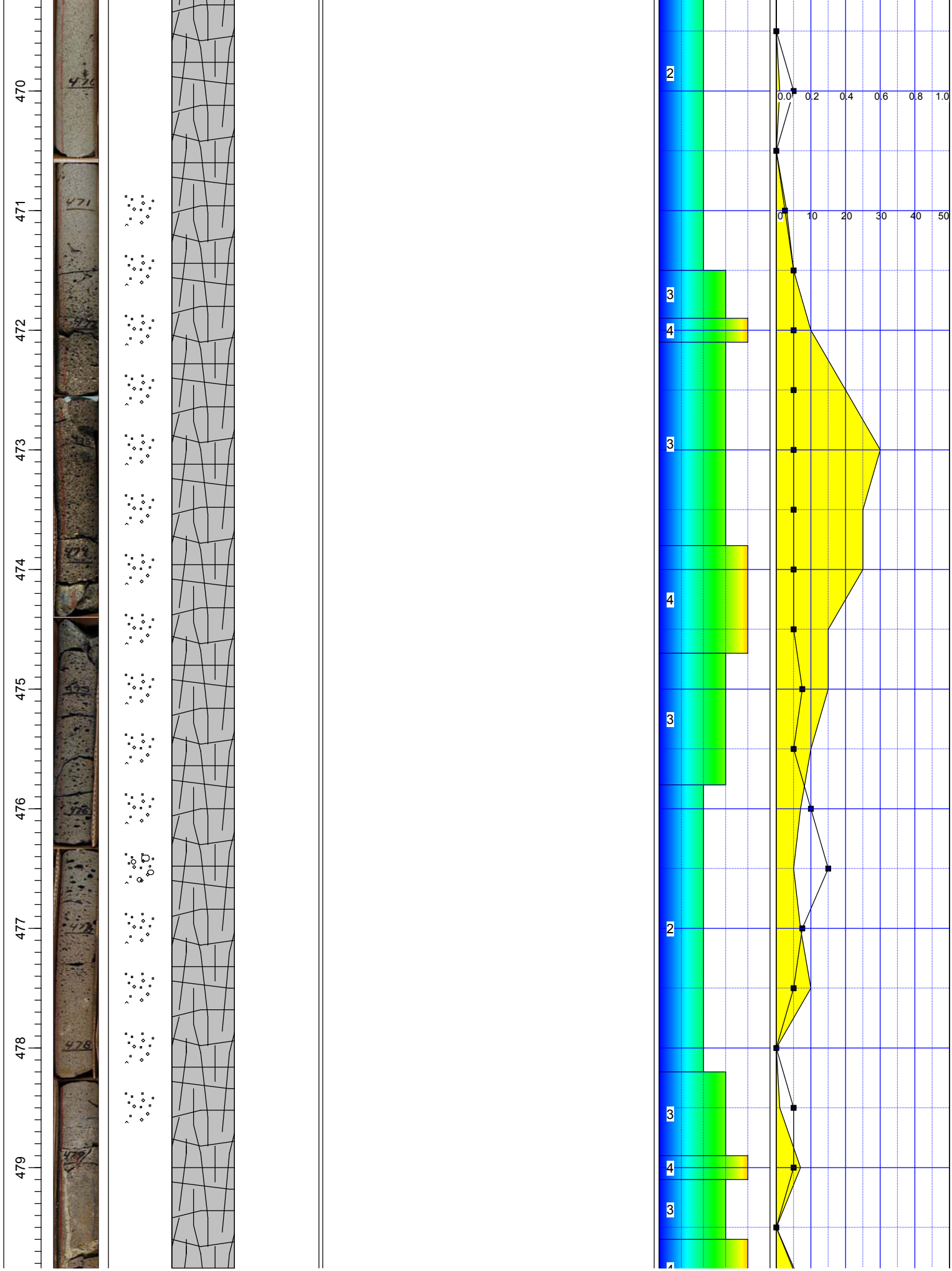
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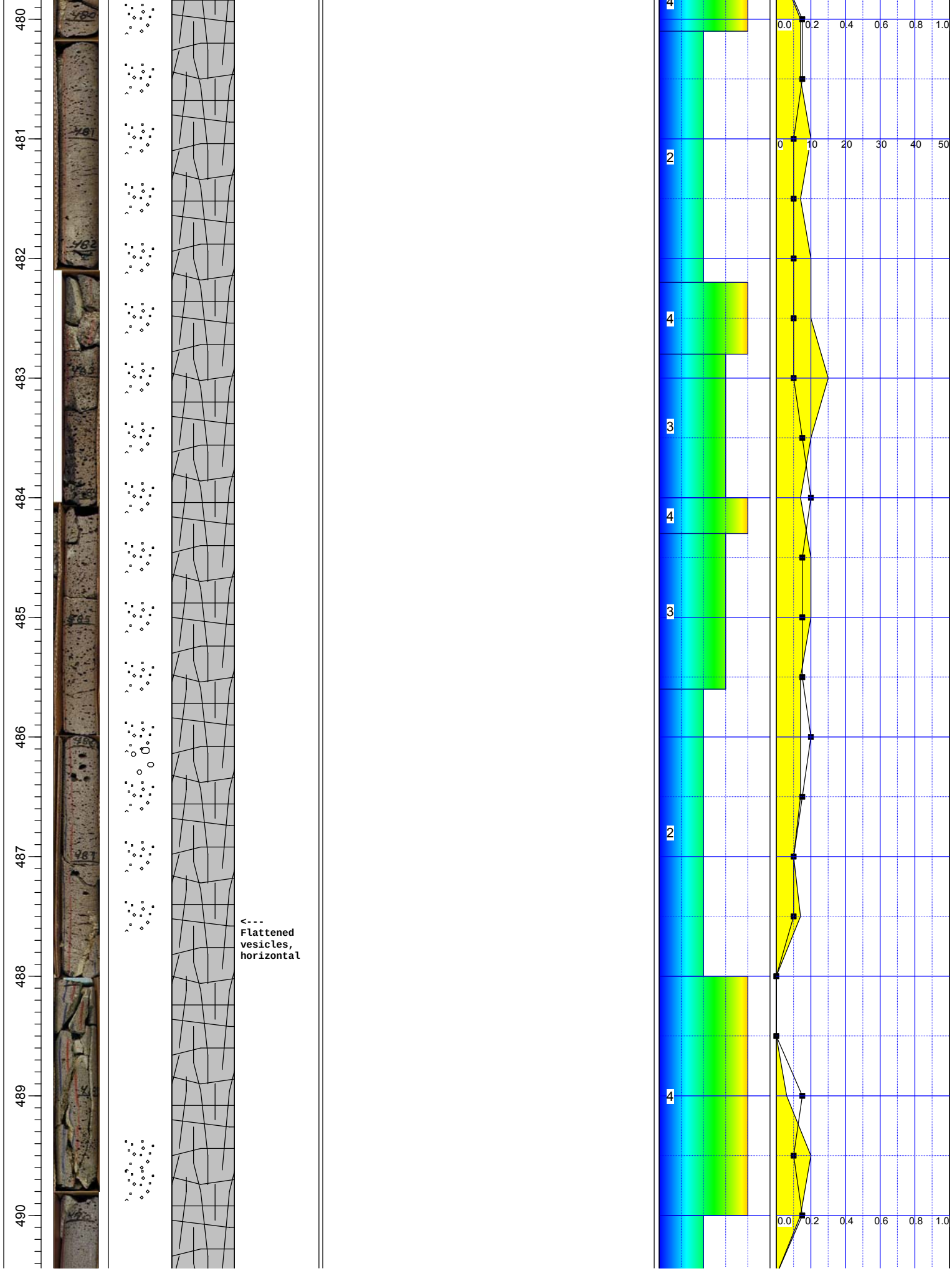
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Flattened
vesicles,
horizontal
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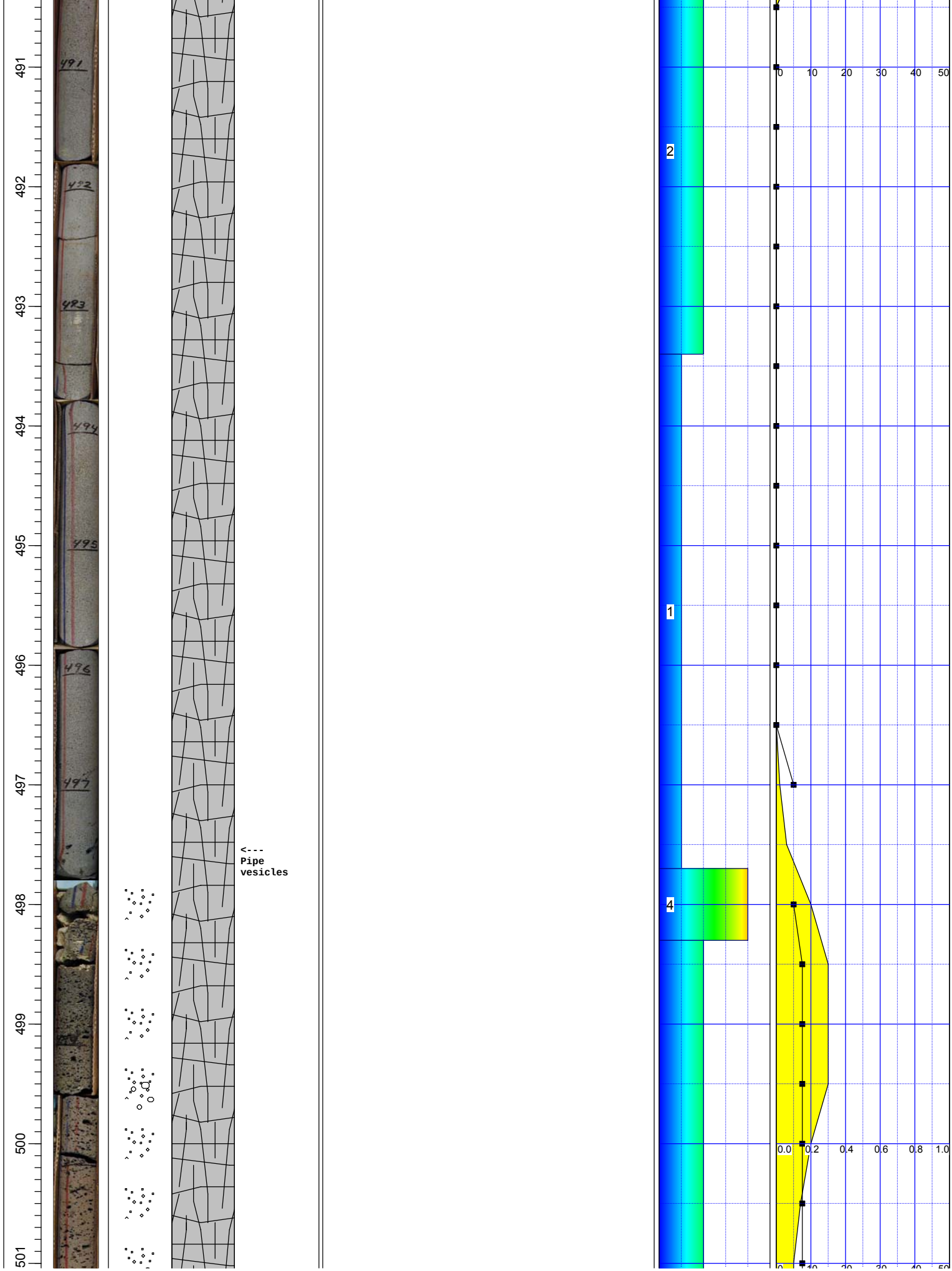
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Pipe
vesicles
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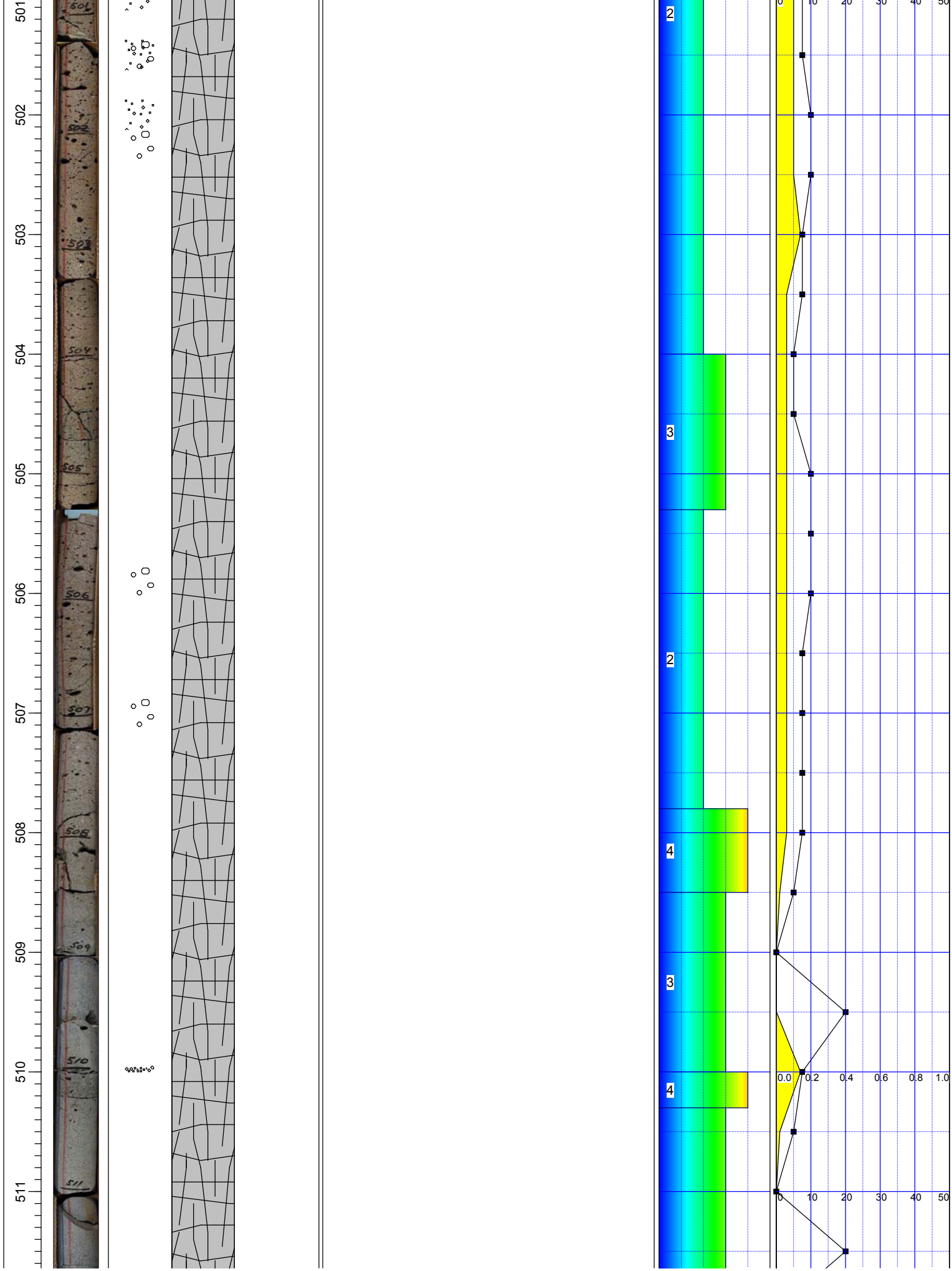
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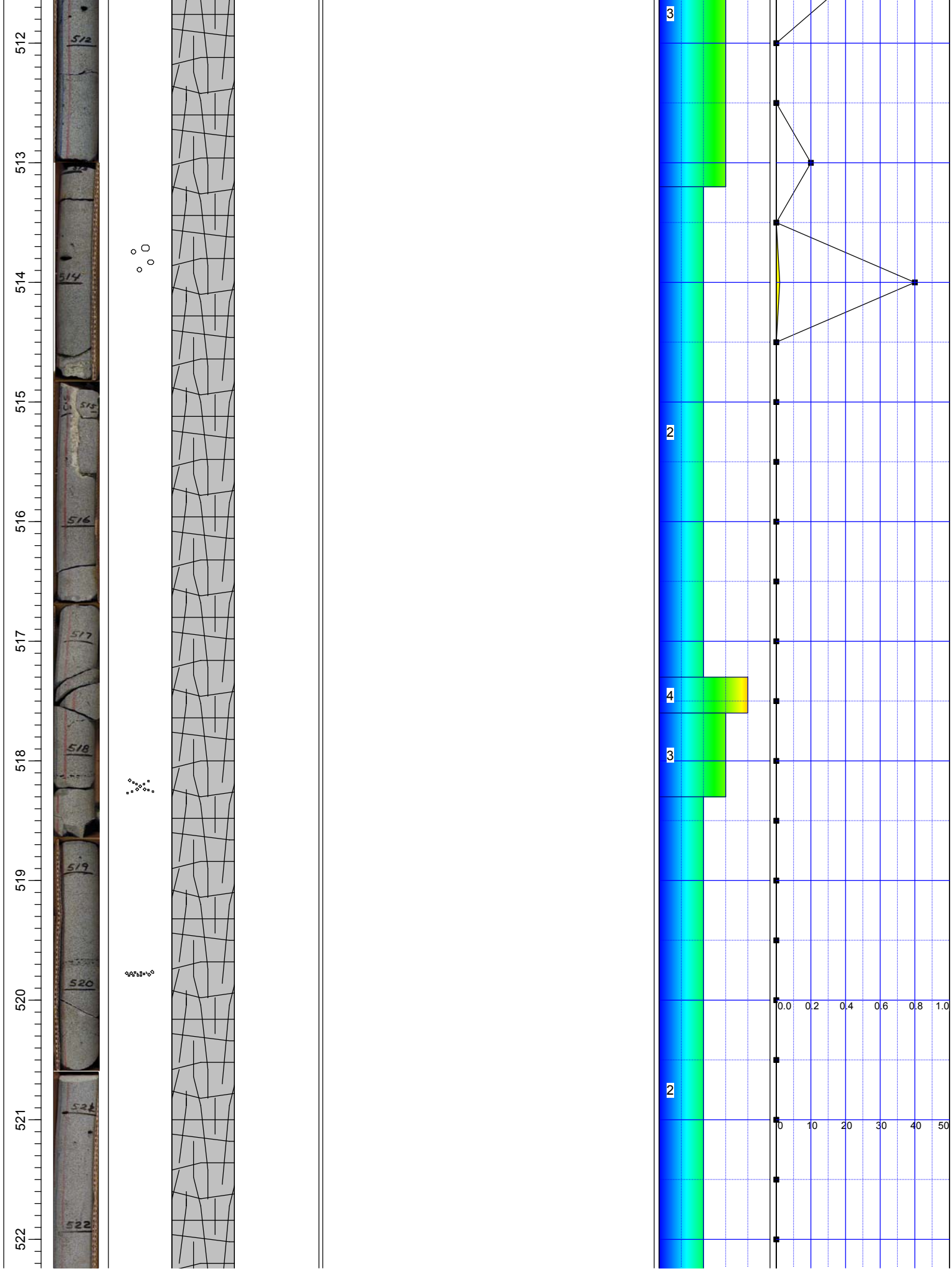
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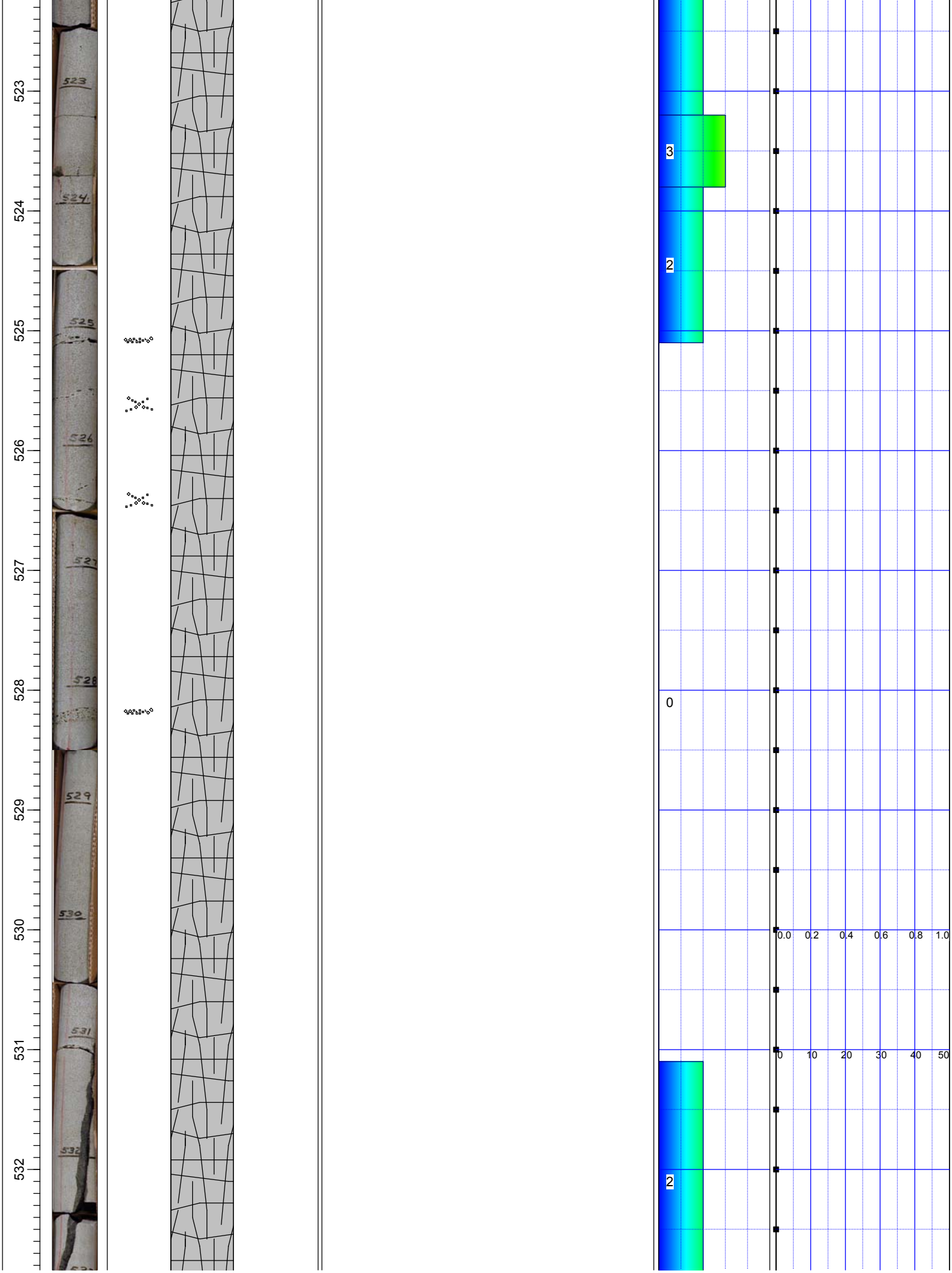
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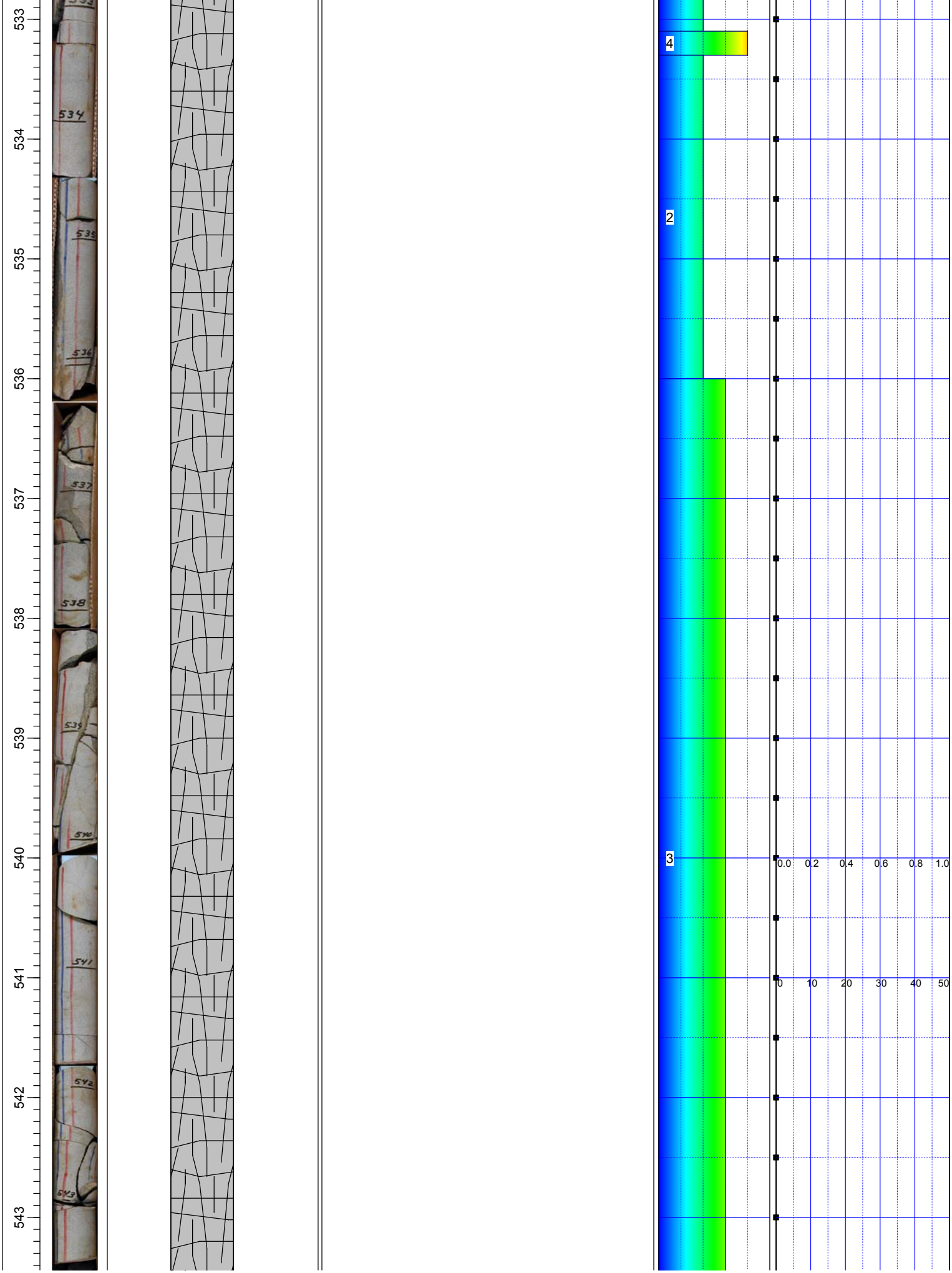
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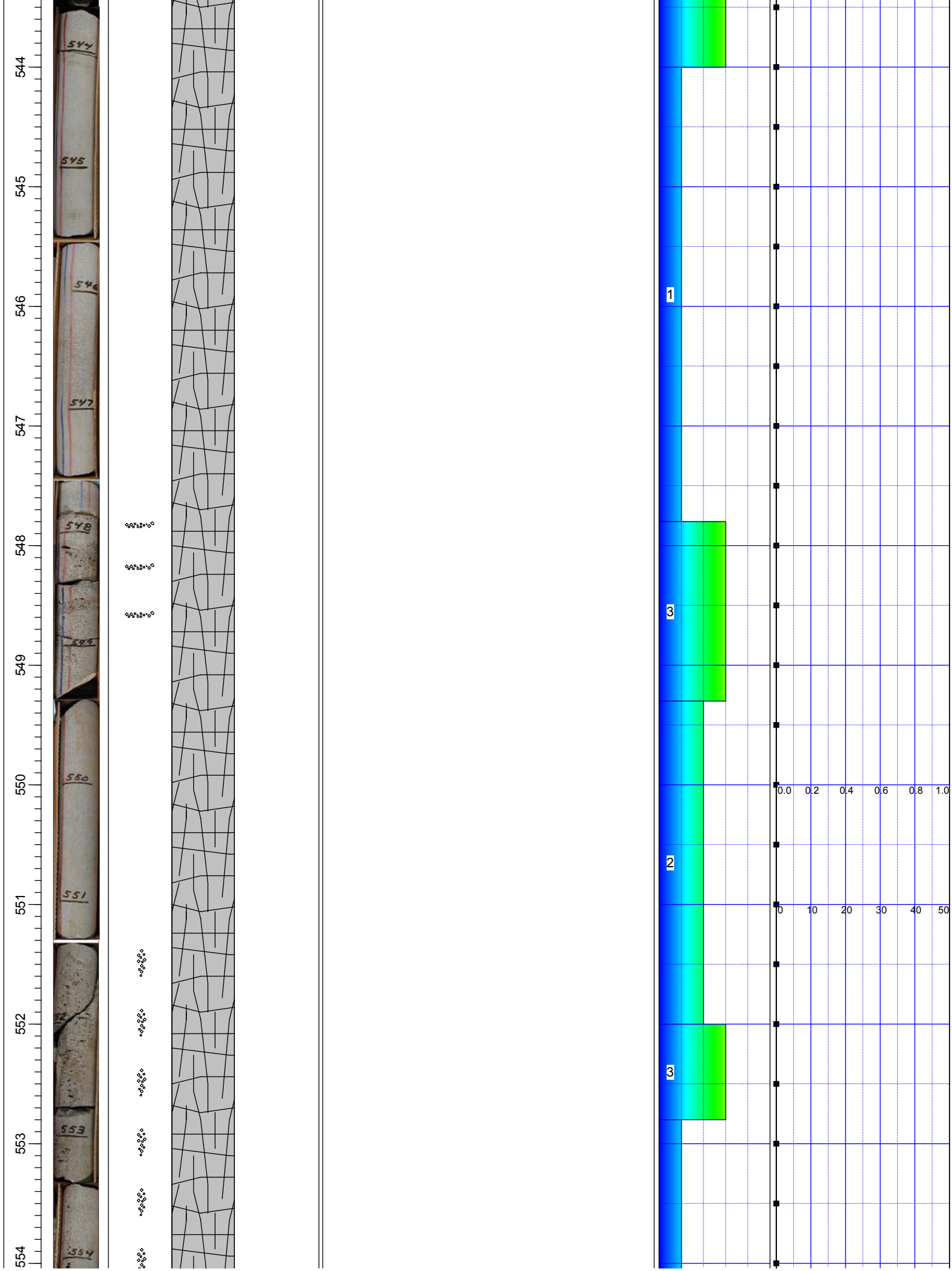
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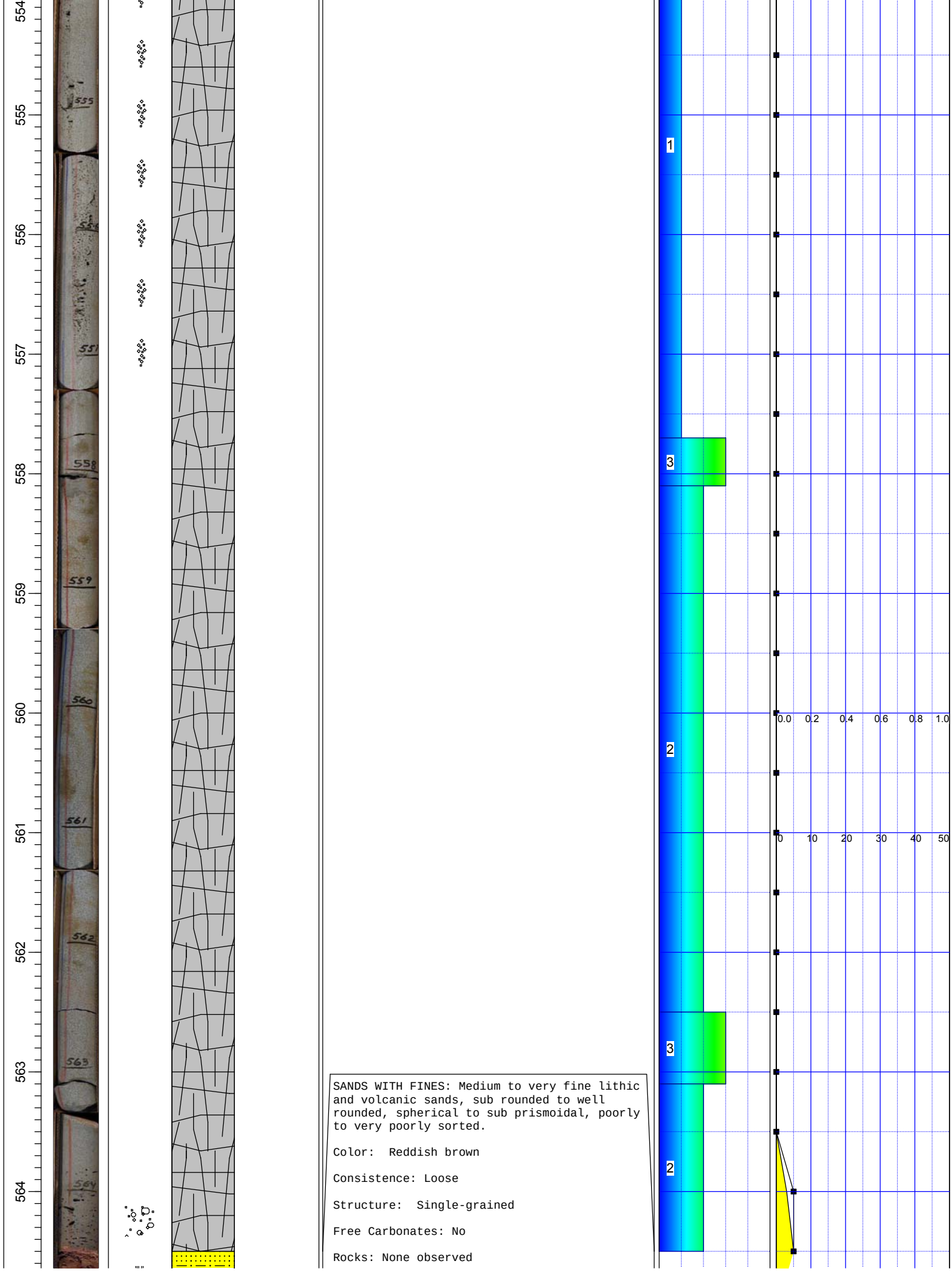


SANDS WITH FINES: Medium to very fine lithic and volcanic sands, sub rounded to well rounded, spherical to sub prismoidal, poorly to very poorly sorted.

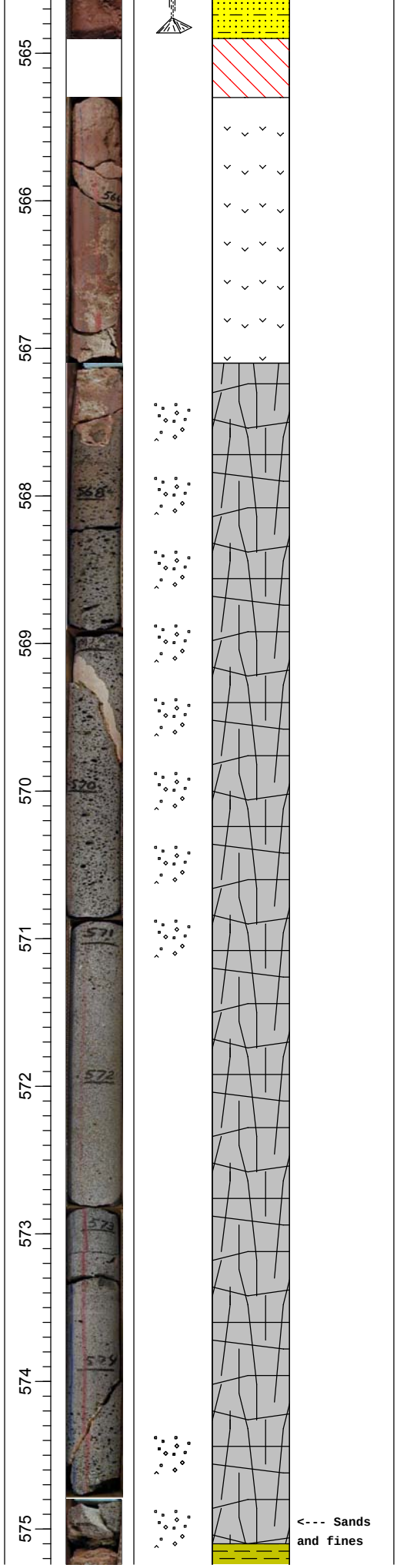
Color: Reddish brown

Consistence: Loose

Structure: Single-grained

Free Carbonates: No

Rocks: None observed



Roots / Fossils: None observed

MISSING INTERVAL

RHYOLITE ASH: Color: Pinkish gray to very pale orange reworked rhyolitic ash, quartz and lithic sand

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine to coarse-grained, poorly consolidated, very poorly sorted. Basaltic lithics. Very rare mafic minerals in larger, lapilli-like or pumiceous clasts. 3 mm - > 5 cm vesicular basalt fragments, angular to subangular, subprismoidal to spherical.
Some portions show several <1 - 1 mm circular and sinuous passageways.

Alteration Activity: reddish-orange color may indicate heating by basalt flow

Note: Back side of core is solid basalt, front side shows rhyolitic ash and sedimentary material incorporated into the basalt flow.

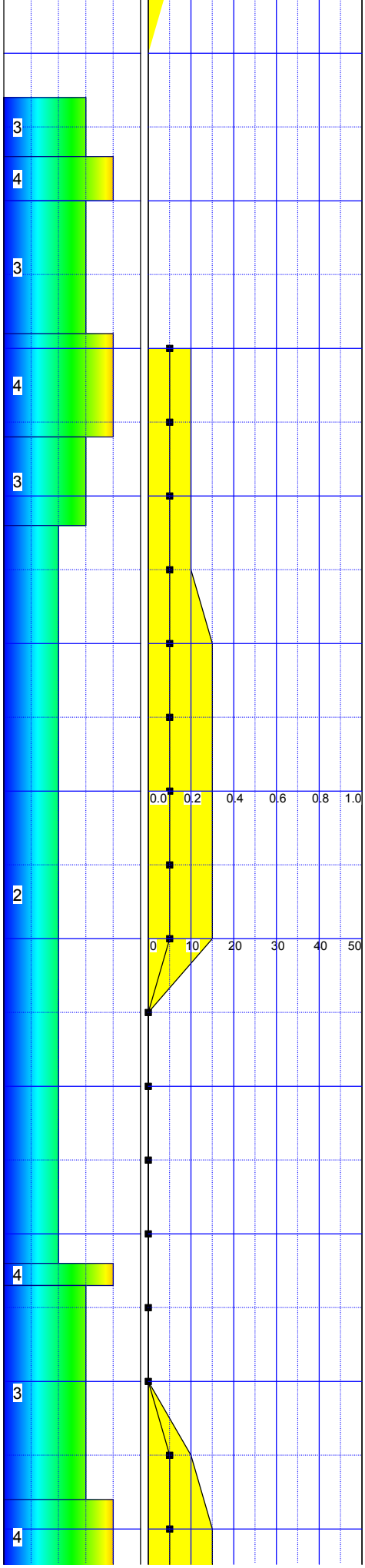
BASALT: Color: Medium dark gray to dark gray and grayish brown

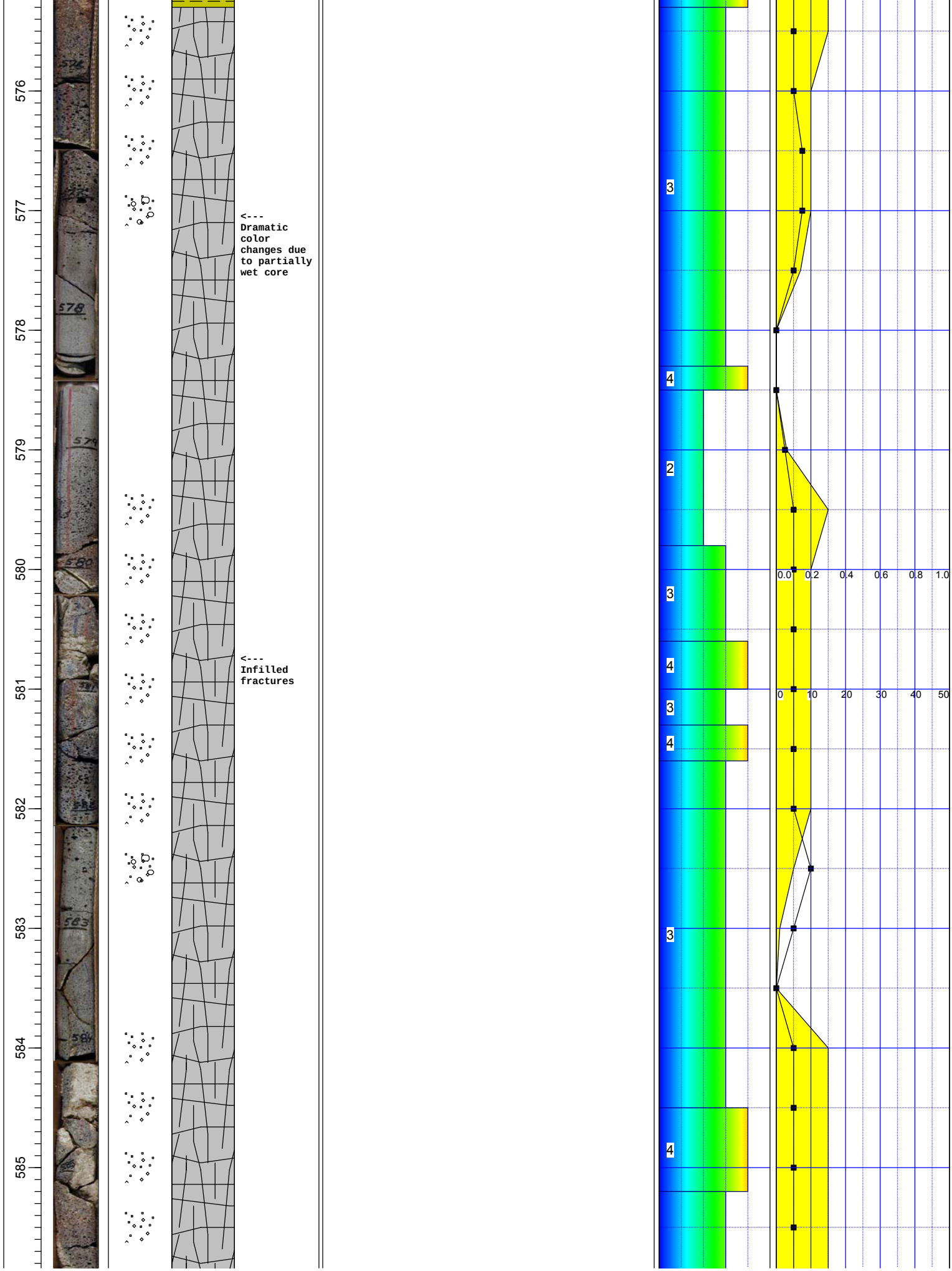
Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic granular groundmass throughout.
Alternates between diktytakitic, vesicular, and massive texture with some regions showing 1 mm euhedral to subhedral, tabular to acicular, plagioclase phenocrysts. Overall, grains are euhedral to subhedral, and evenly distributed.

Xenoliths: None noted

Alteration Some fracture systems and nearby vesicles show infilling with silts and clays in addition to mild bleaching.




576
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585
<---
Dramatic
color
changes due
to partially
wet core
<---
Infilled
fractures
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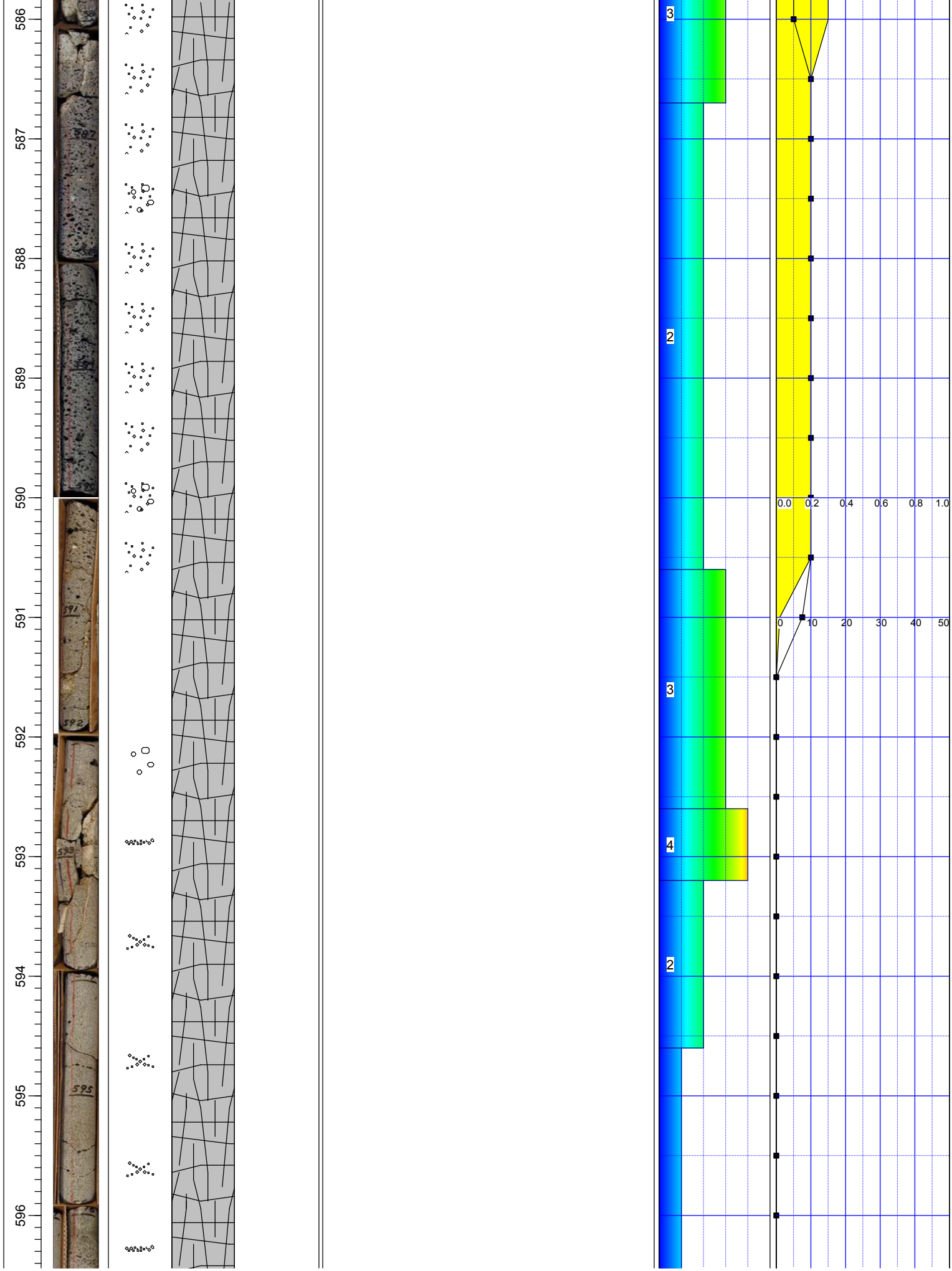
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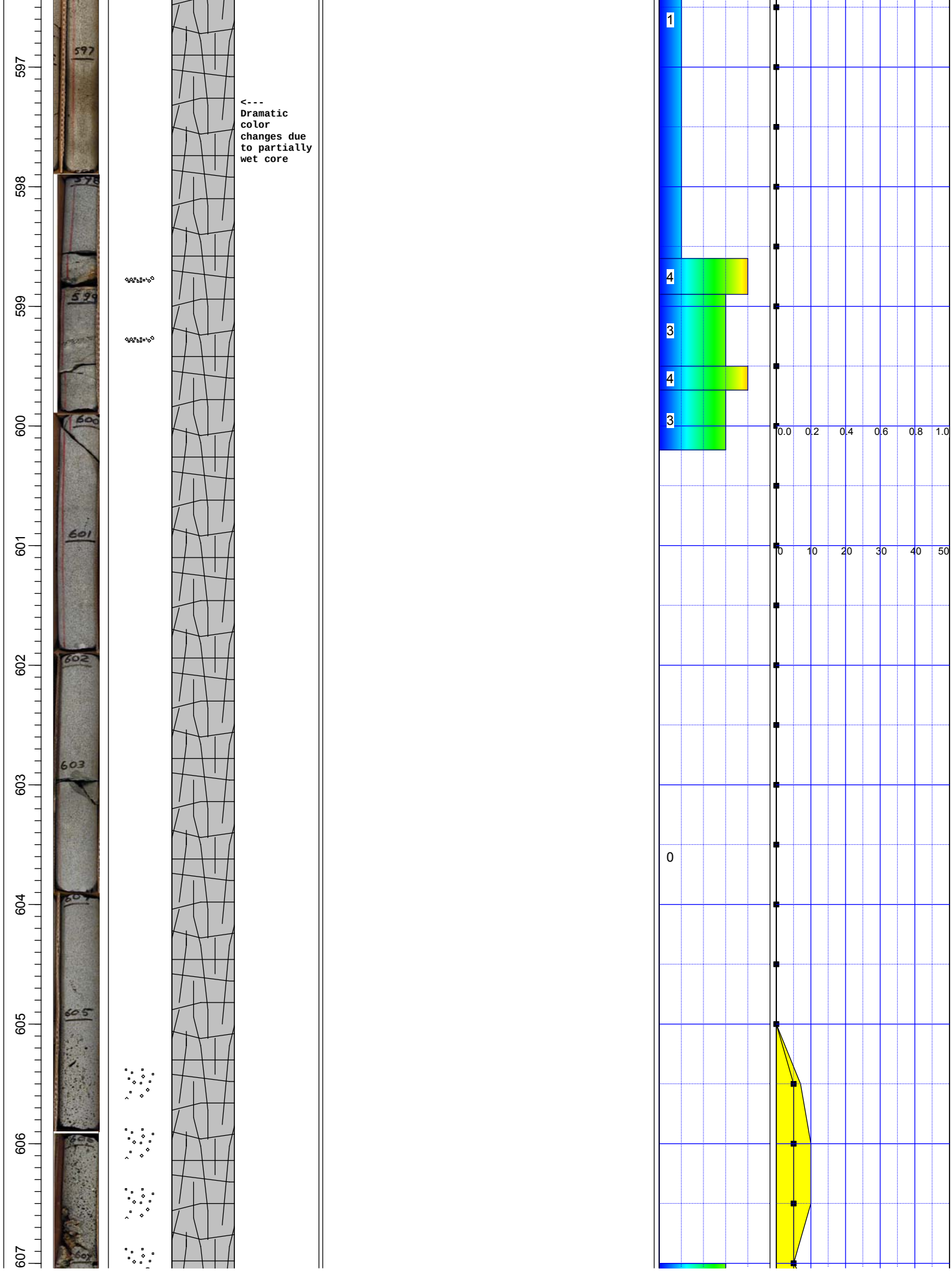
597
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601
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605
606
607
<---
Dramatic
color
changes due
to partially
wet core
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4
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0.6
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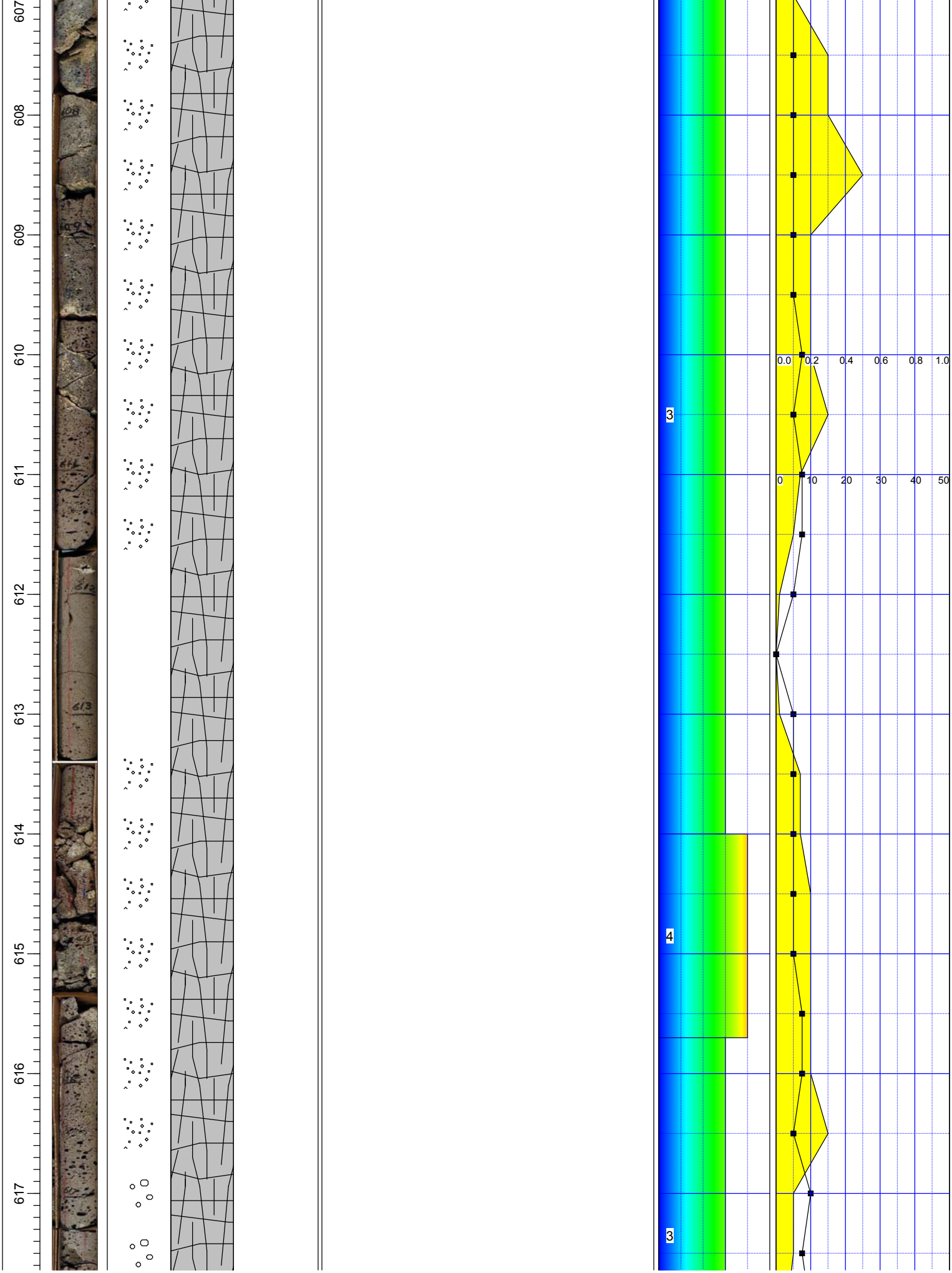
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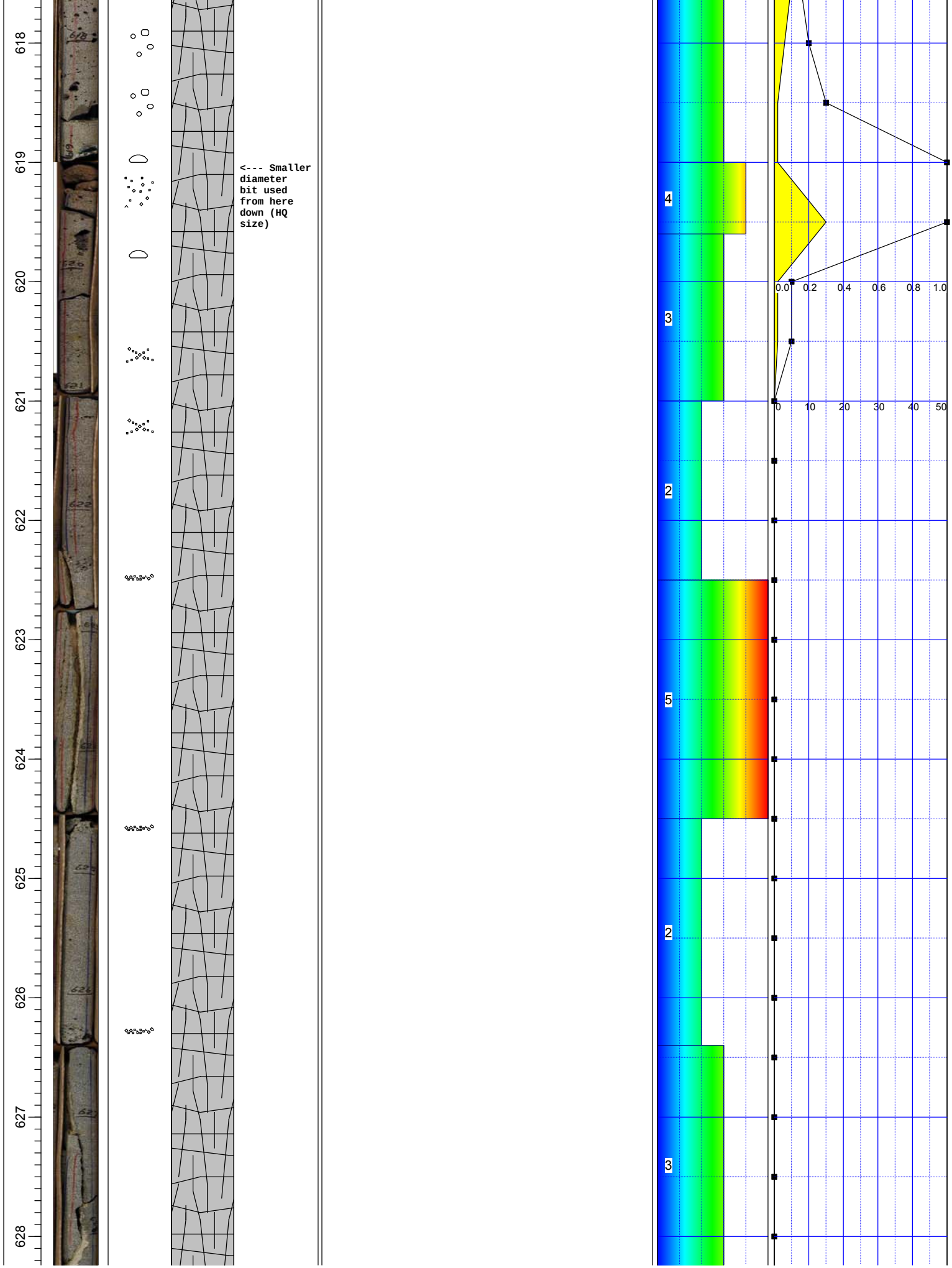
<--- Smaller diameter bit used from here down (HQ size)
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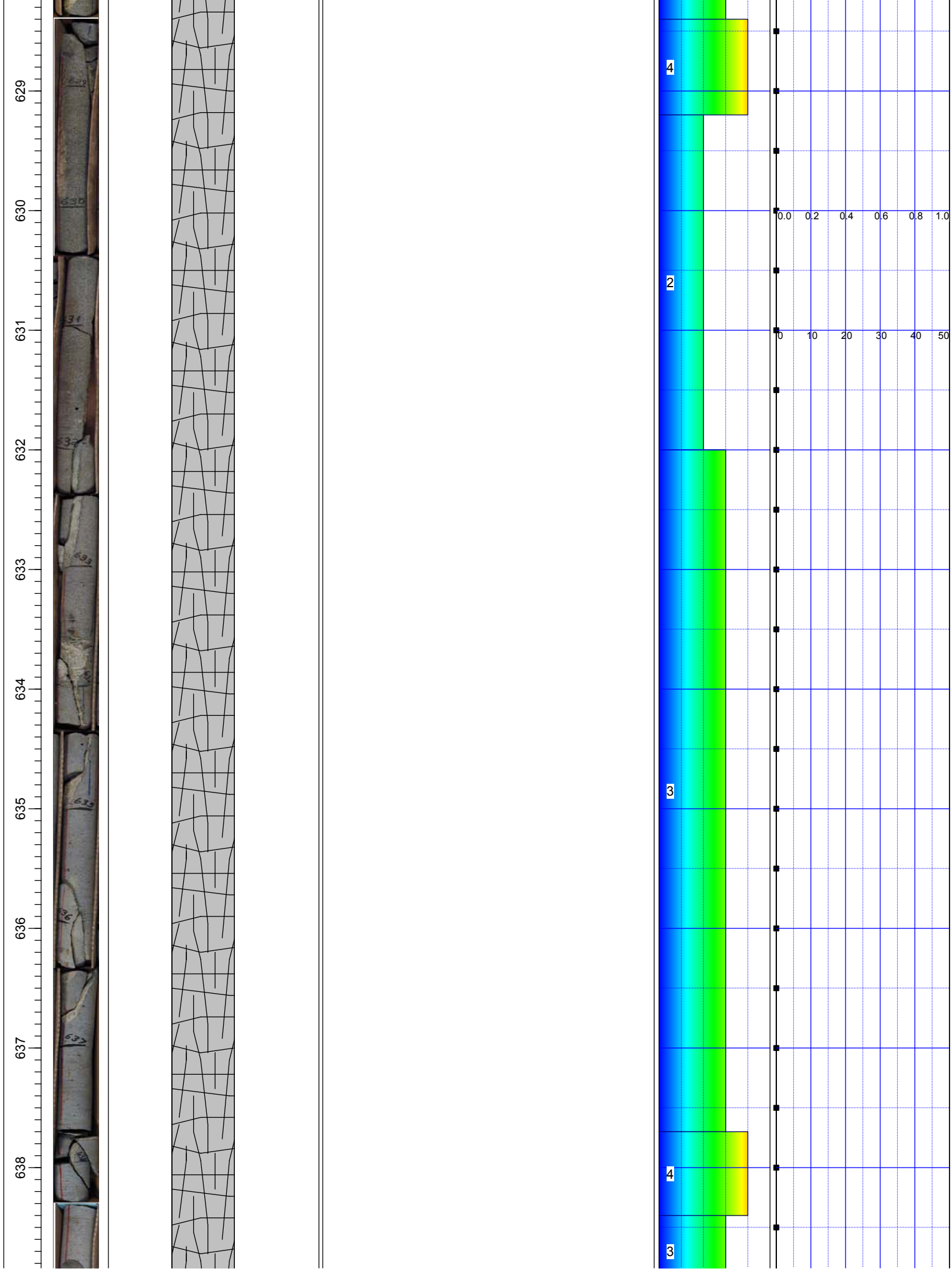
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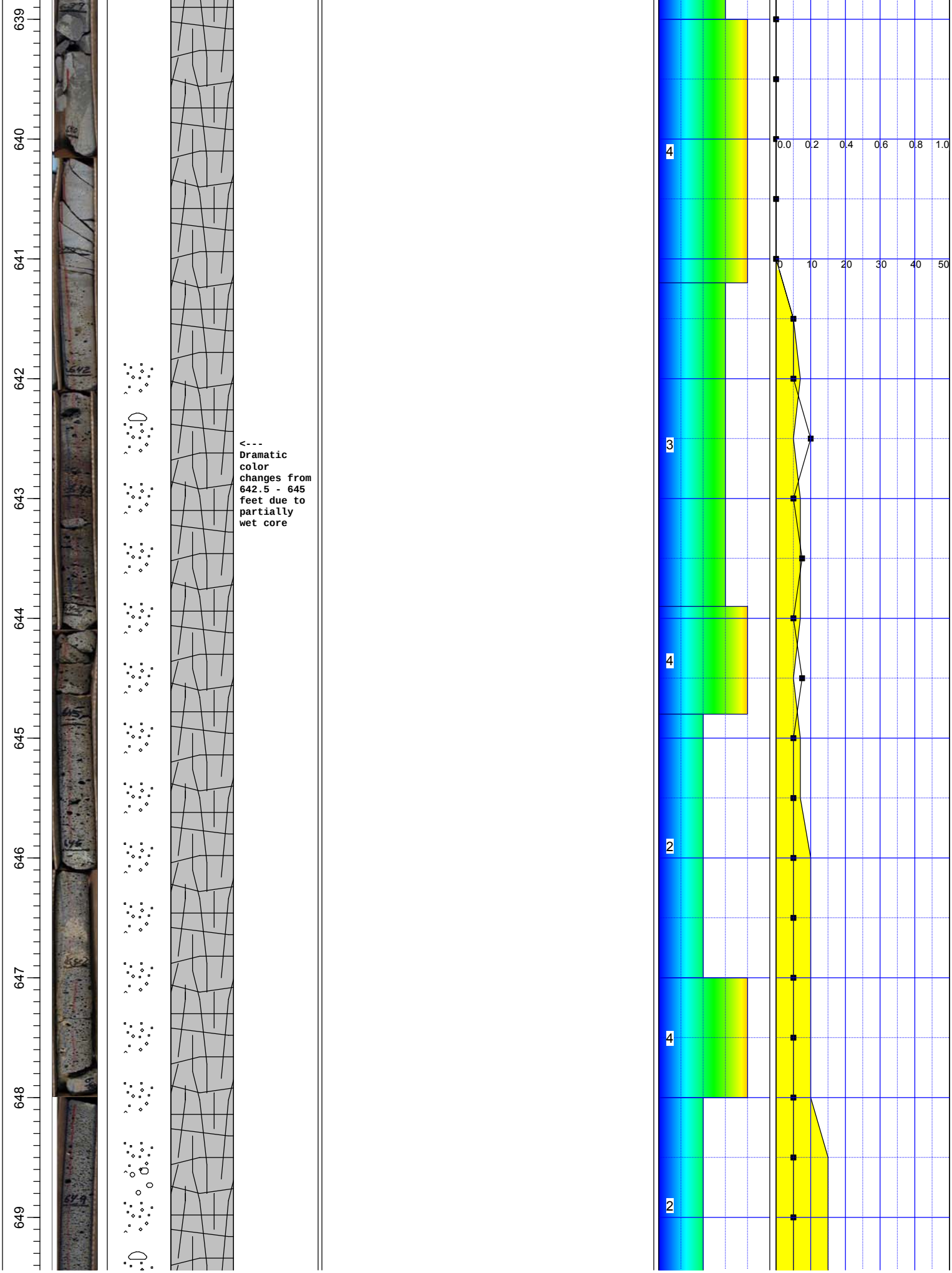
639
640
641
642
643
644
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647
648
649
<---
Dramatic
color
changes from
642.5 - 645
feet due to
partially
wet core
4
3
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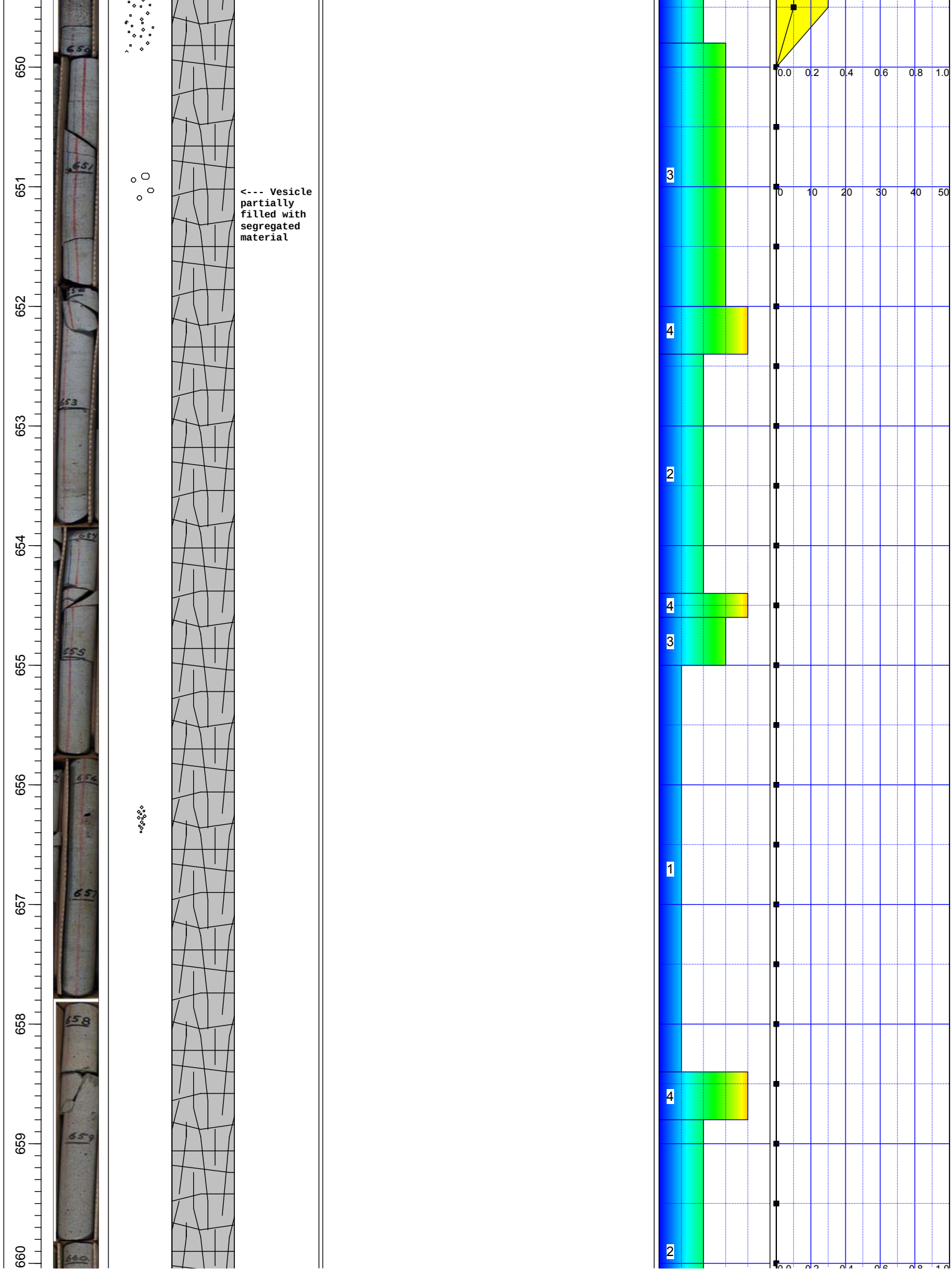
<--- Vesicle partially filled with segregated material
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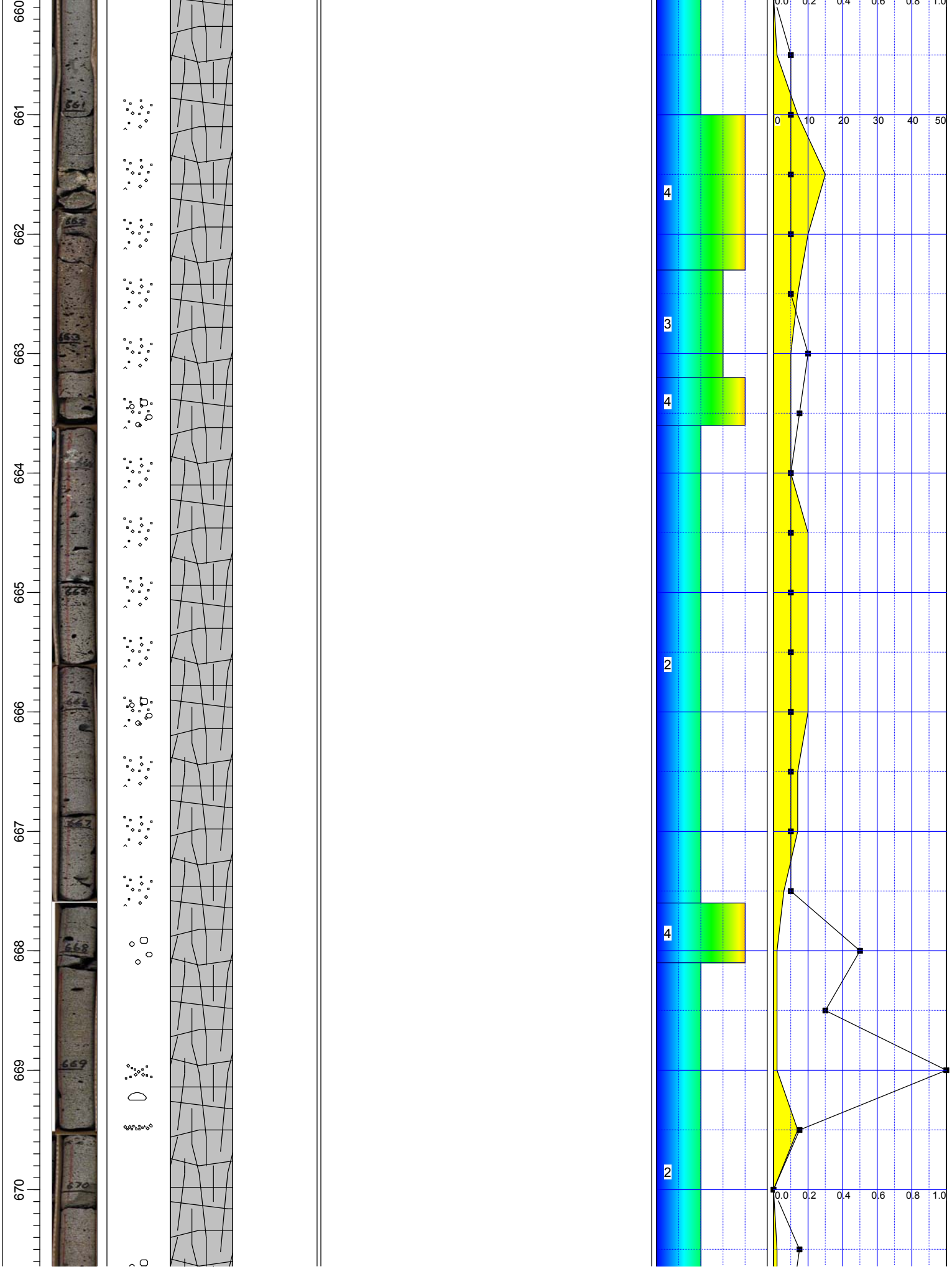
0 10 20 30 40 50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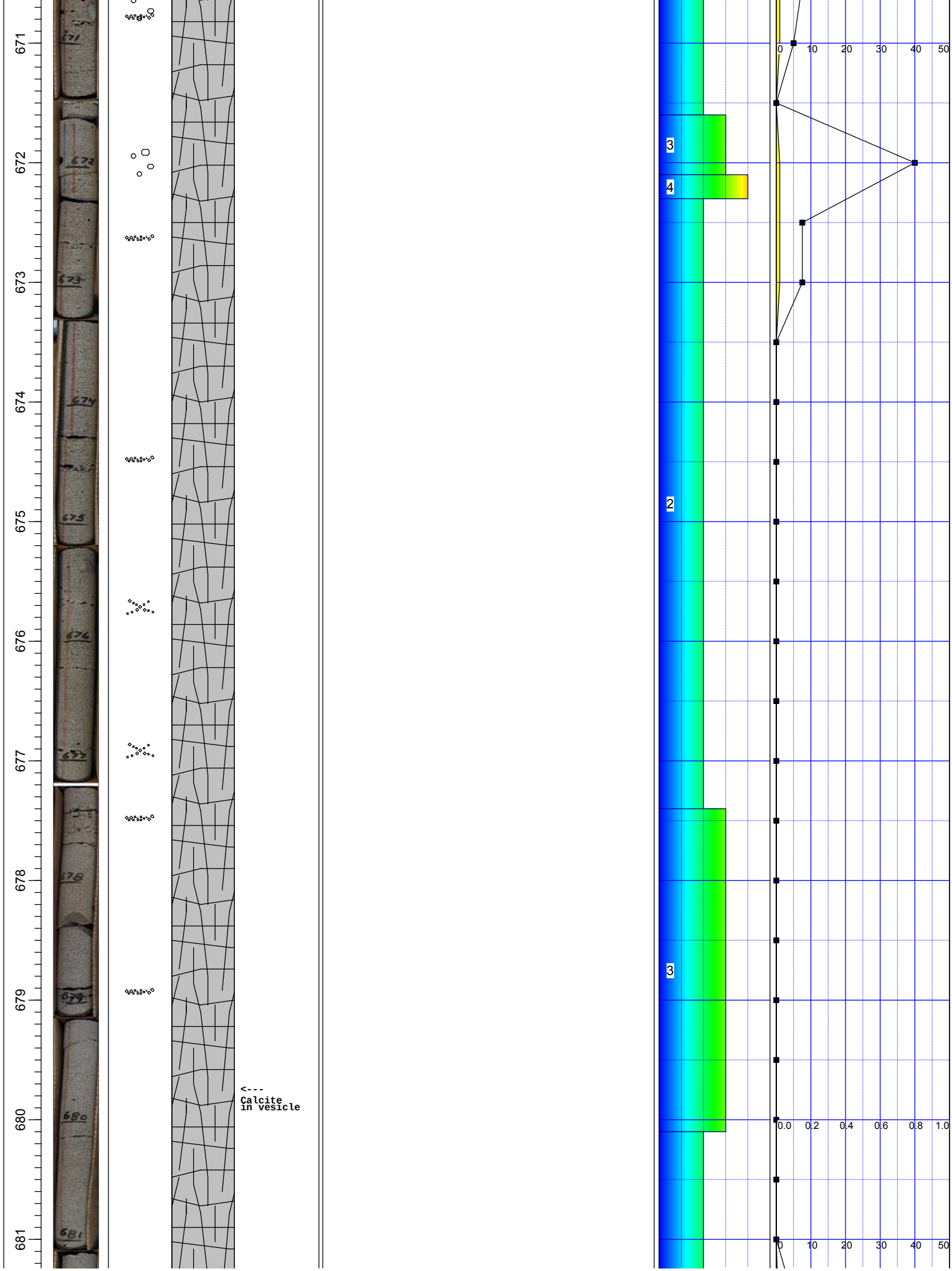
671
672
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675
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677
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679
680
681
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Calcite
in vesicle
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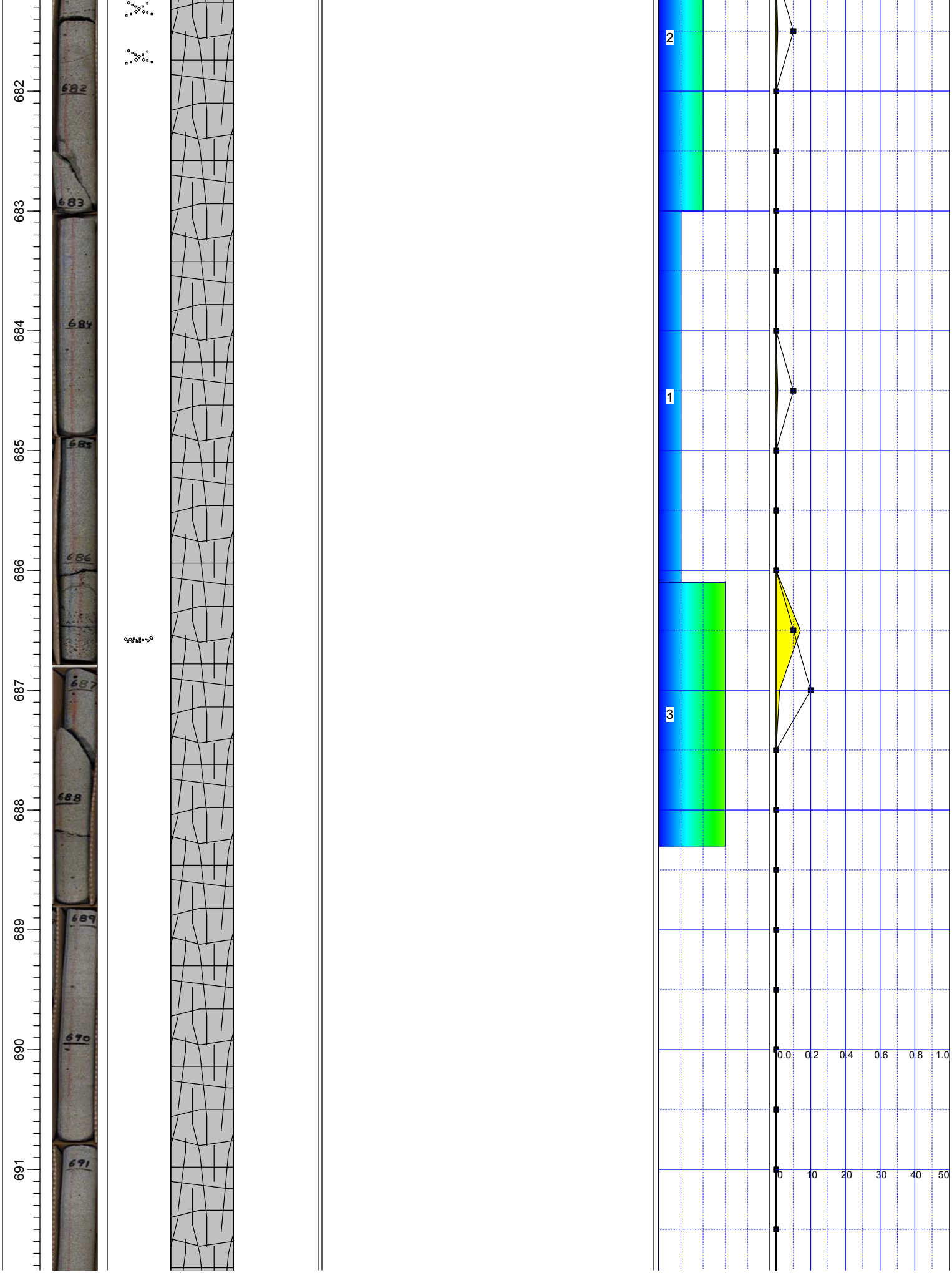
0.4
0.6
0.8
1.0


682
683
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688
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682
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684
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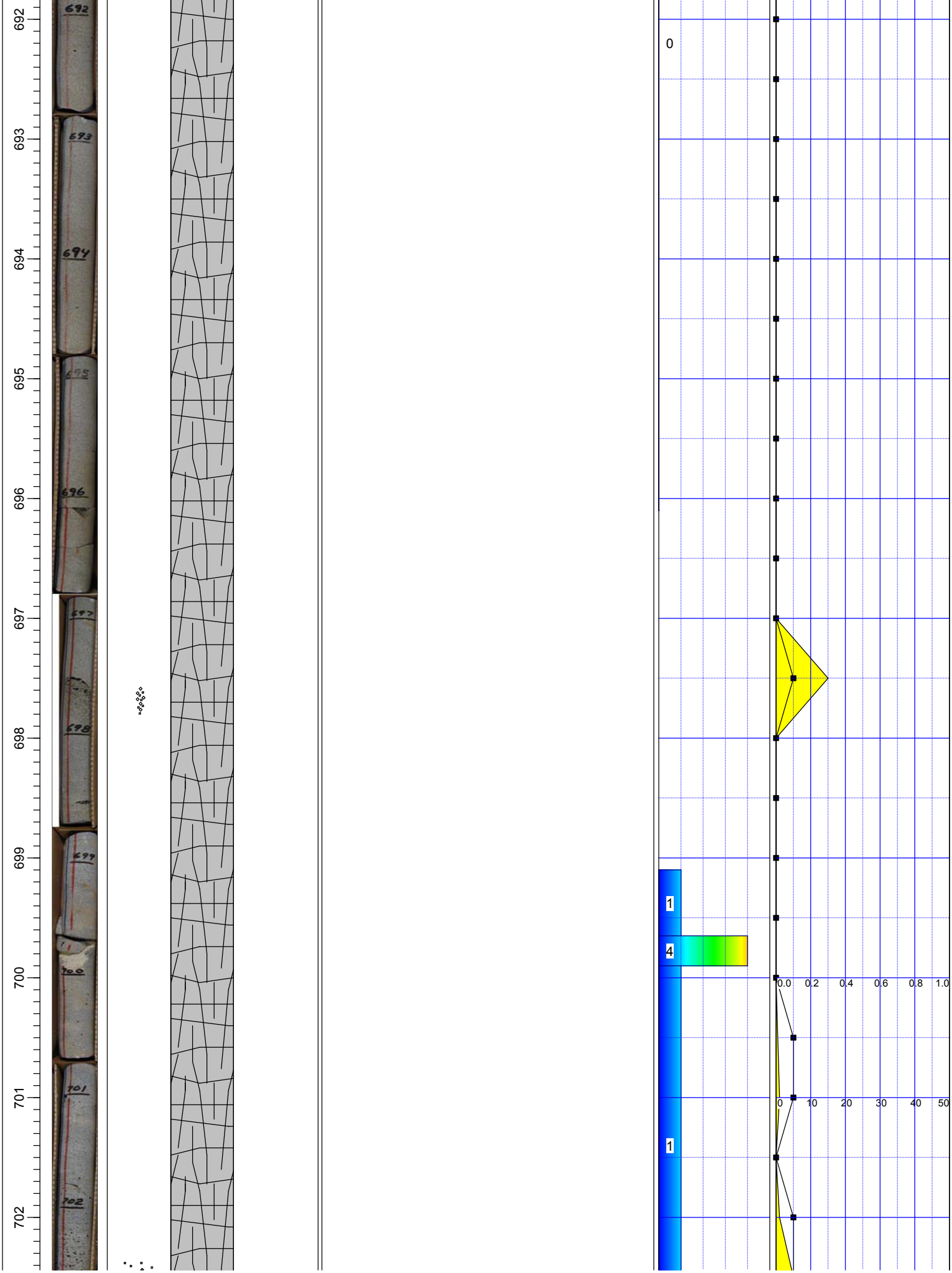
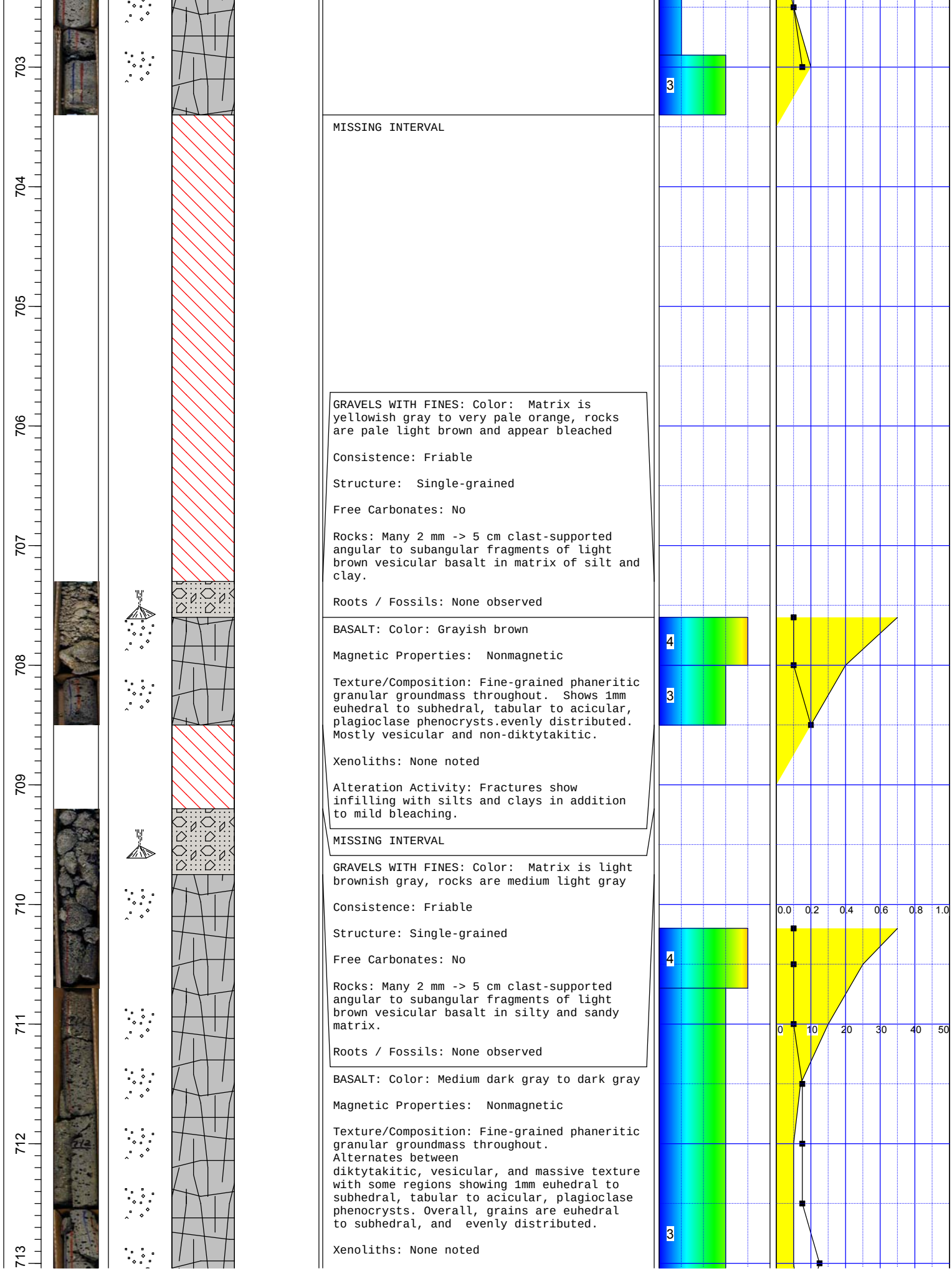
686
687
688
689
690
691
2
1
3
0.0
0.2
0.4
0.6
0.8
1.0
0
10
20
30
40
50


692
693
694
695
696
697
698
699
700
701
702
0
1
4
1
0.0
0.2
0.4
0.6
0.8
1.0
0
10
20
30
40
50



MISSING INTERVAL

GRAVELS WITH FINES: Color: Matrix is yellowish gray to very pale orange, rocks are pale light brown and appear bleached

Consistence: Friable

Structure: Single-grained

Free Carbonates: No

Rocks: Many 2 mm -> 5 cm clast-supported angular to subangular fragments of light brown vesicular basalt in matrix of silt and clay.

Roots / Fossils: None observed

BASALT: Color: Grayish brown

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Shows 1mm euhedral to subhedral, tabular to acicular, plagioclase phenocrysts.evenly distributed. Mostly vesicular and non-diktytakitic.

Xenoliths: None noted

Alteration Activity: Fractures show infilling with silts and clays in addition to mild bleaching.

MISSING INTERVAL

GRAVELS WITH FINES: Color: Matrix is light brownish gray, rocks are medium light gray

Consistence: Friable

Structure: Single-grained

Free Carbonates: No

Rocks: Many 2 mm -> 5 cm clast-supported angular to subangular fragments of light brown vesicular basalt in silty and sandy matrix.

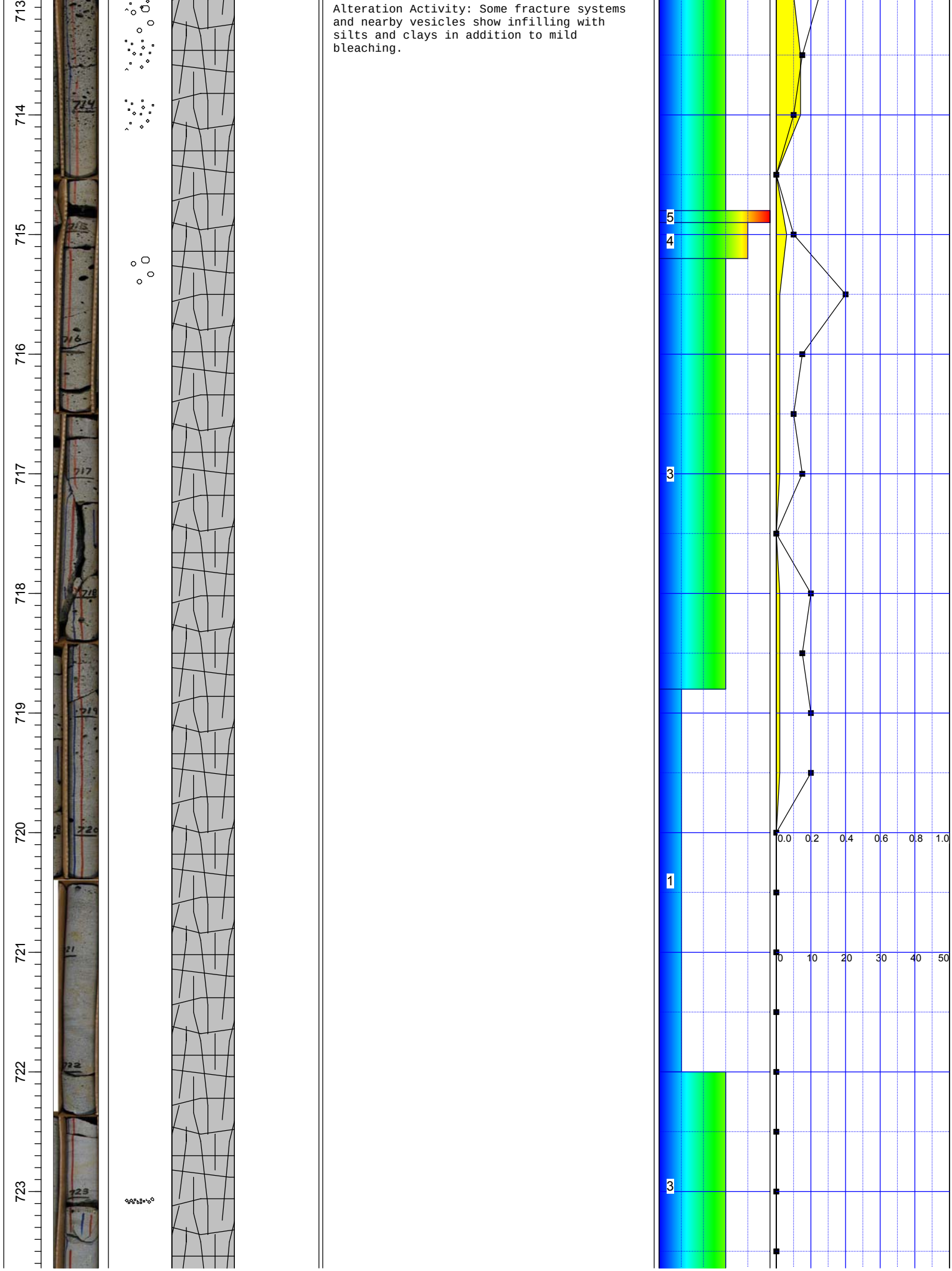
Roots / Fossils: None observed

BASALT: Color: Medium dark gray to dark gray

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Alternates between diktytakitic, vesicular, and massive texture with some regions showing 1mm euhedral to subhedral, tabular to acicular, plagioclase phenocrysts. Overall, grains are euhedral to subhedral, and evenly distributed.

Xenoliths: None noted


713
714
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721
722
723
Alteration Activity: Some fracture systems and nearby vesicles show infilling with silts and clays in addition to mild bleaching.
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3
1
3
0.0
0.2
0.4
0.6
0.8
1.0
0
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20
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40
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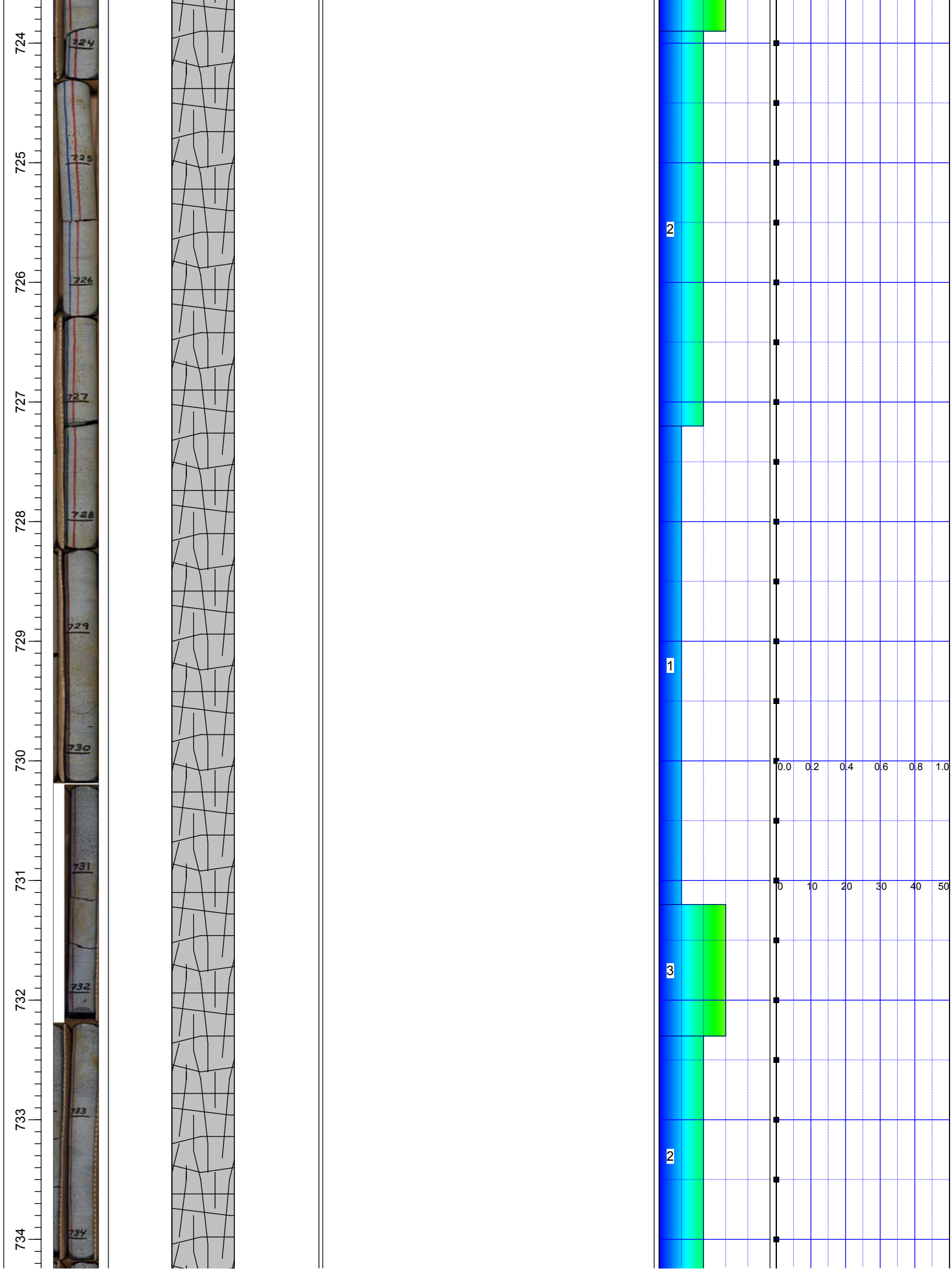
724
725
726
727
728
729
730
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733
734
2
1
3
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0.0
0.2
0.4
0.6
0.8
1.0
0
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20
30
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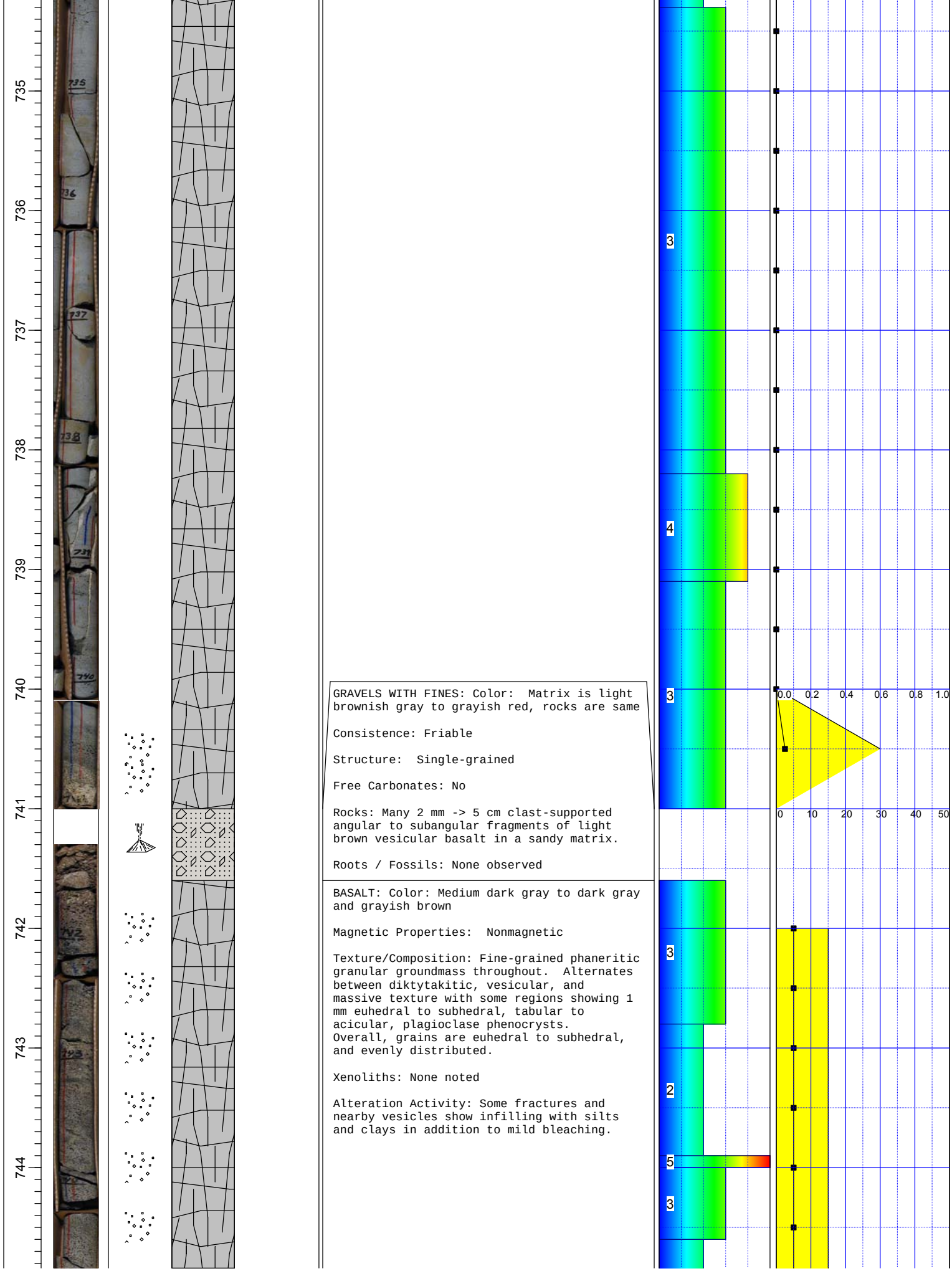


GRAVELS WITH FINES: Color: Matrix is light brownish gray to grayish red, rocks are same

Consistence: Friable

Structure: Single-grained

Free Carbonates: No

Rocks: Many 2 mm -> 5 cm clast-supported angular to subangular fragments of light brown vesicular basalt in a sandy matrix.

Roots / Fossils: None observed

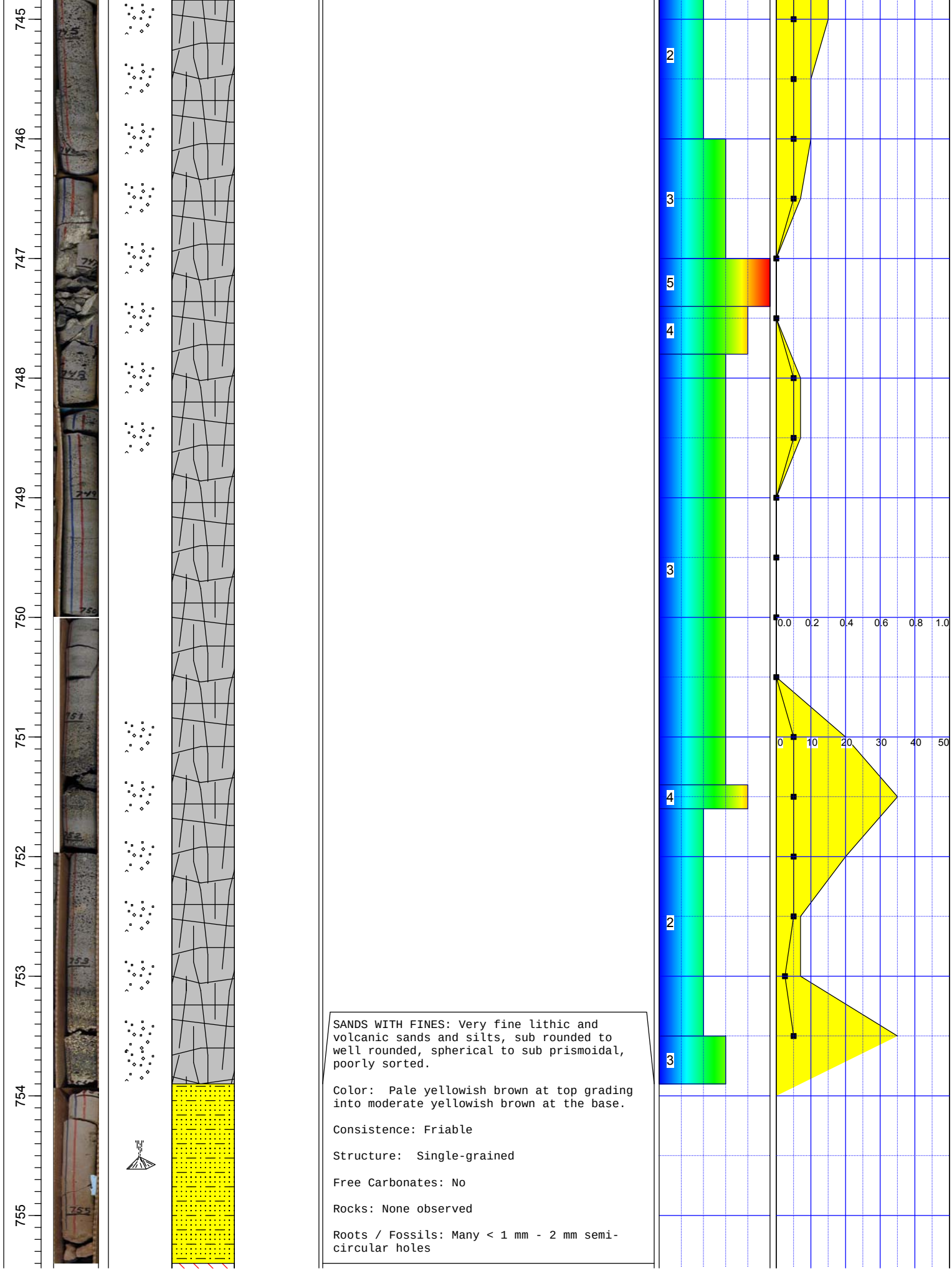
BASALT: Color: Medium dark gray to dark gray and grayish brown

Magnetic Properties: Nonmagnetic

Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Alternates between diktytakitic, vesicular, and massive texture with some regions showing 1 mm euhedral to subhedral, tabular to acicular, plagioclase phenocrysts. Overall, grains are euhedral to subhedral, and evenly distributed.

Xenoliths: None noted

Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.



SANDS WITH FINES: Very fine lithic and volcanic sands and silts, sub rounded to well rounded, spherical to sub prismoidal, poorly sorted.

Color: Pale yellowish brown at top grading into moderate yellowish brown at the base.

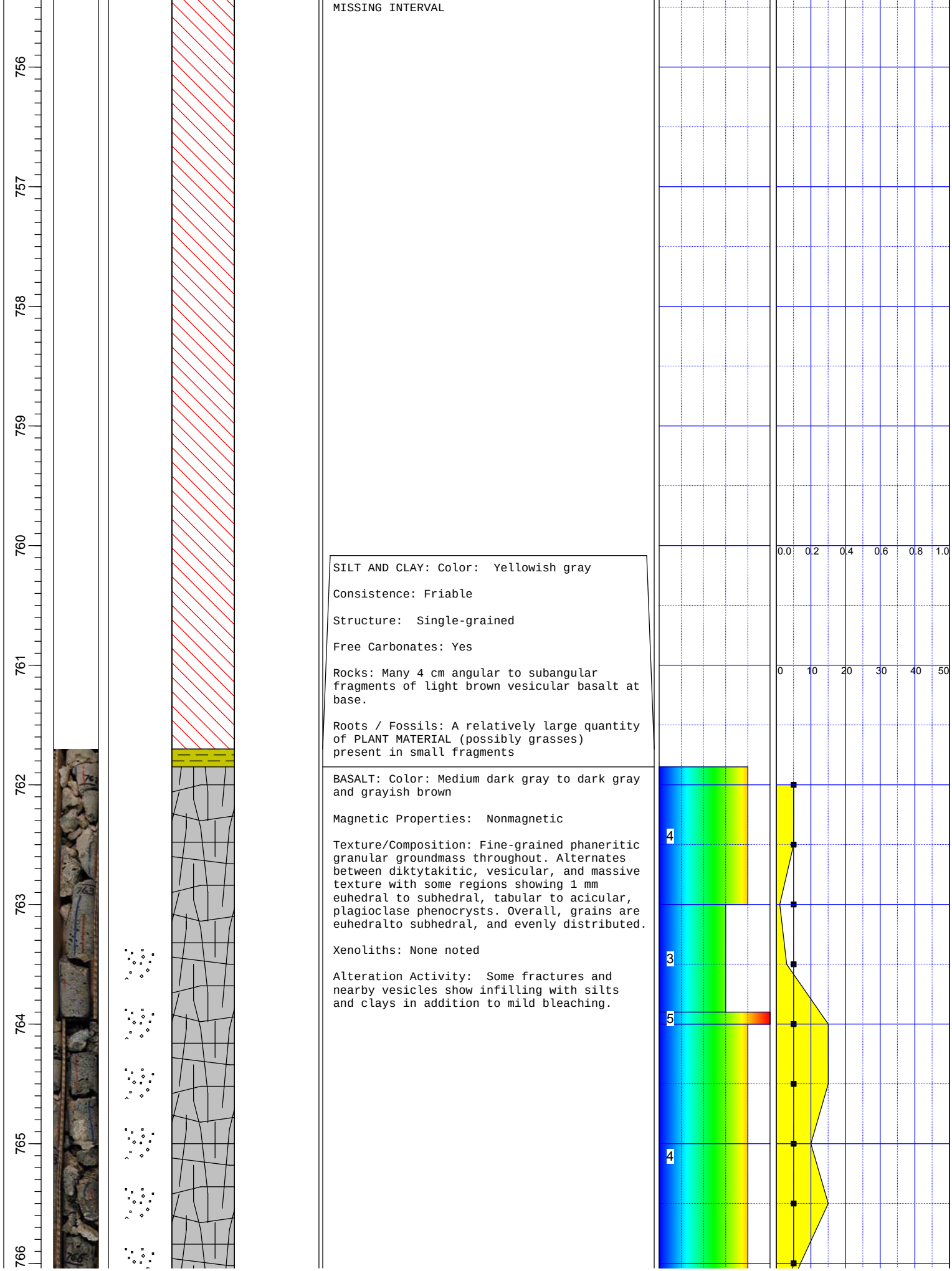
Consistence: Friable

Structure: Single-grained

Free Carbonates: No

Rocks: None observed

Roots / Fossils: Many < 1 mm - 2 mm semi-circular holes


756
757
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766
MISSING INTERVAL
SILT AND CLAY: Color: Yellowish gray
Consistence: Friable
Structure: Single-grained
Free Carbonates: Yes
Rocks: Many 4 cm angular to subangular fragments of light brown vesicular basalt at base.
Roots / Fossils: A relatively large quantity of PLANT MATERIAL (possibly grasses) present in small fragments
BASALT: Color: Medium dark gray to dark gray and grayish brown
Magnetic Properties: Nonmagnetic
Texture/Composition: Fine-grained phaneritic granular groundmass throughout. Alternates between diktytakitic, vesicular, and massive texture with some regions showing 1 mm euhedral to subhedral, tabular to acicular, plagioclase phenocrysts. Overall, grains are euhedralto subhedral, and evenly distributed.
Xenoliths: None noted
Alteration Activity: Some fractures and nearby vesicles show infilling with silts and clays in addition to mild bleaching.
4
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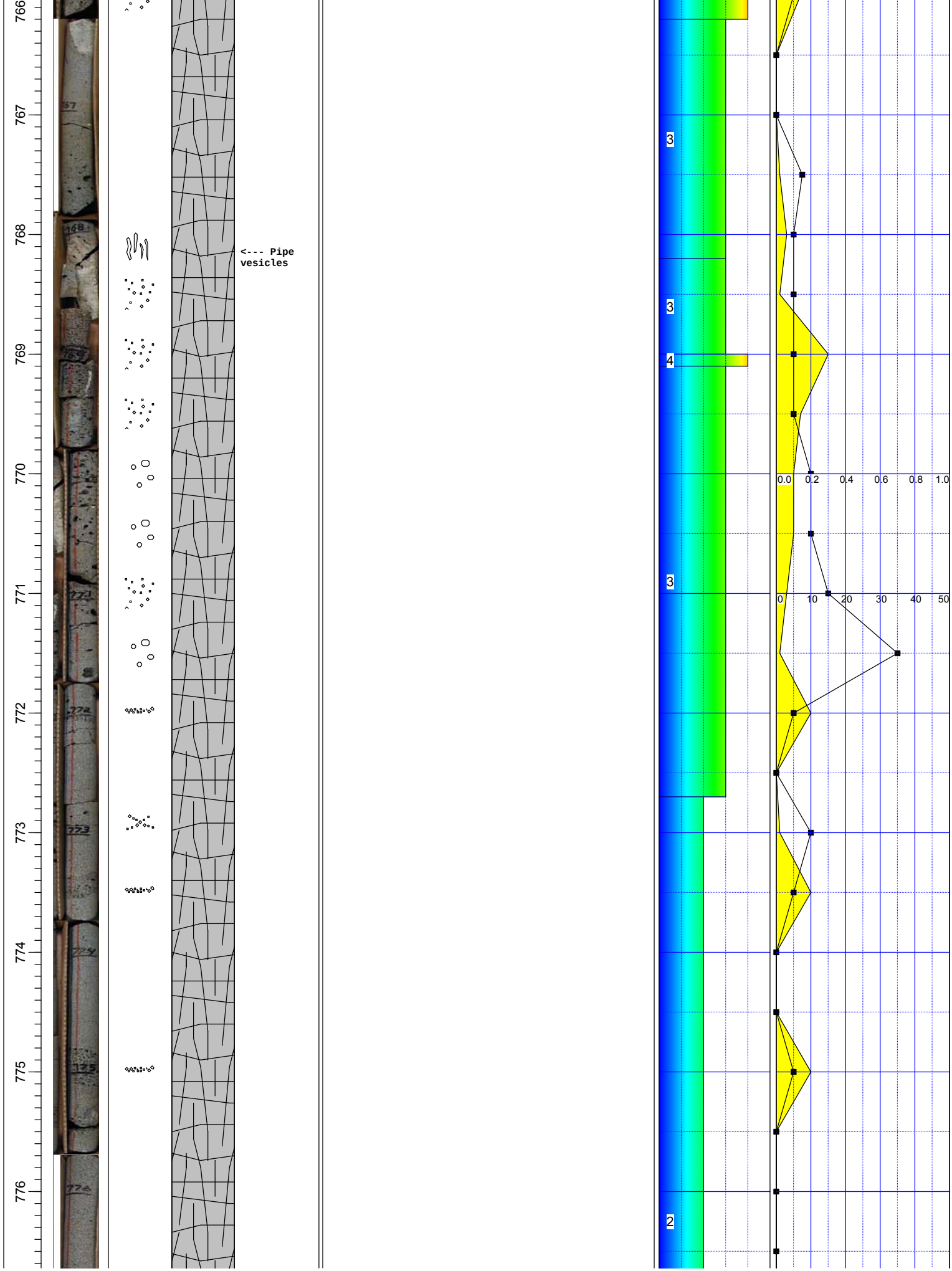
4
0.0 0.2 0.4 0.6 0.8 1.0
0 10 20 30 40 50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776
<--- Pipe vesicles
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0.2
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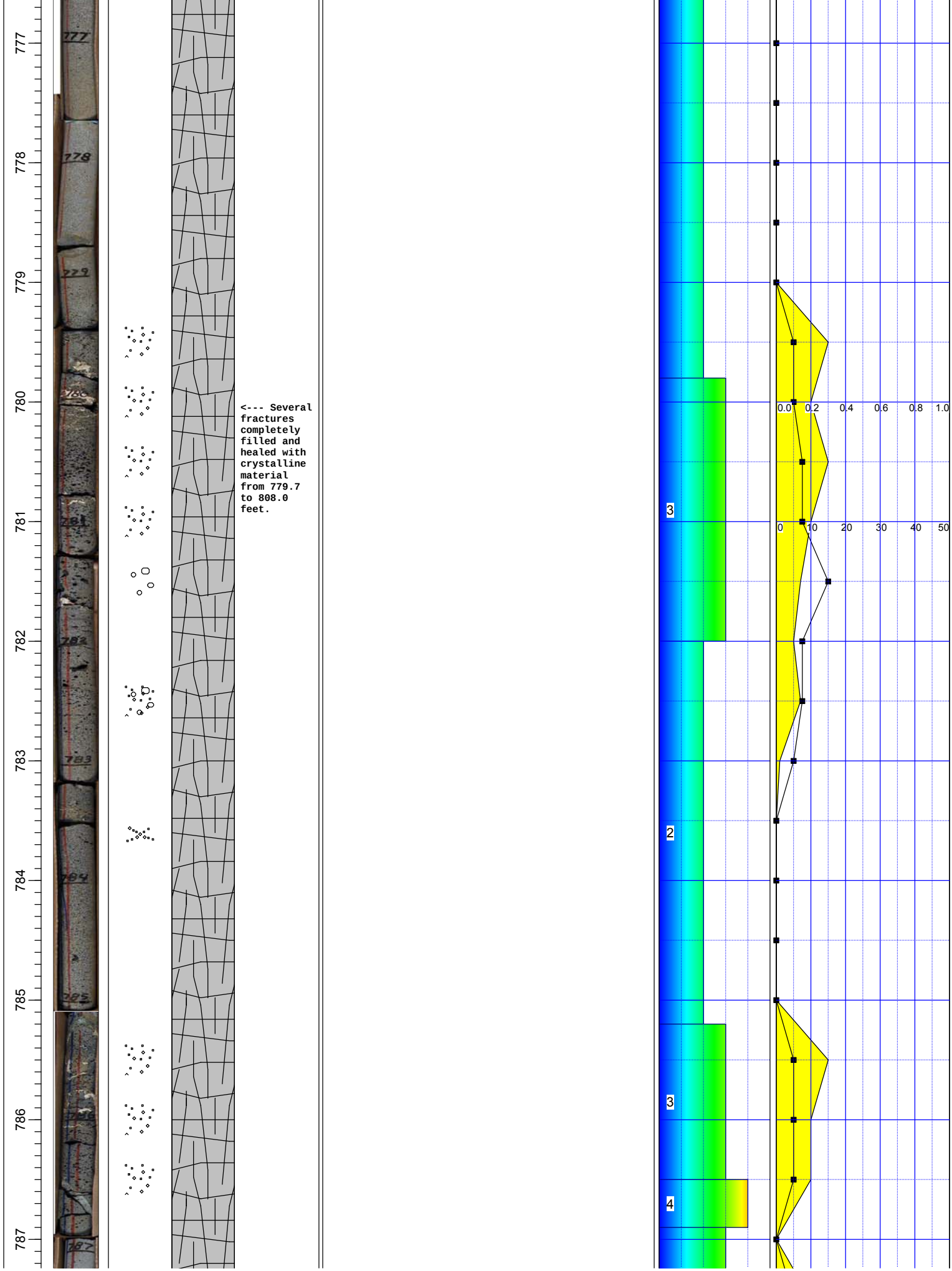
<--- Several fractures completely filled and healed with crystalline material from 779.7 to 808.0 feet.
0.0 0.2 0.4 0.6 0.8 1.0
0 10 20 30 40 50
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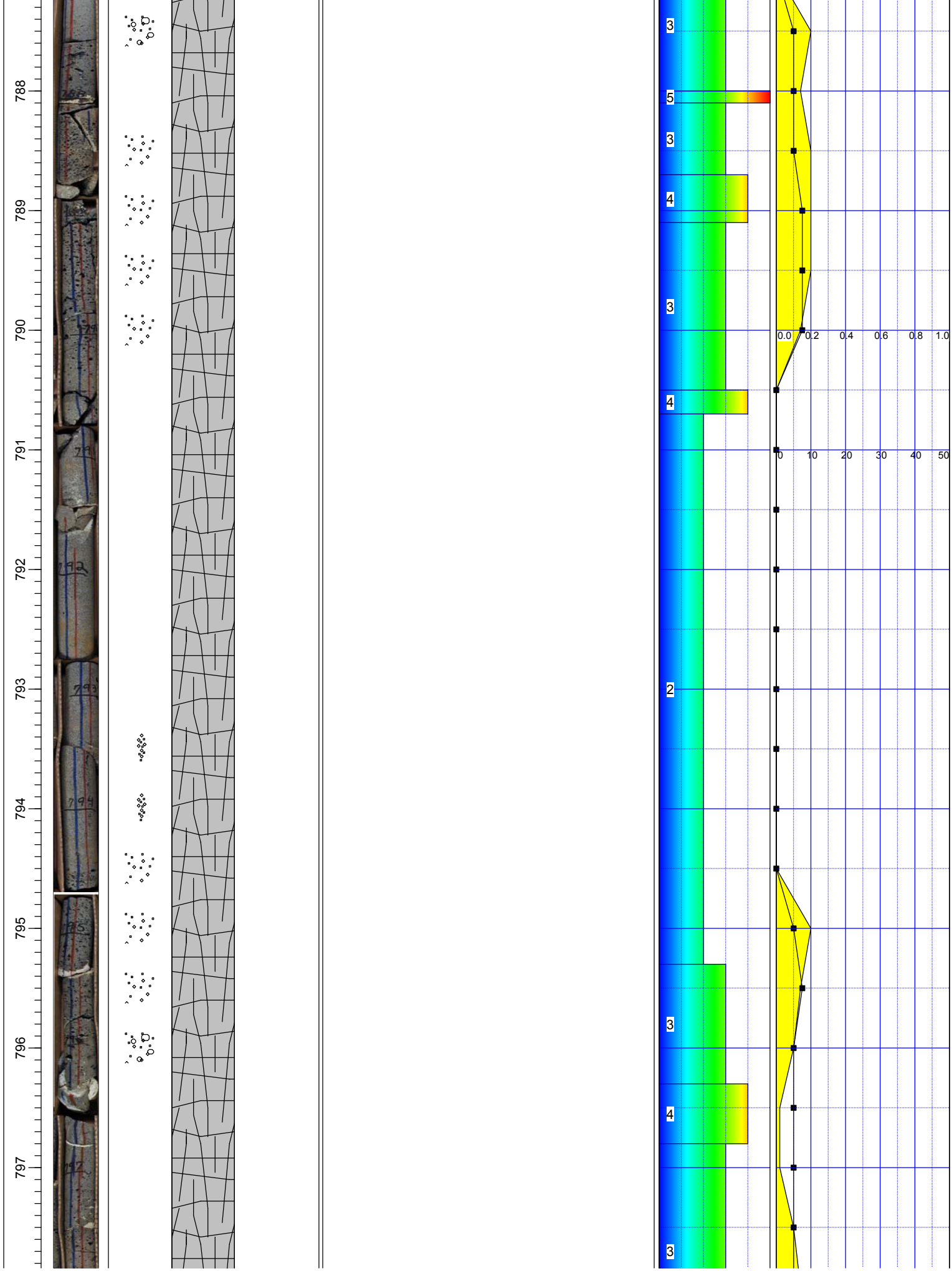
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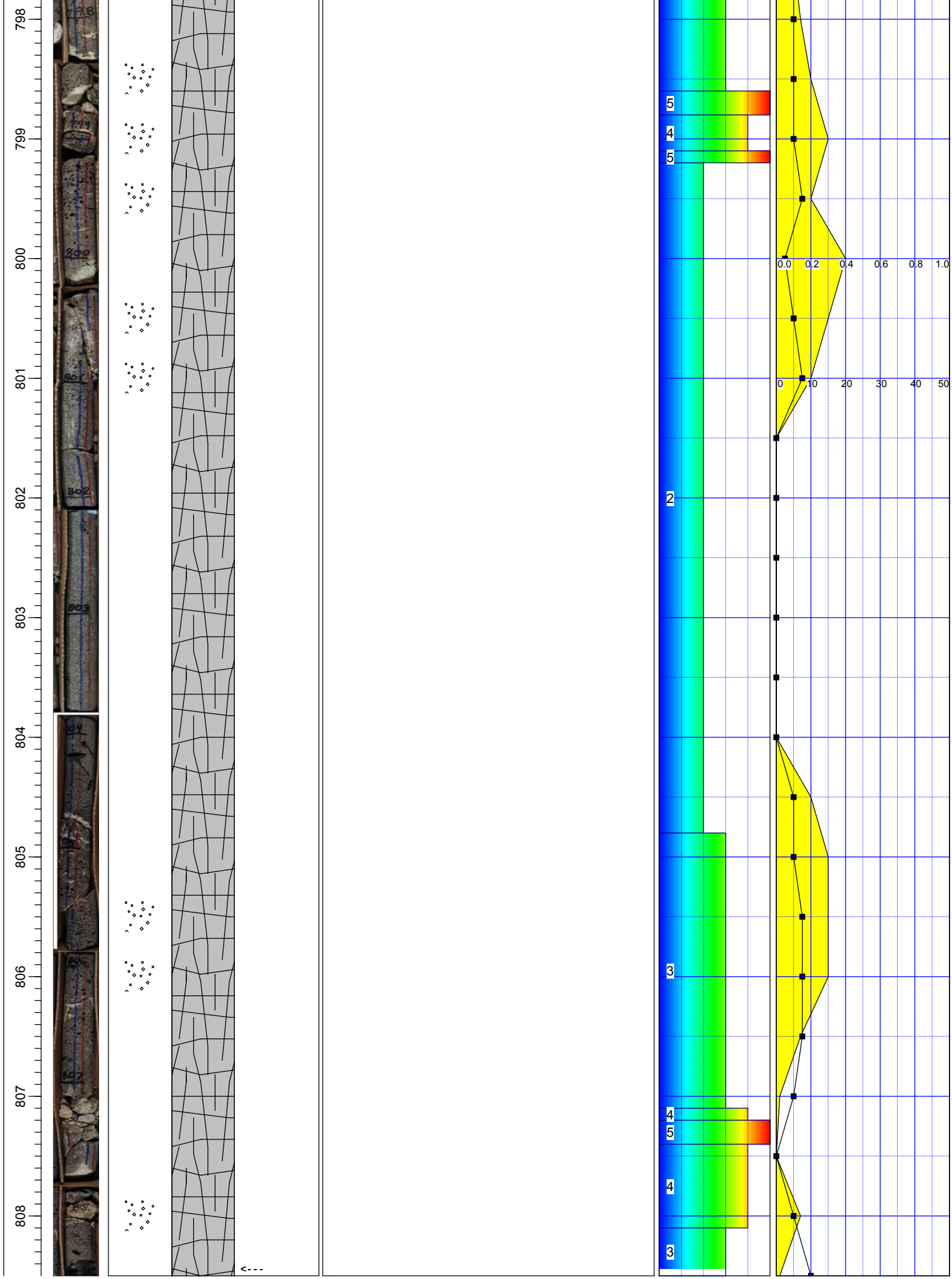
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3
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5
4
3
0.0
0.2
0.4
0.6
0.8
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