



## 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:

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PO Box 8072  
Pocatello, ID.  
83209

**Official Name:**USGS-127

Logged By: Mary K. Hodges, October 2004

Selected Aliases:

USGS Site ID:433058112572201

Contractor Well ID:

Drilling Agency: United States Geological Survey

Year Drilled: 1999

Names of Drillers: Matson, Hermandson, Gilbert

Well Status: Complete

Total Depth of Hole (ft): 598.1 feet

Total Core Recovered (ft):582.6

Beginning Depth (ft): 15.5 feet

Ending Depth (ft): 598.1 feet

☐ Continuous Recovery

☐ Selected Intervals Recovered

Total # of Core Boxes: 111

Notes: 15.5 to 300 feet may have inaccurate depths, depths are not marked on core

County & State: Butte County, ID.

Quadrangle Name: Circular Butte 3 SW

Lat / Lng: 43° 30' 58.28" 112° 57' 22.04" NAD27

Tns / Rng / Sec: T02N, R29E, Sec 11, ADD1

UTM Coordinates: N 675009.239, E 290584.096 NAD 27

Altitude (ft): 4.956.44, NGVD29

## 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



Silt 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



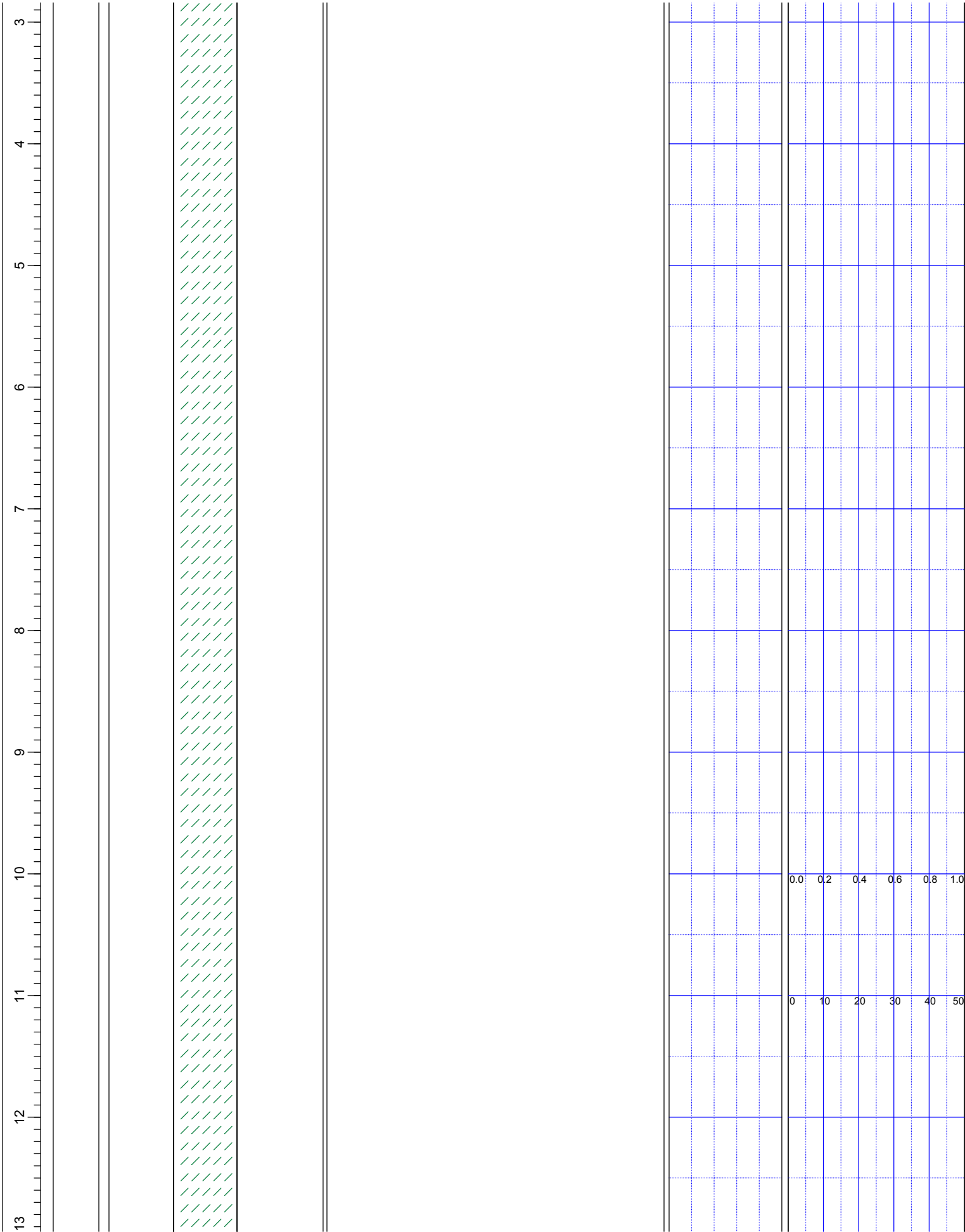
Prismatic

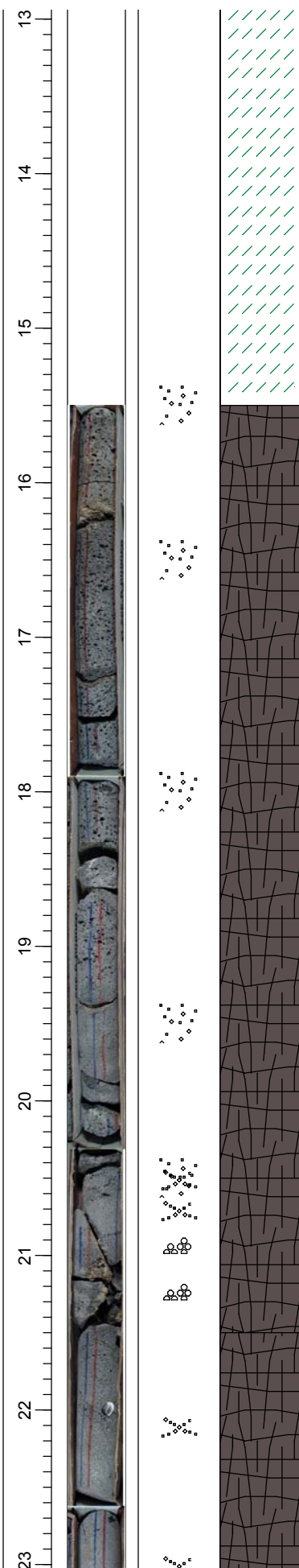


Columnar

Depth (feet & tenths)	Core Photo	Igneous, Soil and Sed Structures	Lithology	Description		Fracture Frequency (See fracture classification on website.)	Vesicle Characteristics Mean Size (in) 0 0.2 0.4 0.6 0.8 1.0 Volume Percentage 0 10 20 30 40 50
				Miscellaneous Text	Lithologic Description	0 1 2 3 4 5	0 10 20 30 40 50

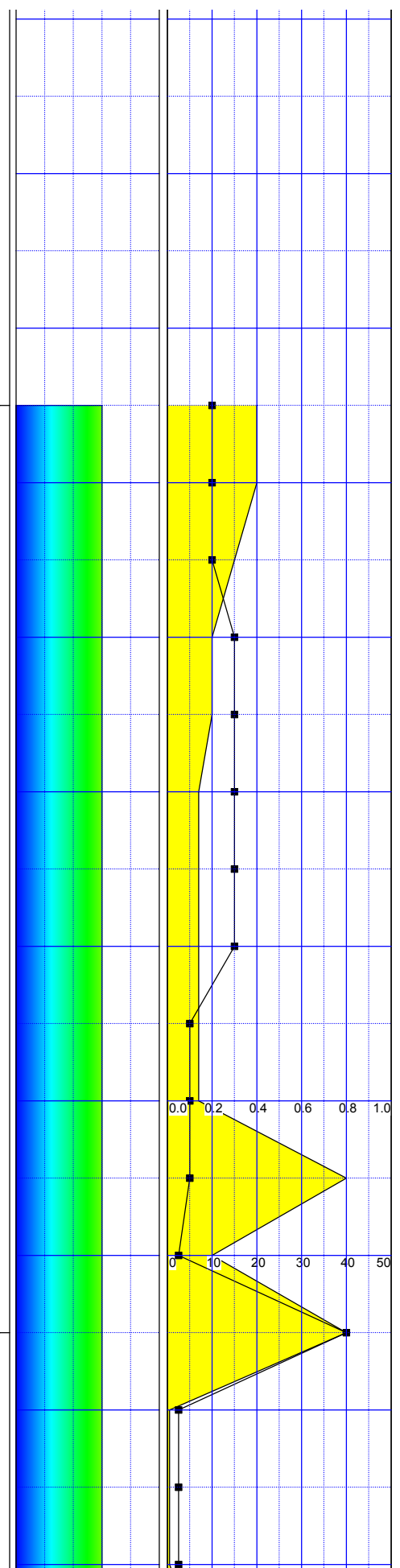
0					MISSING INTERVAL: Not recovered; surficial material		
1							
2							

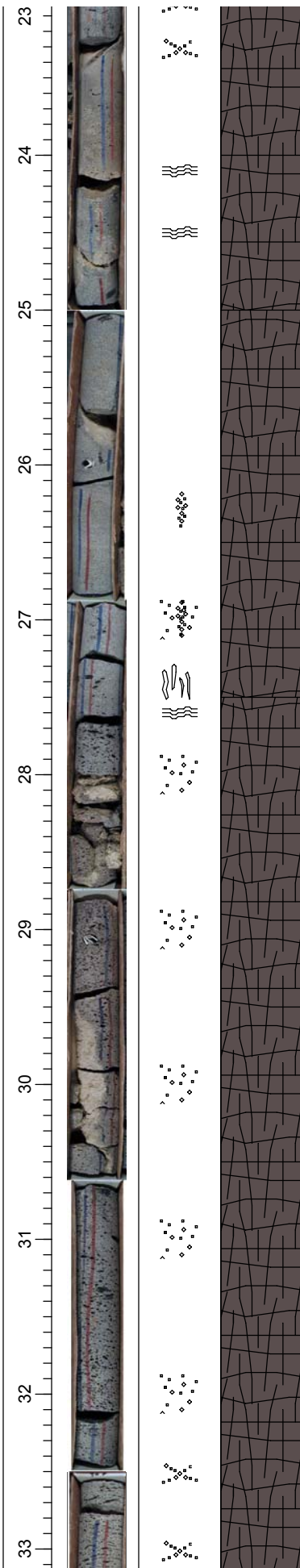




**BASALT:**  
 Color: Medium dark gray N4 to dark gray N3 basalt  
 Texture: Aphanitic, microporphyritic, fine-grained, diktytaxitic, vesicular basalt; larger and more numerous vesicles at top, vesicles decrease in size and number to 19.5 feet, then vesicle sheets and planes, flow/mold features at base  
 Composition: 95% aphanitic felted plagioclase and dark gray groundmass, 5% anhedral green olivine, some with red iddingsite rims  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Pinkish gray 5 YR 8/1 clay on some fractures and in some vesicles; at 16.3 feet, clay contains no free carbonate, at 17.2 feet clay contains free carbonates, at 21.5 feet, clay shows no free carbonate

**BASALT:**  
 Color: Medium gray N5 basalt  
 Texture: Aphanitic, microporphyritic, fine-grained, diktytaxitic, slightly vesicular basalt, flow/mold features at base  
 Composition: 95% aphanitic felted plagioclase and dark gray groundmass, 5% anhedral green olivine, some with red iddingsite rims  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Pinkish gray 5 YR 8/1 clay on some fractures and in some vesicles, clay contains no free carbonate, dark reddish





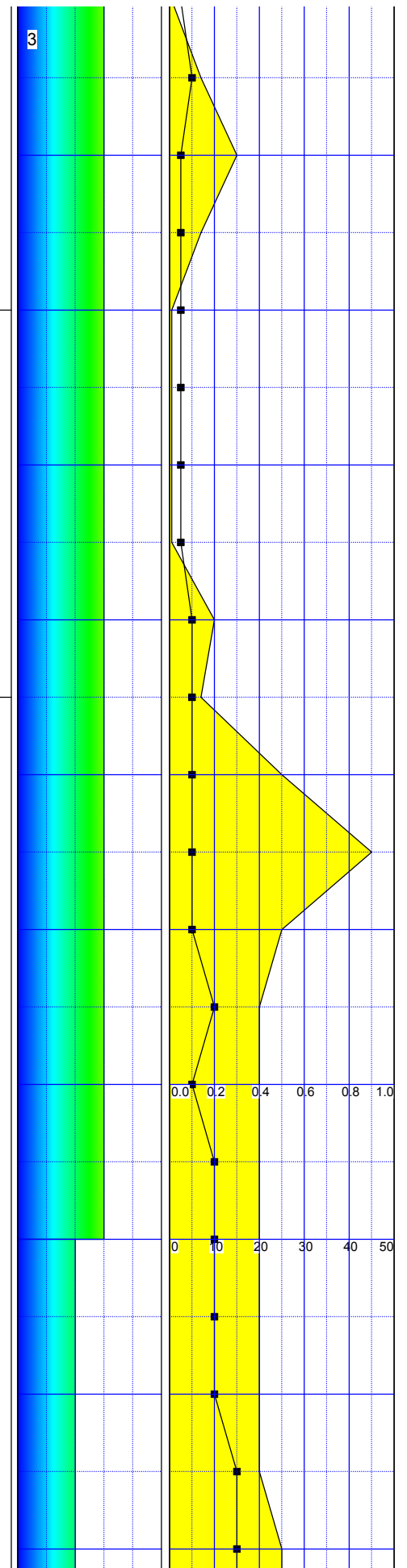
brown film inside some vesicles

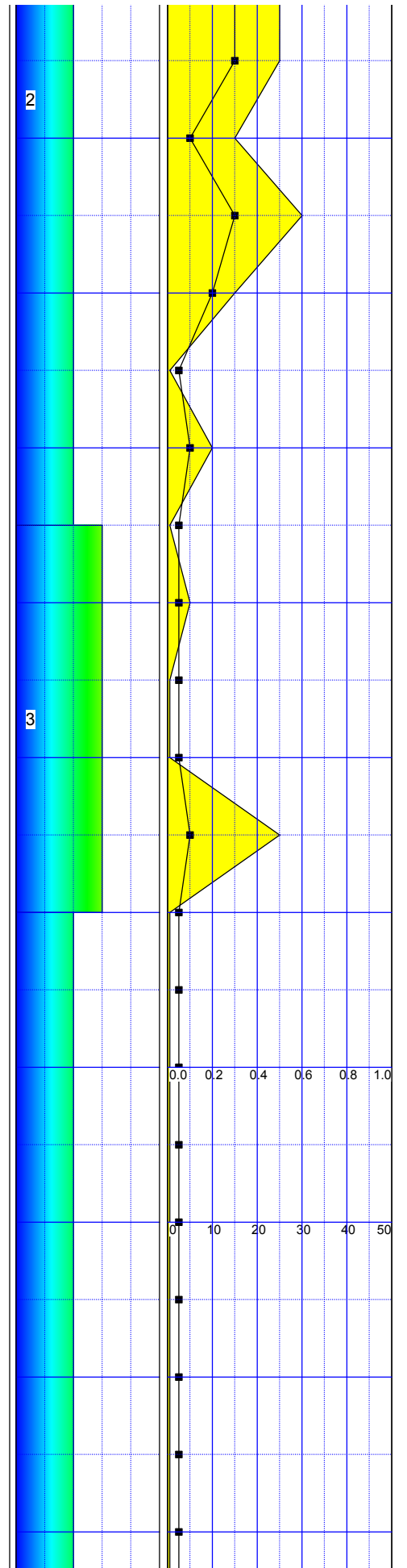
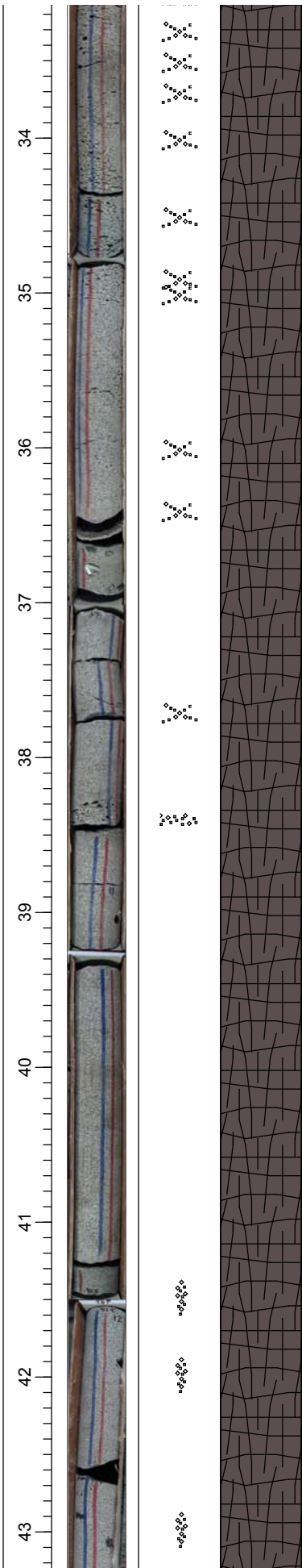
**BASALT:**

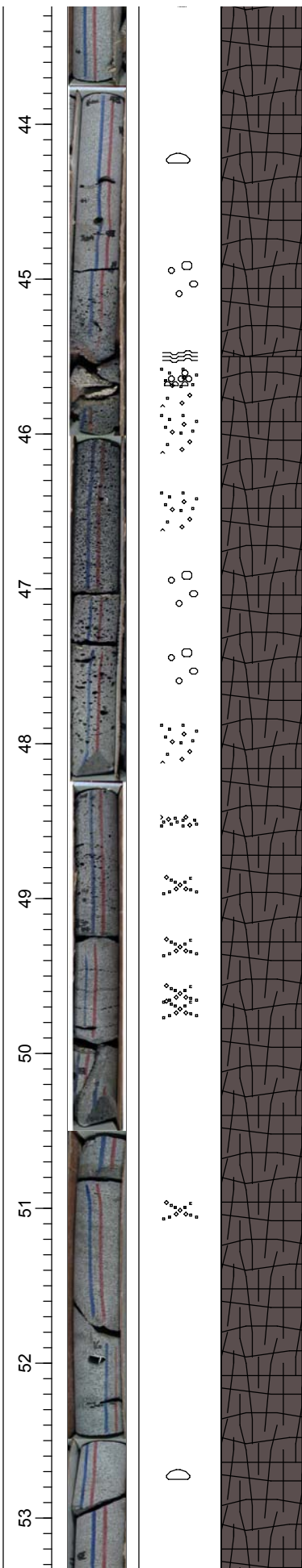
Color: Medium gray N5 basalt  
 Texture: Aphanitic, microporphyritic, fine-grained, diktytaxitic, slightly vesicular basalt, vesicularity increases with depth, flow/mold features at base  
 Composition: 75% aphanitic felted plagioclase and dark gray groundmass, 15% white 1-2 mm plagioclase laths, 10% anhedral green olivine  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Pinkish gray 5 YR 8/1 clay on some fractures and in some vesicles, clay contains no free carbonate, dark reddish brown film inside some vesicles

**BASALT:**

Color: Medium gray N5 basalt  
 Texture: Aphanitic, fine-grained, diktytaxitic, vesicular basalt, vesicular from top to 32.7 feet, vesicle planes and sheets to 38.6 feet, diktytaxitic with rare large vesicles to 44.9, then vesicular to base, flow/mold features at base  
 Composition: 85% aphanitic felted plagioclase and dark gray groundmass, 10% anhedral olivine crystals, 5% 2 mm plagioclase phenocrysts  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Pinkish gray 5 YR 8/1 silty clay on some fractures and in some vesicles, silty clay contains no free carbonate, dark reddish brown film inside some vesicles

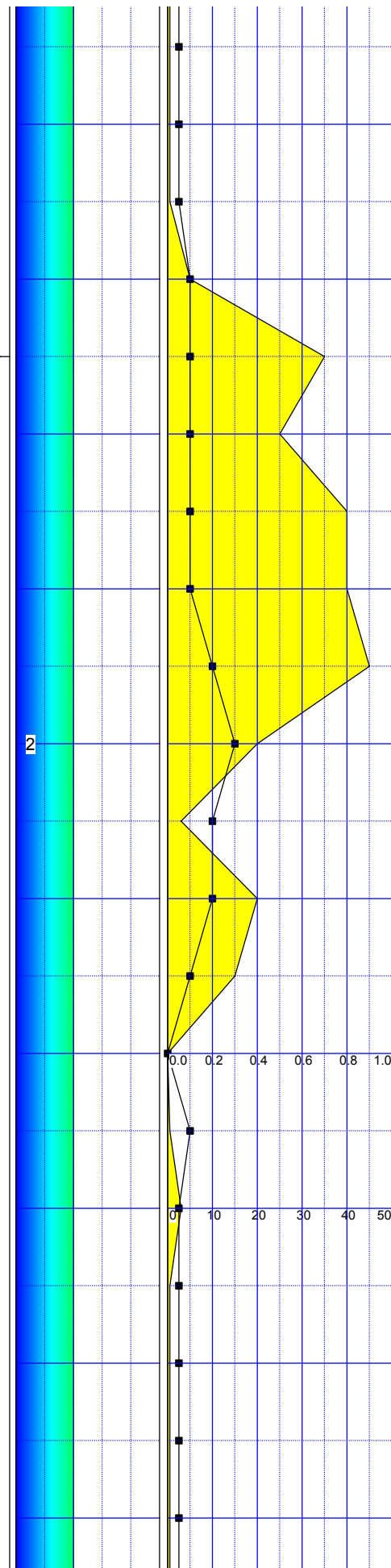




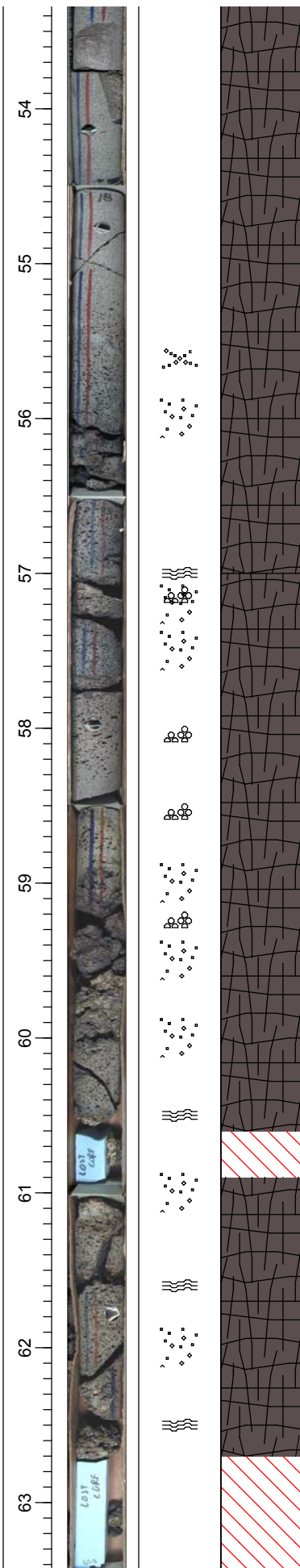


**BASALT:**  
 Color: Medium dark gray N4 basalt  
 Texture: Aphanitic, fine-grained, vesicular basalt, spatter and flow/mold features at base  
 Composition: 95% aphanitic feldt plagioclase and dark gray groundmass, 5% 1 mm plagioclase laths  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Dark reddish film inside all vesicles and on fracture surfaces

N. B. This interval may have been mismarked- depth may be off by as much as 2 feet





**BASALT:**

Color: Medium dark gray N4 basalt  
 Texture: Aphanitic, fine-grained, diktytaxitic, vesicular basalt, spatter features, spatter and flow/mold features at base

Composition: 95% aphanitic feldt plagioclase and dark gray groundmass, 5% anhedral olivine crystals, Magnetic

Xenoliths: None noted

Alteration: Pinkish gray 5 YR 8/1 silty clay on some fractures and in some vesicles, silty clay contains no free carbonate, dark reddish film inside nearly all vesicles and on fracture surfaces

N. B. This interval may have been mismarked- depth may be off by as much as 2 feet, and there are sections of core missing.

**MISSING INTERVAL:**

Core missing no more information

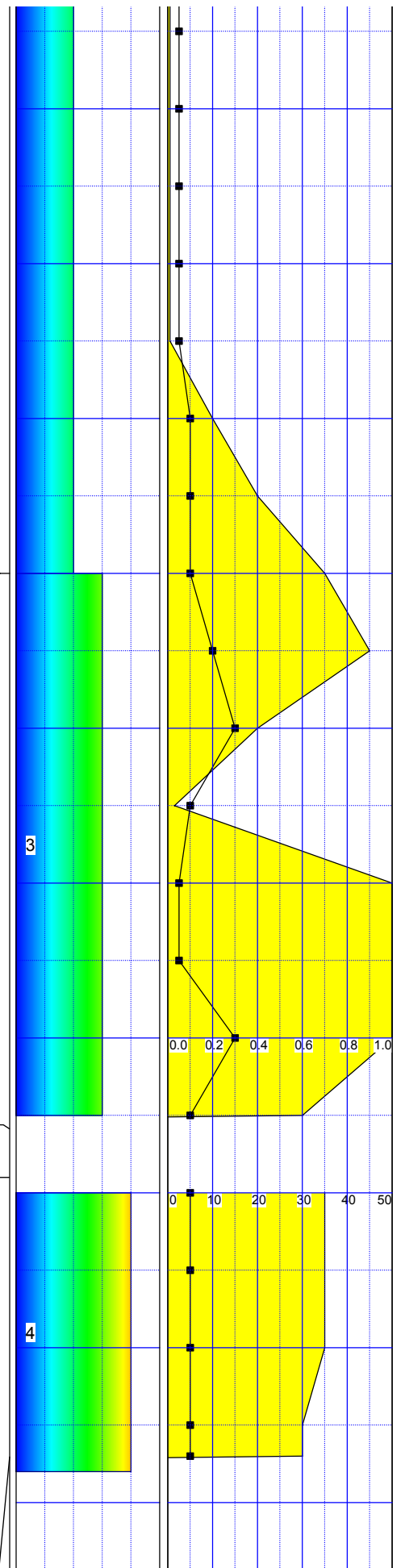
**BASALT:**

Color: Brownish gray 5 YR 4/1 basalt  
 Texture: Aphanitic, porphyritic vesicular basalt; larger plagioclase phenocrysts and olivine microphenocrysts form somewhat stellate glomerocrysts; spatter features, spatter and flow/mold features at base  
 Composition: 80% feldt plagioclase and dark gray groundmass, 15% 1x 3 mm white plagioclase laths, 5% anhedral olivine crystals, Magnetic

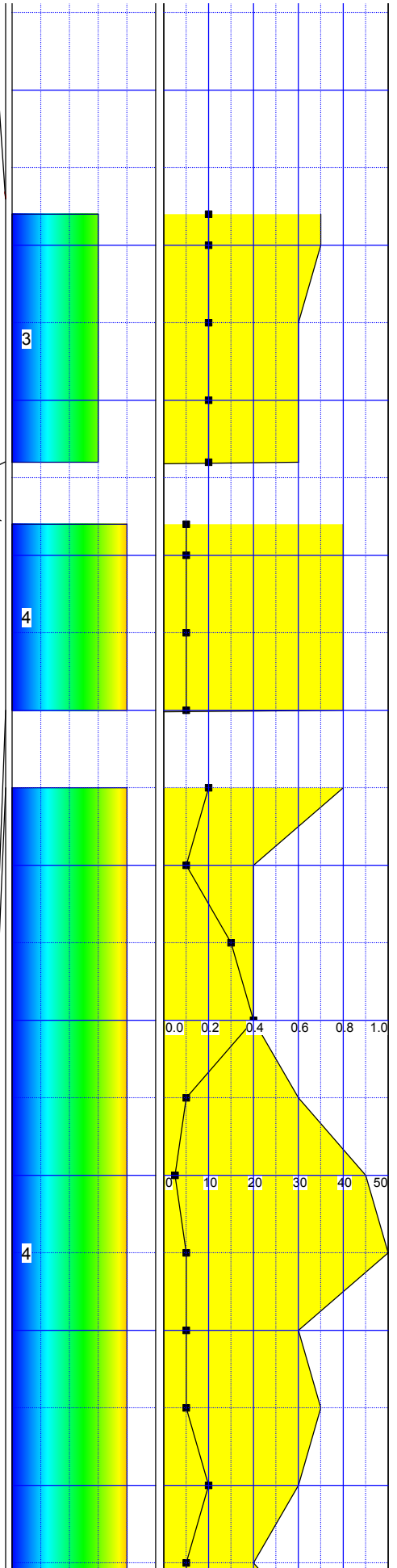
Xenoliths: None noted

Alteration: Very pale orange 10 YR5/2 clay on some fractures and in some vesicles, clay contains no free carbonate, dark reddish film inside nearly all vesicles and on fracture surfaces

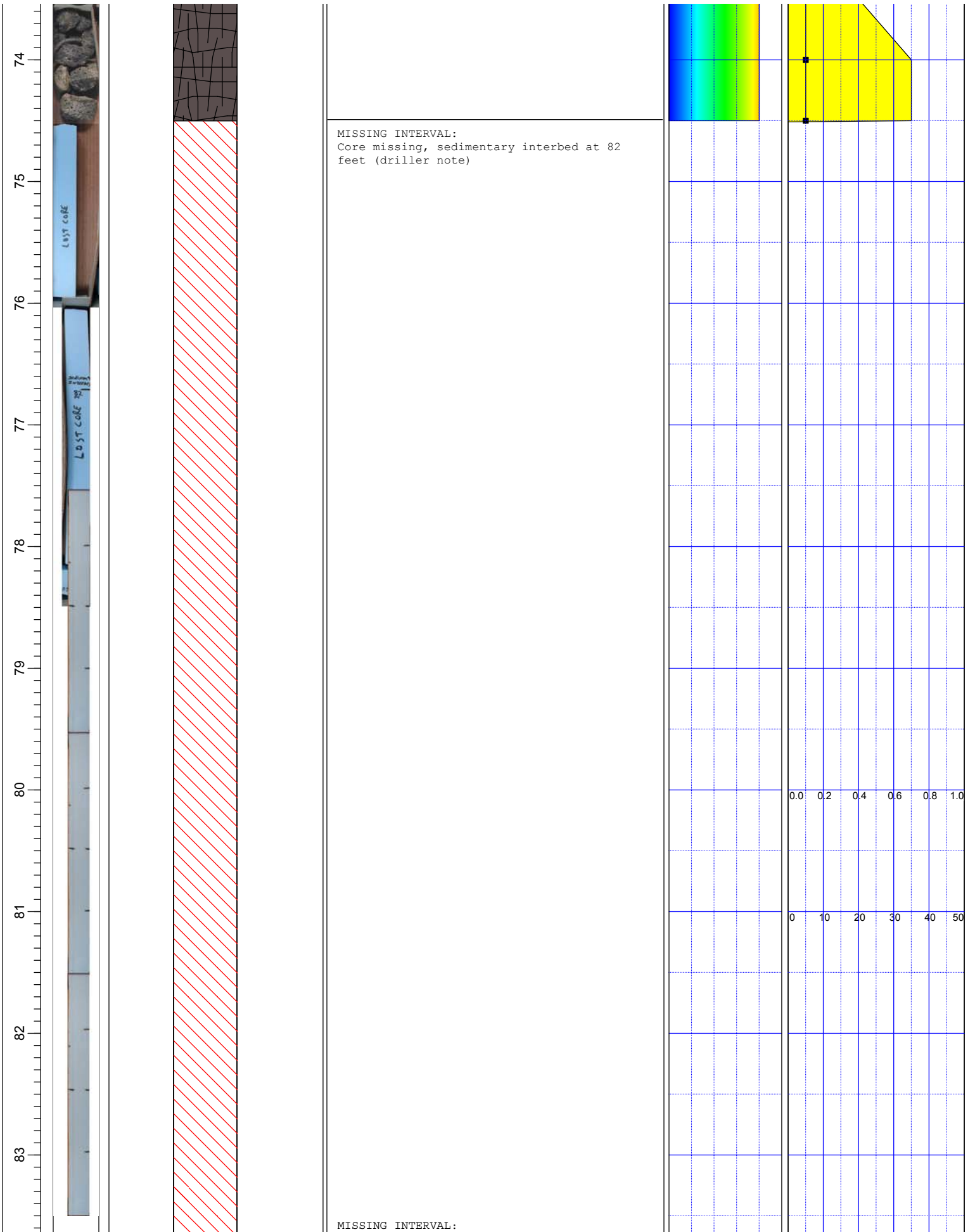
N. B. This interval may have been mismarked- depth may be off by as much as 2 feet, and there are sections of core missing.

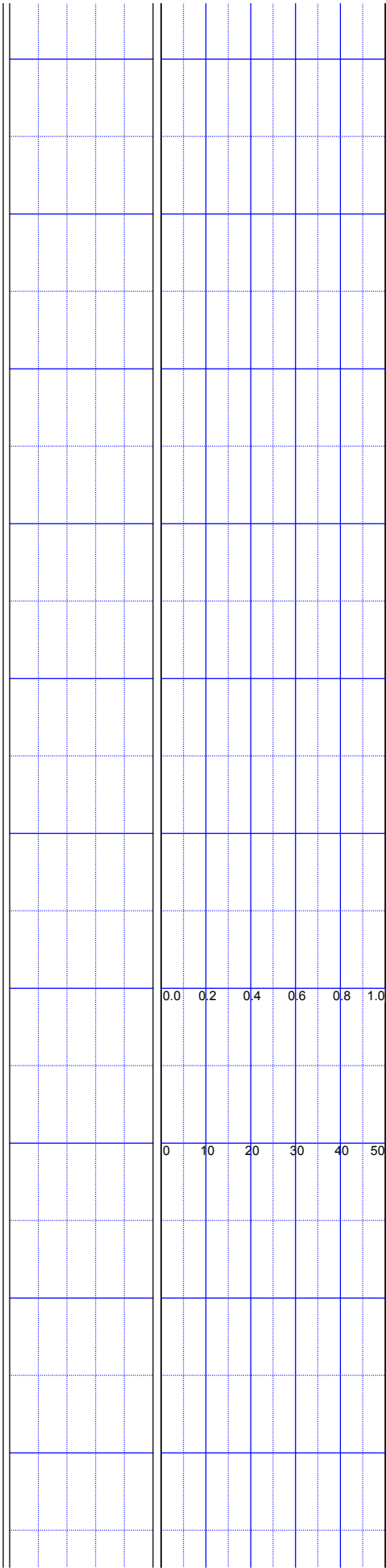
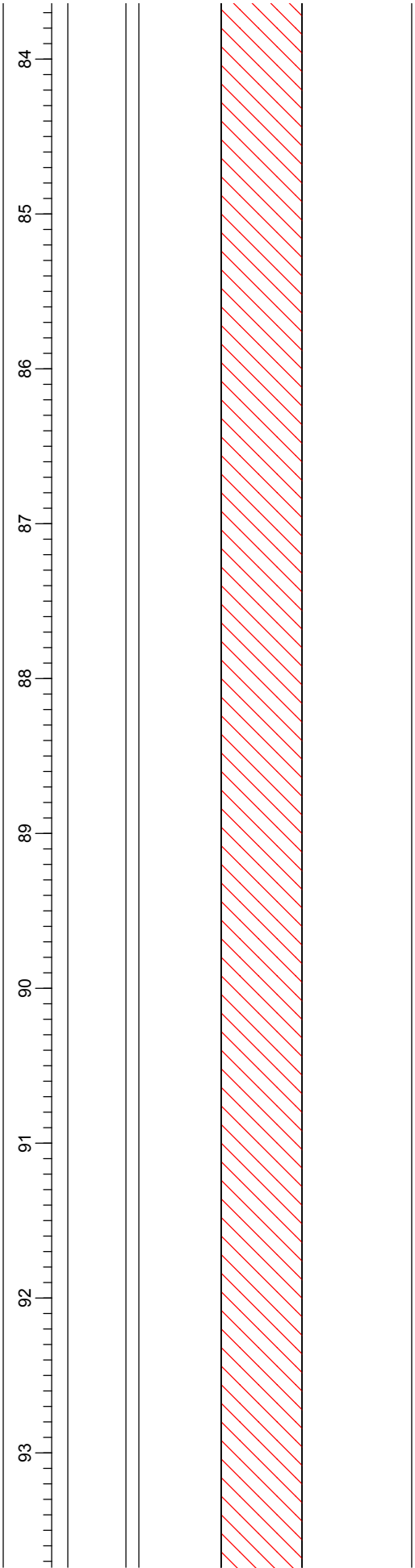


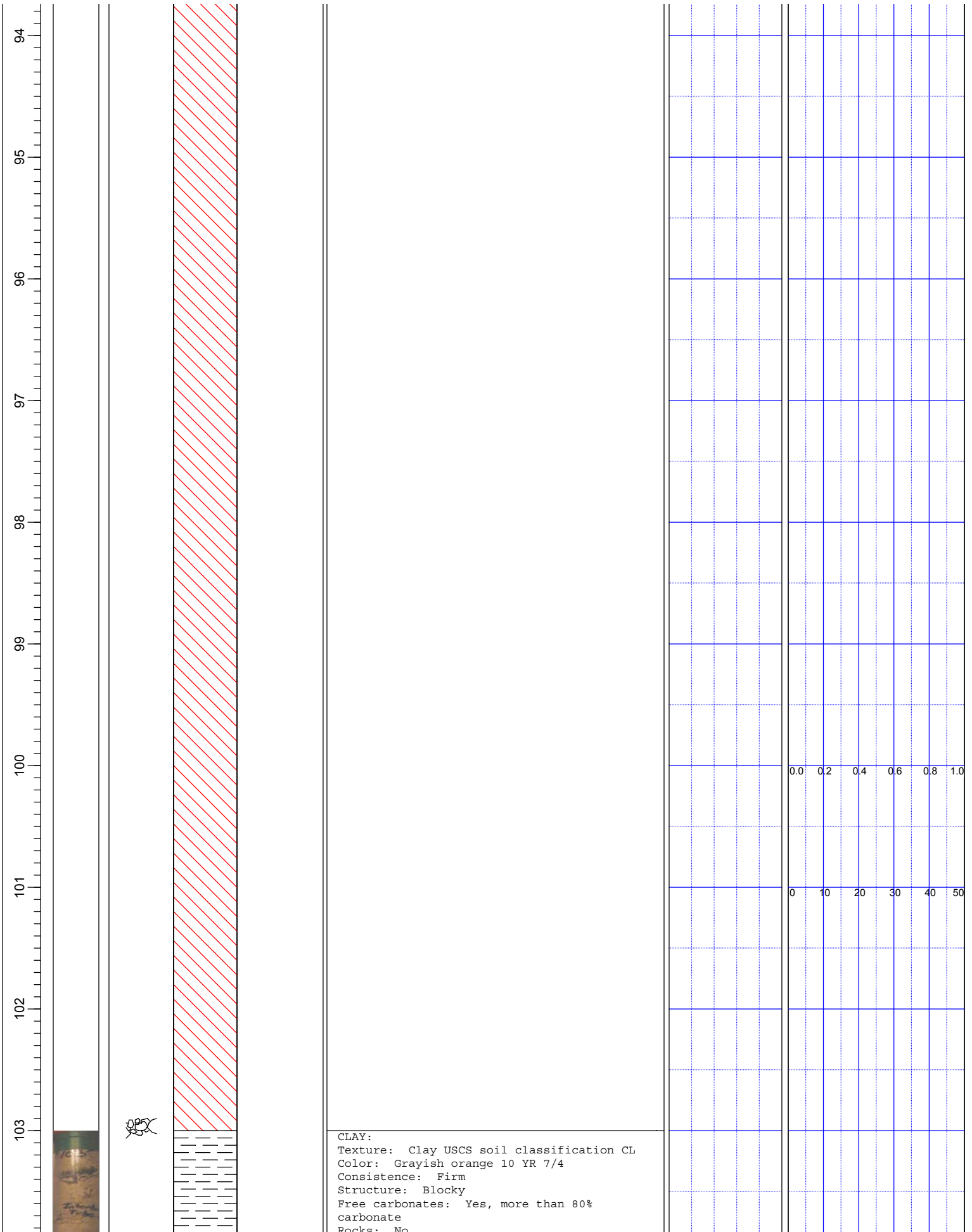
N. B. This interval may have been mismarked-  
depth may be off by as much as 2 feet, and  
there are sections of core missing

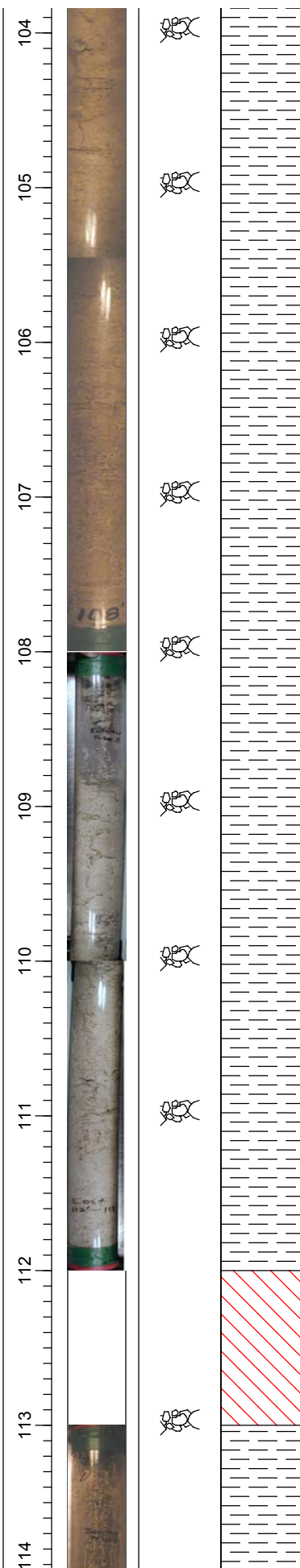












Roots or fossils: None noted

N. B. Interbed is composed of clay- to silt-sized lithics in a carbonate mud matrix. Lithic fragments include white to clear, rounded, frosted quartz grains, angular black fragments of chert or basalt, and tan to orange rounded to subrounded silt grains. Interbed core is encased in Lexan tubes which were opened at 103, 108, 112 feet.

Drillers' notes indicate that water was injected in this interval, and that 1.6 feet of core is missing from this interval.

#### MISSING INTERVAL:

Sediment not recovered from 112 to 113 feet

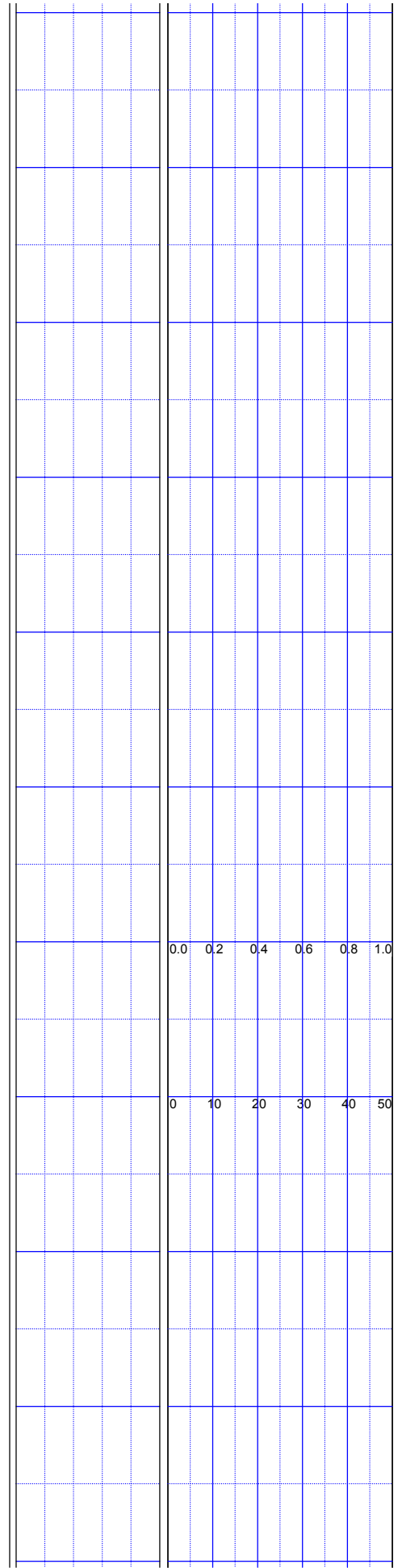
#### CLAY:

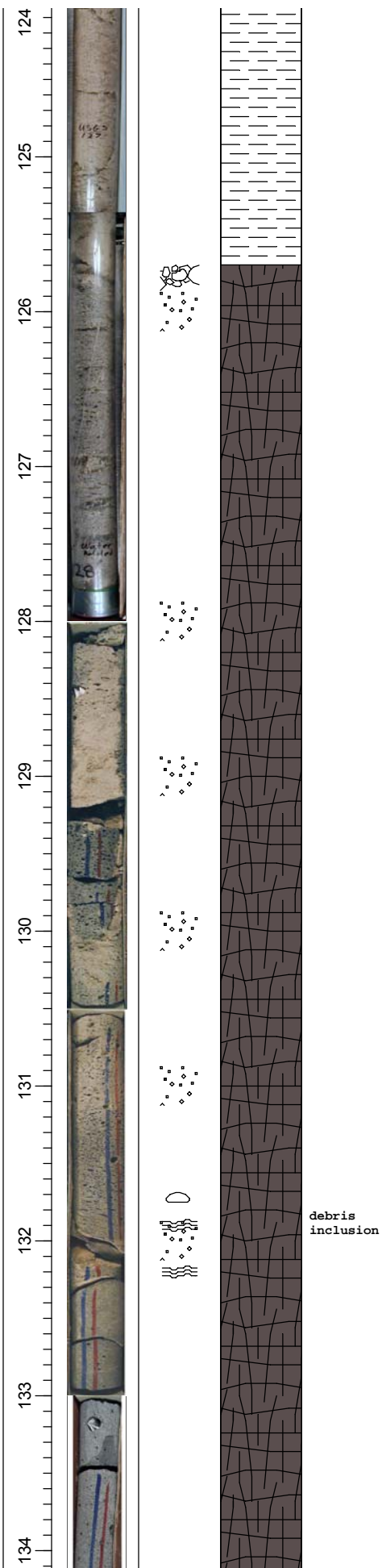
Texture: Clay USCS soil classification CL  
 Color: Grayish orange 10 YR 7/4  
 Consistence: Firm  
 Structure: Blocky  
 Free carbonates: Yes, more than 80% carbonate  
 Rocks: Angular granule to coarse pebble sized fragments of basalt at base

0.0 0.2 0.4 0.6 0.8 1.0

0 10 20 30 40 50

Drillers' notes indicate that water was added to this interval and that 0.5 feet of core were not recovered in this interval.





# **BASALT:**

Color: Medium dark gray N4 basalt

Texture: Aphanitic, porphyritic, diktytaxitic vesicular basalt; spatter features at base, vesicular to 132 feet, debris inclusions (soil) at 131.9 and 132.2 feet, vesicle sheets and planes and a few large vesicles to 136.5 feet, vesicle columns to 141.4 feet, massive and diktytaxitic to 147 feet, then vesicular to base.

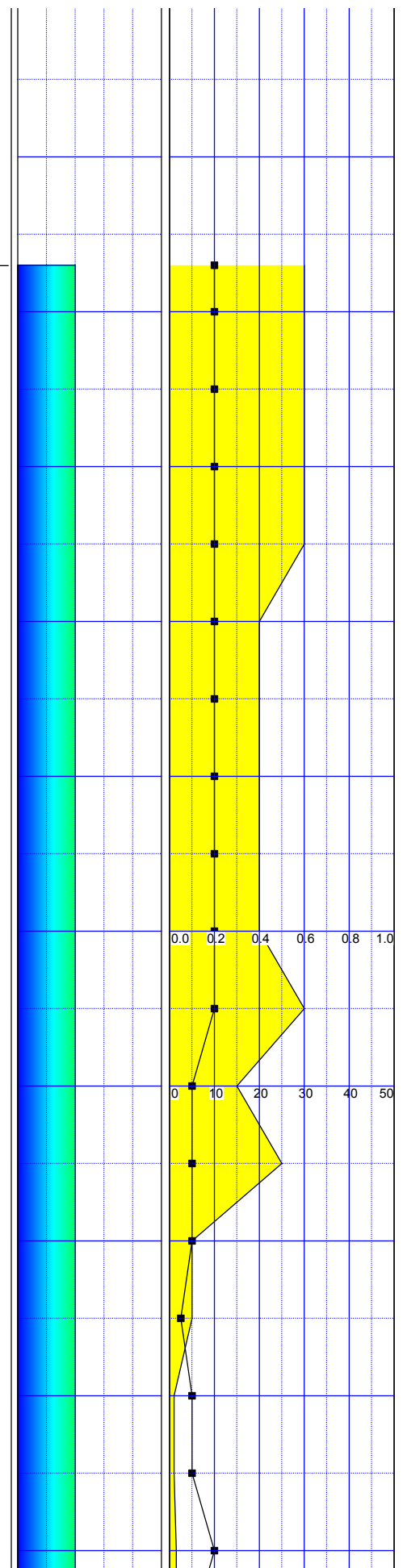
Composition: 90% felted plagioclase and dark gray groundmass, 10% anhedral green olivine crystals

Magnetic

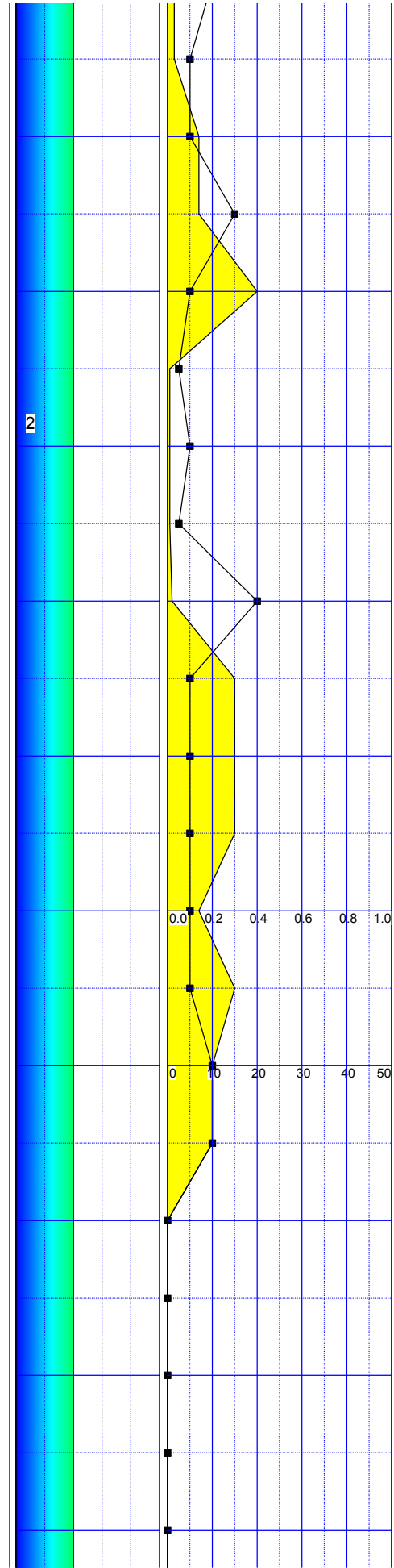
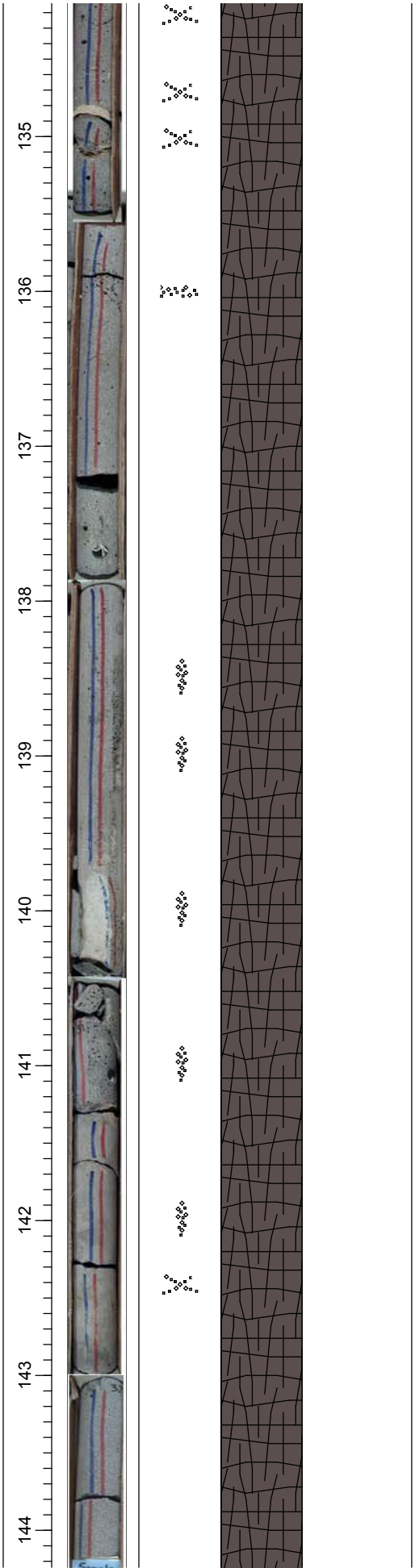
Xenoliths: None noted

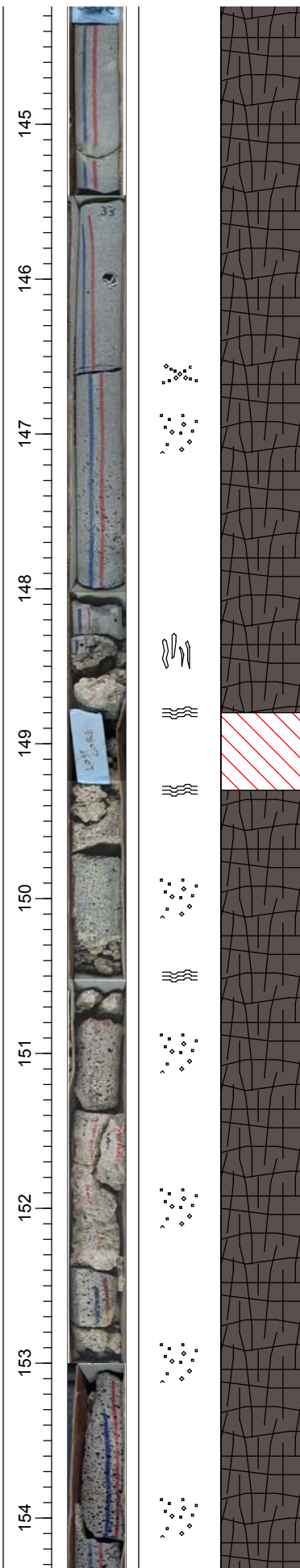
Alteration: Very pale orange 10 YR 8/2 clay on some fractures and in some vesicles, clay contains free carbonates

N. B. This interval may have been mismarked- depth may be off by as much as 2 feet.





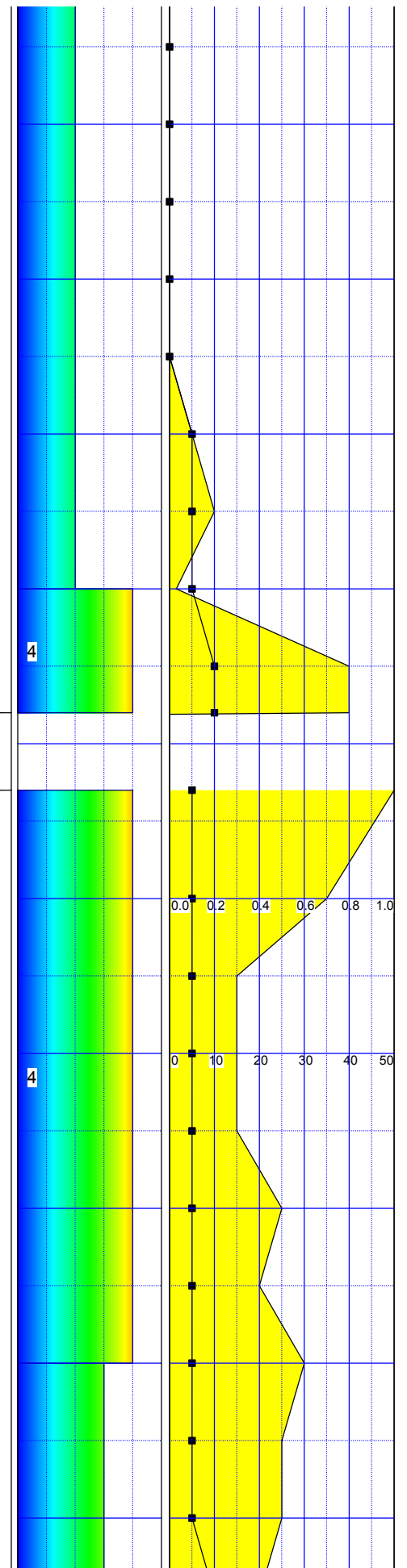


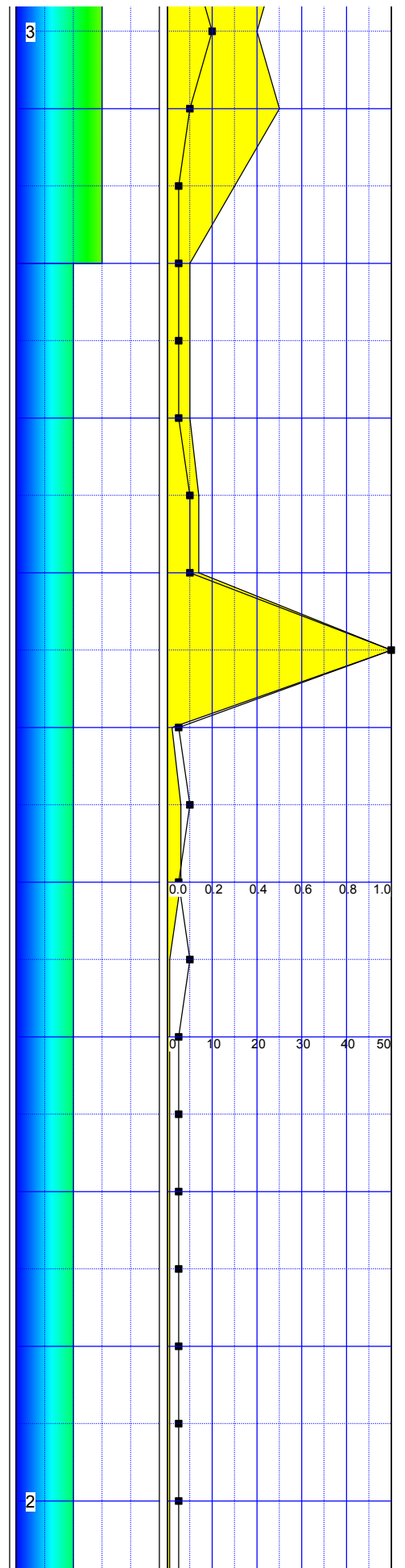
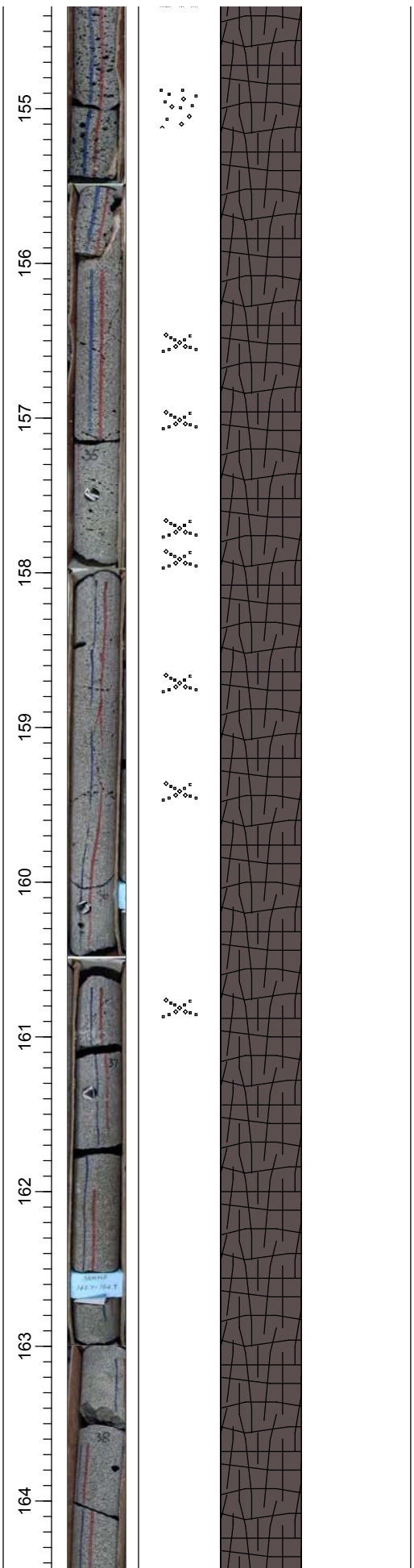


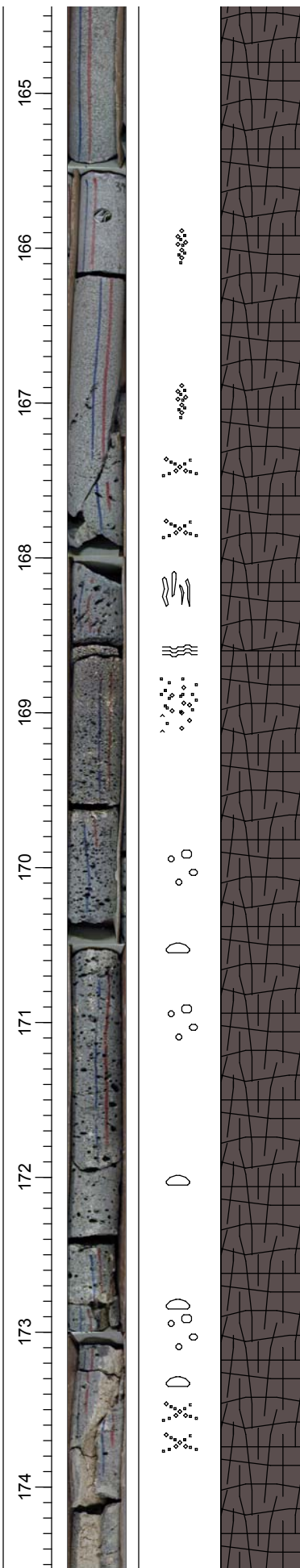
MISSING INTERVAL:  
Missing interval, no more information

**BASALT:**  
Color: Medium dark gray N4 to medium gray N5 basalt  
Texture: Aphanitic, microporphyritic, diktytaxitic, vesicular basalt; spatter features at top and flow/mold feature at base, vesicular to 155 feet, vesicle sheets and planes and a few large vesicles to 160.9 feet, diktytaxitic to 166.8, vesicle columns to 168 feet, vesicular including pipe vesicles to base.  
Composition: 90% felted plagioclase and dark gray groundmass, 10% anhedral green olivine crystals, Magnetic  
Xenoliths: None noted  
Alteration: Very pale orange 10 YR 8/2 clay on some fractures and in some vesicles, clay contains free carbonates

N. B. This interval may have been mismarked-  
depth may be off by as much as 2 feet.





**BASALT:**

Color: Medium gray N5 to light gray N6  
basalt

Texture: Aphanitic, microporphyritic, diktytaxitic, vesicular basalt; vesicle increase in size and decrease in number to 173 feet, vesicle sheets and planes and a few large vesicles to 178.8 feet, diktytaxitic to 186.2, vesicular including pipe vesicles to base.

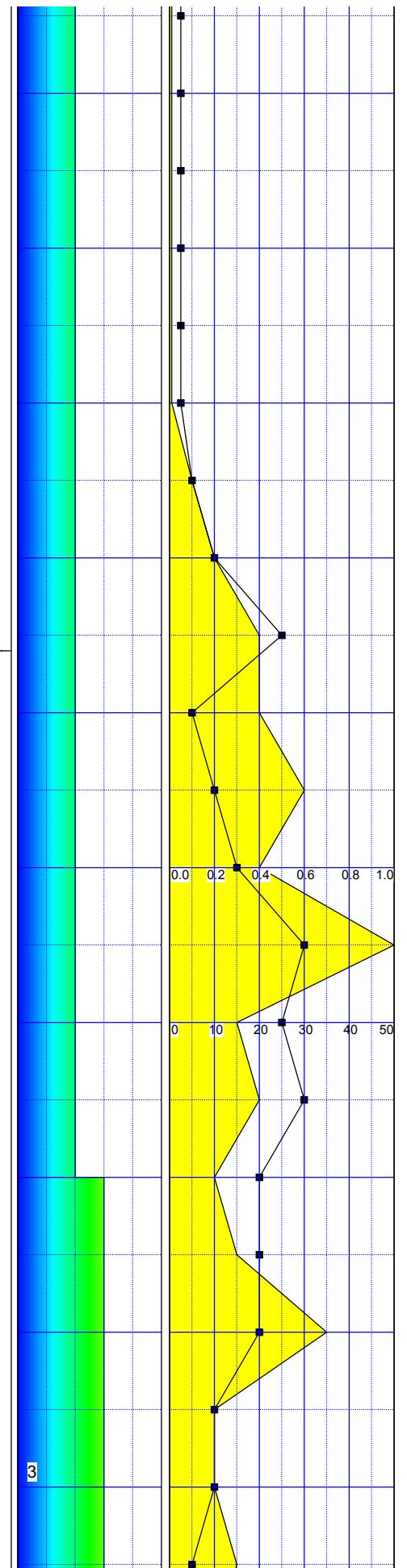
Composition: 95% felted plagioclase and dark gray groundmass, 5% anhedral green olivine crystals

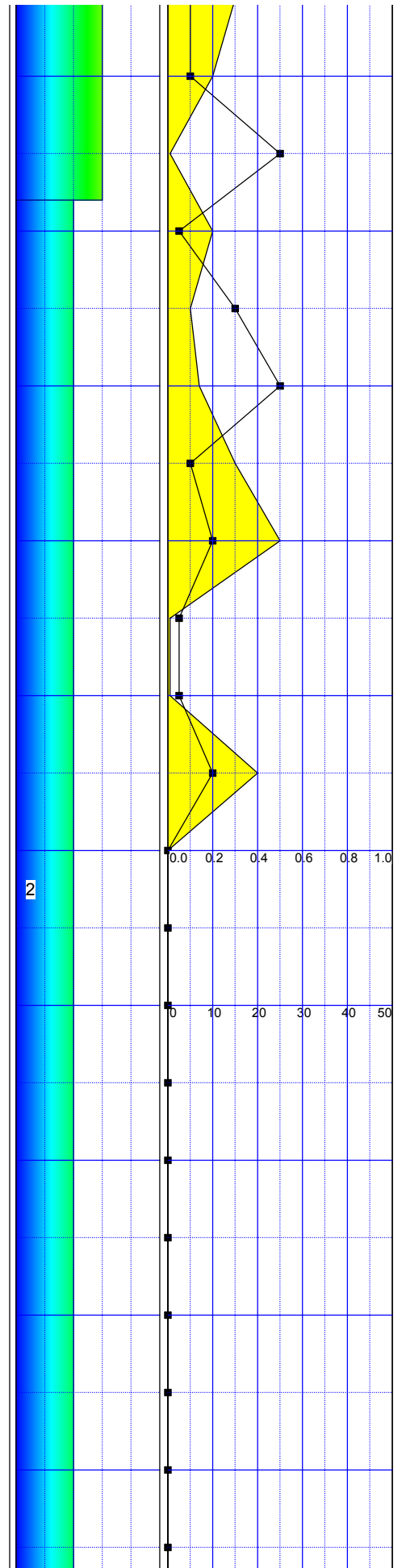
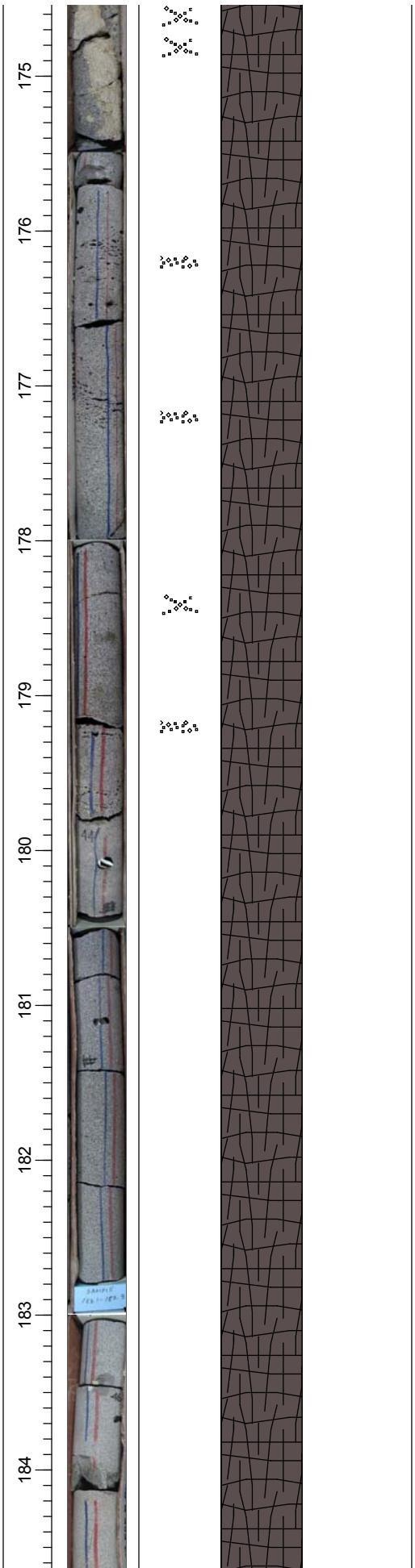
Magnetic

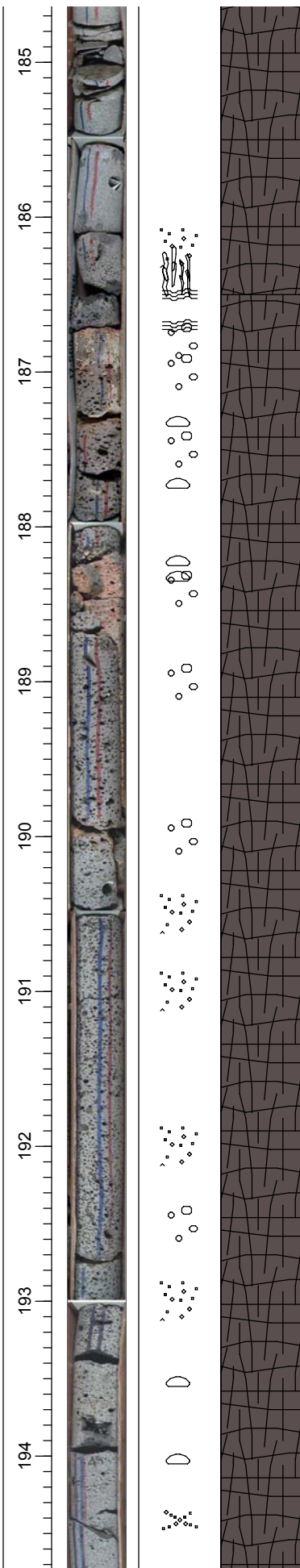
Xenoliths: None noted

Alteration: Very pale orange 10 YR 8/2 calcareous clay on some fractures and in some vesicles,

N. B. This interval may have been mismarked-  
depth may be off by as much as 2 feet.





**BASALT:**

Color: Medium gray N5 to light gray N6 basalt

Texture: Aphanitic, microporphyritic, diktytaxitic, vesicular basalt; vesicular to 191.5 feet, vesicle sheets and planes and a few large vesicles to 207.5 feet, diktytaxitic with a few vesicles to 218 feet, massive to 240 feet, vesicular including pipe vesicles to base. mold texture at base

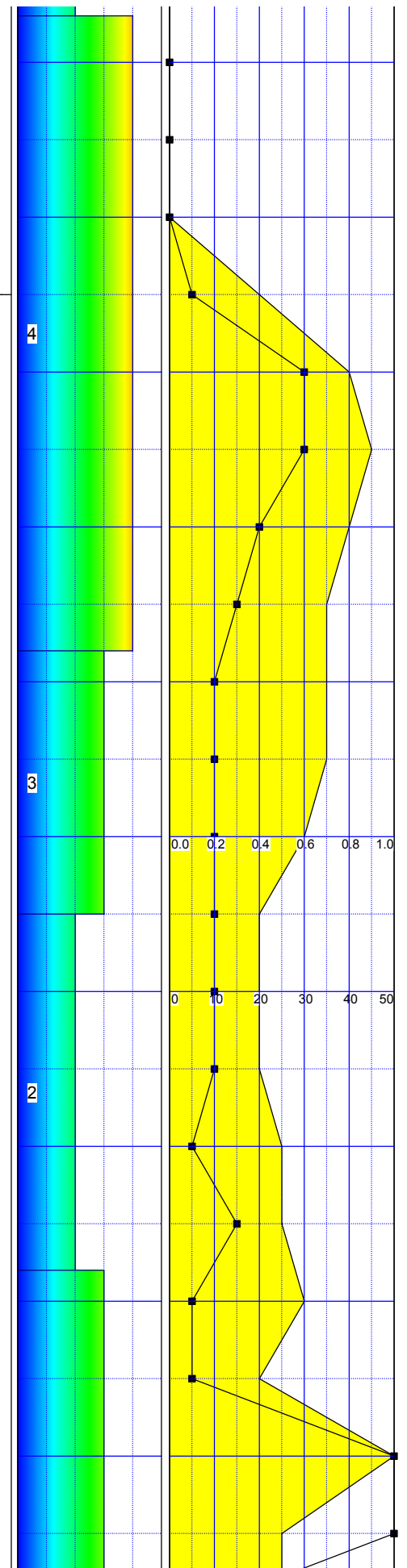
Composition: 95% felted plagioclase and dark gray groundmass, 5% anhedral green olivine crystals

Magnetic

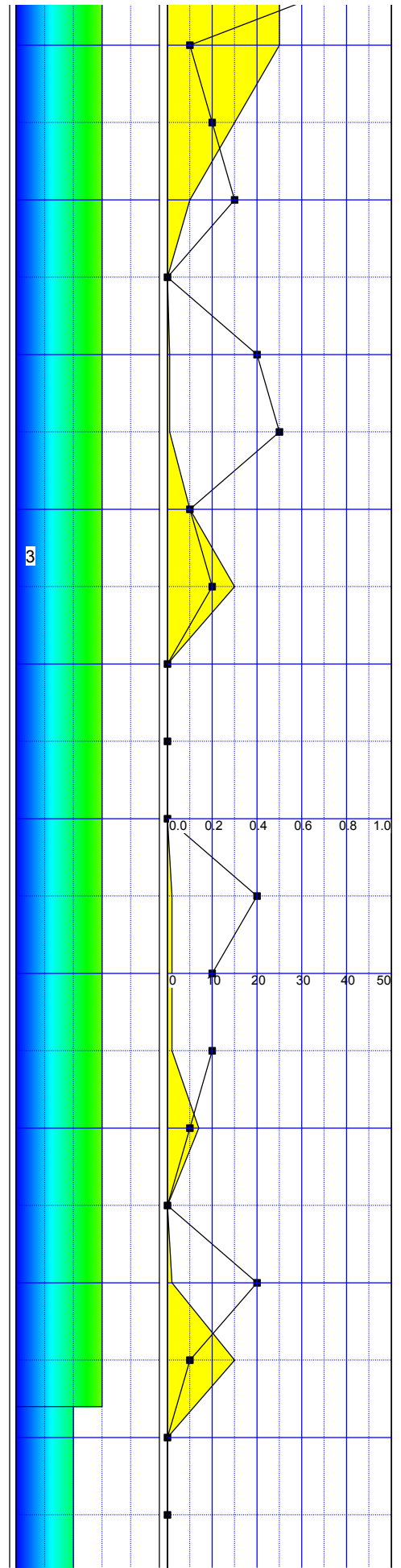
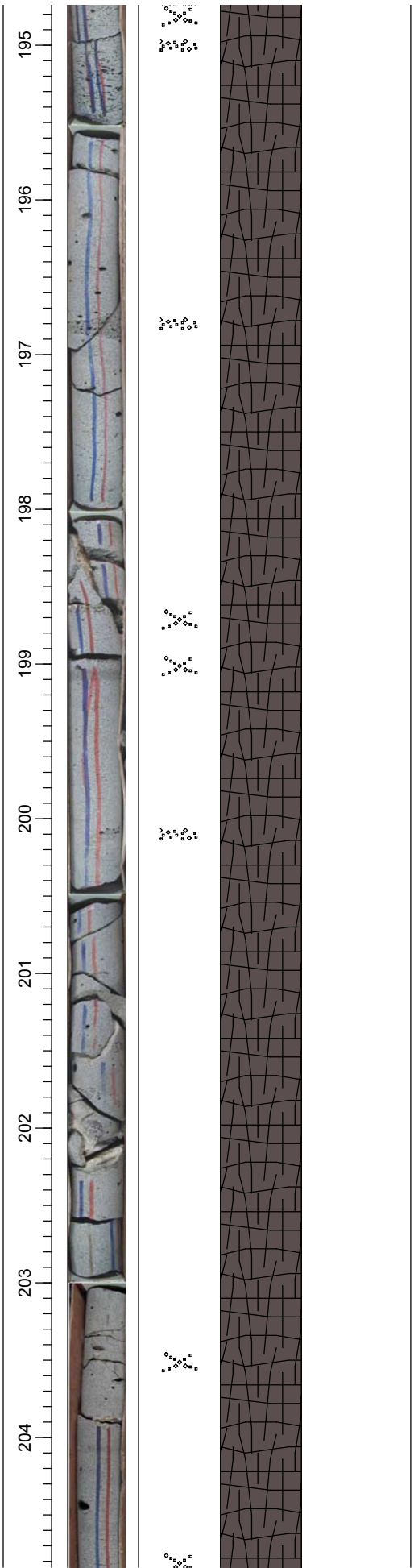
Xenoliths: None noted

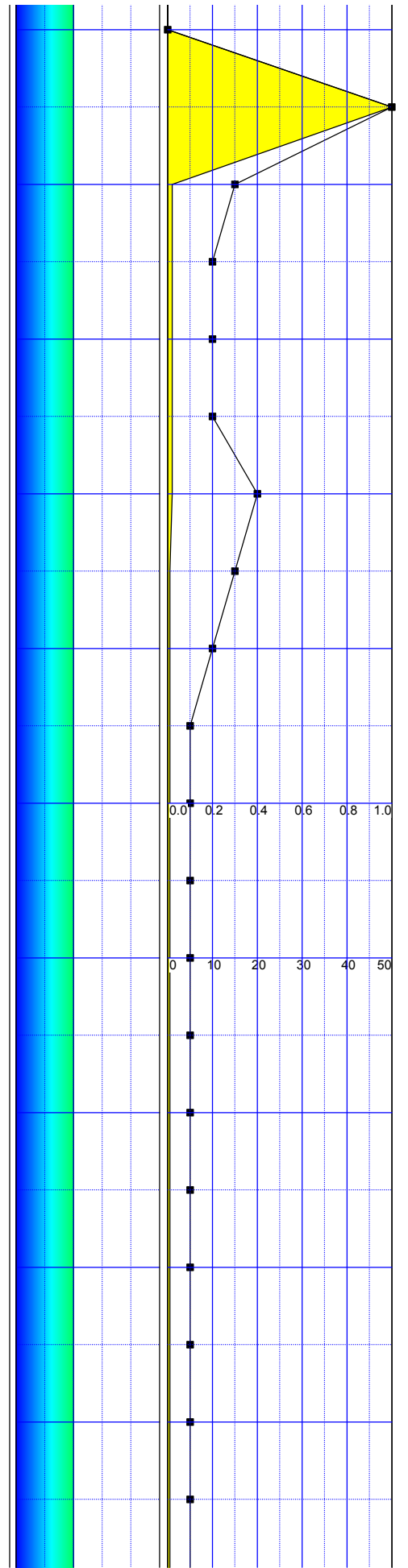
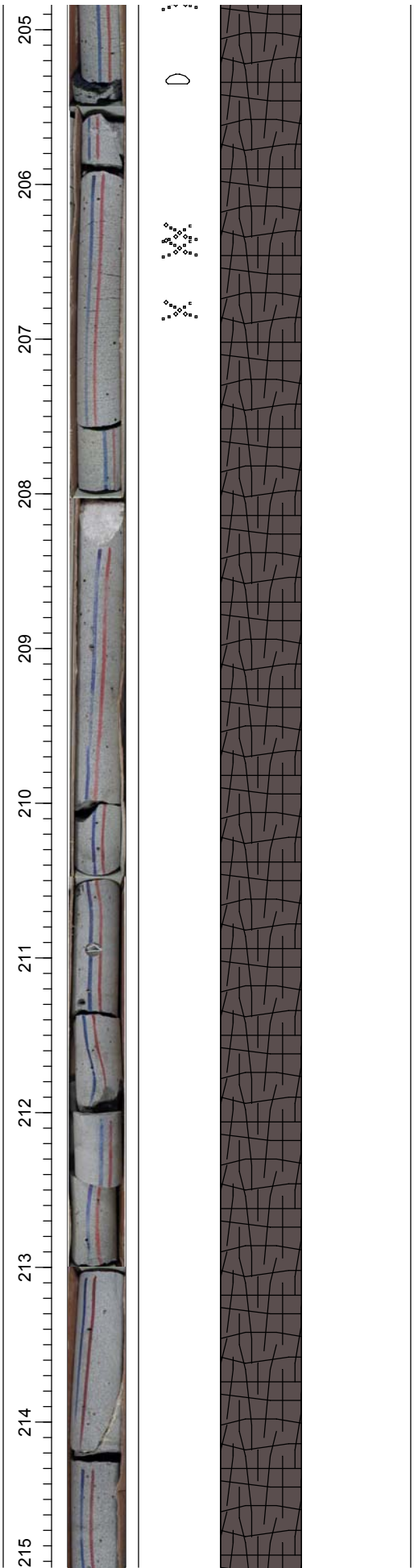
Alteration: Very pale orange 10 YR 8/2 calcareous and non-calcareous clay on some fractures and in some vesicles from top of interval to 188 feet, light brown 5 YR 5/6 clay, and/or white crystalline calcite on some fracture surfaces and in some vesicles from 188 feet to 192.7 feet, white crystalline calcite in some vesicles to 191.3 feet, very pale orange 10 YR 8/2 film or white film on fracture surfaces from 191.3 to 208 feet, very pale orange 10 YR 8/2 calcareous clay in fractures and vesicles to 218.3 feet, non-calcareous very pale orange clay on fracture surfaces to 221.5 feet

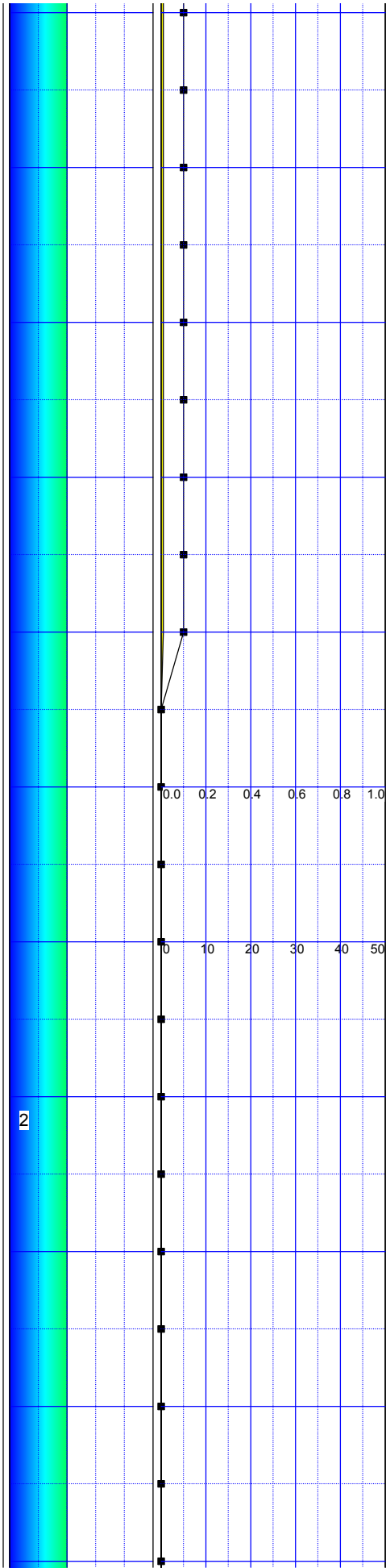
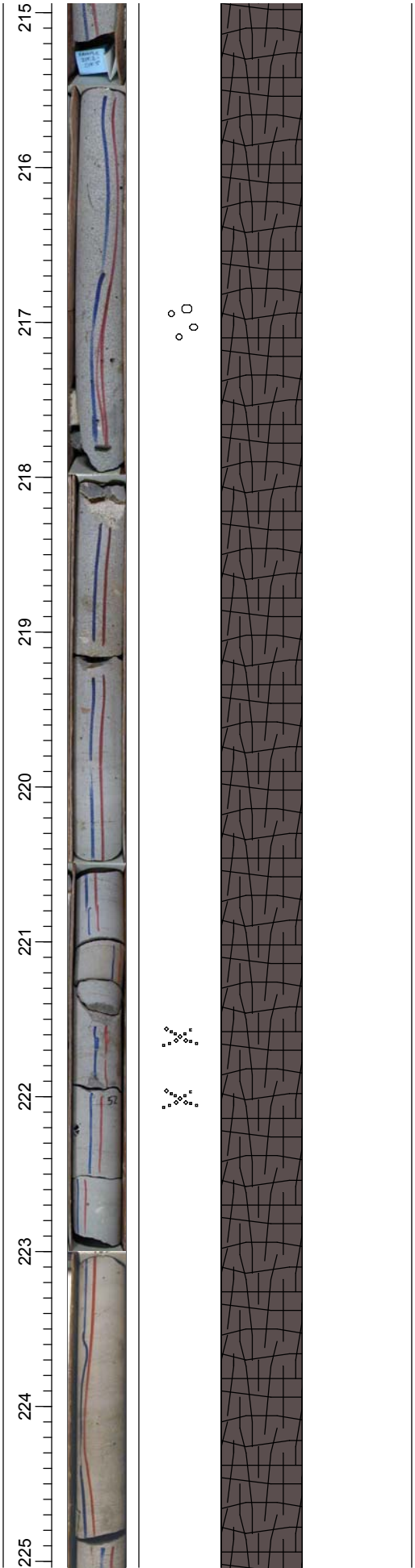
N. B. This interval may have been mismarked- depth may be off by as much as 6 feet.

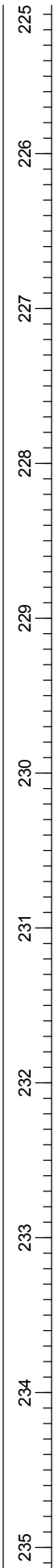




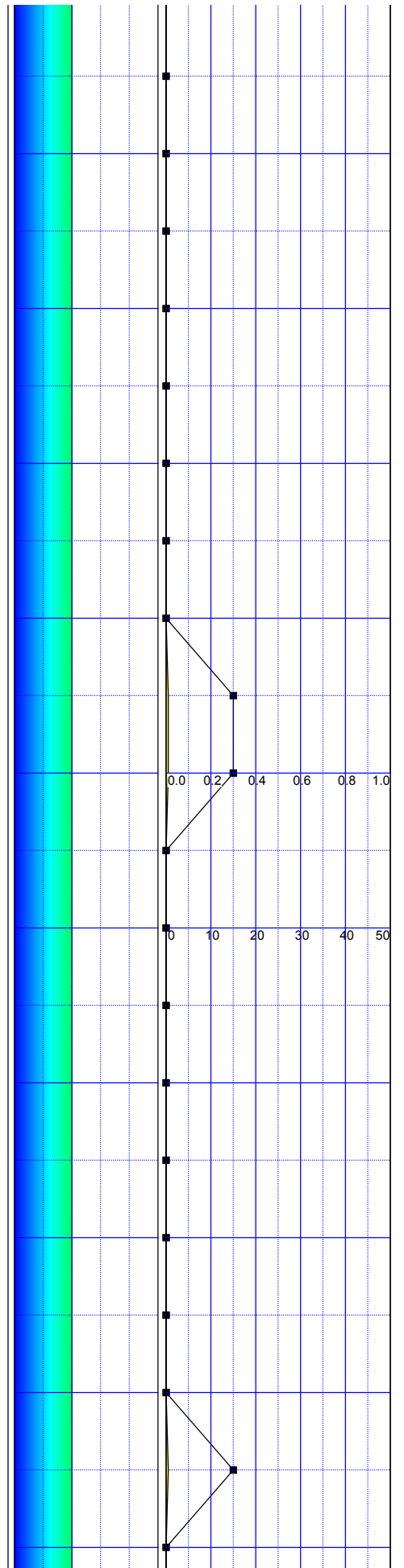


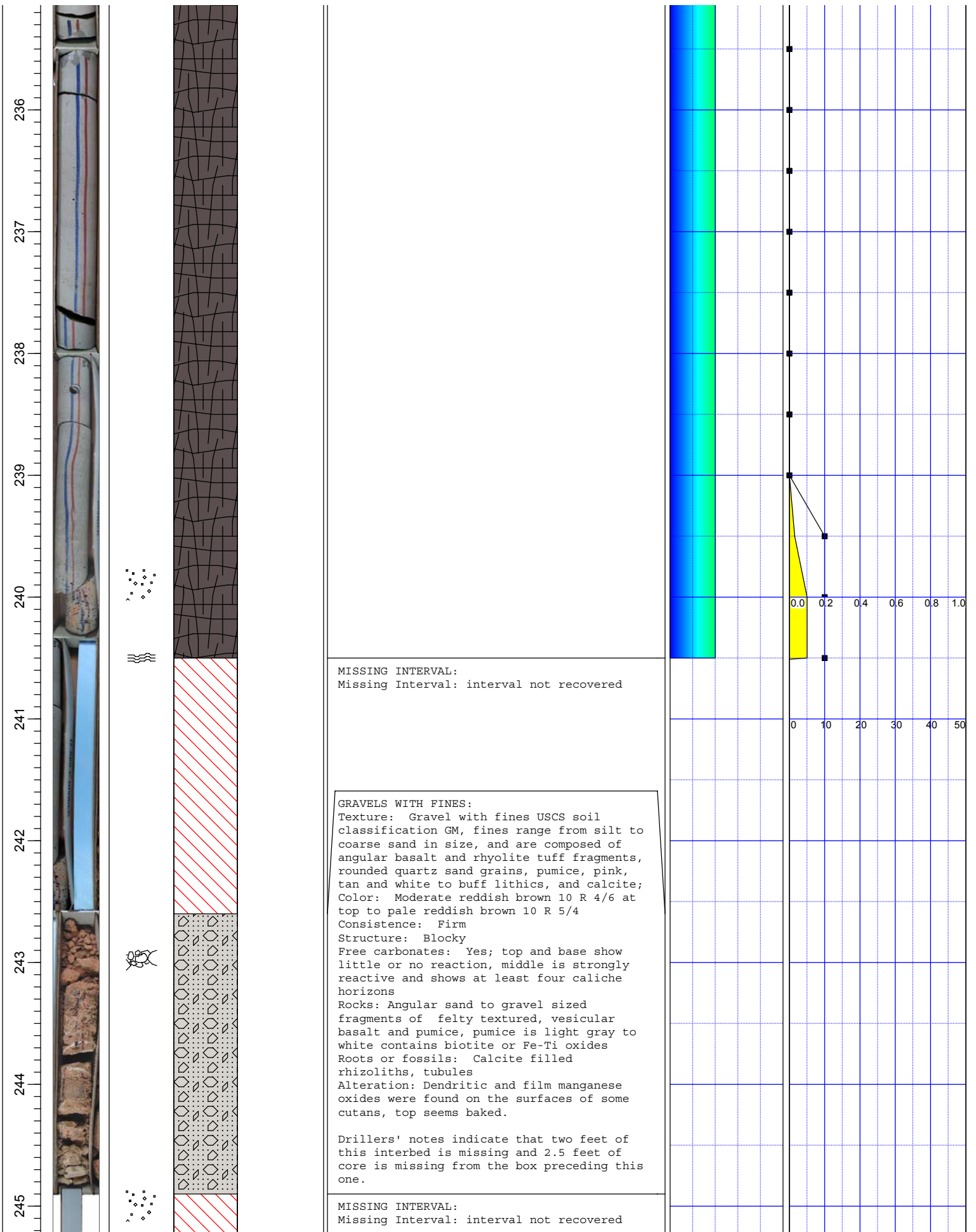


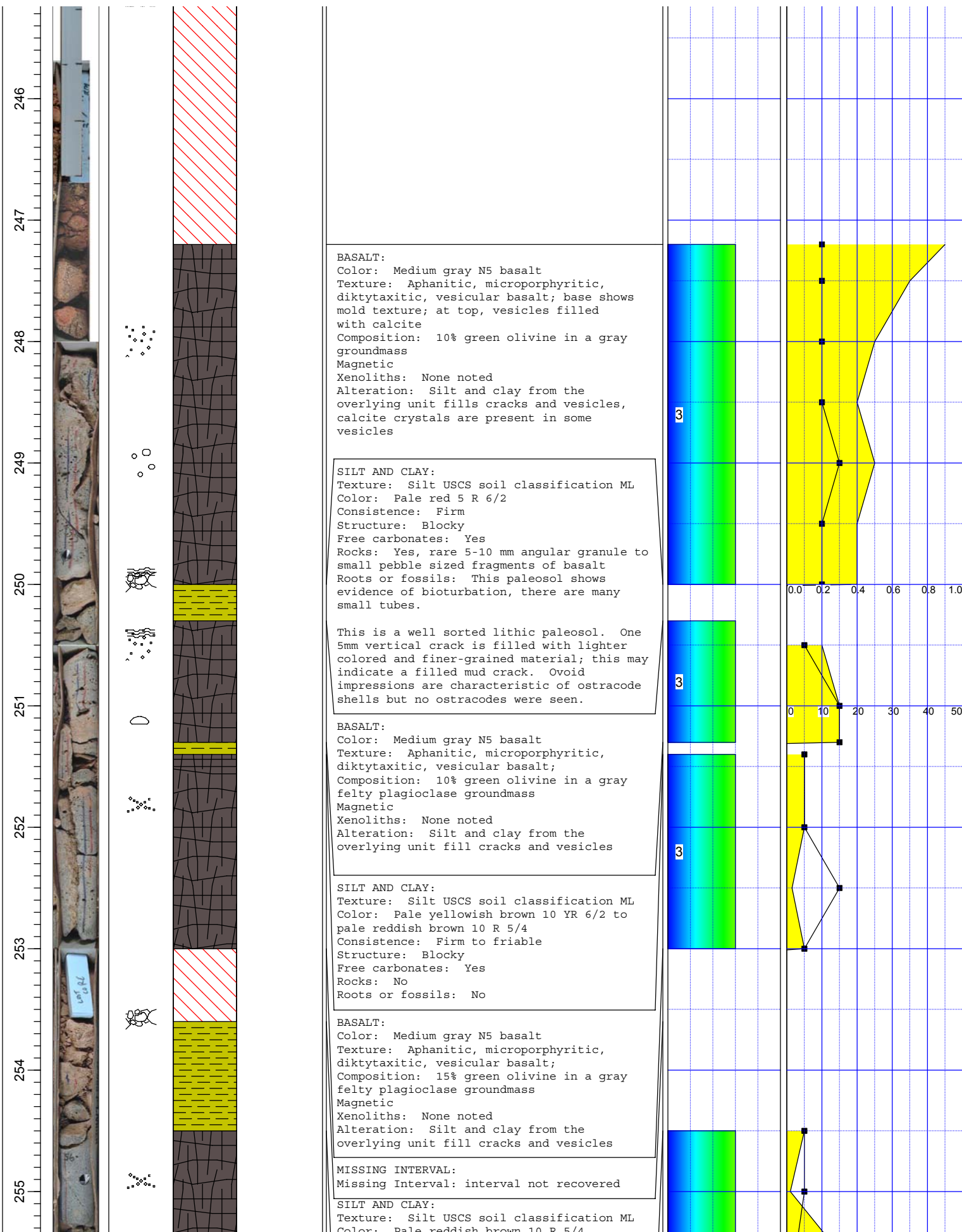




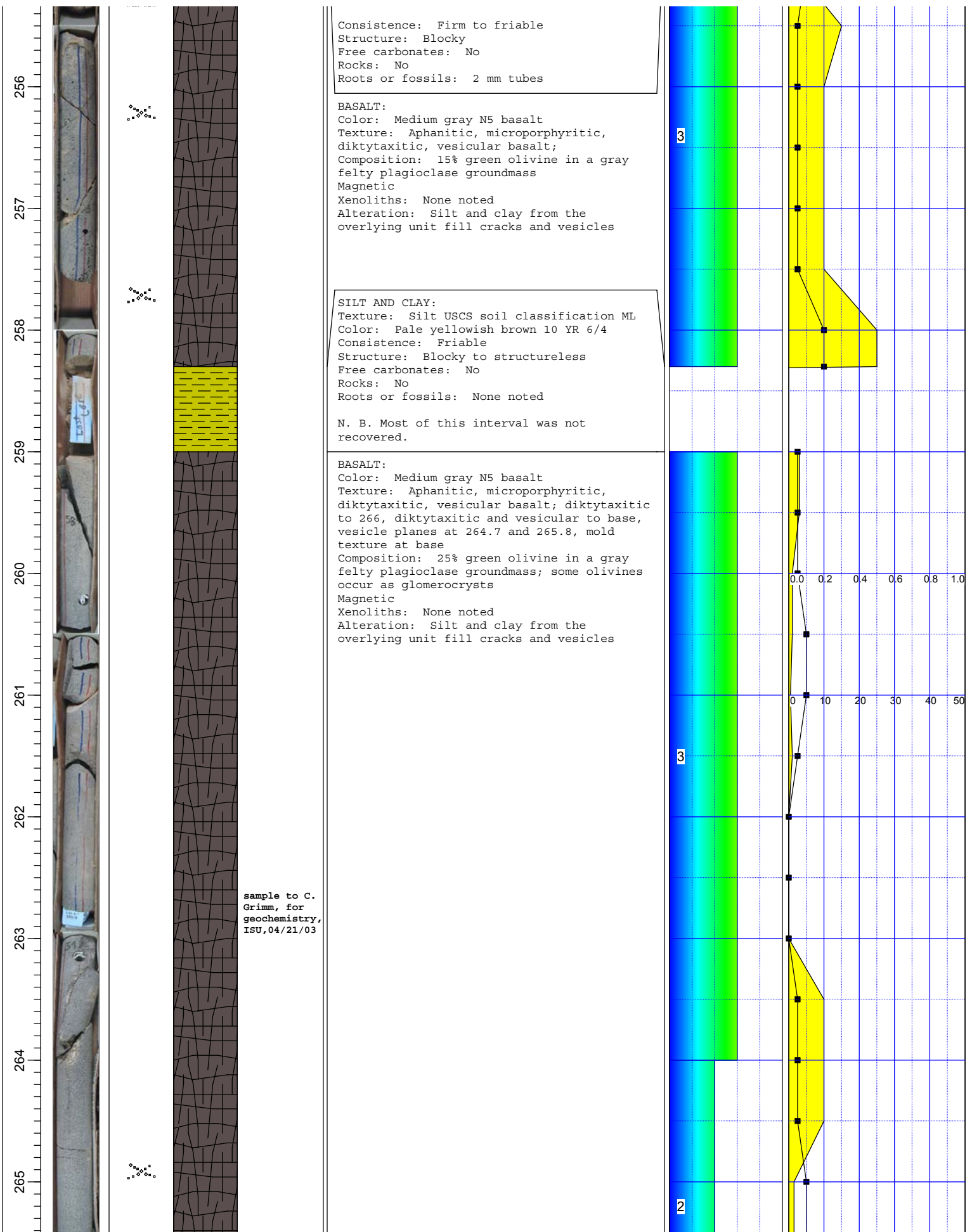
sample to C.  
Grimm, for  
geochemistry,  
ISU, 04/21/03

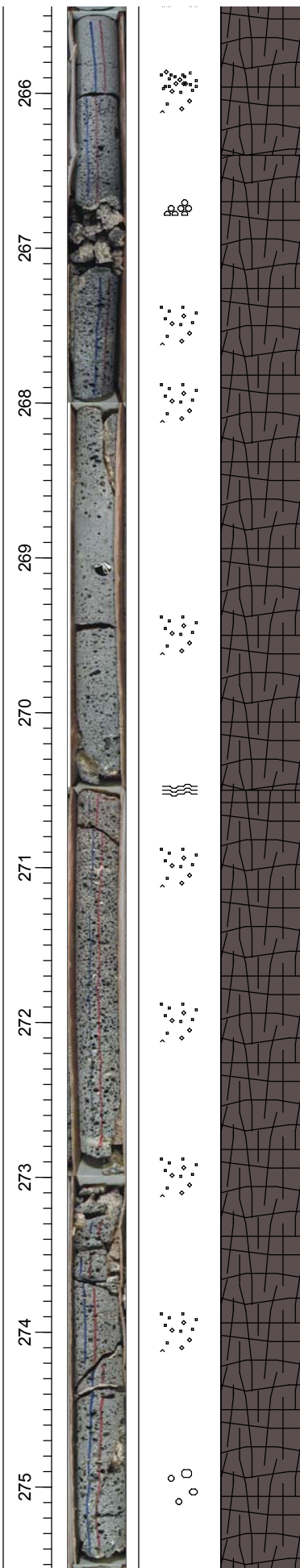










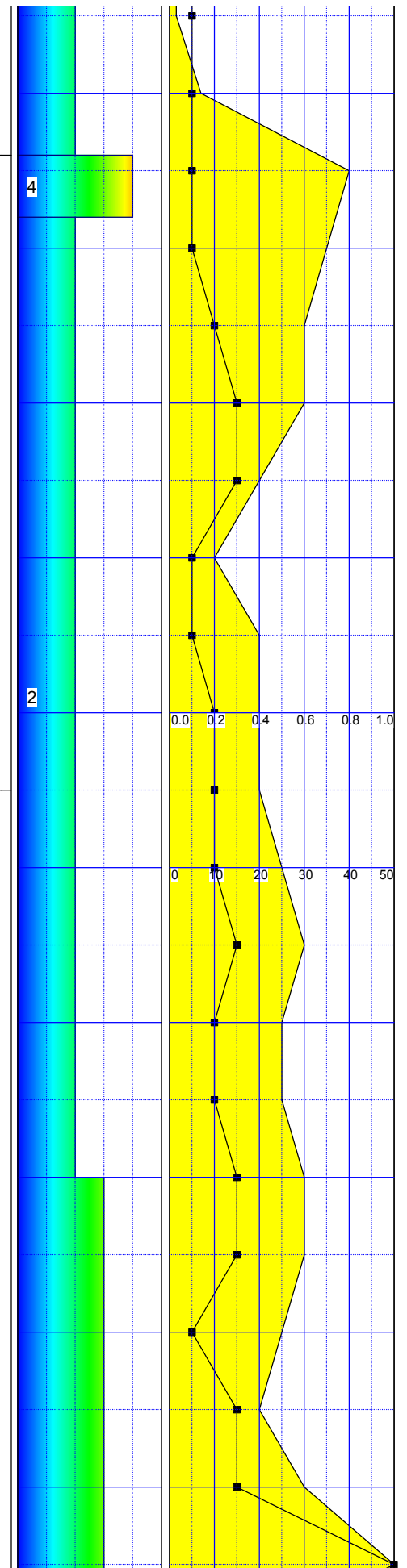


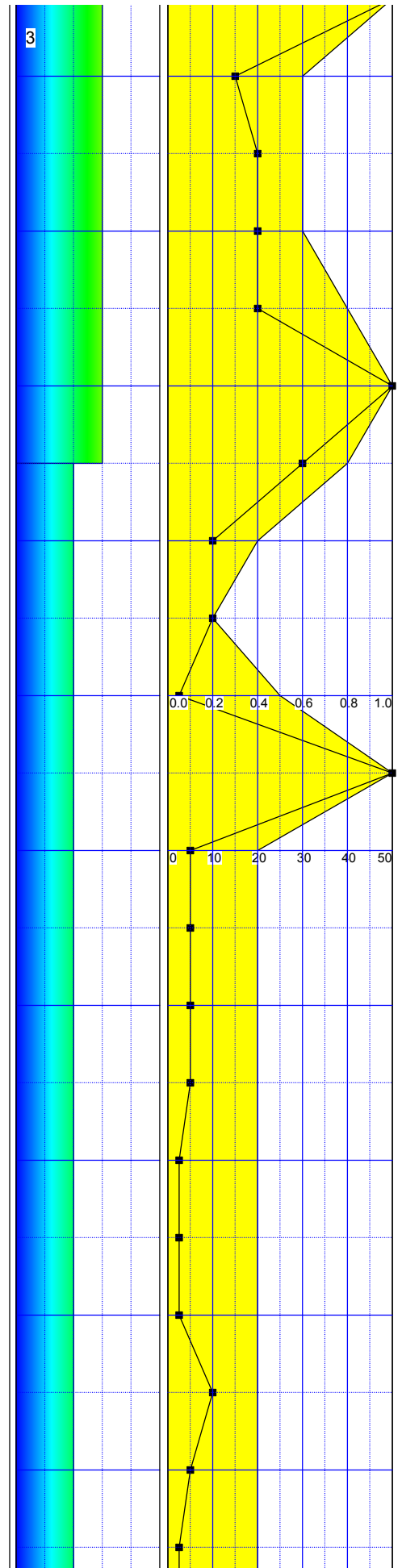
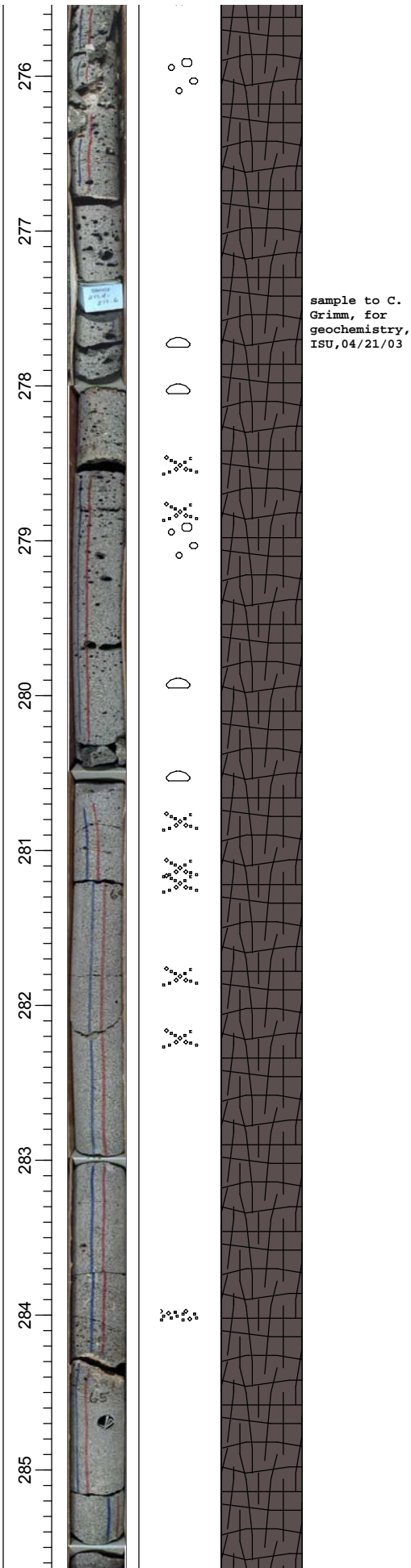
# **BASALT:**

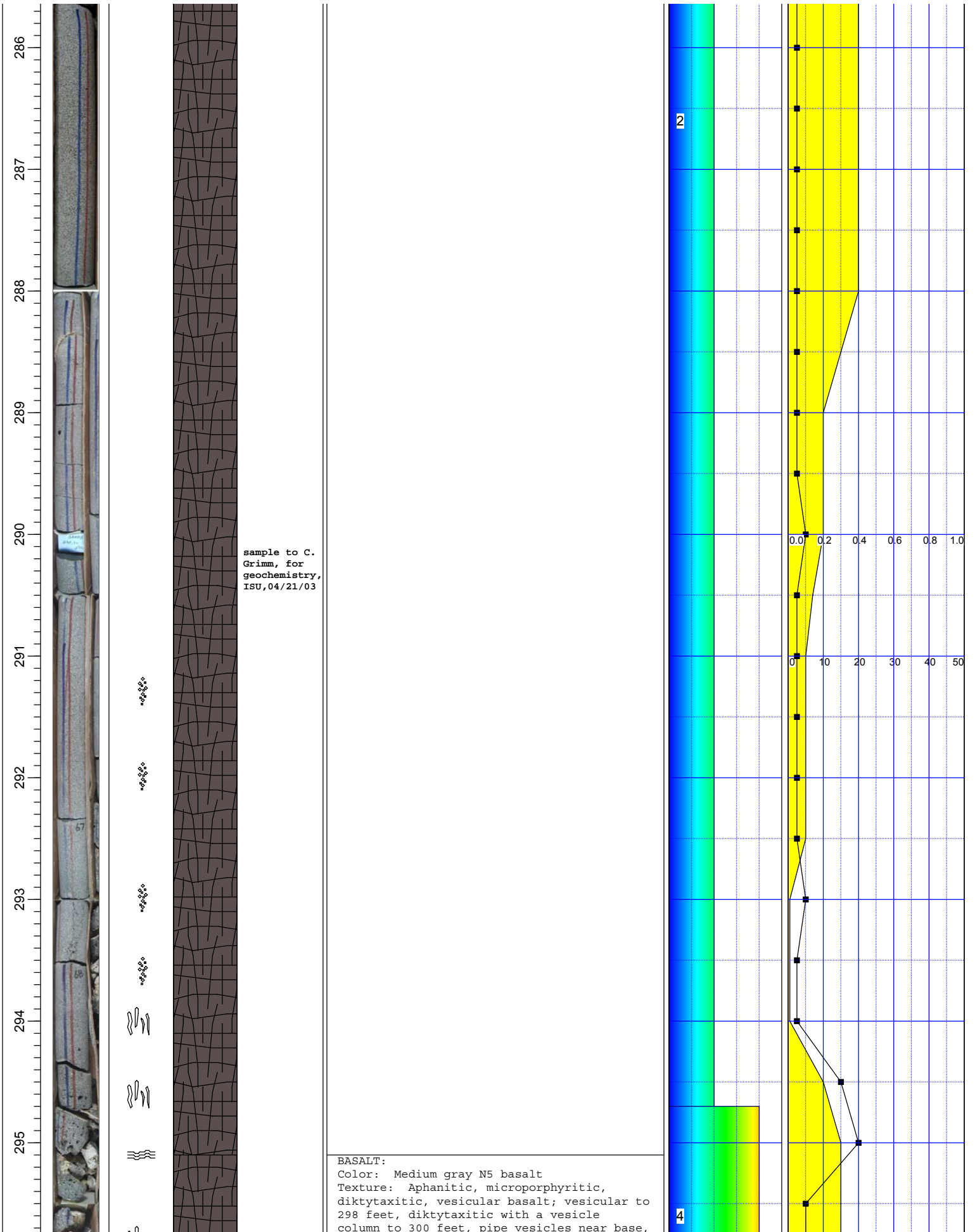
Color: Medium gray N5 basalt  
 Texture: Aphanitic, microporphyritic, diktytaxitic, vesicular basalt; vesicles decrease in number to 268.7 feet then begin to increase in number from 269 feet to base, base shows flow/mold texture with pipe vesicles;  
 Composition: 25% green olivine in a gray felty plagioclase groundmass; some olivines occur as glomerocrysts  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Very pale orange 5 YR 6/4 clay fills cracks and vesicles at top and base

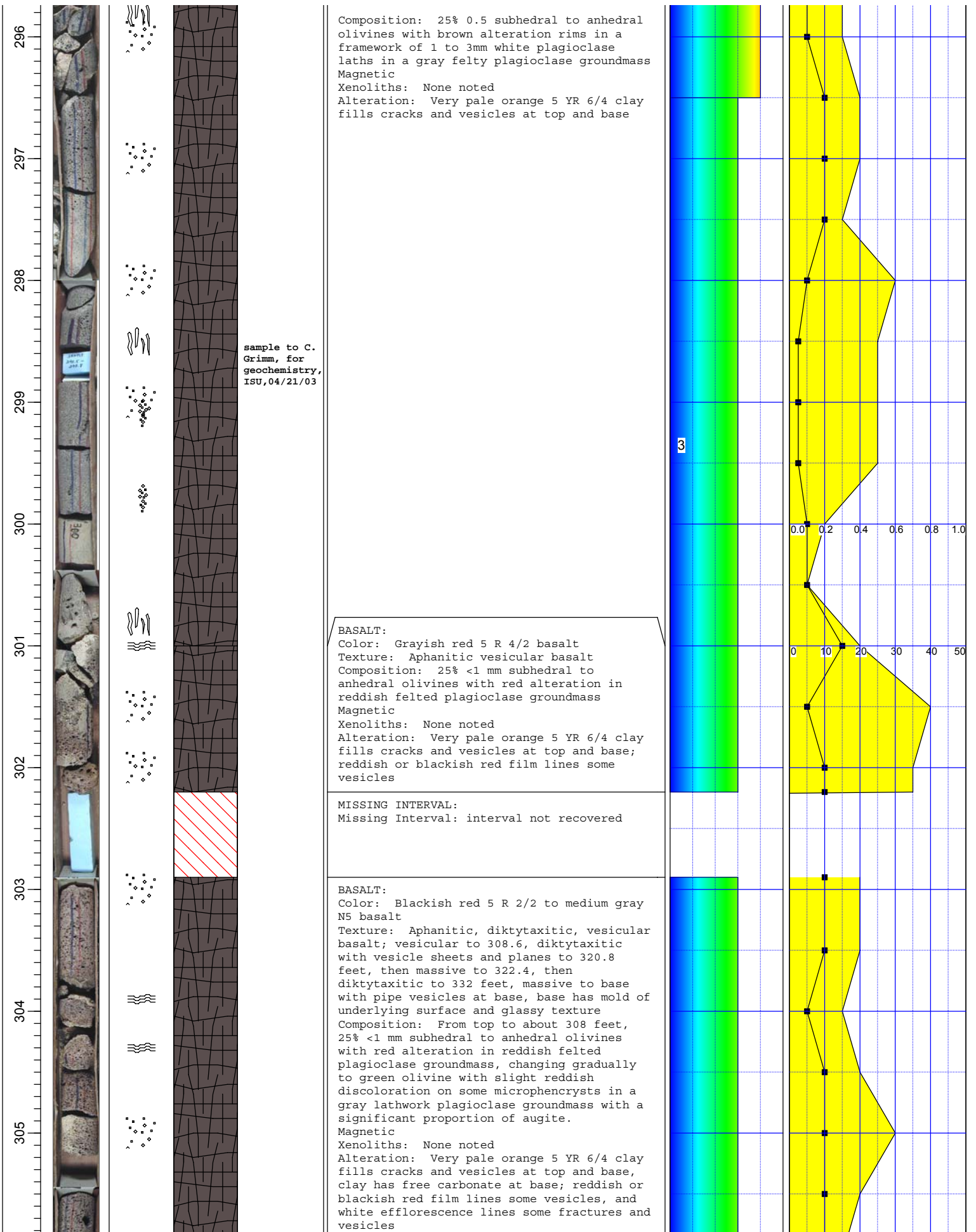
# **BASALT:**

Color: Medium gray N5 basalt  
 Texture: Aphanitic, microporphyritic, diktytaxitic, vesicular basalt; vesicles decrease in number and increase in size to 278 feet, diktytaxitic with vesicle sheets and planes to 284.5 feet, diktytaxitic with a vesicle column from 291.3 to 294.4, base shows mold texture with pipe vesicles;  
 Composition: 25% 1-2 subhedral to anhedral green olivines in a framework of 2 to 10 mm white plagioclase laths in a gray felty plagioclase groundmass; some olivines occur as glomerocrysts with larger plagioclase phenocrysts becoming markedly stellate near base  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Very pale orange 5 YR 6/4 clay fills cracks and vesicles at top and base

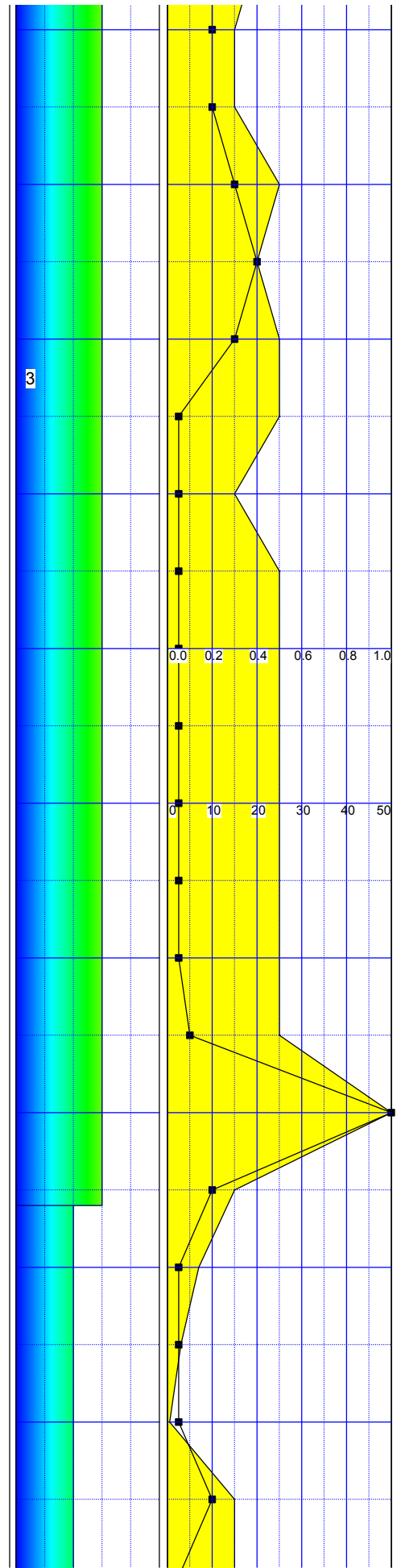
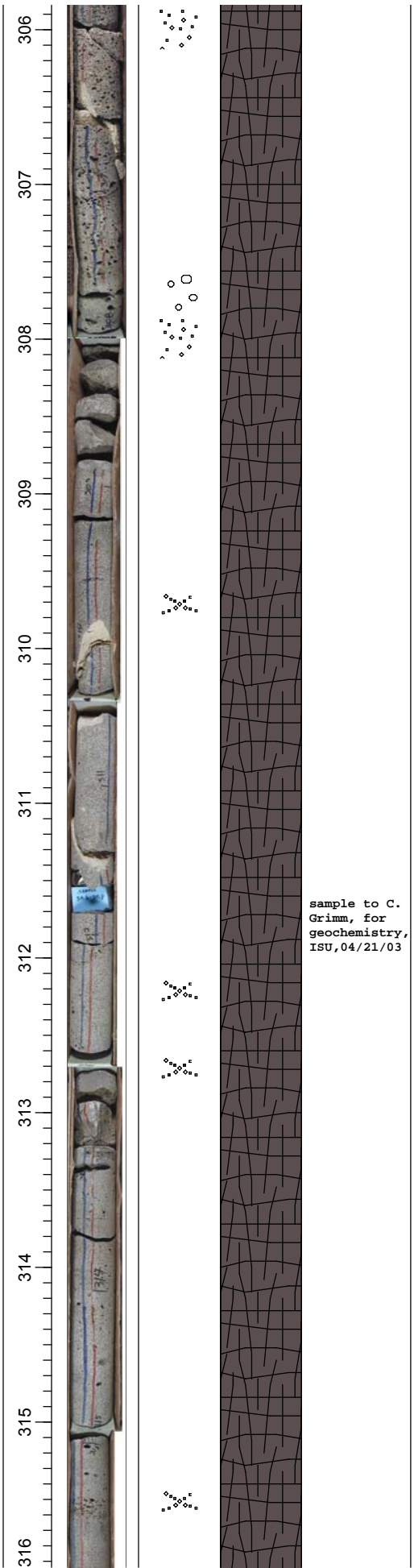




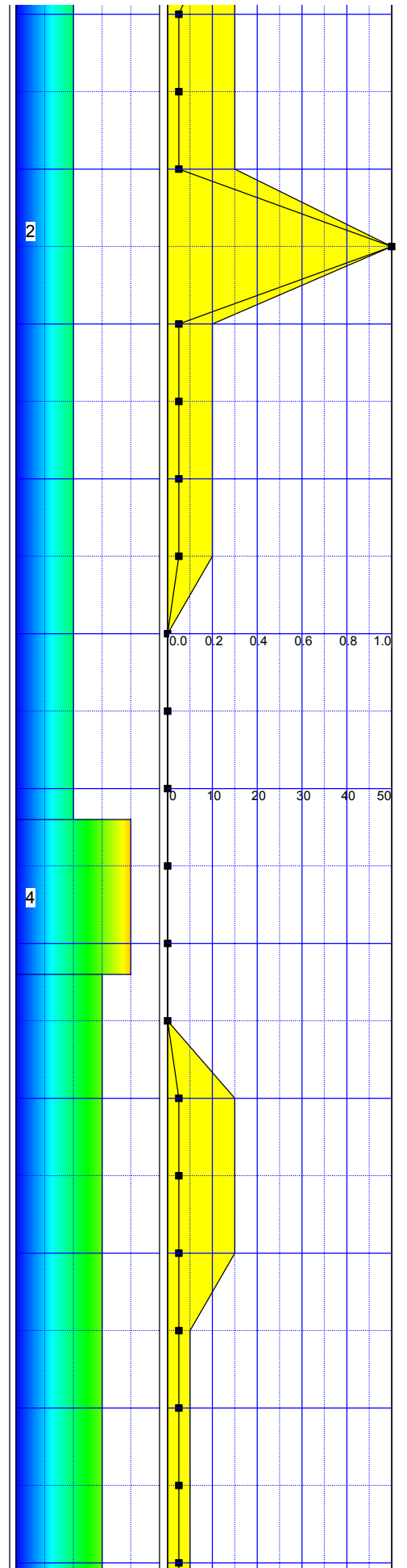
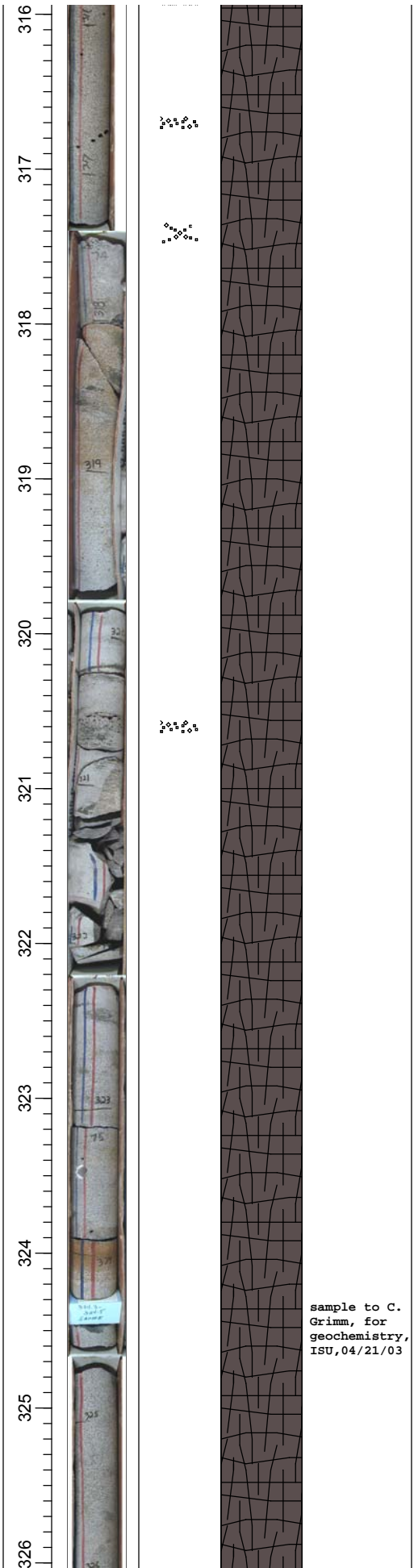


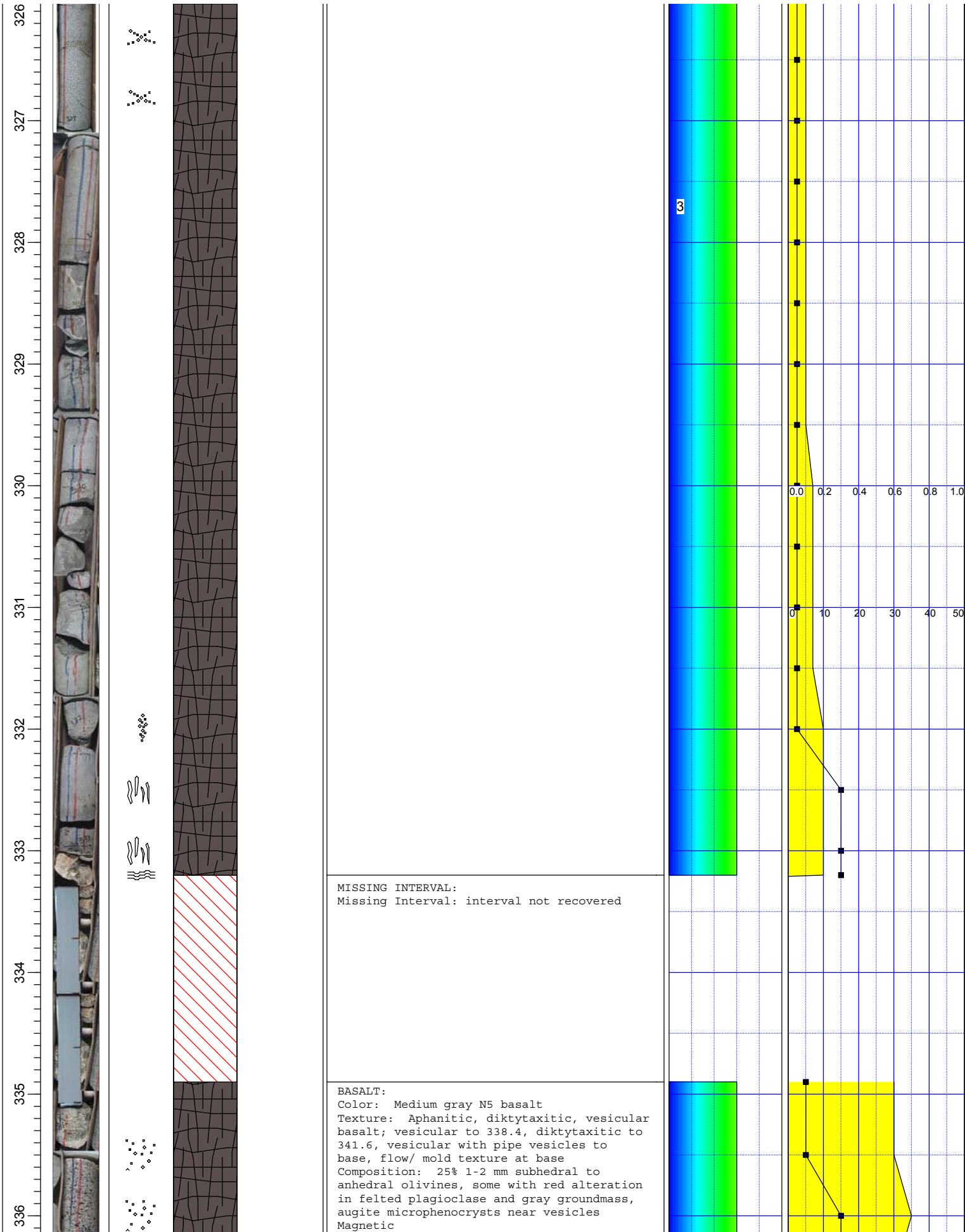


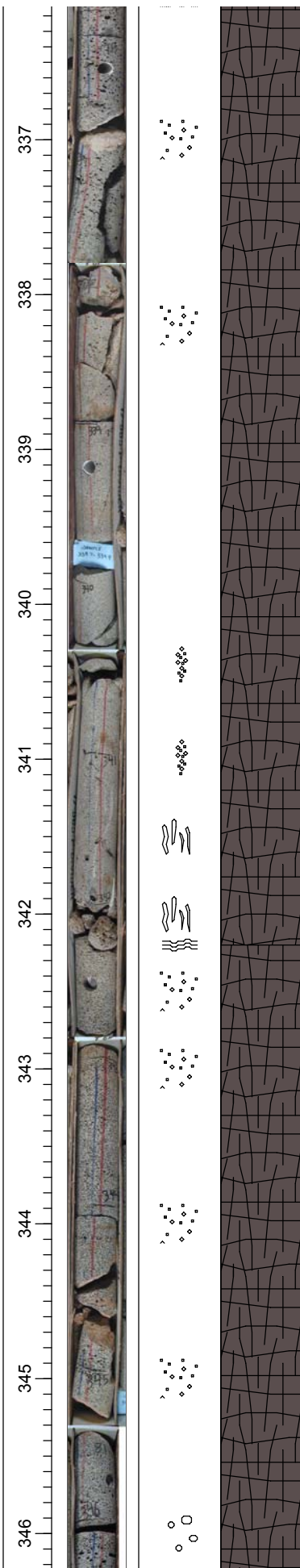






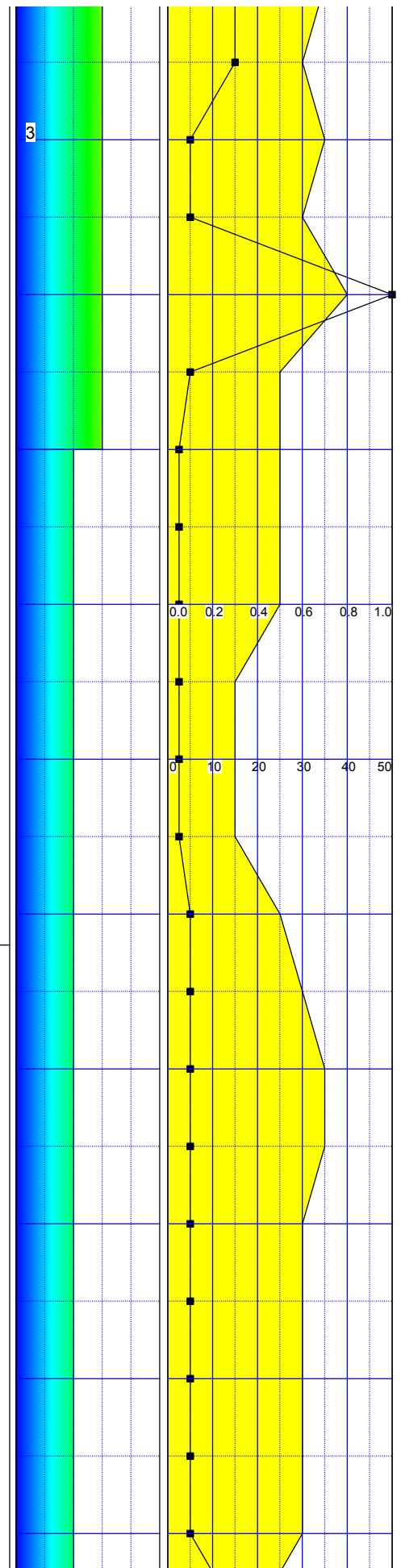


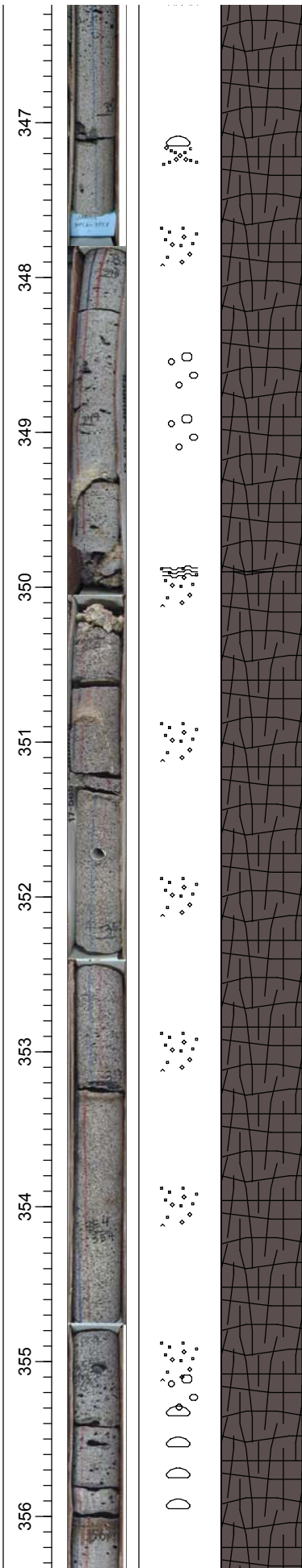




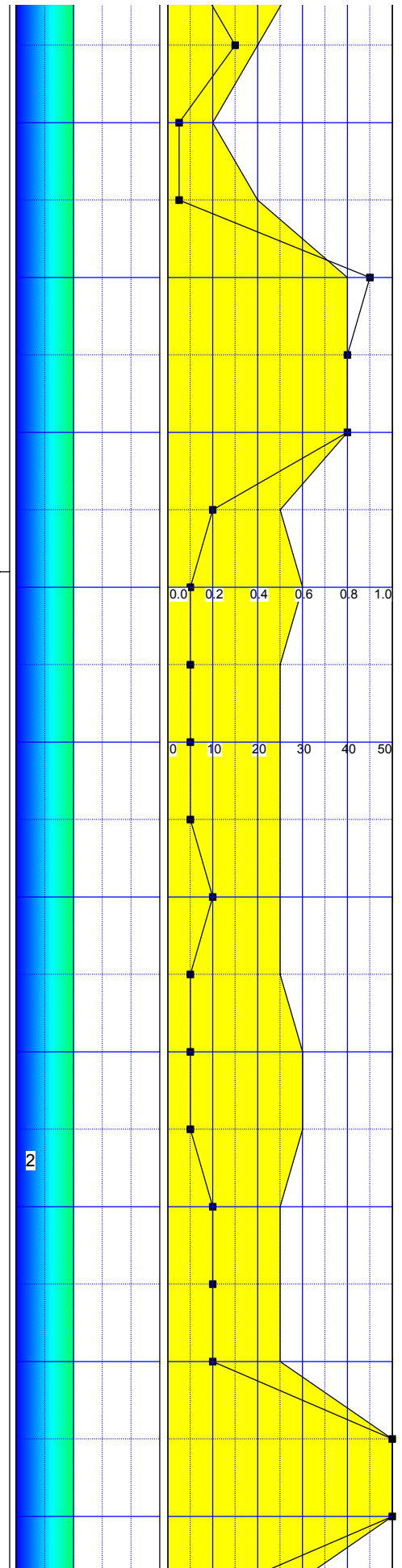
Xenoliths: None noted  
 Alteration: Very pale orange 5 YR 6/4 calcareous clay fills cracks and vesicles, white crystalline calcite fills some vesicles, moderate reddish orange clay 10 R 6/6 fills cracks and vesicles at base

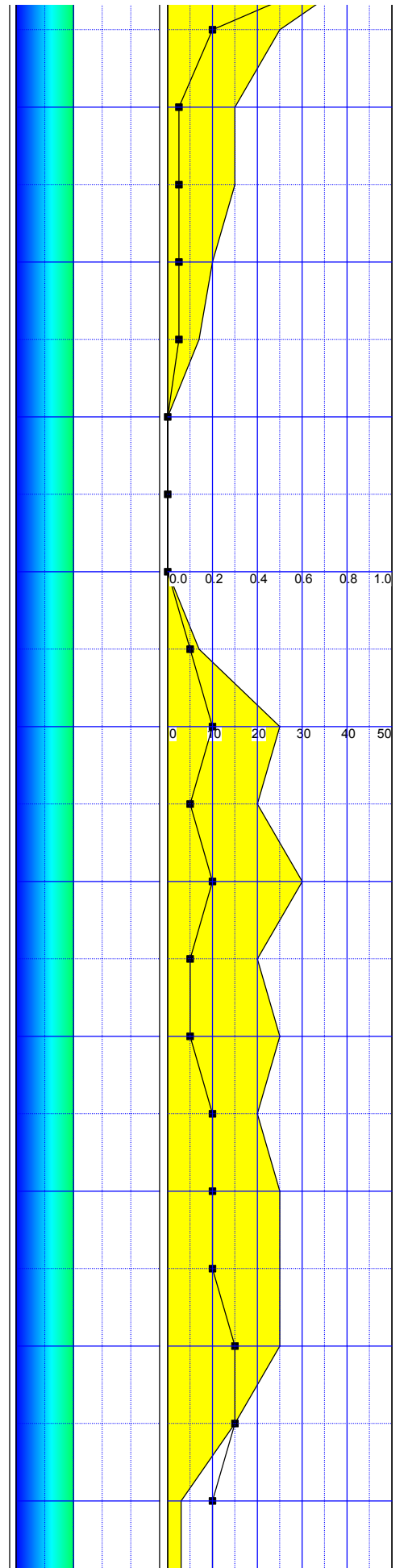
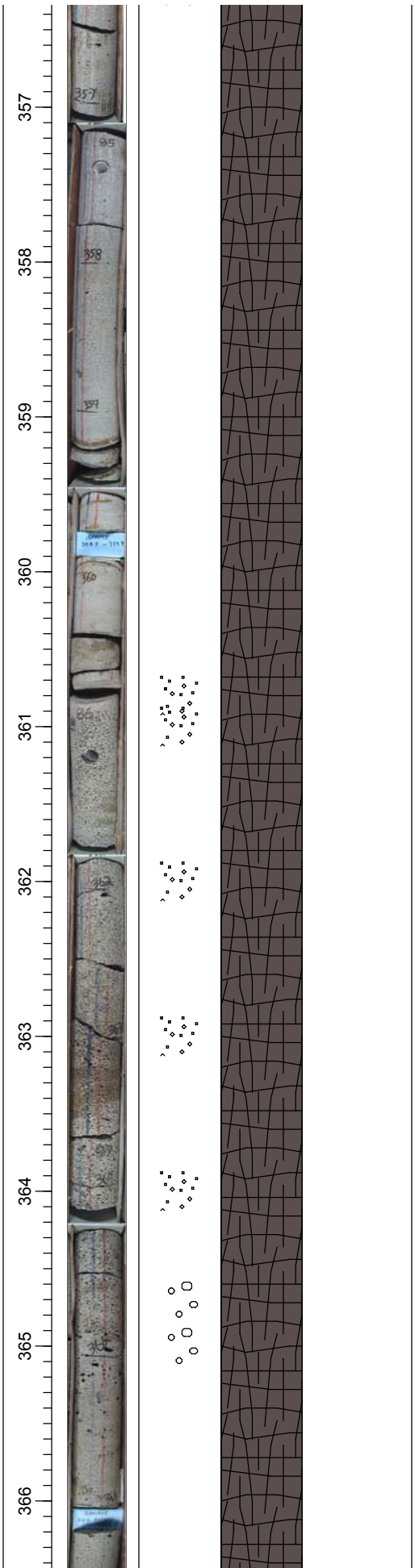
**BASALT:**  
 Color: Medium gray N5 basalt  
 Texture: Aphanitic, diktytaxitic, vesicular basalt; vesicular with pipe vesicles to base, flow/mold texture at top and mold texture at base  
 Composition: 30% 1-5 mm subhedral to anhedral olivines in felted plagioclase and gray groundmass, Magnetic  
 Xenoliths: None noted  
 Alteration: Moderate reddish orange clay 10 R 6/6 fills cracks and vesicles at top, very pale orange 5 YR 6/4 calcareous clay fills cracks and vesicles, especially at base, white crystalline calcite fills some vesicles

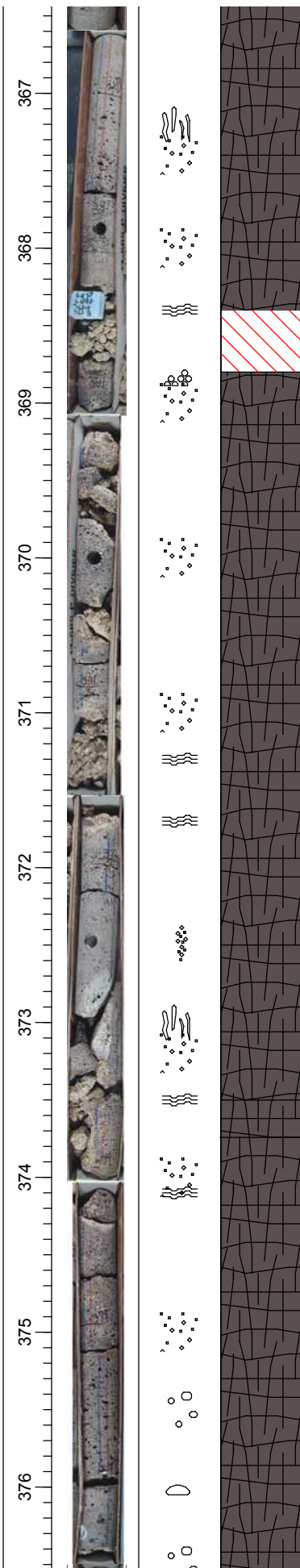




**BASALT:**  
 Color: Medium gray N5 basalt  
 Texture: Aphanitic, diktytaxitic, vesicular basalt; vesicular to 355.3, then large vesicles and megavesicles to 356.3 feet, diktytaxitic to 359.2 feet, massive to 360.9 feet, diktytaxitic to 365 feet, then diktytaxitic with large vesicles to 367.4 feet, vesicular to base, flow/mold texture at top and spatter texture at base  
 Composition: 30% 1-5 mm subhedral to anhedral olivines in felted plagioclase and gray groundmass, some with red alteration rims  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Very pale orange 5 YR 6/4 calcareous clay fills cracks and vesicles, especially at top and base



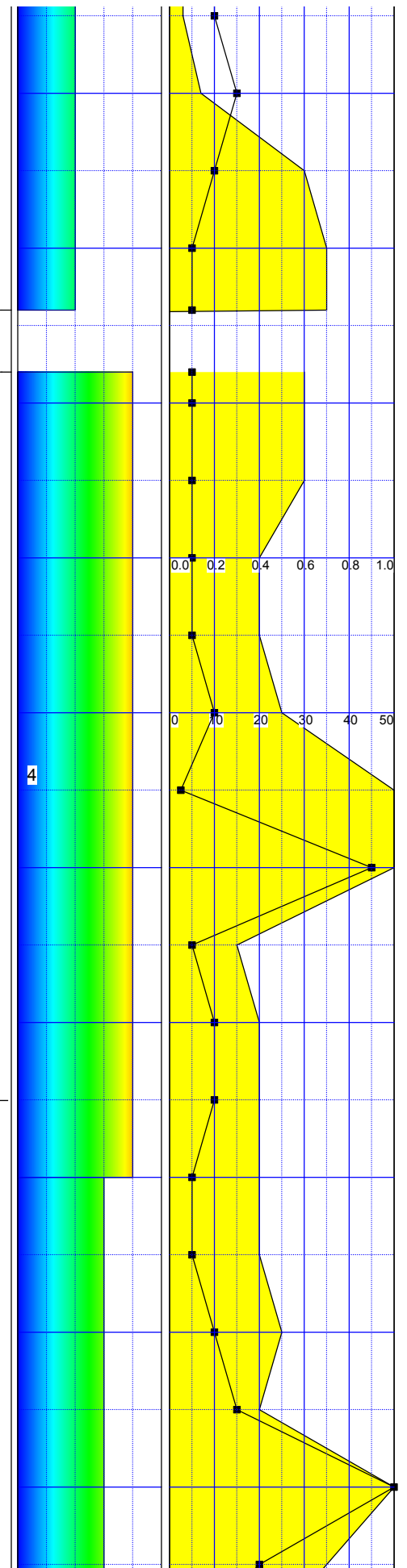




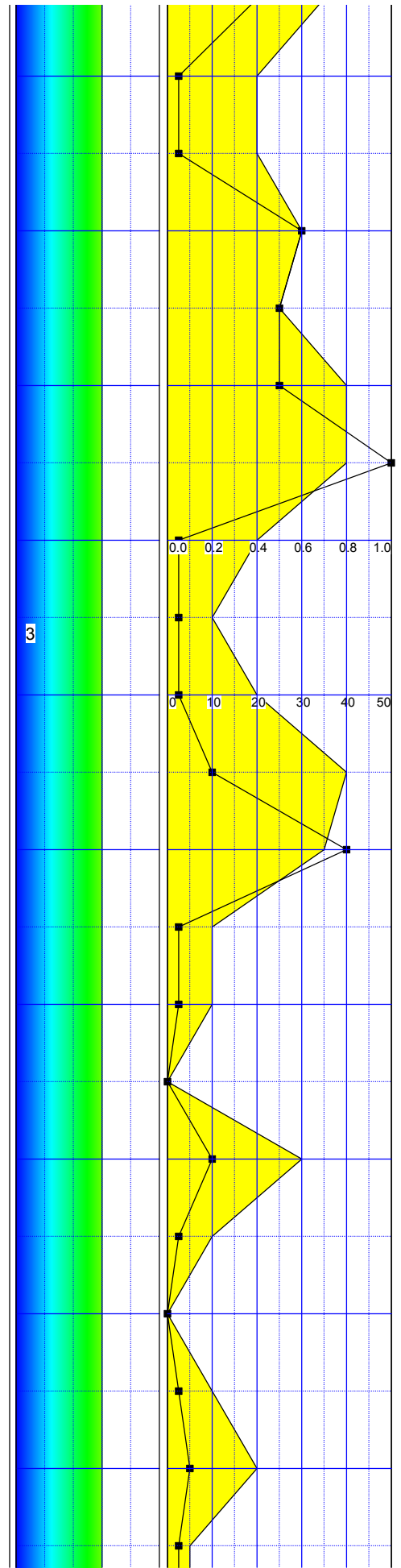
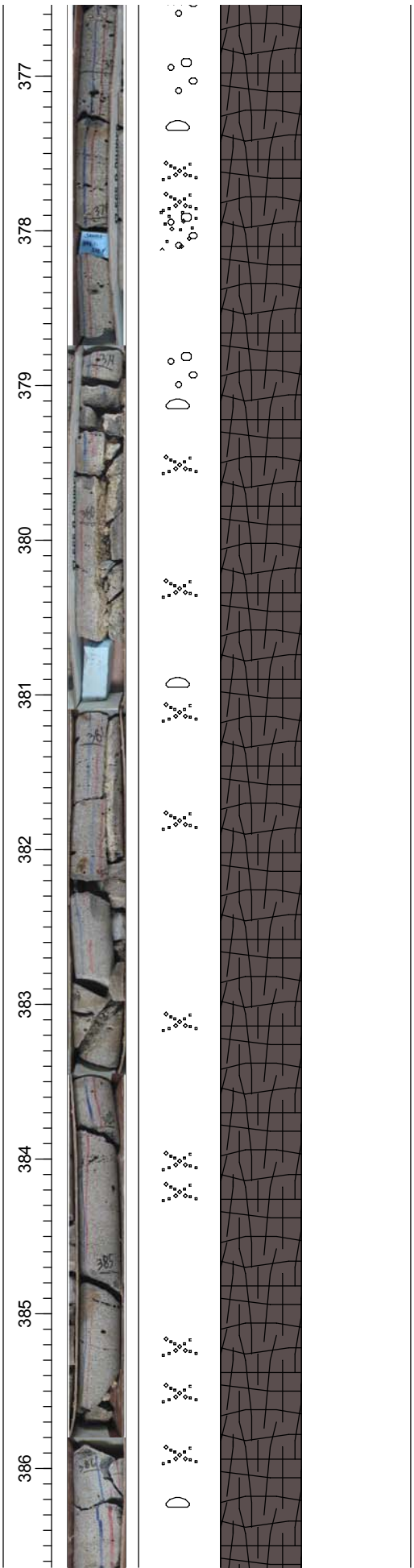
MISSING INTERVAL:  
Missing Interval: interval not recovered

**BASALT:**  
Color: Medium dark gray N4 basalt  
Texture: Aphanitic, diktytaxitic, vesicular basalt; vesicular rubble and spatter to 372.1, pipe vesicles, rubble and spatter to base  
Composition: 40% <1 mm subhedral to anhedral olivines, some with red alteration rims, in a felted plagioclase groundmass, 1-2% black augite  
Magnetic  
Xenoliths: None noted  
Alteration: Very pale orange 5 YR 6/4 calcareous clay fills cracks and vesicles, especially at top and base

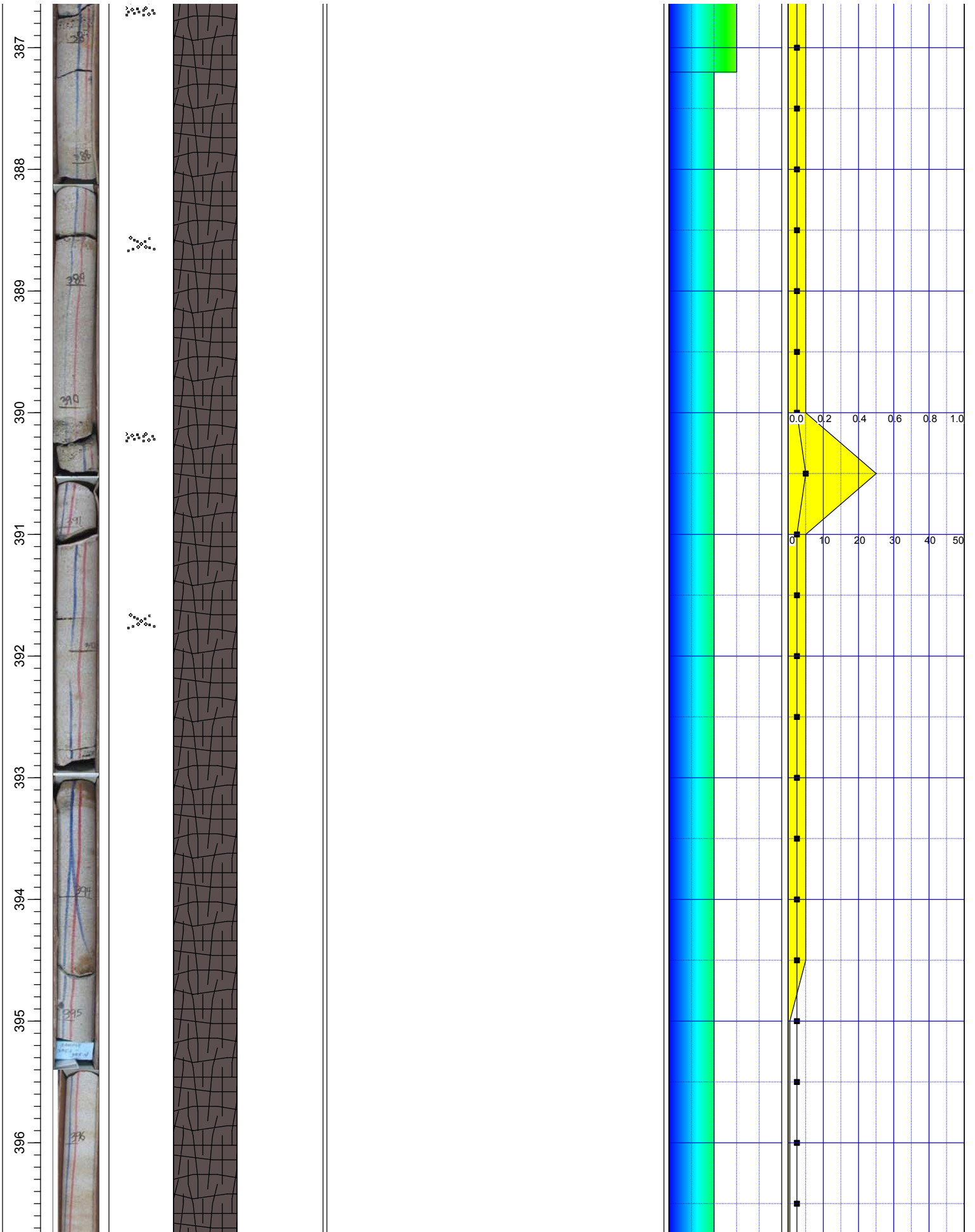
**BASALT:**  
Color: Medium gray N5 to very dusky red 10 R 2/2 basalt  
Texture: Aphanitic, diktytaxitic, vesicular basalt; vesicles increase in size and decrease in number to 380.5 feet, diktytaxitic with vesicle sheets and planes to 391.7 feet, diktytaxitic to 409.5 feet, vesicular to base, flow textures, rubble and spatter to base  
Composition: 40% <1 mm subhedral to anhedral olivines, some with red alteration rims, in a felted plagioclase groundmass, 1-2% black augite; percentage of olivine with alteration rims increases as depth increases, percentage of augite increases to 5% as depth increases  
Magnetic  
Xenoliths: None noted  
Alteration: Very pale orange 5 YR 6/4 calcareous clay fills cracks and vesicles, especially at top and base

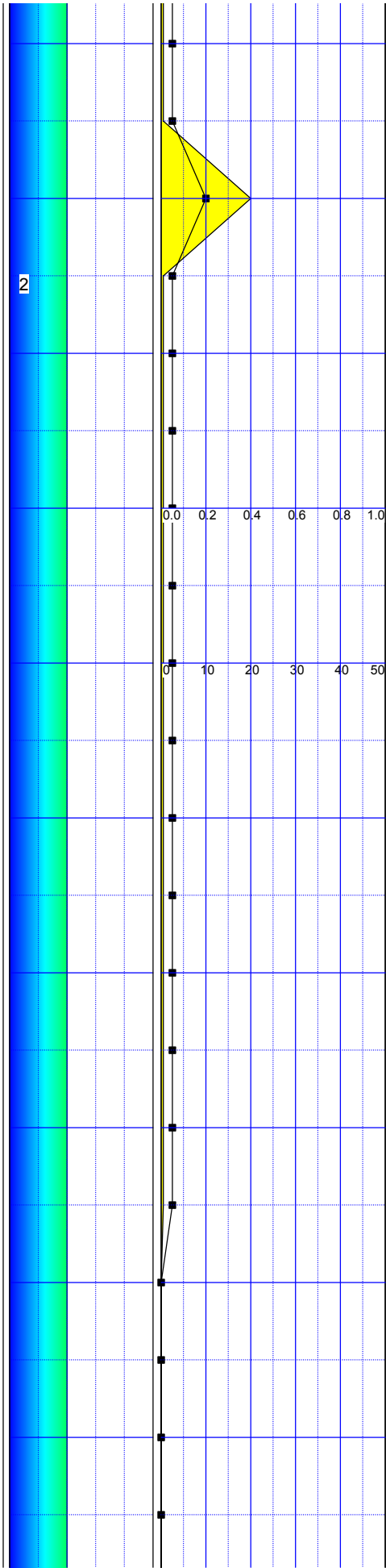
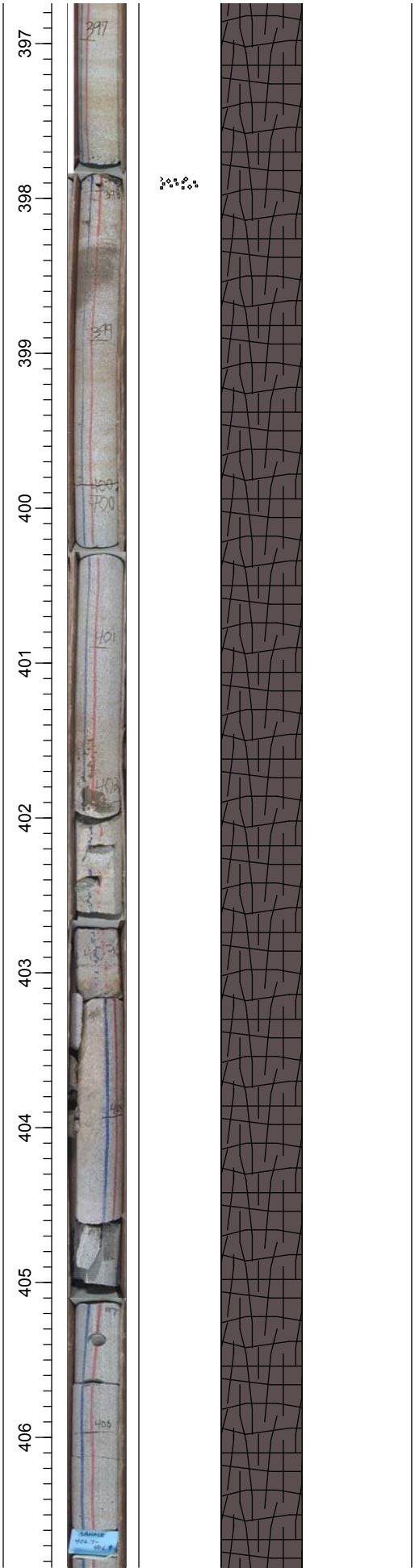


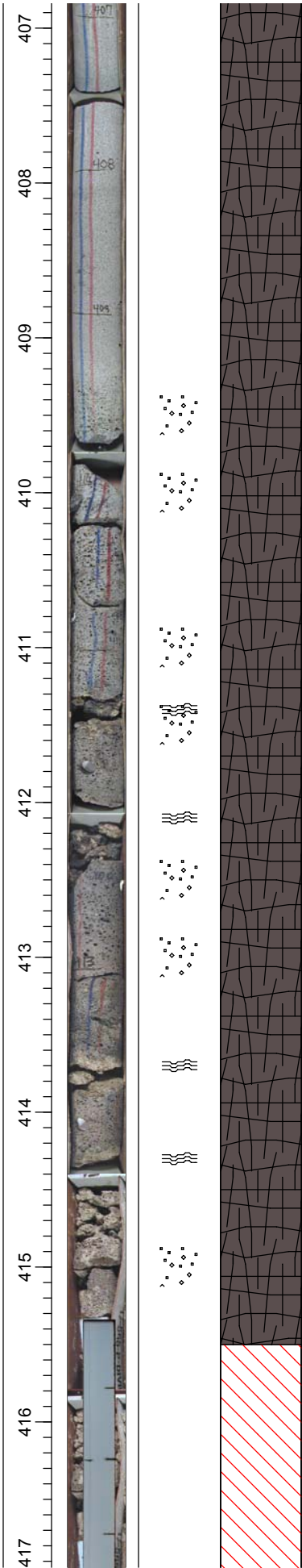




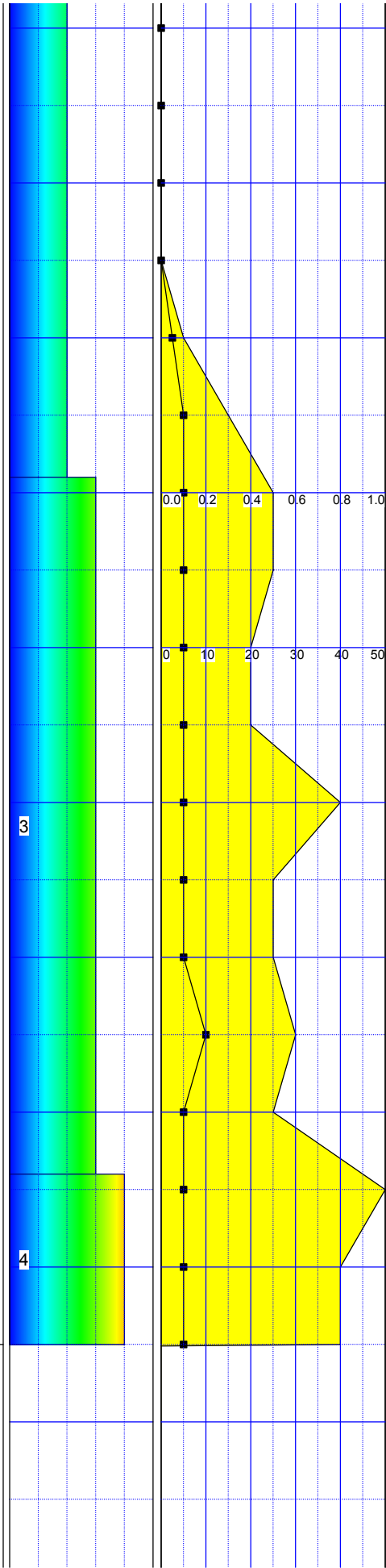


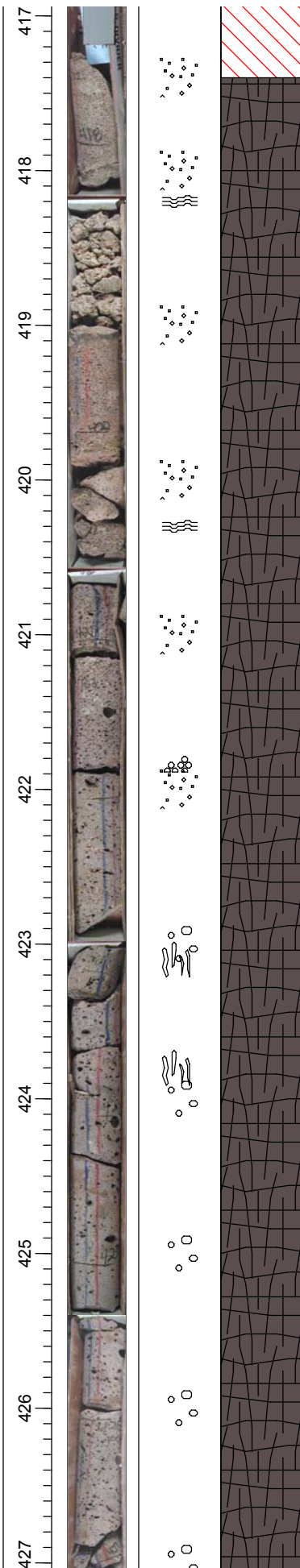




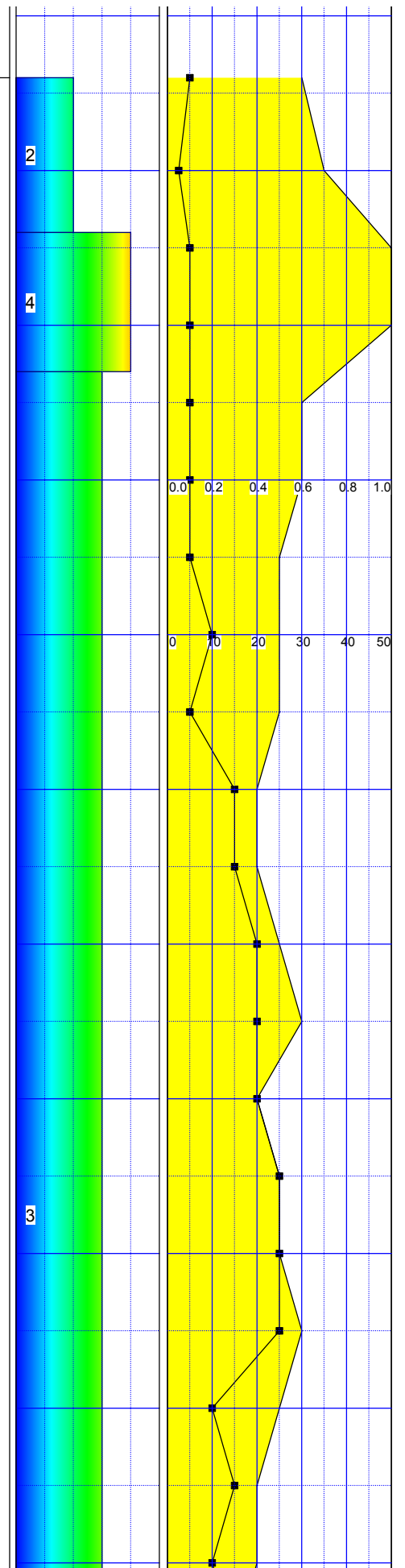


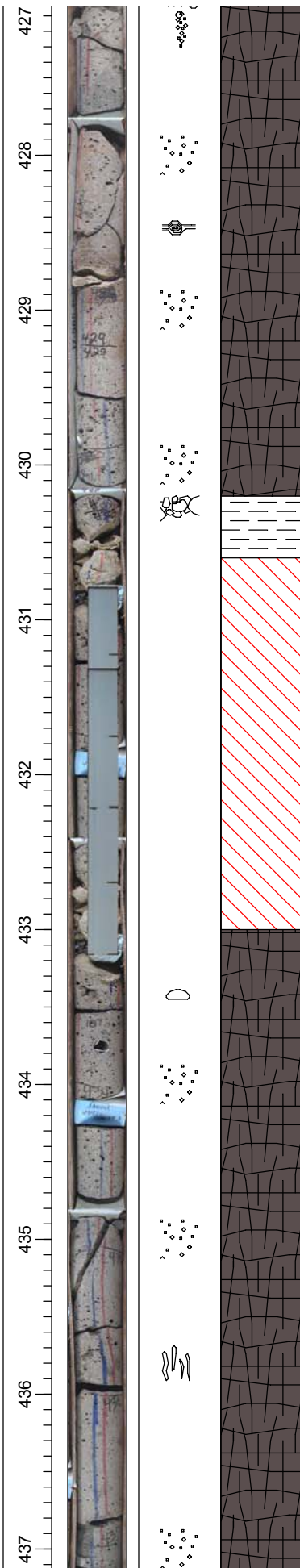
MISSING INTERVAL:  
Missing Interval: interval not recovered





**BASALT:**  
 Color: Very dusky red 10 R 2/2 basalt  
 Texture: Aphanitic, diktytaxitic, vesicular basalt; vesicles increase in size and decrease in number to 424.8 feet, then somewhat vesicular to 428.4 feet where there is a zone of many small vesicles above and below a debris inclusion of very pale orange 5 YR 6/4 calcareous clay, then vesicular with large vesicles and pipe vesicles to base  
 Composition: Very dusky red groundmass with rare plagioclase needles  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Very pale orange 5 YR 6/4 calcareous clay fills cracks and vesicles, especially at top and base, this calcareous clay forms a debris inclusion at 428.5 feet



**CLAY:**

Texture: Clay USCS soil classification CL; microlaminated carbonate mud with rare lithic sand grains, lithics consist of rounded, frosted quartz grains and black subangular lithics  
 Color: Very pale orange 10 R 8/2  
 Consistence: Extremely firm  
 Structure: Blocky  
 Free carbonates: Yes  
 Rocks: None noted  
 Roots or fossils: Brown root traces

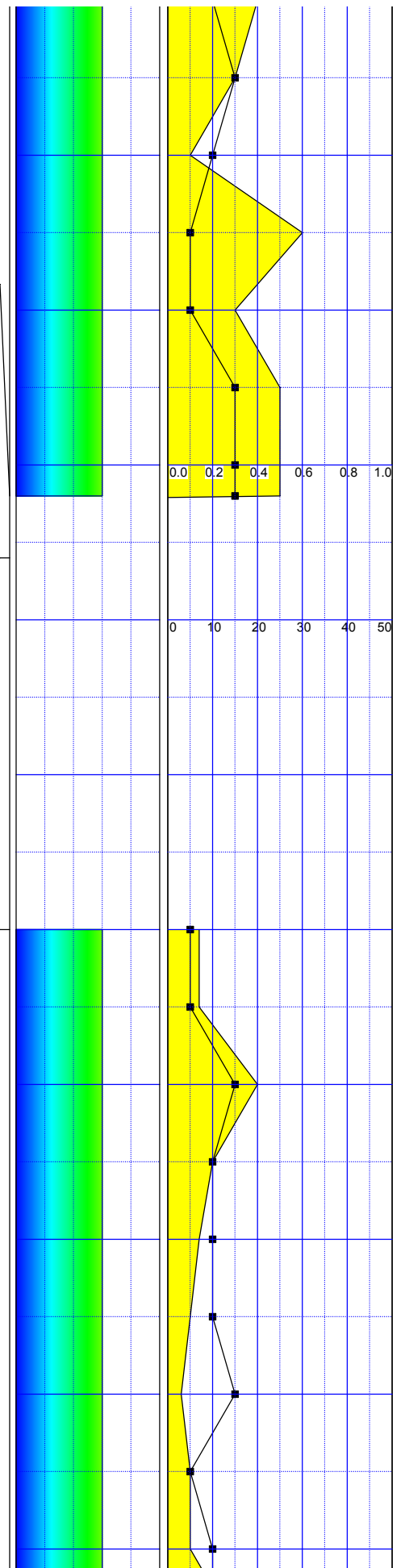
N. B. Most of this interbed was not recovered.

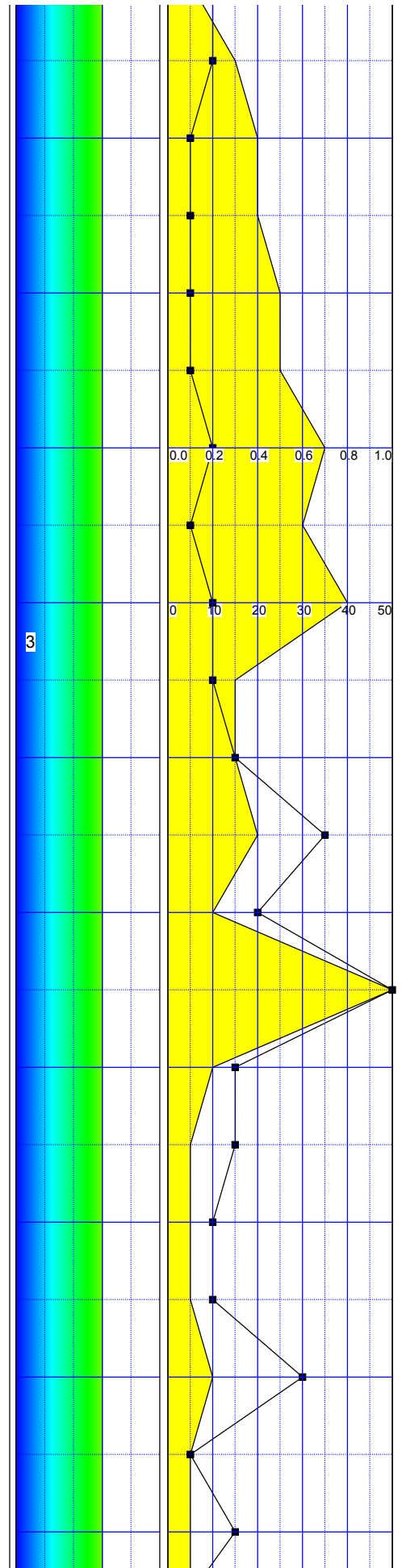
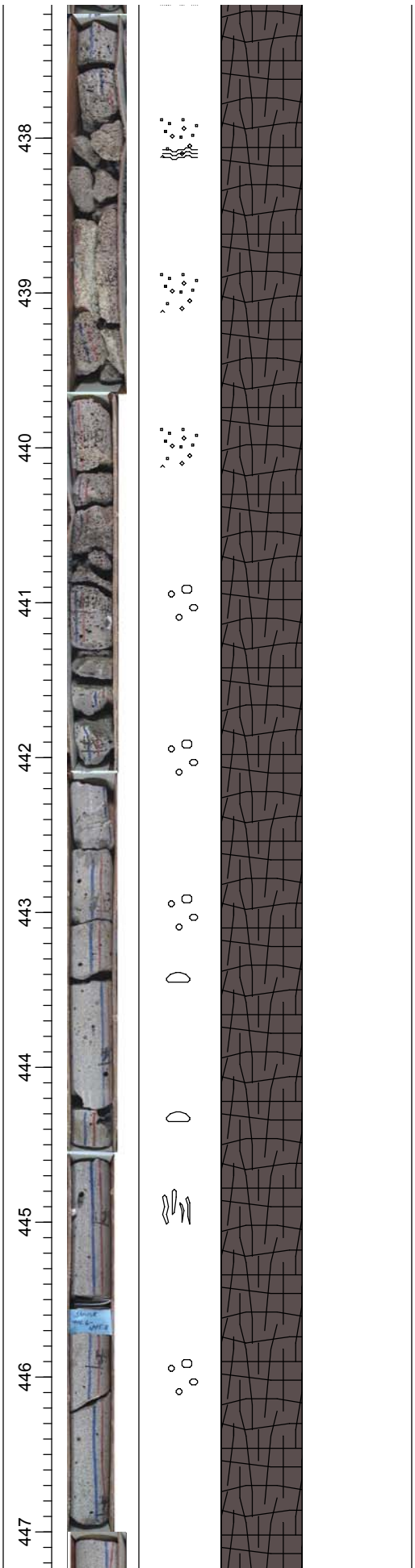
**MISSING INTERVAL:**

Missing core not recovered, probably sedimentary interbed such as the preceding.

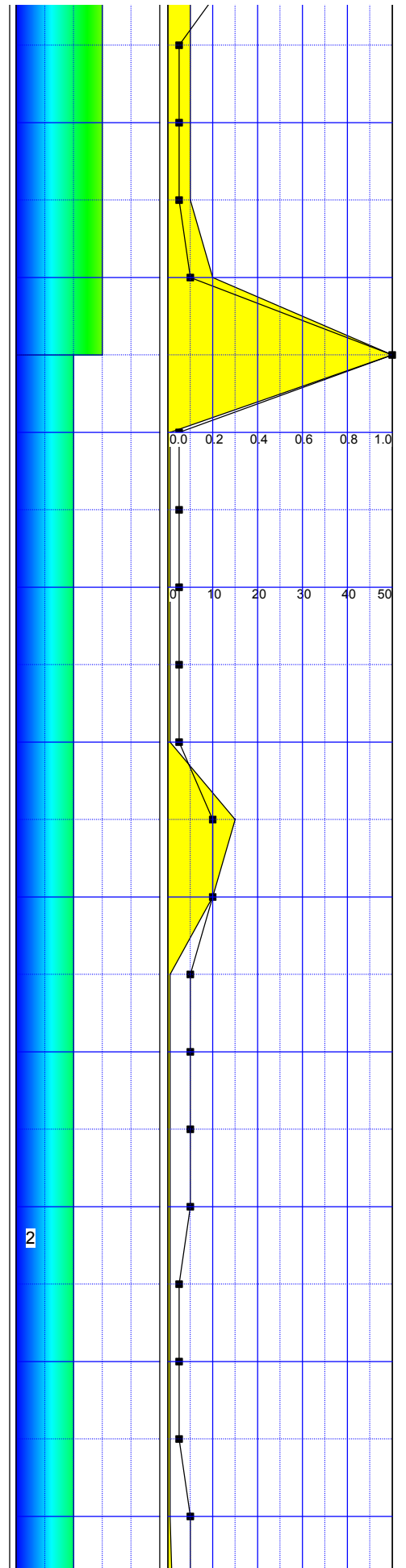
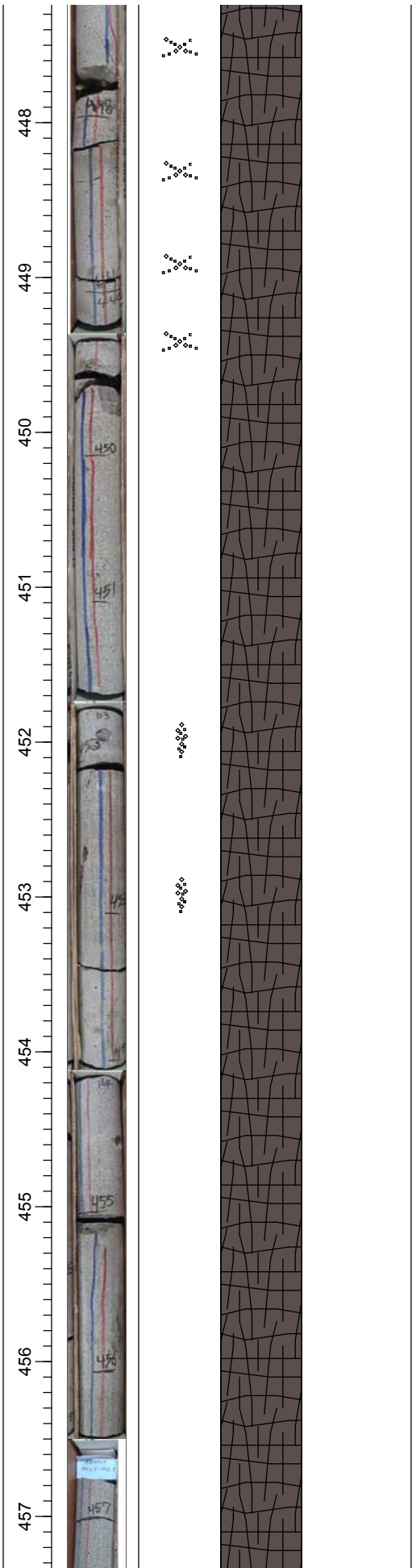
**BASALT:**

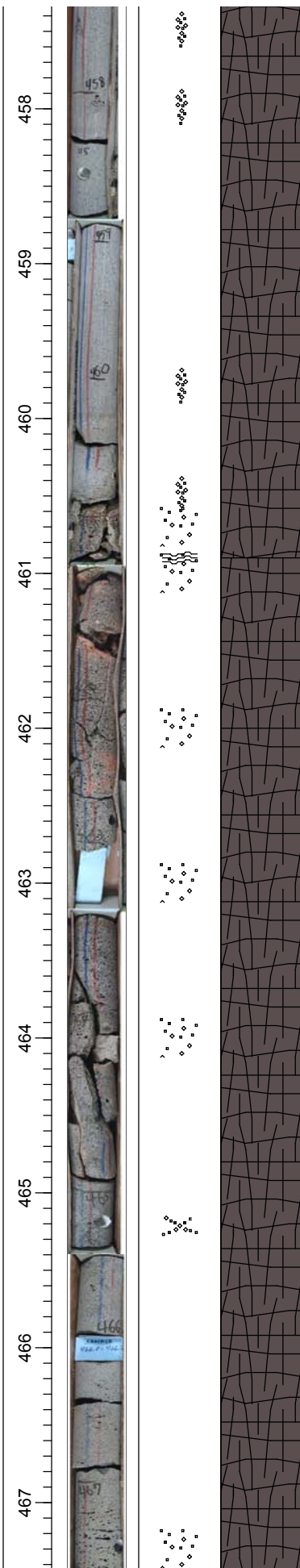
Color: Medium dark gray N4 basalt  
 Texture: Aphanitic, diktytaxitic, vesicular basalt; vesicular zone from 437.4 to 441.3 feet, slightly vesicular to 446 feet, diktytaxitic with vesicle planes and megavesicles to 449.5, vesicle columns from 451.7 to 453, pipe vesicles from 460.5 feet to base  
 Composition: 30 % olivine microphenocrysts, some with brown alteration rims, 10 % 2-4 mm green olivine glomerocrysts in a gray felty plagioclase groundmass; size of olivine glomerocrysts increase with depth to 8mm near base  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Very pale orange 5 YR 6/4 clay fills some cracks and vesicles, white efflorescence on some surfaces









**BASALT:**

Color: Medium dark gray N3 basalt

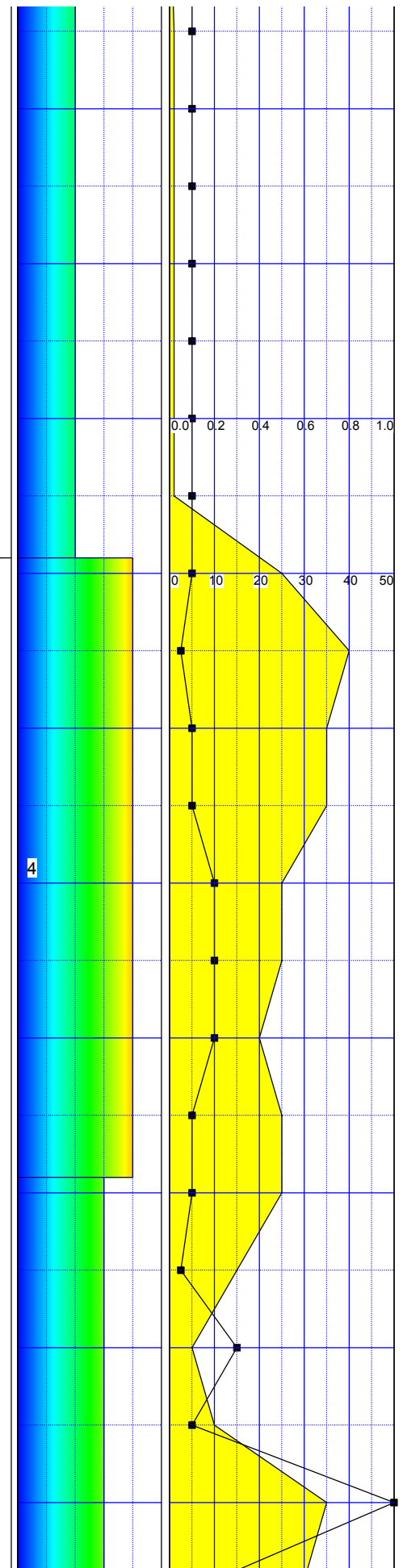
Texture: Aphanitic, diktytaxitic, vesicular basalt; vesicular from top to 465 feet, diktytaxitic with vesicle planes and columns to 467 feet, vesicular with pipe vesicles to base, mold texture at base

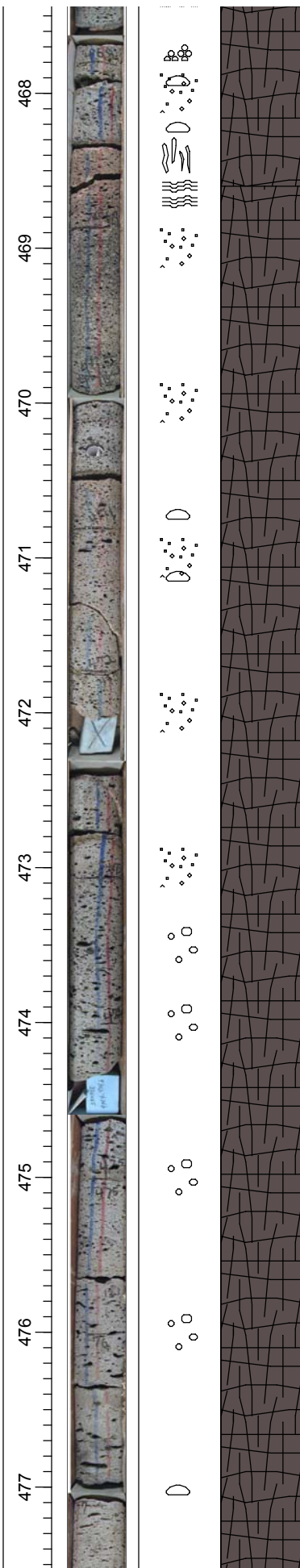
Composition: 50% 1 mm white plagioclase needles in a black groundmass at top; 70% plagioclase, 30% green olivine near base, unit coarsens with depth

Magnetic

Xenoliths: None noted

Alteration: Moderate reddish orange 10 R 6/6 at top, very pale orange 10 YR 8/2, and dark yellowish orange 10 YR 6/6 coat some surfaces and fill some vesicles.



**BASALT:**

Color: Medium dark gray N4 basalt

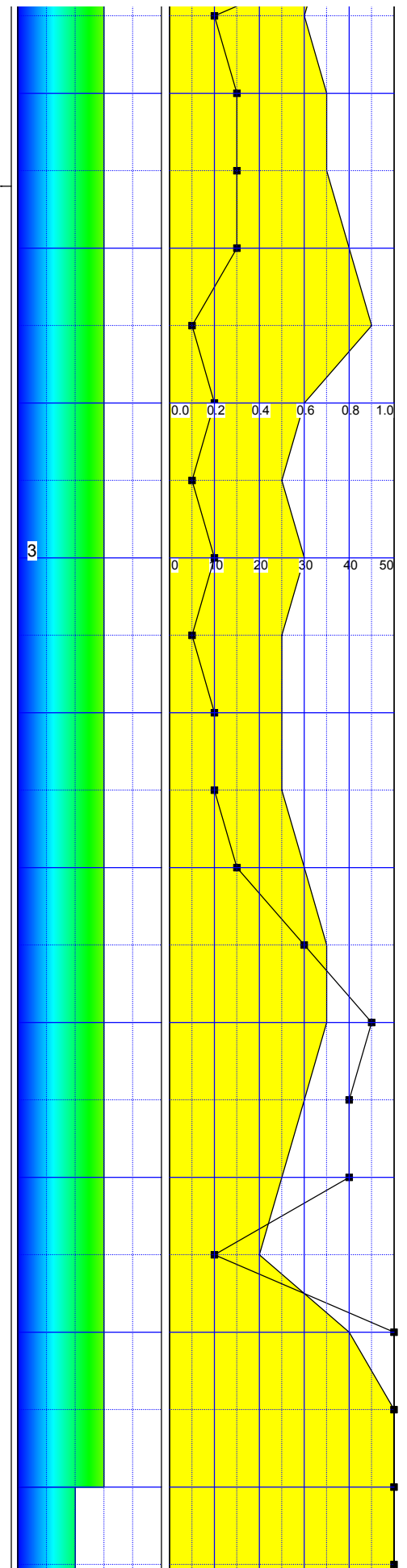
Texture: Aphanitic, diktytaxitic, vesicular basalt; vesicular from top to 478 feet, vesicles generally increase in size and decrease in number with increasing depth, diktytaxitic with vesicle planes and megavesicles to 486.3 feet, diktytaxitic to 487, massive to 488.4 feet, flow texture and grain size change (coarser) at 488.4 feet, vesicular to 489 feet, diktytaxitic to 502.1 feet, vesicular to base, mold texture at base

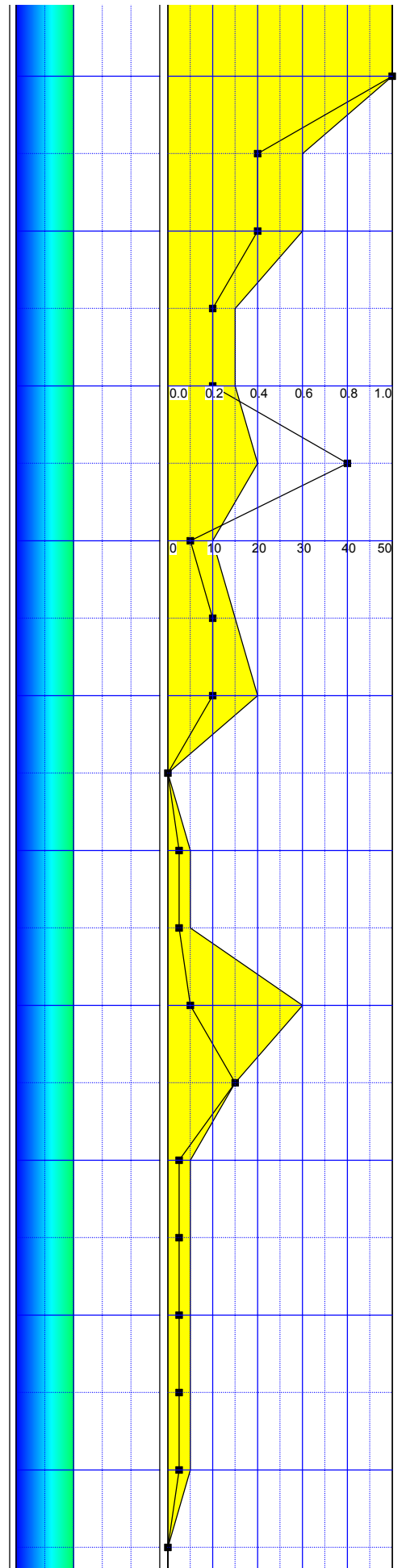
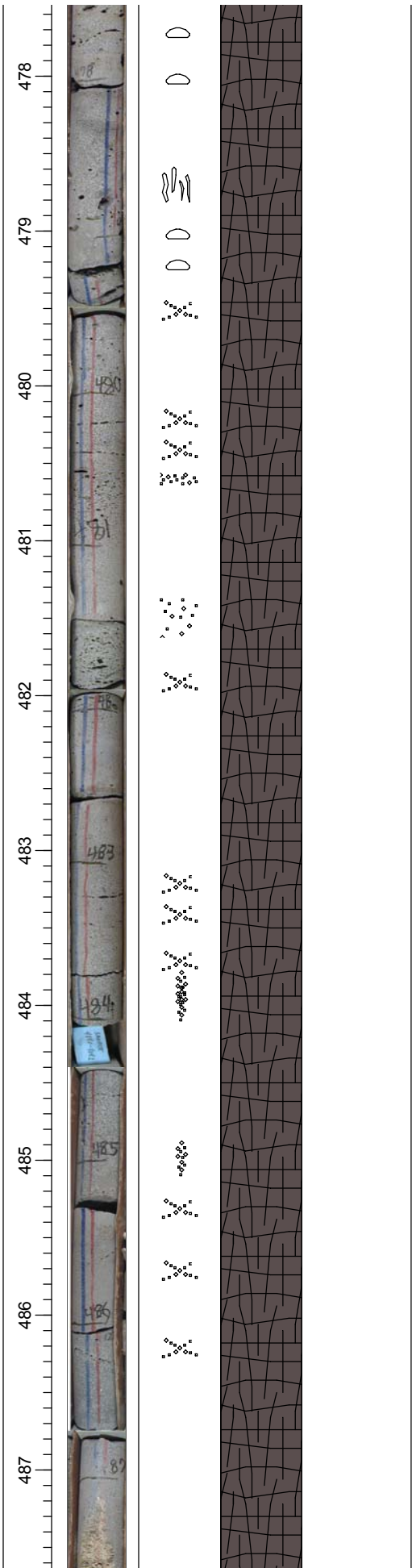
Composition: 50% 1 mm white plagioclase needles in a black groundmass at top; 60% plagioclase, 35% green olivine and 5% black pyroxene near base

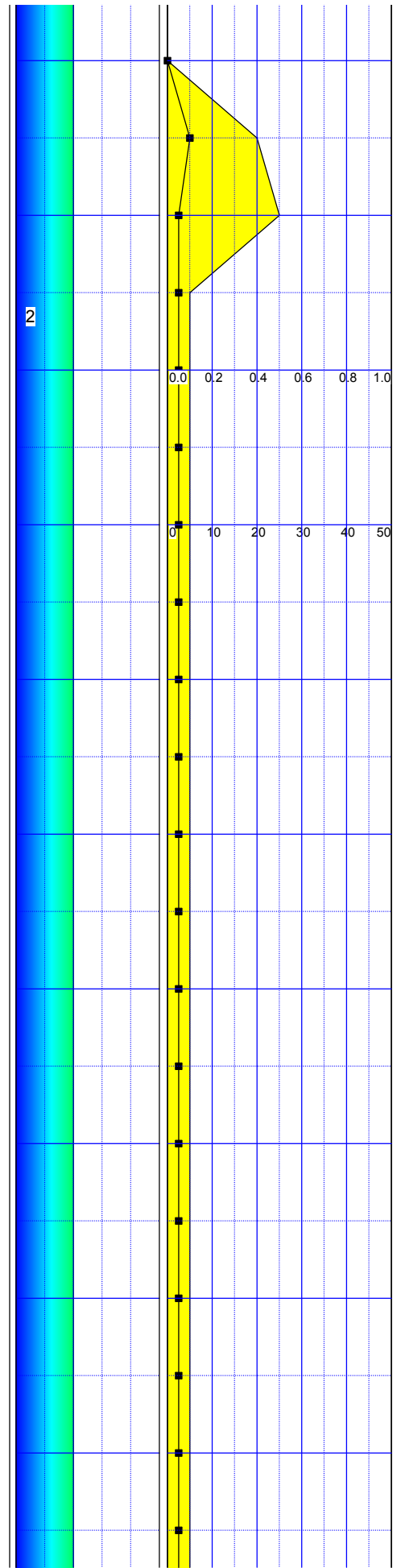
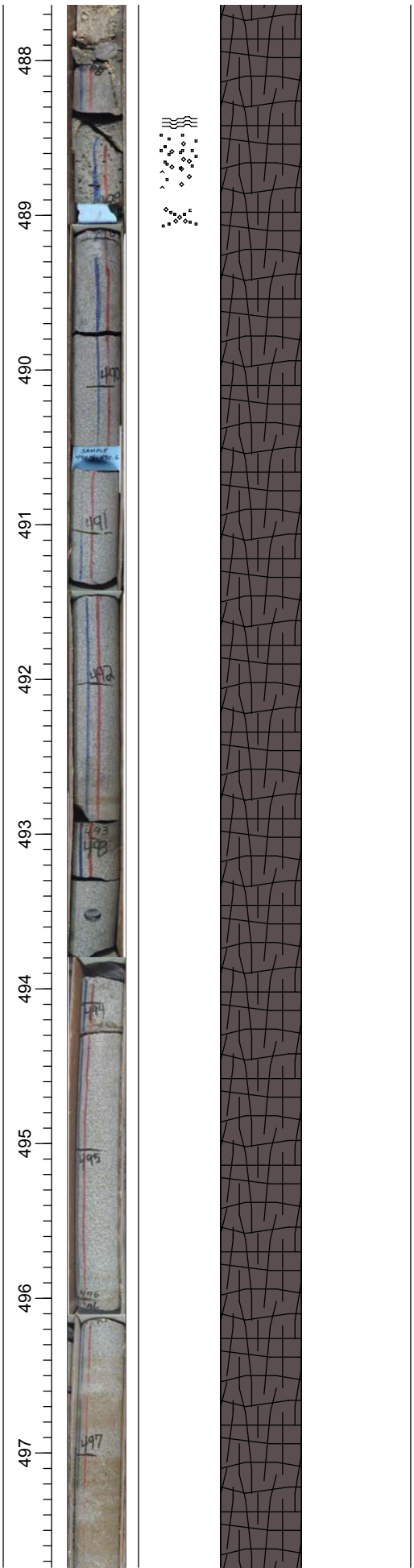
Magnetic

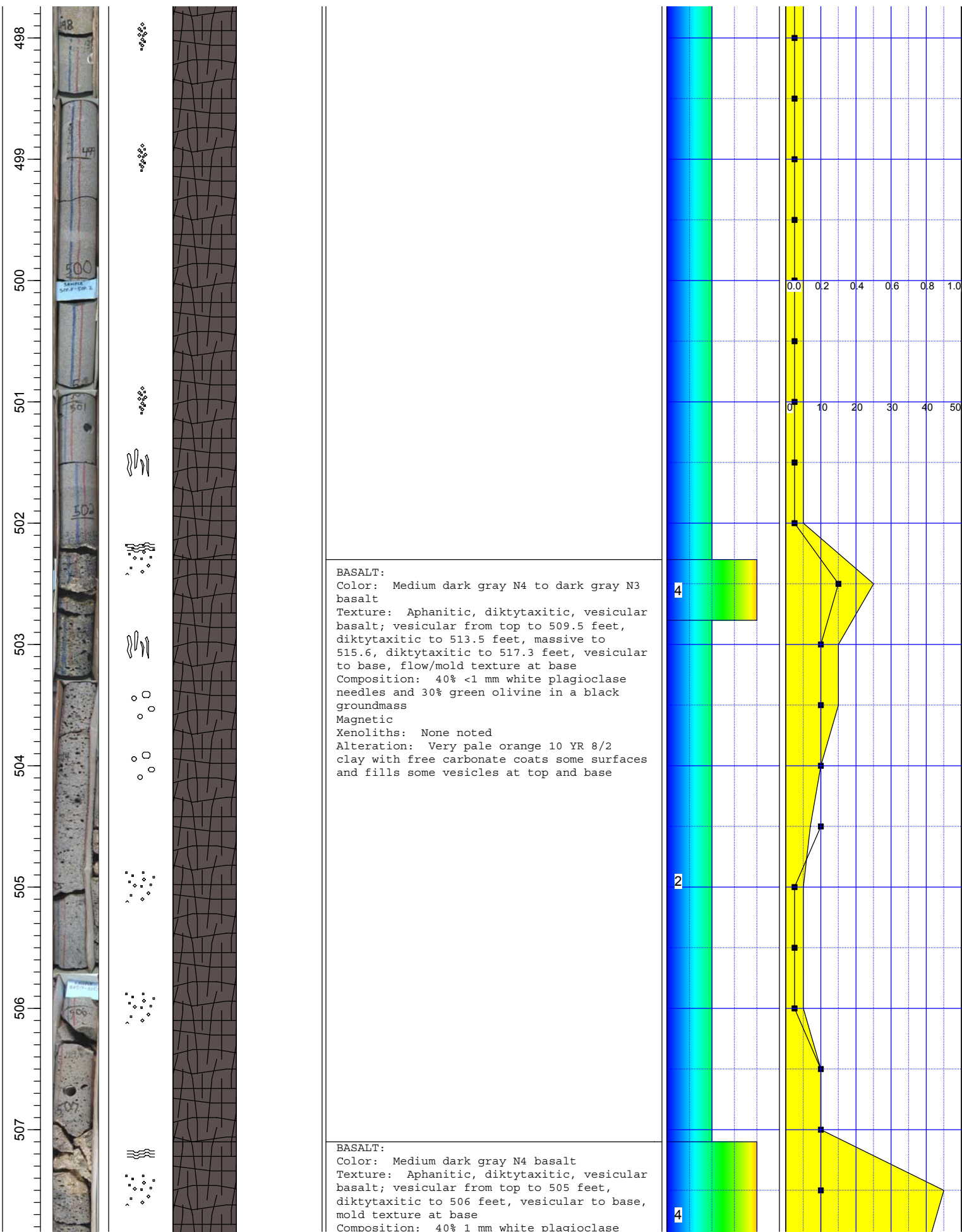
Xenoliths: None noted

Alteration: Moderate reddish orange 10 R 6/6 clay with free carbonate at top, moderate orange pink 5 YR 8/4 with free carbonate from 487.2 to 488.6 feet, very pale orange 10 YR 8/2, and dark yellowish orange 10 YR 6/6 clay with free carbonate coats some surfaces and fills some vesicles at base.

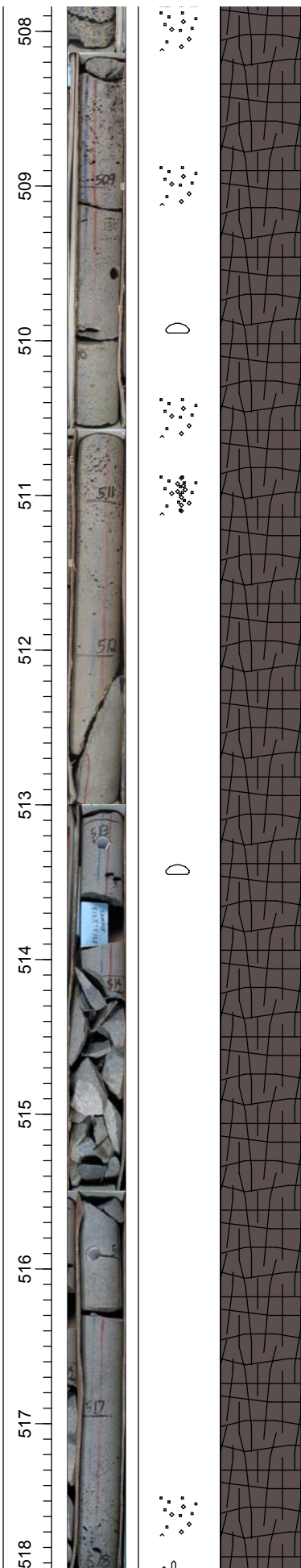




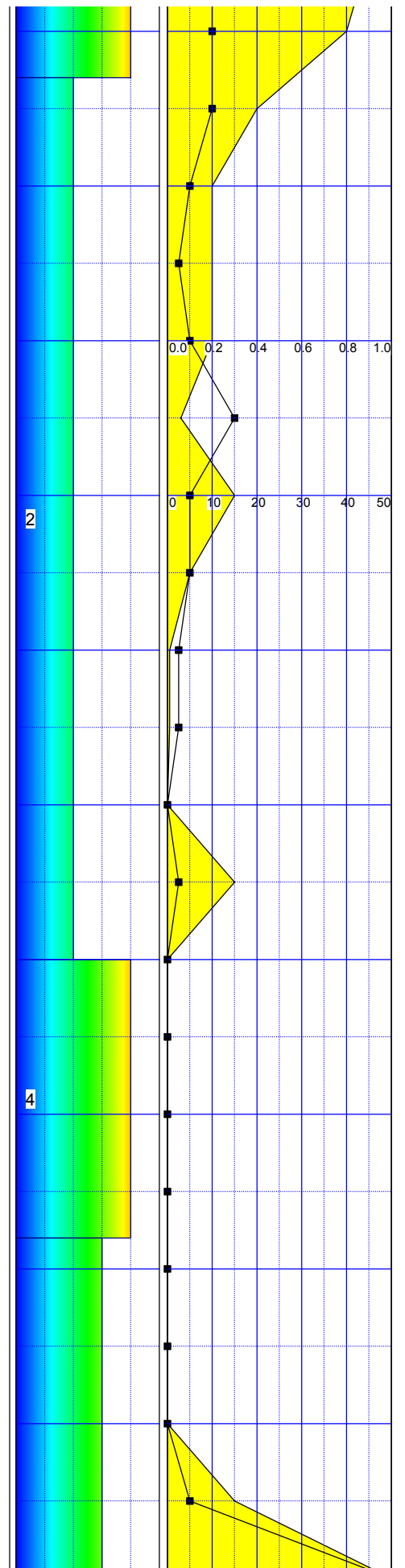


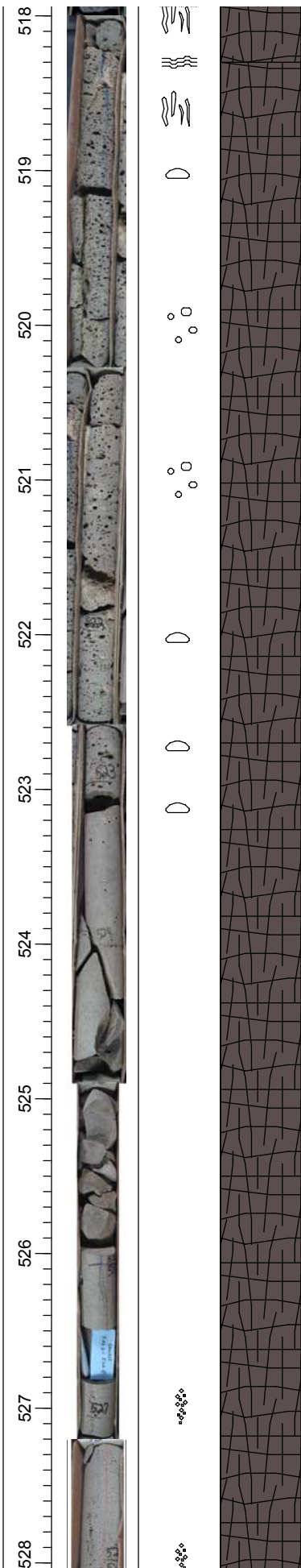






needles in a black groundmass  
Magnetic  
Xenoliths: None noted  
Alteration: Very pale orange 10 YR 8/2  
clay with free carbonate coats some surfaces  
and fills some vesicles at top and base,  
contains free carbonates at top





# **BASALT:**

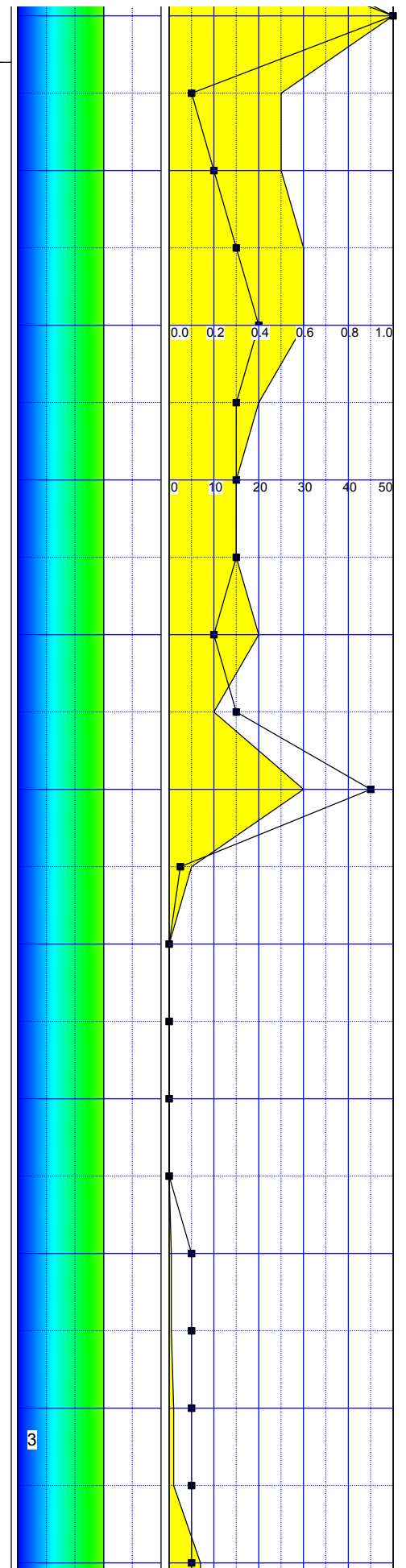
Color: Dark gray N3 basalt

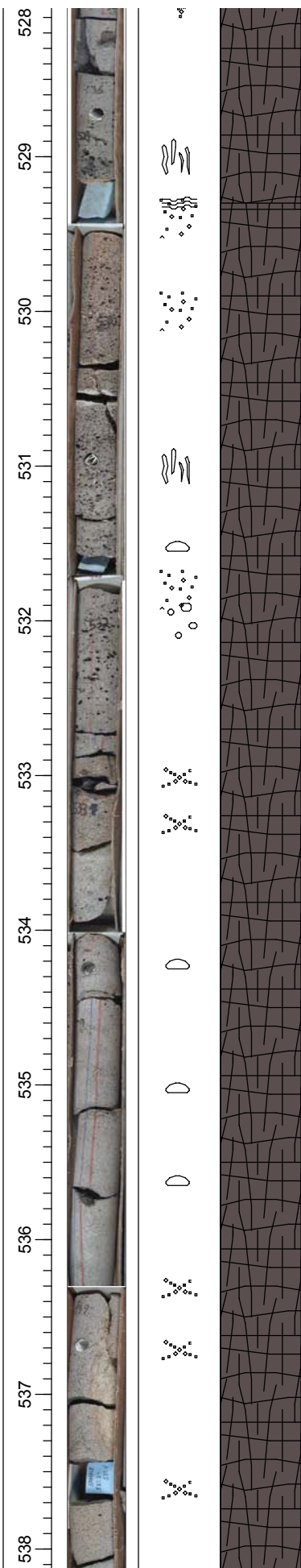
Texture: Aphanitic, diktytaxitic, vesicular basalt; vesicular from top to 523 feet, diktytaxitic to 526.6 feet, diktytaxitic with vesicle column to 529 feet, vesicular to base, pipe vesicles and mold texture at base

Composition: 30% subhedral to anhedral olivine with brown rims in black groundmass  
Magnetic

Xenoliths: None noted

Alteration: Very pale orange 10 YR 8/2 clay coats some surfaces and fills some vesicles at top, moderate reddish orange 10 Y/R 6/6 clay at base





# **BASALT:**

Color: Dark gray N3 basalt

Texture: Aphanitic, diktytaxitic, vesicular basalt; vesicular from top to 533 feet, diktytaxitic to 545 feet, vesicular to base, mold texture and possible spatter texture at base

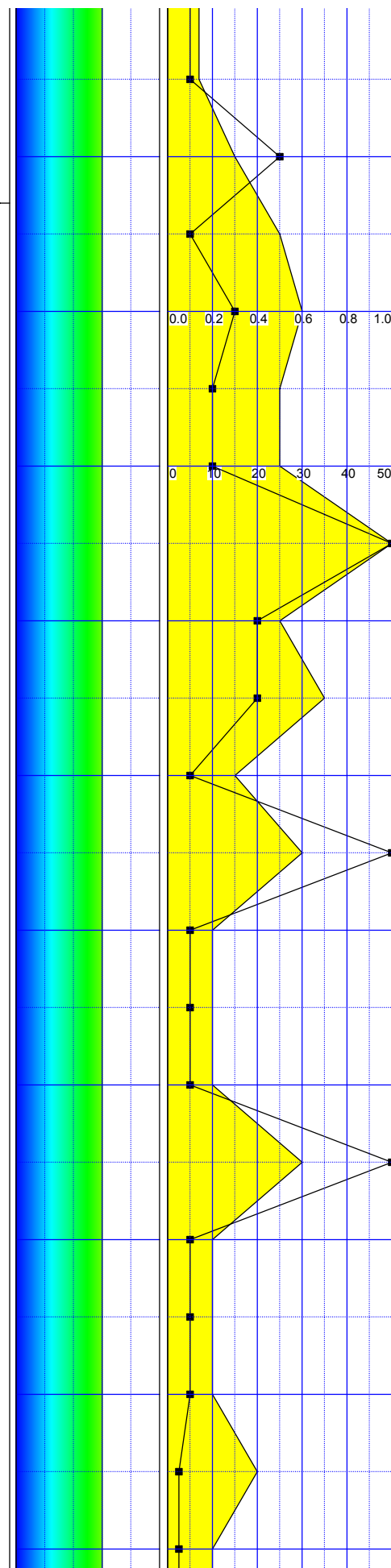
Composition: 20% 1 mm plagioclase needles, 20% subhedral to anhedral olivine with brown rims (more prevalent near top of interval) plus rare 3 to 5 mm olivine glomerocrysts in gray felted plagioclase groundmass

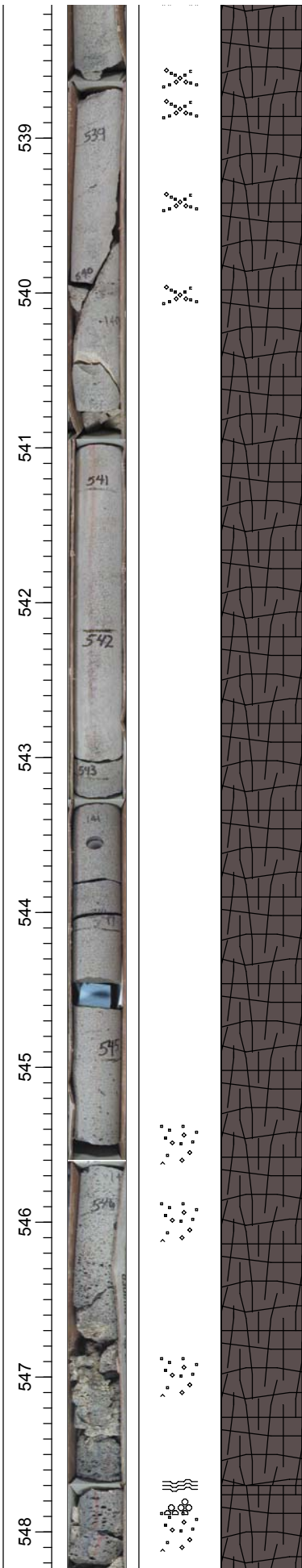
Magnetic

Xenoliths: None noted

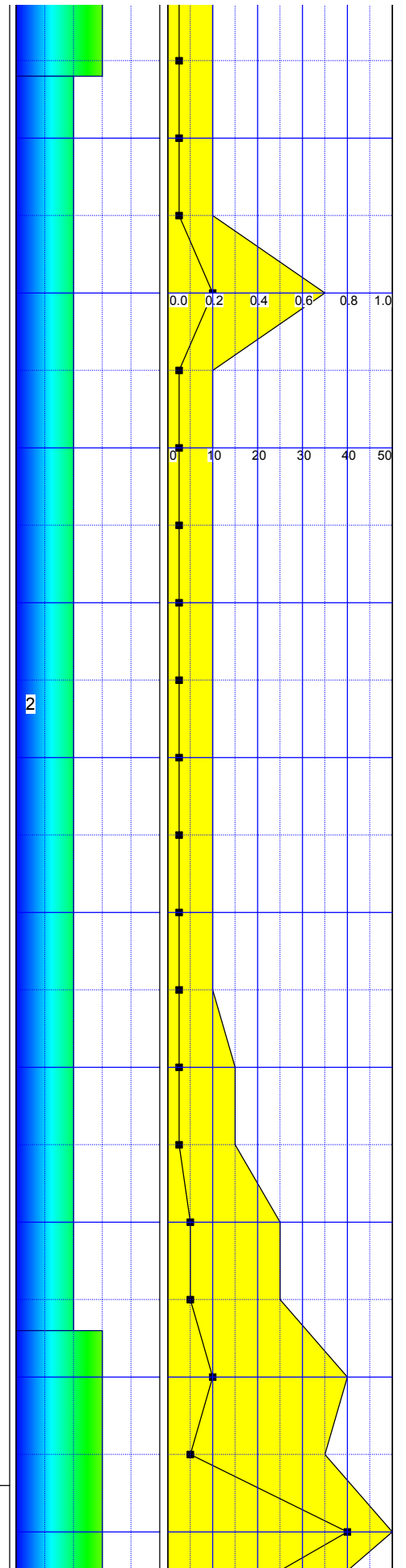
Alteration: Very pale orange 10 YR 8/2 clay coats some surfaces and fills some vesicles at top, moderate reddish orange 10 Y/R 6/6 clay coats surfaces and fills some vesicles at base

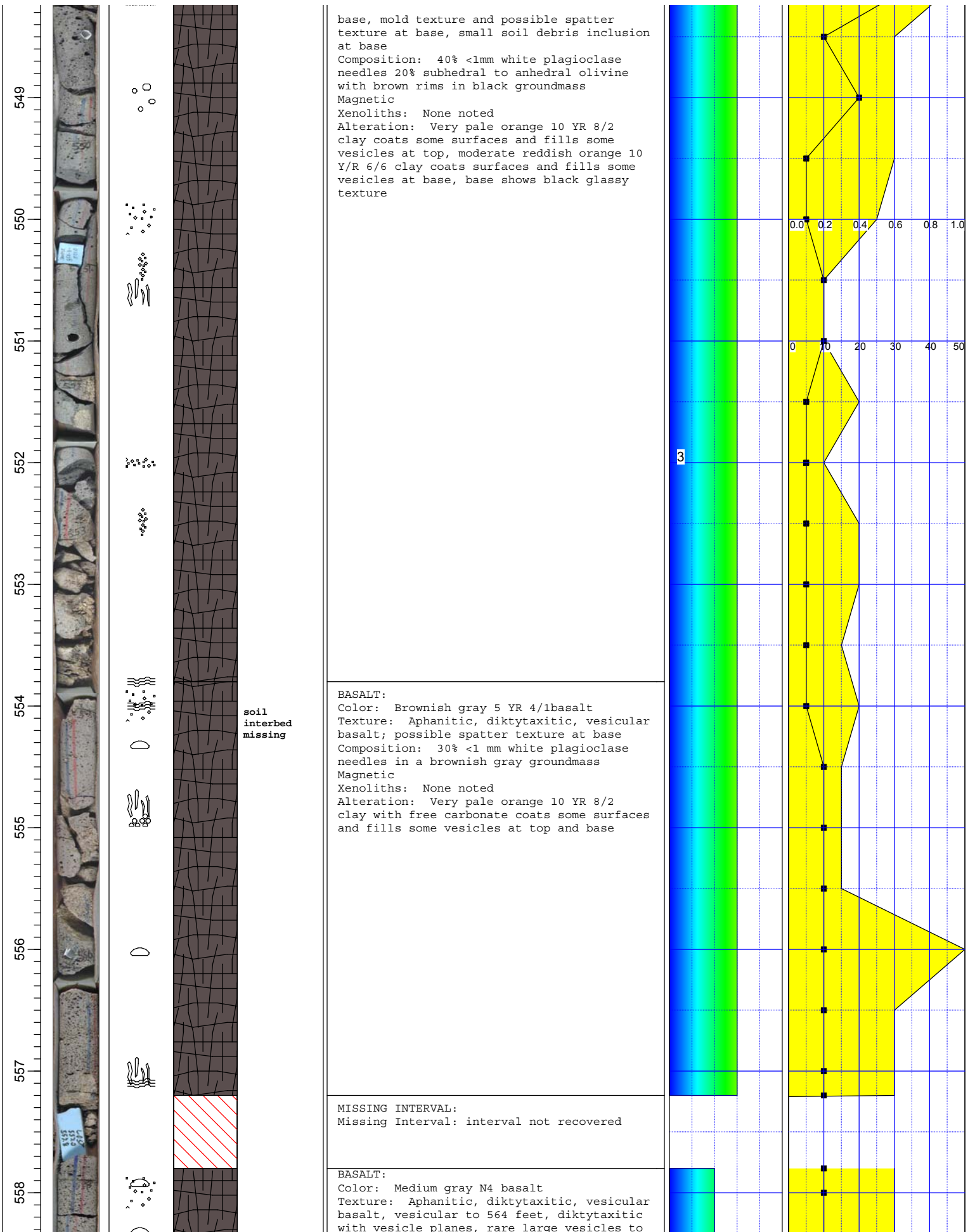
N. B. 1 cm white ash with shards and biotite debris inclusion at 530.5 feet

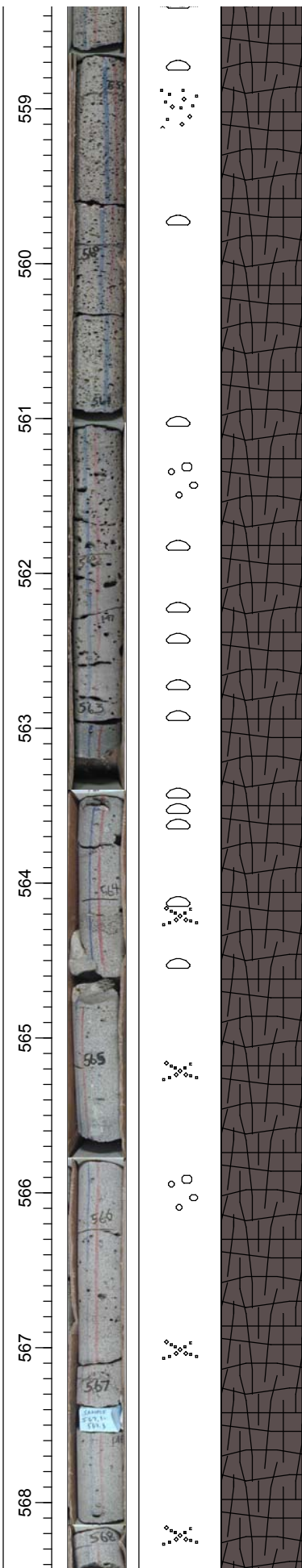




BASALT:  
 Color: Dark gray N3 basalt  
 Texture: Aphanitic, diktytaxitic, vesicular  
 basalt; vesicular from top to 551 feet,  
 diktytaxitic to 552.4 feet, vesicular to







596 feet, massive to base, well ends before base of this flow  
 Composition: 35% anhedral to subhedral phenocrysts and 3 to 10 mm glomerocrysts of green olivine in a felted plagioclase groundmass, as depth increases, olivines show red to brown alteration rims  
 Magnetic  
 Xenoliths: None noted  
 Alteration: Very pale orange 10 YR 8/2 clay with free carbonate coats some surfaces and fills some vesicles at top, clay shows less and less reaction to acid as depth increases.

