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:
M. K. V. Hodges
USGS INL Project Office
Willow Creek Building
MS 1160
Idaho Falls, ID 83415

Official Name: TAN 2312

Logged By: M. K. V. Hodges

USGS Site ID: 434939112422001

Drilling Agency: USGS INL Project Office

Year Drilled: 2017

Names of Drillers: M. Gilbert, C. J. Jones, S. Helmuth

Well Status: complete

Total Depth of Hole (ft): 568

Total Core Recovered (ft): 568 ft

Beginning Depth (ft): 0

Ending Depth (ft): 568

[X] Continuous Recovery

Total # of Core Boxes: 60

Notes: Enter notes here

County & State: Butte County, ID

Quadrangle Name: Circular Butte

Lat / Lng: N43 49 39.37 W112 42 19.57

Tns / Rng / Sec: T6N, R32E, section 24

UTM Coordinates: 362868.079 4853922.870

Surface Elevation (ft): 4796

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

Symbol Legend

- 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: Surficial material, not cored			
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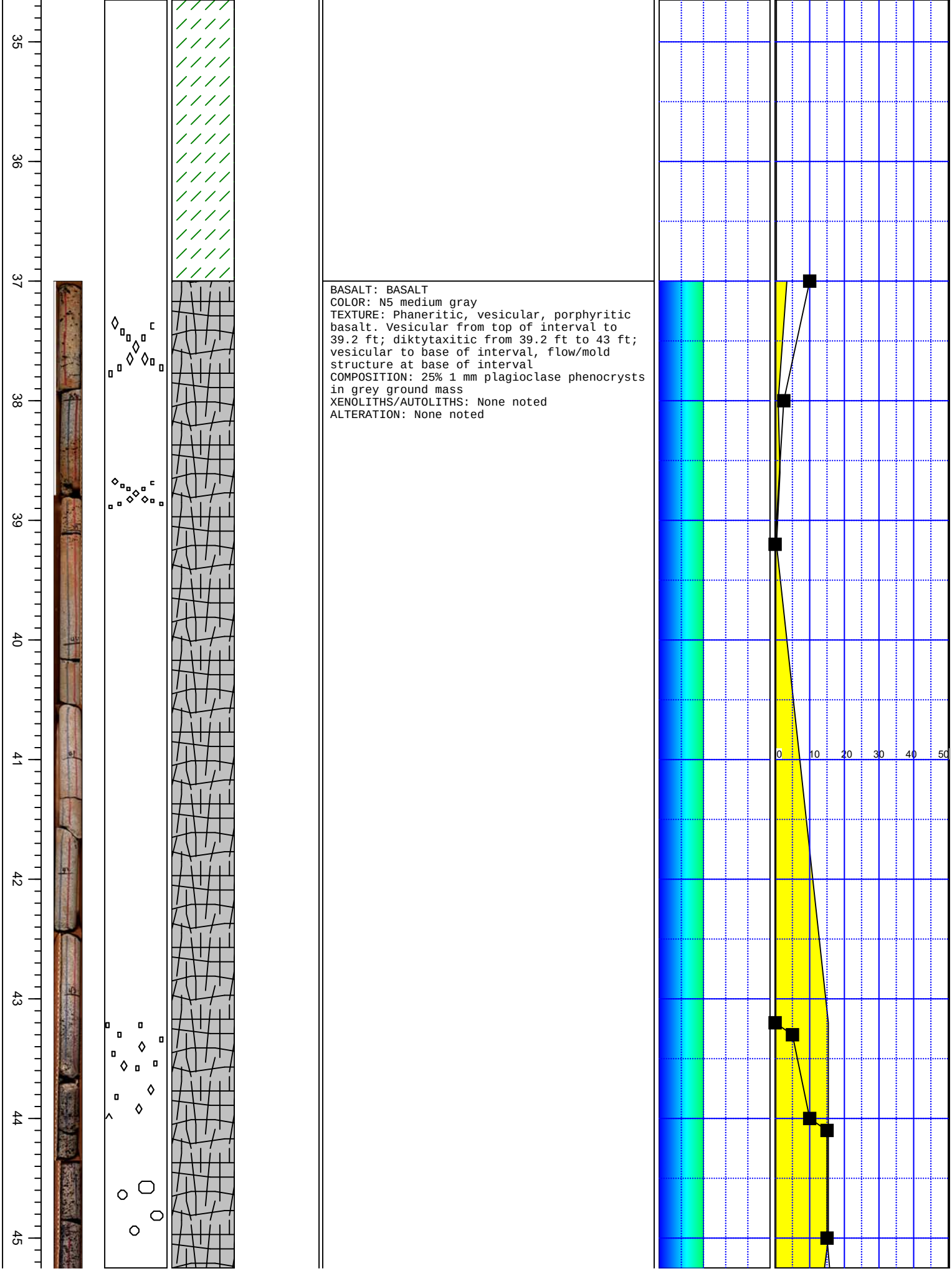
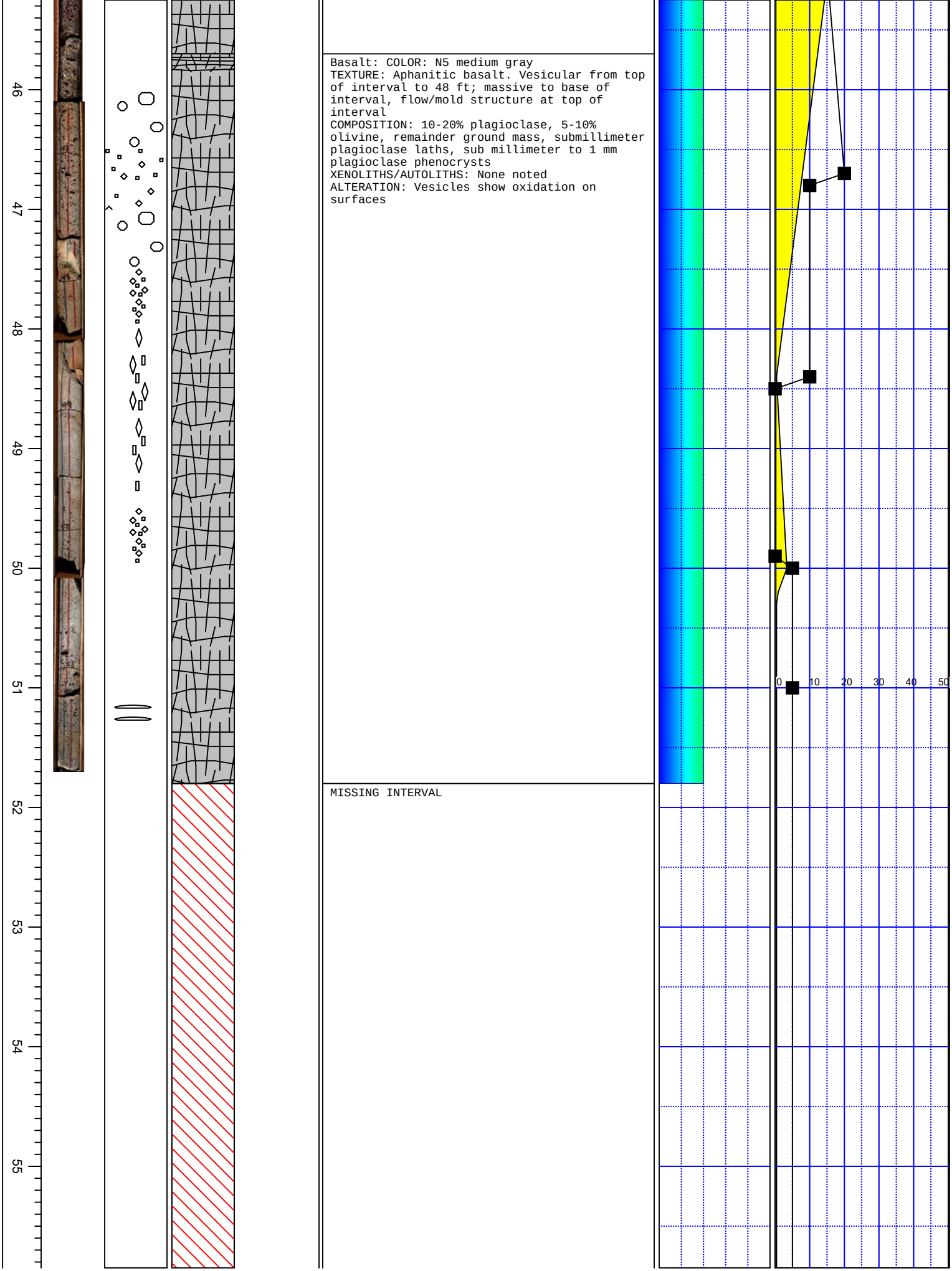
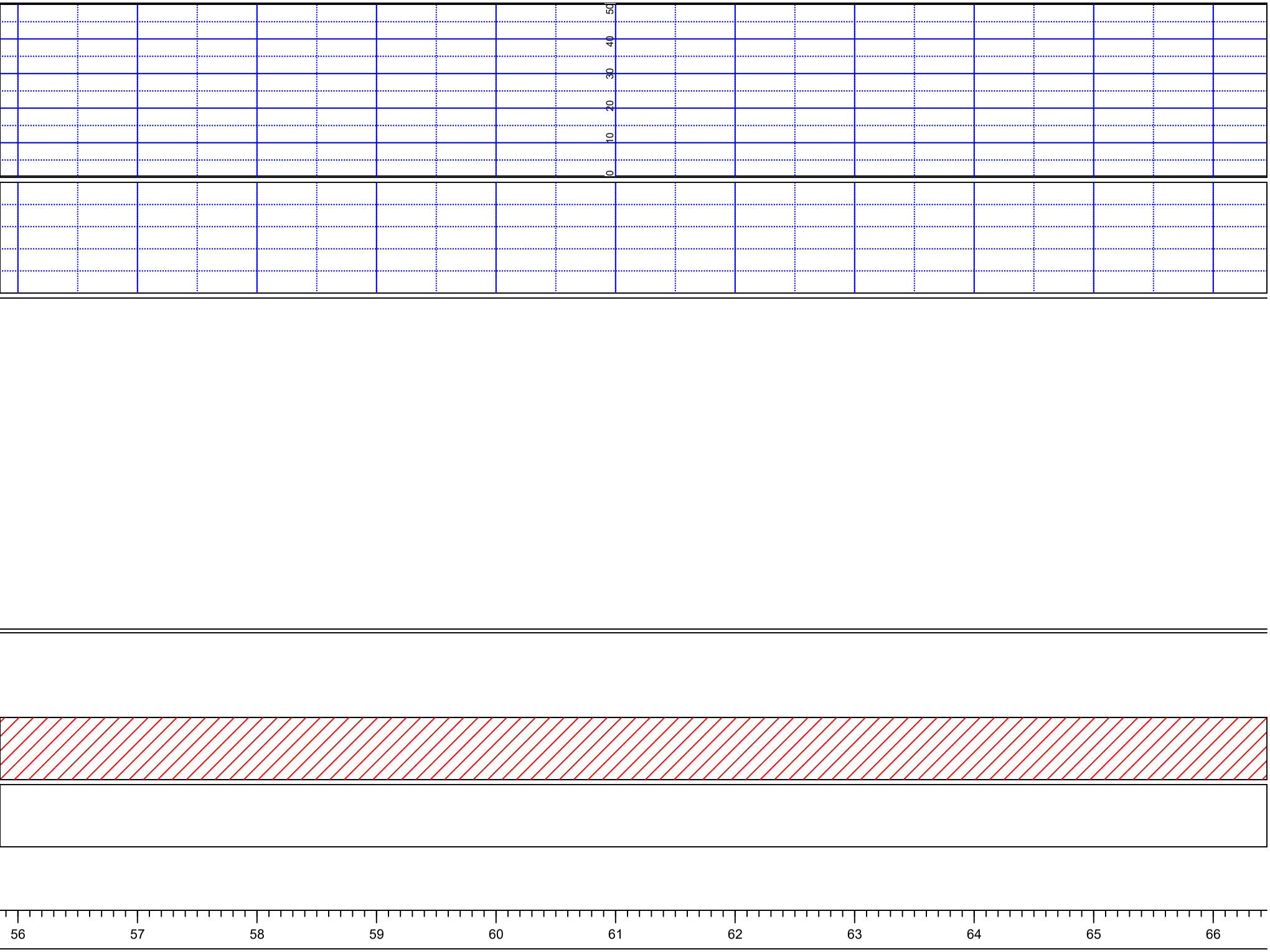


BASALT: BASALT
COLOR: N5 medium gray
TEXTURE: Phaneritic, vesicular, porphyritic basalt. Vesicular from top of interval to 39.2 ft; diktytaxitic from 39.2 ft to 43 ft; vesicular to base of interval, flow/mold structure at base of interval
COMPOSITION: 25% 1 mm plagioclase phenocrysts in grey ground mass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: None noted



Basalt: COLOR: N5 medium gray
TEXTURE: Aphanitic basalt. Vesicular from top of interval to 48 ft; massive to base of interval, flow/mold structure at top of interval
COMPOSITION: 10-20% plagioclase, 5-10% olivine, remainder ground mass, submillimeter plagioclase laths, sub millimeter to 1 mm plagioclase phenocrysts
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Vesicles show oxidation on surfaces

MISSING INTERVAL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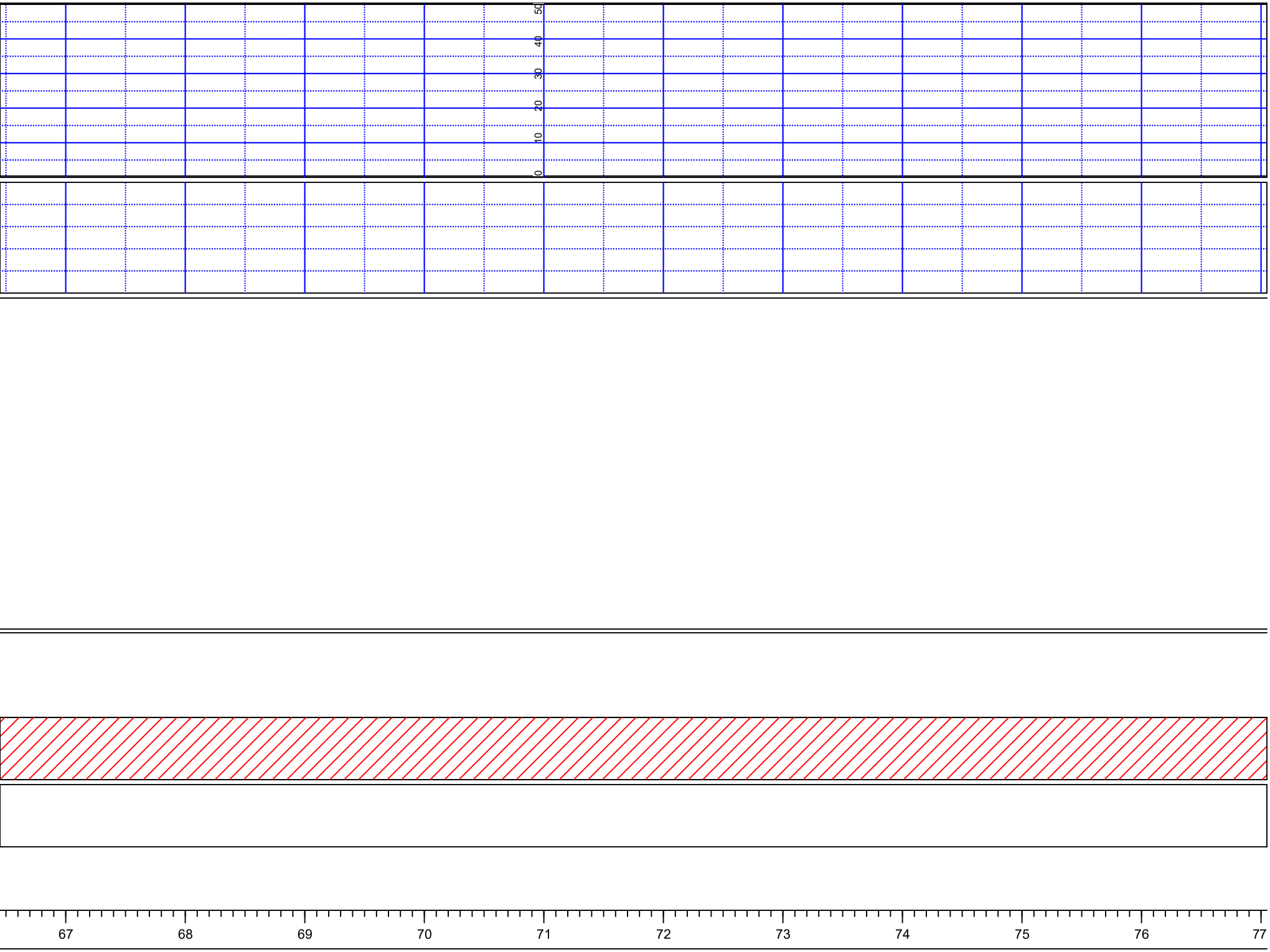
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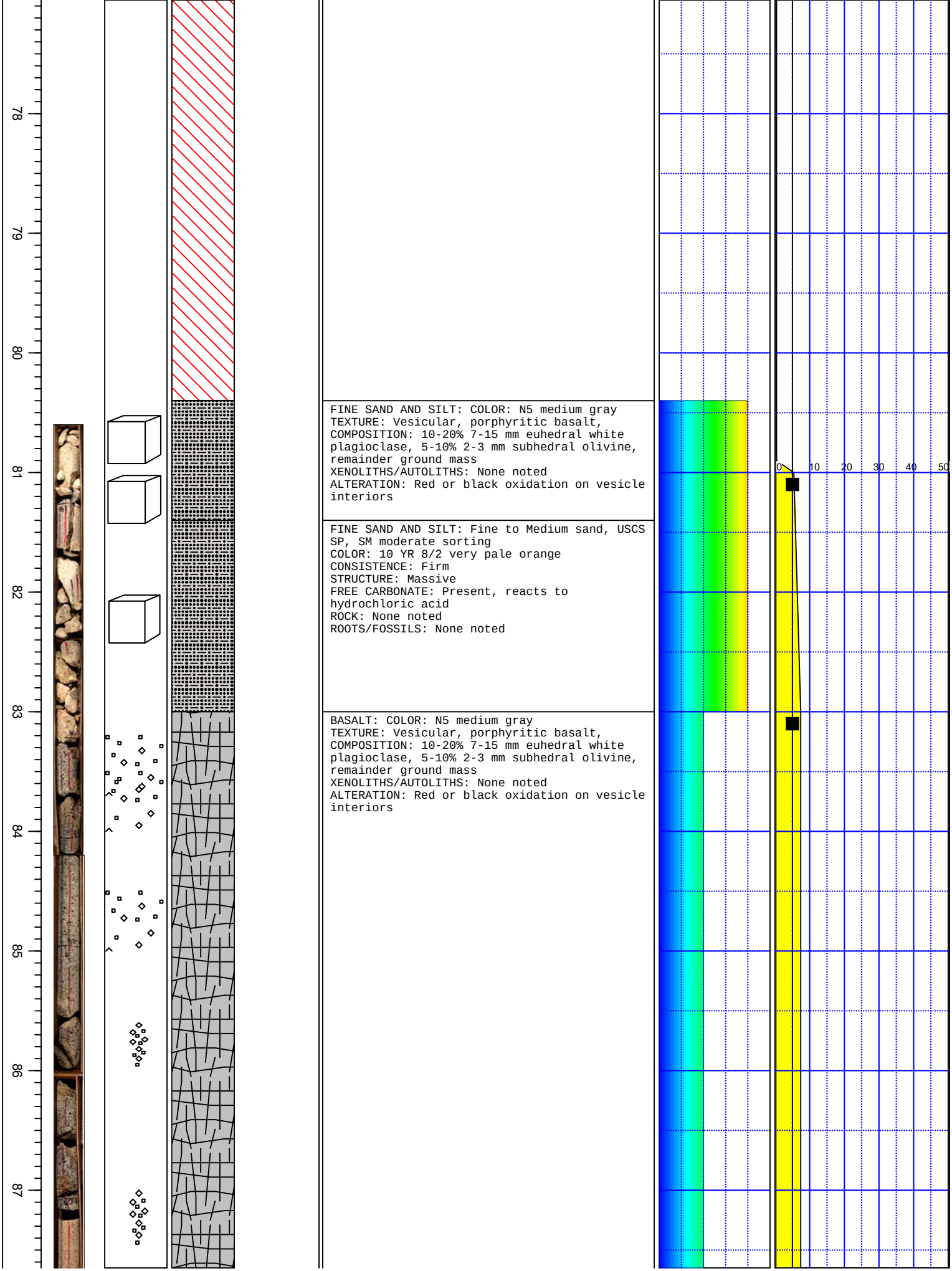

FINE SAND AND SILT: COLOR: N5 medium gray
TEXTURE: Vesicular, porphyritic basalt,
COMPOSITION: 10-20% 7-15 mm euhedral white plagioclase, 5-10% 2-3 mm subhedral olivine, remainder ground mass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Red or black oxidation on vesicle interiors

FINE SAND AND SILT: Fine to Medium sand, USCS SP, SM moderate sorting
COLOR: 10 YR 8/2 very pale orange
CONSISTENCE: Firm
STRUCTURE: Massive
FREE CARBONATE: Present, reacts to hydrochloric acid
ROCK: None noted
ROOTS/FOSSILS: None noted

BASALT: COLOR: N5 medium gray
TEXTURE: Vesicular, porphyritic basalt,
COMPOSITION: 10-20% 7-15 mm euhedral white plagioclase, 5-10% 2-3 mm subhedral olivine, remainder ground mass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Red or black oxidation on vesicle interiors

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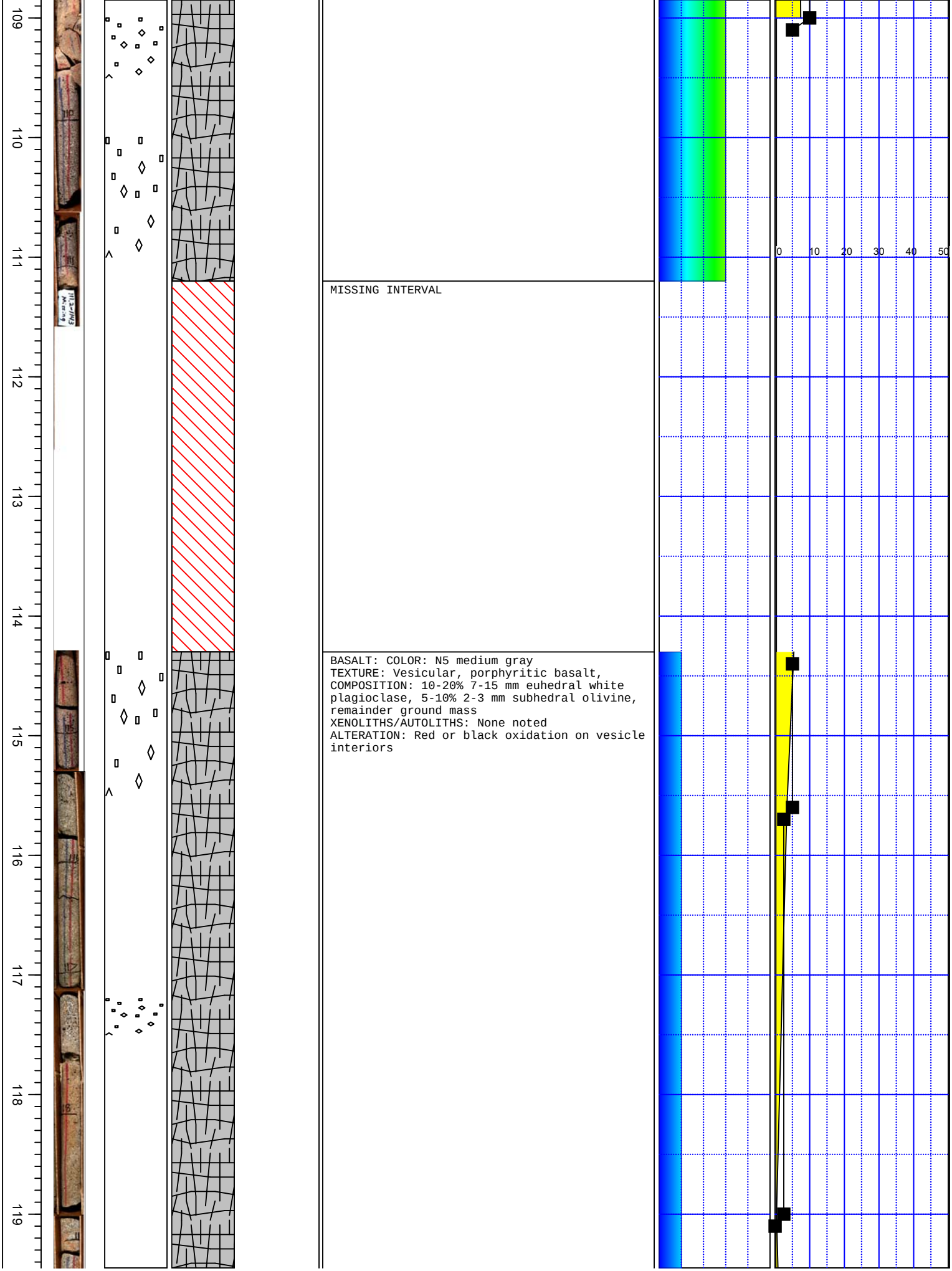
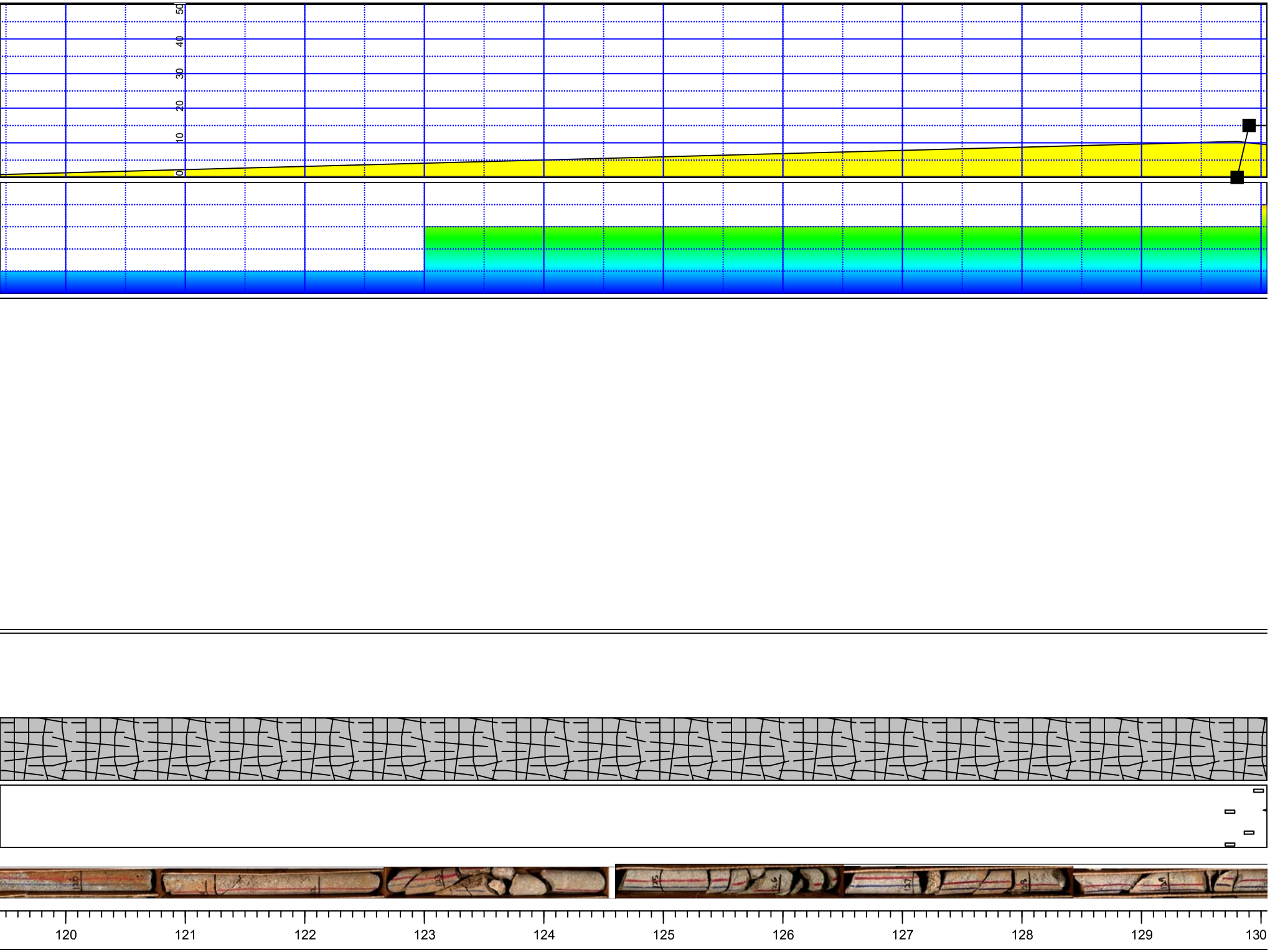


MISSING INTERVAL

BASALT: COLOR: N5 medium gray
TEXTURE: Vesicular, porphyritic basalt,
COMPOSITION: 10-20% 7-15 mm euhedral white plagioclase, 5-10% 2-3 mm subhedral olivine, remainder ground mass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Red or black oxidation on vesicle interiors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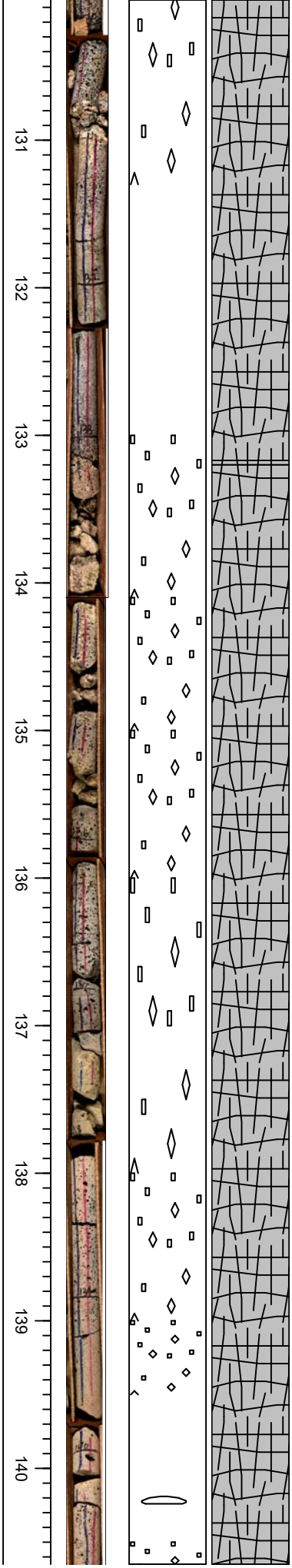
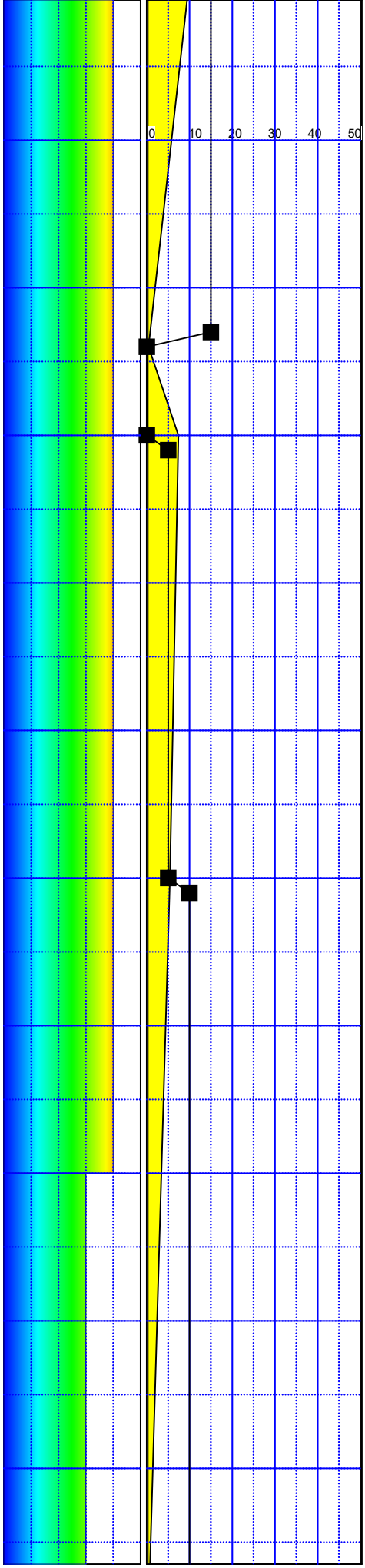
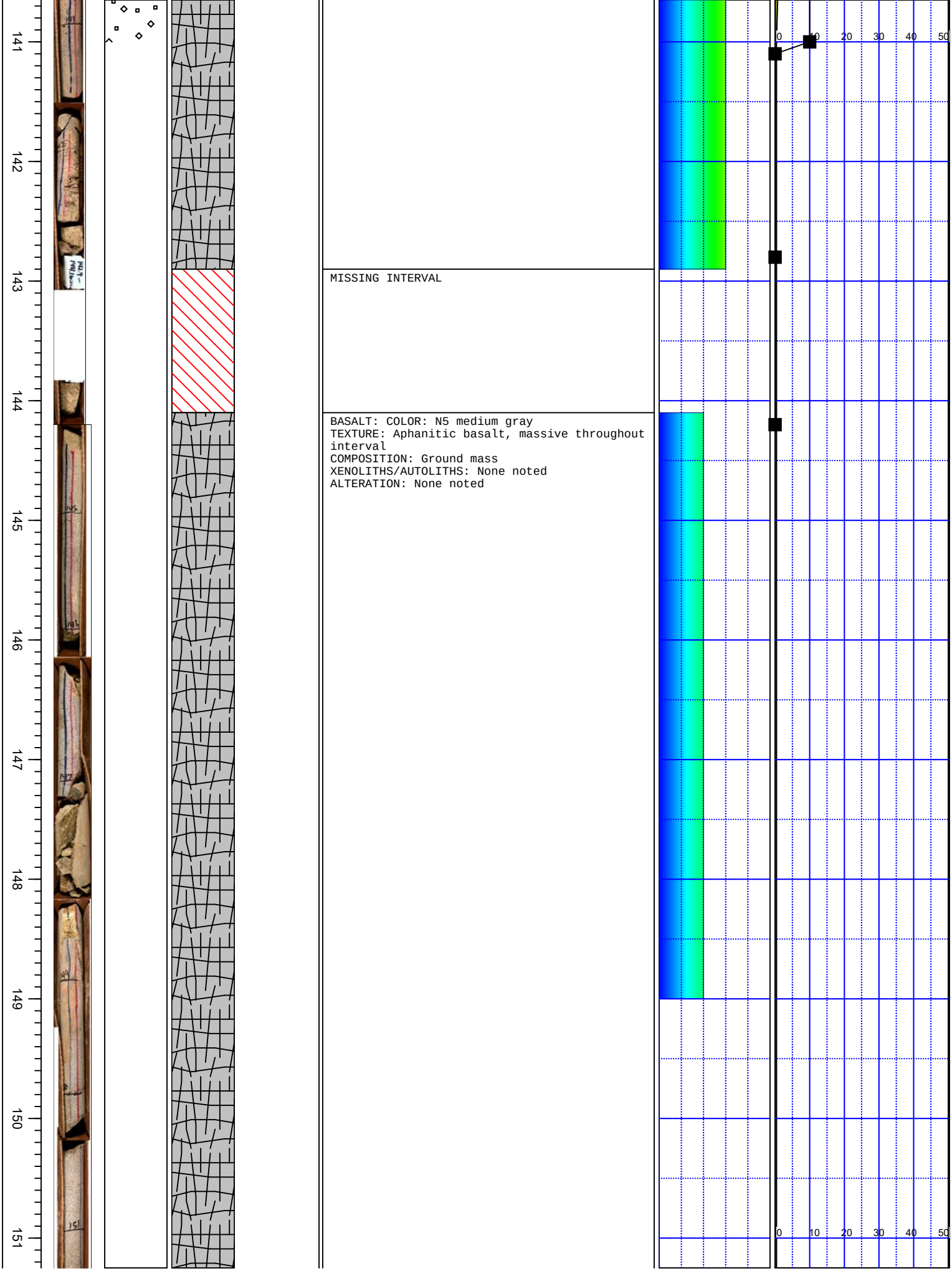


BASALT: COLOR: N4 medium dark gray
TEXTURE: Aphanitic basalt, vesicular from top of interval to 141 ft, massive to base of interval
COMPOSITION: 10% 1 mm euhedral white plagioclase in gray ground mass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Red or black oxidation on vesicle interiors

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151
MISSING INTERVAL
BASALT: COLOR: N5 medium gray
TEXTURE: Aphanitic basalt, massive throughout interval
COMPOSITION: Ground mass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: None noted
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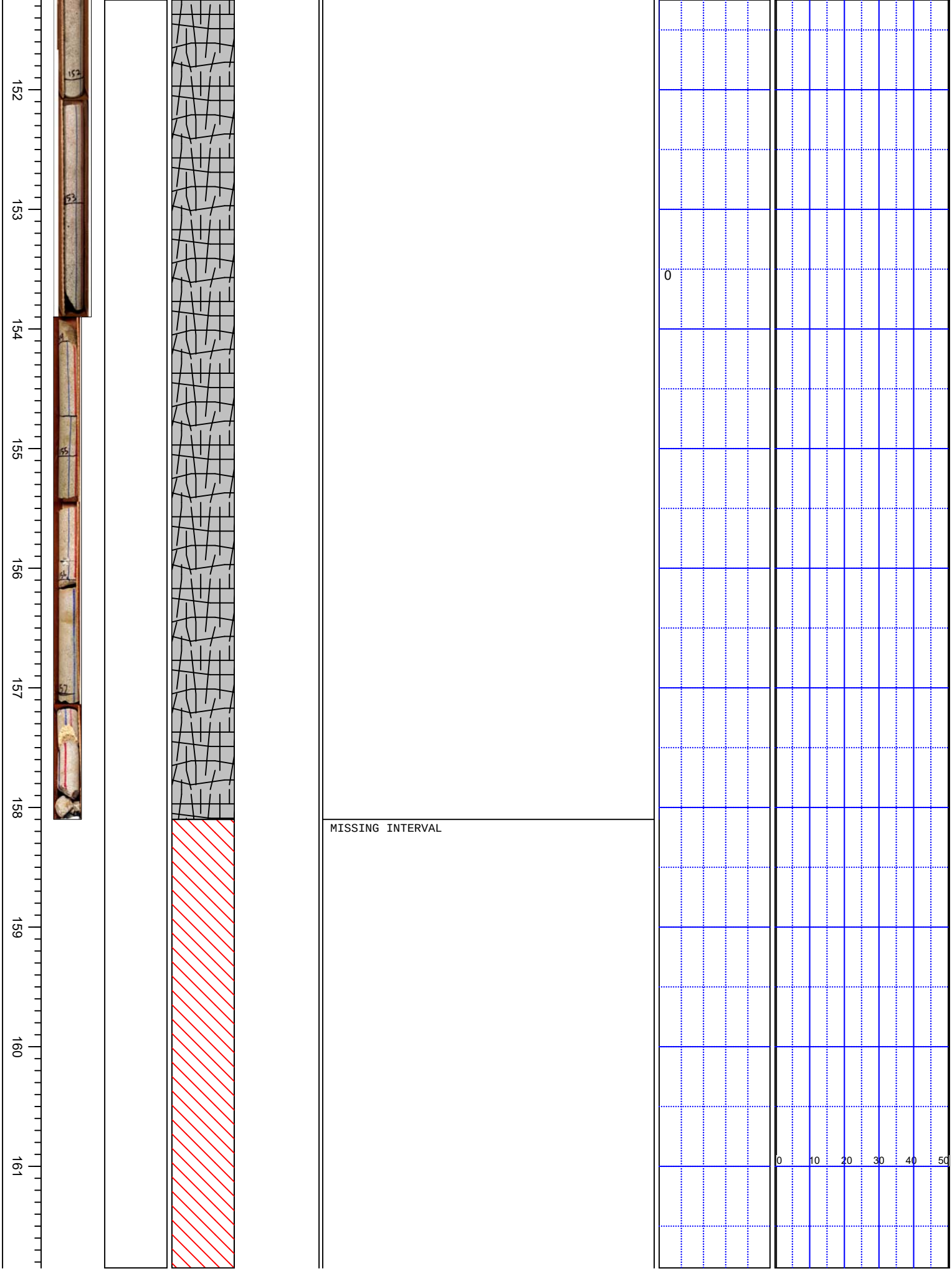
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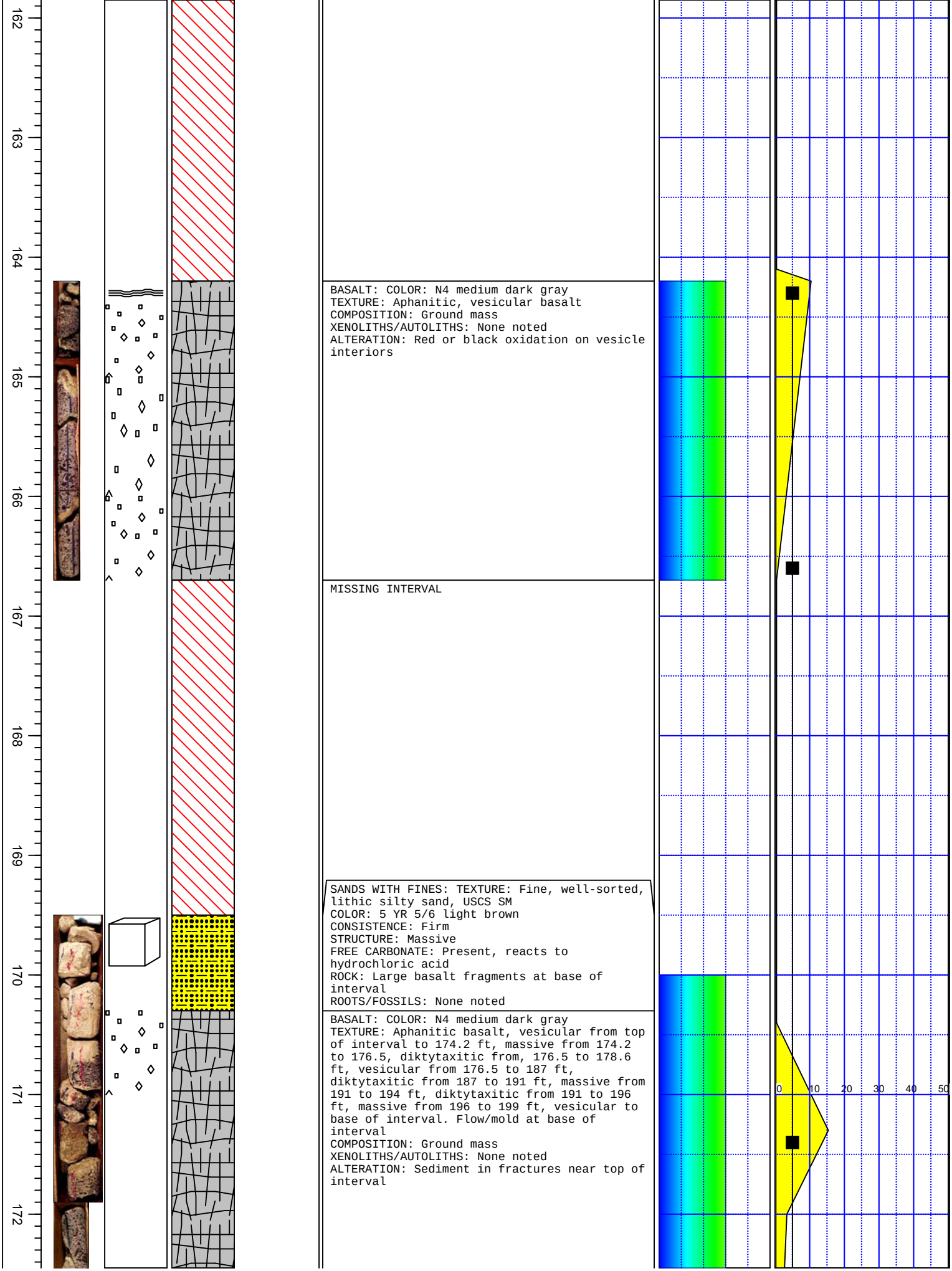

BASALT: COLOR: N4 medium dark gray
TEXTURE: Aphanitic, vesicular basalt
COMPOSITION: Ground mass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Red or black oxidation on vesicle interiors

MISSING INTERVAL

SANDS WITH FINES: TEXTURE: Fine, well-sorted, lithic silty sand, USCS SM
COLOR: 5 YR 5/6 light brown
CONSISTENCE: Firm
STRUCTURE: Massive
FREE CARBONATE: Present, reacts to hydrochloric acid
ROCK: Large basalt fragments at base of interval
ROOTS/FOSSILS: None noted

BASALT: COLOR: N4 medium dark gray
TEXTURE: Aphanitic basalt, vesicular from top of interval to 174.2 ft, massive from 174.2 to 176.5, diktytaxitic from, 176.5 to 178.6 ft, vesicular from 176.5 to 187 ft, diktytaxitic from 187 to 191 ft, massive from 191 to 194 ft, diktytaxitic from 191 to 196 ft, massive from 196 to 199 ft, vesicular to base of interval. Flow/mold at base of interval
COMPOSITION: Ground mass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Sediment in fractures near top of interval

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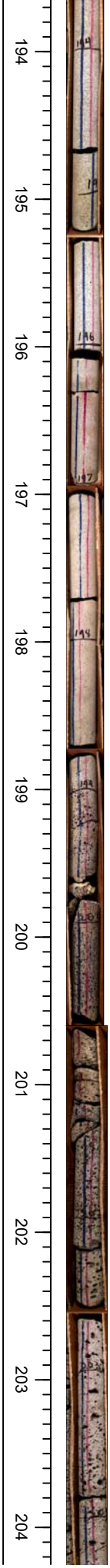
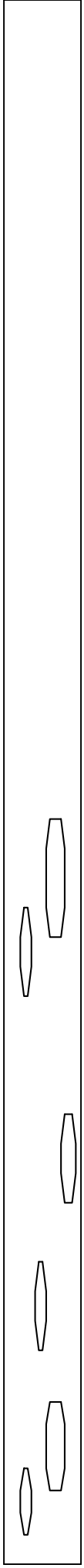
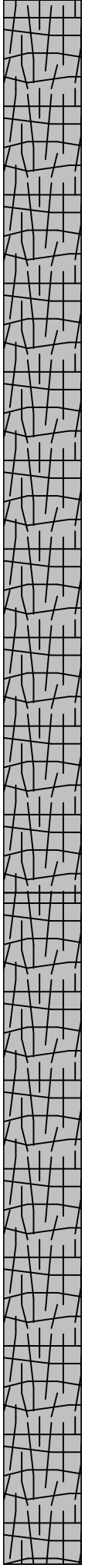
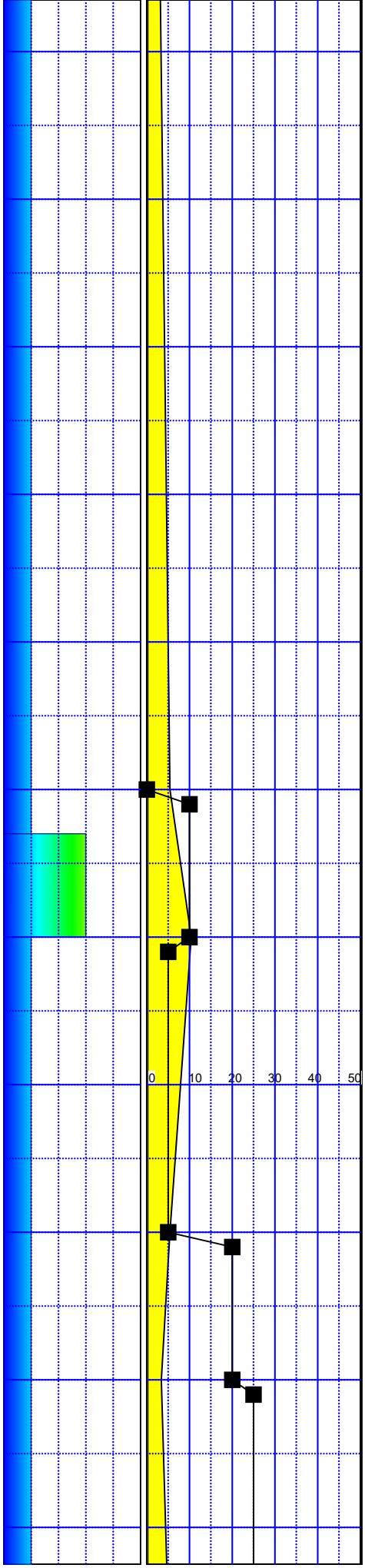






BASALT: OLOR: N4 medium dark gray
TEXTURE: Aphanitic basalt, vesicular from top of interval to 206 ft, diktytaxitic from 206 to 226 ft, vesicular to base
COMPOSITION: Ground mass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: None noted



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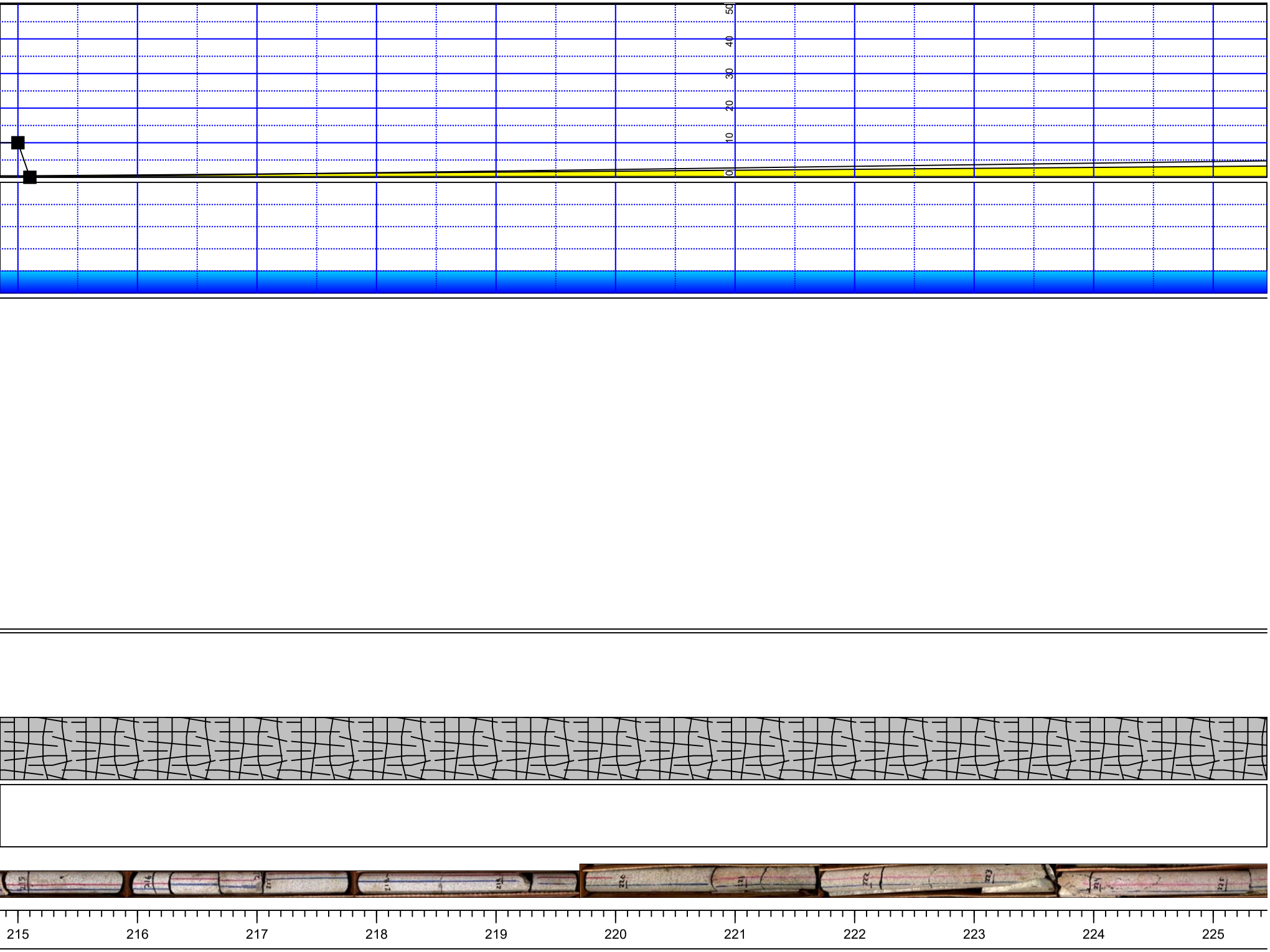
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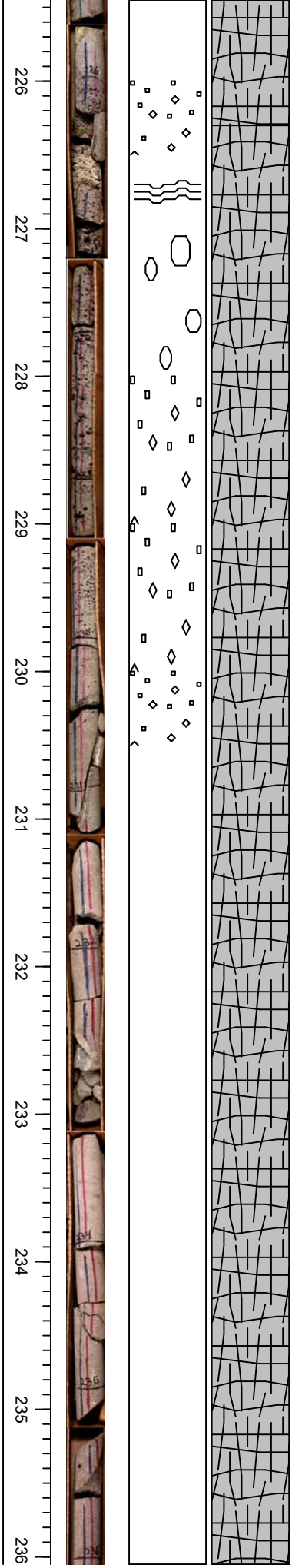
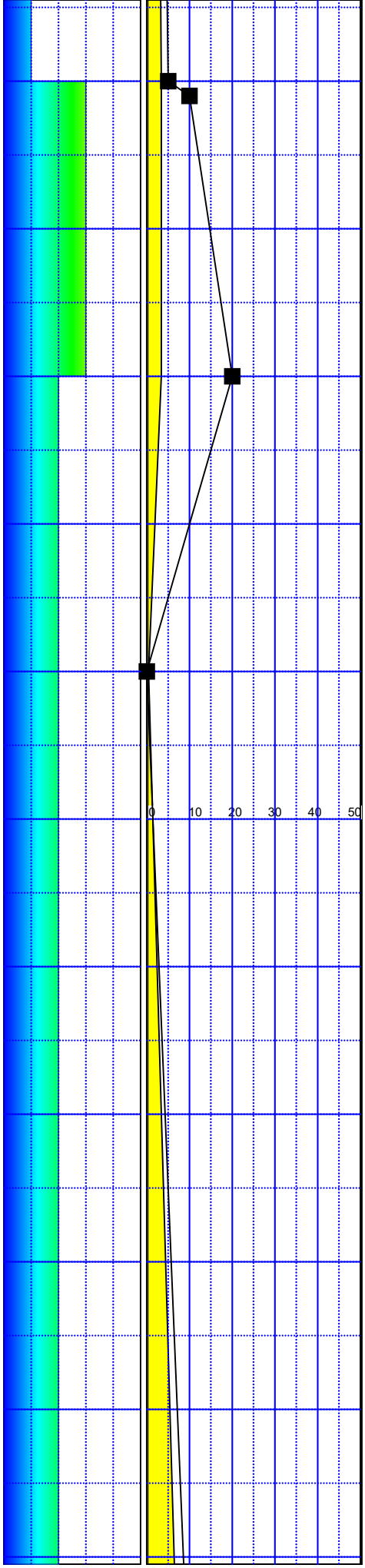
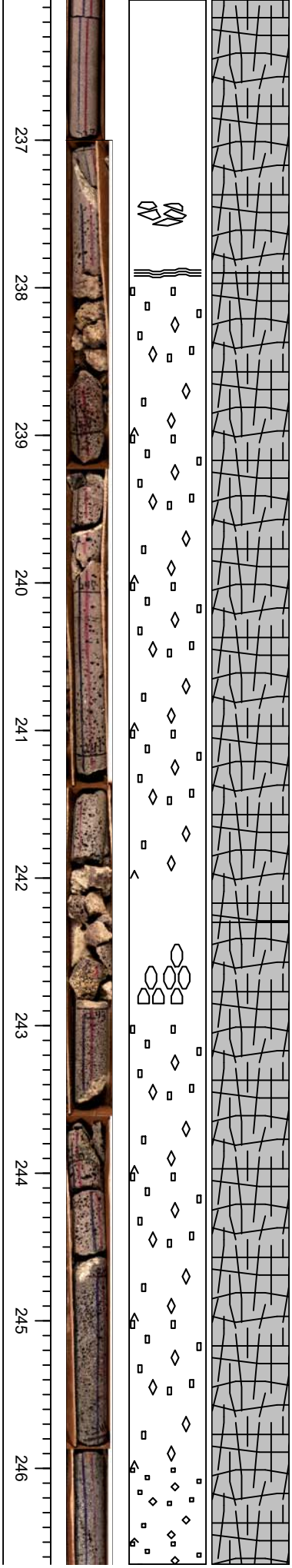


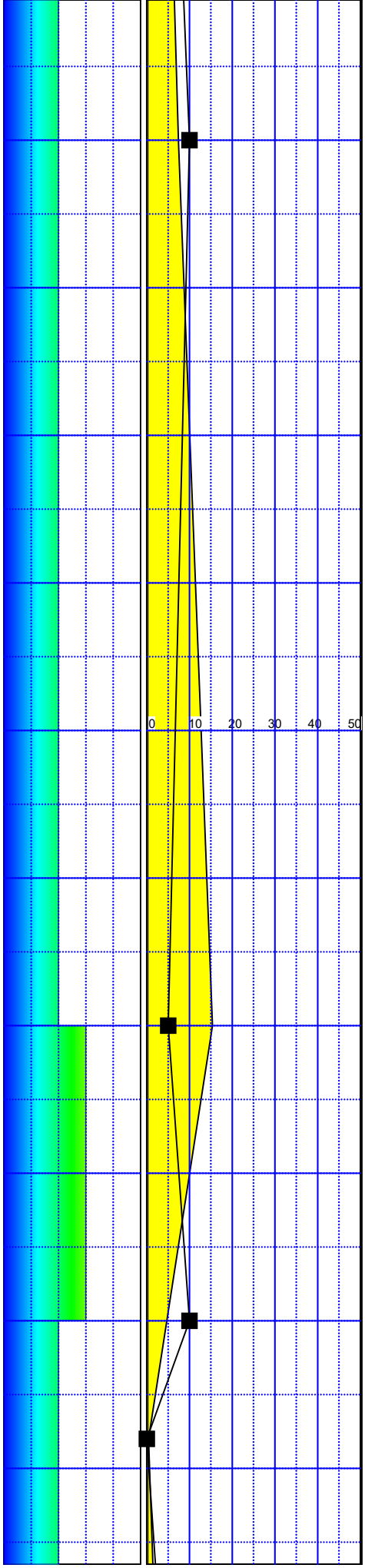
BASALT: COLOR:5 RP 4/2 grayish red purpole
TEXTURE: Aphanitic basalt, vesicular from 226.3 to 230 ft, massive from 230 to base
COMPOSITION: Groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: None noted

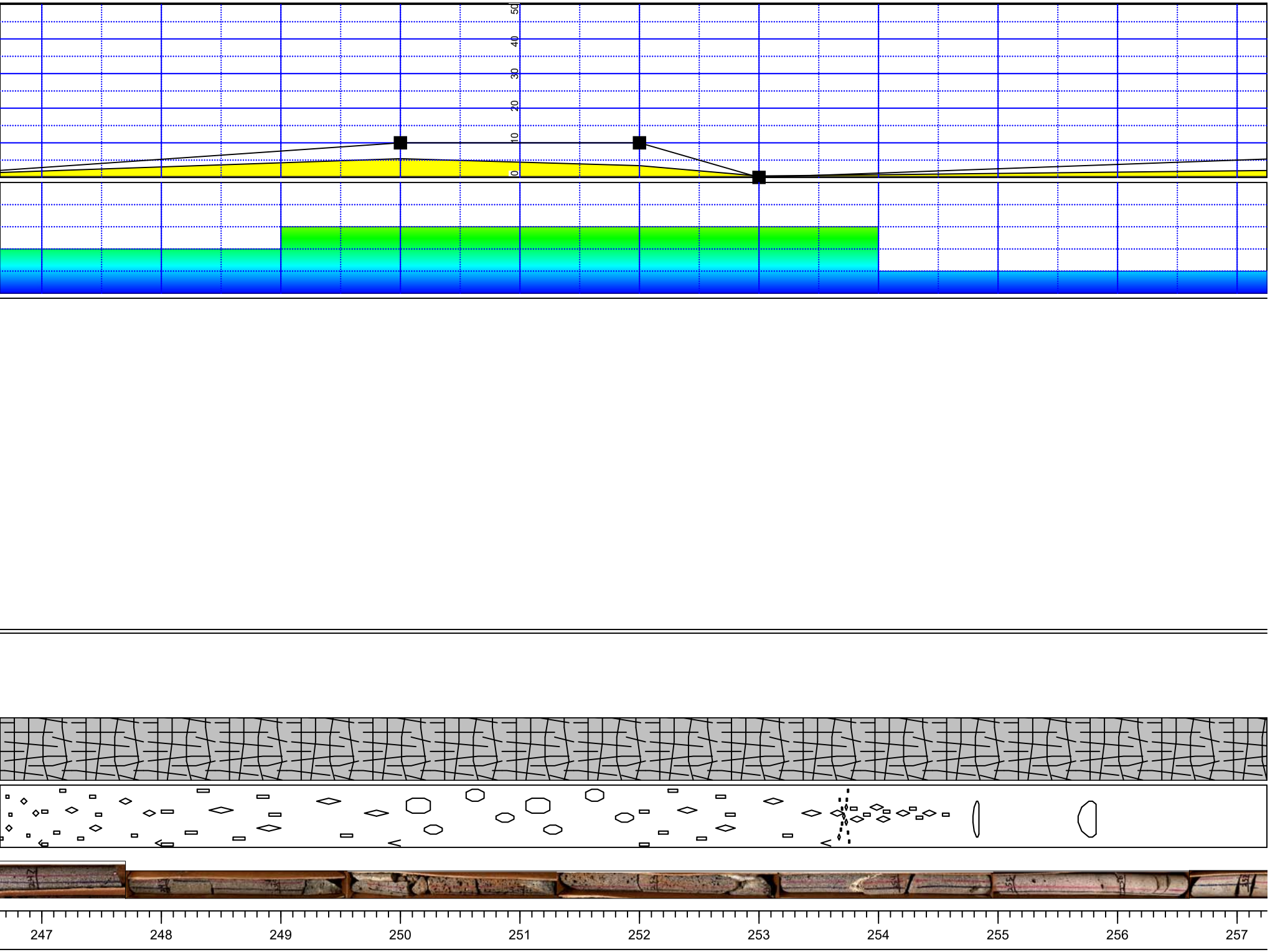




BASALT: COLOR: N4 medium dark gray
TEXTURE: Aphanitic, vesicular basal
COMPOSITION: Gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Calcite and calcareous sediment on fracture surfaces

BASALT: COLOR: N4 medium dark gray
TEXTURE: Phaneritic, microporphyritic, basalt; vesicular from th e top of the interval to 246 ft, diktytaxitic to 249.5 ft; vesicular to 253 ft; diktytaxitic to 255 ft; massive to 259 ft; vesicular to base of interval
COMPOSITION: 20% 1-mm plagioclase microphenocrysts in dark gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Calcite and calcareous sediment on fracture surfaces

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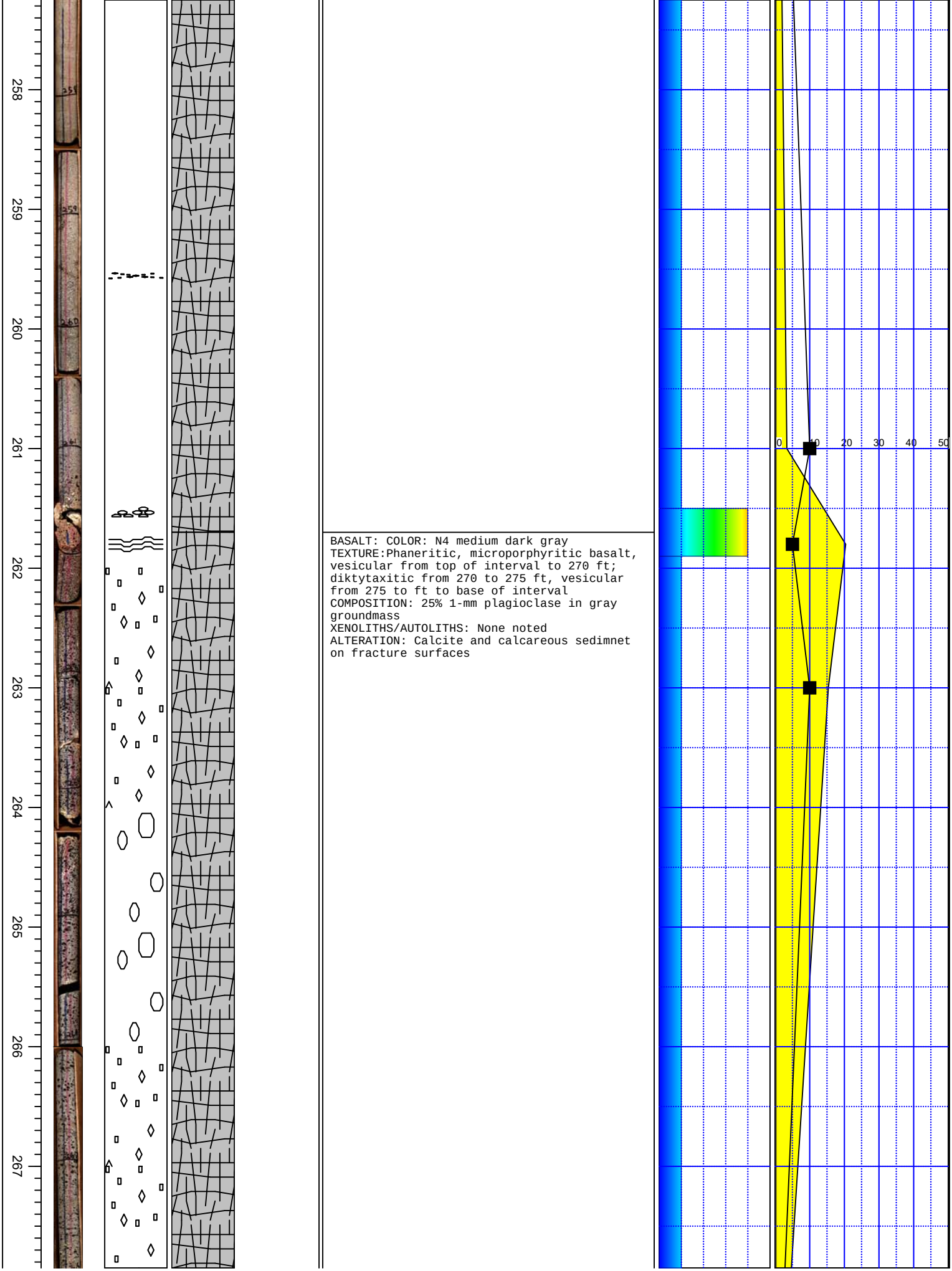

BASALT: COLOR: N4 medium dark gray
TEXTURE:Phaneritic, microporphyritic basalt, vesicular from top of interval to 270 ft; diktytaxitic from 270 to 275 ft, vesicular from 275 to ft to base of interval
COMPOSITION: 25% 1-mm plagioclase in gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Calcite and calcareous sedimnet on fracture surfaces

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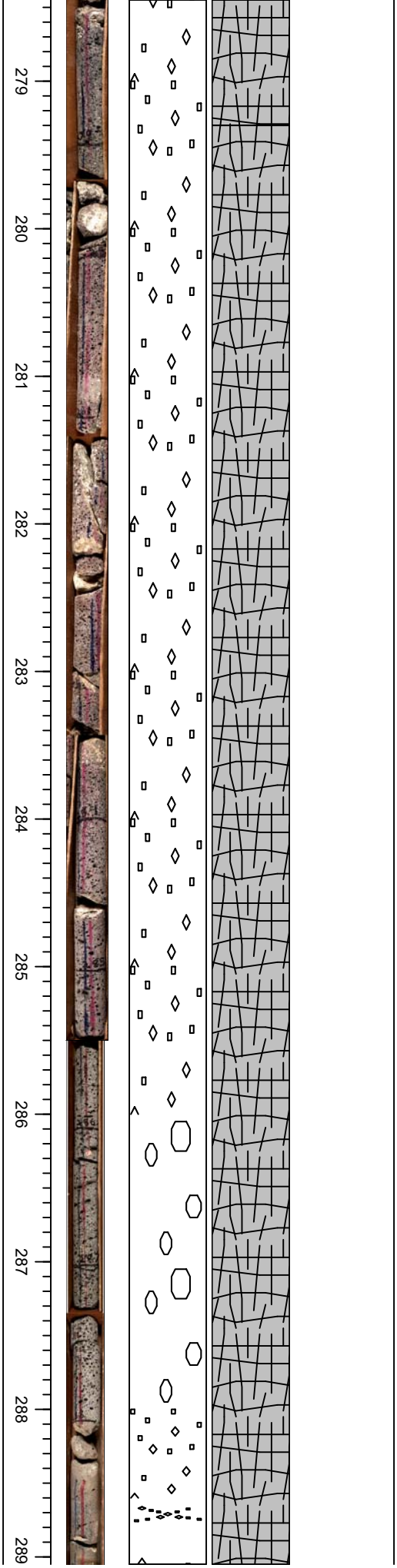
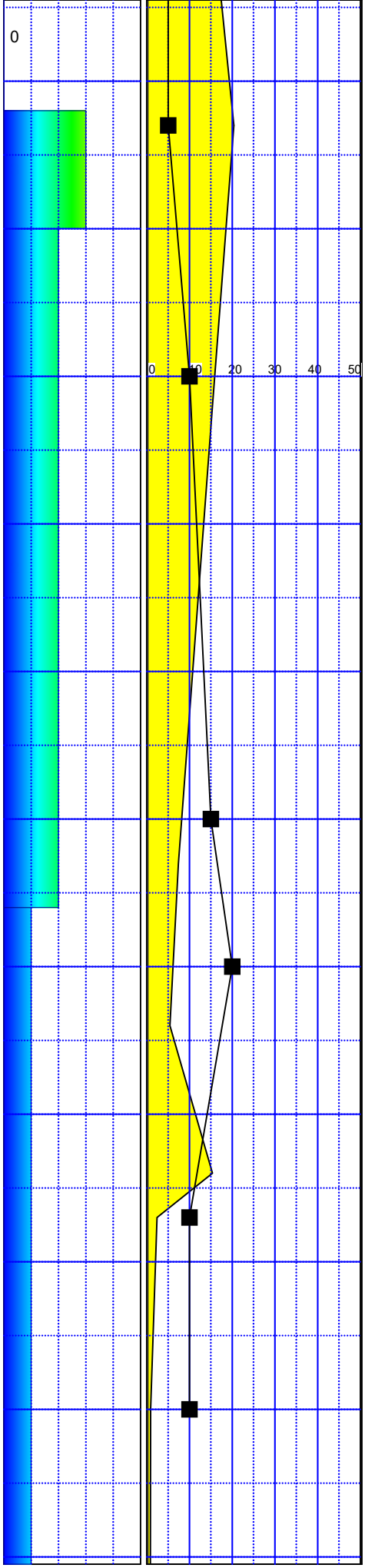


BASALT: COLOR: N5 medium gray basalt
TEXTURE:Vesicular, diktytaxitic, nearly aphanitic basalt. Vesicular from top of interval to 288 ft; diktytaxitic from 288-296 ft, massive from 296-313 ft, diktytaxitic form 313-316.7 ft, vesicular from 316.7- 323 ft, vesicles increase in size and decrease in abundance as depth increases; diktytaxitic from 323 -330 ft; vesicular to base
COMPOSITION: 0.5-1 mm plagioclase laths in medium gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Powdery white to buff calcite on fracture surfaces and inside some vesicles, black or red oxidation inside vesicles



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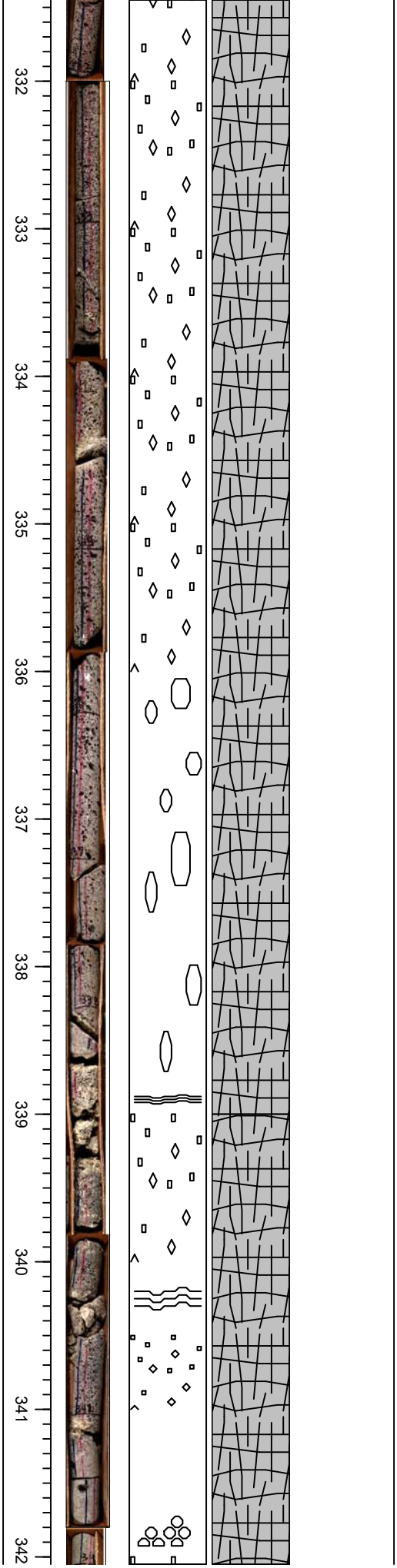
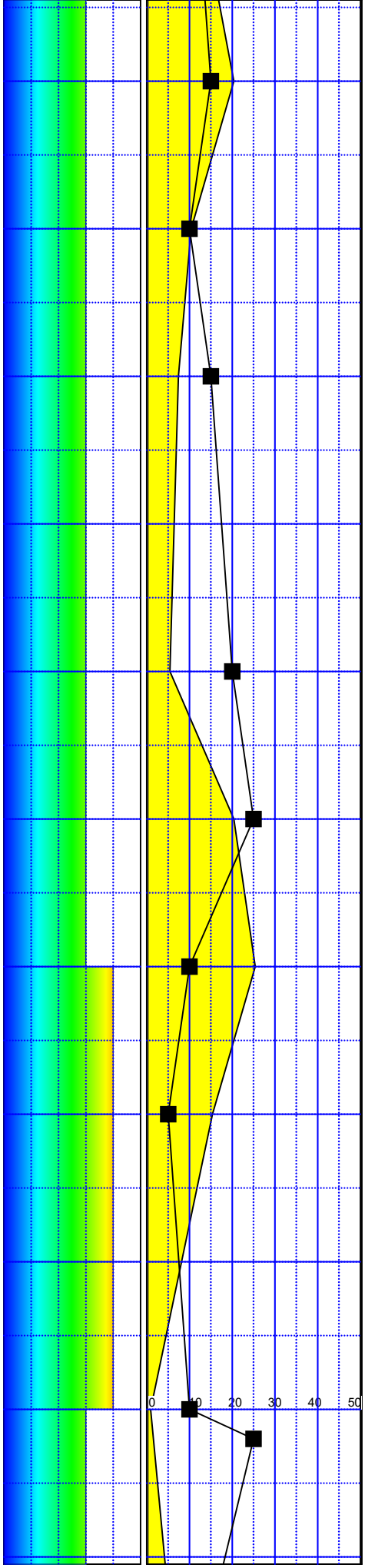


BASALT: COLOR: N4 medium dark gray
TEXTURE: Vesicular, aphanitic basalt, vesicular from top of interval to 344 ft; vesicle planes from 344 to 346, vesicle zones from 346 to 348 ft; diktytaxitic form 348 to 355 ft; increasingly vesicular from 355 to base of interval, flow/mold structure at base
COMPOSITION: 40% 1 mm white euhedral plagioclase laths in dark gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Buff colored calcium carbonate in fractures, reddish oxidation on base and inside some vesicles



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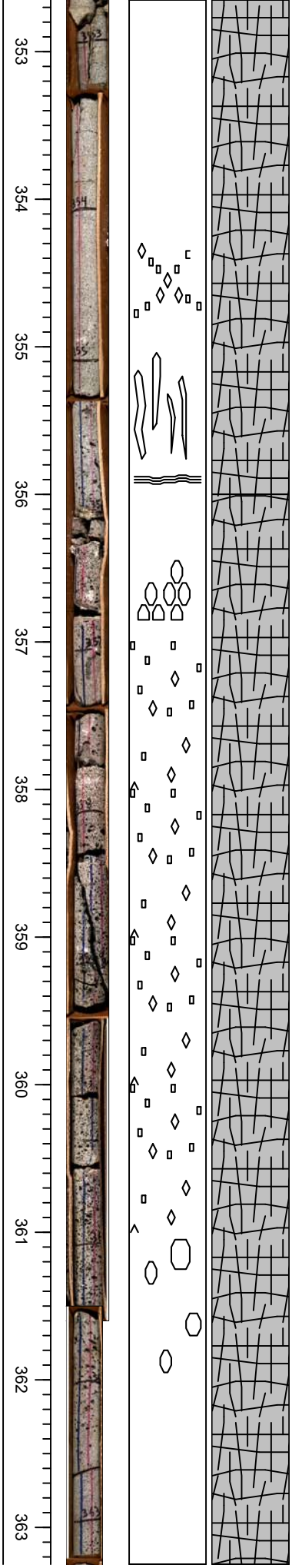
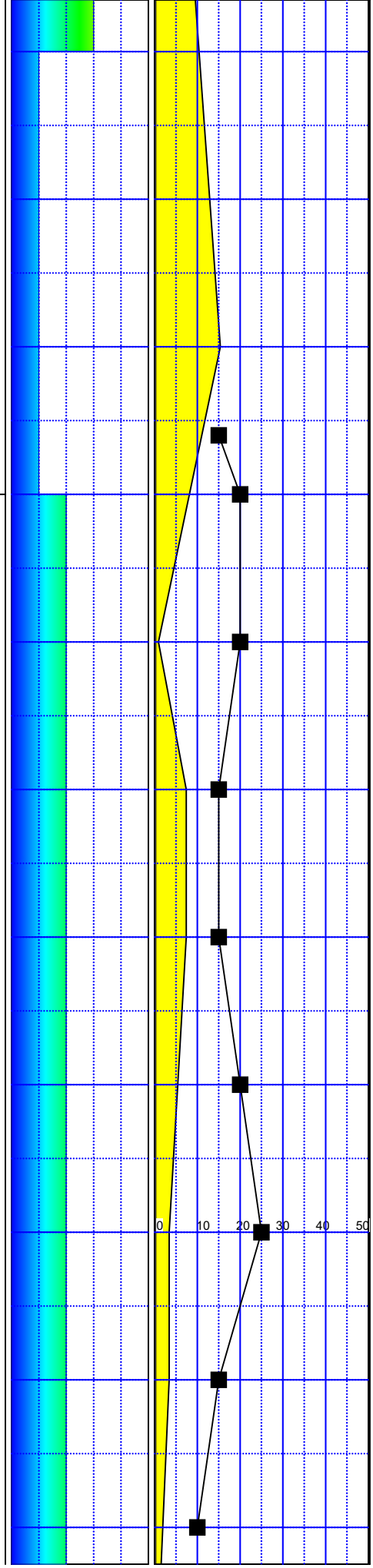
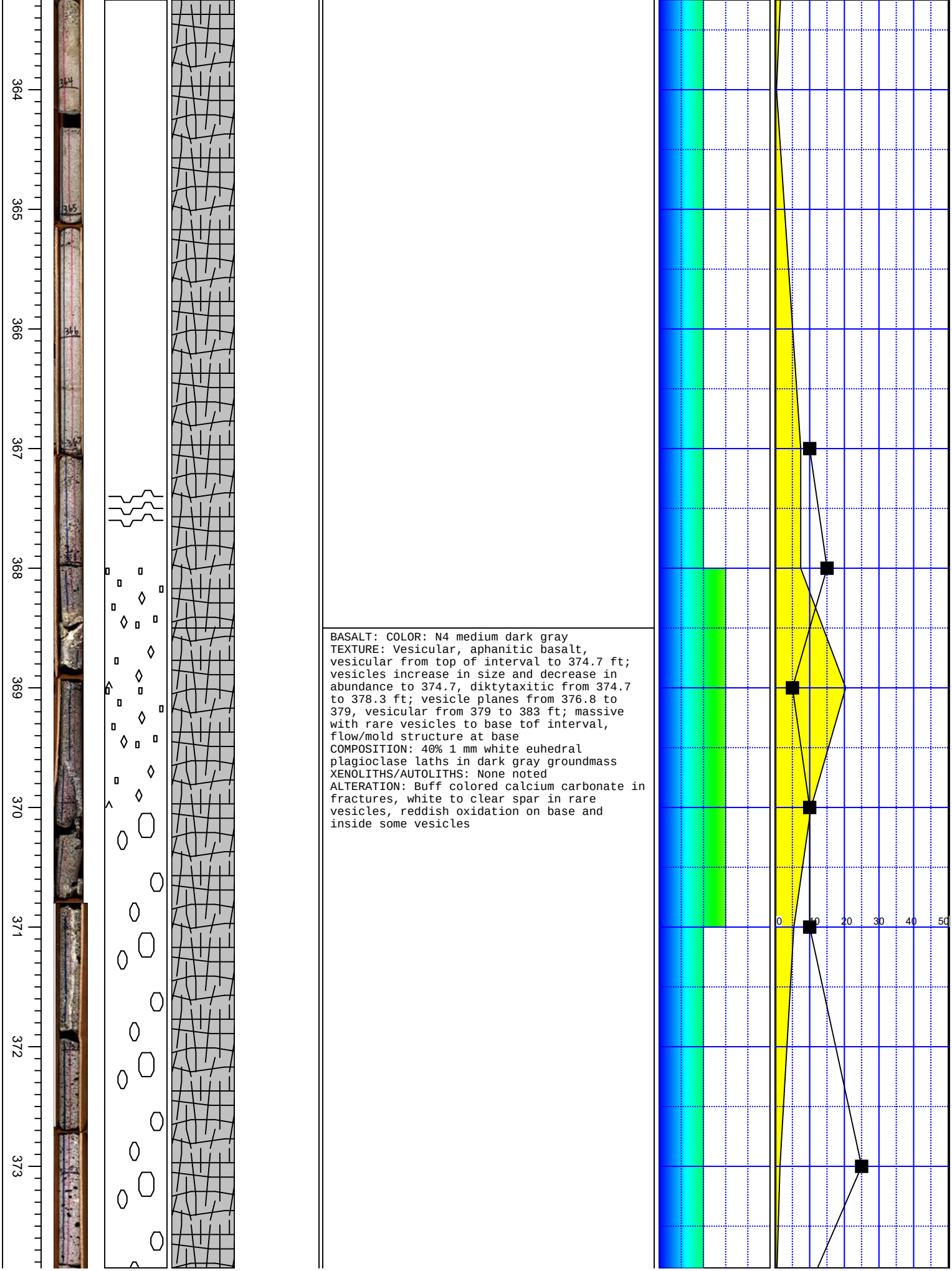


BASALT: COLOR: N4 medium dark gray
TEXTURE: Vesicular, aphanitic basalt, vesicular from top of interval to 363.6 ft; , vesicle zone from 364.3 ft; diktytaxitic form 363.4 to 366.9 ft; increasingly vesicular from 367 to base of interval
COMPOSITION: 40% 1 mm white euhedral plagioclase laths in dark gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Buff colored calcium carbonate in fractures, reddish oxidation on base and inside some vesicles





BASALT: COLOR: N4 medium dark gray
TEXTURE: Vesicular, aphanitic basalt, vesicular from top of interval to 374.7 ft; vesicles increase in size and decrease in abundance to 374.7, diktytaxitic from 374.7 to 378.3 ft; vesicle planes from 376.8 to 379, vesicular from 379 to 383 ft; massive with rare vesicles to base tof interval, flow/mold structure at base
COMPOSITION: 40% 1 mm white euhedral plagioclase laths in dark gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Buff colored calcium carbonate in fractures, white to clear spar in rare vesicles, reddish oxidation on base and inside some vesicles

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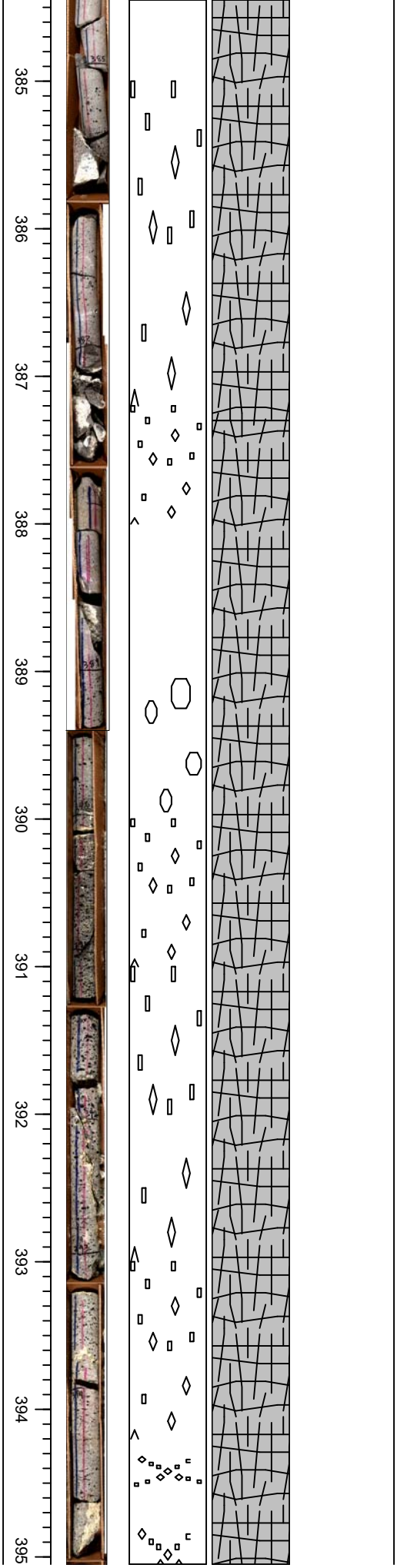
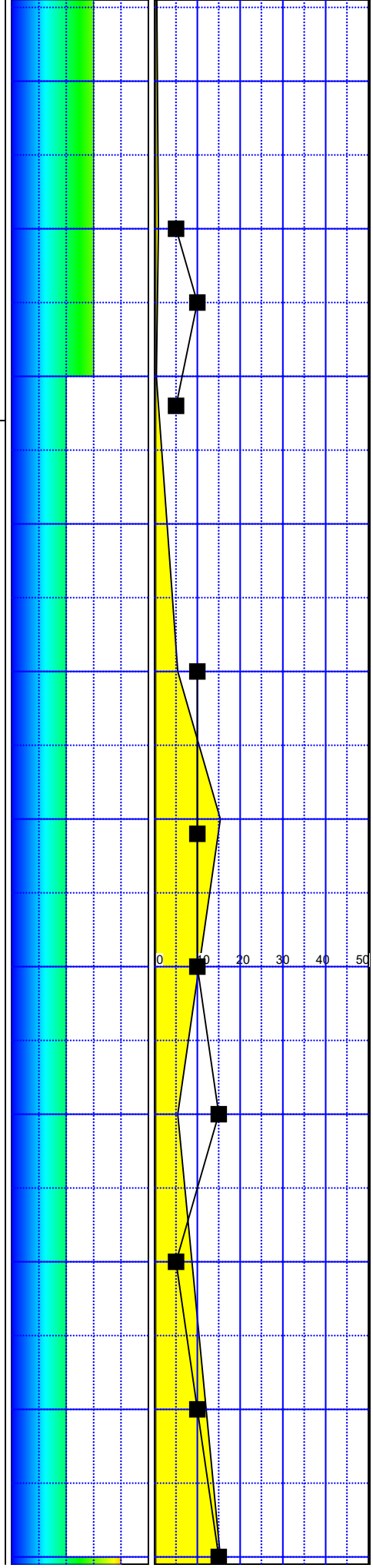


BASALT: COLOR: N4 medium dark gray
TEXTURE: Vesicular, aphanitic basalt, vesicular from top of interval to 394 ft; vesicles increase in size and decrease in abundance to 394 ft; vesicle planes from 394 to 395.5 ft;, vesicular from 395.5 to 399 ft; massive to 400 ft; vesicular to 405.8 ft; diktytaxitic to 408.5 ft; vesicular from 408.5 ft to base, flow/mold structure at base
COMPOSITION: Dark gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Buff colored calcium carbonate in fractures, white to clear spar in rare vesicles, reddish oxidation on base and inside some vesicles



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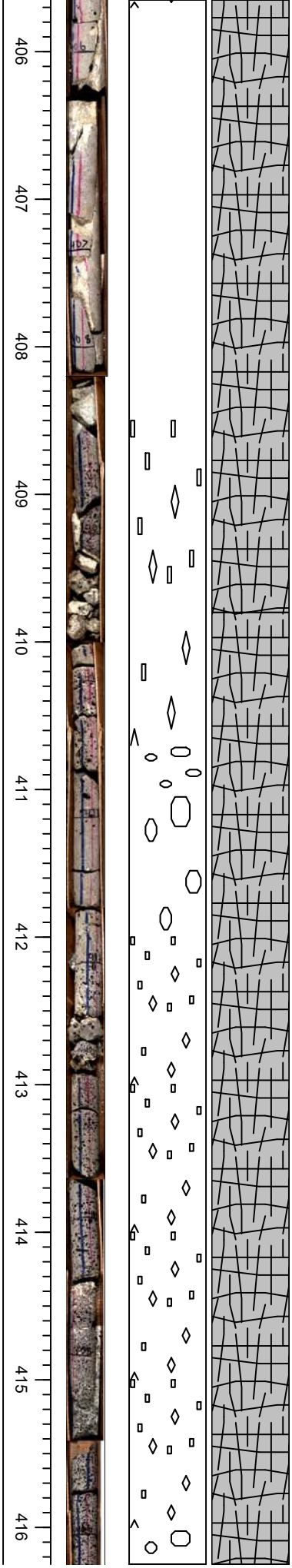
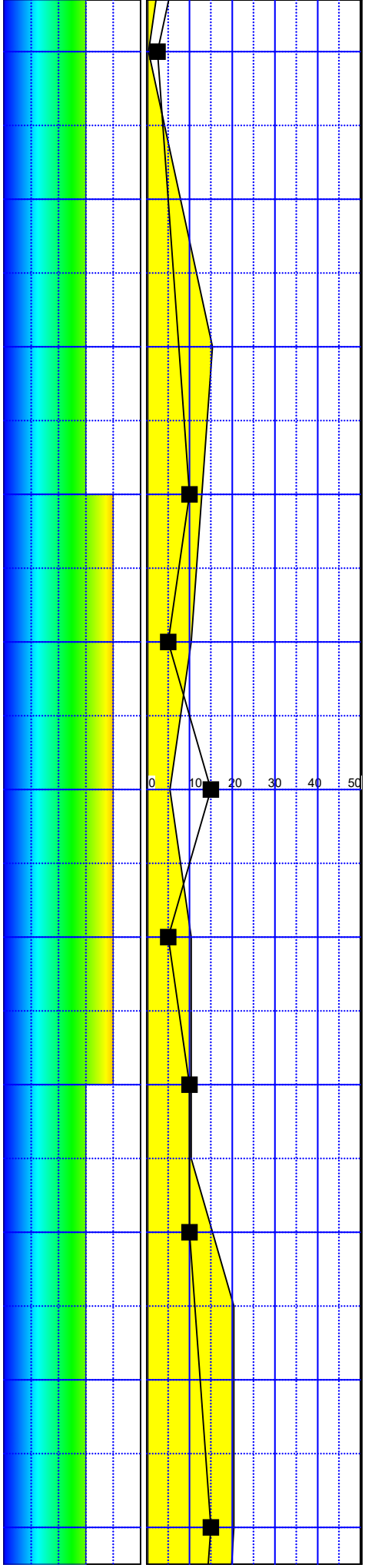
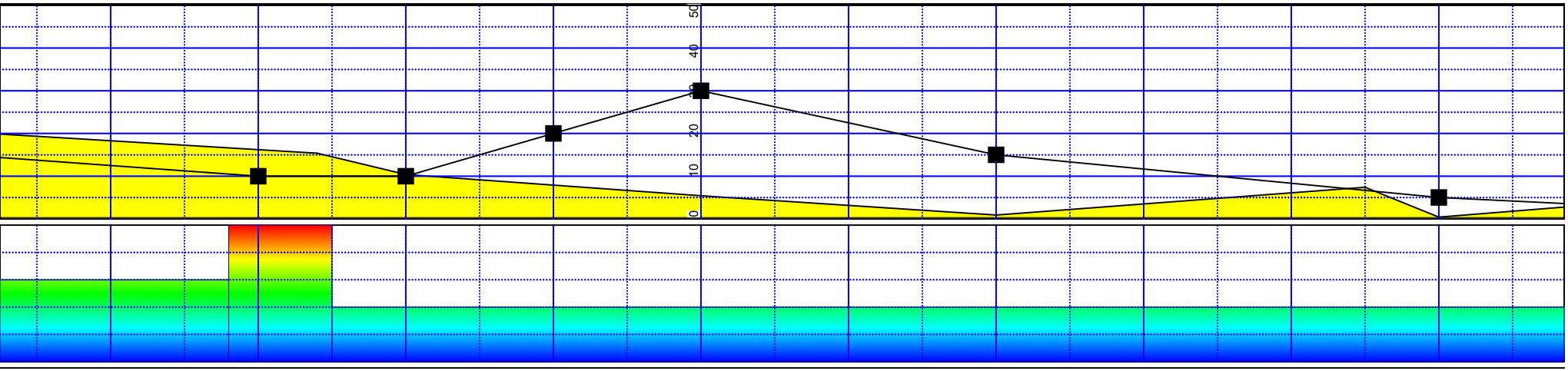
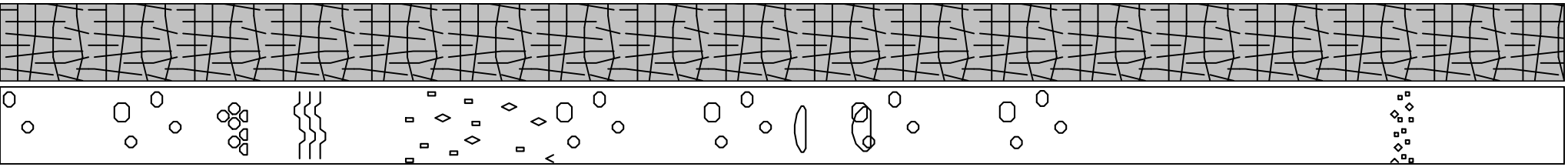


BASALT: COLOR: N5 medium gray
TEXTURE: Vesicular from top of interval to 423 ft; diktytaxitic from 423 to 436.5 ft; vesicular to base
COMPOSITION: Dark gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Buff colored calcium carbonate in fractures, white to clear spar in rare vesicles, reddish oxidation on base and inside some vesicles







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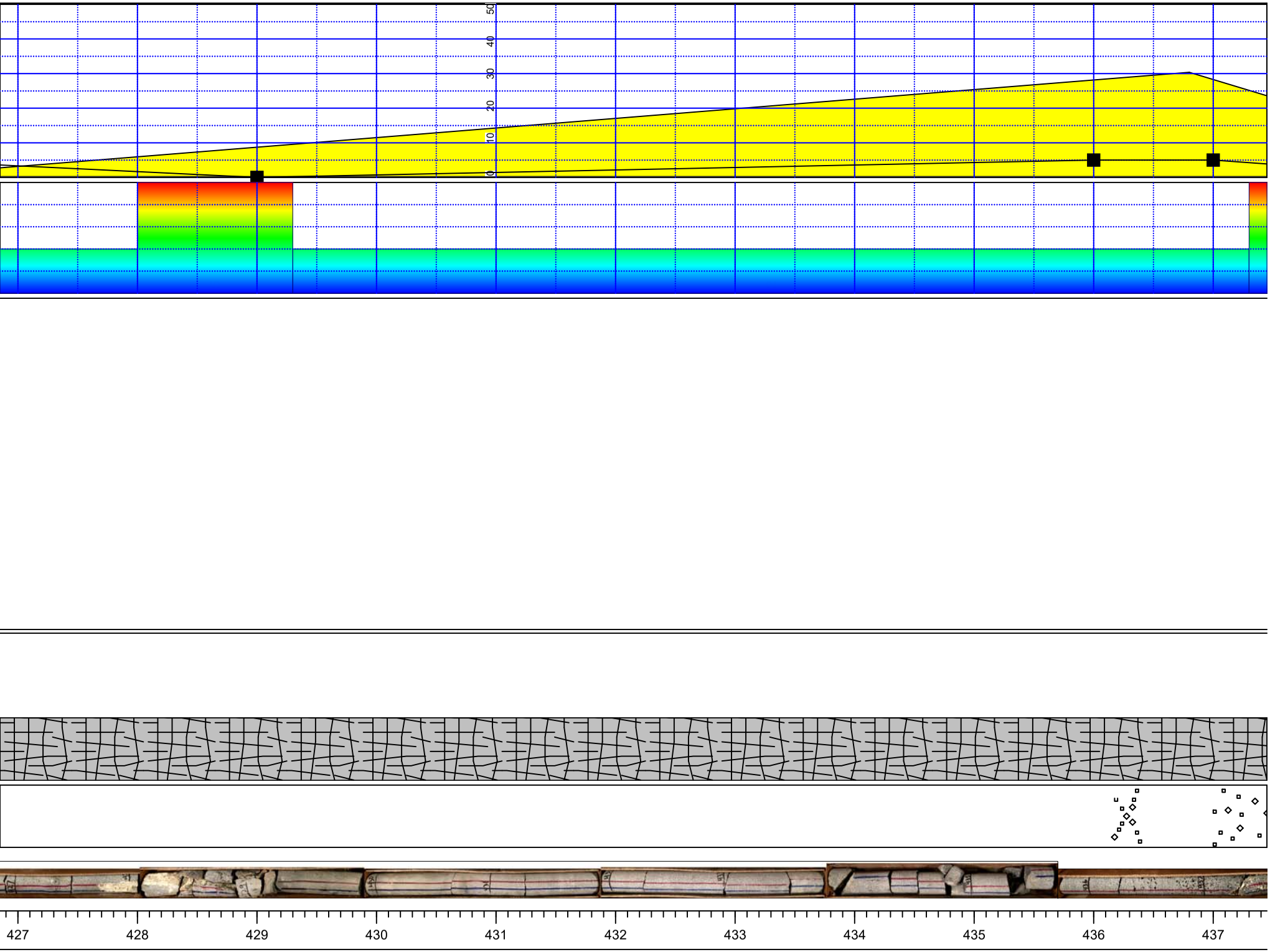
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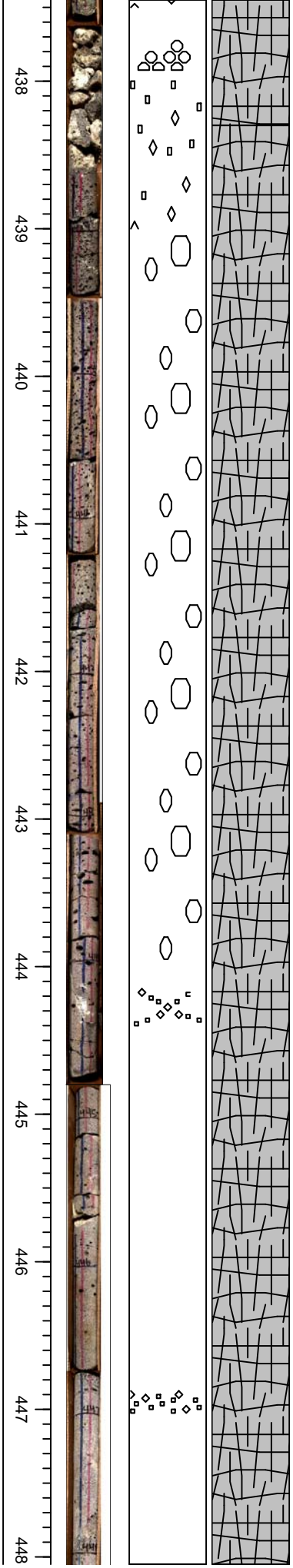
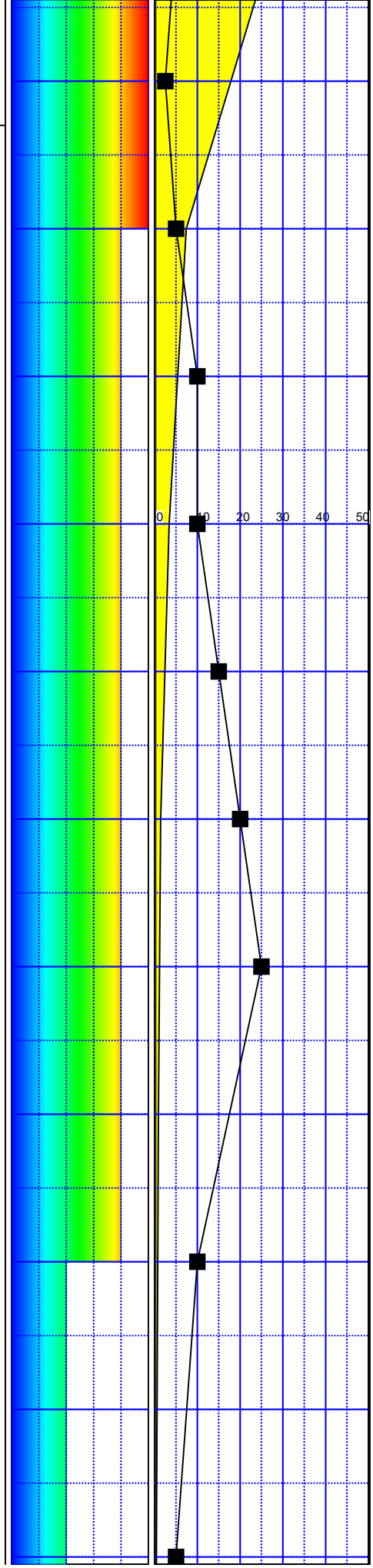
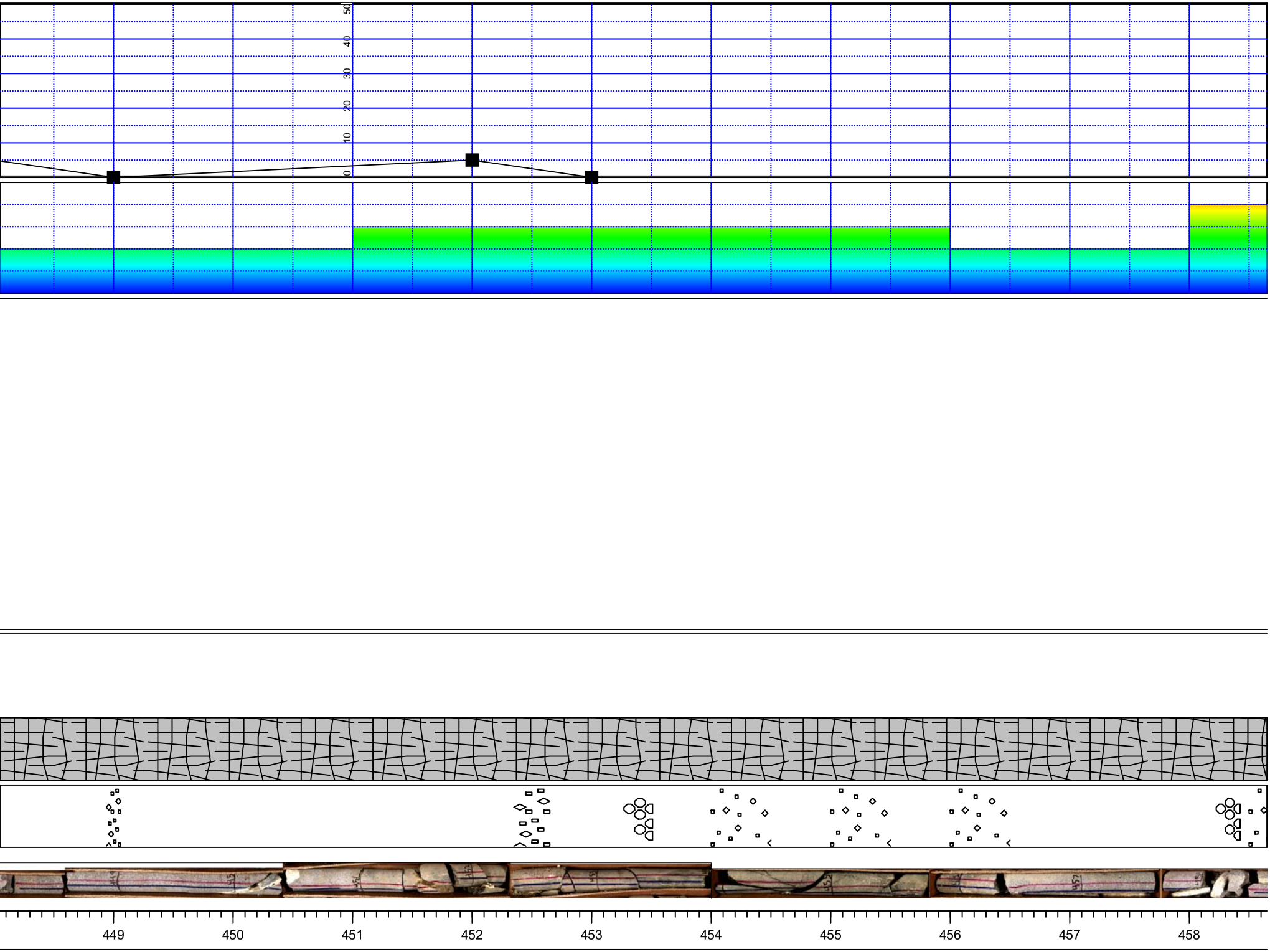


BASALT: COLOR: N5 medium gray
TEXTURE: Vesicular from top of interval to 446 ft, diktytaxitic from 445.6 to 450.4 ft; massive to 456.4 ft; diktytaxitic to 466.5 ft; vesicular to base
COMPOSITION: Gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Buff colored calcium carbonate in fractures, white to clear spar in rare vesicles, reddish oxidation on base and inside some vesicles

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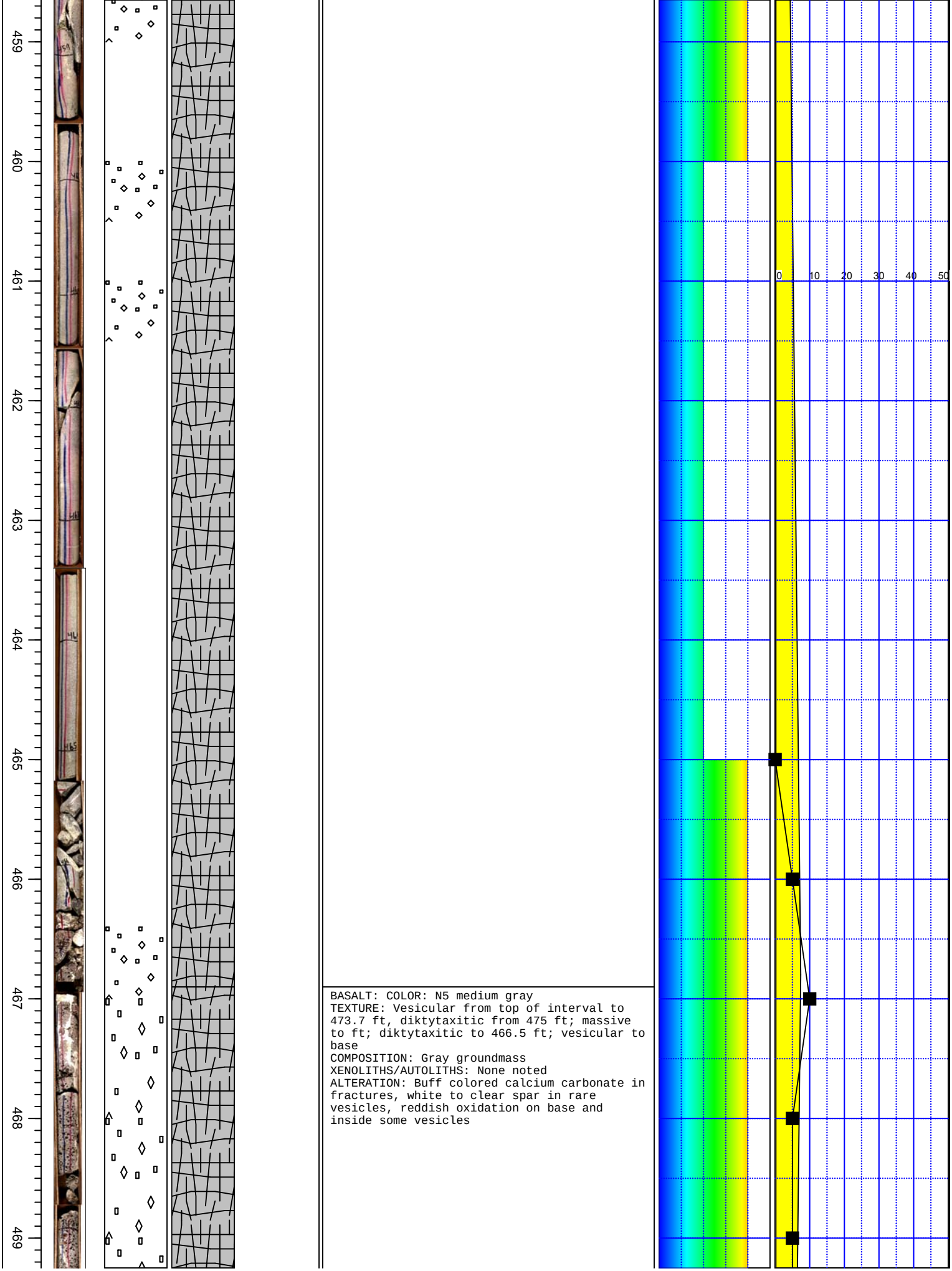

BASALT: COLOR: N5 medium gray
TEXTURE: Vesicular from top of interval to 473.7 ft, diktytaxitic from 475 ft; massive to ft; diktytaxitic to 466.5 ft; vesicular to base
COMPOSITION: Gray groundmass
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Buff colored calcium carbonate in fractures, white to clear spar in rare vesicles, reddish oxidation on base and inside some vesicles

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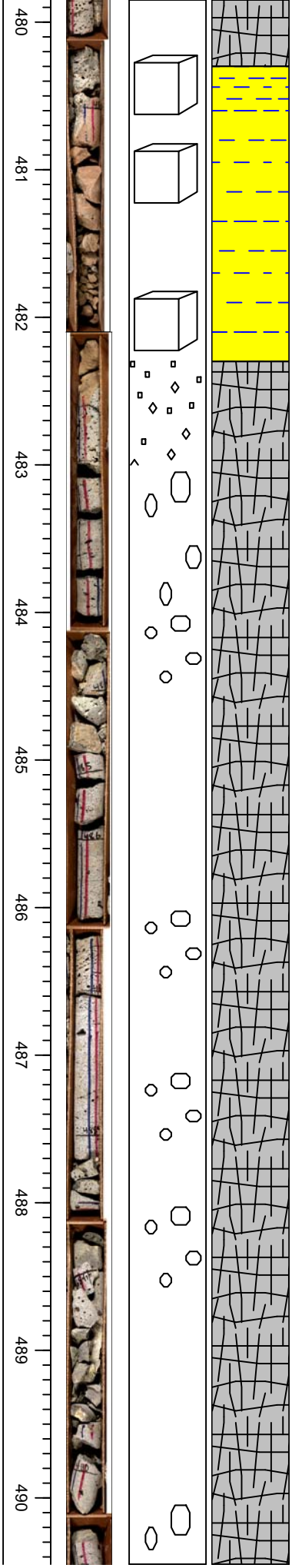
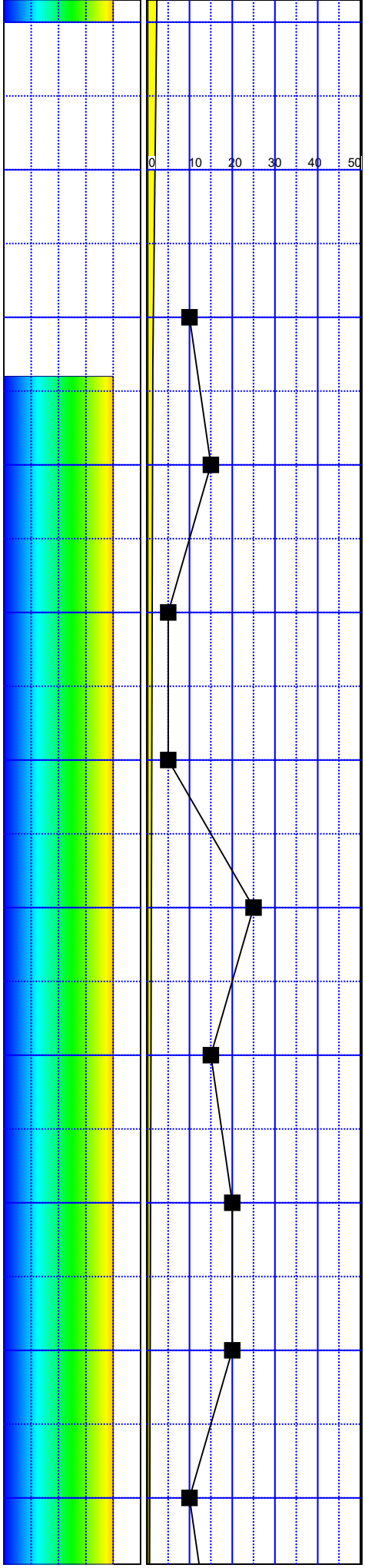


CALCAREOUS SILTSTONE: TEXTURE: Fine, well-sorted, lithic silty sand, USCS SM
COLOR: 5 YR 6/4 light brown
CONSISTENCE: Firm
STRUCTURE: Massive
FREE CARBONATE: Present, reacts to hydrochloric acid
ROCK: Basalt fragments at base of interval
ROOTS/FOSSILS: None noted

BASALT: COLOR: N5 medium gray
TEXTURE: Sparsely vesicular from top of interval to 498 ft, vesicles increase in size and decrease in abundance with depth; diktytaxitic to base of corehole, which does not penetrate the base of the flow
XENOLITHS/AUTOLITHS: None noted
ALTERATION: Buff colored calcium carbonate in fractures, white to clear spar in rare vesicles, reddish oxidation on base and inside some vesicles



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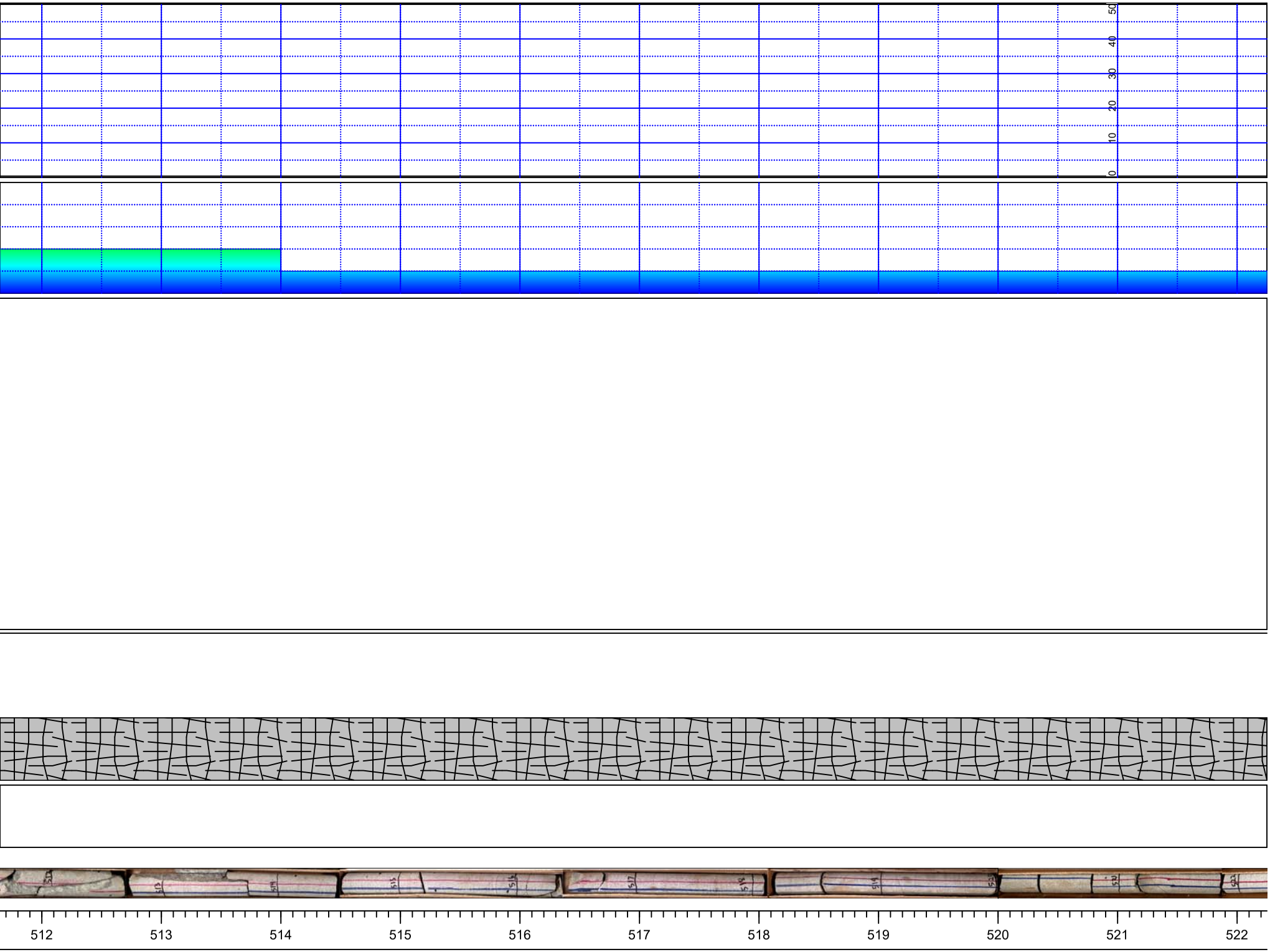
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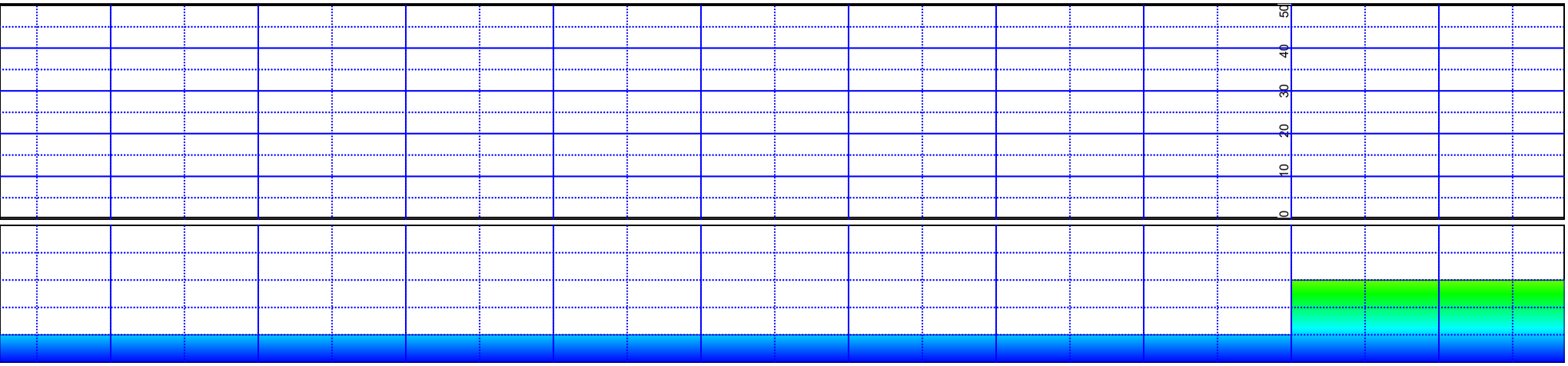
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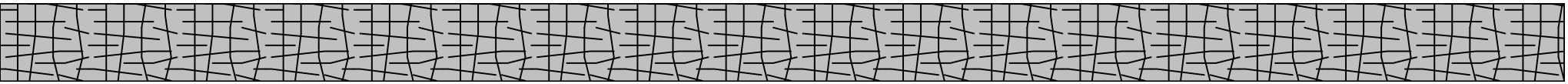

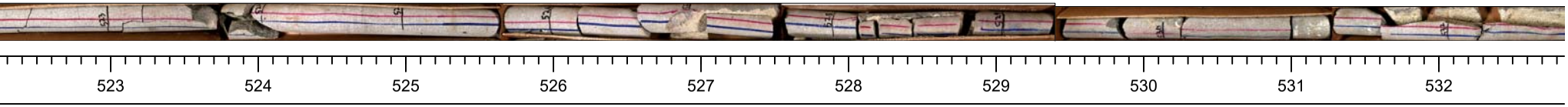
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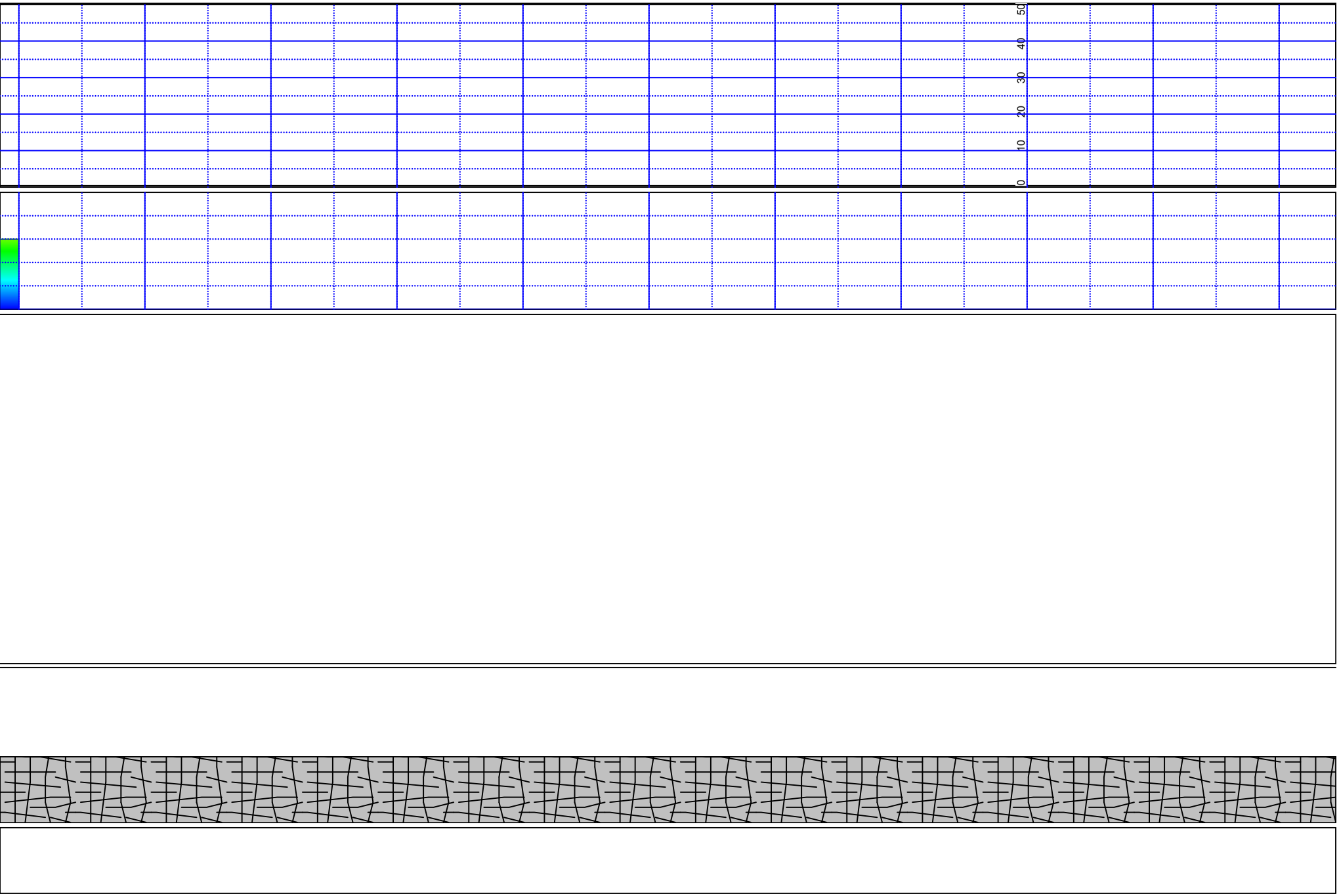
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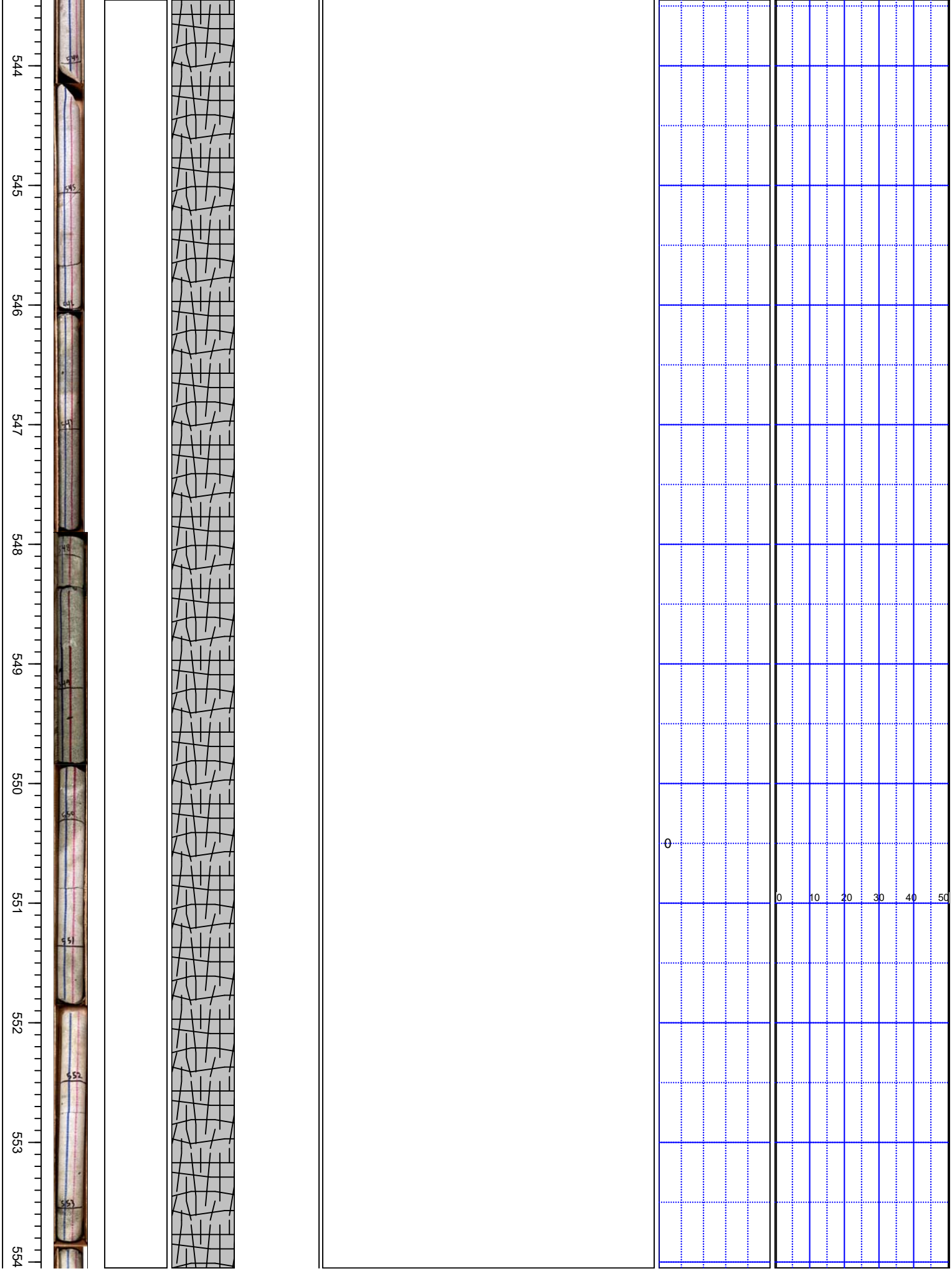
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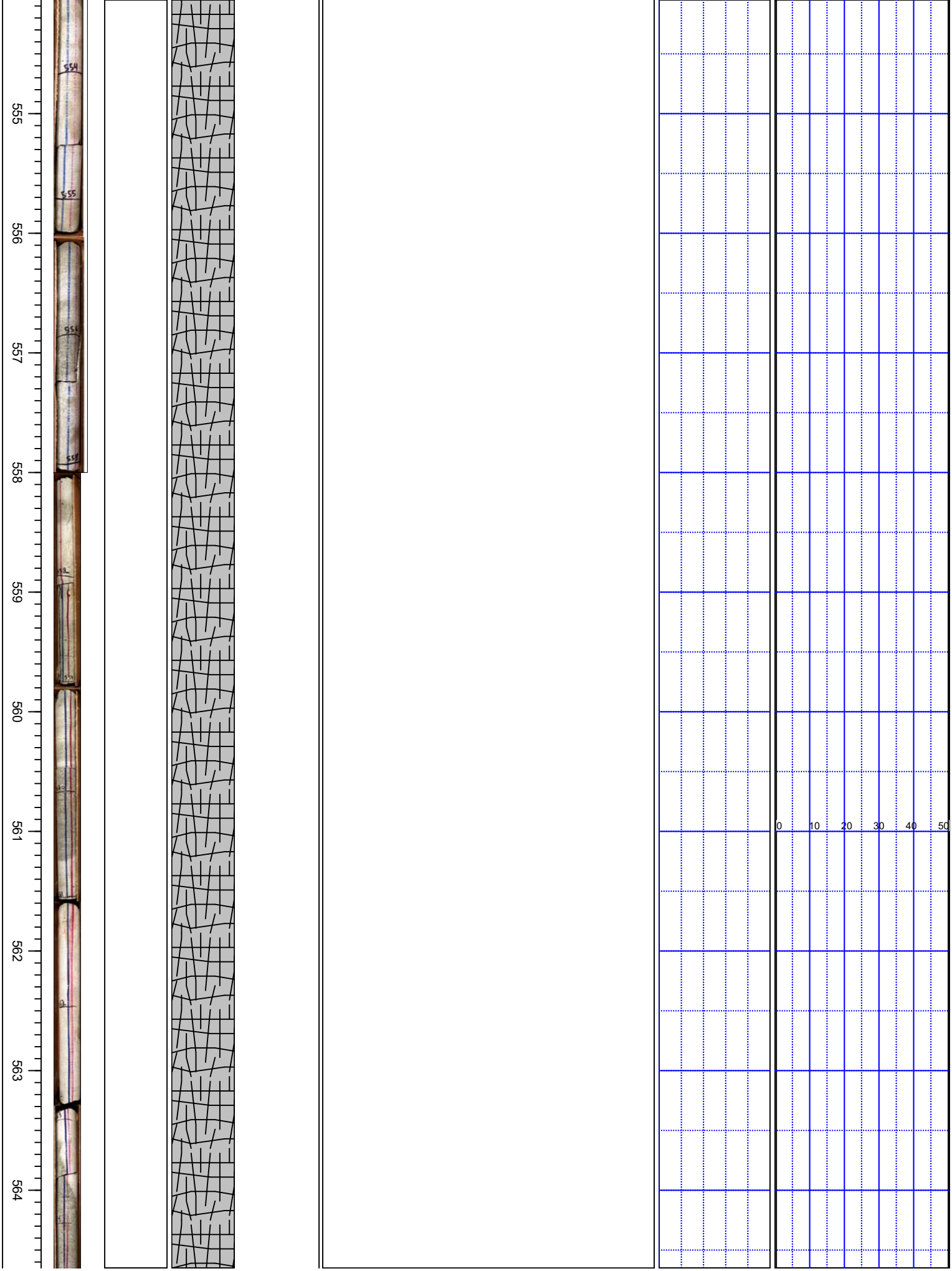
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