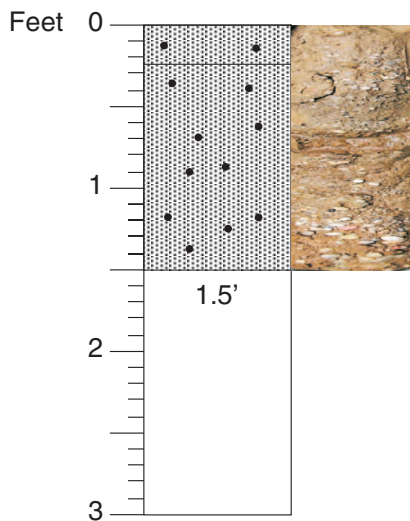


## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

1



SAND; medium to coarse, poorly sorted, well-rounded pebbles; mostly quartz pebbles, predominantly quartz in sand fraction, sand is well-rounded; yellowish brown (10YR 5/8)

SAND; coarse to very coarse, poorly sorted, pebbles to granules, 0.25-0.45 ft more pebble-dominated, pebbles are well-rounded, mostly quartz; possibly coarsening upward, pebbles near bottom of core may have been carried down; sand is mostly quartz; matrix color is olive-yellow (2.5Y 6/6)

174AX CZ

Core # 1

Start depth: 0 ft

Stop depth: 3 ft

Recovery: 1.47 ft

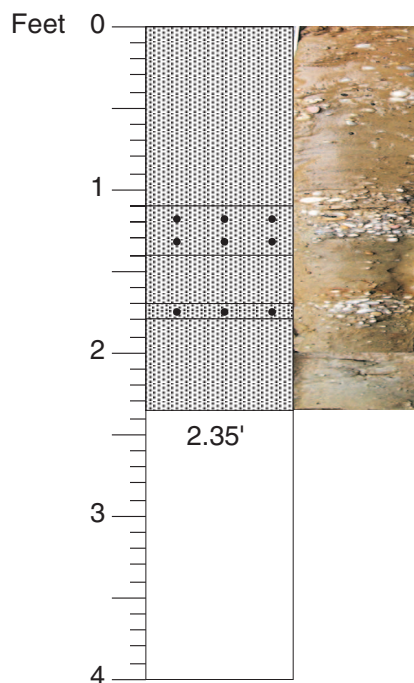
Date: 9/29/04

Described by: AS

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

2



SAND; medium, sub-rounded, sub-angular; 2-3% OHM's; pebbles on outside of core washed down from above, not in middle of core; olive-yellow sand color (2.5Y 6/6)

GRAVEL; pebbles up to 13 mm, quartz, quartzite

SAND; same as above

GRAVEL; same as above, some iron staining above gravel, some iron staining below gravel

SAND; same as above, no pebbles on outside of core

174AX CZ

Core # 2

Start depth: 3 ft

Stop depth: 7 ft

Recovery: 2.35 ft

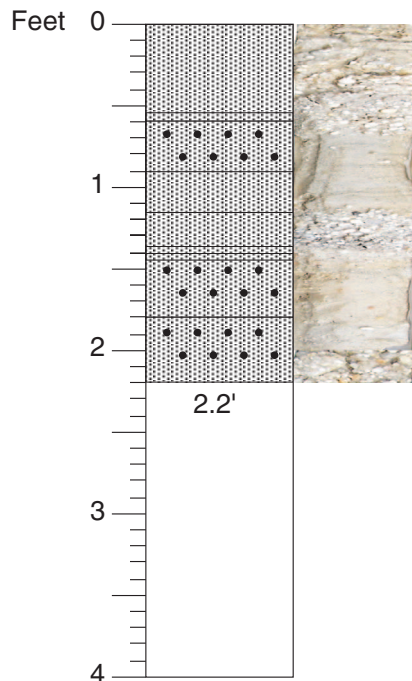
Date: 9/29/04

Described by: JVB, AS

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

3



SAND; medium grained, sub-rounded, well-sorted, quartz dominated; 2-3OHM's; rare pebbles washed down on outside of core; top gray (10 YR 6/1); bottom light yellowish brown (2.5Y 6/3)

GRAVEL; mostly quartz pebbles, rounded, sub-rounded, matrix is coarse-med sand, pebbles up to 6 mm in size; possible inclined upper contact

SAND; sub-rounded, med grained, few % OHM's; finely laminated (mm scale) with darker bands; color light yellow brown (2.5Y 6/3)

GRAVEL BED; quartz dominated; pebbles are up to 8 mm in size, mostly ~3 mm; rounded, sub-rounded; coarse sand matrix

SAND AND GRAVEL; pebbles are mostly quartz, sub-rounded, up to 9 mm coarse sand matrix with about 1% OHM's; sand matrix composes a larger %

174AX CZ

Core # 3

Start depth: 7 ft

Stop depth: 11 ft

Recovery: 2.2 ft

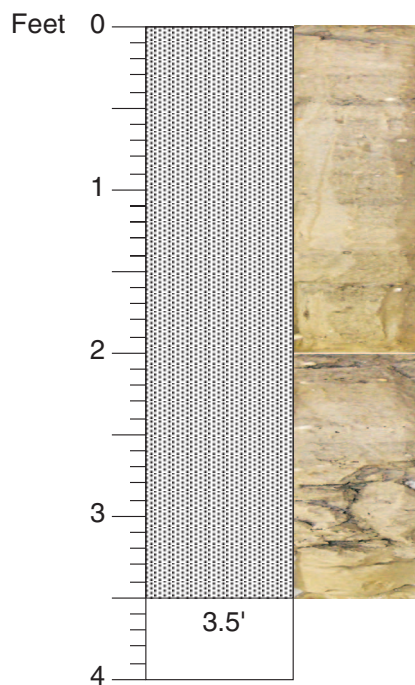
Date: 9/29/04

Described by: AS

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

4



SAND; fine-very fine, coarsening upward; mostly quartz with 3-5% OHM's; sub-angular, well-sorted, finely laminated, 1 mm-several mm thick; laminations at 0.5 ft (thin laminae, inc % of OHM's up to 10% in enriched zones), 0.6 ft (same as above), 1.2 ft (same as above), 1.5 ft (gravel mixed in with OHM-enriched zones), 2.1 ft (same as above) and 2.65 ft (same as above); some oxidation at bottom of core; light brownish gray-grayish brown (2.5Y 6/2)

174AX CZ

Core # 4

Start depth: 11 ft

Stop depth: 15 ft

Recovery: 3.5 ft

Date: 9/29/04

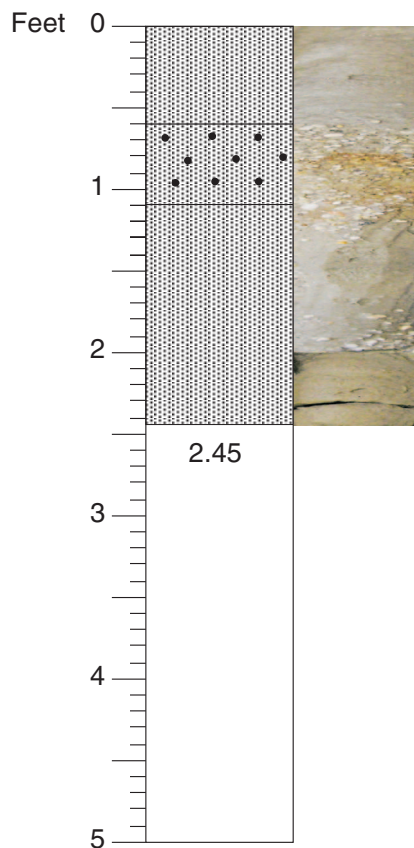
Described by: JU, AS



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

5



SAND; fine to medium grained, 5% OHM's; slightly micaceous; gray to light brownish gray (2.5Y 6/1 or 6/2)

GRAVEL; coarse sand matrix in with the gravel, 1% OHM's; gravel up to 7 mm diameter, most average 3 mm; clast-supported, sub-rounded, iron staining at 0.8 and 1.0 ft

SAND; slightly silty, fine to very fine; faint banding of OHM's with up to 10%, more micaceous down core; browning down core (2.5Y 6/2)

174AX CZ

Core # 5

Start depth: 15 ft

Stop depth: 20 ft

Recovery: 2.45 ft

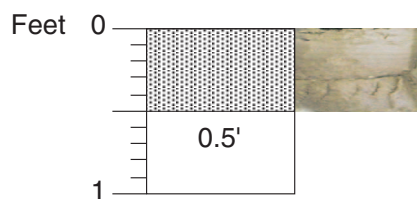
Date: 9/29/04

Described by: AS

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

6



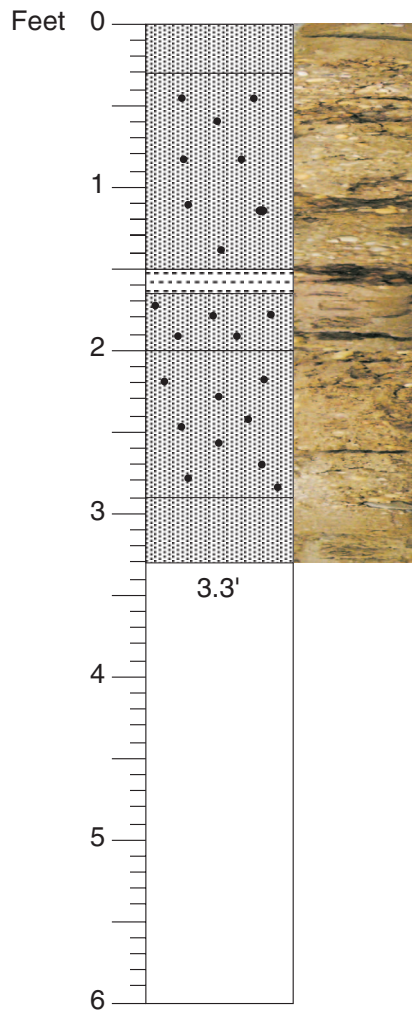
SAND; fine to very fine, silty; indistinct layers near the bottom; well-sorted; rounded to sub-rounded quartz sand; less mica than above; opaques percent down to ~3%; light yellowish brown (2.5Y 6/3)

174AX CZ  
Core # 6  
Start depth: 20 ft  
Stop depth: 21 ft  
Recovery: 0.4 ft  
Date: 9/29/04  
Described by: JVB, AS

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

7



SAND; very fine, silty; 3-5% OHM's; partly well-sorted, well-rounded, finely micaceous laminations ~1 mm thick of clay; yellow-brown (10YR 5/4)

PEBBLE/GRAVEL; pebbles up to 3 cm, mostly about 1 cm and down; mostly coarse-very coarse matrix; very poorly sorted; pebbles are mostly quart, sub-rounded; some iron staining; clay lens at 0.6-0.7 ft (some mica, dark yellowish brown [10YR 4/6]); clay rip up at 1.2 ft (very thin, dark brownish color [10YR 4/6]); yellowish brown (10YR 5/4)

CLAY; laminated, small amount of mica; yellowish brown (10YR 5/8)

GRAVEL; very poorly sorted, coarse sand matrix, 20-30% clasts up to 2.5 cm, most 5 mm diameter; less red downcore; yellowish brown (10YR 5/4)

GRAVEL BED; pebbles and granules of quartz at bottom, mostly sub-rounded

SAND; coarse to very coarse, poorly sorted with some pea gravel; trace OHM's; gray (10YR 5/3)

174AX CZ

Core # 7

Start depth: 21 ft

Stop depth: 27 ft

Recovery: 3.3 ft

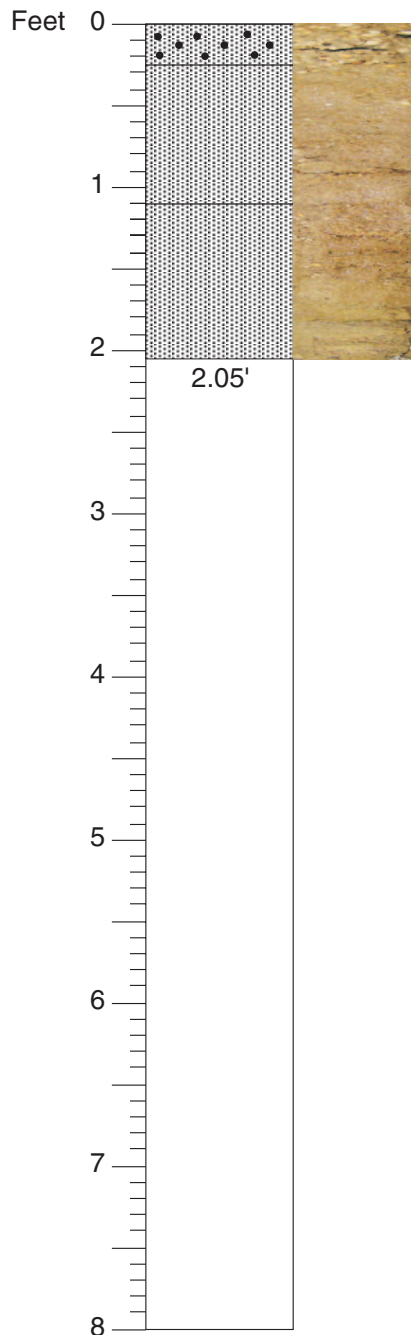
Date: 9/29/04

Described by: JU, JVB

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

8



GRAVEL; clasts up to 7 mm; rounded quartz, average 4 mm diameter; matrix is coarse quartz sand with trace opaques; (2.5Y 6/4)

SAND; coarse to very coarse sand, rare pebbles; well-sorted at top, less well-sorted and coarser going down core; larger opaques are angular, could be lignite or sulphides, larger than usually opaques; light yellowish brown (2.5Y 6/4)

SAND; medium sand; better sorted just below the gravel, less well-sorted towards the lignitic layer; small trace lignite fragments at 1.3 – 1.4 ft; slightly coarser below lignitic layer, fine layering, some opaques, some caused by iron staining, layers are very thin; color change at 1.7 ft from (2.5Y 6/4 [above]) to (2.5Y 6/3 [below])

174AX CZ

Core # 8

Start depth: 27 ft

Stop depth: 35 ft

Recovery: 2.05 ft

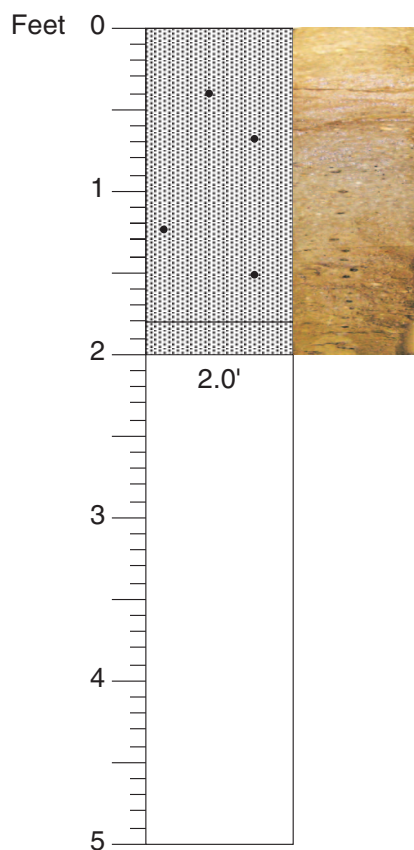
Date: 9/29/04

Described by: AS, JVB

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

9



SAND; coarse to very coarse, some pebbles and granule; poorly sorted; quartz is well-rounded; very wet and soft; pale yellow (2.5Y 7/4)

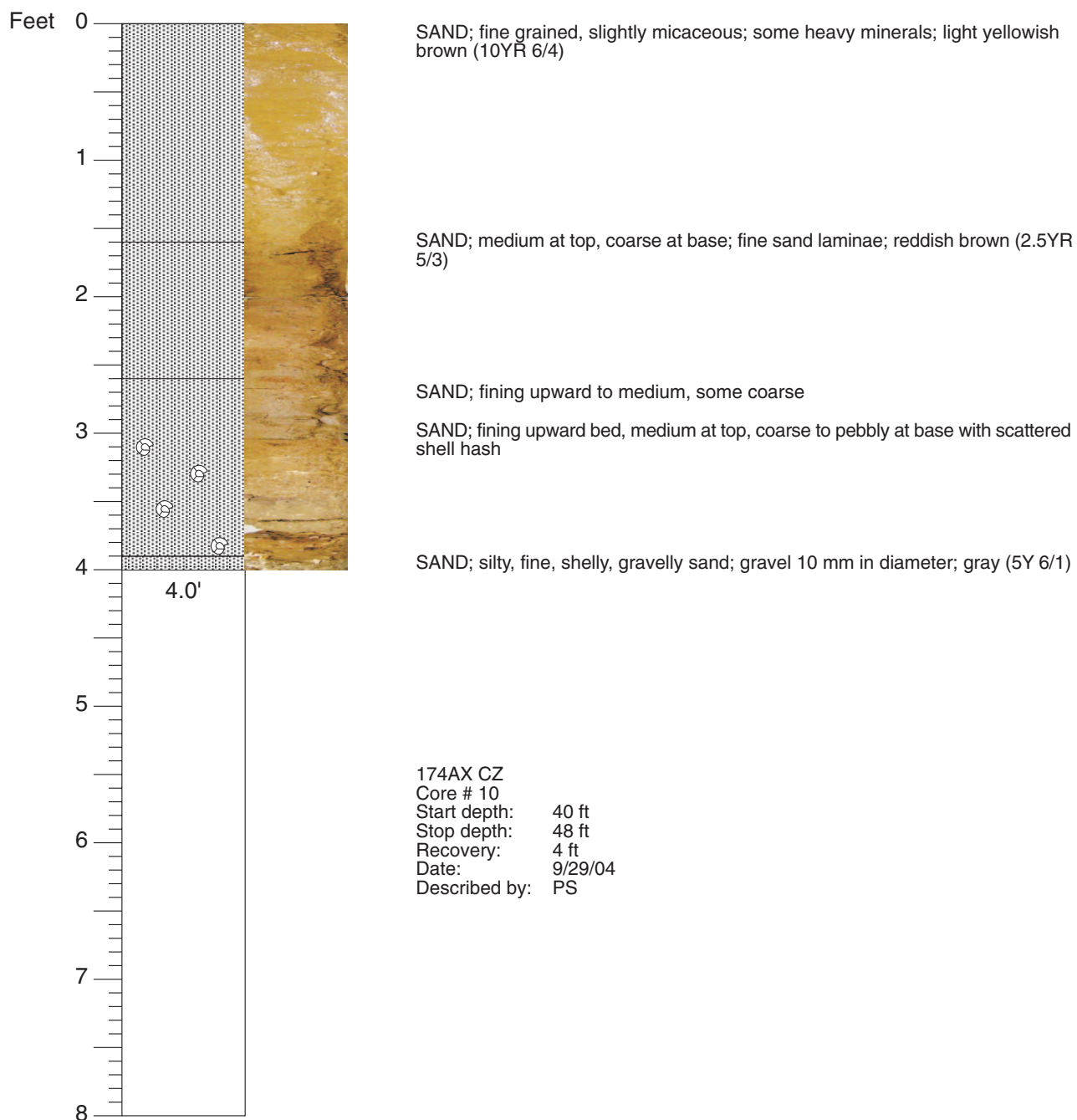
SAND; very fine, silty; ~2% OHM's; yellowish brown (10YR 5/4)

174AX CZ  
Core # 9  
Start depth: 35 ft  
Stop depth: 40 ft  
Recovery: 2.0 ft  
Date: 9/29/04  
Described by: JVB

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

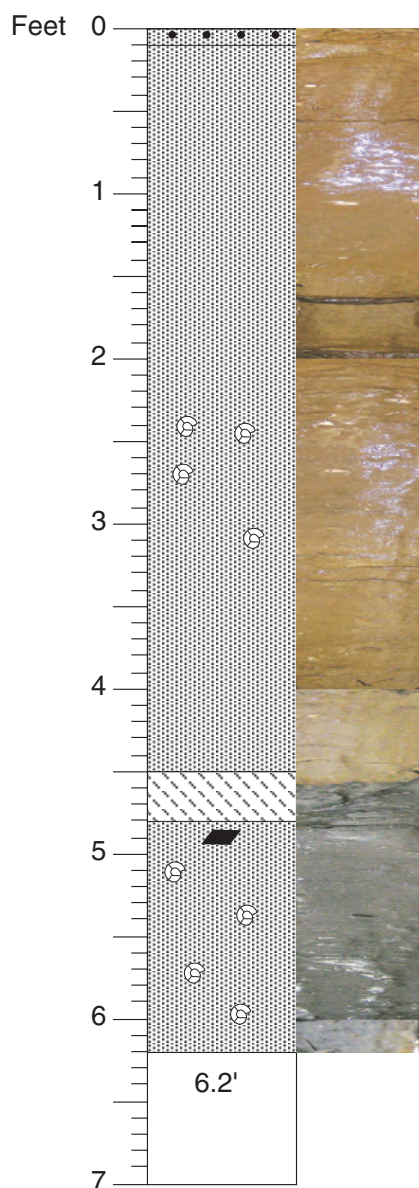
10



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

11



CONTACT; bottom of last run; pebbly med to coarse sand with shells

SAND; micaceous, 3% opaques, heavies might be laminated fine to medium; fine laminae; some shells, shell fragments; brown (10YR 5/3)

CONTACT

SILT; clayey; cross laminae; greenish gray (5GY 5/1)

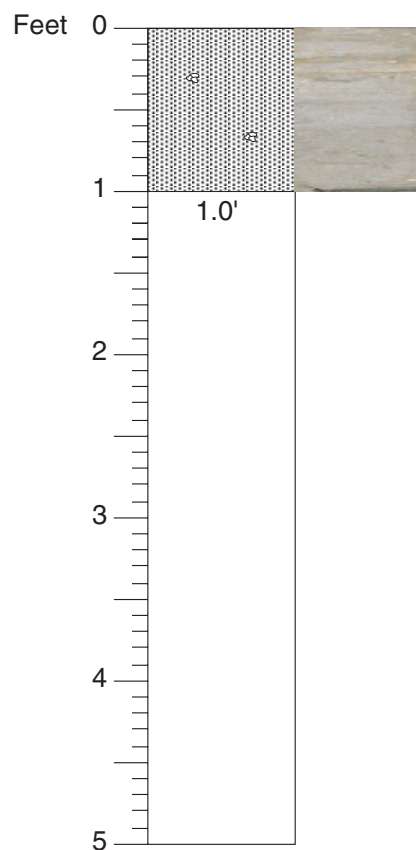
SAND; very fine to fine; with wood; slightly micaceous, shell fragments

174AX CZ  
Core # 11  
Start depth: 48 ft  
Stop depth: 55 ft  
Recovery: 6.2 ft  
Date: 9/30/04  
Described by: PS, DM, AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

12



SAND; medium, some fine; sand size wood, shell fragments, trace mica; greenish gray (5GY 5/1)

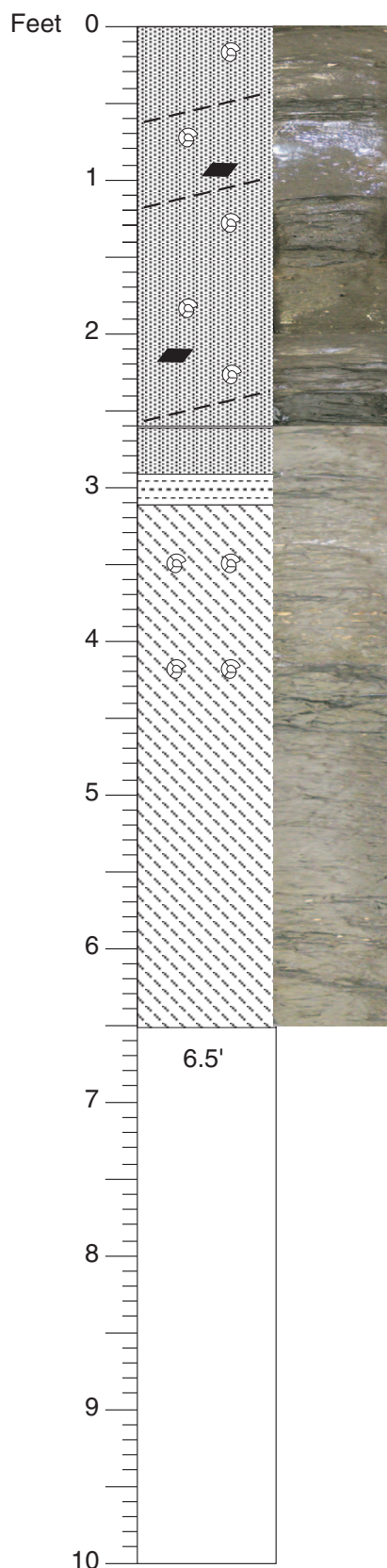
174AX CZ  
Core # 12  
Start depth: 55 ft  
Stop depth: 60 ft  
Recovery: 1.0 ft  
Date: 9/30/04  
Described by: PS, DM, AP



# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

13



SAND; fine to medium; wood fragments throughout with cross laminated muds; some shells are whole; greenish gray (5BG 5/1)

SAND; dark greenish gray (5BG 4/1)

CLAY; micaceous, wood fragments, some silt; very soft; interbeds of silt with very fine sand

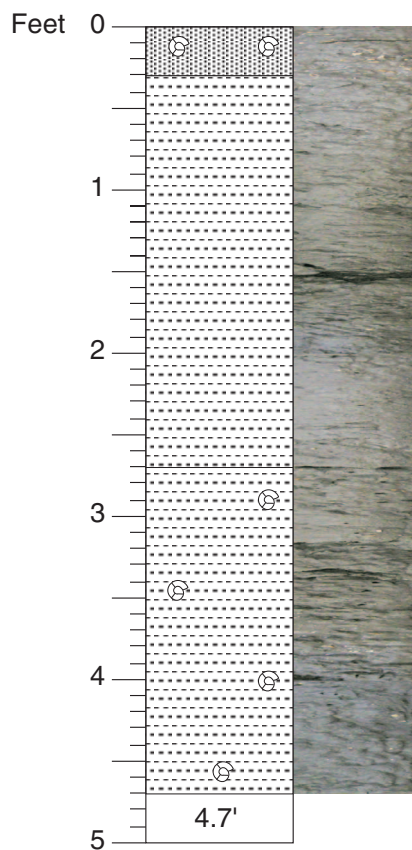
SILT; with interbedded laminae of sand and clay

174AX CZ  
Core # 13  
Start depth: 60 ft  
Stop depth: 70 ft  
Recovery: 6.65 ft  
Date: 9/30/04  
Described by: PS, DM, AP?

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

14



SAND; very fine with shells

CLAY; silty, maybe laminated, slightly micaceous; gets siltier downcore

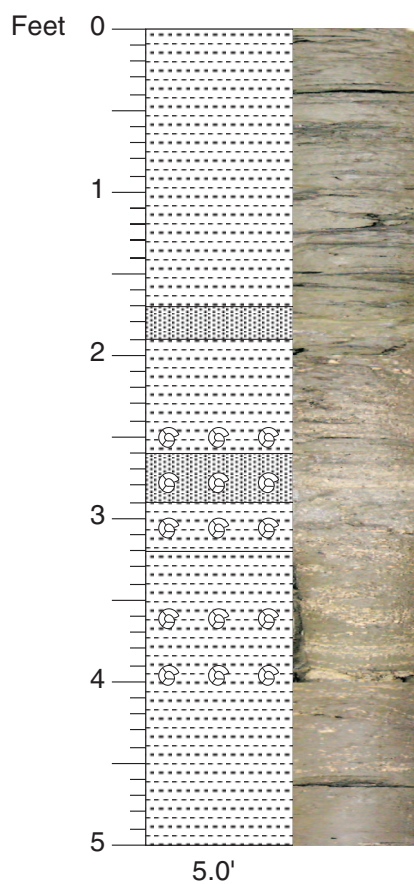
CLAY; silty, very fine sand and very fine sandy silt with shells; dark greenish gray (5BG 4/1)

174AX CZ  
Core # 14  
Start depth: 70 ft  
Stop depth: 75 ft  
Recovery: 4.7 ft  
Date: 9/30/04  
Described by: PS, DM, AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

15



CLAY; fine to silt sized; laminated clay and silt and occasional interbedded sand

SAND; fine to medium; trace mica; some dark grains; shells and shell fragments at 2.4-2.5 ft

SAND; fine to medium, trace mica, some dark grains

CLAY; with dark grains

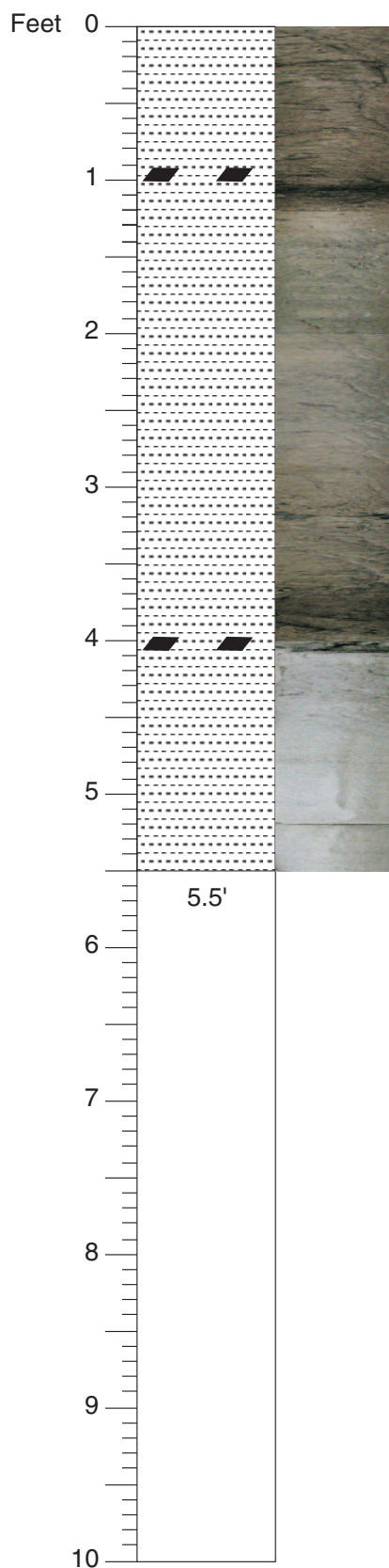
CLAY; massive; shells at 3.5 ft and 3.9 ft

174AX CZ  
Core # 15  
Start depth: 75 ft  
Stop depth: 80 ft  
Recovery: 5.0 ft  
Date: 9/30/04  
Described by: AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

16



CLAY; silty; laminated; laminated lignite layer at ~1 ft; darker lignite layer at 4 ft; dark greenish gray (10GY 4/1)

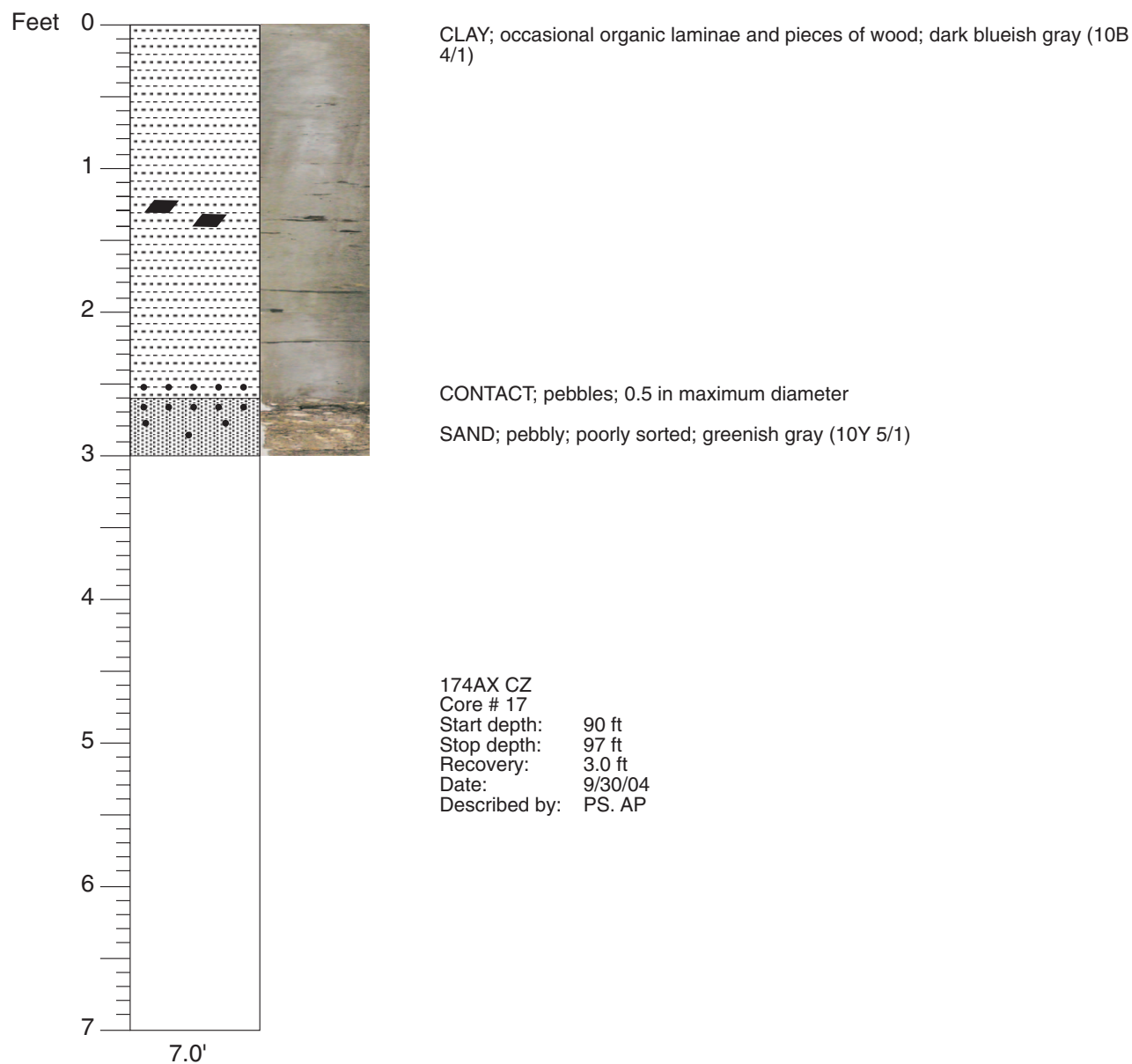
CLAY; massive, blue

174AX CZ  
Core # 16  
Start depth: 80 ft  
Stop depth: 90 ft  
Recovery: 5.5 ft  
Date: 9/30/04  
Described by: PS, DM, AP?

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

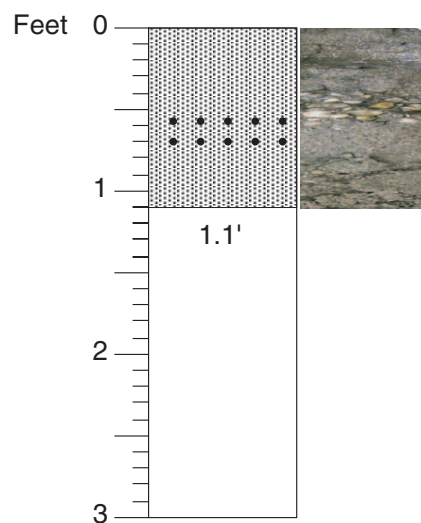
17



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

18



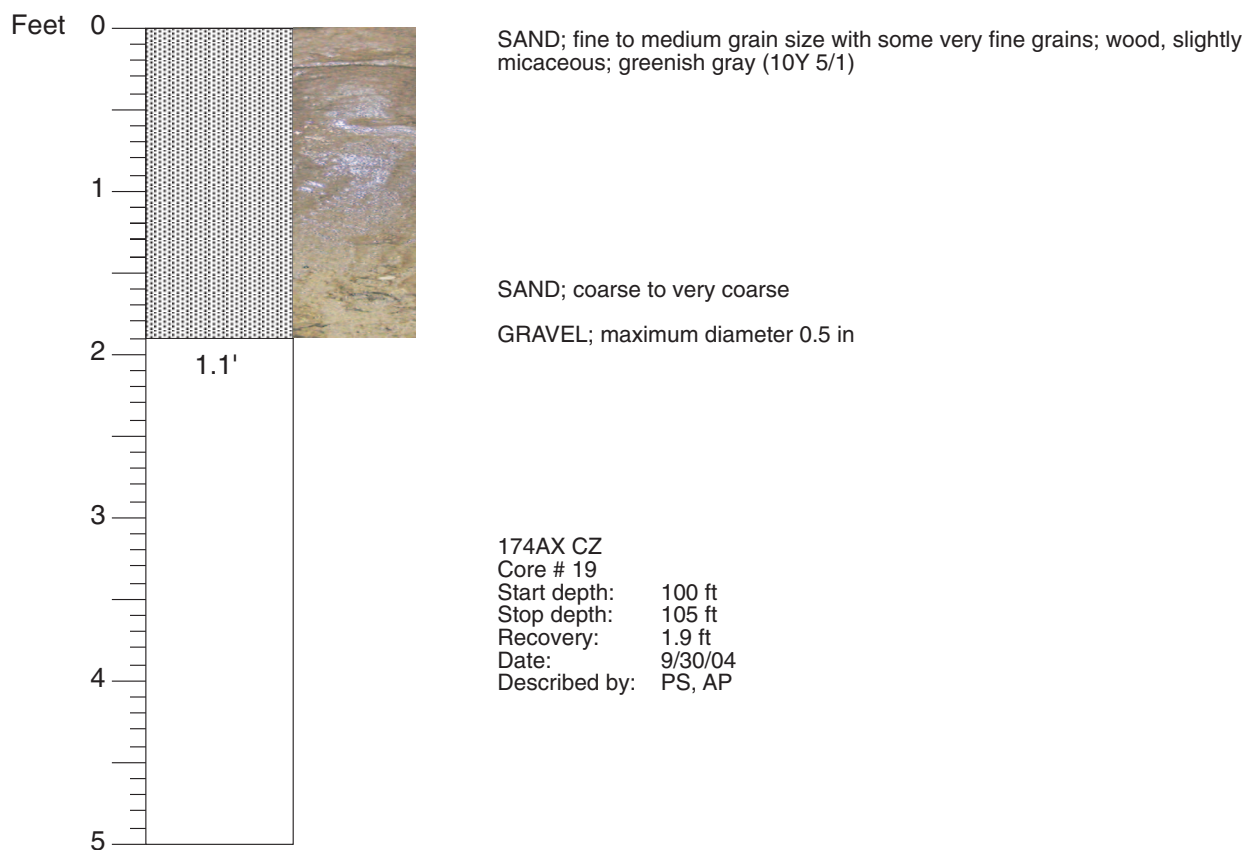
SAND; coarse to very coarse with sand-sized lignite; gravel with clasts to 2 cm; greenish gray (10Y 5/1)

174AX CZ  
Core # 18  
Start depth: 97 ft  
Stop depth: 100 ft  
Recovery: 1.1 ft  
Date: 9/30/04  
Described by: PS, AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

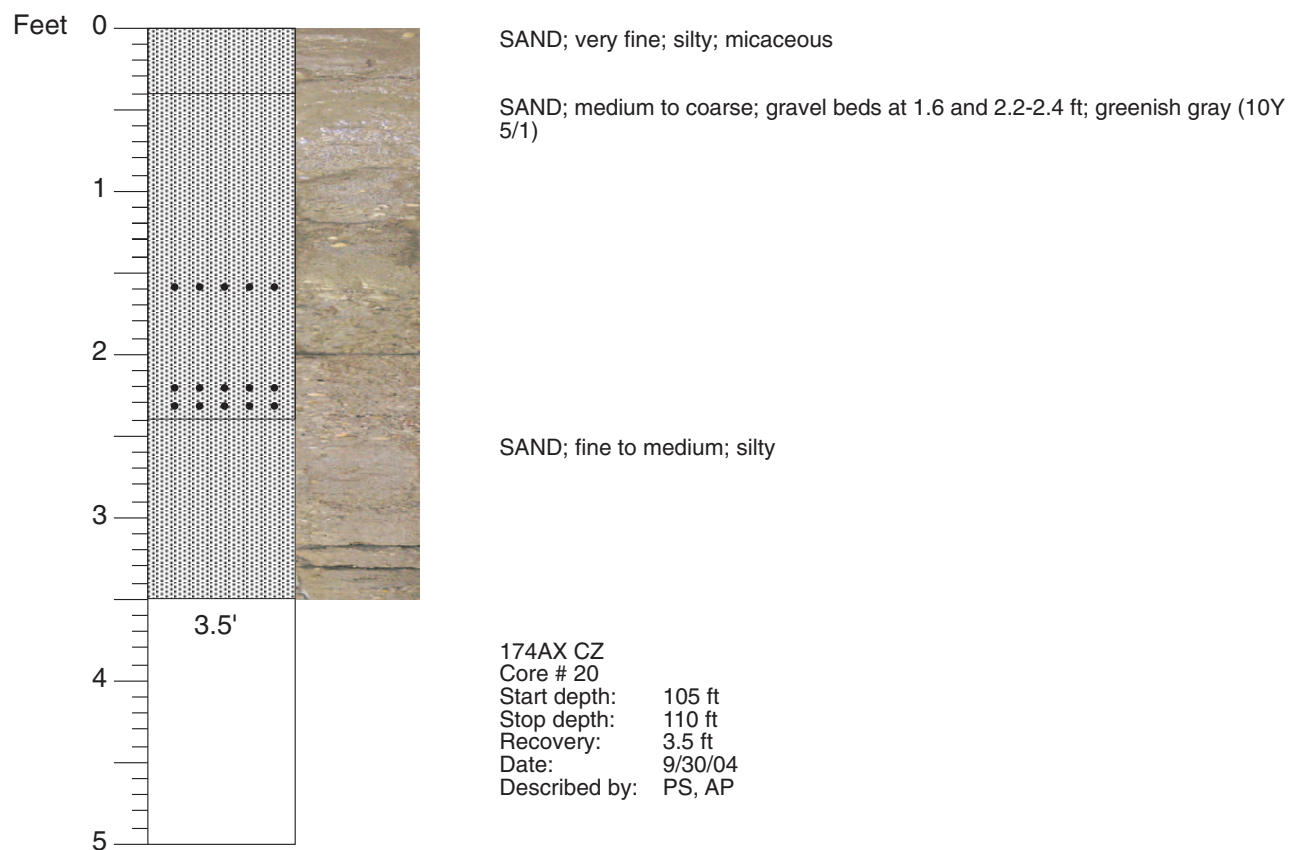
19



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

20

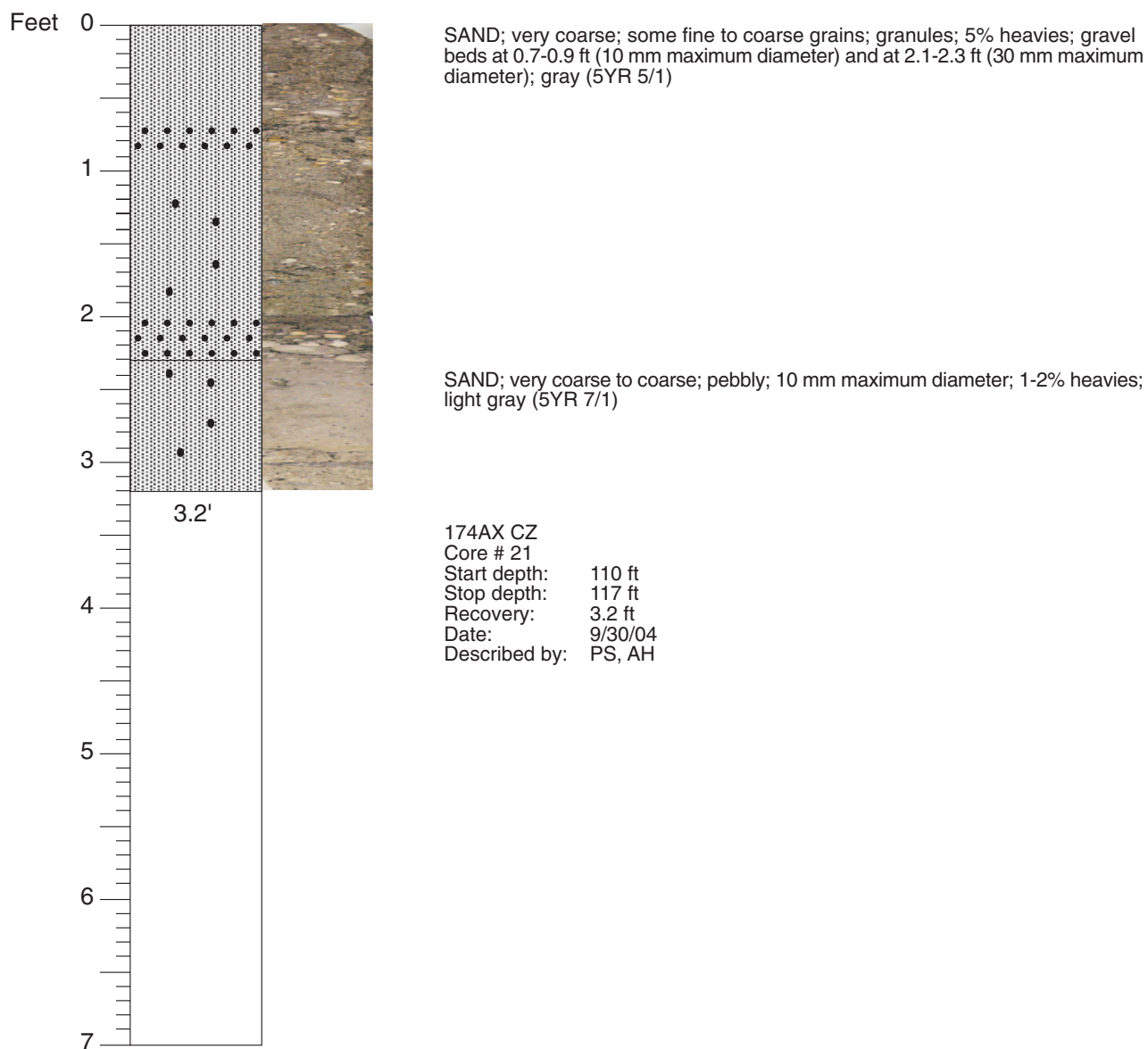




## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

21

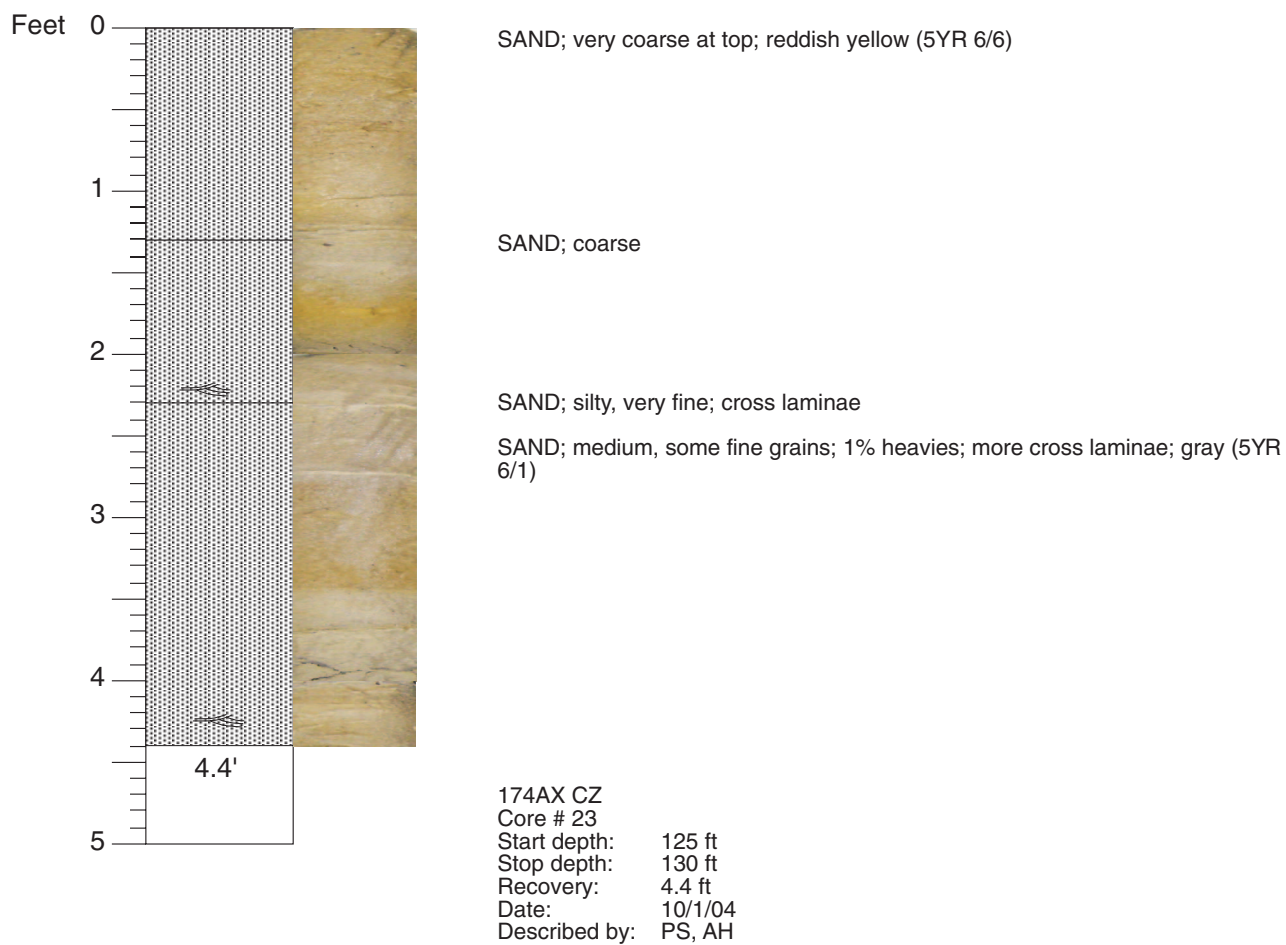


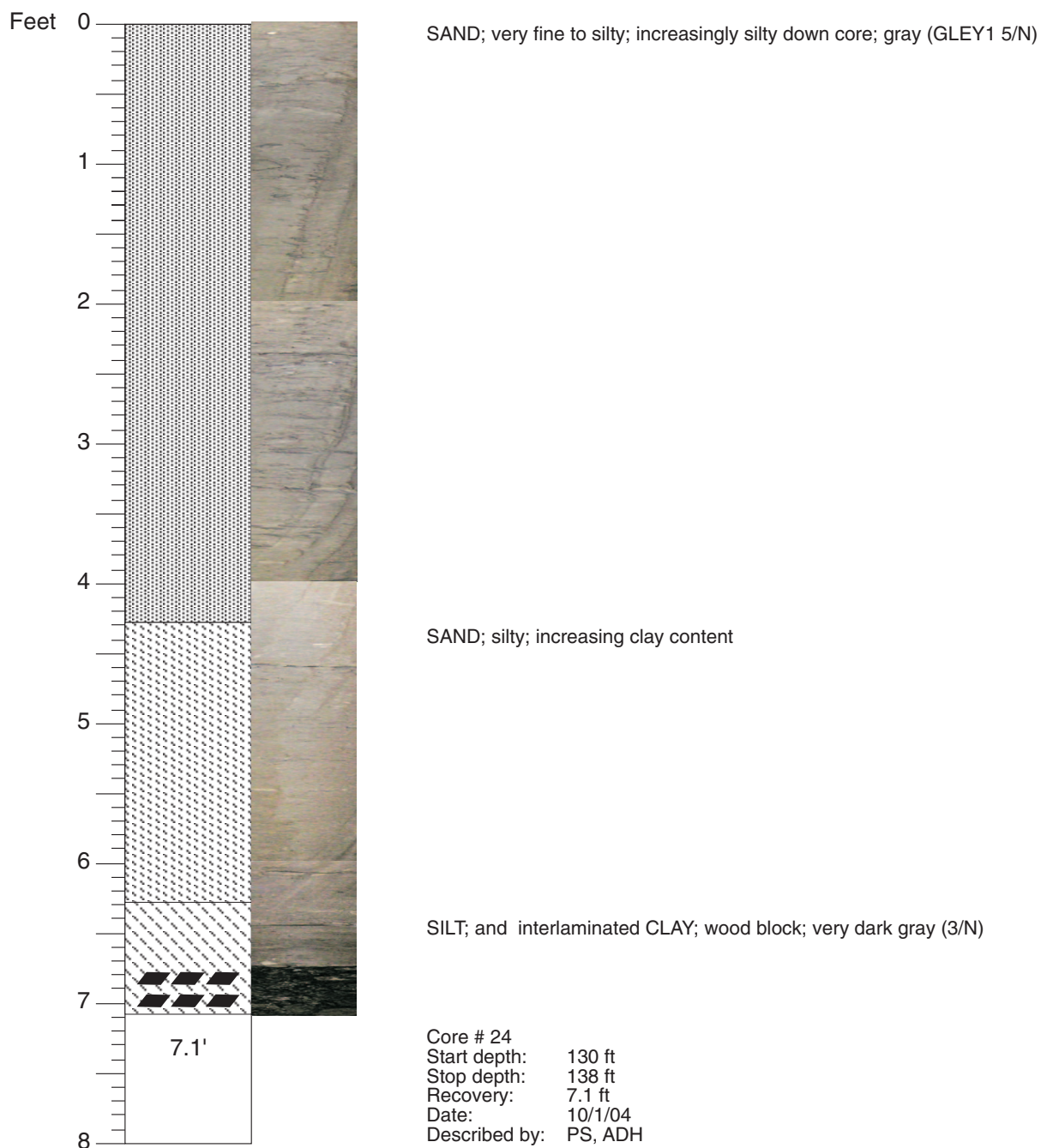
Core 22 (117-125 ft) NO RECOVERY

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

22

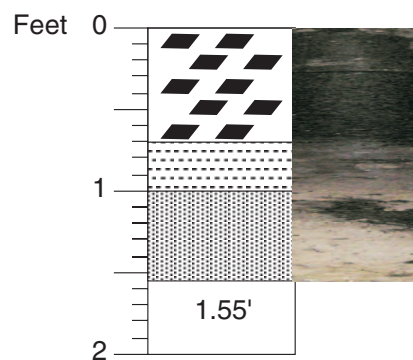




## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

24



WOOD; block

CLAY; silty; with interbedded wood; very dark gray (GLEY1-3/N)

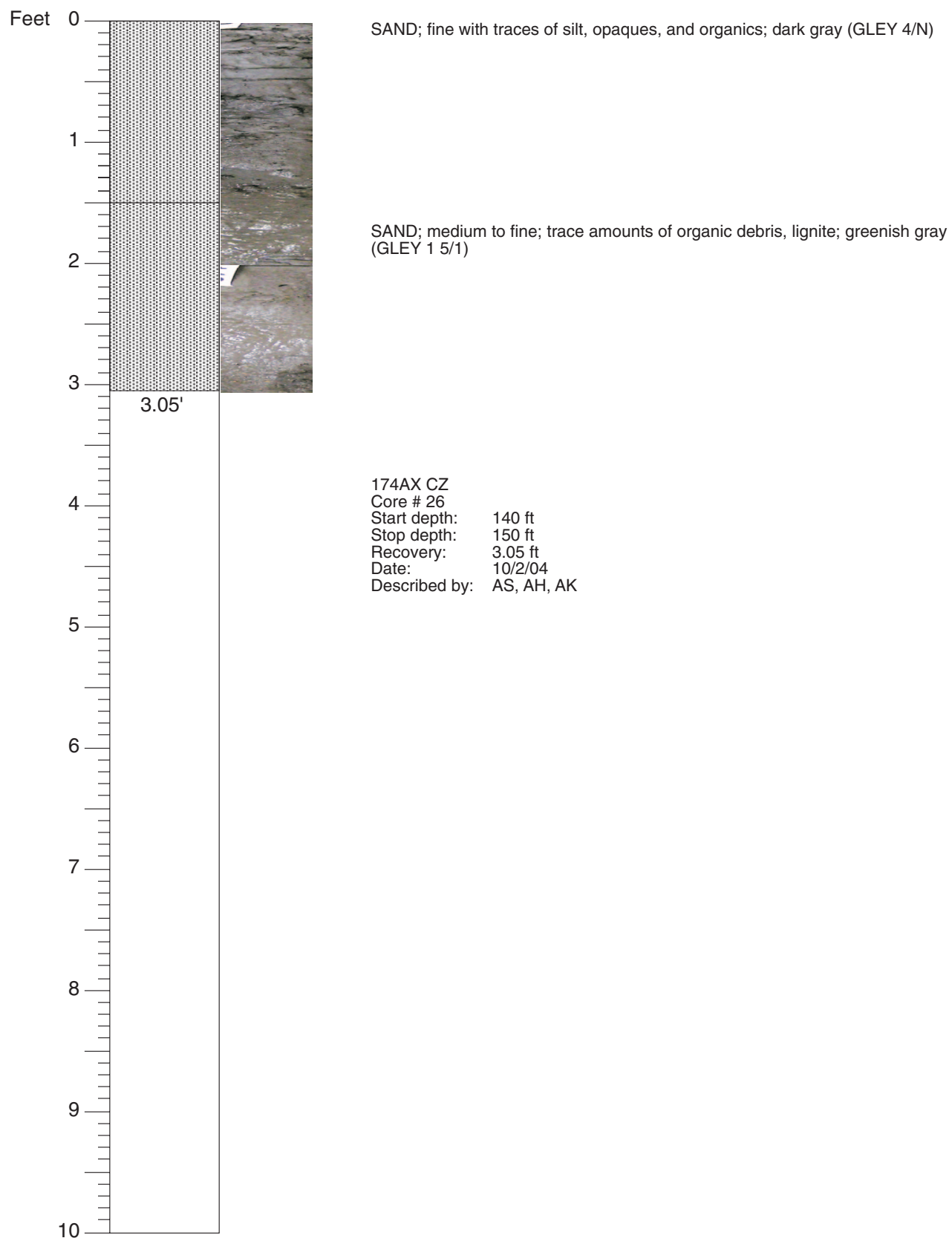
SAND; fine; silty; large wood at 1.1-1.2 ft, small wood pieces throughout; greenish gray (GLEY1-5/10Y)

174AX CZ  
Core # 25  
Start depth: 138 ft  
Stop depth: 140ft  
Recovery: 1.55 ft  
Date: 10/2/04  
Described by: AS, AH, AK

## CORE DESCRIPTIONS

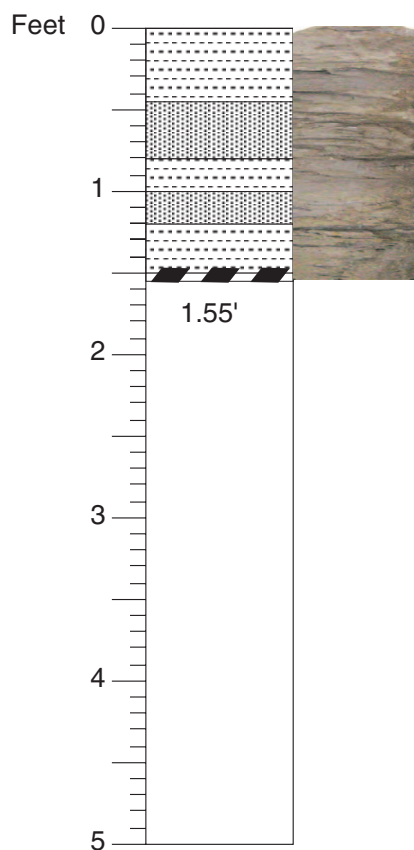
### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

25



**CORE DESCRIPTIONS**  
**VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE**

26



CLAY; sandy; very dark gray (GLEY 1 3/N)

SAND; silty to fine grained; greenish dark gray (GLEY 1 4/N)

CLAY; sandy

SAND; clayey

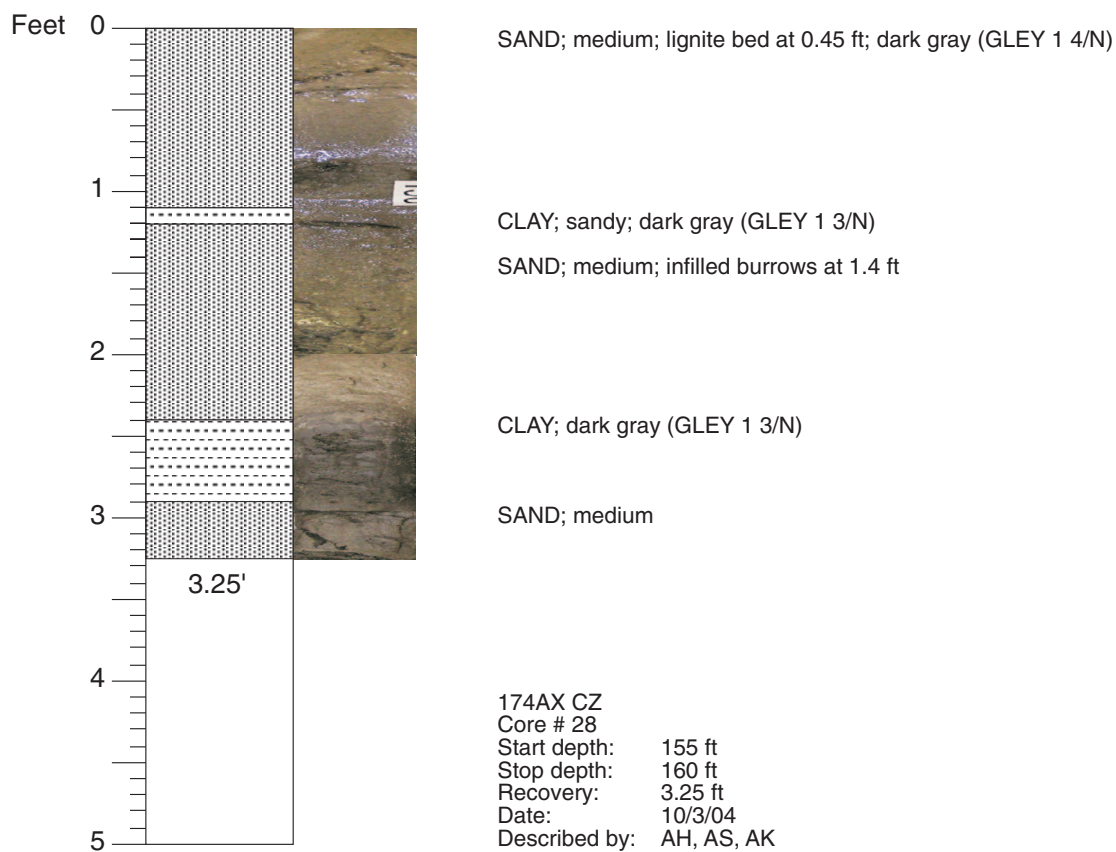
CLAY; sandy; 0.02 ft thick, condensed lignite/organic layer at the bottom

174AX CZ  
 Core # 27  
 Start depth: 150 ft  
 Stop depth: 155 ft  
 Recovery: 1.55 ft  
 Date: 10/2/04  
 Described by: AH, AS, AAK

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

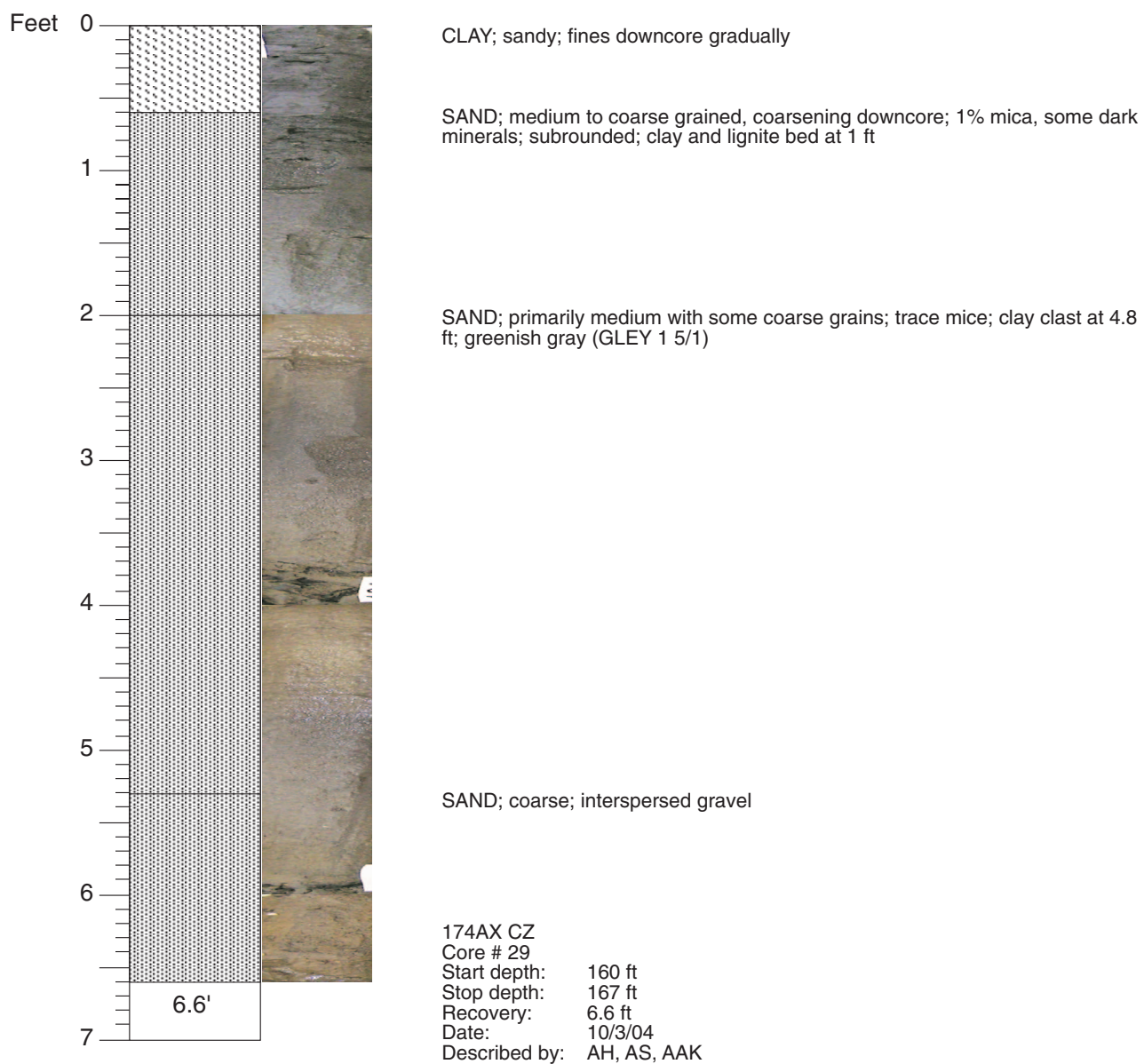
27



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

28

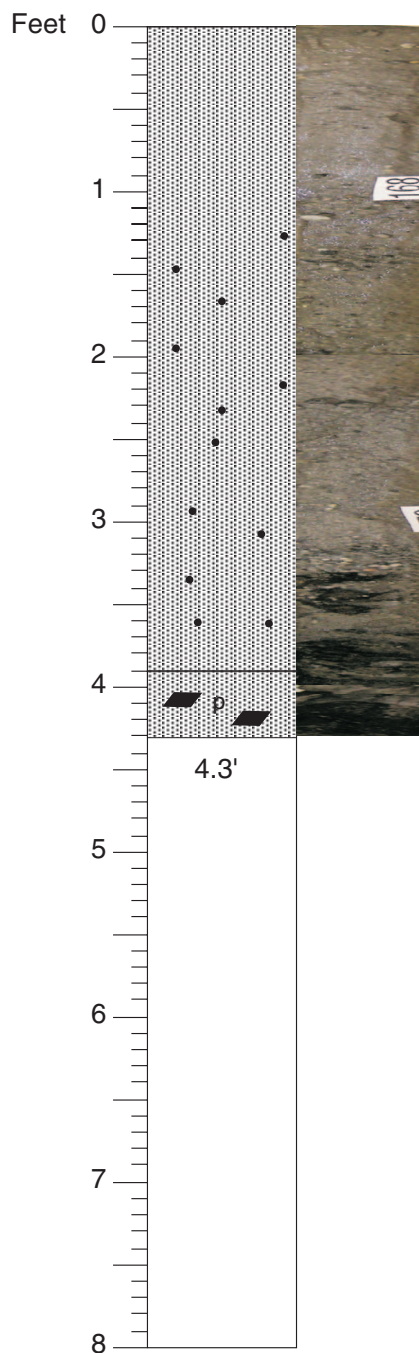




# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

29



SAND; coarse with coarse gravel; gravel beds at 1.15 ft (sub-angular, maximum grainsize is 12 mm) and 1.45 ft (sub-angular, maximum grain size is 13 mm)

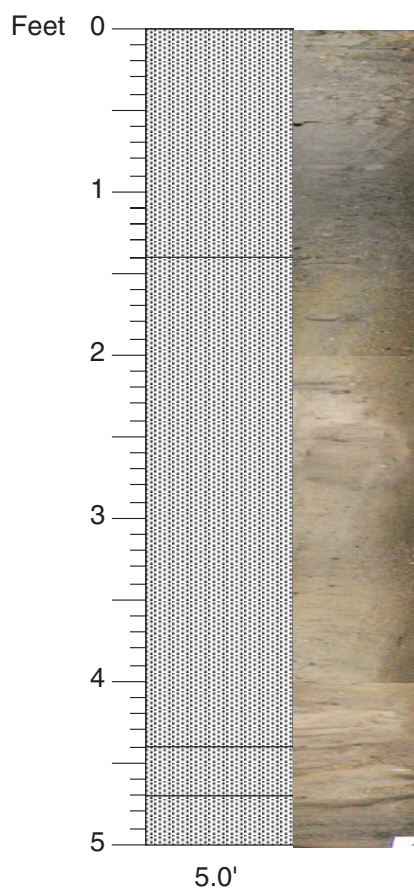
SAND; very coarse; coarse chert pebble 12 mm in diameter; gravel bed at 3.1-3.25 ft; wood and lignite in coarse and medium sand with trace silt; pyrite layer at 3.65 ft; heavy wood and lignite zone with associated pyrite at base; dark gray (GLEY 1 4/N)

174AX CZ  
Core # 30  
Start depth: 167 ft  
Stop depth: 175 ft  
Recovery: 4.3 ft  
Date: 10/3/04  
Described by: AH, AS, AAK

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

30



SAND; clayey with interspersed pebbles less than 4 mm in diameter; sparse lignite; very dark gray (GLEY 1 3/N)

SAND; fining downward, coarse to medium grained at the top, fine to very fine grained at the bottom; 2% opaques, 1% mica; gray (GLEY 1 5/N)

SAND; fine to medium grained; contains inclined clay lenses (cross-bedding?)

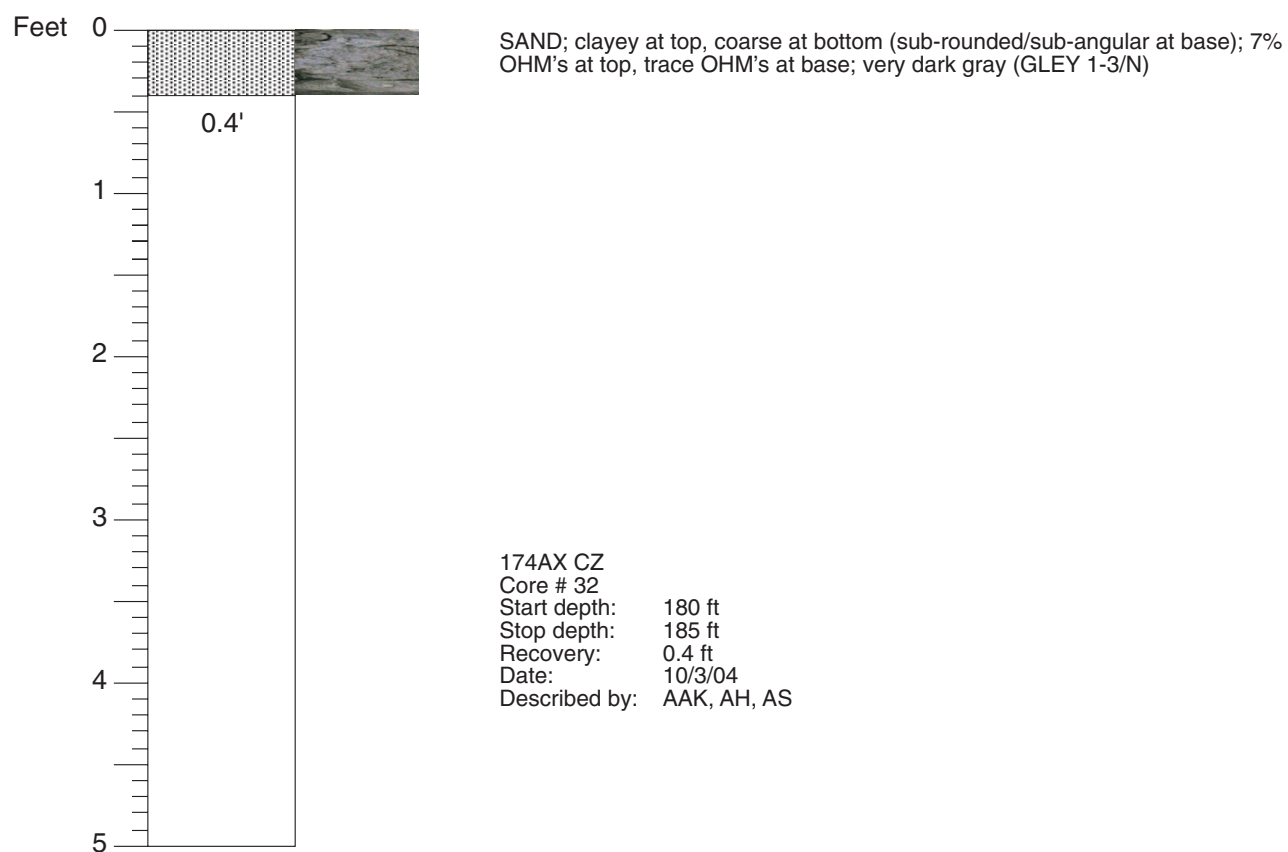
SAND; medium to coarse grained; very dark gray (GLEY 1 4/N)

174AX CZ  
Core # 31  
Start depth: 175 ft  
Stop depth: 180 ft  
Recovery: 5.0 ft  
Date: 10/3/04  
Described by: AH, AS, AAK

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

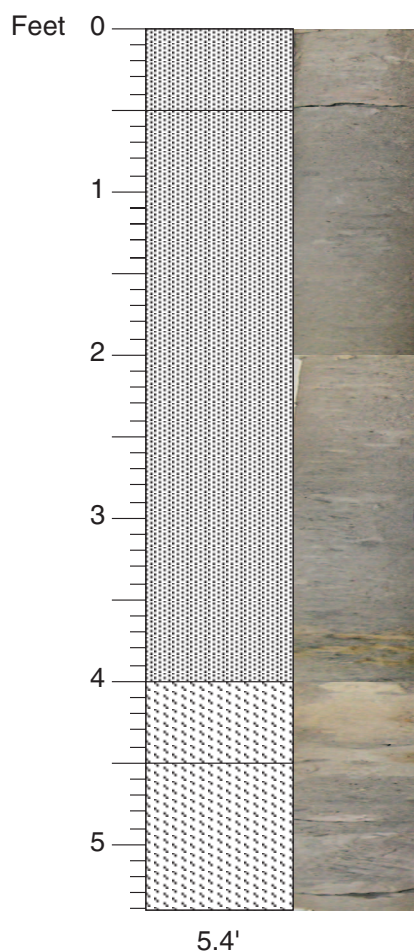
31



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

32



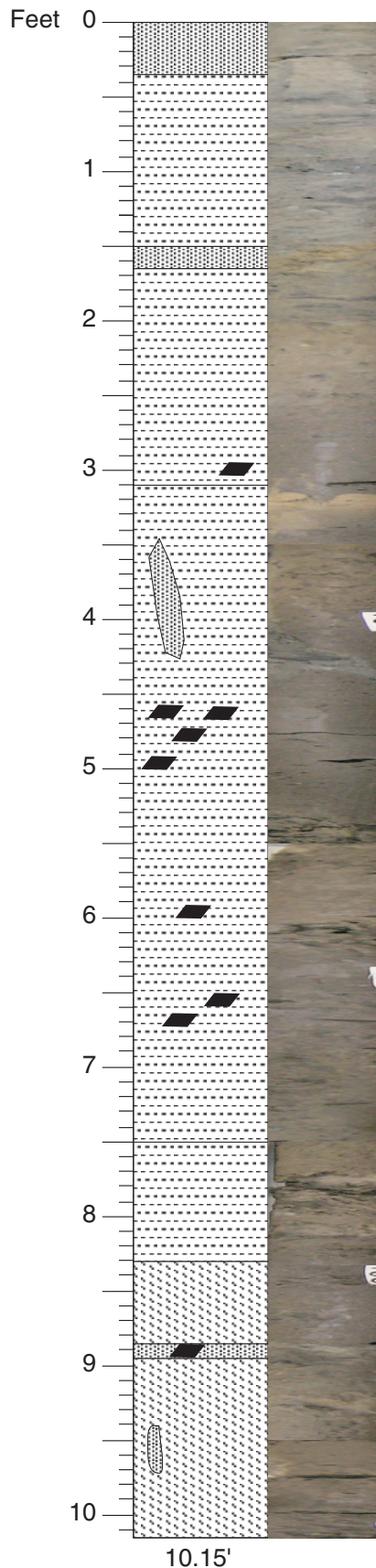
SAND; very clayey, sand is medium coarse; clay lens at 0.4 ft; greenish gray (GLEY 1 5/1)

SAND; coarse to subangular grains; clayey with multiple clay interbeds and lenses; fines down section; iron oxides in infilled burrows, scours?; multiple thin clay interbeds; light greenish gray (GLEY 1 7/1)

CLAY; sandy and silty; 1% mica; lighter in color than above

CLAY; sandy (sand is coarse to very coarse)

174AX CZ  
Core # 33  
Start depth: 185 ft  
Stop depth: 190 ft  
Recovery: 5.4 ft  
Date: 10/3/04  
Described by: AH, AS, AAK



SAND; clayey

CLAY; micaceous, silty; interbedded with clayey sand; trace lignite

SAND; silty; medium grained; indurated; light yellowish brown (2.5Y 6/3)

CLAY; micaceous

CLAY; soft sediment deformation (ball and pillow?); micaceous, lignitic; major burrow filled with clay and medium sand; lignite-rich zone at 4.6-5.2 ft; slightly sandier towards base; light colored, pale yellow at the top (5Y 7/3), different color at base: greenish gray (GLEY 1 10Y 5/1)

174AX CZ  
 Core # 34  
 Start depth: 190 ft  
 Stop depth: 200 ft  
 Recovery: 10.15 ft  
 Date: 10/3/04  
 Described by: AS/AH/AK

CLAY; some mica, lignite; (GLEY 1 5/10Y)

CLAY; fine, sandy; clay and medium sand interbeds

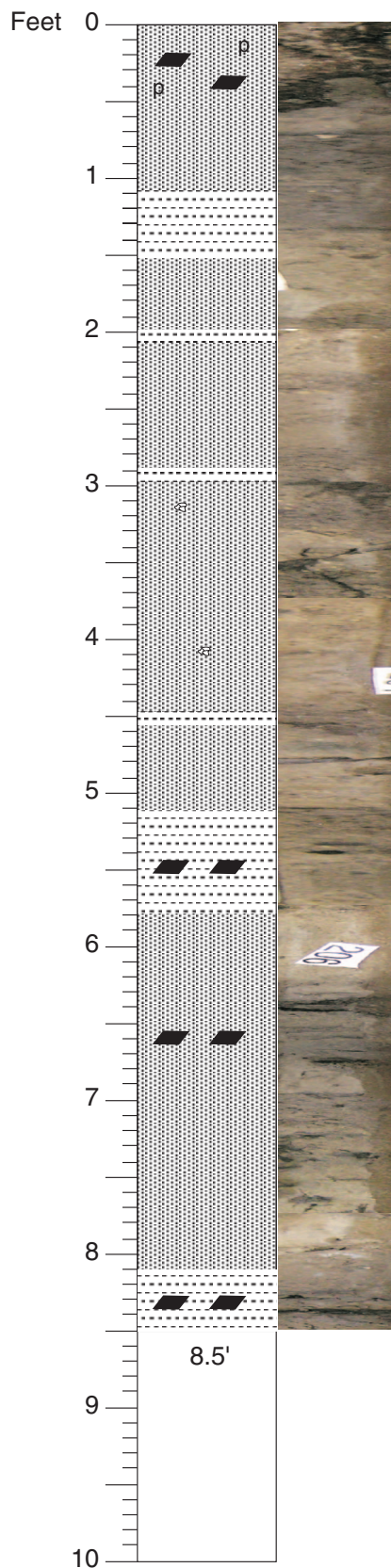
SAND; medium grained bed

CLAY; fine, sandy grained; burrow at 9.6 ft

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

34



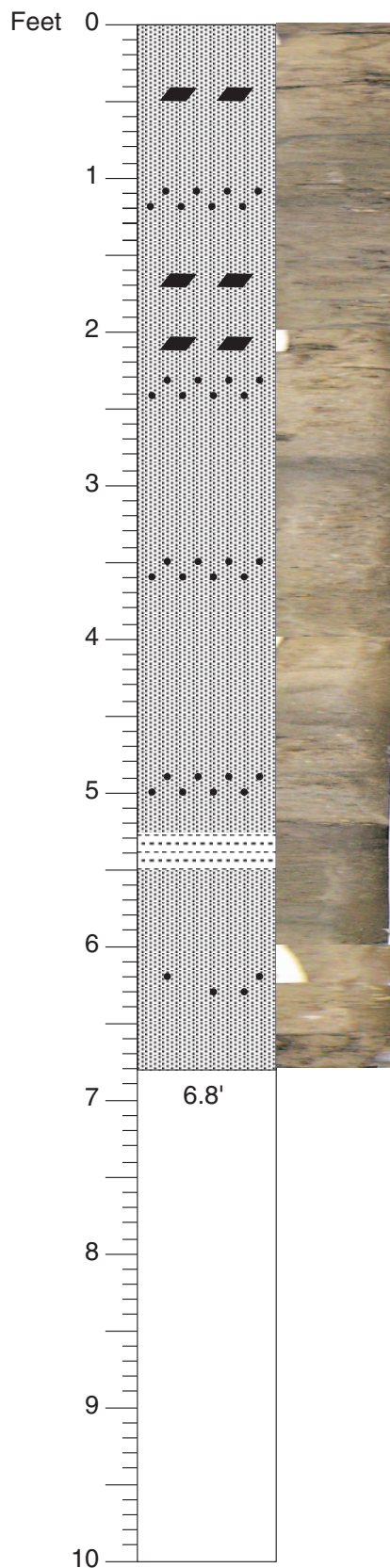
SAND; medium to coarse-grained with CLAY interbeds; lignite and pyrite fragments (coarse pyrite up to 10 mm max diameter); trace clay; 2% mica; clay clasts at 2 ft; pebbles (maximum diameter ~3 mm) at 2.5 ft; very micaceous clayey sand bed at 2.9 ft shell fragments at 3.3 ft; lignite bed at 5.4 ft; clay interbed at 7.0-7.3 ft; clay with lignite at base; GLEY 1 7/N

174AX CZ  
Core # 35  
Start depth: 200 ft  
Stop depth: 210 ft  
Recovery: 8.5 ft  
Date: 10/3/04  
Described by: AS, AH, AK

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

35



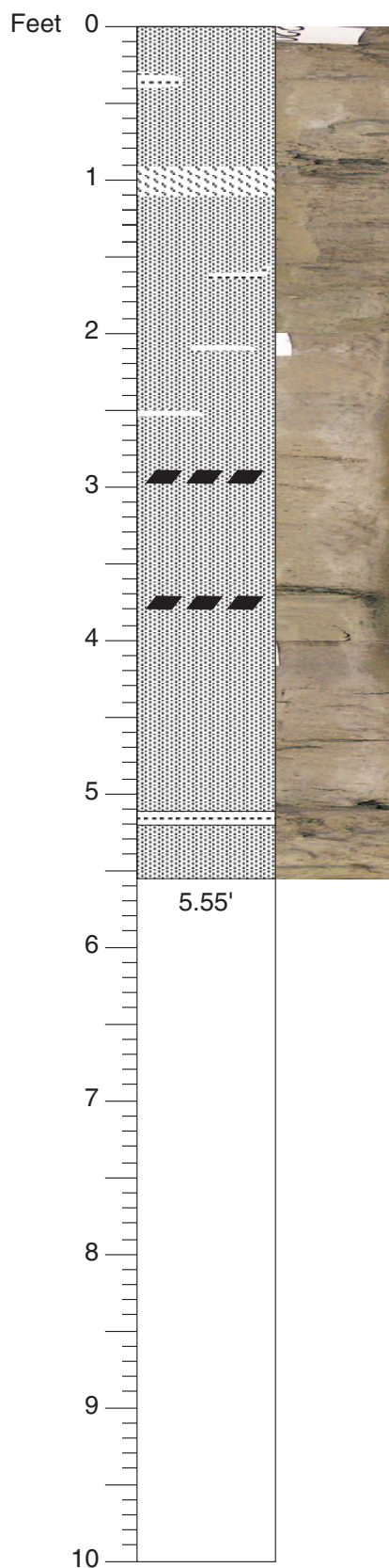
SAND; interbedded coarse, medium and very coarse sand; 2% mica; some scattered pebbles throughout; lignite bed with mica at 0.5 ft; gravel beds at 1.0-1.3, 2.2-2.4, and 3.4-3.7 ft, chert pebbles to 7mm; clay bed at 4.8-5.0 ft; dark greenish gray (GLEY 1 4/10Y); more clay at base; light gray (GLEY 1 7/N)

174AX CZ  
 Core # 36  
 Start depth: 210 ft  
 Stop depth: 220 ft  
 Recovery: 6.8 ft  
 Date: 10/3/04  
 Described by: AH, AS, AAK

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

36



SAND; medium; some subangular coarse grained sand from 3.0-3.7 ft; clayier from 0.9-1.1 ft, scattered clay lenses (e.g., at 0.35 ft); lignite beds at 2.9-3.0 and 3.7-3.8 ft; clay bed at 5.2-5.3 ft; gray (GLEY 1 5/N)

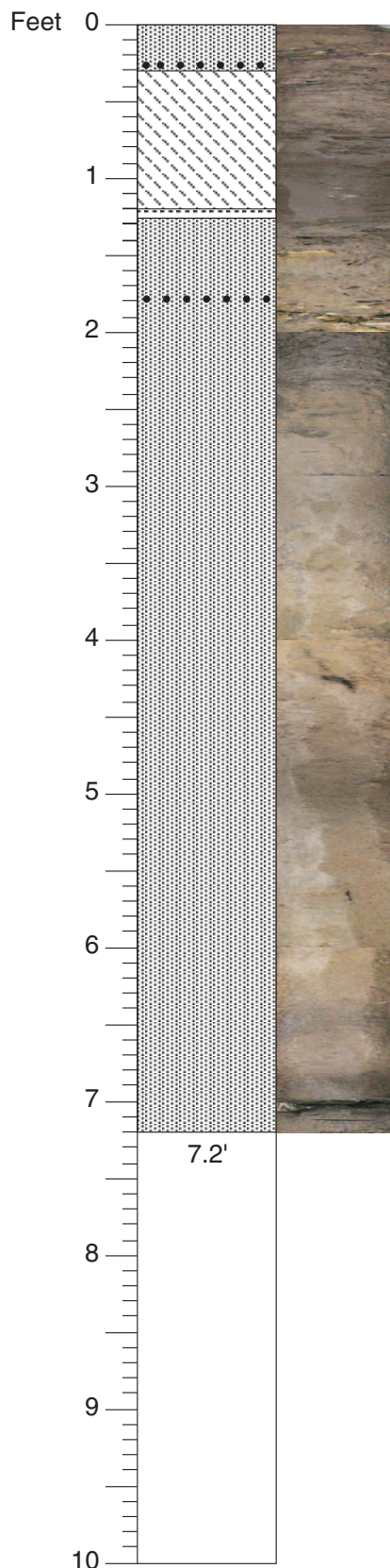
174AX CZ  
Core # 37  
Start depth: 220 ft  
Stop depth: 230 ft  
Recovery: 5.55 ft  
Date: 10/3/04  
Described by: AAK, AS, AH



# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

37



SAND; quartz with some black wood; 0.25 ft pebbles, with coarse sand

SILT; coarse with very fine sand; fining upward sandy at base to clayey at top; micaceous and organic; greenish gray (GLEY 1, 10Y 5/1)

CLAY; slightly micaceous; abrupt contact with silt; 10% organic rich; pyrite; brown (10YR 4/3)

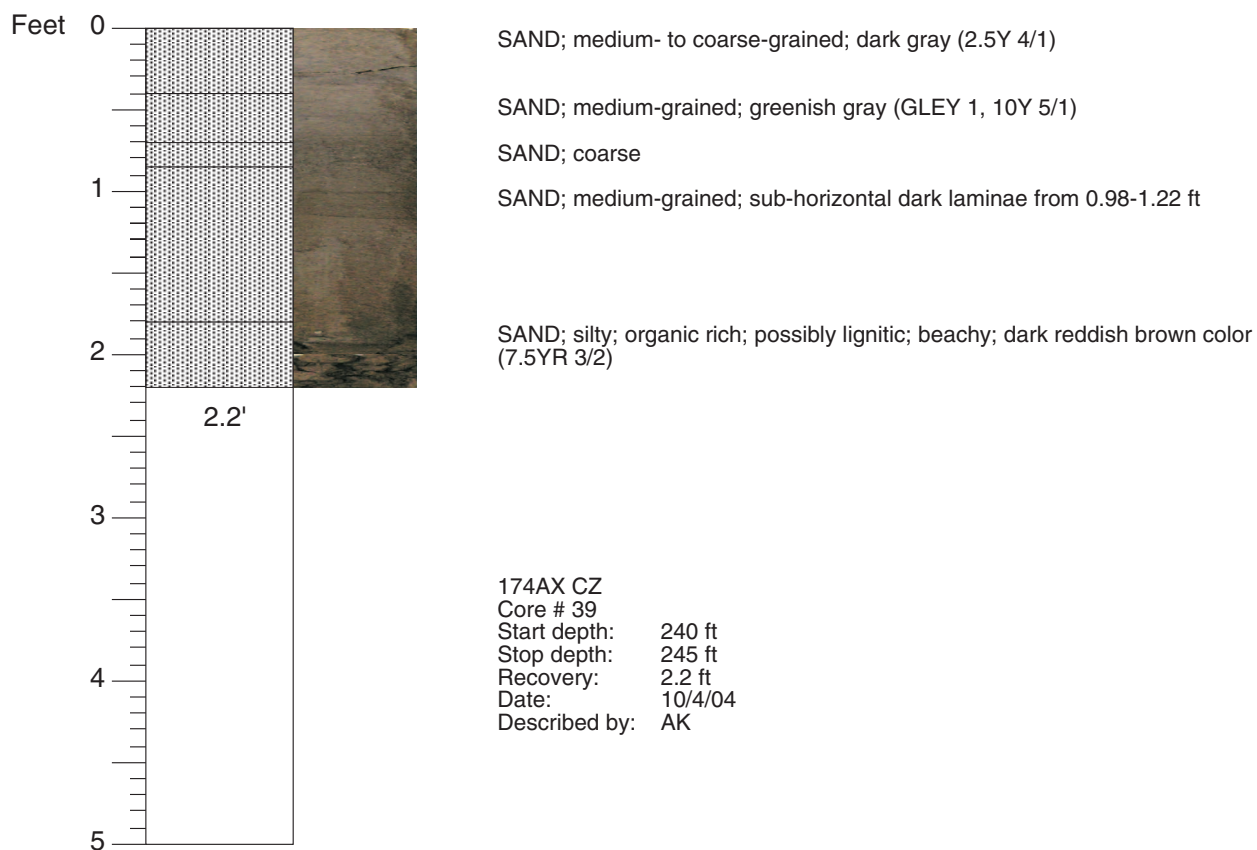
SAND; medium to coarse grained; some streaks and darker beds; bioturbated; medium- to well-sorted; muddy, organic, with clay blebs at top; sand percent increases downcore; organics more concentrated in bottom 0.8 ft of core; gravel bed with medium to coarse grained sand, pebbles, and granules up to 1.5 cm in diameter at 1.8-1.9 ft; olive gray (5Y 5/2)

174AX CZ  
Core # 38  
Start depth: 230 ft  
Stop depth: 240 ft  
Recovery: 7.2 ft  
Date: 10/4/04  
Described by: JVB, AK

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

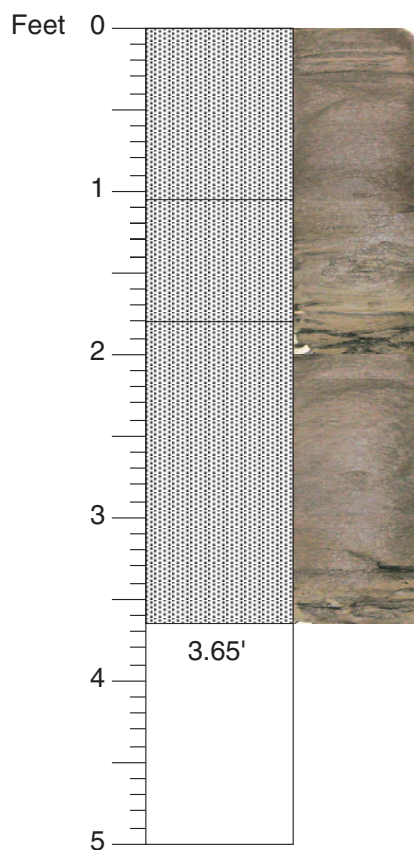
38



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

39



SAND; "beachy"; well-sorted; medium-grained; stained by organics; some dark gray laminae in top 0.5 ft (2.5Y 3/1); color shifts around 1.05 ft

SAND; medium-grained; no organics; laminated between 1.05-1.8 ft; some fining downward minerals from 1-2 mm in diameter; distinct laminae of coarse sands at 1.8 and 2.9 ft

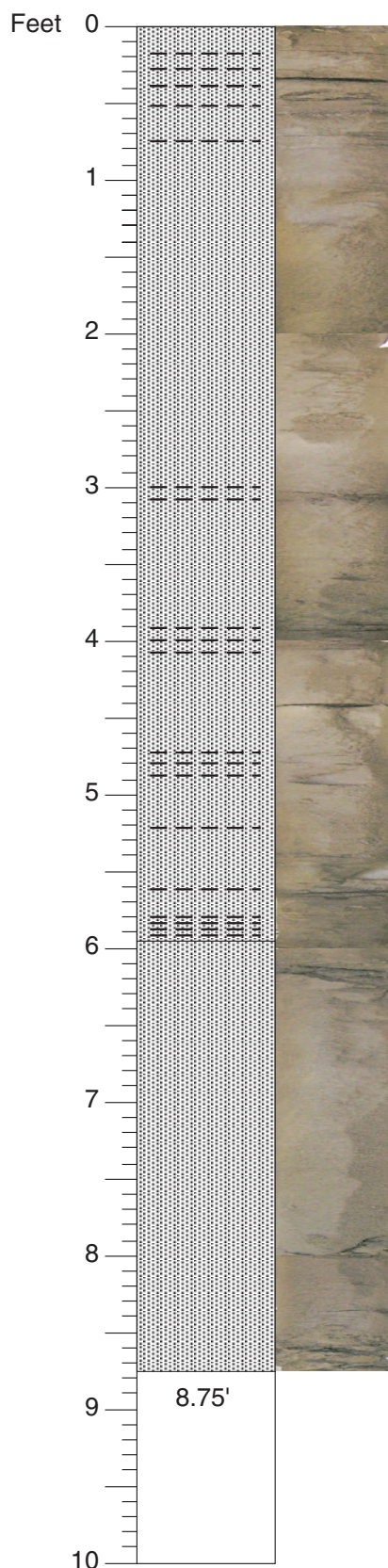
SAND; less well-sorted; occasional coarse-grained material; increase in organics from 3.4-3.65 ft; black laminae (5Y 2.5/1); overall very dark gray (5Y 3/1)

174AX CZ  
Core # 40  
Start depth: 245 ft  
Stop depth: 250 ft  
Recovery: 3.65 ft  
Date: 10/4/04  
Described by: JU

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

40



SAND; fine to medium; silty; prominent clayey laminae down to 0.8 ft; the top 0.8 ft is browner than the sand below; clay laminae at 3.0-3.1, 3.9-4.1, and 4.7-4.9, 5.2, 5.6, and 5.75-5.95 ft, top: black (7.5 YR 2.5/1); below 0.8 ft: very dark greenish gray (GLEY 1 3/1 10Y)

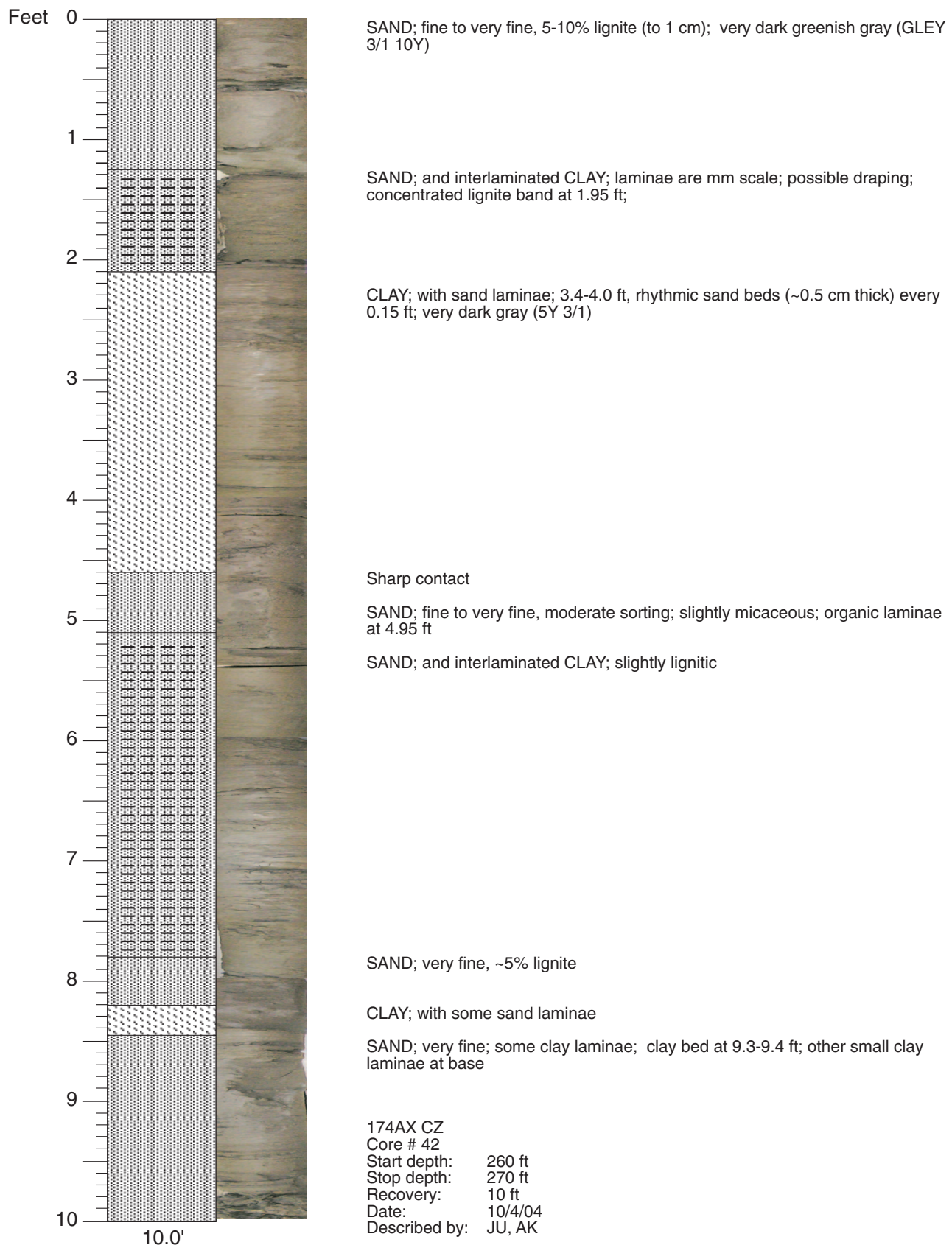
SAND; fine; very dark greenish gray (GLEY 1 3/1 10Y)

174AX CZ  
Core # 41  
Start depth: 250 ft  
Stop depth: 260 ft  
Recovery: 8.75 ft  
Date: 10/4/04  
Described by: AK, JU

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

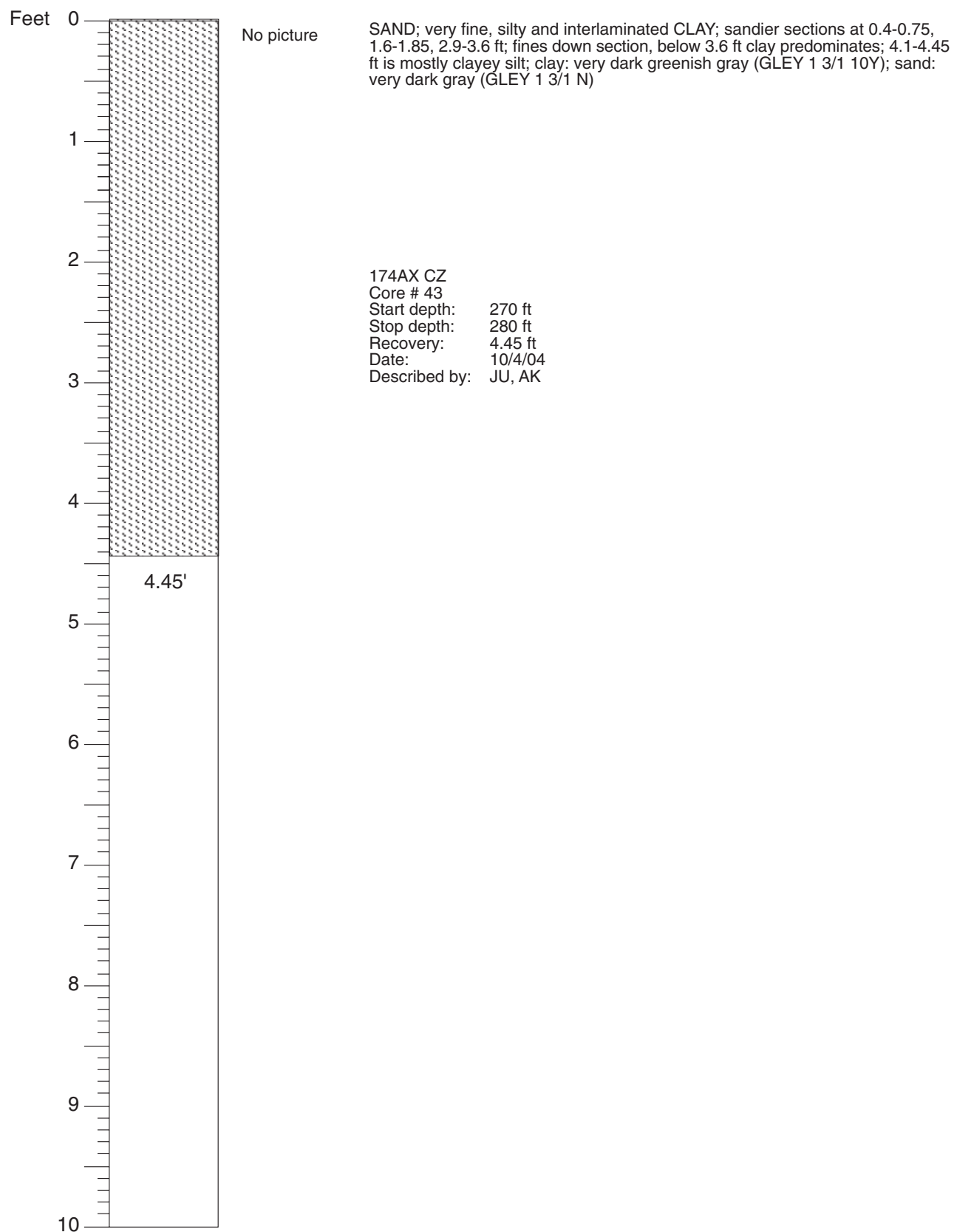
41



# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

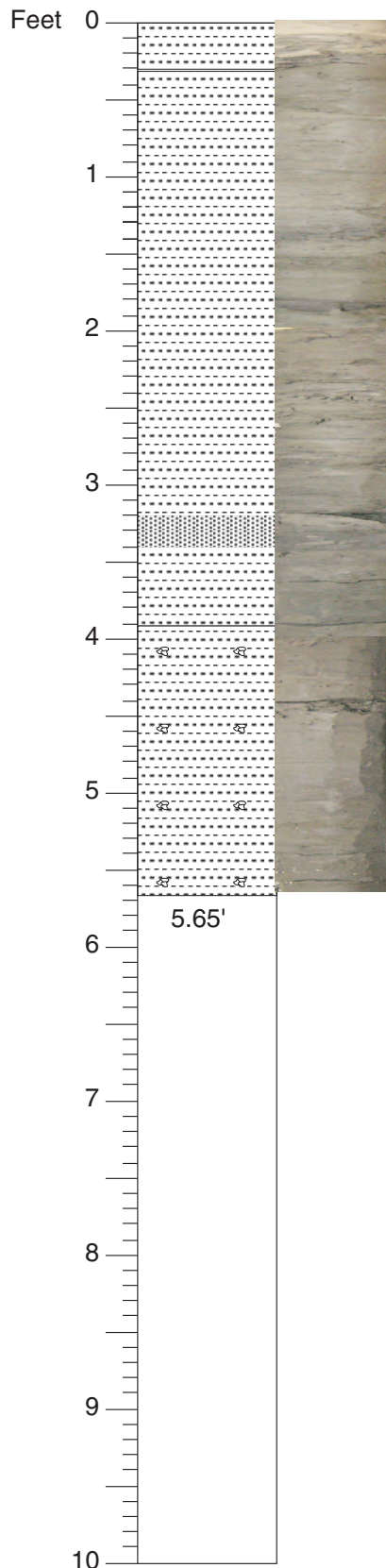
42



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

43

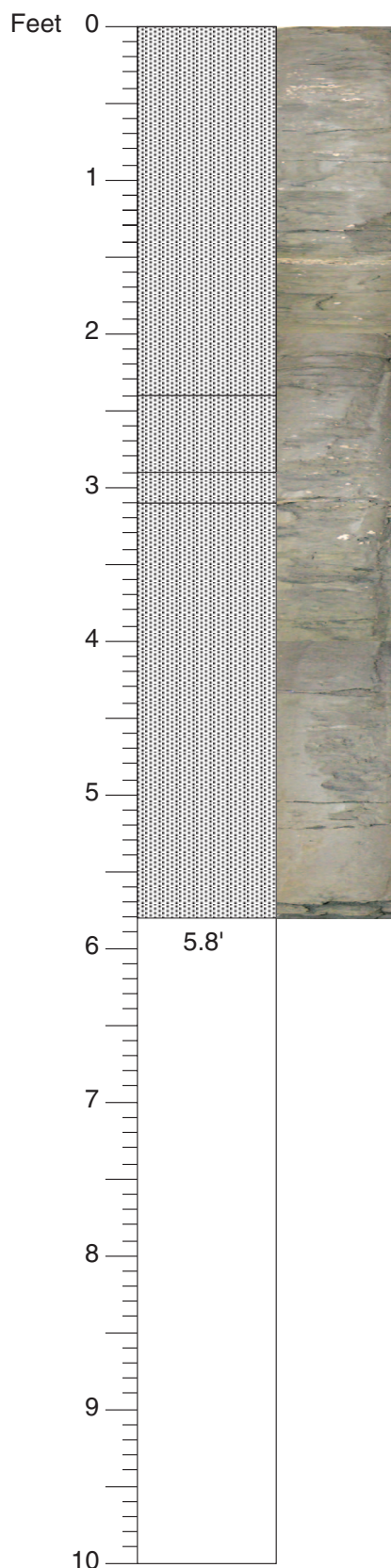


CLAY; includes clay blebs with black grains in them (gray [GLEY 1 6/1 N]), blebs may contain glauconite; at 0.15 ft more fissile parting but still clay; slight color change at 0.15 due to an increase in black grains

CLAY; laminated; laminae are medium sized; 3.2-3.4 ft is clayey silt; very dark greenish gray (GLEY 1 3/1 10Y)

CLAY; micaceous, very slightly silty, very small amount of shell fragments (mm sized); shell fragments get larger and more abundant down core; little blebs of slightly micaceous, greener, less silty clay

174AX CZ  
Core # 44  
Start depth: 280 ft  
Stop depth: 290 ft  
Recovery: 5.65 ft  
Date: 10/4/04  
Described by: AK, JU



Drilling slurry

CLAY; silty, interbedded with SILT, clayey; cross laminations at 1.0-1.5 and 2.2-2.3 ft; massive clay at 2.0-2.2; greenish black (GLEY 1 2.5/1 5G)

CLAY

SAND; fine; scattered shell fragments

SAND; very fine, no shells

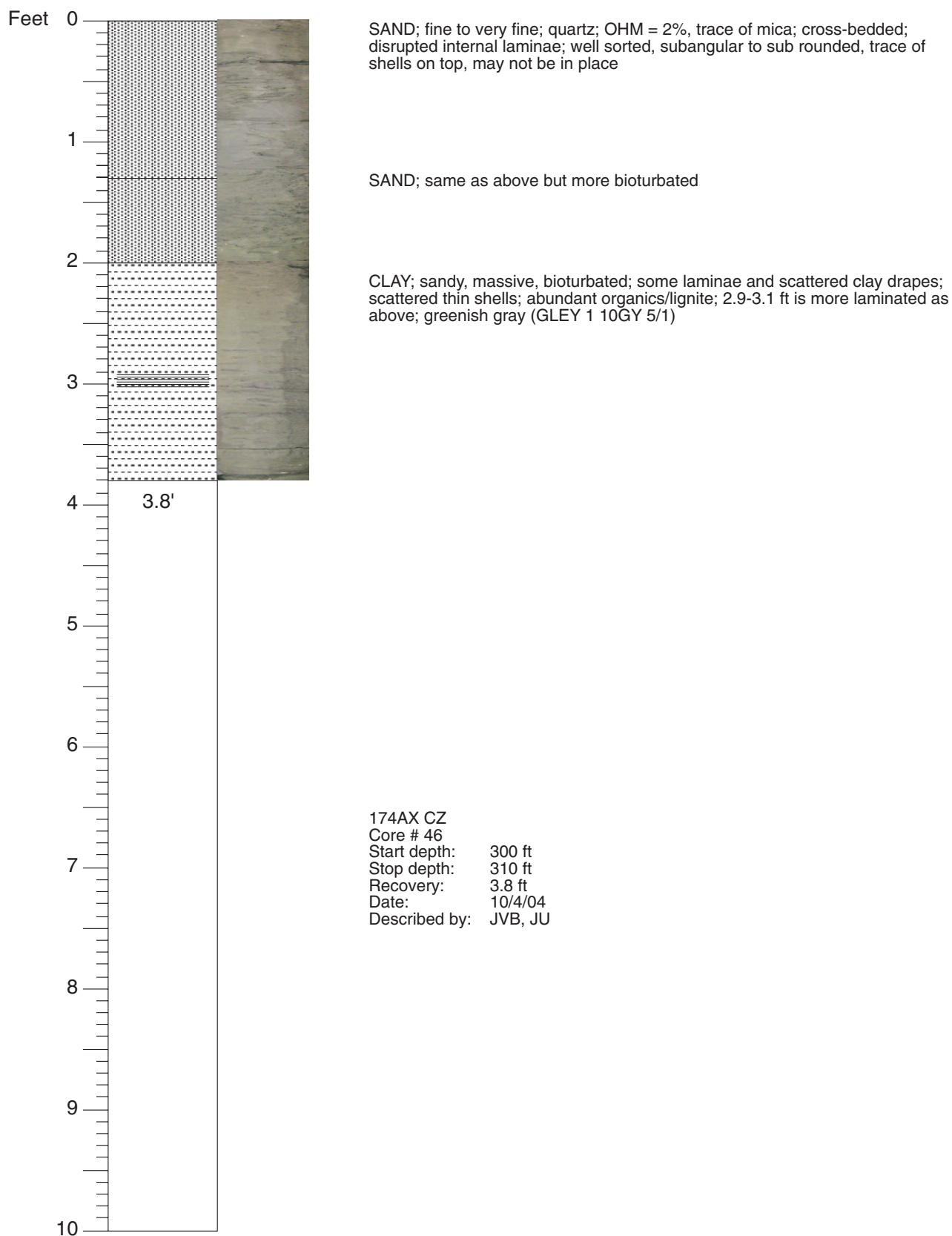
174AX CZ  
 Core # 45  
 Start depth: 290 ft  
 Stop depth: 300 ft  
 Recovery: 5.8 ft  
 Date: 10/4/04  
 Described by: AK, JVB, JU



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

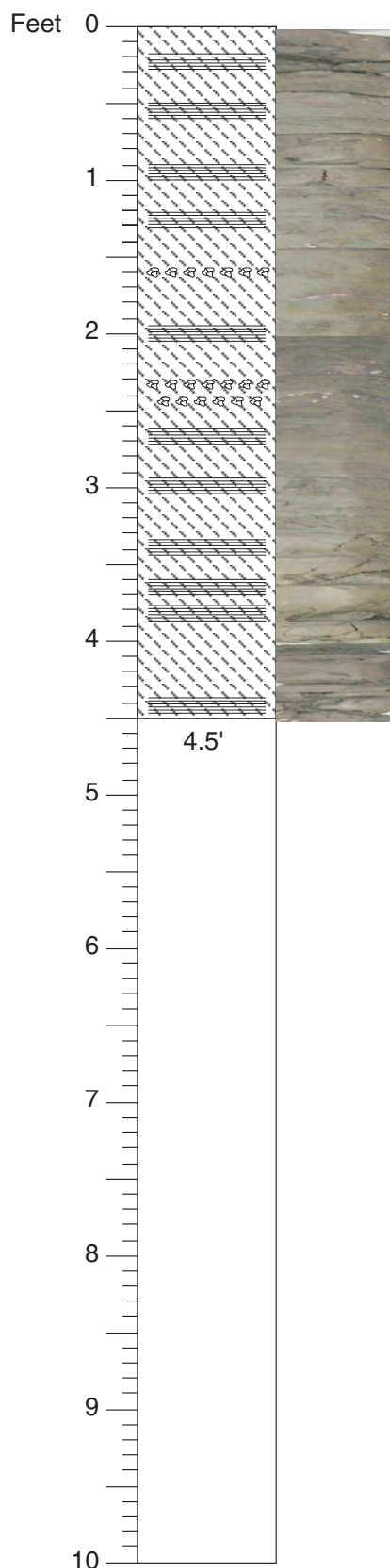
45



# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

46



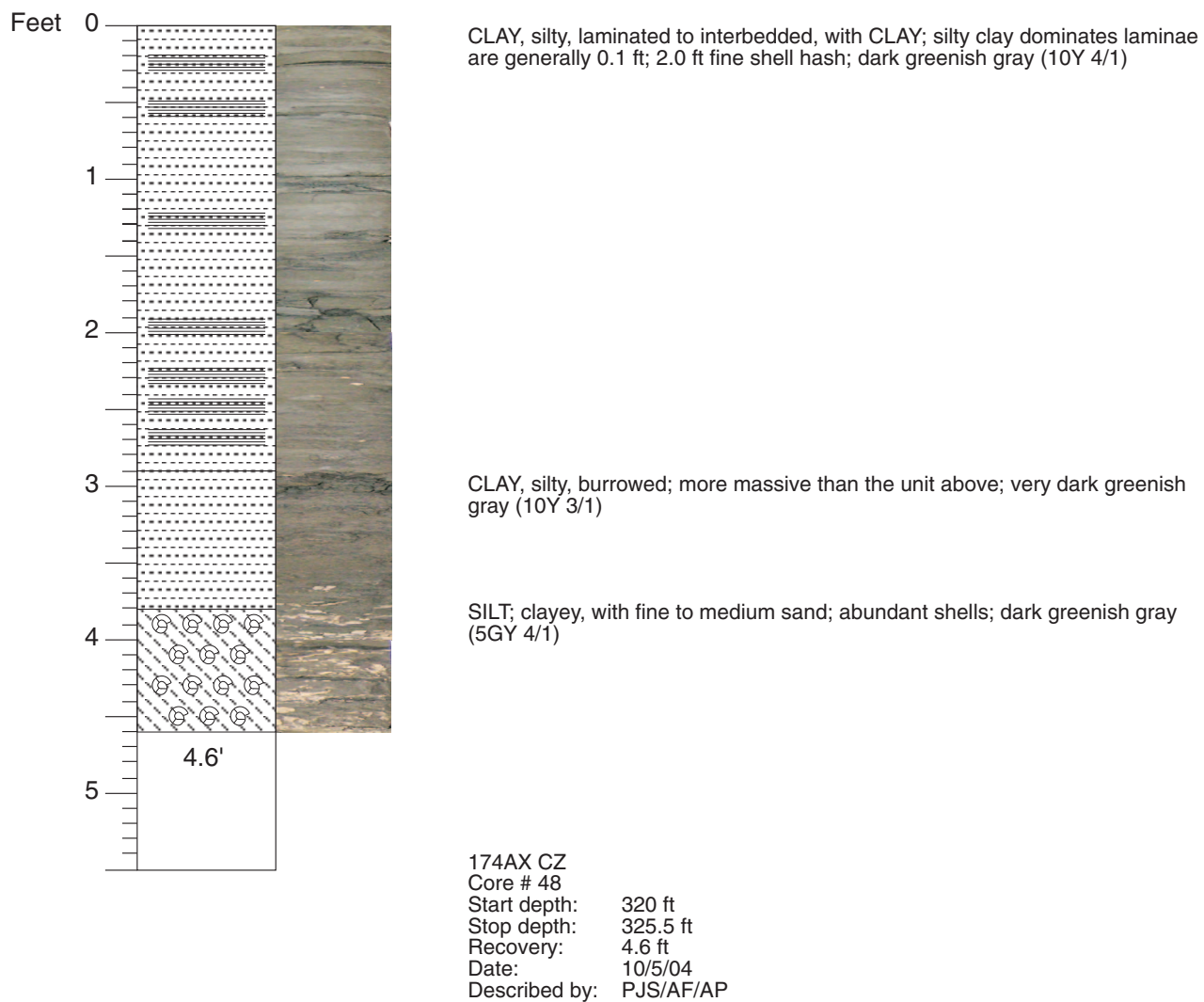
SILT; clayey, laminated to interbedded with silty fine SAND, laminae are generally 0.1 ft; dispersed broken shells; 1.6 ft is fine shell hash; 2.3-2.5 ft is fine shell hash; greenish gray (5GY 5/1)

174AX CZ  
Core # 47  
Start depth: 310 ft  
Stop depth: 320 ft  
Recovery: 4.5ft  
Date: 10/4/04  
Described by: PS/AF/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

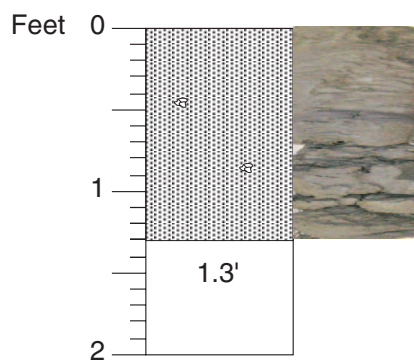
47



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

48



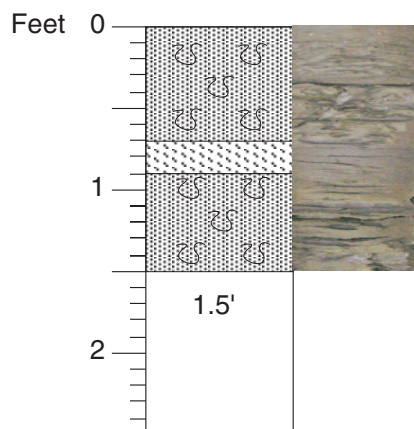
SAND; medium, some very fine wood, trace of shell hash, burrowed with some hints of bedding; greenish gray (5GY 5/1)

174AX CZ  
Core # 49  
Start depth: 325.5 ft  
Stop depth: 327.5 ft  
Recovery: 1.3 ft  
Date: 10/5/04  
Described by: PJS/AF/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

49



SAND; fine to medium, burrowed, lots of wood, slightly micaceous, fine shell hash; dark greenish gray (5GY 4/1)

SILT, and interbedded fine SAND; very dark greenish gray (5GY 3/1)

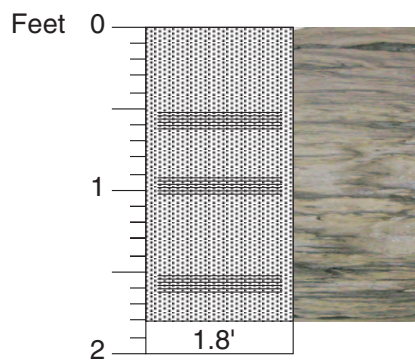
SAND; fine to medium, burrowed, lots of wood, slightly micaceous, fine shell hash; dark greenish gray (5GY 4/1)

174AX CZ  
Core # 50  
Start depth: 327.5 ft  
Stop depth: 330 ft  
Recovery: 1.5ft  
Date: 10/5/04  
Described by: PJS/AF/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

50



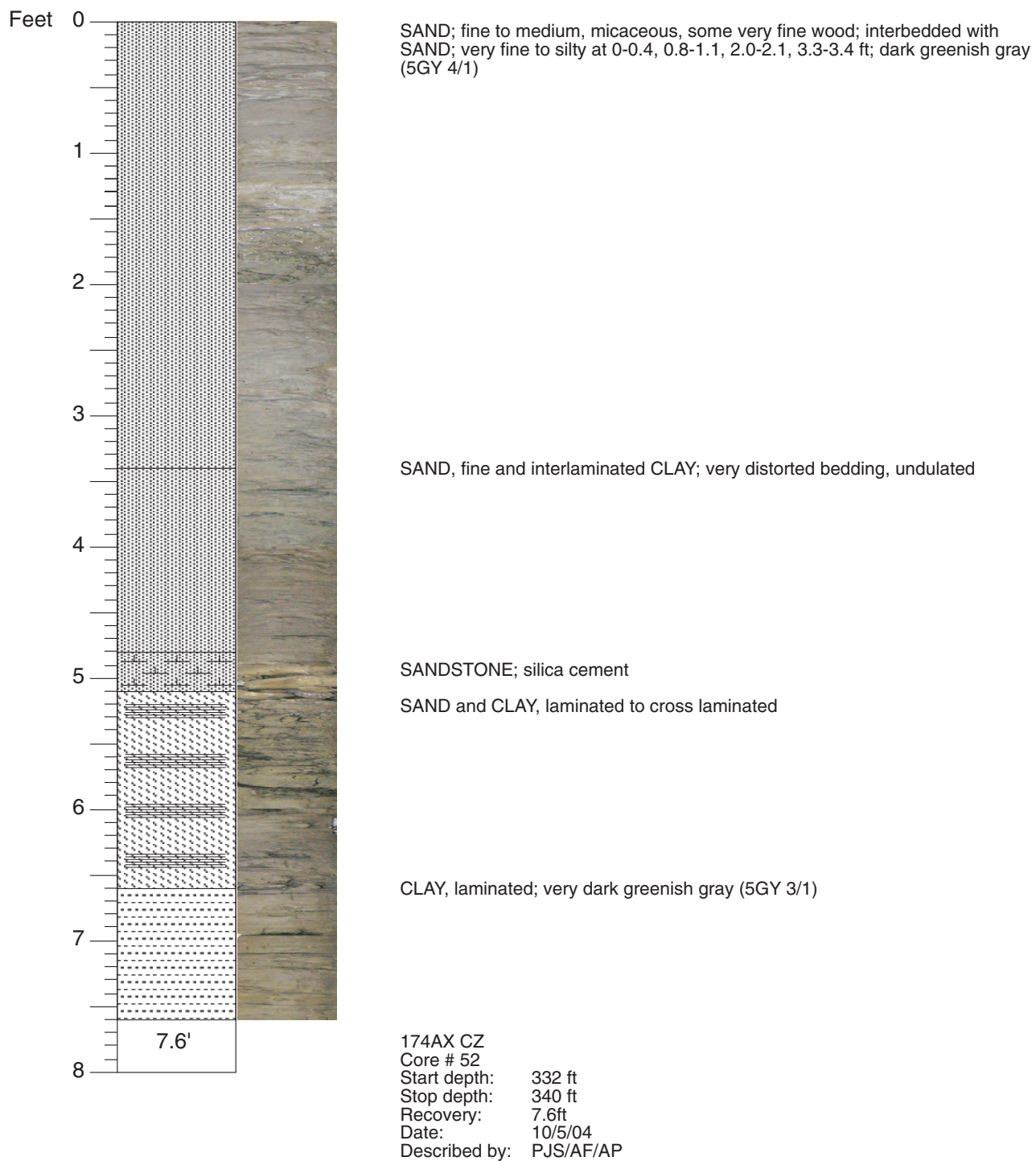
SAND; fine-medium, micaceous, some very fine wood; with silty very fine to fine laminae; burrowed, dark greenish gray (5GY 4/1)

174AX CZ  
Core # 51  
Start depth: 330 ft  
Stop depth: 332 ft  
Recovery: 1.81ft  
Date: 10/5/04  
Described by: PJS/AF/AP

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

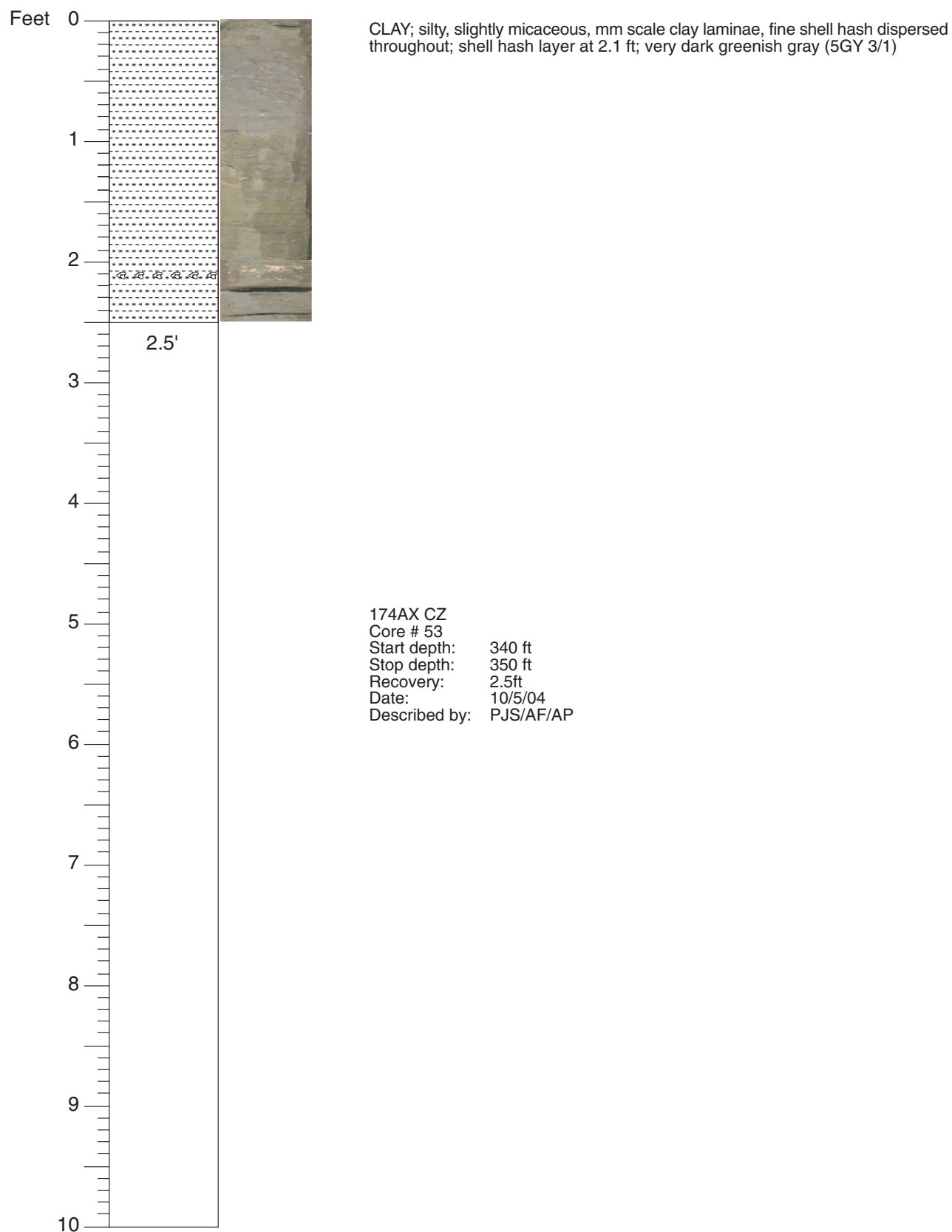
51



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

52

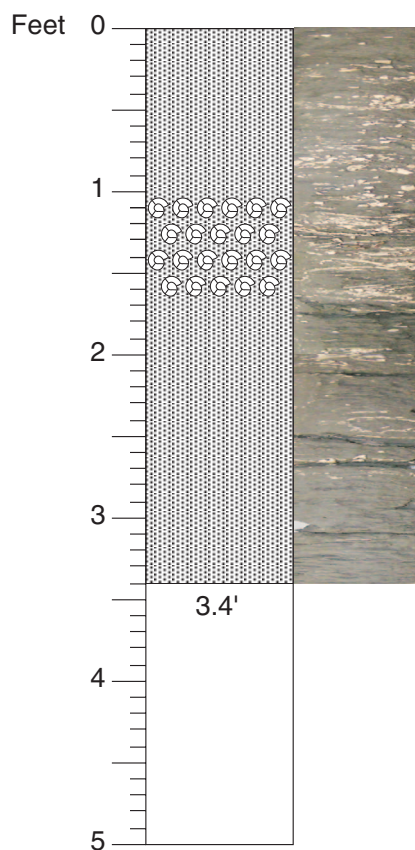




## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

53



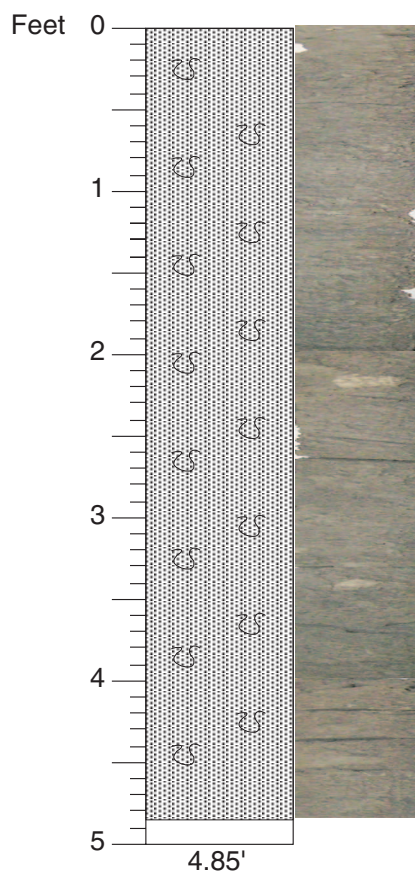
CLAY; silty, very fine sand; laminated, many shell hash layers; shells very abundant between 1.0-1.7 ft; dark greenish gray (10GY 4/1)

174AX CZ  
Core # 54  
Start depth: 350 ft  
Stop depth: 355 ft  
Recovery: 3.4 ft  
Date: 10/5/04  
Described by: PJS/AF/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

54



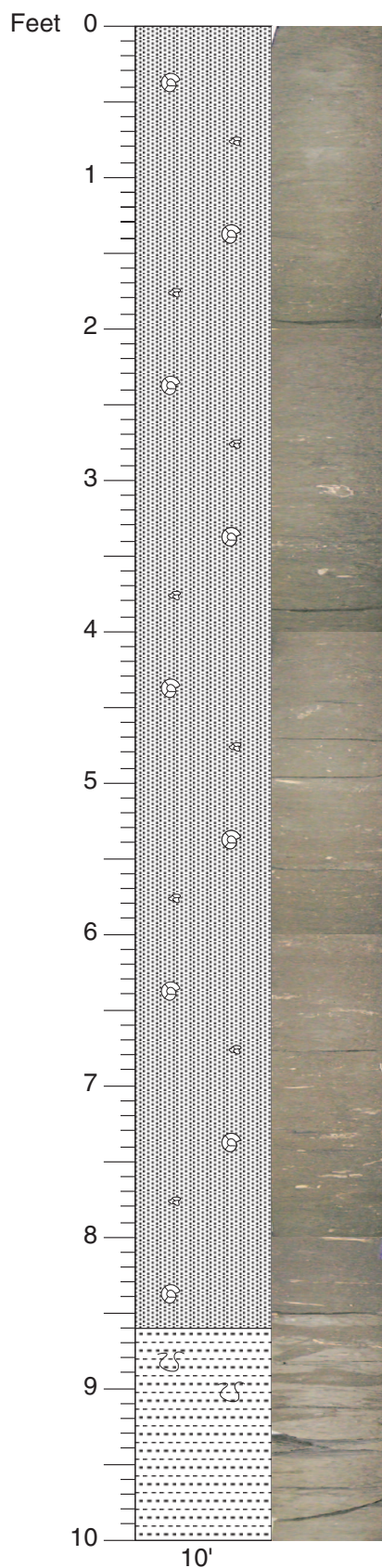
SAND; fine, possible fine glauconite heavily bioturbated, some individual burrows up to 20 mm across; 2.1-2.7 ft hint of inclined strata (but could be drilling disturbance); greenish gray (GLEY 1 10Y 5/1)

174AX CZ  
Core # 55  
Start depth: 355 ft  
Stop depth: 360 ft  
Recovery: 4.85 ft  
Date: 10/6/04  
Described by: JVB/DHM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

55



SAND; very fine to fine, some clay in uppermost section, possible 2-3% very fine glauconite grains, finely micaceous ; highly bioturbated, scattered broken shells and concentrations of broken shells, some shells possibly in life position; possible lignite fragment on outside of core at 3.6 ft; dark greenish gray(GLEY 1 5GY 4/1)

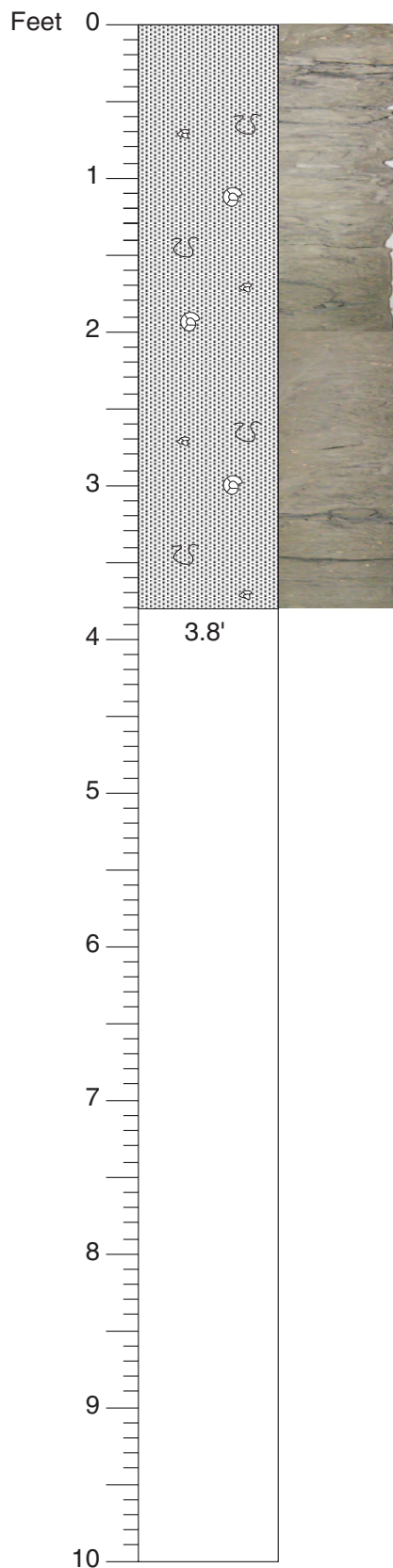
174AX CZ  
Core # 56  
Start depth: 360 ft  
Stop depth: 370 ft  
Recovery: 10 ft  
Date: 10/6/04  
Described by: ADH/DHM/JVB

CLAY; some burrowing of overlying lithology down to 9.3 ft; possible rip up clasts above surface

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

56



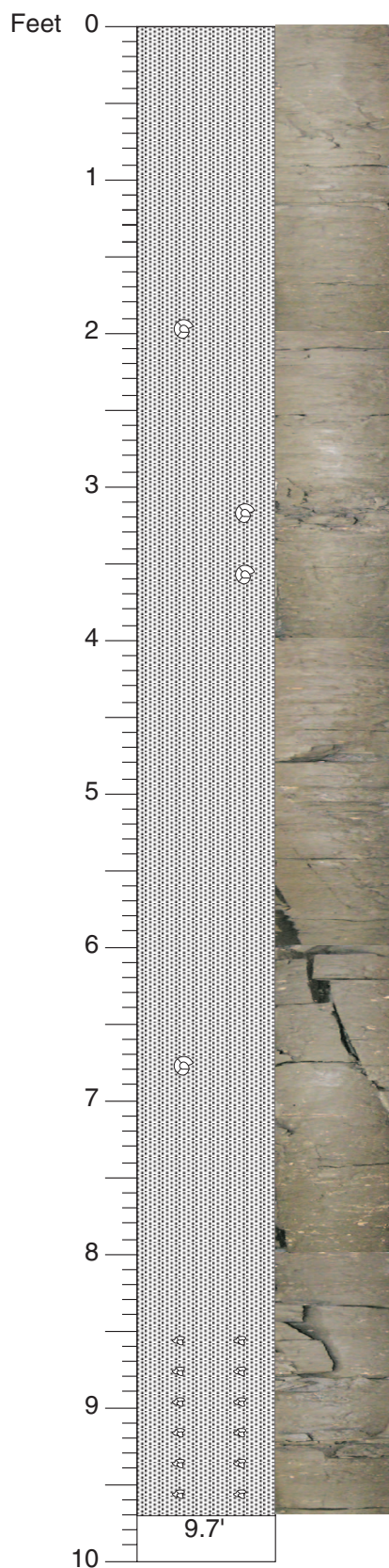
CLAY; slightly silty, very fine mica, heavily bioturbated, with fine shells; darker mottled at top (to 0.5 ft) possibly representing material burrowed down; below 0.9 ft there are silty to very fine sand horizons disrupted by burrows, some burrows contain sand, possible glauconite; 3.3-3.7 ft stronger appearance of laminated material, appears more silt content; dark greenish gray (GLEY 1 5GY 4/1)

174AX CZ  
Core # 57  
Start depth: 370 ft  
Stop depth: 380 ft  
Recovery: 3.8 ft  
Date: 10/6/04  
Described by: JVB/ADH/DHM

## CORE DESCRIPTIONS

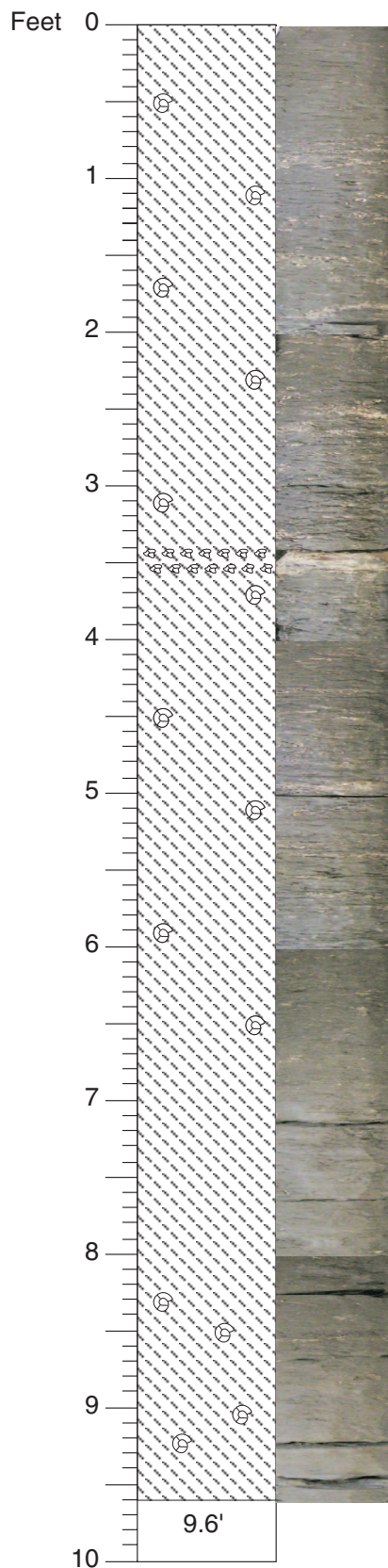
### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

57



CLAY; silty, slightly micaceous (very fine), dark grains present to 1%, scattered shell fragments throughout, bioturbated, fairly uniform core; core has fractures that cut the core at very high angle, 8.5-9.5 ft higher shell concentration; dark greenish gray (GLEY 1 5GY 4/1)

174AX CZ  
Core # 58  
Start depth: 380 ft  
Stop depth: 390 ft  
Recovery: 9.7 ft  
Date: 10/6/04  
Described by: JVB/ADH/DHM



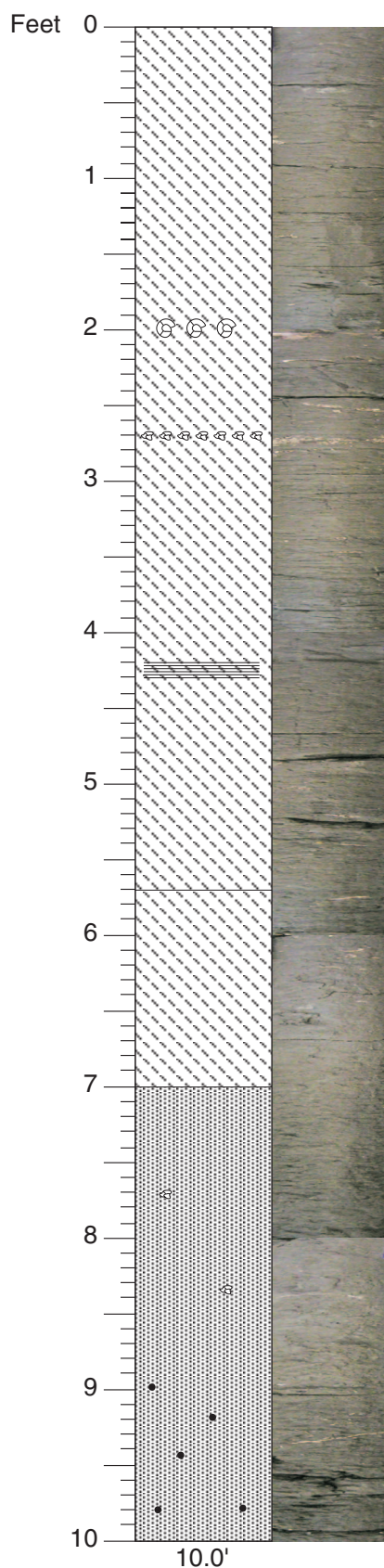
SILT, clayey, to clay, silty, slightly micaceous, very shelly, dominantly as broken fragments, gastropods and bivalves; up to 1% dark grains; suggestions of bioturbation; 3.4-3.6 ft 100% shell hash, irregular upper and lower contact; little to no mica in the middle of the core; shells are less common below 6.5 ft; also rare quartz grains as coarse sand to pebbles (2 mm) are found from 5.3-7.0 ft; below 8.3 ft possible laminations, suggests silt increases down section to very fine sand at base with shells in life position; dark greenish gray (GLEY 1 5GY 4/1)

174AX CZ  
 Core # 59  
 Start depth: 390 ft  
 Stop depth: 400 ft  
 Recovery: 9.6 ft  
 Date: 10/6/04  
 Described by: JVB/ADH/DHM

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

59



SILT; rare mica, overall coarsening down; aragonitic shell material at 2.0 ft; shell hash at 2.7 ft; turritellid gastropod shells noted; laminations at 4.2-4.3 ft; dark greenish gray (GLEY 1 5GY 4/1)

174AX CZ  
Core # 60  
Start depth: 400 ft  
Stop depth: 410 ft  
Recovery: 10 ft  
Date: 10/6/04  
Described by: JVB/ADH/DHM

Mottled contact

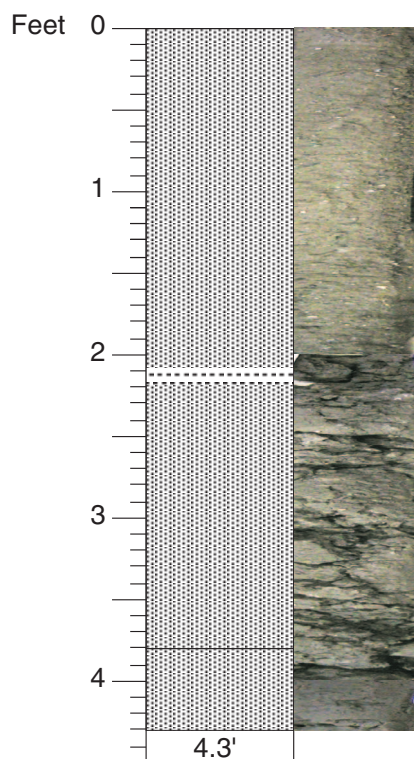
SILT; with numerous pebbles to very coarse sand grains

SAND; moderate sorting, 1% OHM; occasional large shell; larger grains to 5 mm; more numerous down core

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

60



SAND; fine to medium; subangular, poorly sorted; grains range to gravel; shell fragments to 7 mm; clay-rich layer at 2.1-2.2 ft; dark greenish gray (GLEY 1 5GY 4/1)

SAND; medium, subrounded, moderately sorted, grains range to gravel; shell fragments to 7 mm

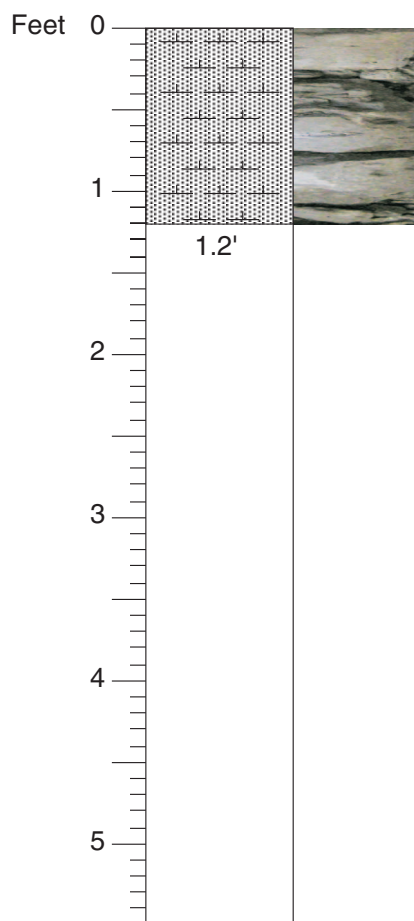
174AX CZ  
Core # 61  
Start depth: 410 ft  
Stop depth: 414.5 ft  
Recovery: 4.3 ft  
Date: 10/6/04  
Described by: JVB/ADH/DHM



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

61



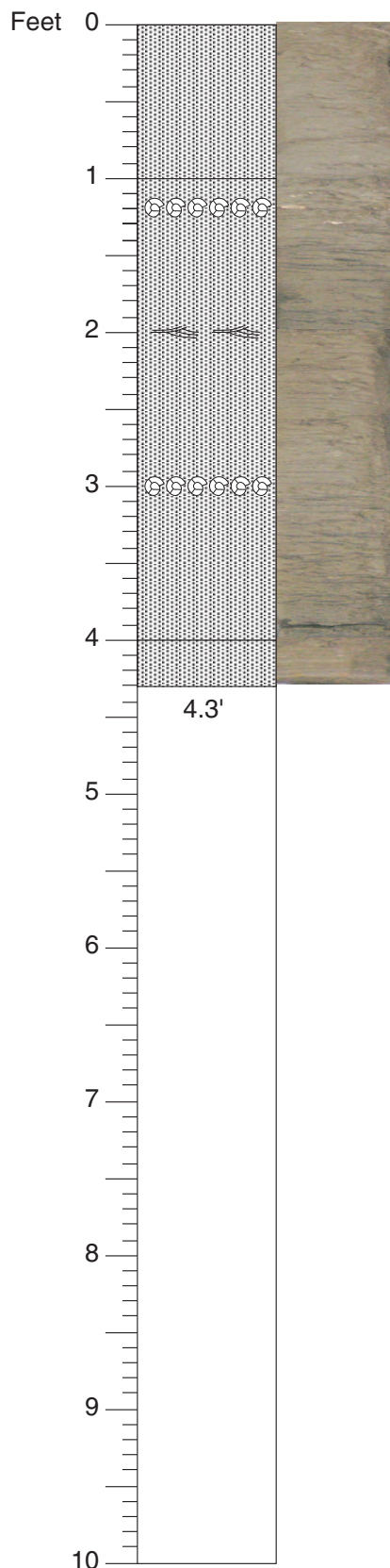
SANDSTONE; fine, subrounded, moderately sorted; glauconite present, more in the upper part of the core, calcite cement; light bluish gray (GLEY 2 10B 7/1)

174AX CZ  
Core # 62  
Start depth: 414.5 ft  
Stop depth: 420 ft  
Recovery: 1.2 ft  
Date: 10/6/04  
Described by: JVB/ADH/DHM

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

62



SAND; fine; homogenous, bioturbated with some inclined laminations very slightly muddy

SAND; slightly muddy; mostly fine, subangular to subangular, some small scale cross beds (2 cm maximum relief); mostly quartz, medium sorting; scattered shells, some ripple marks; very dark greenish gray (GLEY 2 5BG 3/1)

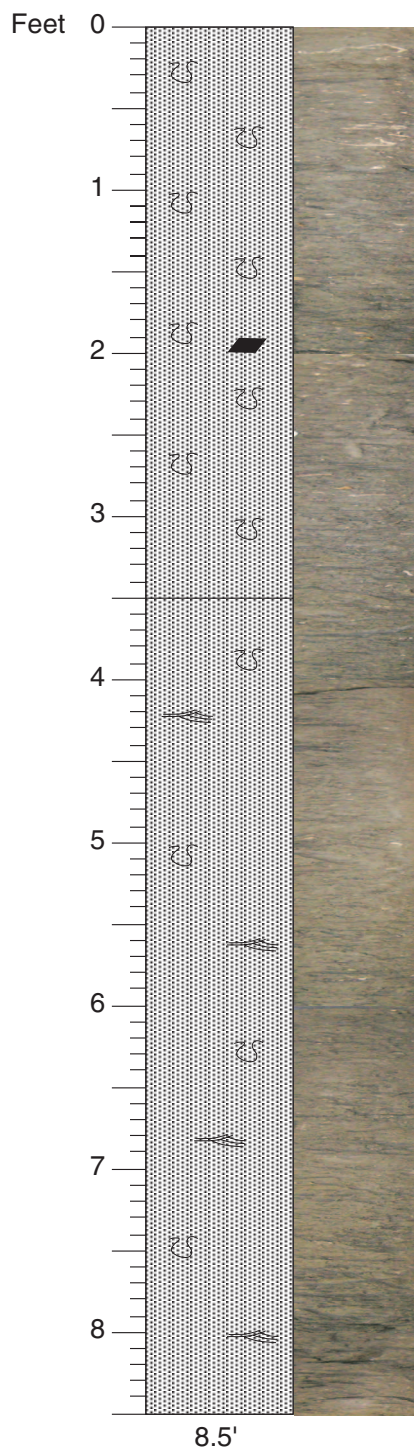
SAND; slightly stiffer, muddy, with laminae, some weathered shells

174AX CZ  
Core # 63  
Start depth: 420 ft  
Stop depth: 430 ft  
Recovery: 4.3 ft  
Date: 10/7/04  
Described by: PPM/JW/PE/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

63



SAND; shelly, very bioturbated, fine, subangular to subrounded; mostly quartz, rare mica, rare dark grains, shells include barnacles, bivalves, worm tubes, burrows from 1-5 mm in diameter, some mud filled and some sand filled, laminations are poorly preserved; wood fragment at 2.0 ft; very dark greenish gray (GEY 1 5 GY 3/1)

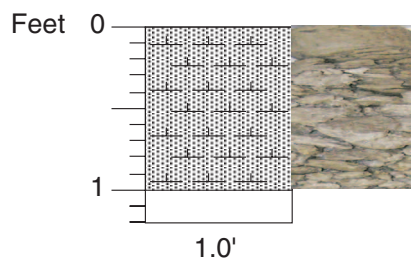
SAND; fine, some medium; slightly shelly; moderate bioturbation, well sorted, subangular to subrounded; shells are mostly fragments; burrows 1-10 mm; ripples and small cross laminations disrupted by burrows; lightly cemented; greenish black (10 GY 2.5/)

174AX CZ  
Core # 64  
Start depth: 430 ft  
Stop depth: 438.5 ft  
Recovery: 8.5 ft  
Date: 10/7/04  
Described by: PPM/JW/PE/PJS/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

64



SANDSTONE; powdered cement fizzes (?dolomite) fine, some medium; quartz, few dark grains, common shell fragments; some biomoldic porosity; some green shell fragments (phosphate, weathered?); the cementation is irregular making it crumbly; very dark greenish gray (GLEY 5GY 3/1)

174AX CZ

Core # 65

Start depth: 438.5 ft

Stop depth: 439.7 ft

Recovery: 1 ft

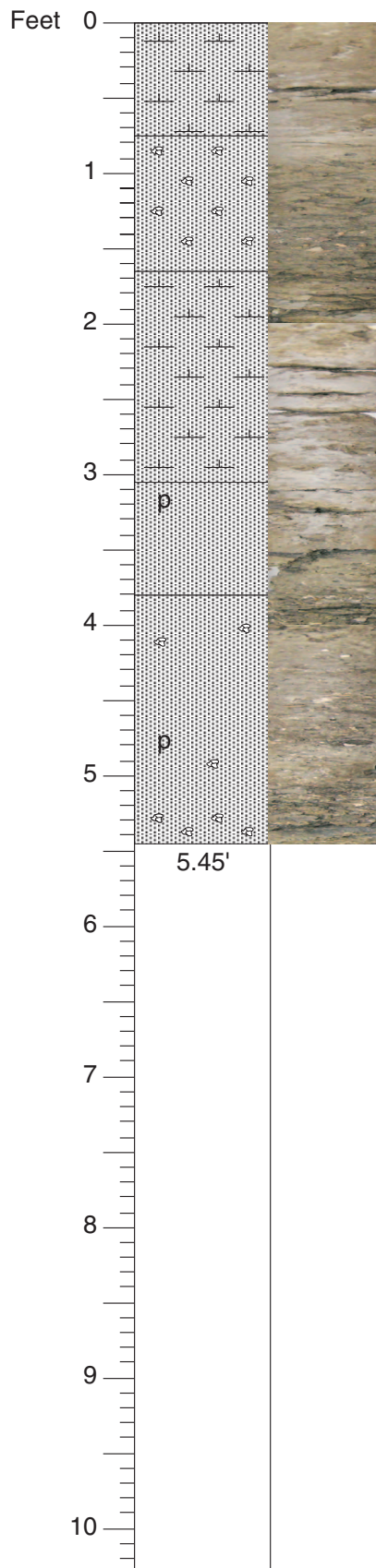
Date: 10/7/04

Described by: PPM/JW/PE/PJS/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

65



SANDSTONE; dolomite? Cemented fine grained; burrows, bioturbic porosity; green phosphate?

SAND; fine to medium, quartz; lots of shell fragments; muddy and bioturbated; moderately to well sorted; subangular to subrounded

SANDSTONE; similar to top; lighter gray color, scattered black phosphate grains

SAND; muddy, fine to medium with abundant shell fragments concentrated at the bottom, hard green fragments; very dark greenish gray (GLEY 5GY 3/1)

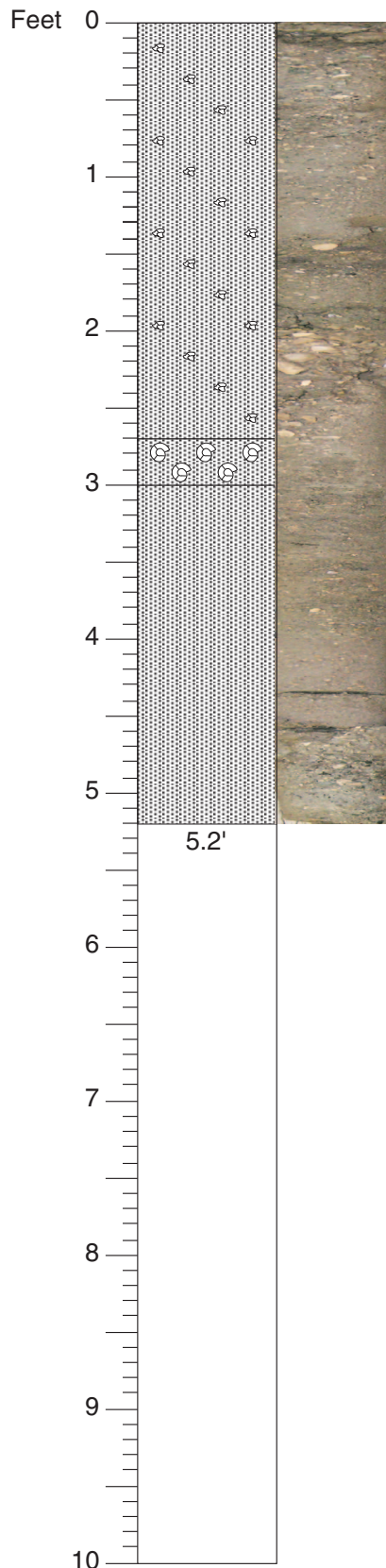
SAND; very muddy and shelly; fine to medium; shells especially abundant near the bottom 0.3 ft, includes abalone fragments, clams and mussels; phosphate at 4.7 ft; green shell fragments common particularly at the bottom; bioturbated, dark greenish gray (GLEY 5GY 3/1)

174AX CZ  
Core # 66  
Start depth: 439 ft  
Stop depth: 450 ft  
Recovery: 5.45 ft  
Date: 10/7/04  
Described by: PPM

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

66



SAND; fine to medium; very muddy with abundant shell fragments; subangular to subrounded; moderate sorting; shell fragments all smaller than 1 cm; abundant dark and green shell fragments; shell fragments are smaller and thinner towards the bottom, homogenous; greenish gray (GLEY 5G 5/1)

SAND; as above, with more shells, anomalocardia, strombus, barnacles, rounded shell from snail (fresh water/estuary); dark greenish gray (GLEY 5GY 4/1)

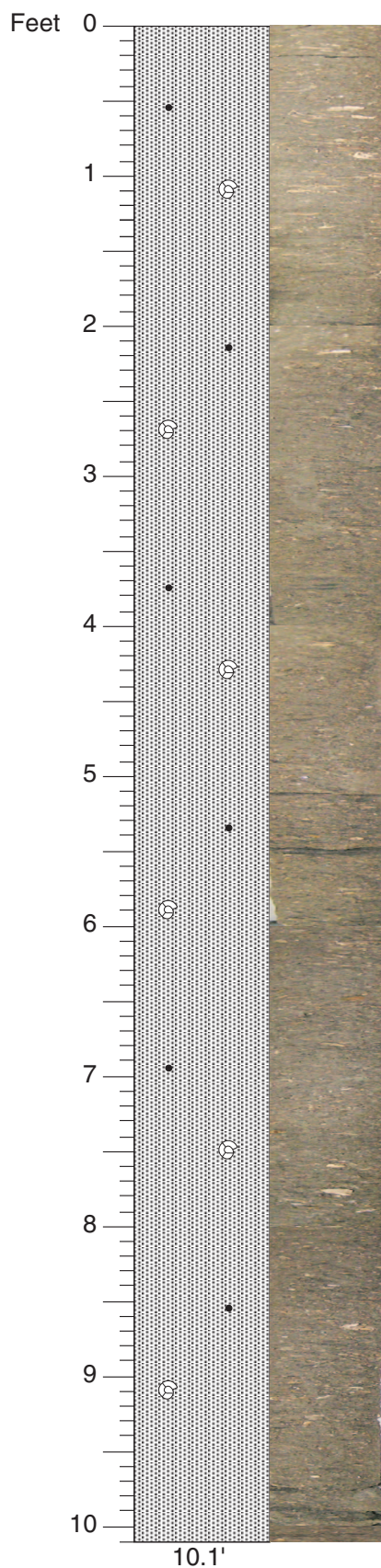
SAND; fine to medium, very muddy with abundant and very small fragments (2 or 3 mm); wood fragment at 3.9 ft; no green fragments; homogenous; dark greenish gray (GLEY 5GY 4/1)

174AX CZ  
Core # 67  
Start depth: 450 ft  
Stop depth: 460 ft  
Recovery: 5.2 ft  
Date: 10/7/04  
Described by: PPM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

67



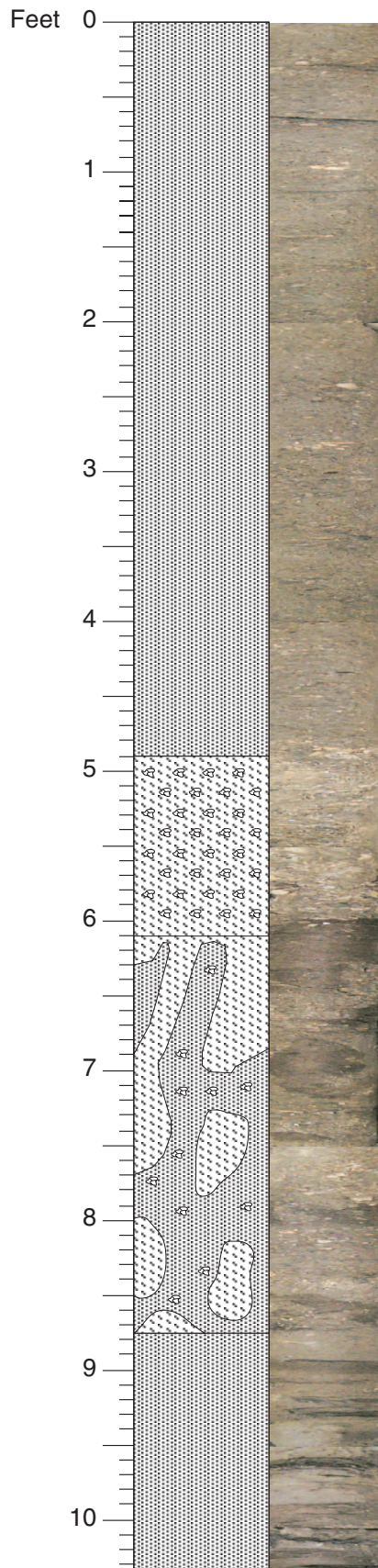
SAND; muddy, mostly medium with few grains ranging from coarse to granule; abundant shell fragments, range from 1-20 mm, some are very well preserved; sand is moderately poorly sorted, fairly homogenous with some burrows evident, many gastropods (strombus, olividae), rare green shell fragments, most shells are well preserved, lots of bivalve fragments and some snails from fresh water; one tubular (1 cm) shell filled with mud at 4 ft; overall apparently very bioturbated, very dark greenish gray (GLEY 5GY 3/1)

174AX CZ  
Core # 68  
Start depth: 460 ft  
Stop depth: 470 ft  
Recovery: 10.1 ft  
Date: 10/7/04  
Described by: PPM/AP

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

68



SAND; medium, poorly sorted with grains up to granule; very muddy, abundant shell debris, shell fragments are between 2-3 cm but none are as large as 3 cm; some are black (phosphate?); includes black phosphate grains; rounded gastropods from fresh water; dark greenish gray (GLEY 5Y 4/1)

Core # 69  
Start depth: 470 ft  
Stop depth: 480 ft  
Recovery: 10.35 ft  
Date: 10/7/04  
Described by: PPM/PJS/AP

SAND; muddy as above but with very abundant shell debris (nearly 50%); color as above plus some greenish gray (GLEY 1 5GY 5/1)

MUD; organic rich and laminated interspersed with shelly muddy sand from above that fills burrows, muddy silt and clay; flat laminated; burrows cover more than 50%, occupy zones at least from 2 cm to more than 5 cm wide; black (5Y 2.5/1)

SAND; muddy with interbedded clean sand and organic rich brown clay and lignite, scattered shell fragments in the sand; abundant mica in the mud; at 9.85 ft small scale cross bedding in the sand; greenish gray (GLEY 5Y 5/1)

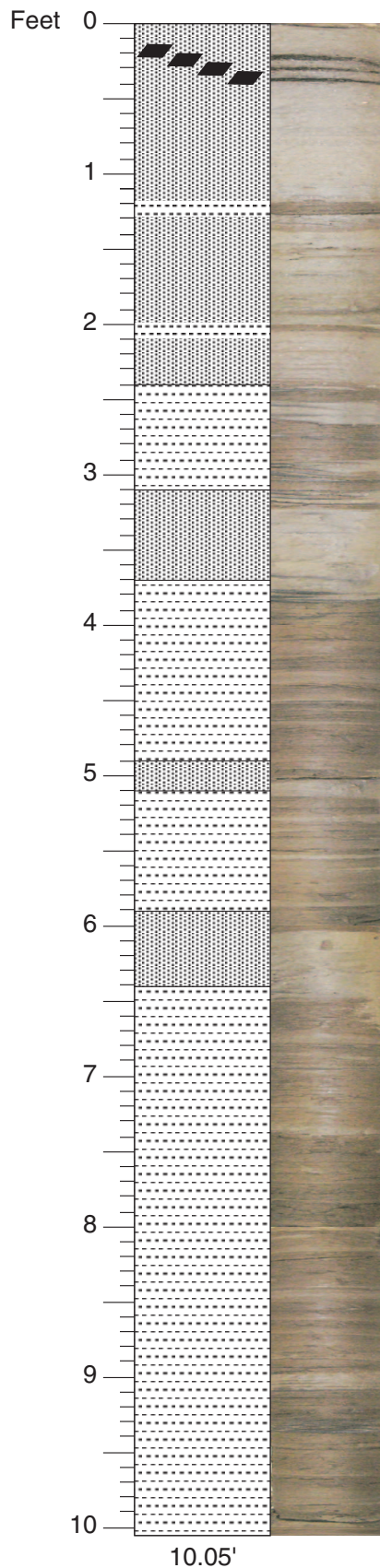
10.35'



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

69



SAND; fine to medium, moderately well sorted, with common dark grains, common mica; lignite at top; clay layers at 0-0.1, 1.2-1.3, 2.0-2.1 ft; sand: gray (GLEY 1 5/N); clay: black (2.5/N)

CLAY; brown, laminated with thin interbedded sand; small cross beds and cross laminae (flaser?)

SAND; as above

CLAY; silty, brown, organic rich, laminated within sandy interbeds, notably from 4.9-5.1 ft; sand bed at 4.9-5.1 ft; gray (GLEY 1 5/N)

SAND; as above

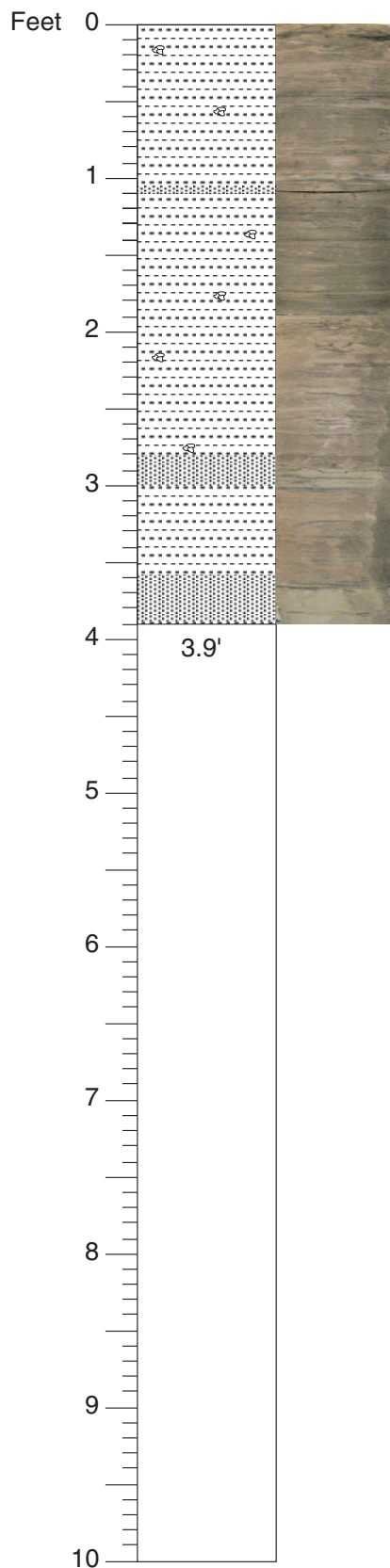
CLAY; as above; some alternations between lighter color sandy clay and darker organic rich, silt and clay; sand bed from 8.8-8.9 ft; very nice flaser bedding at 9.0-9.2 ft (tidal); alternation between sand /clay, presence of sand beds between 9.75-9.85 ft; black (5YR 2.5/1)

174AX CZ  
Core # 70  
Start depth: 480 ft  
Stop depth: 490 ft  
Recovery: 10.05 ft  
Date: 10/7/04  
Described by: PPM/PJS

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

70



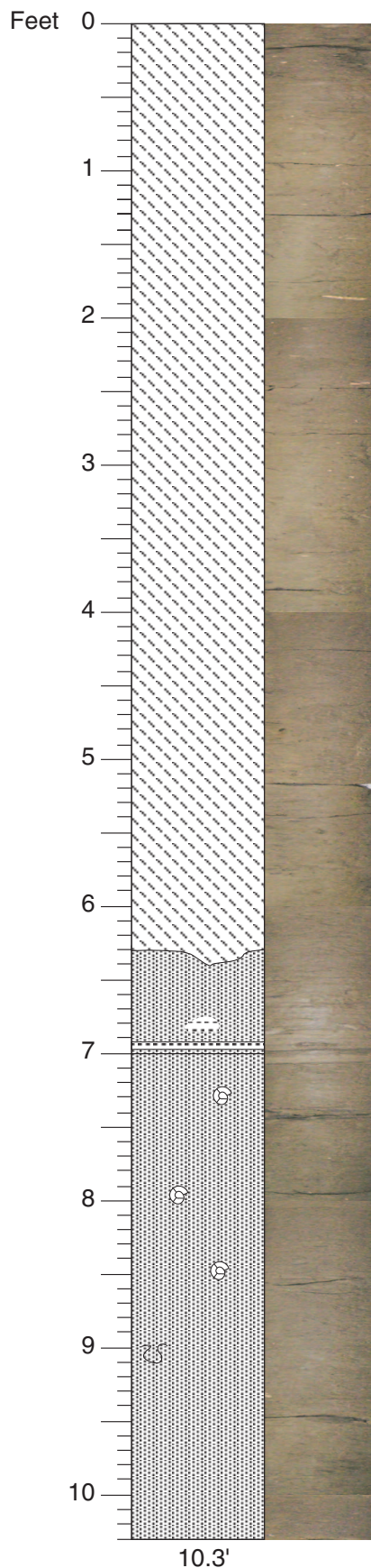
CLAY; stiff, laminated, very slightly silty with scattered shell debris, scattered thin sand beds, sands include small cross laminae with thin clay drapes, possible wave ripples at 2.7 ft; sand has small disseminated shell fragments and few lenticular sand laminae; some of the clay laminae are silty; sands include fire mica; clay: black (5Y 2.5/1); sand: dark gray (5Y 4/1)

174AX CZ  
Core # 71  
Start depth: 490 ft  
Stop depth: 500 ft  
Recovery: 3.9 ft  
Date: 10/7/04  
Described by: PPM/PJS/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

71



SILT; slightly clayey; widespread shell debris scattered throughout the section; 1-2% mica, very fine grained; some fine sand present in silts; large shell at 1.7-9 ft; clay content decreases down section; fine sand content increases; black lignitic band at 3.8 ft; dark greenish gray (GLEY 5GY 4/1)

Surface; with burrow/scour infilled with overlying lithology

SAND; very fine, silty; trace of lignite; clay clast at 6.8 ft; finely laminated clay interbed at 6.9-7.0 ft; SAND; silty, fine with glauconite, shell debris sporadic, trace mica; slightly clayey at 9.0-9.7 ft; shell at 9.2 ft; coarsens to base

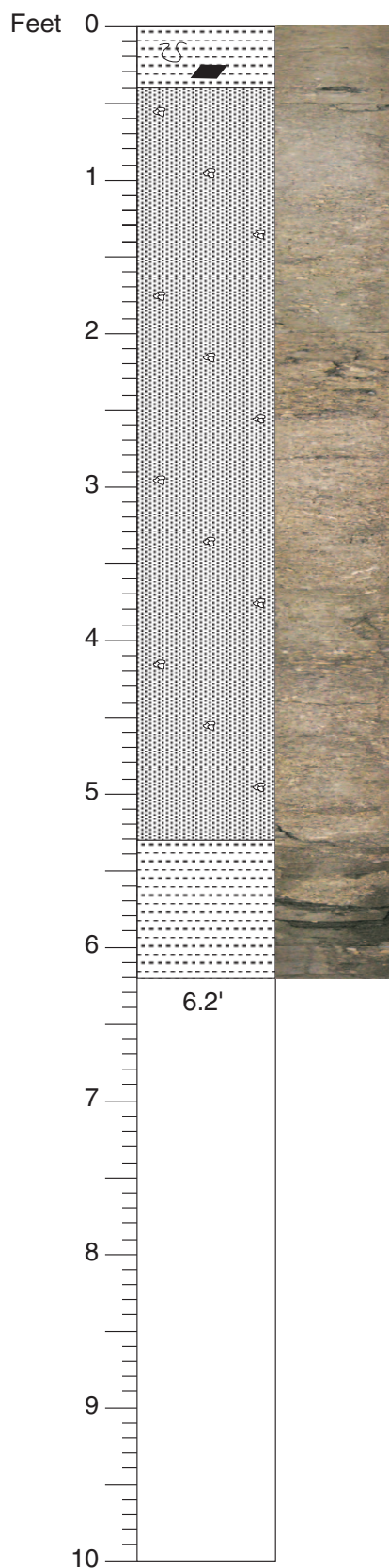
SAND; fine with granules of quartz, shell fragments and 1-2% mica

174AX CZ  
Core # 72  
Start depth: 500 ft  
Stop depth: 510 ft  
Recovery: 10.3 ft  
Date: 10/8/04  
Described by: PJS/AAK/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

72



CLAY; laminated, stiff; contains sand in burrows from below

SAND; medium to coarse, shelly, muddy, uniform and bioturbated, shell fragments, pebble and granule rich (to 1 cm diameter); shell fragment at 3.6 ft; gray (10YR 6/1)

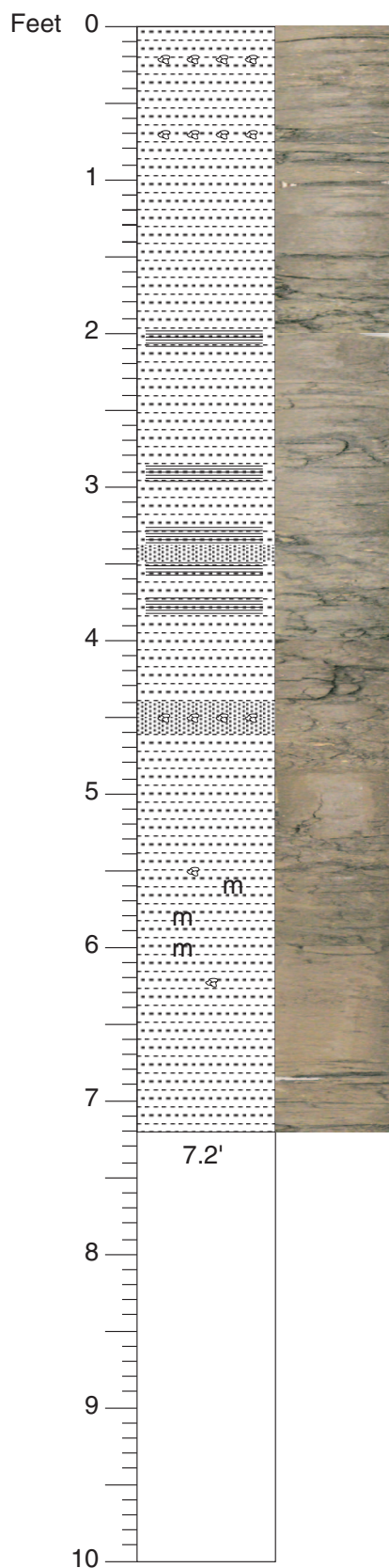
CLAY; laminated; very dark grayish brown (10YR 3/2)

174AX CZ  
Core # 73  
Start depth: 510 ft  
Stop depth: 520 ft  
Recovery: 6.2 ft  
Date: 10/8/04  
Described by: PJS/AAK/AP

# CORE DESCRIPTIONS

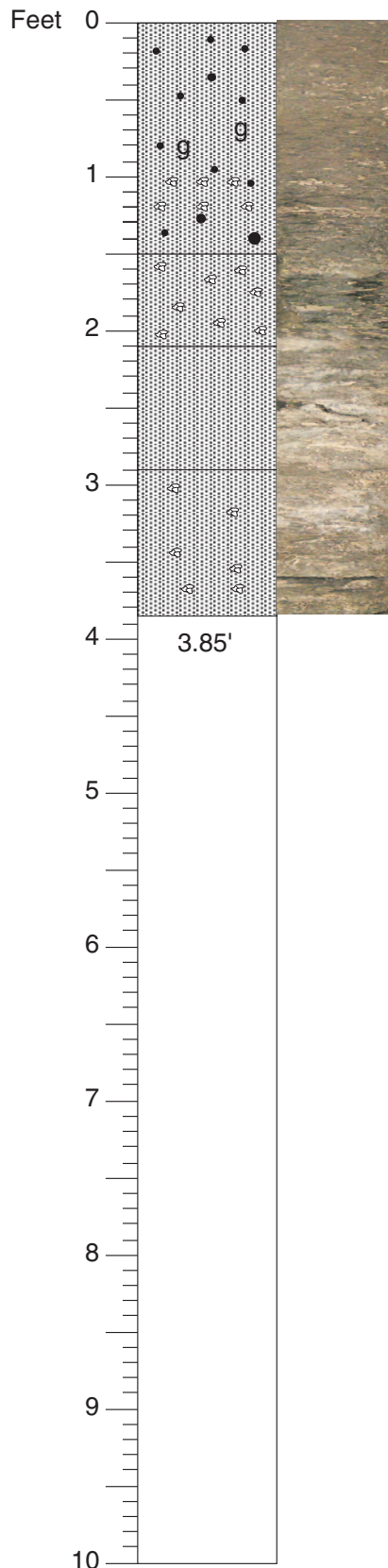
## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

73



CLAY; thin bedded to laminated, silty, slightly shelly with occasional very fine sand; fine laminations at 2.0, 2.9, 3.3, 3.5, and 3.8 ft; muddy very fine sand bed with shell fragments at 3.3-3.5 ft

174AX CZ  
Core # 74  
Start depth: 520 ft  
Stop depth: 530 ft  
Recovery: 7.2 ft  
Date: 10/8/04  
Described by: PJS/AAK/AP



SAND; slightly clayey, medium, poorly sorted; contains quartz granules and shell fragments, trace mica, 1-2% glauconite; shells and shell fragments at 1.0-1.2 ft

SAND; medium, abundant shell fragments

SAND; medium to coarse; discolored shell at 2.2-2.3 ft; more glauconite at 2.8-2.9 ft

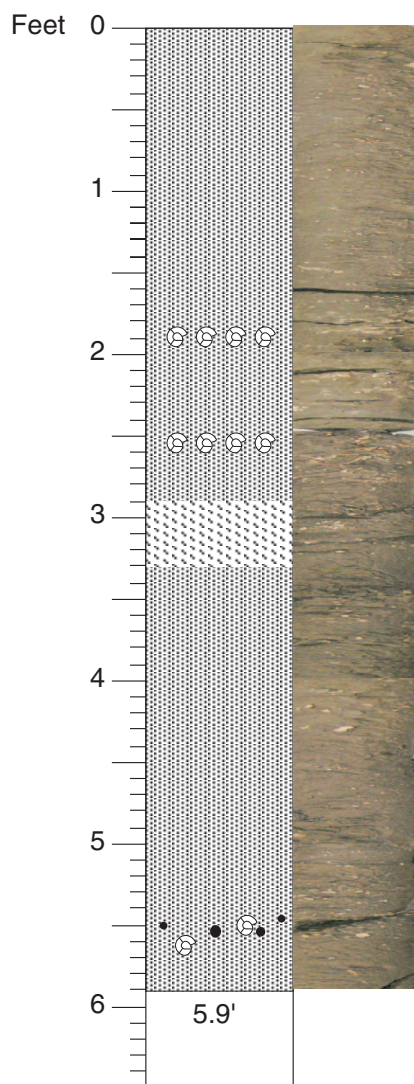
SAND; medium, clayey; with shell debris; shells at 3.8 ft

174AX CZ  
 Core # 75  
 Start depth: 530 ft  
 Stop depth: 533.5 ft  
 Recovery: 3.85 ft  
 Date: 10/8/04  
 Described by: AAK/PJS

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

75



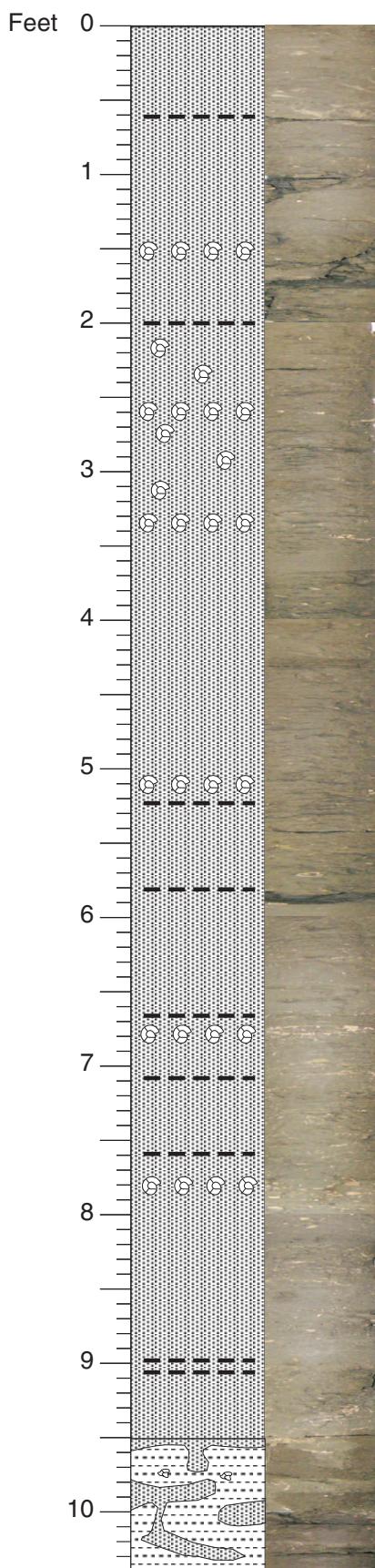
SAND; medium to coarse; shell fragments; faint cross bedding; micaceous; shell beds at 1.9 and 2.6 ft; silty fine sand bed at 2.9-3.3 ft; dark greenish gray (GLEY 10Y 4/)

174AX CZ  
Core # 76  
Start depth: 533.5 ft  
Stop depth: 540 ft  
Recovery: 5.9 ft  
Date: 10/8/04  
Described by: PJS/AAK/AP

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

76



SAND; medium, slightly silty, scattered shell fragments; 1-2% ohm; faintly laminated; shell beds at 1.5, 2.6, 5.1, 6.7, 7.8 ft; clay clast at 7.1 ft; very dark greenish gray (GLY 1 10Y 3/)

174AX CZ  
Core # 77  
Start depth: 540 ft  
Stop depth: 550 ft  
Recovery: 10.4 ft  
Date: 10/8/04  
Described by: PJS/AAK/AP

Contact

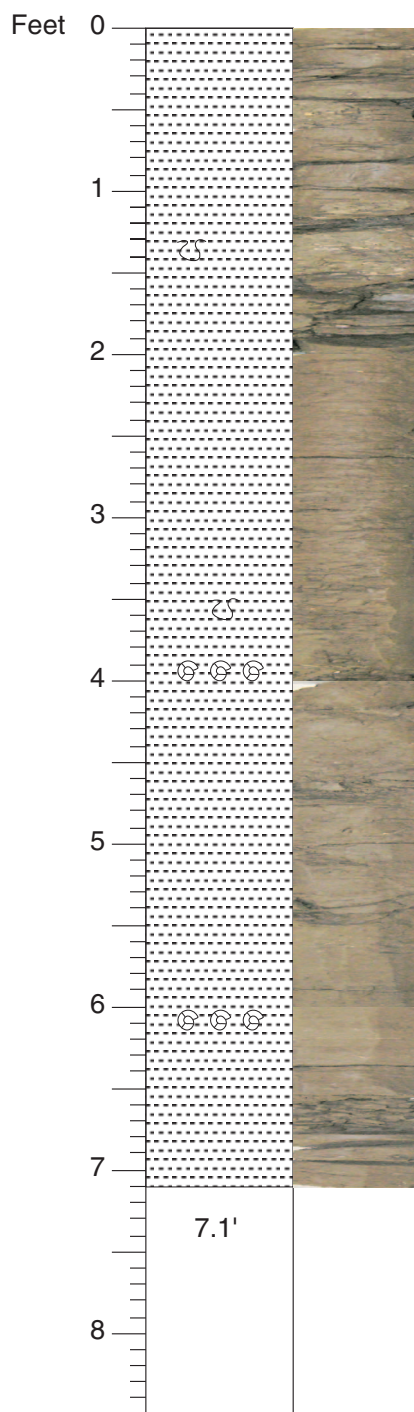
CLAY; mixed with medium SAND; heavily burrowed and bioturbated; greenish black (10Y 2.5/1)



# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

77



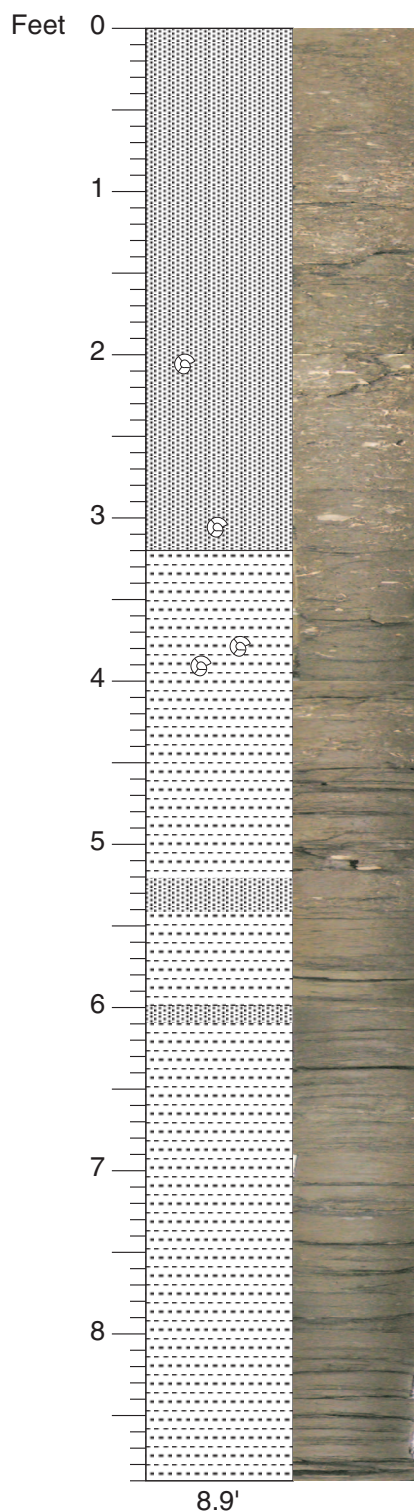
CLAY; laminated, silty, with very fine sand; shelly muddy sand burrow at 1.3 ft; rare thin shells; more very fine sand in laminae

174AX CZ  
Core # 78  
Start depth: 550 ft  
Stop depth: 558.5 ft  
Recovery: 7.1 ft  
Date: 10/8/04  
Described by: PJS/AAK/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

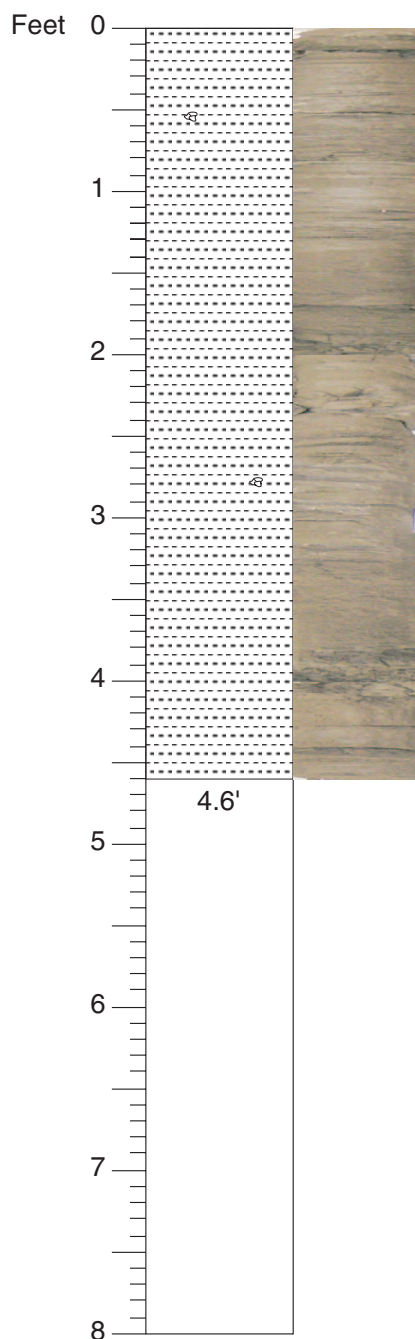
78



SAND; silty, very fine; lightly indurated, very shelly; large shell fragments at 2.0, and 3.0 ft

CLAY, silty, laminated, sand lenses; silty sand bed with shell debris at 5.2-5.4 and 6.0-6.1 ft; very dark greenish gray (GLEY 1 10Y 3/1)

174AX CZ  
Core # 79  
Start depth: 558.5 ft  
Stop depth: 567 ft  
Recovery: 8.9 ft  
Date: 10/8/04  
Described by: PJS/AAK/AP



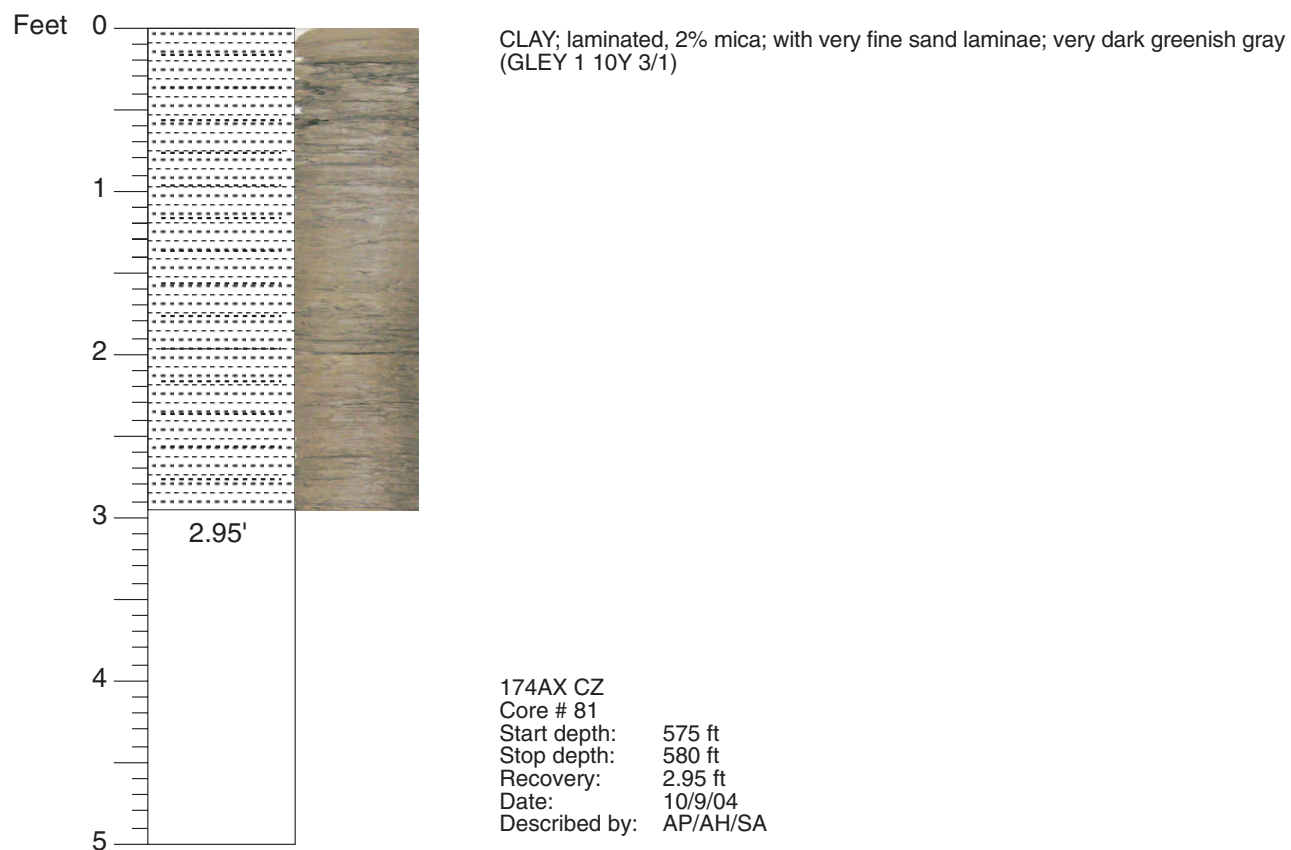
CLAY; laminated; shell fragments at 0.5 and 2.8 ft; very dark greenish gray  
(GLEY 1 10Y 3/1)

174AX CZ  
Core # 80  
Start depth: 567 ft  
Stop depth: 575 ft  
Recovery: 4.6 ft  
Date: 10/8/04  
Described by: PJS/AAK/AP

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

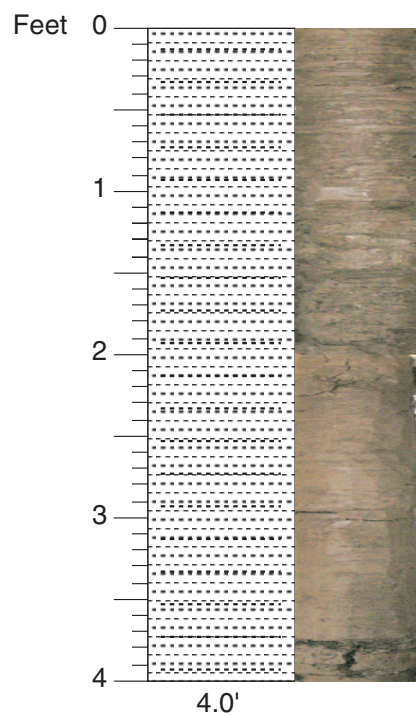
80



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

81



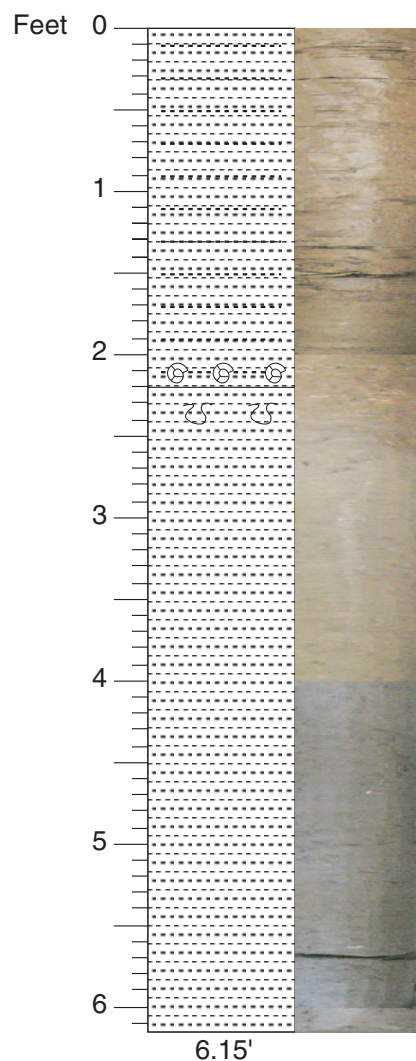
CLAY; laminated, 2% mica; with very fine sand laminae; Greenish black (GLEYS 10Y 2.5/1)

174AX CZ  
Core # 82  
Start depth: 580 ft  
Stop depth: 584 ft  
Recovery: 4 ft  
Date: 10/9/04  
Described by: AP/AH/SA

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

82



CLAY; laminated, 1% mica; with very fine sand laminae; dark gray (5Y 4/1)

Surface, burrowed

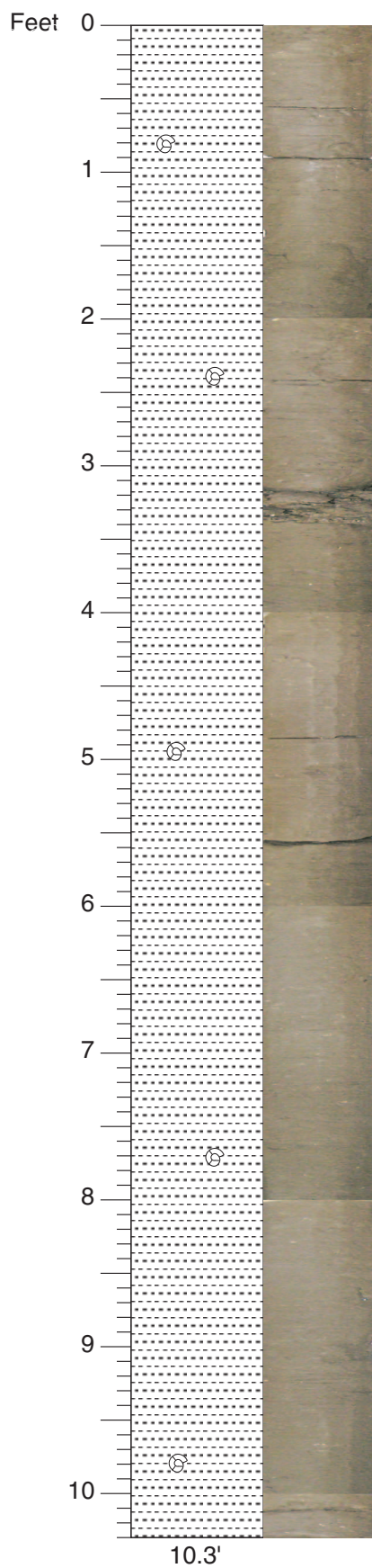
CLAY; scattered shells (to 10 mm), 2% mica; very dark greenish gray (GLE 1 10Y 3/1)

174AX CZ  
Core # 83  
Start depth: 584 ft  
Stop depth: 590 ft  
Recovery: 6.15 ft  
Date: 10/9/04  
Described by: AP/AH/SA

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

83



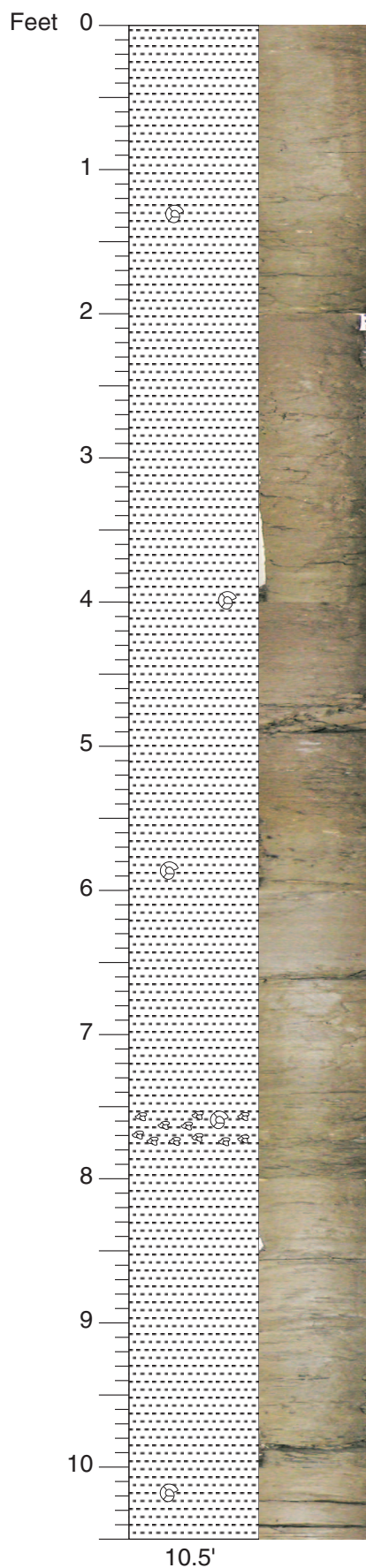
CLAY; silty; laminated; 3% mica; scattered shells (to 10 mm); very dark greenish gray (GLEY 1 10Y 3/1)

174AX CZ  
Core # 84  
Start depth: 590 ft  
Stop depth: 600 ft  
Recovery: 10.3 ft  
Date: 10/9/04  
Described by: AP/AH/SA

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

84



CLAY; silty; laminated; 3% mica; scattered shells (to 10 mm); shell hash layer at 7.5-7.3 ft; olive gray (4Y 4/2); very dark greenish gray (GLE 1 10Y 3/1)

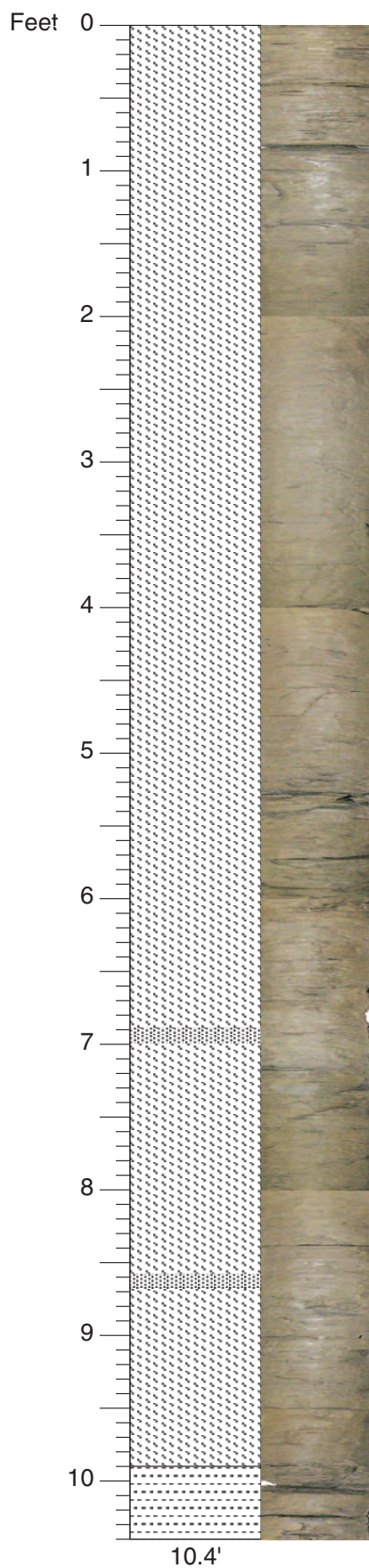
174AX CZ  
Core # 85  
Start depth: 600 ft  
Stop depth: 610 ft  
Recovery: 10.5 ft  
Date: 10/9/04  
Described by: AP/AH/SA



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

85



CLAY; laminated silty, interbedded with fine SAND; up to 30 mm; dark greenish gray (GLEY 1 10Y 4/1)

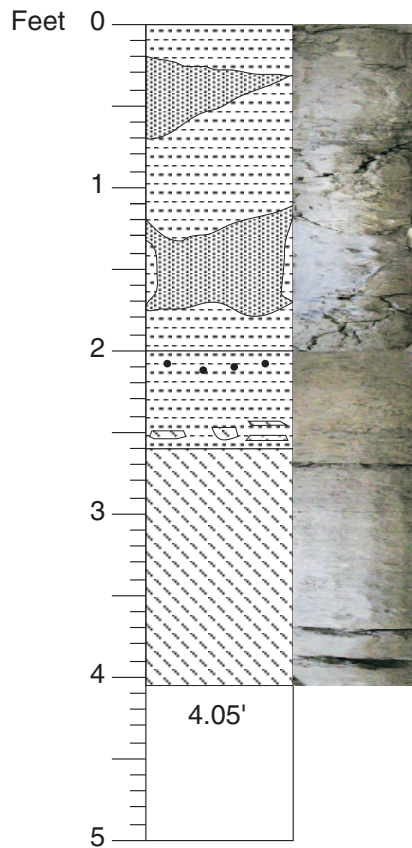
174AX CZ  
Core # 86  
Start depth: 610 ft  
Stop depth: 620 ft  
Recovery: 10.4 ft  
Date: 10/9/04  
Described by: AP/AH/SA

CLAY; sandy, with convoluted layering; very dark greenish gray (GLEY 1 10Y 3/1)

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

86



CLAY; silty, finely laminated with asymmetrical fine to very fine sand deposits; clay: dark greenish gray (GLEY 1 10Y 4/1); sand: gray (GLEY 1 N 5/1)

CLAY; sandy, silty, poorly sorted; sand is fine to very coarse, subangular; very small amount of gravel (to 4 mm); interfingering with unit below; contact zone either due to ripup from below and burrowing from above; dark greenish gray (10Y 4/1)

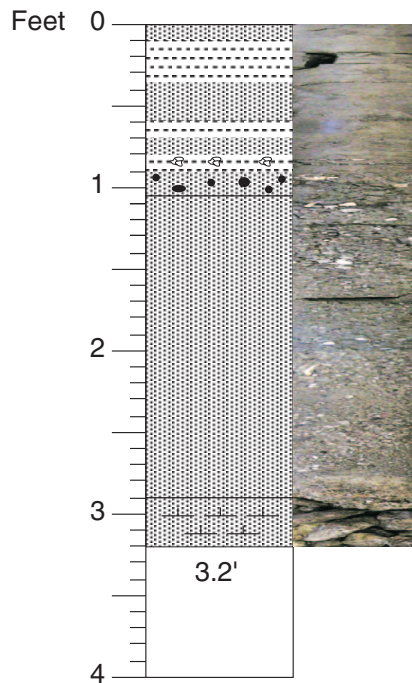
SILT; sandy, clayey; slightly micaceous; some very small dark grains (glauconite?), faint mm scale laminae; sand is very fine, sand percent decreases upward, very dark greenish gray (5GY 3/1)

174AX CZ  
Core # 87  
Start depth: 620 ft  
Stop depth: 625 ft  
Recovery: 4.05 ft  
Date: 10/10/04  
Described by: AH/LN/ALF/PPM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

87



SAND, very fine slightly muddy, interbedded with CLAY; stiff, faint laminations; dark greenish gray (10Y 4/1)

SAND; granuliferous, fine to very coarse, poorly sorted; changes upward from very muddy to clean with common shell fragments near top

SAND; fine to very coarse, granuliferous, with small pebbles, slightly muddy, coarse zones from 1.1-1.6, 1.9-2.2, 2.3-2.7 ft; shell fragments 2.1 ft; granules and pebbles mostly subangular; whitish and darker quartz; shell fragments are concentrated in coarser zones; greenish gray (10Y 5/1); below 2.75: grayish brown (2.5Y 5/2)

SANDSTONE; fine to very coarse; calcite or dolomite cemented; shelly, granules, mostly quartz; light olive brown (2.5Y 5/3)

174AX CZ

Core # 88

Start depth: 625 ft

Stop depth: 629ft

Recovery: 3.2 ft

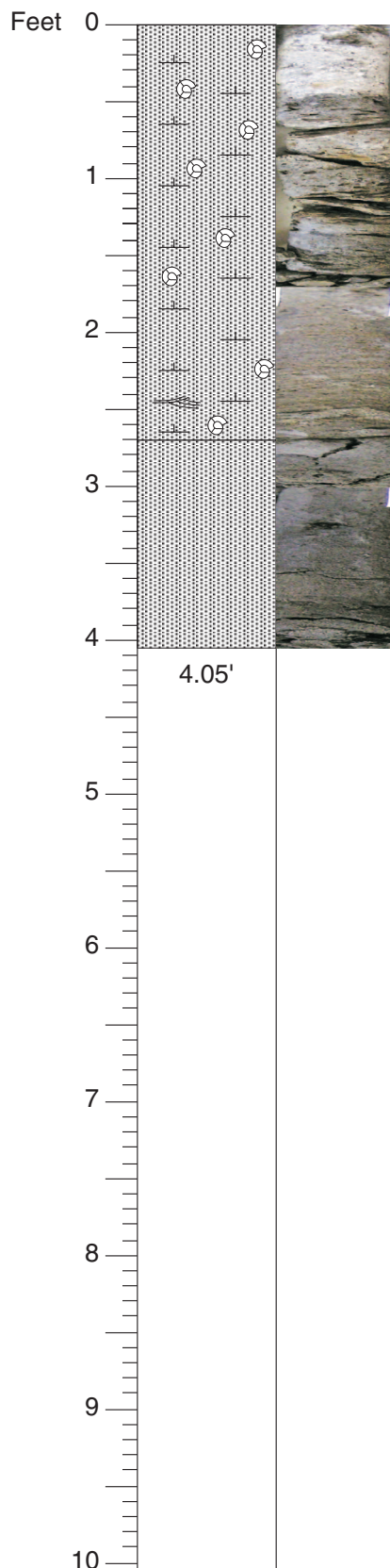
Date: 10/10/04

Described by: AH/LN/ALF/PPM

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

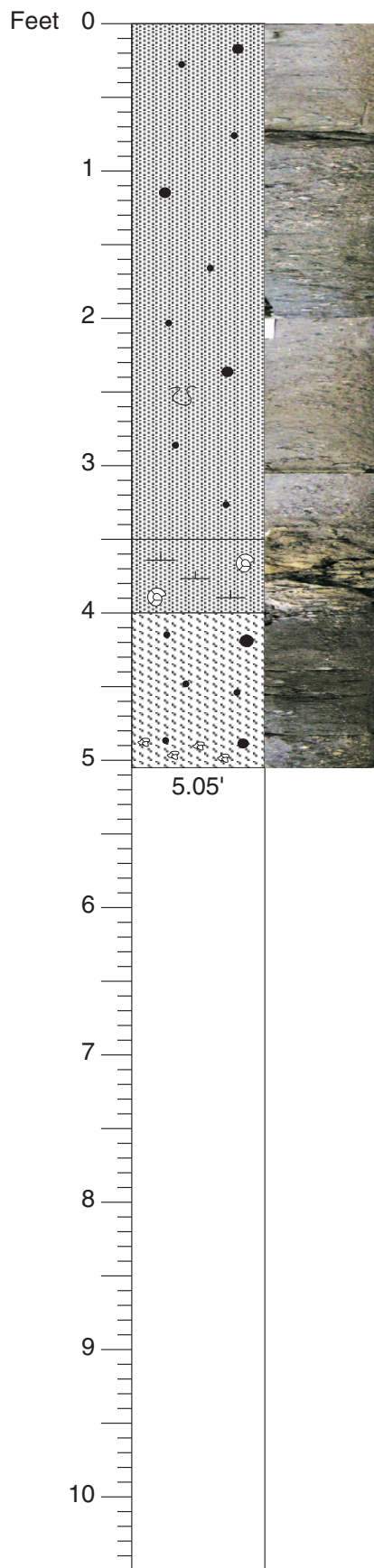
88



SANDSTONE; dolomite cement? (fizzes weakly, better when scraped, possibly calcite); changes downward from poorly sorted, fine to very coarse sand with a few granules to fine to medium sand with a few coarse grains; poorly sorted; abundant open shell molds, with the most abundant and largest size from 0.9-1.9 ft (biomoldic porosity); yellowish crystalline coating on mold surfaces (?dolomite); some black grains, possibly phosphate; cross bedded from 2.2-2.7 ft; cement is whitish up core, cement is stronger up core; top, 0-1.0 ft: light greenish gray (10Y 7/1); bottom, 1.0-2.7 ft: light olive gray (5Y 6/2)

SAND; medium to fine, moderate sorting, slightly muddy, mostly quartz, some dark grains, some of the dark grains appear to be phosphate (including one long thin bone-like fragment ~1 mm diameter); wood fragment at 3.3 ft, fairly homogenous, without clear sedimentary structures; gray (5Y 5/1)

174AX CZ  
Core # 89  
Start depth: 629 ft  
Stop depth: 639.5 ft  
Recovery: 4.05 ft  
Date: 10/10/04  
Described by: AH/LN/ALF/PPM



SAND; medium; poorly sorted, ranges from fine to very coarse, with common granules and some pebbles, coarse fraction more abundant from 0.7-1.4 ft; common shell fragments (1-2%) from sand size to 1 cm; granules and pebbles mostly quartz, rare shelly sandstone clasts, very slightly muddy, some small bone phosphate fragments (sand sized), clay lined burrow at 2.55 ft, shell fragments more abundant on bottom, sand subangular to subrounded; 1-2% dark grains (subangular and not glauconite), little or no mica; greenish gray (GLEY 1 10Y 5/1)

SANDSTONE; with bivalve shell molds, yellowish cement and overgrowths (likely with dolomite or calcite); sand is mostly medium, common granules and a few small pebbles; some of the shells are thick with fibrous like structure; light olive brown (3Y 5/4)

SAND; very muddy with abundant clay and silt; very poorly; mostly fine to medium, with common granules and pebbles; scattered sand-size shell fragments with more abundant and larger shell fragments from 4.8-5.05 ft including bivalves and ?barnacles; slightly clayier zone from 4.45-4.6 ft; granules and pebbles are mostly subrounded with some subangular; very dark greenish gray (10Y 3/1)

174AX CZ

Core # 90

Start depth: 639.5 ft

Stop depth: 650 ft

Recovery: 5.05 ft

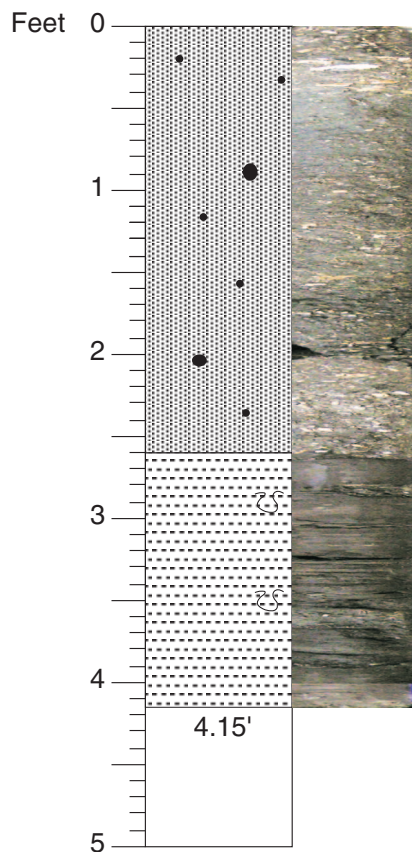
Date: 10/10/04

Described by: AH/LN/ALF/PPM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

90



SAND; medium, poorly sorted, muddy, fine to very coarse and common granules; granules and coarse grains, subangular to subrounded, common shell fragments and shells, more abundant granules and larger (to 2 cm) shell fragments, 0-0.45 ft; more intact shells (mostly bivalves) 1.1-1.6 ft; more abundant granules 1.6-2.6 ft; increasing in abundance down section with common shell fragments (light and dark shell); clay rip up clasts near base (at ~2.5 ft); very dark greenish gray (10Y 3/1)

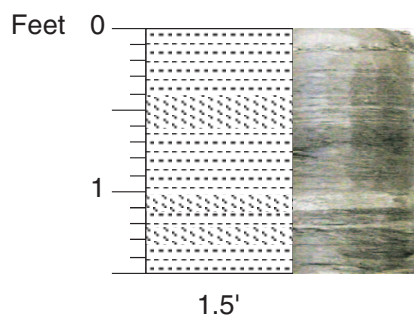
CLAY; slightly silty, laminated, dark with scattered laminae of fine to medium sand, some lighter bands or silty clay, thin beds/thick laminae of fine to medium sand with a few coarse-very coarse-granule grains and shell fragments at 3.5-3.6, 3.8-3.85, 4.1-4.15 ft; sand zones, possible sand filled burrows at 2.8 and 3.4 ft; appears to include very fine sand to silt size micas; greenish black (10Y 2.5/1)

174AX CZ  
Core # 91  
Start depth: 650 ft  
Stop depth: 655 ft  
Recovery: 4.15 ft  
Date: 10/10/04  
Described by: AH/LN/ALF/PPM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

91



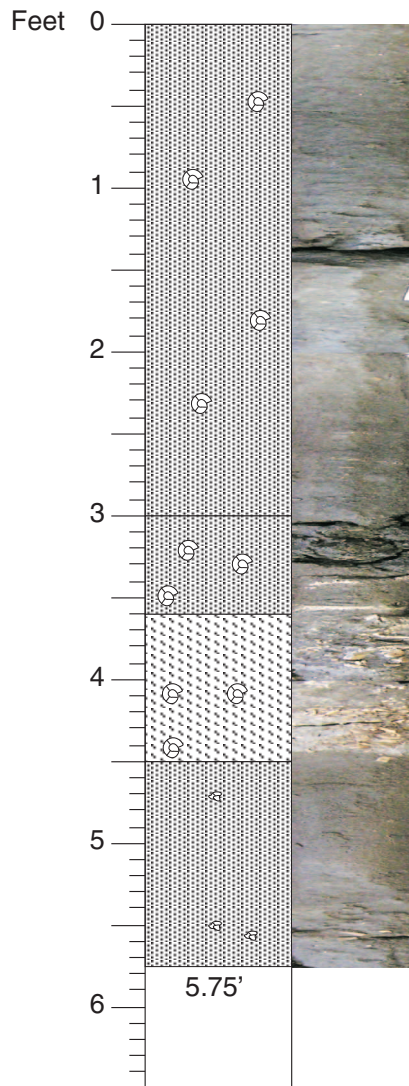
CLAY; slightly silty, very finely laminated, with scattered mm-scale clay beds; scattered shell hash, slightly micaceous; 1.4-1.6 ft clayey silty, very fine to fine sand parting; 1.0-1.1; sand, fine to medium; very fine shell fragments; 1.2-1.25; sand, fine to medium; very fine shell fragments; sands are slightly micaceous; sand: very dark greenish gray (10Y 3/1); clay: very dark gray (10YR 3/1)

174AX CZ  
Core # 92  
Start depth: 655 ft  
Stop depth: 656.5 ft  
Recovery: 1.5 ft  
Date: 10/10/04  
Described by: AH/LN/ALF/PPM

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

92



SAND; medium, mostly quartz, possible ohms (garnet); ~2% shell fragments, some larger shell fragments up to 5 mm; trace amounts of mica, moderate to well sorted; clean sand; ~2% fine dark grains; very dark greenish gray (GLEY 1 10Y 3/1)

SAND; same as above but with large shell pieces; gray (GLEY 1 M 6/)

SAND; muddy, abundant thick shell and fragments; poorly sorted, predominantly medium grained sand, includes fine to coarse; clay matrix in the intervals 3.6-3.95 and 4.25-4.45 ft causes color differences; sand: dark greenish gray (GLEY 1 10Y 4/1); intervals: gray (GLEY 1 M 6/)

SAND; moderately well sorted; ~3% fine dark grains, clean sands, ~2-3% shell fragments, some finely laminated layers, shell fragments concentrated at bottom; very dark greenish gray (GLEY 1 10Y 3/1)

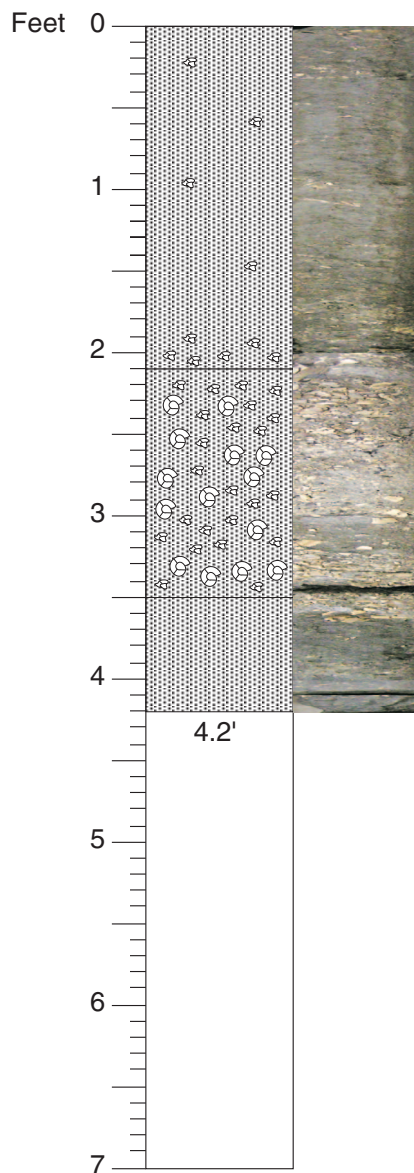
174AX CZ  
Core # 93  
Start depth: 656.5 ft  
Stop depth: 663 ft  
Recovery: 5.75 ft  
Date: 10/10/04  
Described by: AH/LN/ALF/PPM



## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

93



SAND; medium to fine, slightly muddy, scattered shell hash, less than 1% dark grains, subangular-subrounded, moderate sorting, faint laminations with slightly siltier zones standing out, a few coarse grains, shell content increases below 1.4 ft to around 10% by bottom, sand grain size is consistent; dark gray (5Y 4/1)

SAND; very shelly, muddy (variably), poorly sorted, from fine to very coarse (average medium), shells comprise 50% near top and ~25% near bottom; more ohms than above, including garnets; shells include bivalves, "turritellid" gastropods, small coral fragments, some shell fragments are very pearly, some dark; most of the interval has a gray (GLEY 1 N6/) sticky clayey matrix interbedded with cleaner dark gray (5Y 4/1) slightly muddy sand that is slightly less shelly

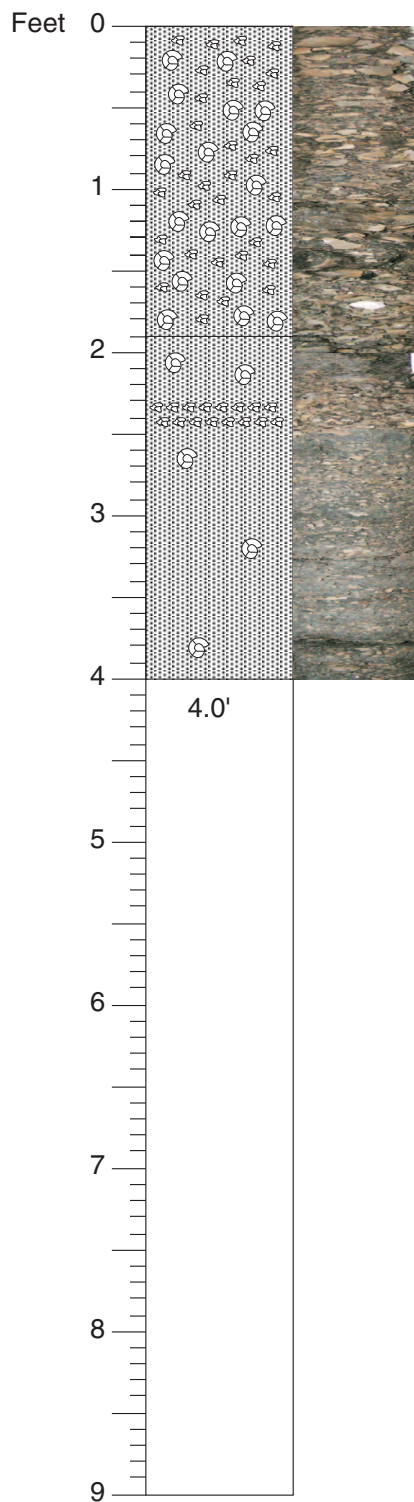
SAND; silty, moderated sorting, mostly medium, varies from fine to coarse, fine shell hash throughout and concentrated from 3.8-3.88 ft; sand coarsens below 3.88 ft to medium to coarse, moderate sorting, subangular to subrounded, 1-7% ohm; color varies due to varying concentration of ohms, more from 3.5-3.8 ft (~7%, less below); dark greenish gray (GLEY 1 10Y 4/1)

174AX CZ  
Core # 94  
Start depth: 663 ft  
Stop depth: 670 ft  
Recovery: 4.2 ft  
Date: 10/10/04  
Described by: ALF/PPM

# CORE DESCRIPTIONS

## VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

94



SAND; medium to coarse; very shelly; shells are about even with sand; some fine, moderate sorting; some silt and clay; subangular-subrounded, very thick shells, up to 40 mm long, shells are broken and abraded, shells have zones where they are concentrated; 3 cycles of coarsening upward

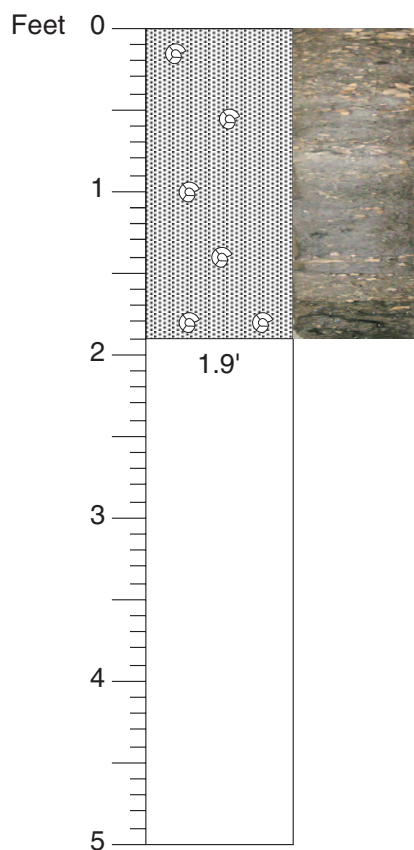
SAND; very shelly; medium; silty, slightly clayey; very similar to above with fewer and smaller shells; shells are ~25%; 2.25-2.5 ft shell hash; largest shell is 15 mm; average is 5-10 mm; dark greenish gray (GLEY 2 5BG 4/1)

174AX CZ  
Core # 95  
Start depth: 670 ft  
Stop depth: 679 ft  
Recovery: 4.0 ft  
Date: 10/11/04  
Described by: JVB/DM/SA

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

95



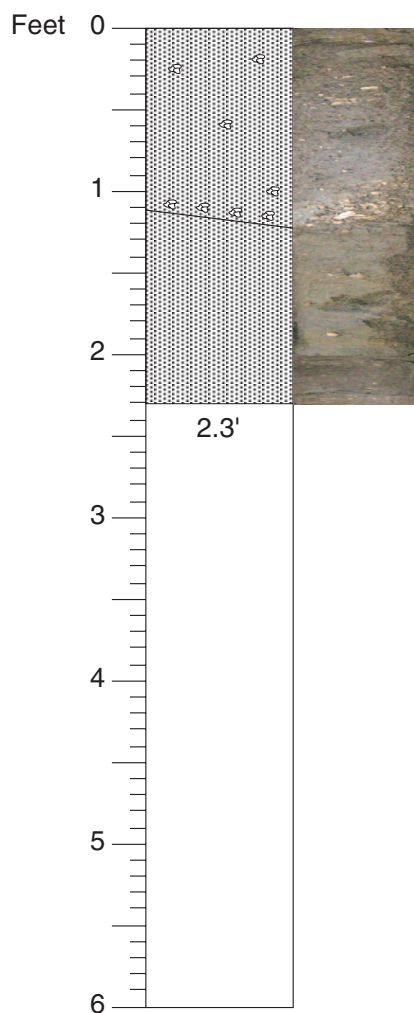
SAND; medium; moderate sorting, subangular, some coarse to very coarse grains; shells to 15%; shell fragments (to 15 mm) mostly, some smaller whole shells (average 4 mm); some siltier beds up to 30 mm thick; shells are more common in siltier beds; <1% ohm; dark greenish gray (GLEY 1 10Y 4/1)

174AX CZ  
Core # 96  
Start depth: 679 ft  
Stop depth: 684 ft  
Recovery: 1.9 ft  
Date: 10/11/04  
Described by: JVB/DM/SA

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

96



SAND; medium; poor sorting, very coarse to silt; scattered shell fragments at base (up to 15 mm in length; 4-5 mm average); very dark greenish gray (GLEY 1 10Y 3/1)

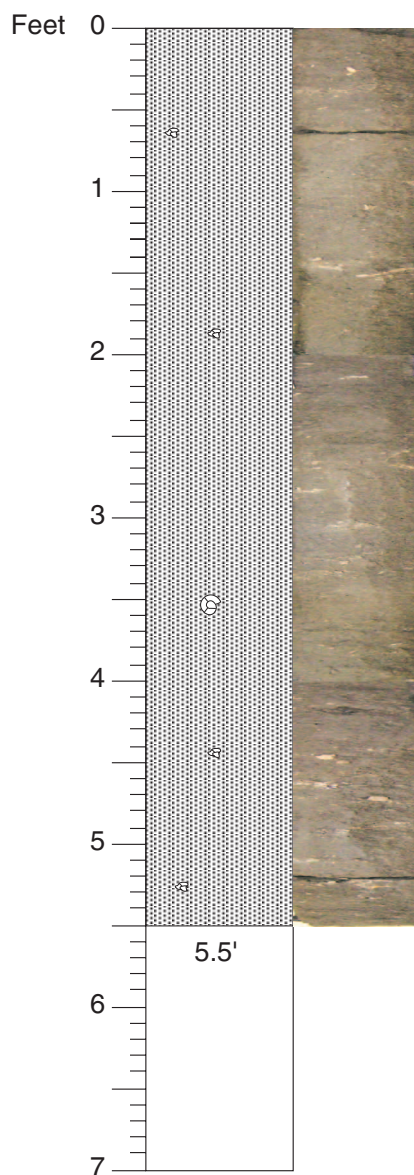
SAND; medium; <1% ohm; some fine sand mixed in; subangular; rare to absent shells; greenish black (GLEY 1 10Y 2.5/1)

174AX CZ  
Core # 97  
Start depth: 684 ft  
Stop depth: 690 ft  
Recovery: 2.3 ft  
Date: 10/11/04  
Described by: JVB/DM/SA

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

97



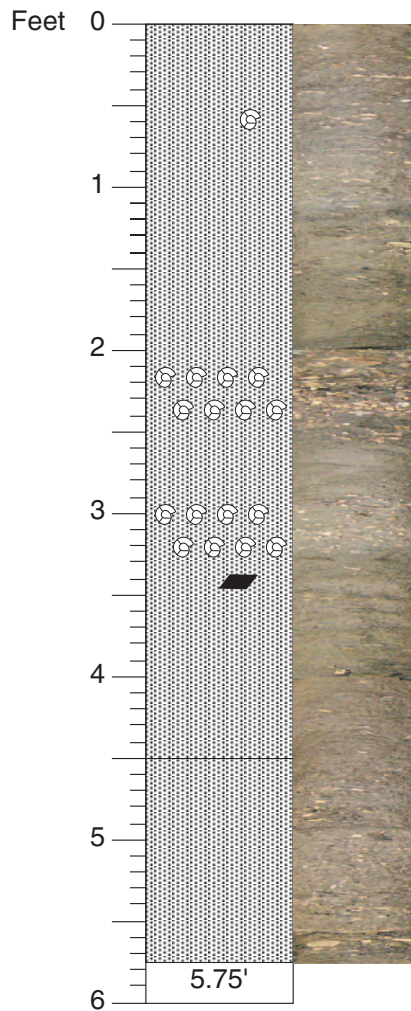
SAND; medium, a few coarse, ~1% ohm; subangular-subrounded; scattered shell fragments; bioturbated texture; shark's tooth at 4.2 ft; bluish gray (GLEY 2 10B 5/1)

174AX CZ  
Core # 98  
Start depth: 690 ft  
Stop depth: 697 ft  
Recovery: 5.5 ft  
Date: 10/11/04  
Described by: JVB/DM/SA

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

98



SAND; fine to coarse; mostly medium; poorly sorted, subangular-subrounded; rare quartz granule; shelly, all fragments; 1.1-1.2 ft; siltier bed with more ohms; 2.1-2.4 ft shellier zone (average 3-8 mm; up to 15 mm); 2.9-3.2 ft – shellier zone, some granules and shells; very dark greenish gray (GLEY 1 10Y 3/1)

Gradational contact

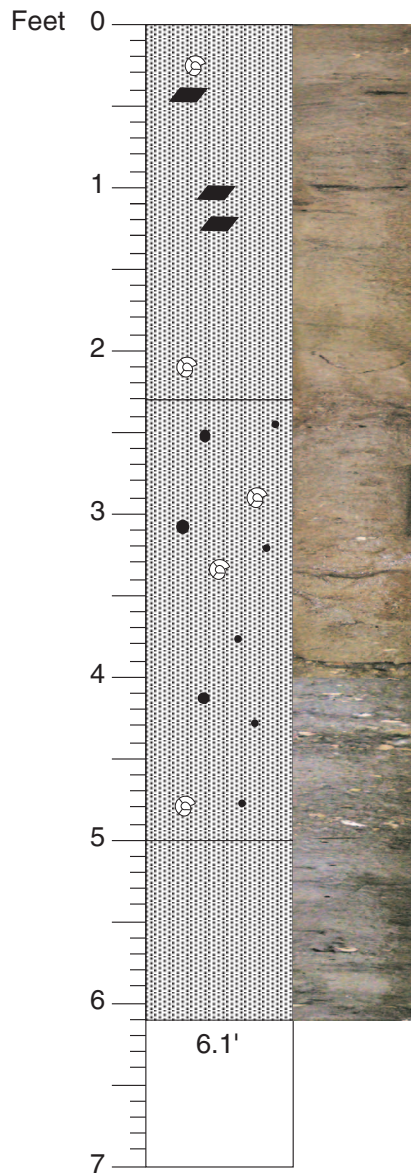
SAND; coarse, very poorly sorted; quartz, some shells, ohm 1-2 %, coarsens to bottom (to 5 mm), shells fragments are larger too

174AX CZ  
Core # 99  
Start depth: 697 ft  
Stop depth: 703 ft  
Recovery: 5.75 ft  
Date: 10/11/04  
Described by: JVB/DM/SA

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

99



SAND; medium; lignitic, rare shells; moderate sorting, subangular-subrounded; few ohms; rare shell fragments; may fine down section; dark gray (2.5Y 4/1)

SAND; poorly sorted, pebbles to 12 mm; shells increase to base; mostly medium to coarse sand, granules and pebbles more common in bottom; very dark gray (2.5Y 3/1)

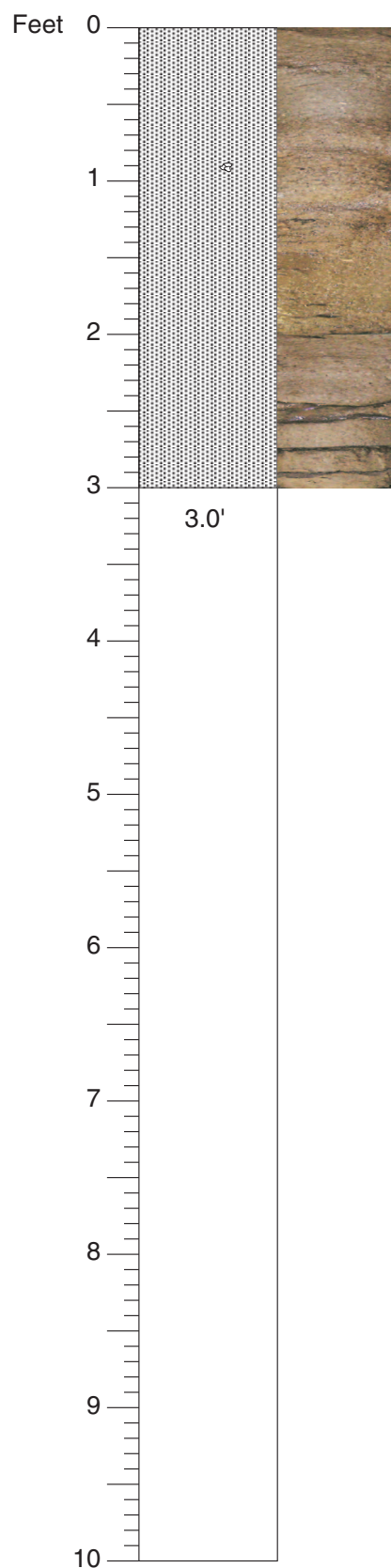
SAND; medium-fine; slightly silty moderate sorting; subangular-subrounded; slightly micaceous; rare shell fragments

174AX CZ  
Core # 100  
Start depth: 703 ft  
Stop depth: 710 ft  
Recovery: 6.1 ft  
Date: 10/11/04  
Described by: JVB/DM/SA

## CORE DESCRIPTIONS

### VISUAL CORE DESCRIPTIONS, CAPE MAY ZOO SITE

100


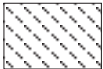


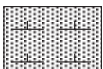












SAND; medium to coarse, moderate sorting; subangular-subrounded; rare shell fragments, ohm <1%; very dark gray (2.5Y 3/1)

174AX CZ  
Core # 101  
Start depth: 710 ft  
Stop depth: 715 ft  
Recovery: 3.0 ft  
Date: 10/11/04  
Described by: JVB/DM/SA



**Key**

	Silty sand
	Silt
	Sand
	Clay
	Sandstone
	Peat/Lignite
	Pebbles/Granules
	Shell fragments
	Shells
	Cross beds
	Laminations
	Clay laminae
	Burrows
	Mica
	Pyrite