TERRA NOVA SEDIMENT DATA COMPILATION

PETRO-CANADA 1997 GEOTECHNICAL INVESTIGATIONS

GSC OPEN FILE # 3680

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by

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INTRODUCTION

Jacques/McClelland Geosciences Inc (JMGI) was retained by the Terra Nova Alliance to investigate and report on the geotechnical conditions at the proposed sites of subsea completions (Glory Holes, Anchor Piles and Flow Lines) at the Terra Nova Development site, located on the Grand Banks offshore Newfoundland (Jacques/McClelland Geosciences Inc., 1997).

The study comprised a total of:

- three boreholes and piezocone penetration tests (PCPTs) to 13 m, five boreholes and PCPTs to 42 m at five glory hole sites;
- six boreholes and PCPTs to 40 or 45 m at three anchor pile sites
- 20 boreholes and PCPTs to 3 m depth along * flow line routes.

The field work was completed between 6 July to 21 July, 1997 onboard the drillship *MV Norskald.* In-situ testing comprised PCPTs and sediment samples taken with the Fugro Engineers Wip sampler. Onboard laboratory testing of samples was performed to determine physical properties to aid in classification. The onboard sample descriptions and laboratory results are presented in the Terra Nova Development Preliminary Field Report on 1997 TNA Offshore Geotechnical Investigation (Jacques/McClelland Geosciences Inc., 1997).

The onshore laboratory investigation comprised additional classification tests, physical property tests and strength testing including unconsolidated-undrained tests, triaxial compression tests and direct shear tests performed on undisturbed and reconstituted samples. The in-situ testing results, final stratigraphic profiles, classification and geotechnical testing results are presented in the Terra Nova Development Report on 1997 TNA Offshore Geotechnical Investigation (Jacques/McClelland Geosciences Inc., 1997).

GSC-Atlantic (GSCA) contracted Petro-Canada to extend Glory Hole site GS1_97 from a depth of 42.00 m to 52.63 m with almost continuous sediment sampling. GSCA chose to extend one hole to ensure that the major shallow seismostratigraphic units (Sonnichsen and Cumming, 1996 *) were penetrated and sampled. GS1_97 was selected for extension because it was the longest borehole close to GSCA's existing seismic coverage . The GS1_97 extension core samples were split, described, photographed and subsampled onboard by and brought back to the GSC-Atlantic Core Repository. Meghan MacCarthy of GSC-Atlantic was aboard M/V Norskald in order to digitally photograph, describe and subsample all recovered borehole sediment cores.

K & K Geoscience was contracted by G.Sonnichsen of GSC-Atlantic to:

1) compile the GSC-Atlantic digital photography, sediment descriptions and PCPT data for Terra Nova boreholes GS1_97 and A3_97;

2) describe and subsample the extended portion of GS1_97;

3) to locate any hardpan layers in the Flow Line route boreholes and compile the GSC-Atlantic digital photography, sediment descriptions and PCPT data for those boreholes.

DATA PROCESSING

Digital Photography

GSCA provided 430 Adobe PhotoDeluxe jpeg files of the digital photography taken using an Olympus 300L digital camera. The jpeg images for eight Glory Hole boreholes (EFN1A_97, EFN1B_97, EFN2_97, EFS1_97, FEI_97, GN1_97, GS1_97 and GS2_97), one Anchor Pile site borehole (A3_97) and nine Flow Line Route boreholes (FPSOB, FR1_1B, FR1_2B,FR1_3B, FR1_6B, FR1_7, FR4_1B, FR4_3C and FR4_4B) were processed using Adobe Photoshop 2.5.1. The images were rotated to a vertical position (top of the core up), auto adjusted, cropped (to reduce the file size) and saved as PC LZW compressed TIFF files. The sample number, sample depth, tiff filename, quality of image and other appropriate comments were recorded (Appendix 1).

Cone Penetrometer Testing (CPT)

The raw CPT data of the individual pushes for each borehole were provided as compiled PC ASCII data files by JMGI. The CPT datafiles consisted of record number, depth (metres from the start of each push), time (seconds from the start of each push), cone tip resistance (q_c : Mpa), sleeve friction (f_s : MPa), friction ratio (R_f) and pore pressure (u_2 : Mpa).

The sleeve friction measurement (f_s) is offset from the cone tip resistance measurement (q_c) by 11 cm. This offset could not be corrected by simply shifting the sleeve friction datapoints. The depth correction for the sleeve friction was made using the MacCombine (version 1.0) program written by David Mosher. The MacCombine program combined the original depth and q_c values with the corrected depth (actual depth) and sleeve friction values by finding the closest corresponding depth for each value and combining the data.

The measured q_c and f_s values may not represent true total stress resistance of the sediment as a result of water pressures acting on the exposed surfaces behind the cone tip and on the ends of the friction sleeve (Robertson and Campanella, 1988). The q_c value was corrected for unequal pore pressure effects using:

$$q_t = q_c + u_2 (1\text{-}a)$$

where
q_t = corrected total cone tip resistance
q_c = measured cone tip resistance
u_2 = pore pressure generated immediately behind the cone tip
a = net area ratio (equal to 0.75)

Robertson (1989) outlines a procedure to normalize total cone tip resistance using vertical effective stress. The CPT data in this study was not normalized on the advise of GSC-Atlantic.

Measured pore pressure was corrected for hydrostatic pressure. Hydrostatic pore pressure u_0 was set to zero at the start of each push and kept at zero for the entire push.The hydrostatic pressure for each measurement was calculated as follows:

$$u_o = z * 9.81 * \rho_{sw}$$

where
z = distance from the start of each push
ρ_{sw} = density of salt water assumed as 1.024 g/cm^3

The measured pore pressure (u_2) was corrected for the effect of hydrostatic pressure using:

$$u = u_2 - u_0$$

The sleeve friction ratio (R_f) was recalculated using the depth adjusted f_s and the following:

$$R_f = (f_s/q_t) * 100\%$$

where
Rf = friction ratio
f_s = measured sleeve fiction
q_t = corrected cone tip resistance

The raw CPT data for each of the Glory Hole, Anchor Pile and Flow Line route boreholes was compiled into 3 excel 5.0 datafiles. The corrected CPT data for GS1_97, A3_97, FPSO, FR1_1B, FR1_3B and FR4_1B was compiled into one excel 5.0 datafile for each site. Each corrected datafile comprises the original raw data and the MacCombine corrected depth (m), measured cone tip resistance (q_c : MPa), measured sleeve friction (f_s : Mpa), measured pore pressure (u_2 : Mpa), corrected pore pressure (u : Mpa), total cone tip resistance (q_t) using both measured pore pressure (u_2) and corrected pore pressure (u), friction ratio (R_f) using both values of q_t and the cpt soil classification (see "Soil Classification and Core Description" section of this report). The data was then saved in excel 4.0 format and imported into Kaleidagraph 3.0.

Grain Size Analysis

Sieve and hydrometer grain size analyses were conducted by JMGI according to ASTM Method D422. The results were presented as percent passing (Glory Hole and Anchor Hole Preliminary Field Reports) and percent grain size distribution curves and in table format (Flow Line Preliminary Field Report).

Cumulative relative frequency percentage curves and data tables were provided by the GSC-Atlantic Sedimentological Laboratory (Appendix 2) for the additional GS1_97 borehole grain size subsamples taken at the GSC-Atlantic Core Laboratory.

The percent grain size was calculated for GS1_97 and A3_97 from the percent passing grain size data supplied by JMGI. Cumulative grain size percent was calculated for GS1_97, A3_97, FPSOB, FR1_1B, FR1_3B and FR4_1B in individual Excel 5.0 datafiles.

Soil Classification and Core Descriptions

Unified Soil Classification

The Unified Soil Classification System (USCS) is commonly used in civil engineering practice. The basis for the USCS is that coarse-grained soils are classified according to their grain size distributions, whereas the engineering behaviour of fine grained soils is primarily related to their plasticity. Therefore only a sieve analysis and the Atterberg limits are required to completely classify a soil in this system. A summary of the USCS Soil Classification is shown in Table 1.

Table 1
Unified Soil Classification

Coarse grained

Gravels

GW - Well graded gravels, gravel-sand mixtures, little or no fines
GP - Poorly graded gravels, gravel-sand-silt mixtures
GM - Silty gravels, gravel-sand-silt mixtures
GC - Clayey gravels, gravel-sand-clay mixtures

Sands

SW - Well graded sands, gravelly sands little or no fines
SP - Poorly graded sands, gravelly sands little or no fines
SM - Silty sands-sand silt mixtures
SC - Clayey sands, sand-clay mixtures

Fine grained

Silts and Clays - liquid limit less than 50

ML - Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
CL - Inorganic clays of low to medium plasticity, gravelly clays,sandy clays,silty clays ??
OL - Organic silts and organic silty clays of low plasticity

Silts and Clays - liquid greater than 50

MH - Inorganic silts, micaceous or diatomaceous fine sandy or silty soils elastic silts
CH - Inorganic clays of high plasticity, fat clays
OH - Organic clays of medium to high plasticity, organic silts

CPT Soil Classification

The CPT data for the boreholes GS1_97, A3_97, FPSOB, FR1_1B, FR1_3B and FR4_1B was classified using the Simplified Soil Classification Chart for Standard Electronic Friction Cone (Robertson et al.1986). This classification uses friction ratio (R_f) versus log total cone tip resistance (q_t) to define 12 soil behaviour type zones (Table 2).

Table 2
Simplified Soil Behaviour Type Classification for Standard Electric Friction Cone

Zone	Soil Behaviour Type
1	- sensitive fine grained
2	- organic material
3	- clay
4	- silty clay to clay
5	- clayey silt to silty clay
6	- sandy silt to clayey silt
7	- silty sand to sandy silt
8	- sand to silty sand
9	- sand
10	- gravelly sand to sand
11	- very stiff fine grained
12	- sand to clayey sand

Core Description

The core description was based upon the initial visual grain size description and then modified by grain size analysis data where available. Sediment containing gravel was classified after Folk (1968) and sand-silt-clay mixtures were classified after Shepard (1954).

DATA COMPILATION

Digital Photography

K & K Geoscience was contracted to integrate the core photography with the core descriptions and CPT data. In order to provide the best quality photography the images were compiled and printed in letter size page format. To reduce processing time and maintain photographic integrity the only modification to the images was an auto adjustment made in Adobe Photoshop 2.5.1. The images were scaled in the final format but file size was unchanged in order to maintain image quality. The downhole images are shown from left to right and where applicable a metre tape was used as the scale for images to the right of the metre tape.

The following borehole images are presented at the end of the written section of this report :

1. Glory Holes - EFN1A_97, EFN1B_97, EFN2_97, EFS1_97, FEI_97, GN1_97, GS1_97 and GS2_97;
2. Anchor Pile site borehole - A3_97;
3. Flow Line Route boreholes - FPSO, FR1_1B, FR1_2B,FR1_3B, FR1_6B, FR1_7, Fr4_1B, FR4_3C and FR4_4B

Soil Classification, Core Descriptions, Grain Size and CPT Data

The Unified Soil Classification, Core Description and CPT Soil Classification were digitally compiled as separate logs utilizing the software package AppleCORE v0.7.5g. The AppleCORE digital logs incorporated the sediment classification, core description and sediment subsampling.

The AppleCORE Unified Soil Classification is based upon data obtained from the JMGI Terra Nova Draft and Preliminary Field Reports. The JMGI Terra Nova Draft Report contains summary tables consisting of samples recovered and the Unified Soil Classification of the samples tested. The JMGI Preliminary Field Reports contains the visual core description and incorporates core condition, core consistency, reaction to HCL, core colour, visual texture and grain size, lithologic contacts, bioturbation intensity, presence of shells, presence of organics and other visible features.

The AppleCORE CPT Soil Classification is based upon the Simplified Soil Classification Chart for Standard Electronic Friction Cone (Robertson et al.1986). For each depth interval where both q_t and R_f values were calculated the soil behaviour type zone was identified.

The AppleCORE Core Description is based upon the visual descriptions provided by: 1) JMGI (Preliminary Field Reports); 2) Meghan MacCarthy of GSC-Atlantic (field notes); and 3) K & K Geoscience (for the extended section of GS1_97). The visual core descriptions incorporate core condition, core consistency, reaction to HCL, core colour, visual texture and grain size, lithologic contacts, bioturbation intensity, presence of shells, presence of organics and any other visible features. The AppleCORE Core Description was modified by the grain size analysis data provided by JMGI and the GSC-Atlantic Sedimentological Laboratory.

The AppleCORE Unified Soil Classification (Appendix 3), Core Description (Appendix 4) and CPT Soil Classification (Appendix 5) for GS1_97, A3_97, FPSOB, FR1_1B, FR1_3B and FR4_1B were printed at 5 m downcore intervals.

Each of the three AppleCORE graphic lithology logs were exported as pict files (at scales of 1:250 and 1:25) and imported into Aldus Freehand 5.0. The entire length of the borehole was exported at a scale of 1:250. Ten metre length intervals were exported at a scale of 1:25 and further scaled to 1:12.5 in Aldus Freehand 5.0.

A Combined Core Description was made by superimposing the Core Description on the CPT Soil Classification in Aldus Freehand 5.0. In instances where there were intervals of both CPT data and sediment sample the Core Description was used.

The cumulative percent gravel, sand, silt and clay were plotted using Kaleidagraph 3.0 for GS1_97 and A3_97. No clay percentages were given for the Flow Lone Route boreholes and silt percent was defined as silt/clay percent. The cumulative percent gravel, sand, silt /clay were plotted using Kaleidagraph 3.0 for FPSOB, FR1_1B, FR1_3B and FR4_1B. The cumulative percent plots were plotted at the same scales (1:250 and 1:12.5) as the AppleCORE lithology logs using Kaleidagraph 3.0. The plots were imported into Freehand 5.0 and coloured.

The four lithology logs and cumulative grain size plots for each borehole were compiled into a tabloid size format file and a letter size format file using Freehand 5.0 (Appendix 6). The tabloid size format comprises the entire length of each borehole and the letter size comprises 10 metre downcore intervals of each borehole.

The final Aldus Freehand files comprise the Combined Core Description, Core Sample Identifier, Cumulative Grain Size, Sleeve Friction (f_s), Sleeve Friction Ratio (R_f), Total Cone Tip Resistance (q_t) and Corrected Pore Pressure (u) as both tabloid (1:250) and letter size (1:12.5) plots. These plots are presented at the end of the written section of this report.

REFERENCES

Folk, R.L. 1968. Petrology of Sedimentary Rocks. Hemphills

Jacques/McClelland Geoscience Inc., Terra Nova Development Preliminary field report on 1997 TNA Offshore Geotechnical Investigation. Volume 3- anchor pile sample data Contract report prepared for Petro-Canada Resources.

Jacques/McClelland Geoscience Inc., Terra Nova Development Preliminary field report on 1997 TNA Offshore Geotechnical Investigation. Volume 4- flow line route sample data Contract report prepared for Petro-Canada Resources.

Jacques/McClelland Geoscience Inc., Terra Nova Development draft report on anchor pile sites; 1997 TNA offshore geotechnical investigation. Contract report prepared for Petro-Canada Resources. 12 pages plus appendices

Jacques/McClelland Geoscience Inc., Terra Nova Development draft report on flow line routes; 1997 TNA offshore geotechnical investigation. Contract report prepared for Petro-Canada Resources. 33 pages plus appendices

Jacques/McClelland Geoscience Inc., Terra Nova Development draft report on seafloor structure (glory hole) sites; 1997 TNA offshore geotechnical investigation. Contract report prepared for Petro-Canada Resources. 25 pages plus appendices

Robertson P.K., and Campanella R.G. 1988: Guidelines for geotechnical design using CPT and CPTU. Soil Mechanics Series No. 120. Department of Civil Engineering, The University of British Columbia, Vancouver, B.C., 193p.

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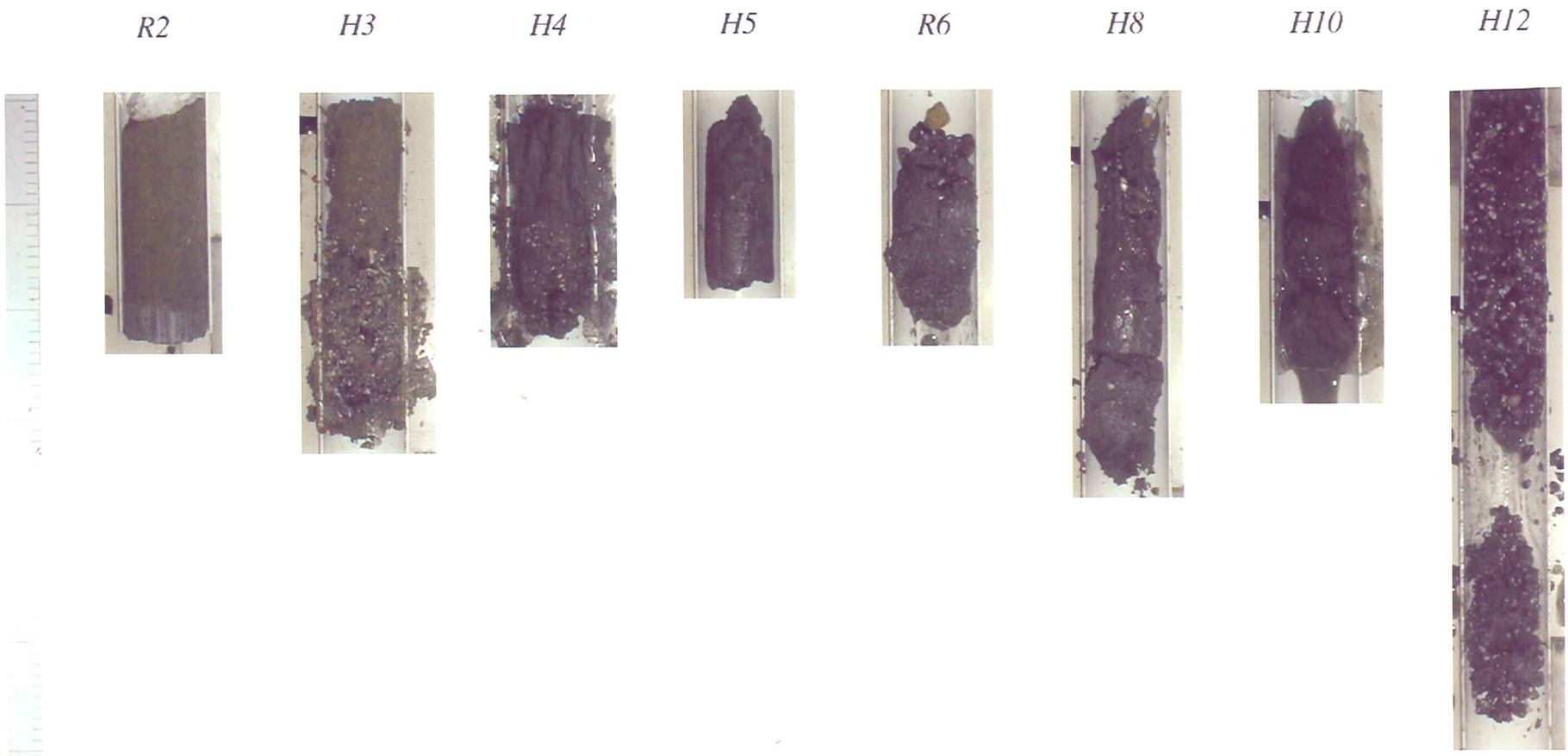
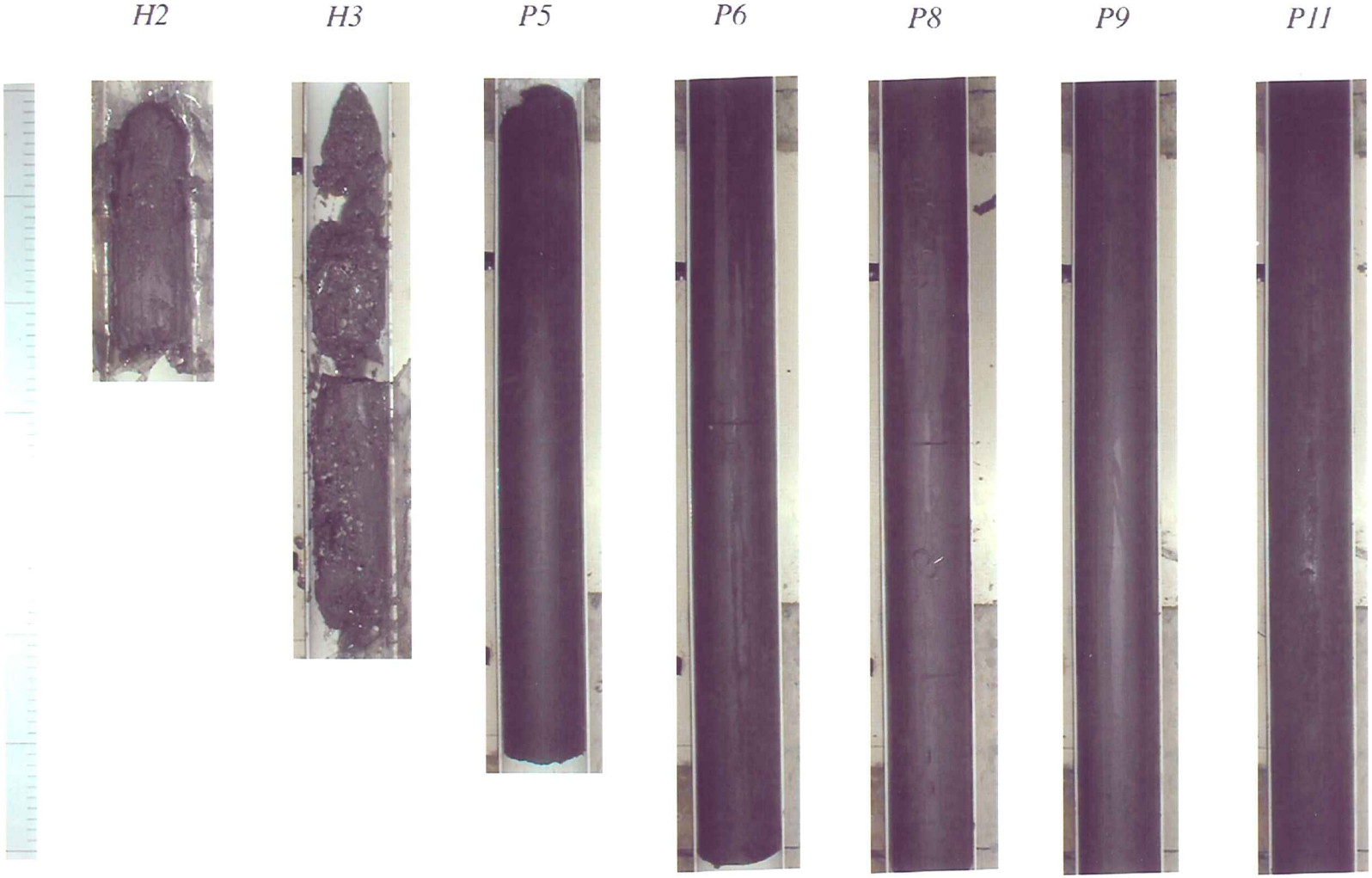
Sonnichsen, G.V., and Cumming, E., 1996 Shallow stratigraphy, sediment properties and foundation stability in the Jeanne D'arc basin discovery areas. 49th Canadian Geotechnical Conference of the Canadian Geotechnical Society, 23-25 September 1996. St John's, Newfoundland.

Shepard, F.P., 1954, Nomenclature based on sand-silt-clay ratios. Journal Sedimentary Petrology, v.24 pp 151-158.

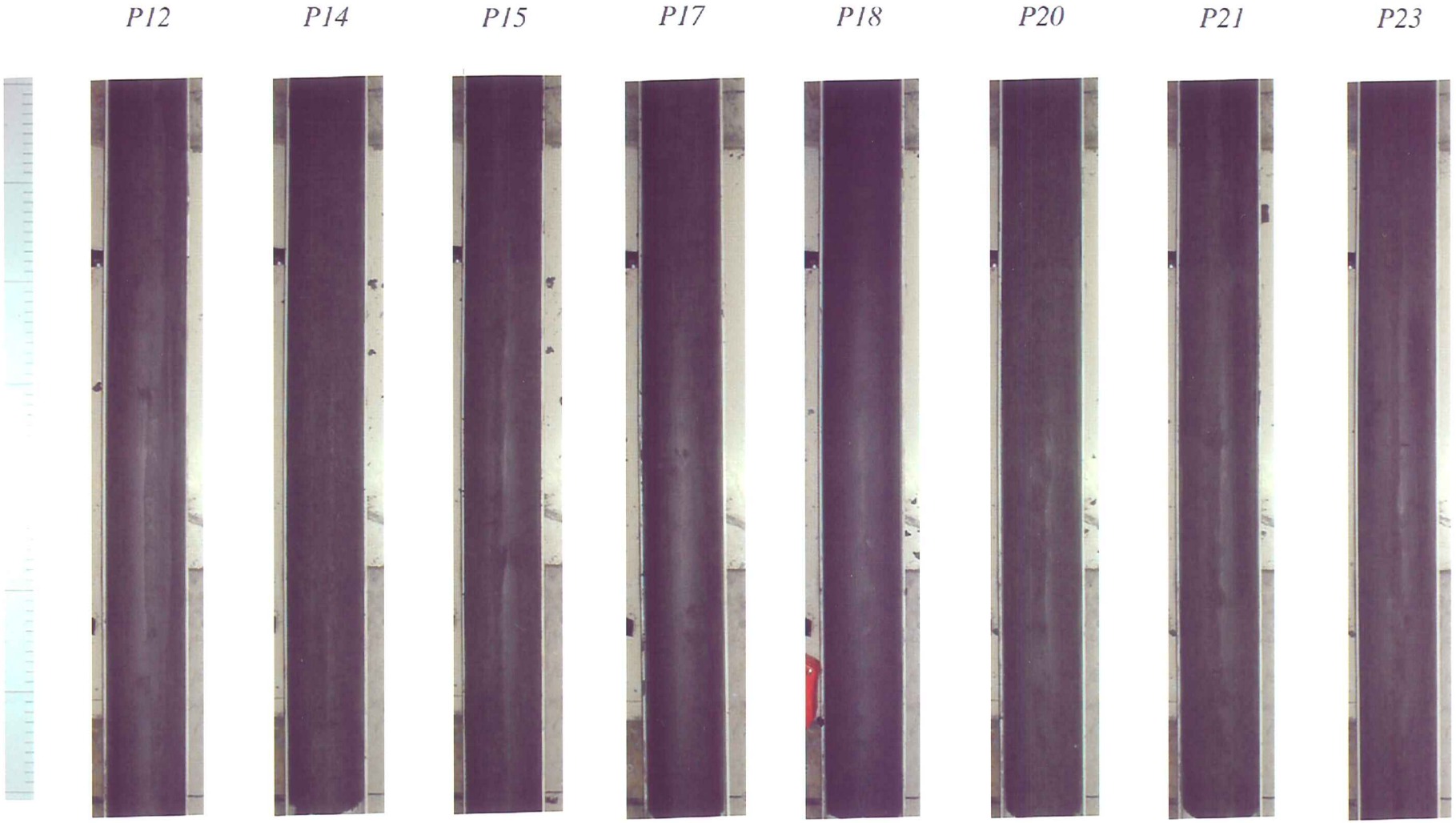
Glory Hole
Borehole Photography



EFN1A_97

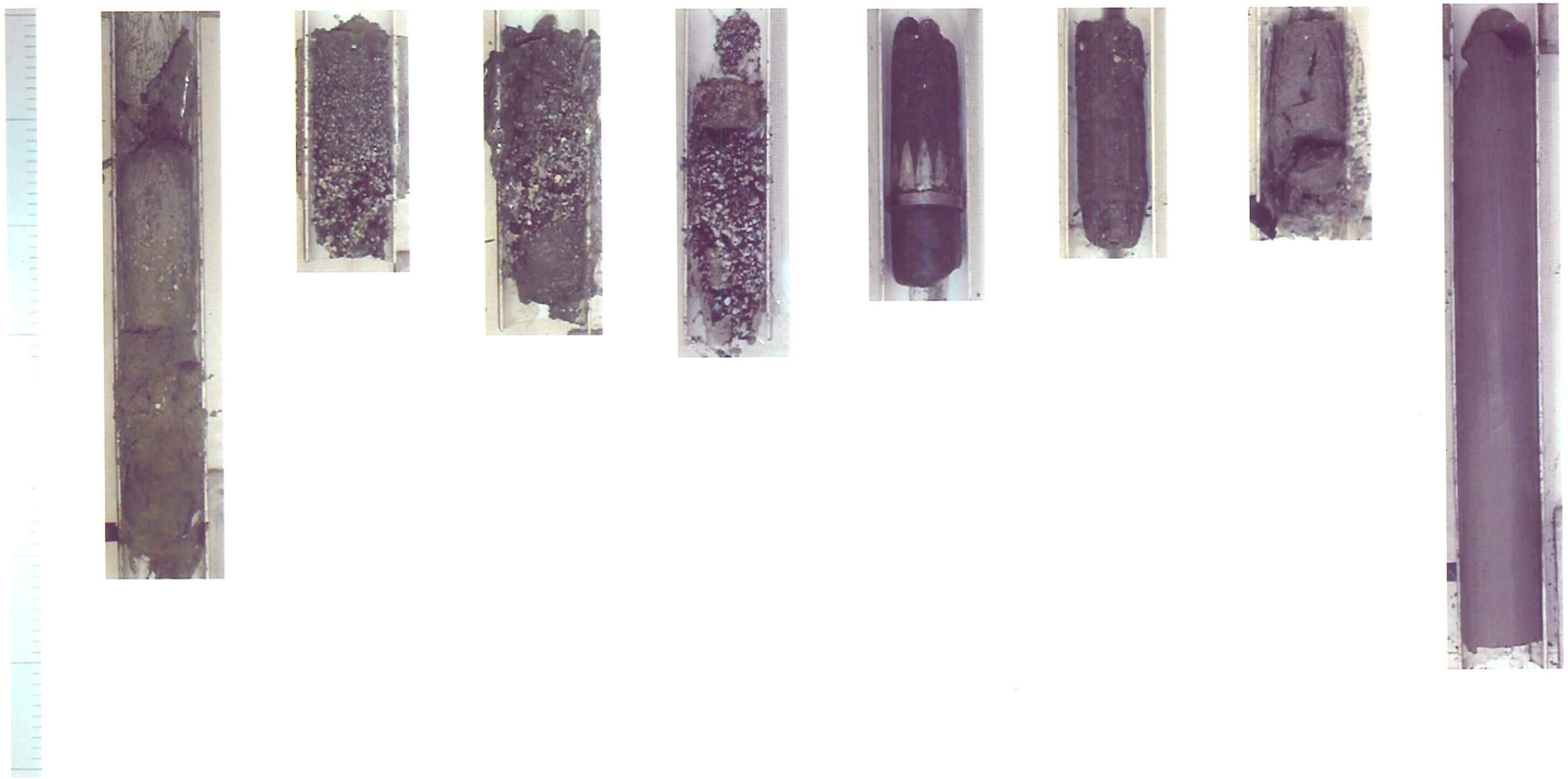


EFN1B_97



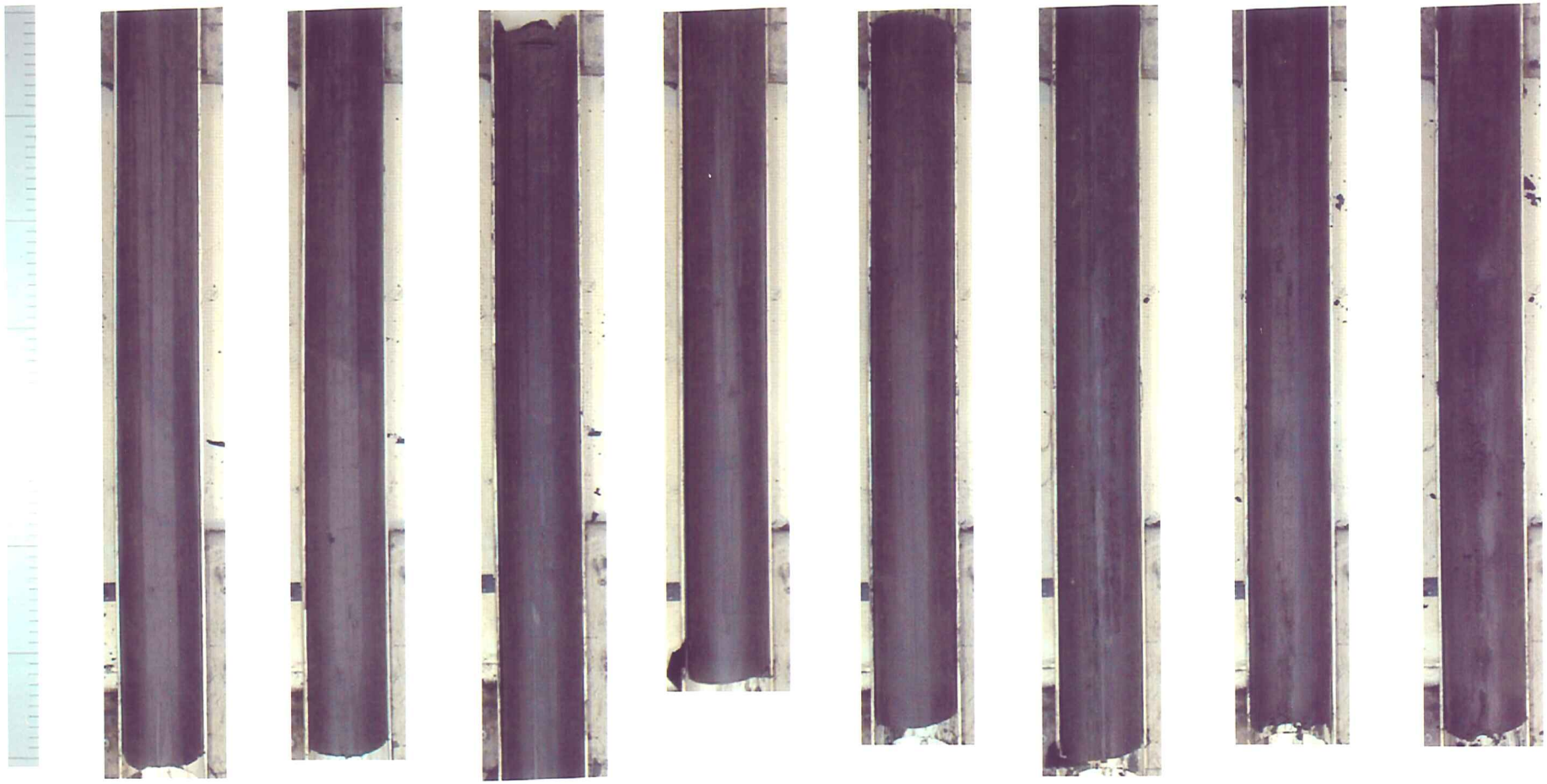
EFN1B_97

H1 H2 H3 H4 H5 H6 H7 P8



EFN2_97

P9 P11 P12 P13 P14 P15 P16 P17



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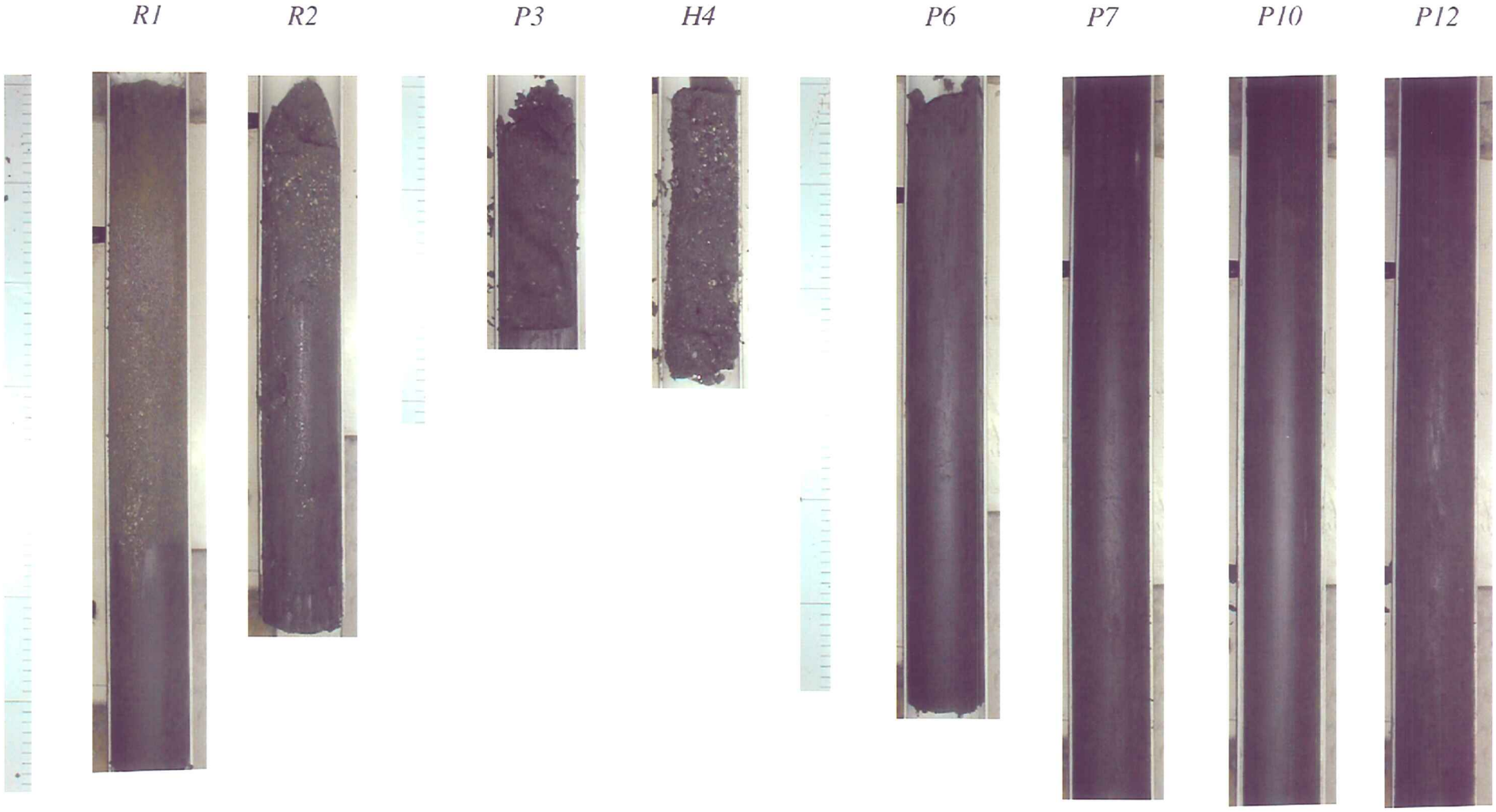
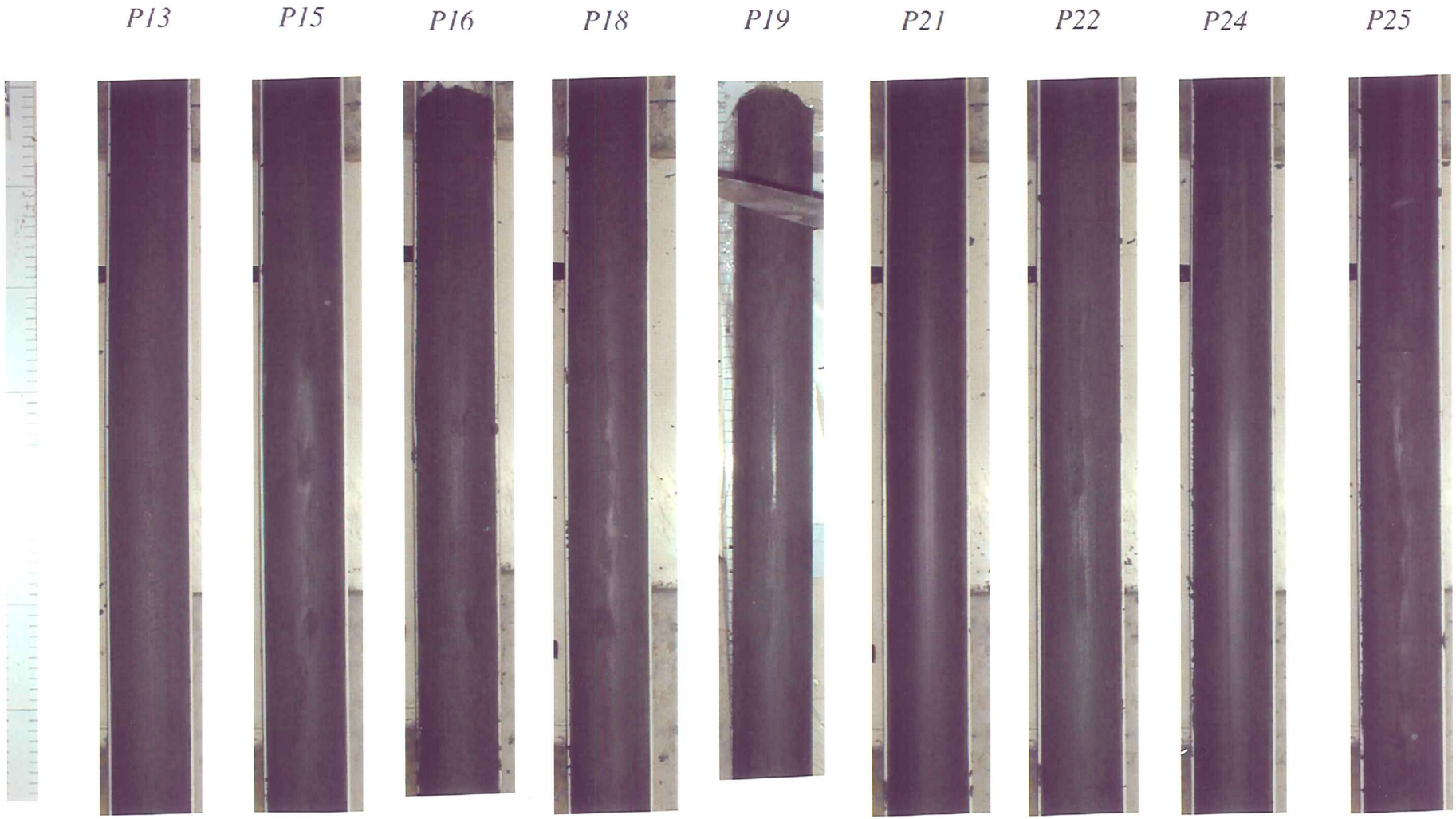


EFS1_97



EFS1_97

fe1_97 photo 1 page

H3

H3

H3

H6

H7

H8

H9

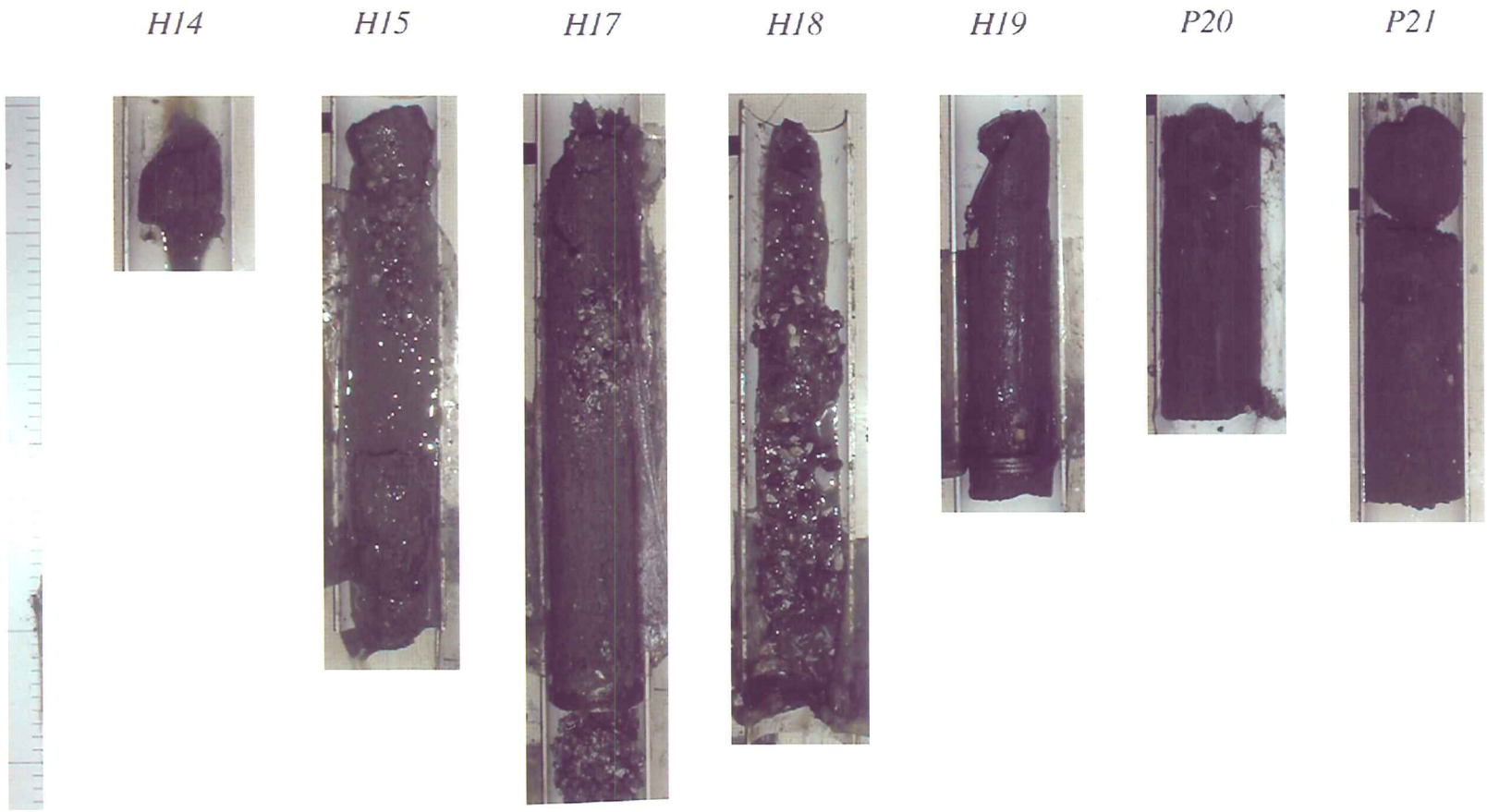
H10

H11

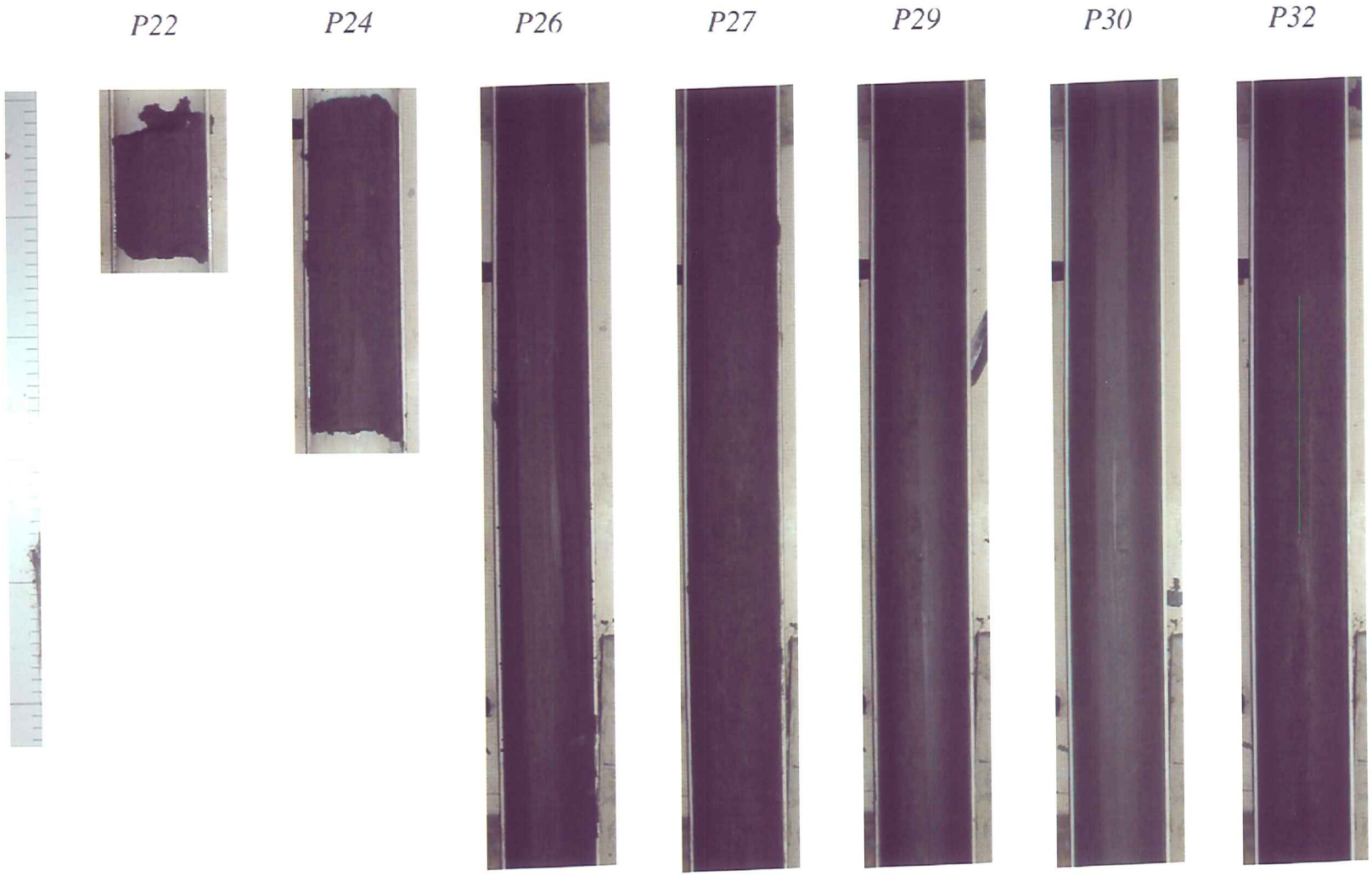
H3

H3

FE1_97



FE1_97



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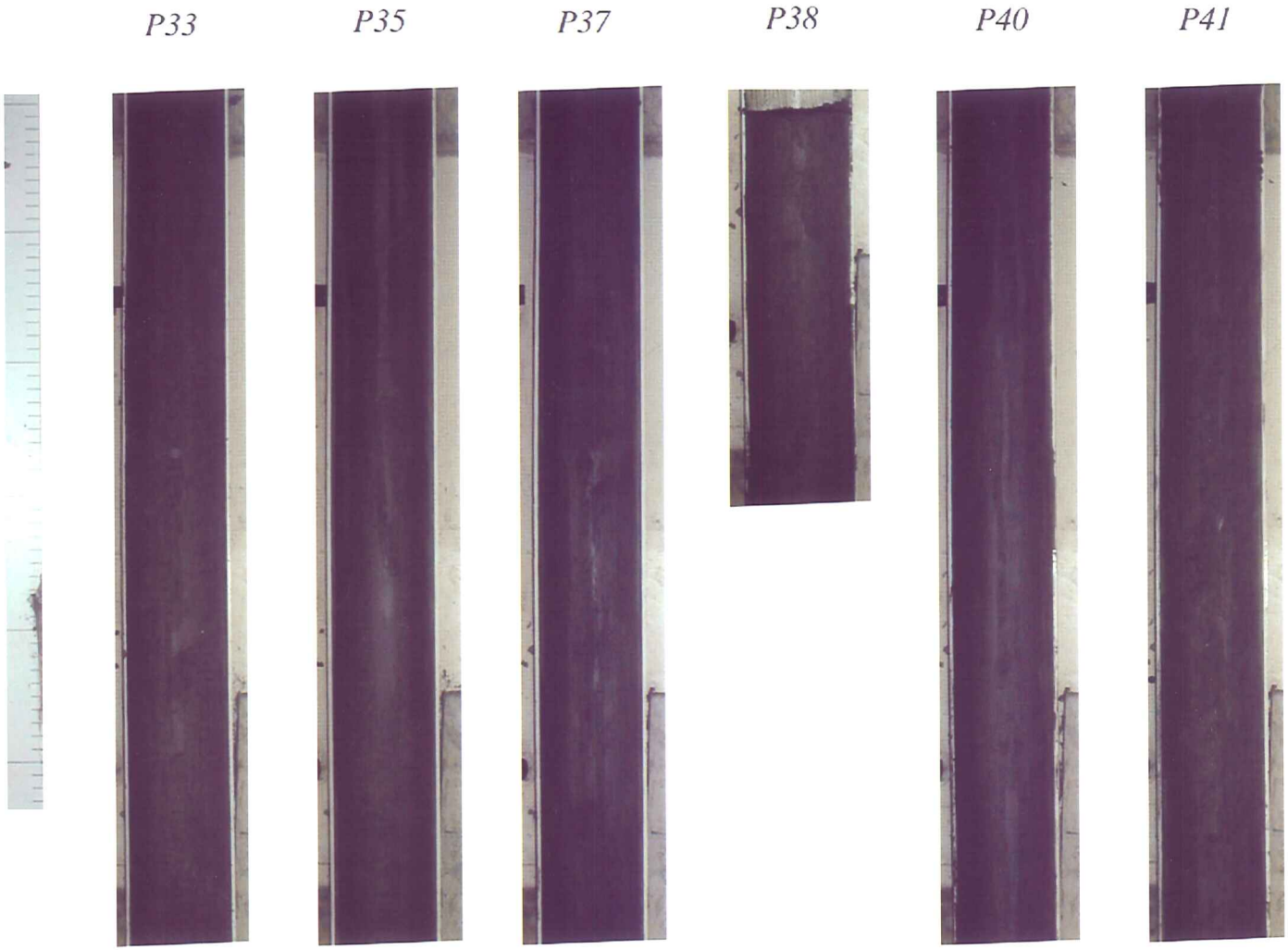

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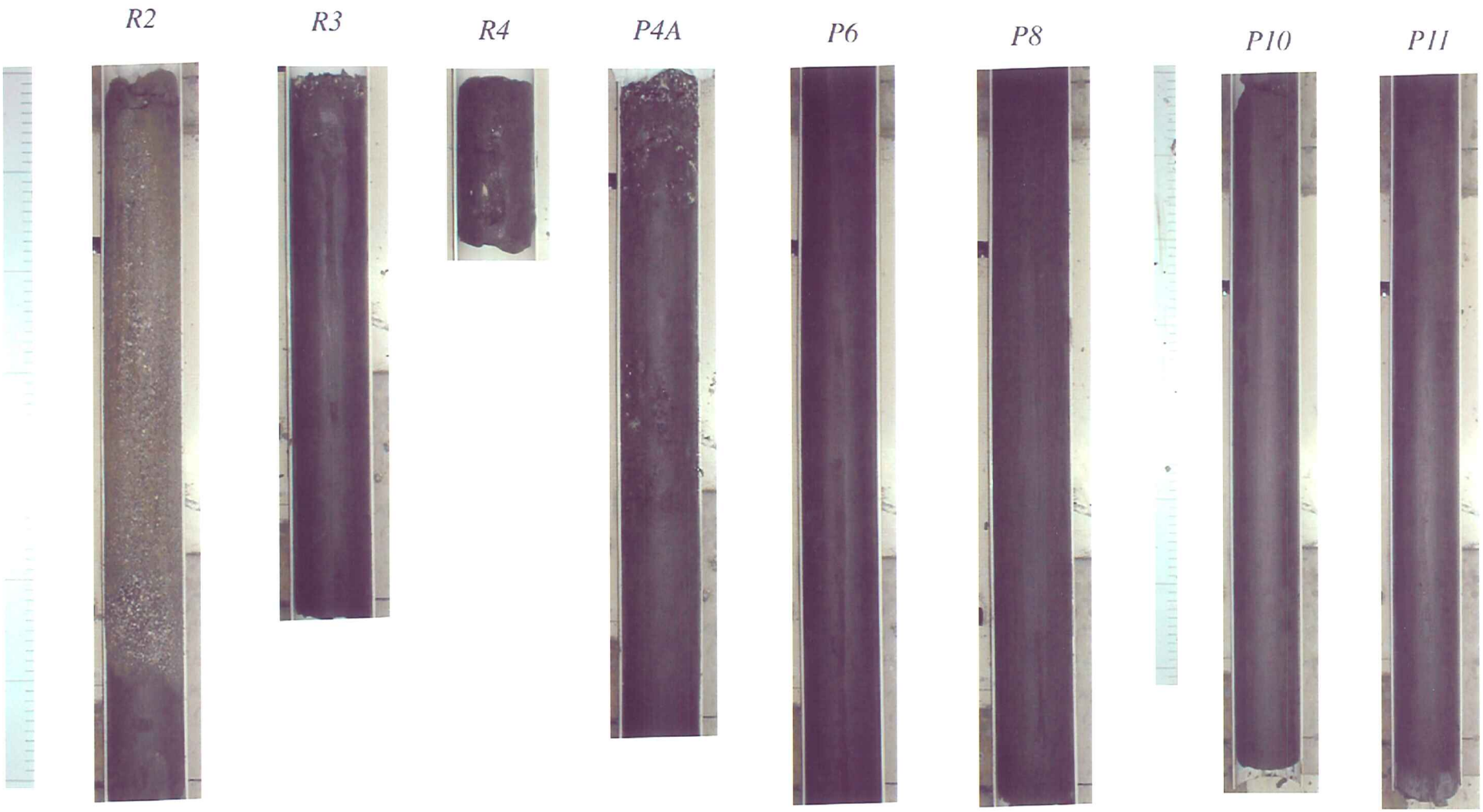
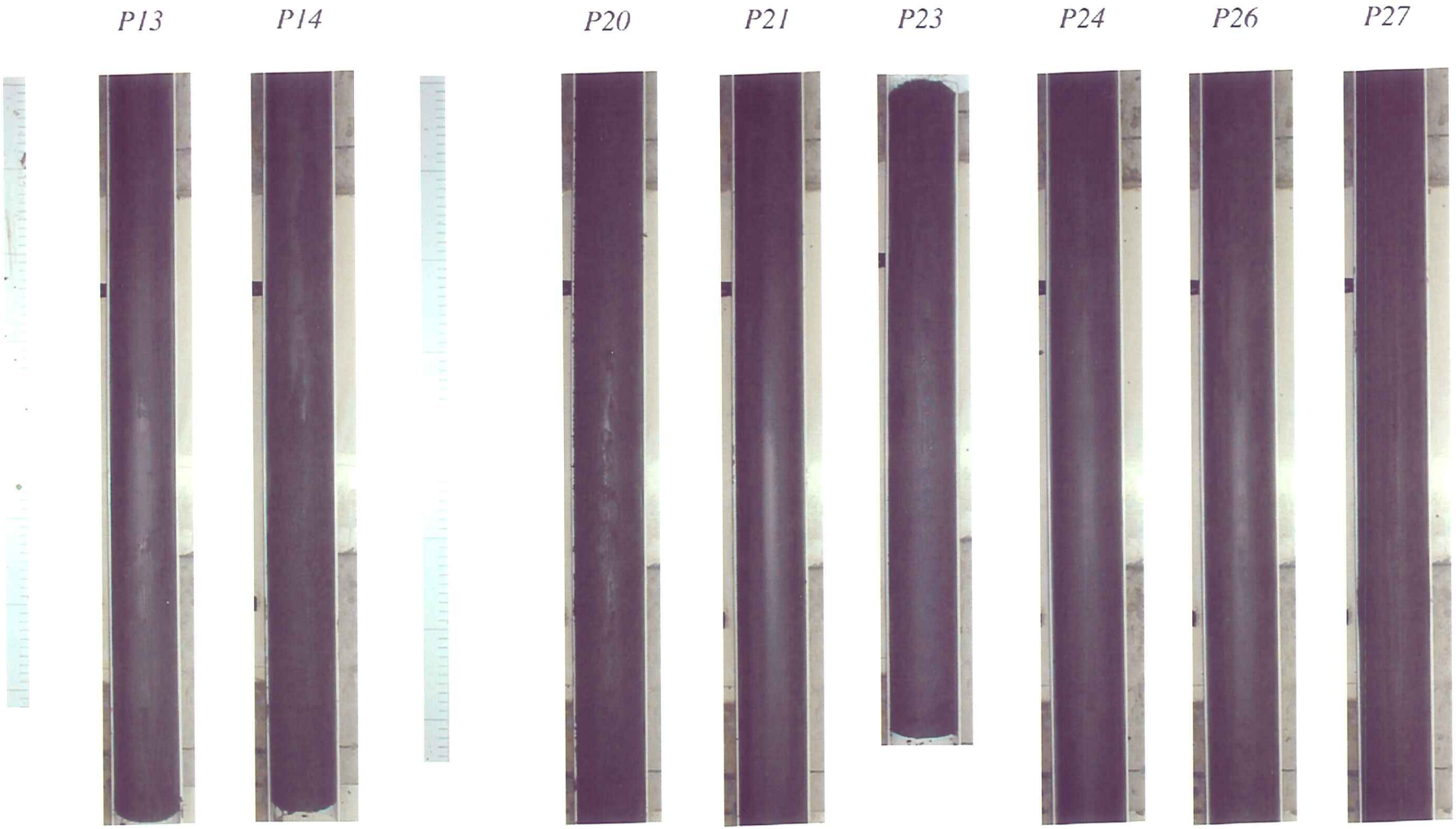


GN1_97



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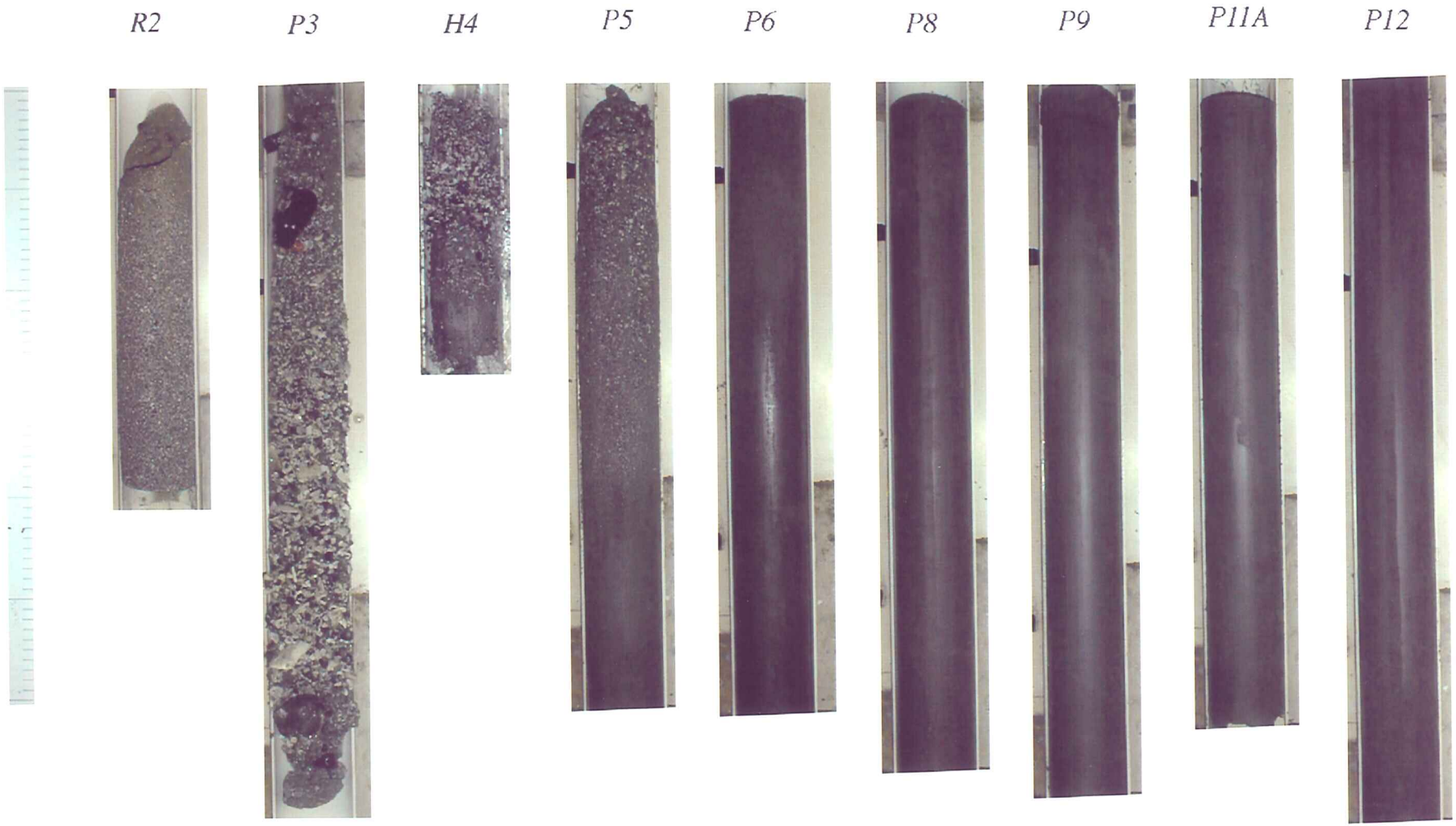
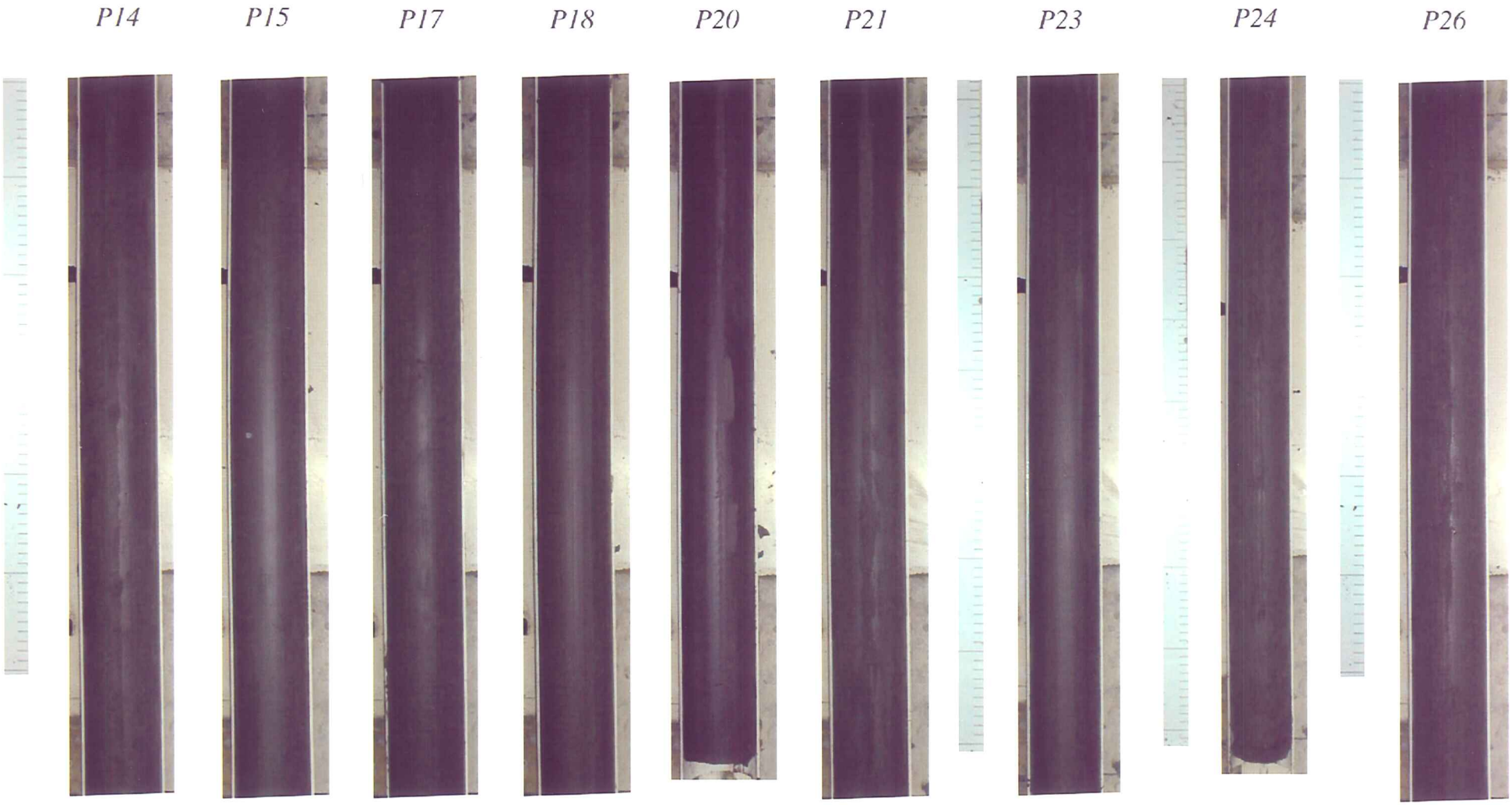
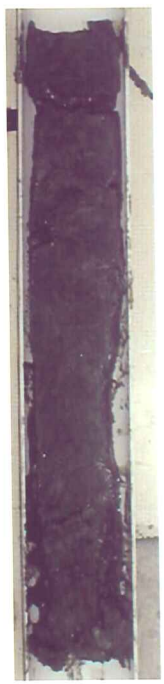


GS1_97



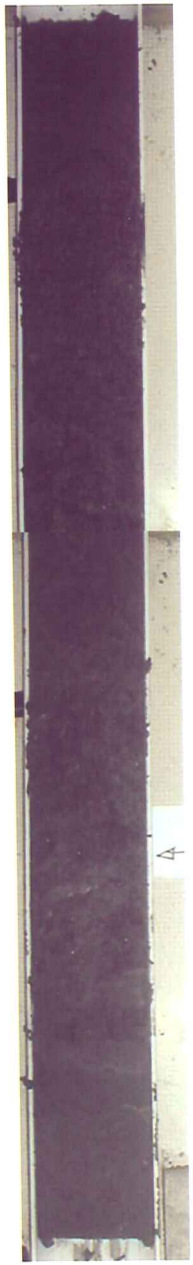
GS1_97

H28A



R29

R30



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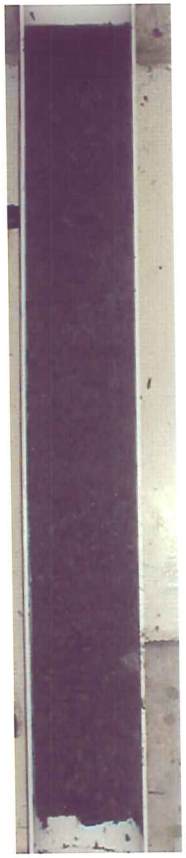
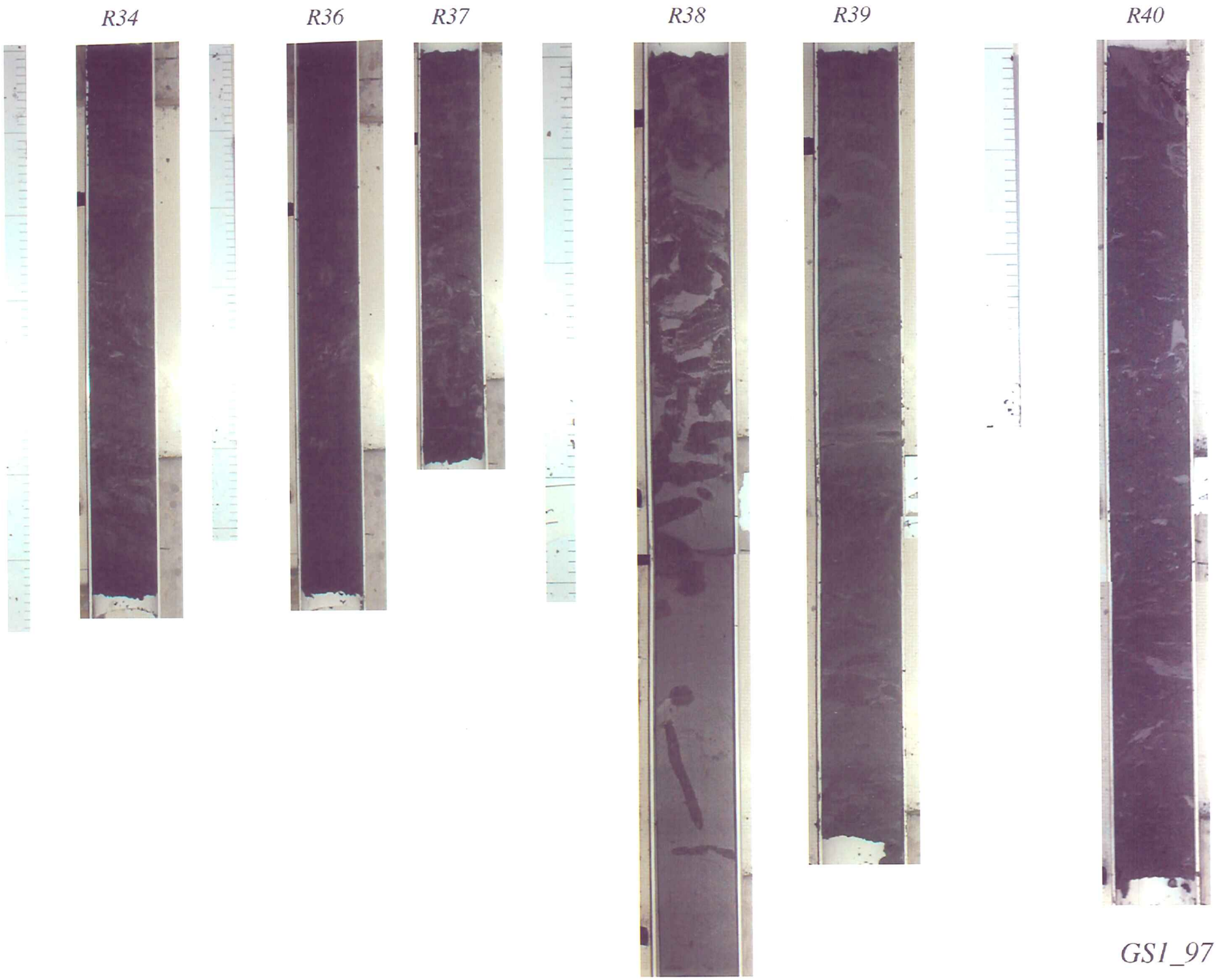


R32

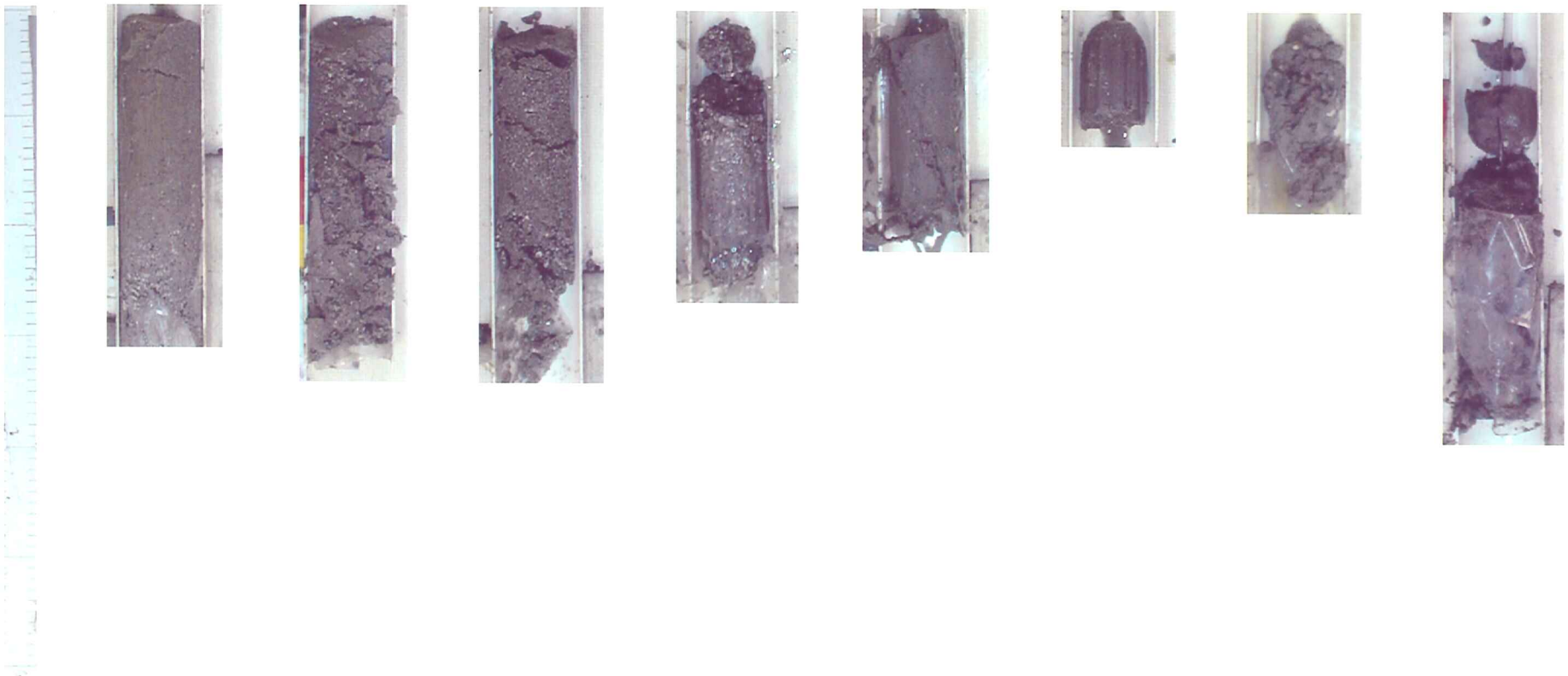
R33

GS1_97



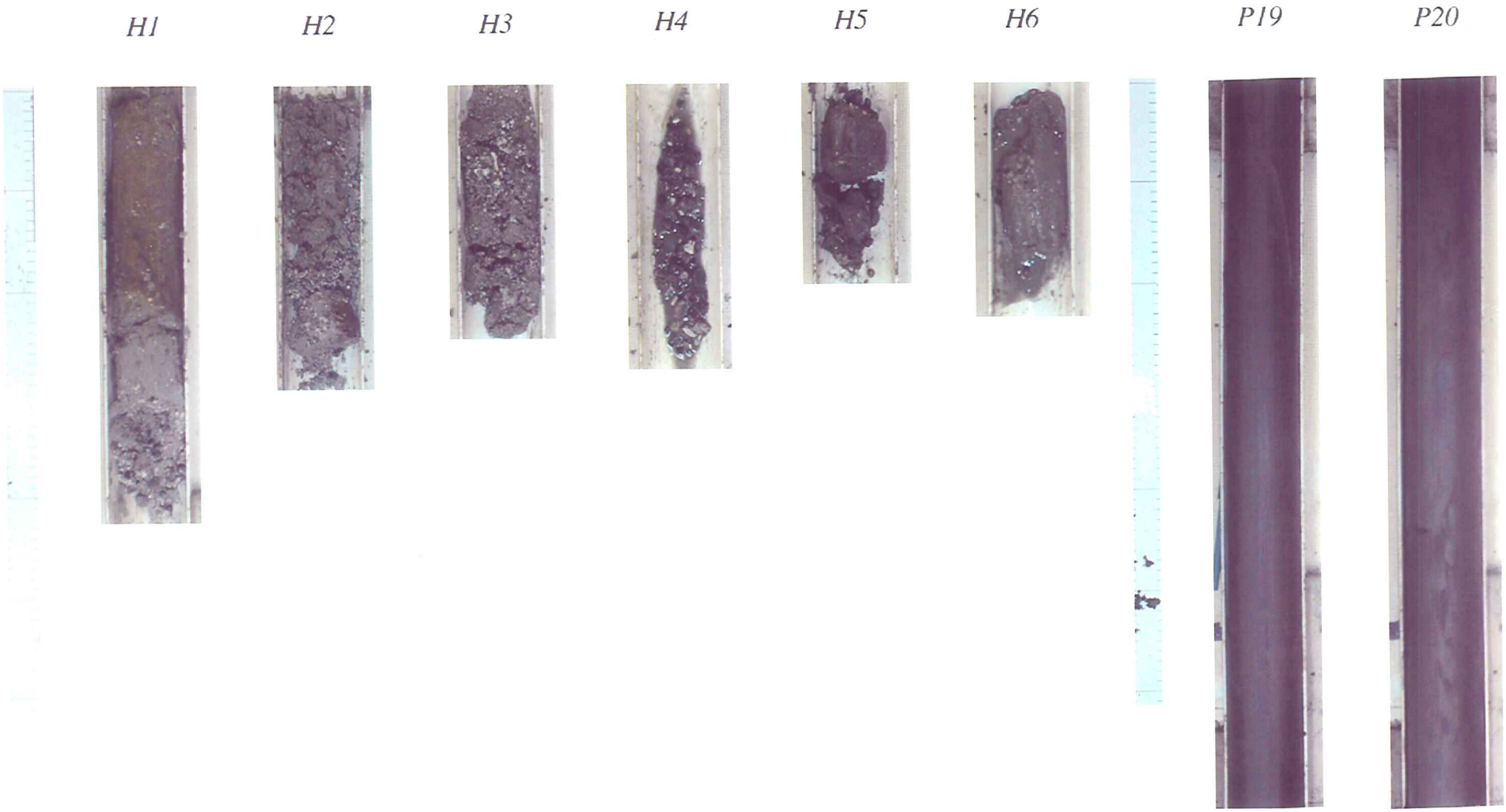
GS1_97

P1 H3 H4 H5 H7 H8 H10 H11



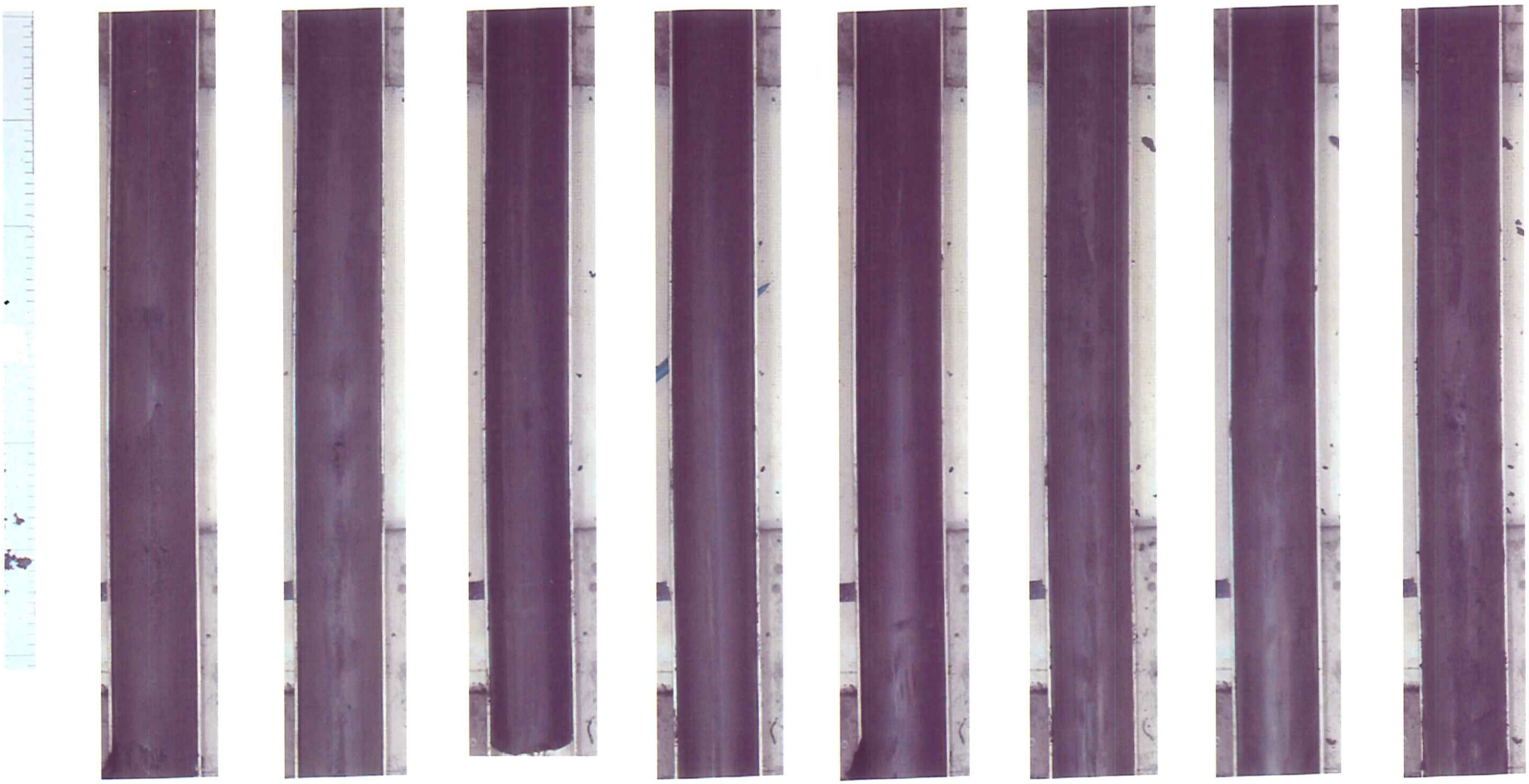
GS2_97

Anchor Pile
Borehole Photography

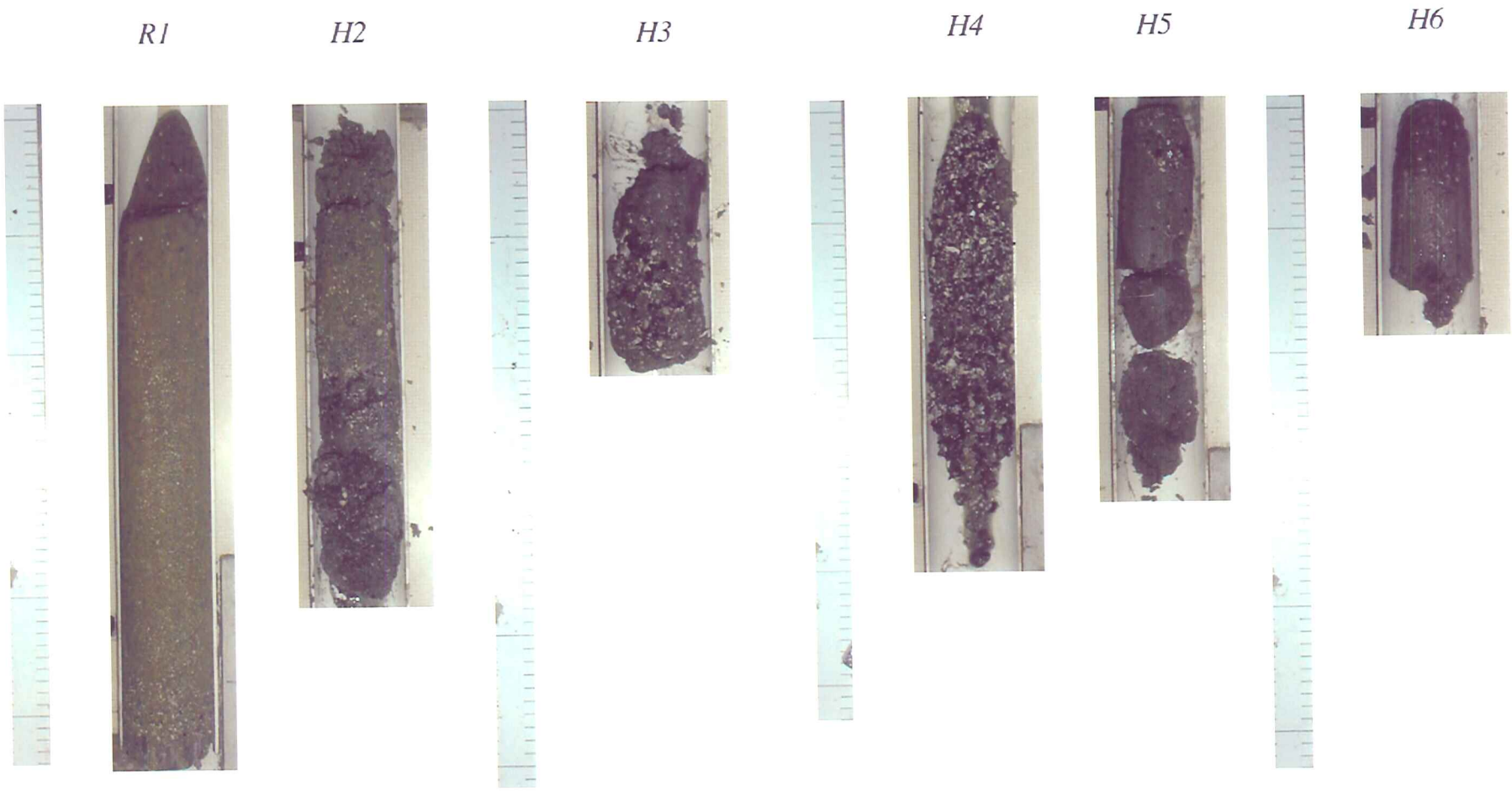


A3_97

P22 P23 P25 P26 P28 P29 P31 P32

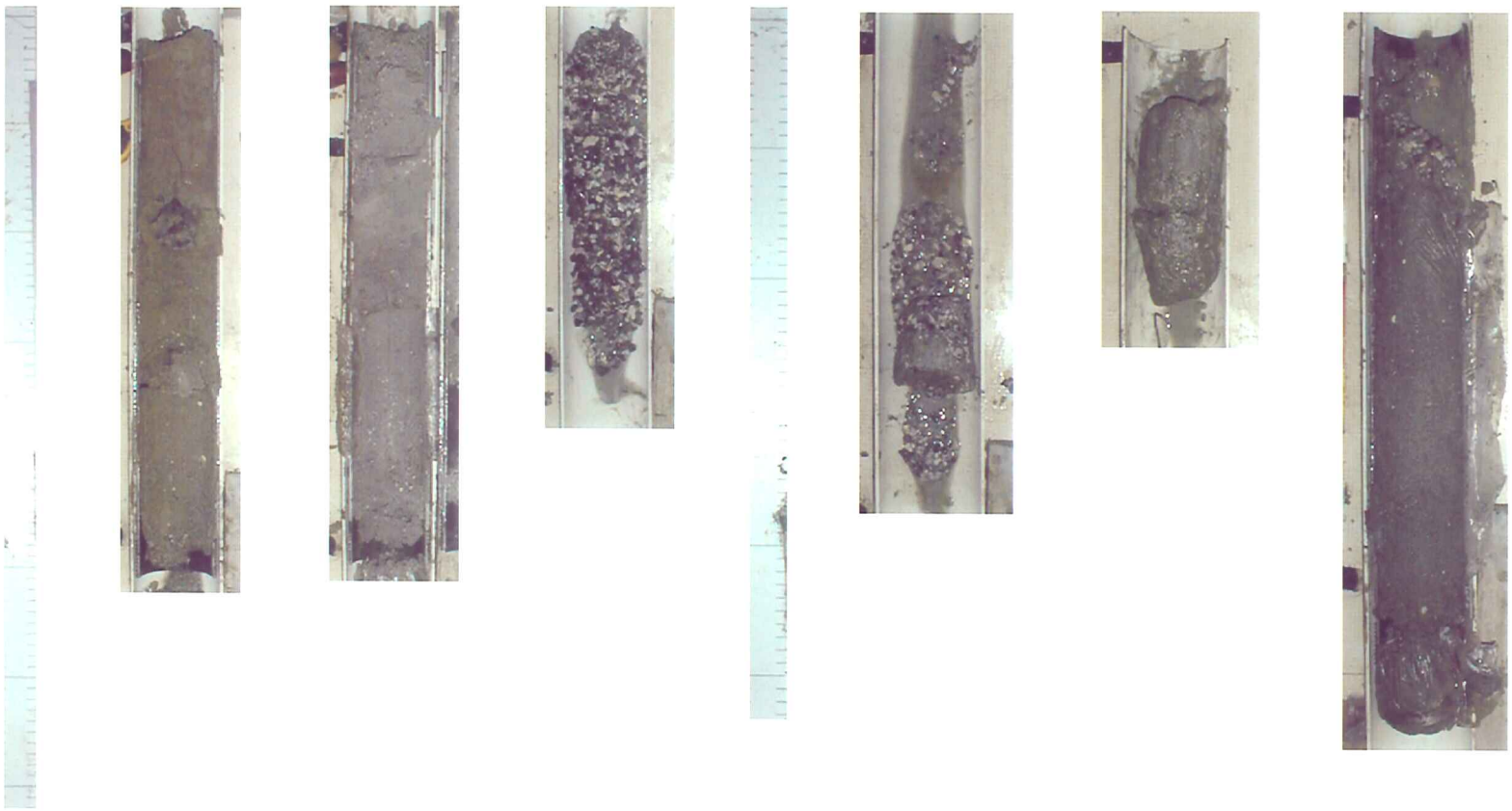


Flow Line Route
Borehole Photography

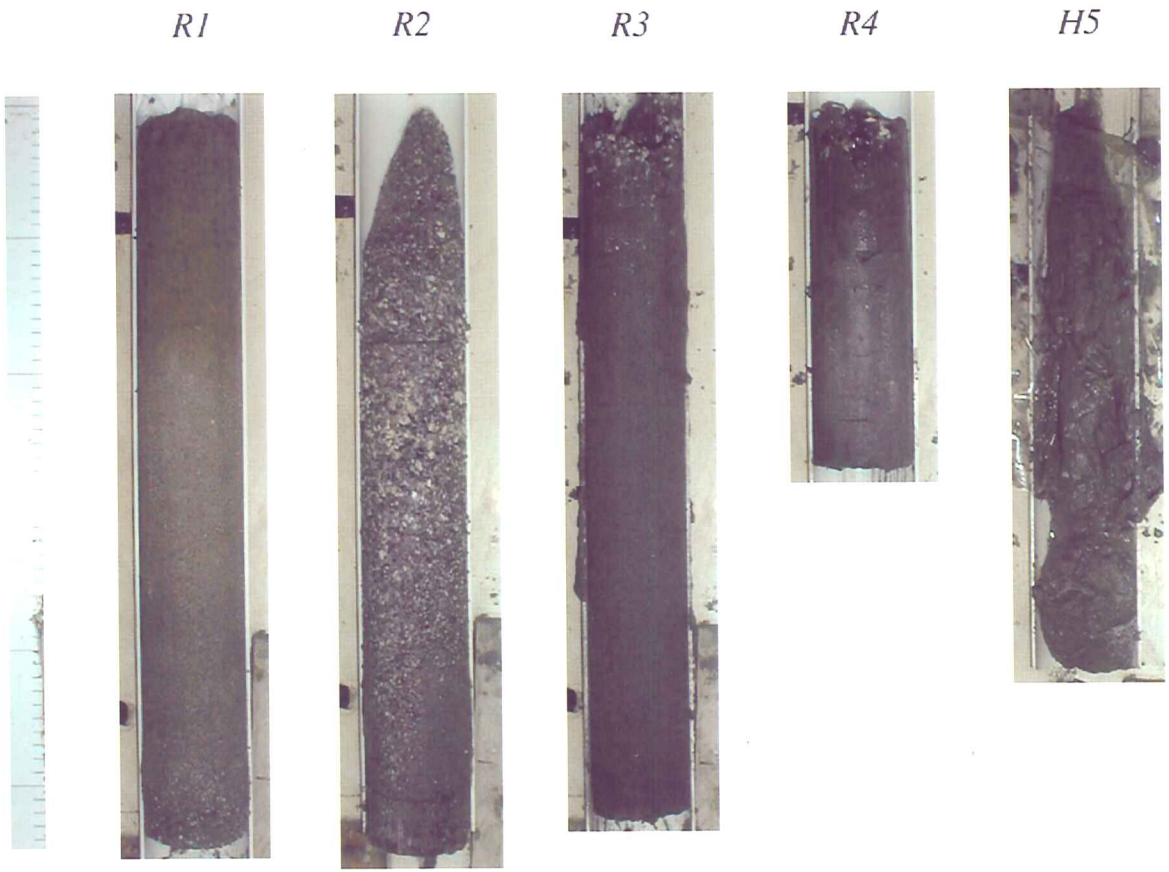


FPSO_b

H1 H2 H3 H4 H5 H6



FR1_1b



FR1_2B

H2

H3

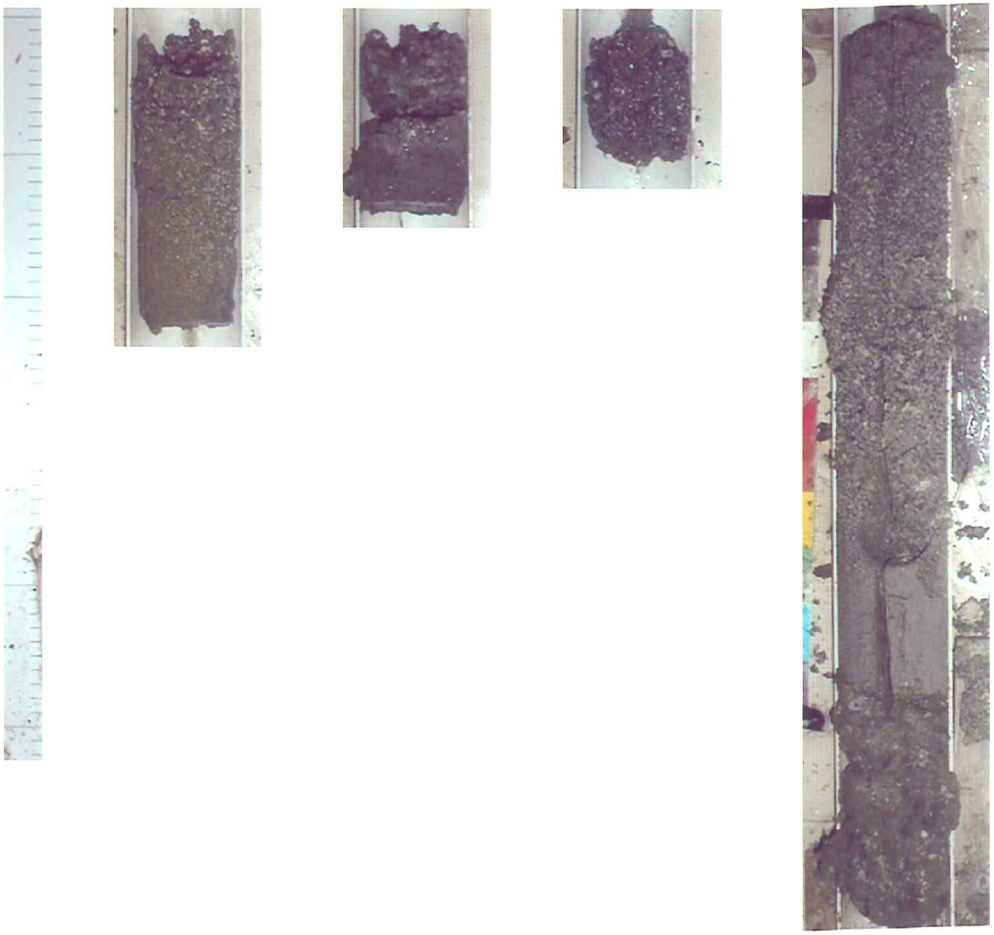
H4

H5

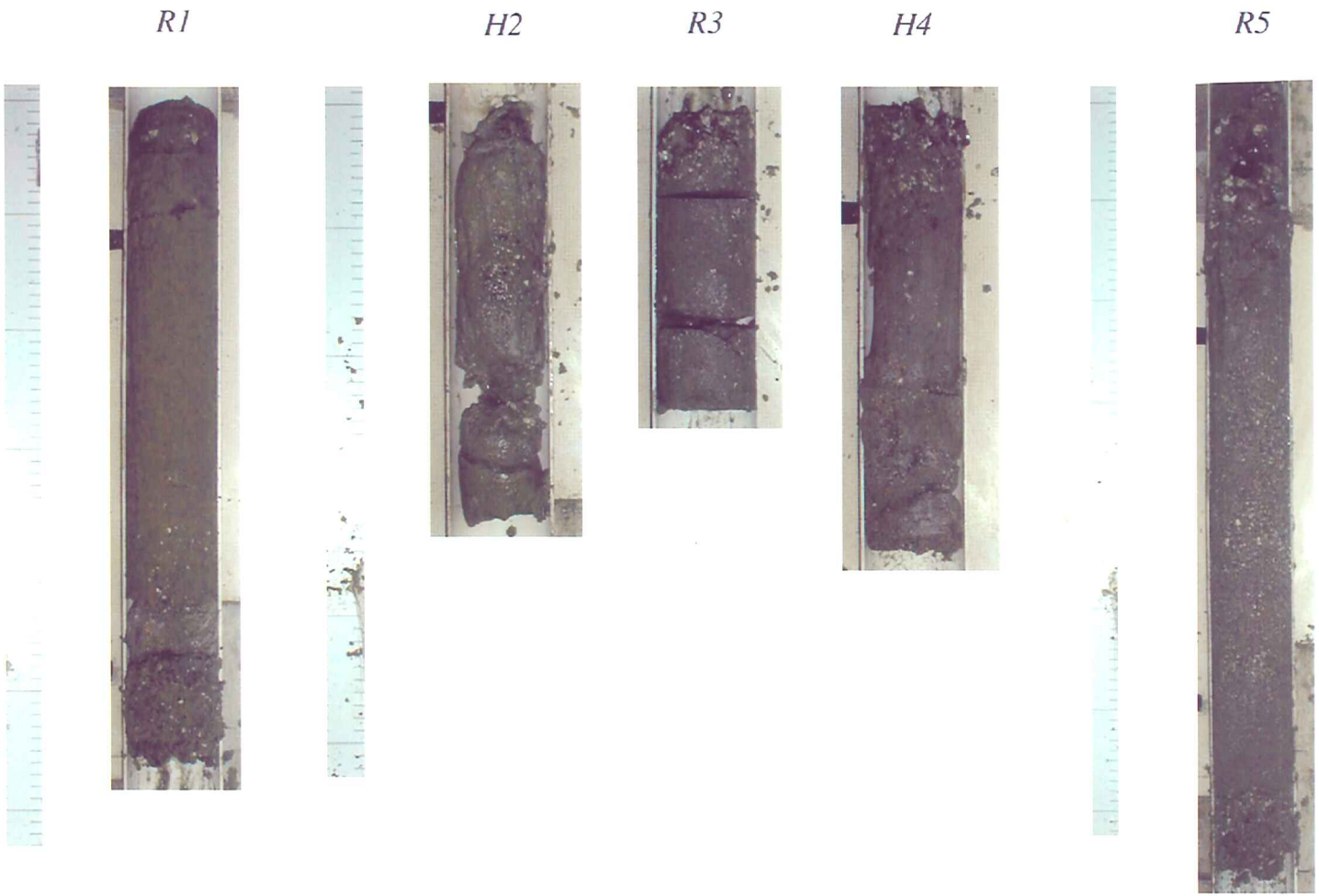
H6

FR1_3B

H1 R2 H3 H4

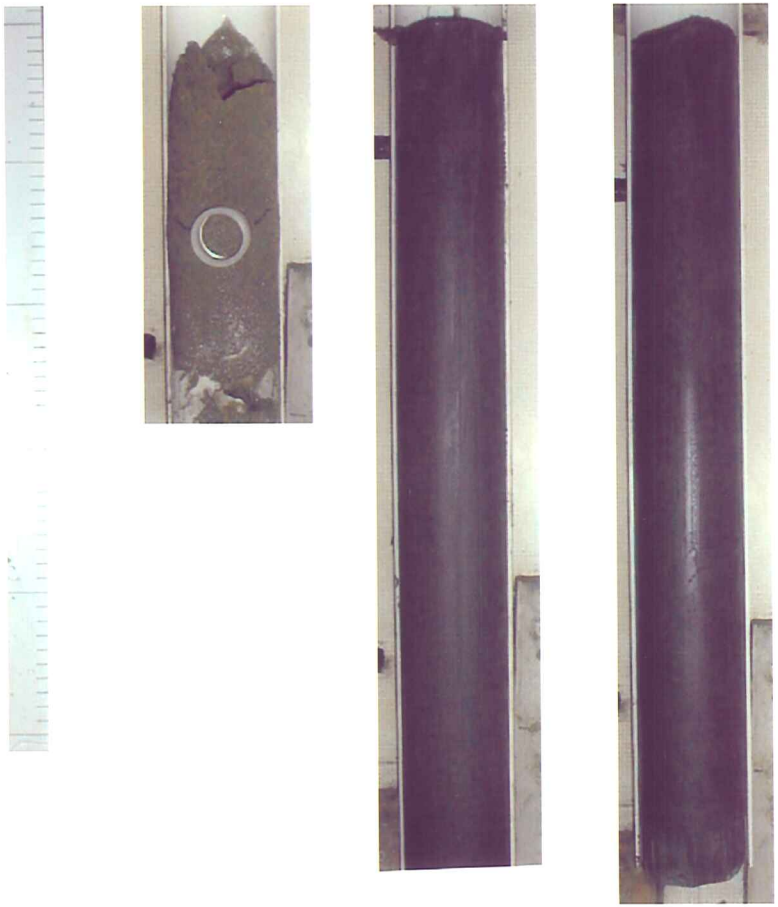


FR1_6B



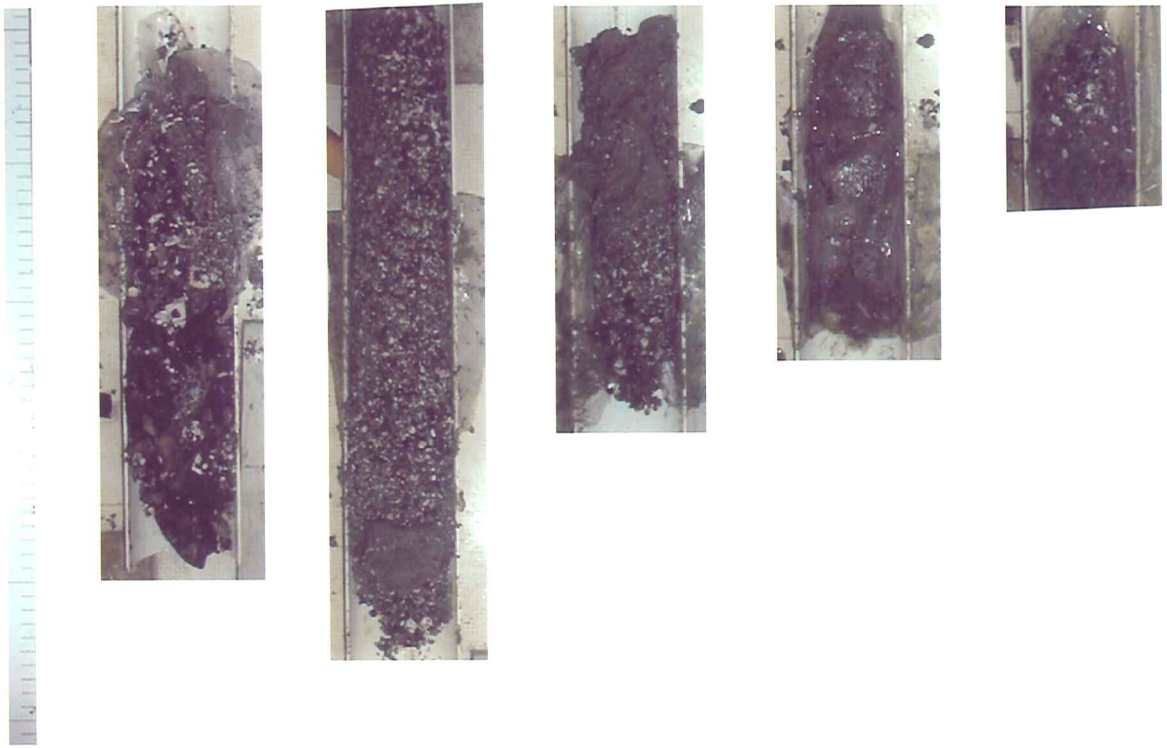
FR4_1B

R1 R2 R3



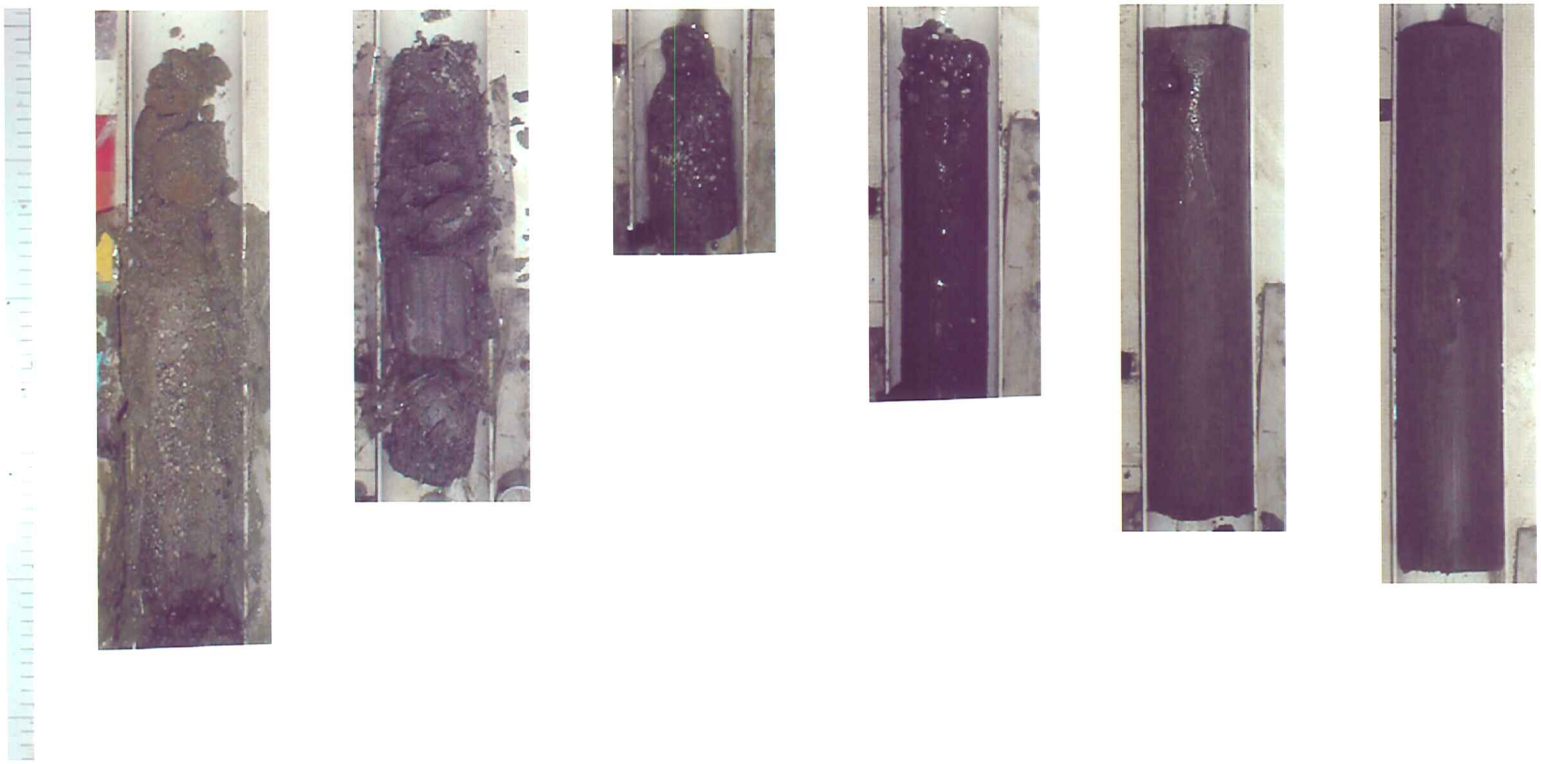
FR1_7

H1 *H2* *H3* *H4* *H5*



FR4_3C

H2 H3 H4 H5 P6 P7



FR4_4B

Legend

Unified Soil Classification


GW - well graded gravels, gravel sand mixtures, little or no fines


SW - poorly graded gravels, gravel sand mixtures, little or no fines


SP - poorly graded sands, gravelly sand, little or no fines


SM - silty sands, sand silt mixtures


SC - clayey sands, sand clay mixtures


CL - inorganic clays of low to medium plasticity, gravelly clays, sandy clays and silty clay


CH - inorganic clays of high plasticity, fat clays

CPT Soil Classification


Gravelly sand to sand


Sand


Sand to silty sand


Sand to clayey sand


Clayey sand


Silty sand to sandy silt


Sandy silt to clayey silt


Silt


Clayey silt to silty clay


Silty clay to clay


Clay


Very stiff fine grained

Grain Size Analysis


Gravel


Sand


Silt/Clay


Silt


Clay

Legend

Contacts

Sharp

Gradational

Bioturbated

Physical Structures

- Graded Bedding

- Reverse Graded Bedding

Lithologic Accessories

	Cobble		Sand Lenses		Shell Fragments
	Pebble		Silty/Clay Lenses	Wd	Wood Fragments
	Gravel				Organic Black Flecks
	Pebbles/Granules			Py	Pyritized Worm Burrow

Core Disturbance

Slightly Disturbed

Very Disturbed

Bioturbation

Abundant

Common

Moderate

Rare

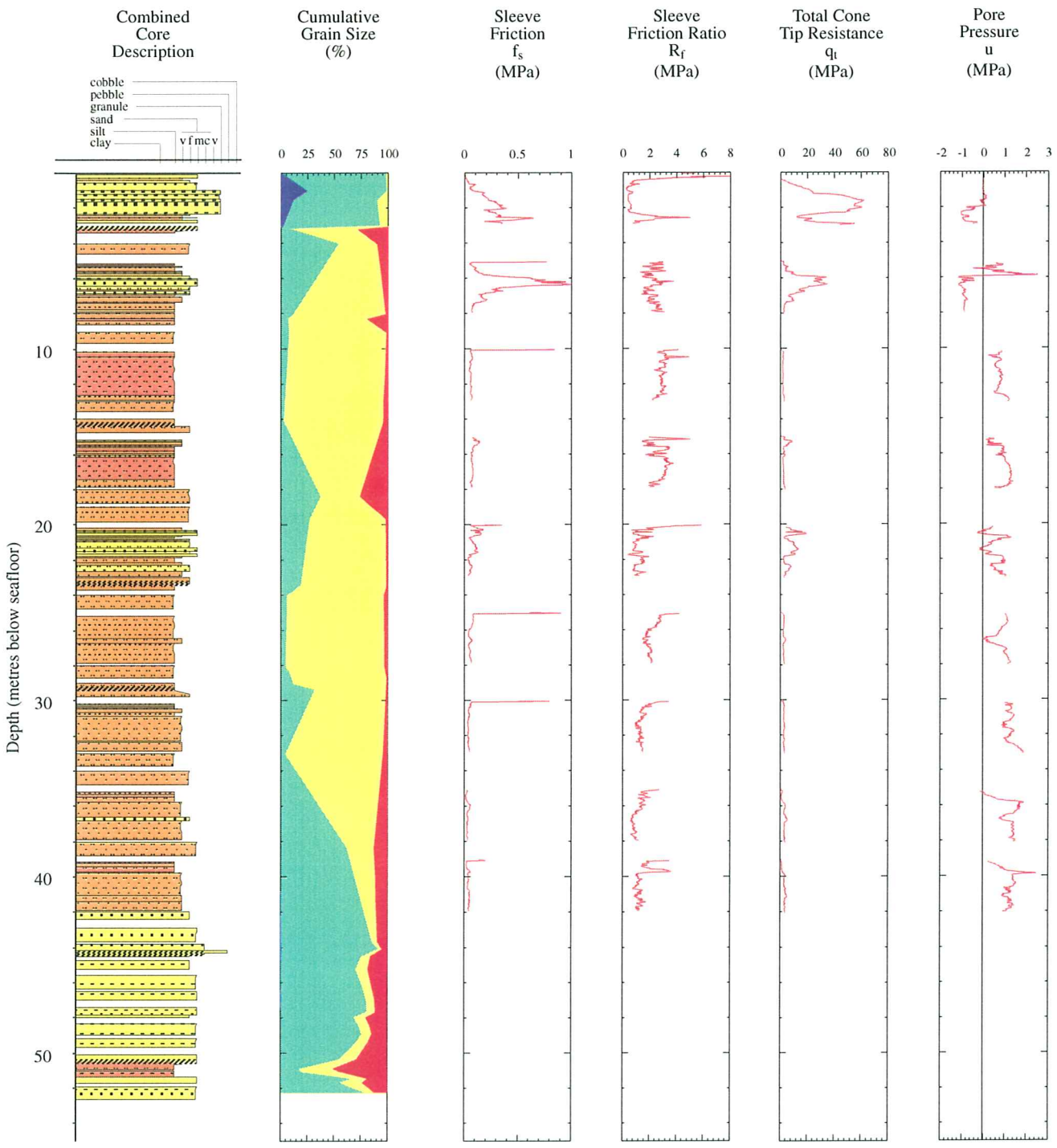
Barren

Legend

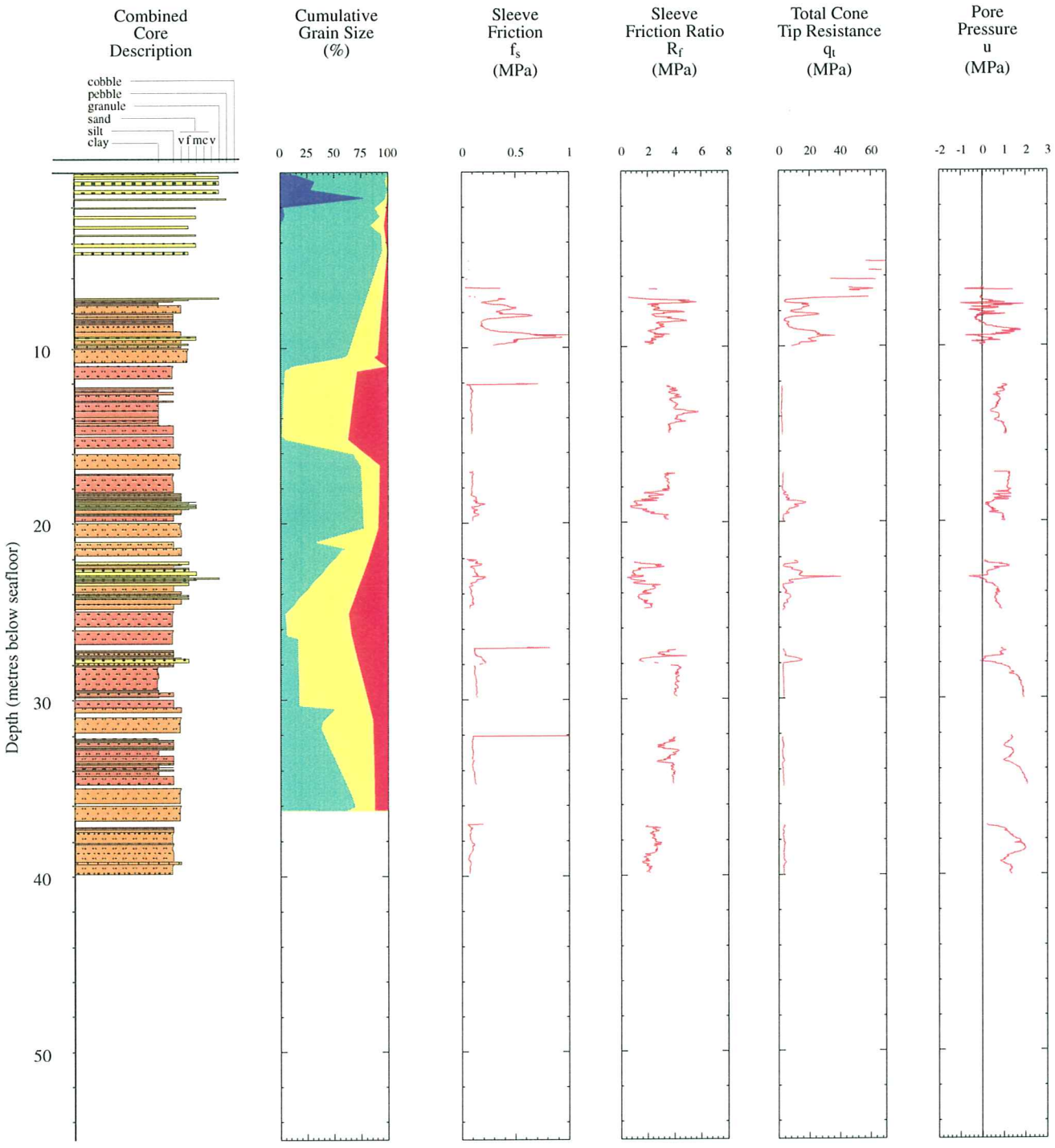
Subsamples

d	JMGI density
w	JMGI water content
gs	JMGI grain size
pp	JMGI pocket penetrometer
t	JMGI torvane
Gb	GSC-Atlantic bulk
Gf	GSC-Atlantic foram
Ggs	GSC-Atlantic grain size

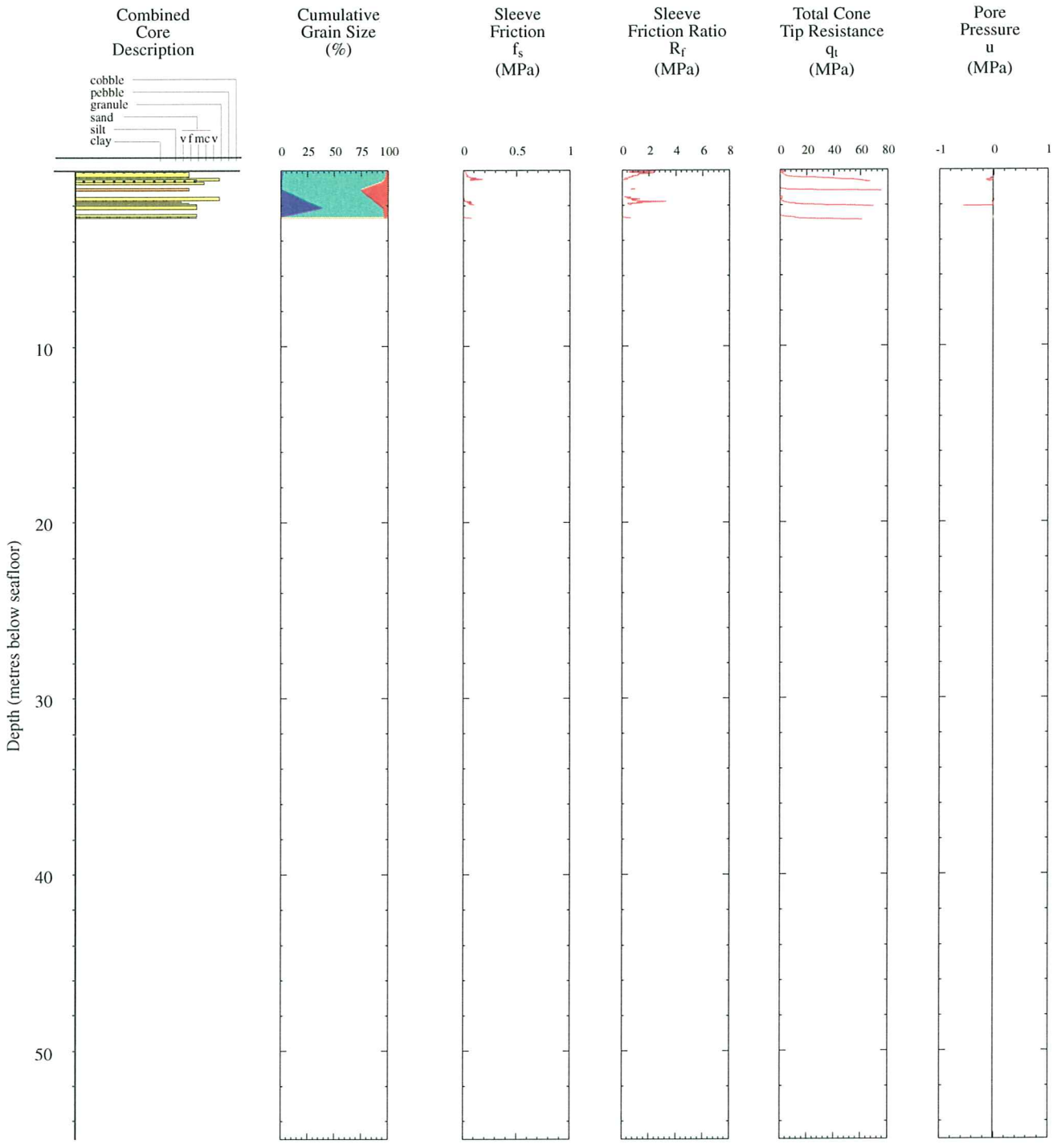
GS1_97


Combined Core Description
cobble
pebble
granule
sand
silt
clay
v f mc v
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6 8
Total Cone Tip Resistance q_t (MPa)
0 20 40 60 80
Pore Pressure u (MPa)
-2 -1 0 1 2 3
Depth (metres below seafloor)
10
20
30
40
50

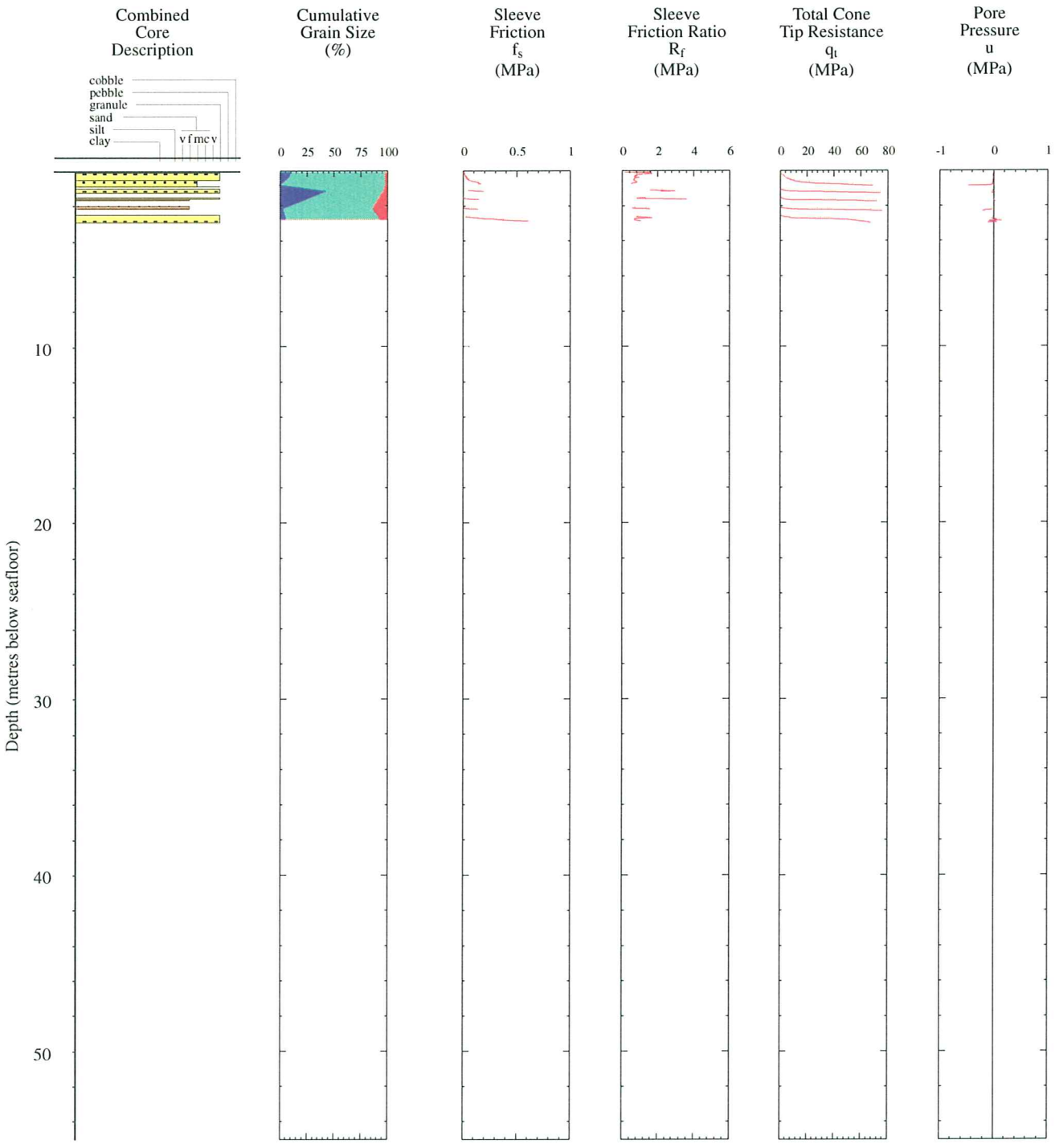
A3_97


Combined Core Description
cobble
pebble
granule
sand
silt
clay
v f m c v
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6 8
Total Cone Tip Resistance q_t (MPa)
0 20 40 60
Pore Pressure u (MPa)
-2 -1 0 1 2 3
Depth (metres below seafloor)
10
20
30
40
50

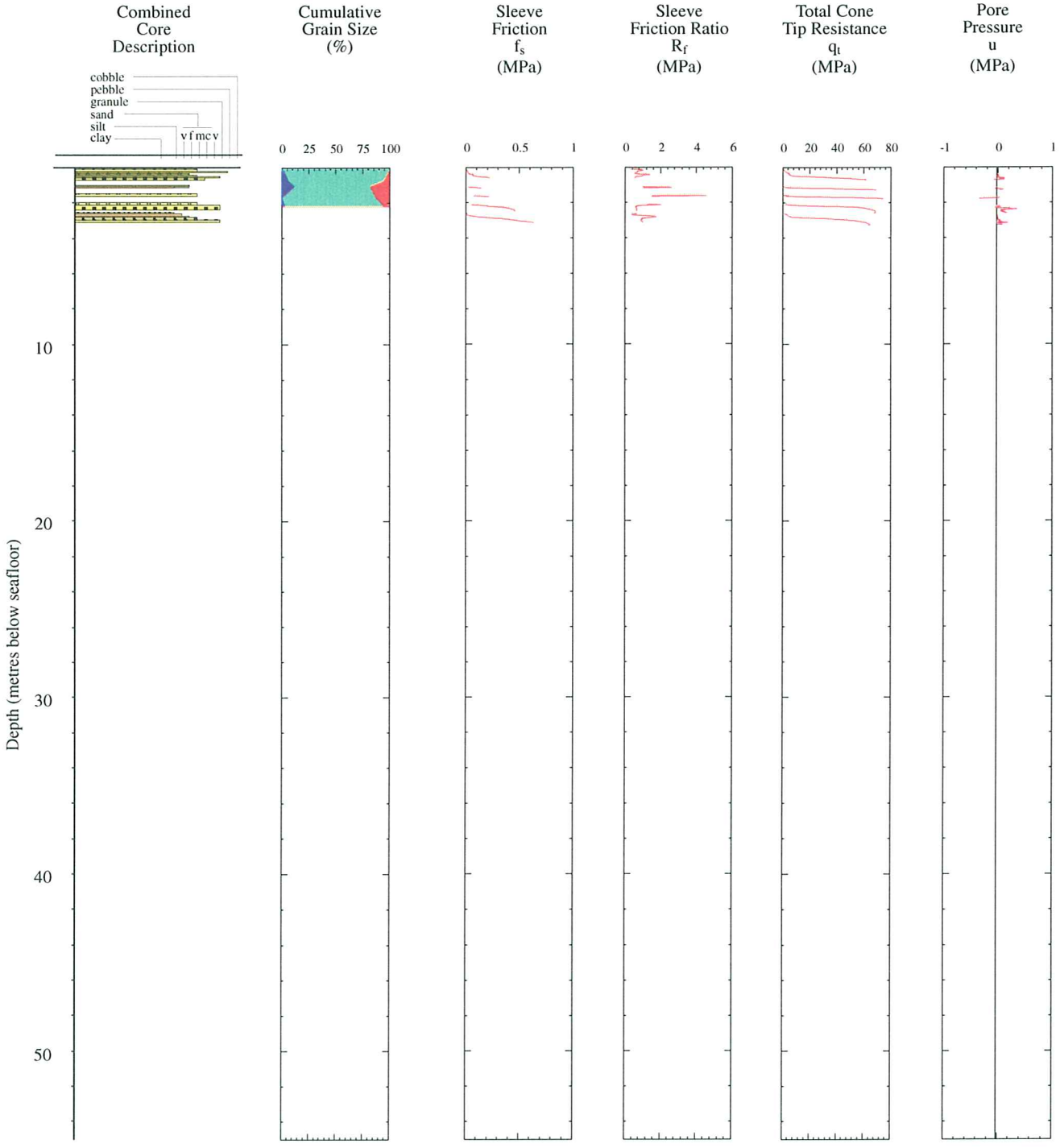
FPSO_B


Combined Core Description
cobble
pebble
granule
sand
silt
clay
v f m c v
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6 8
Total Cone Tip Resistance q_t (MPa)
0 20 40 60 80
Pore Pressure u (MPa)
-1 0 1
Depth (metres below seafloor)
10
20
30
40
50

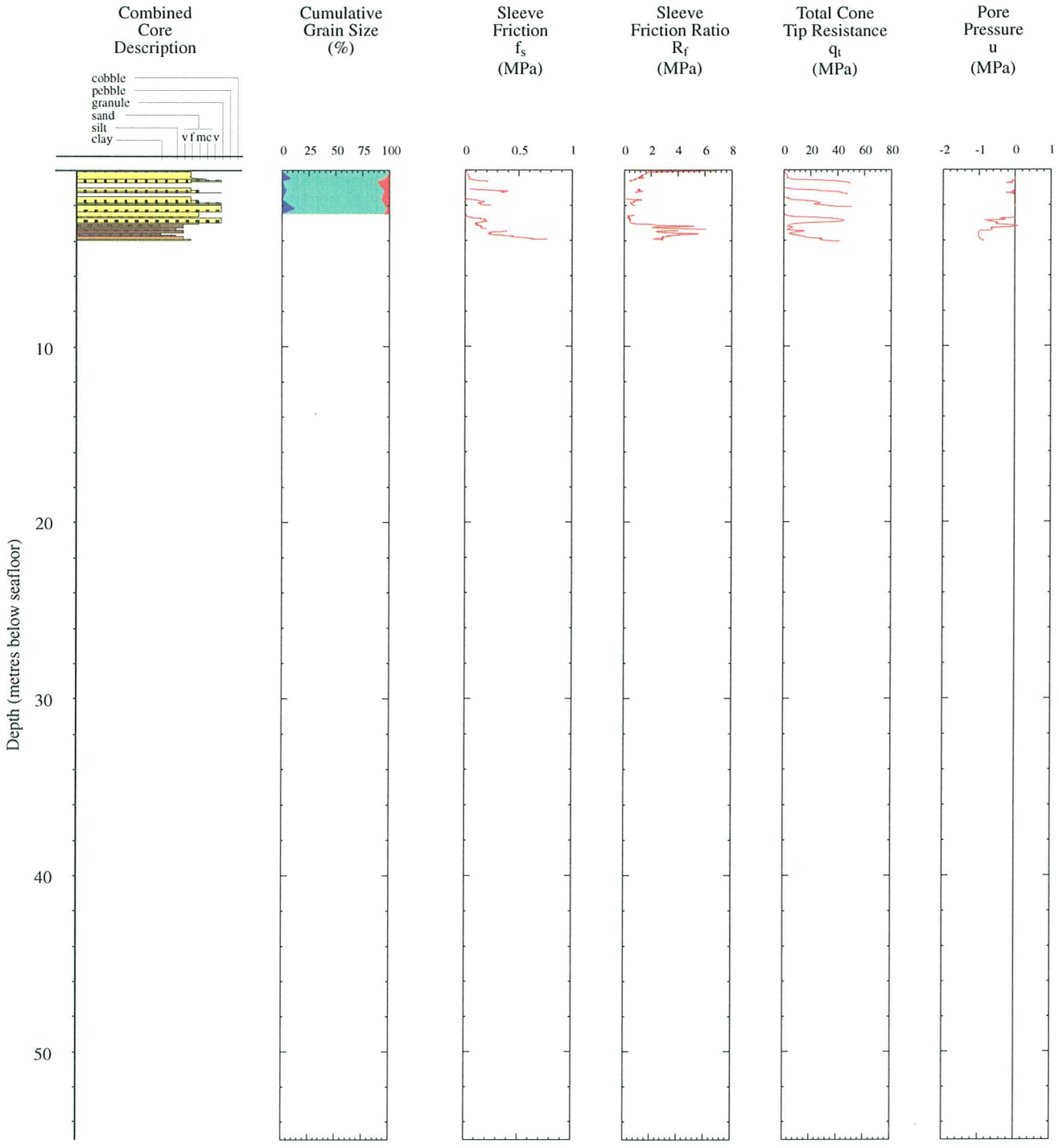
FR1_1B


Combined Core Description
cobble
pebble
granule
sand
silt
clay
v f m c v
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 20 40 60 80
Pore Pressure u (MPa)
-1 0 1
Depth (metres below seafloor)
10
20
30
40
50

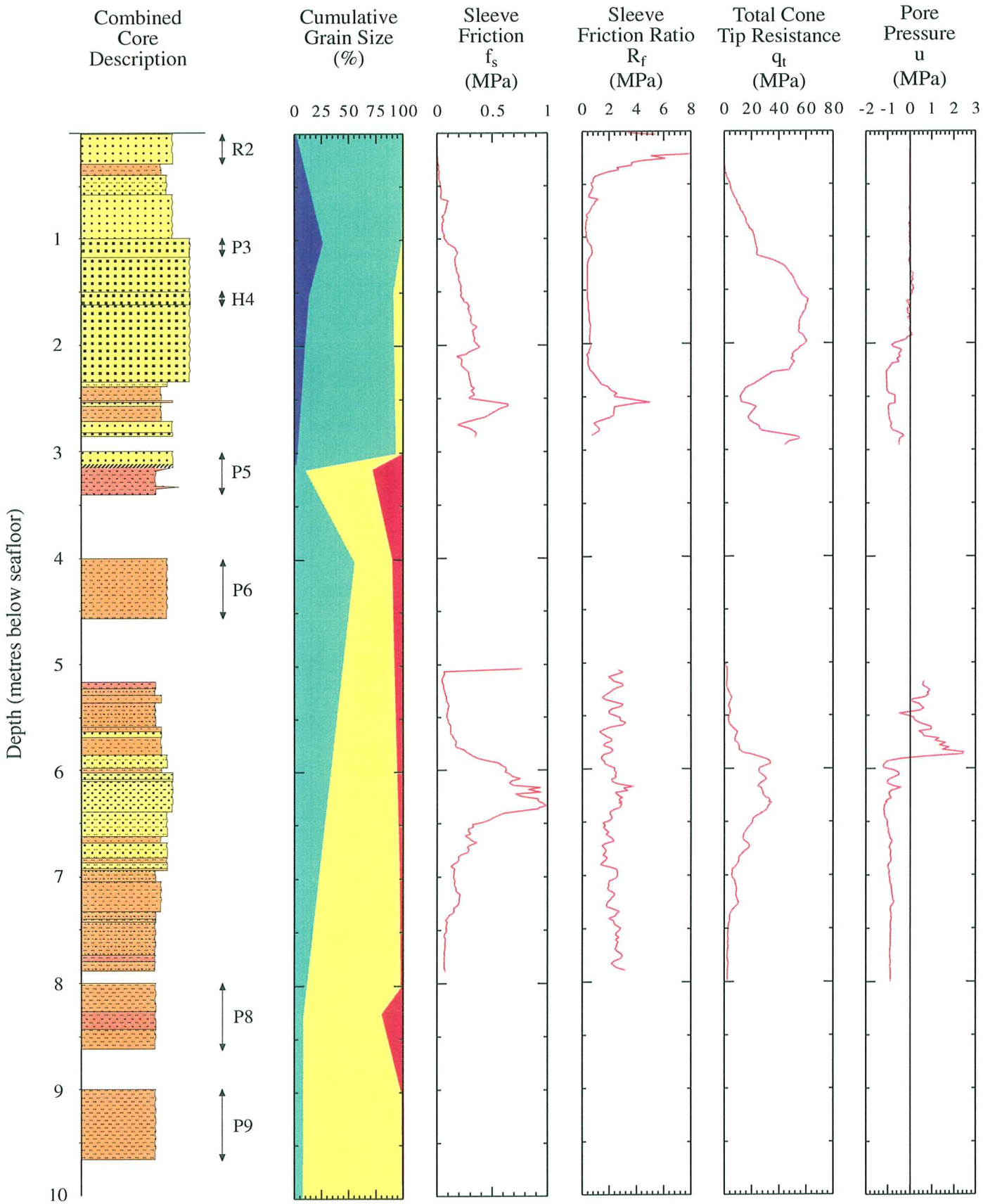
FR1_3B


Combined Core Description
cobble
pebble
granule
sand
silt
clay
v f m c v
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 20 40 60 80
Pore Pressure u (MPa)
-1 0 1
Depth (metres below seafloor)
10
20
30
40
50

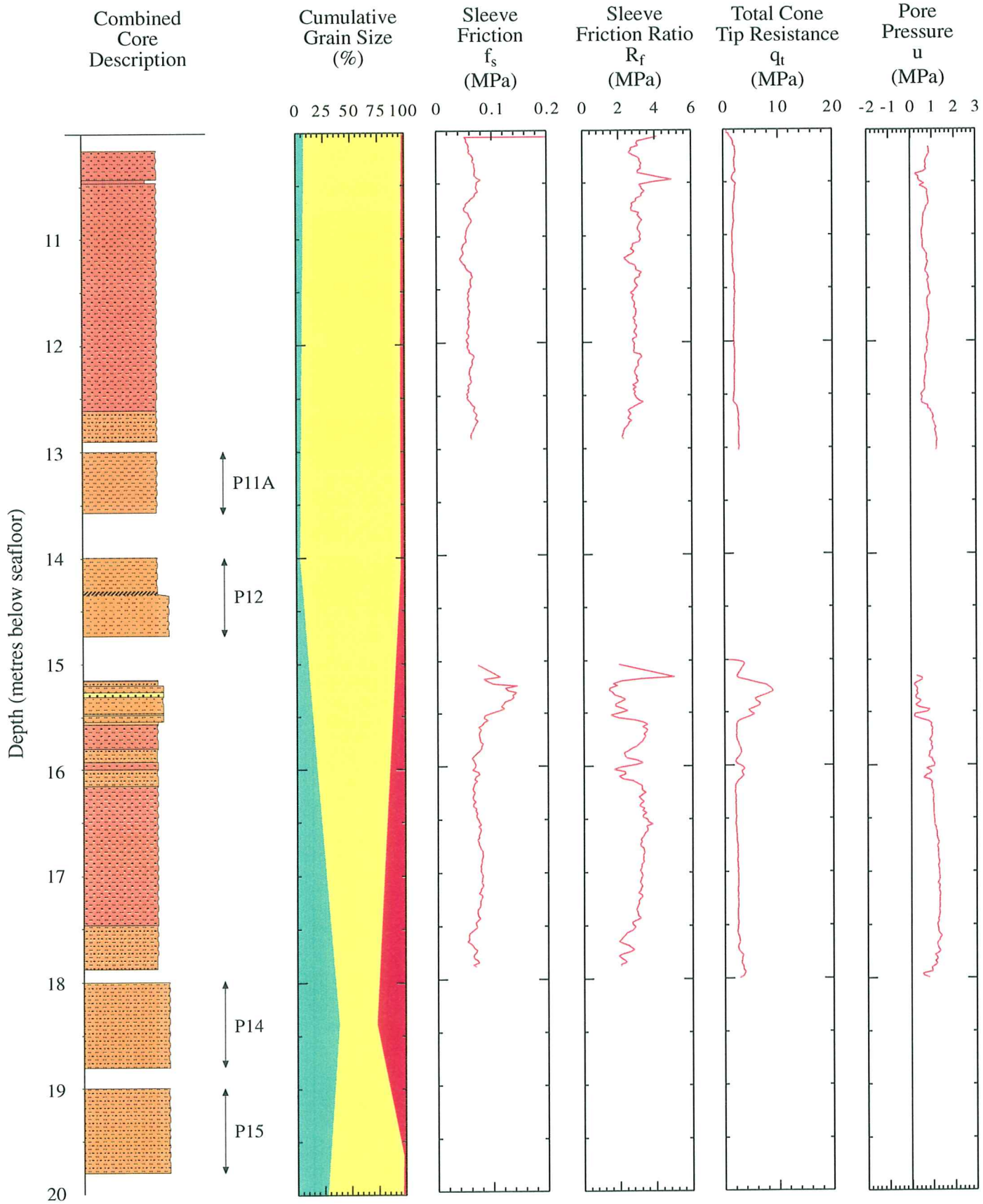
FR4_1B


Combined Core Description
cobble
pebble
granule
sand
silt
clay
v f m c v
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6 8
Total Cone Tip Resistance q_t (MPa)
0 20 40 60 80
Pore Pressure u (MPa)
-2 -1 0 1
Depth (metres below seafloor)
10
20
30
40
50

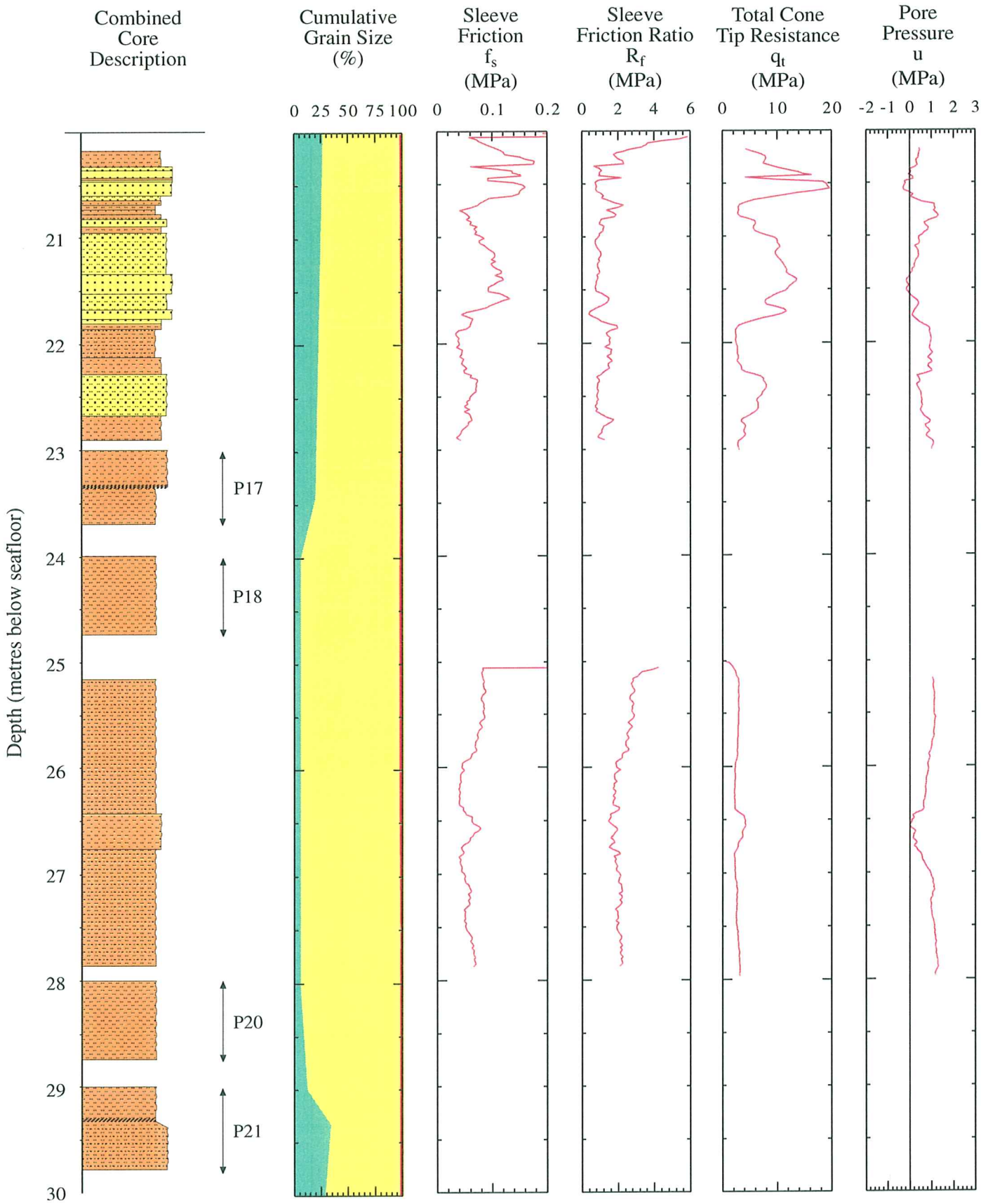
GS1_97


Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6 8
Total Cone Tip Resistance q_t (MPa)
0 20 40 60 80
Pore Pressure u (MPa)
-2 -1 0 1 2 3
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10
R2
P3
H4
P5
P6
P8
P9

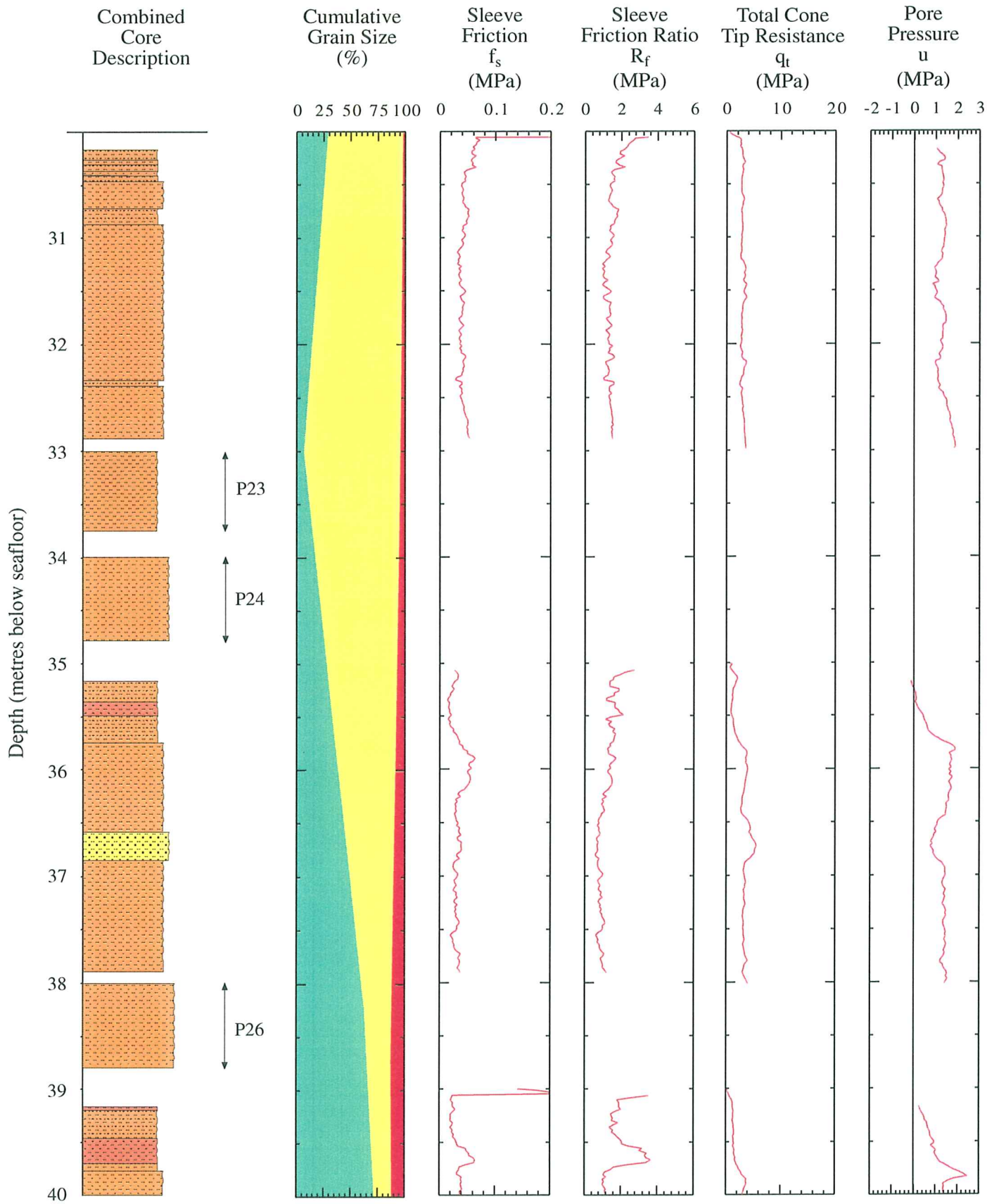
GS1_97


Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.1 0.2
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 10 20
Pore Pressure u (MPa)
-2 -1 0 1 2 3
Depth (metres below seafloor)
11
12
13
14
15
16
17
18
19
20
P11A
P12
P14
P15

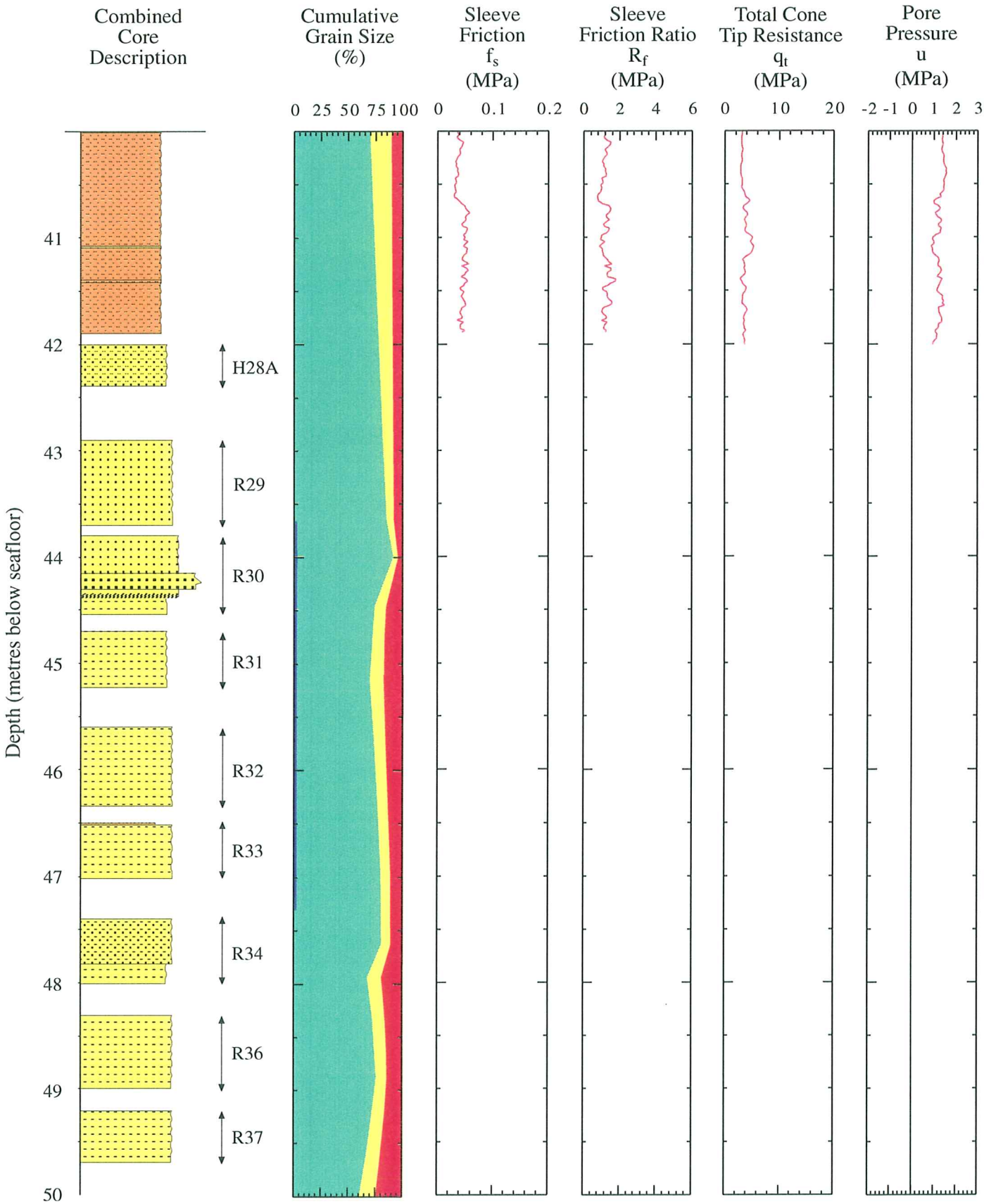
GS1_97


Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.1 0.2
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 10 20
Pore Pressure u (MPa)
-2 -1 0 1 2 3
Depth (metres below seafloor)
21
22
23
24
25
26
27
28
29
30
P17
P18
P20
P21

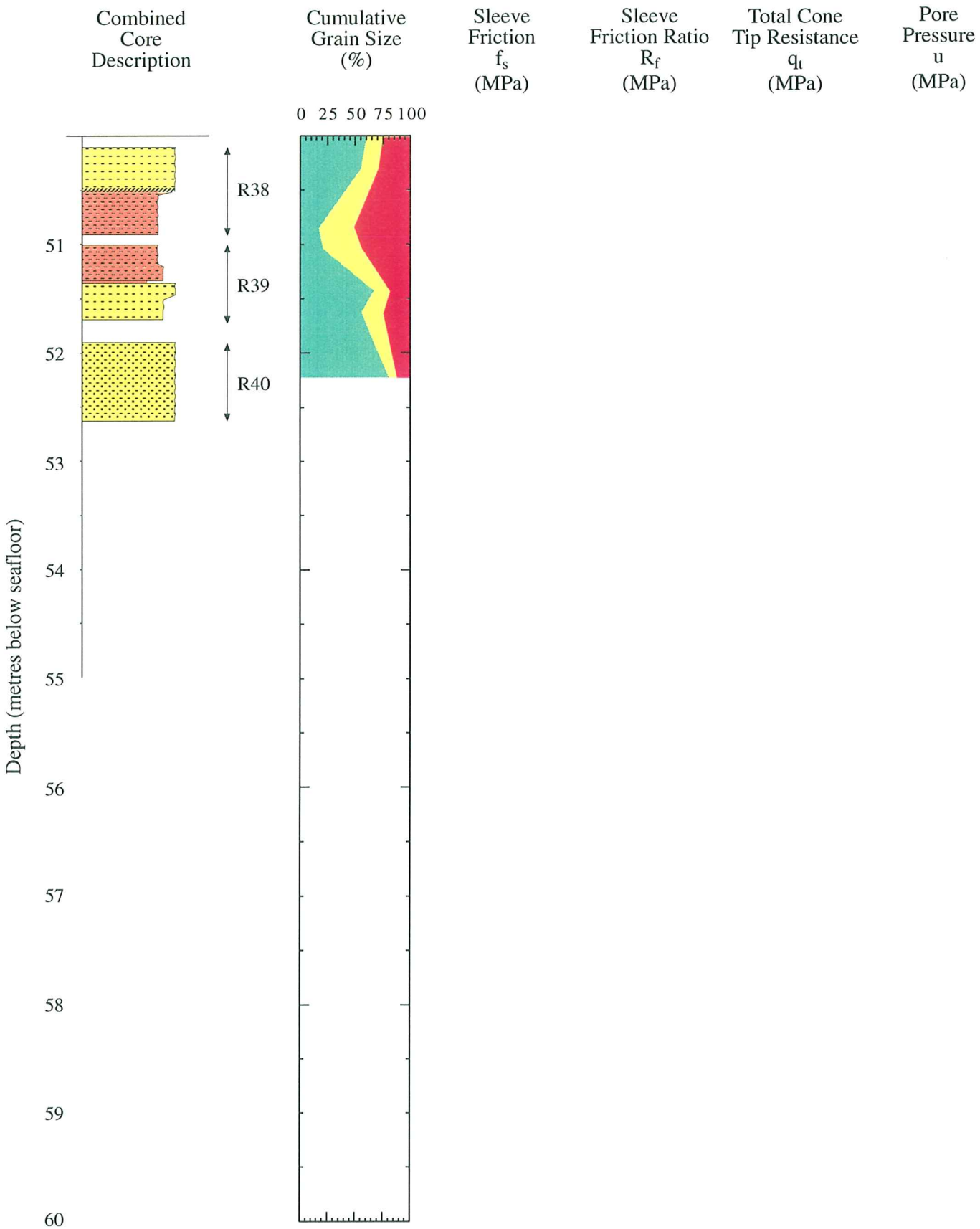
GS1_97


Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.1 0.2
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 10 20
Pore Pressure u (MPa)
-2 -1 0 1 2 3
Depth (metres below seafloor)
31
32
33
34
35
36
37
38
39
40
P23
P24
P26

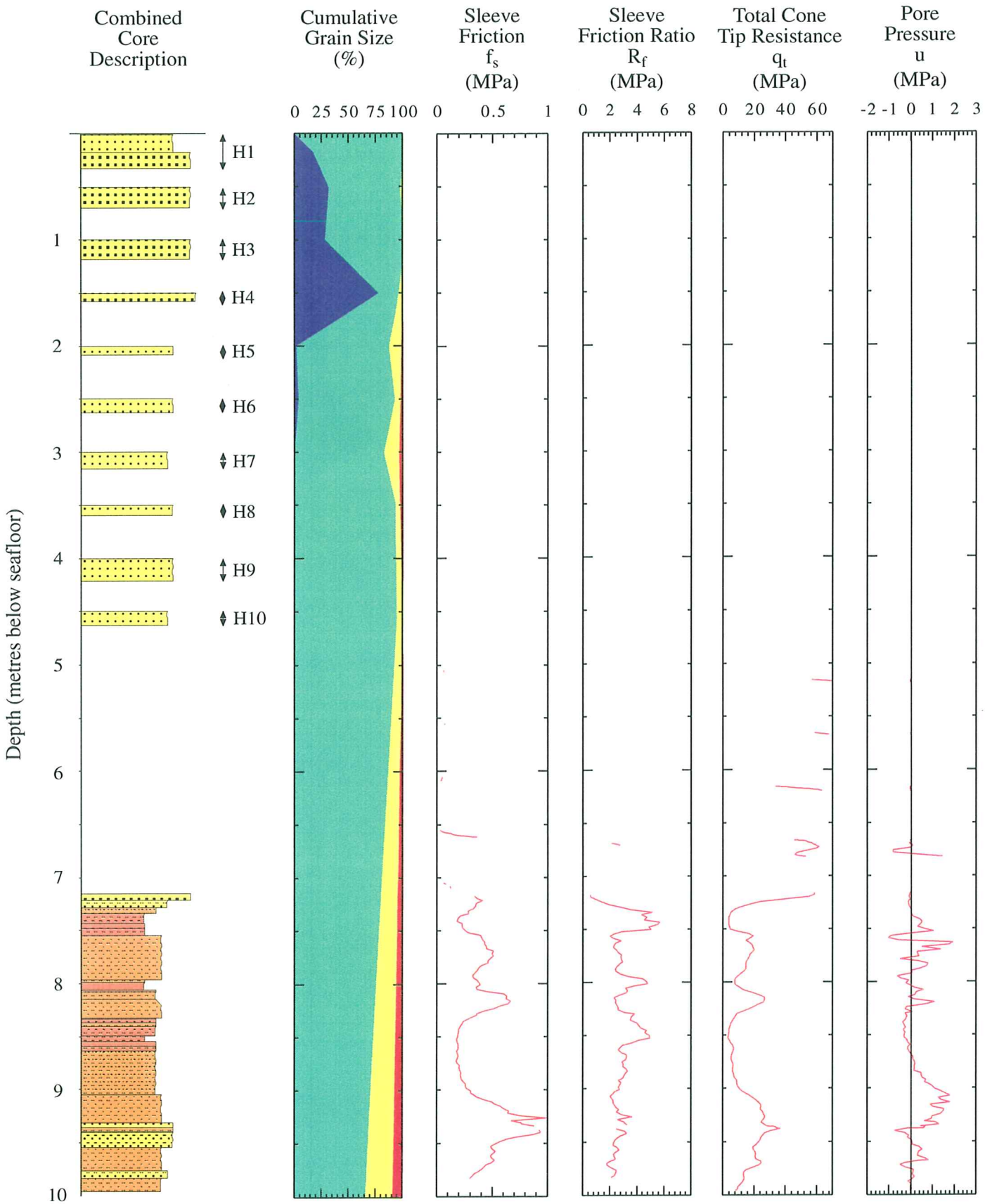
GS1_97

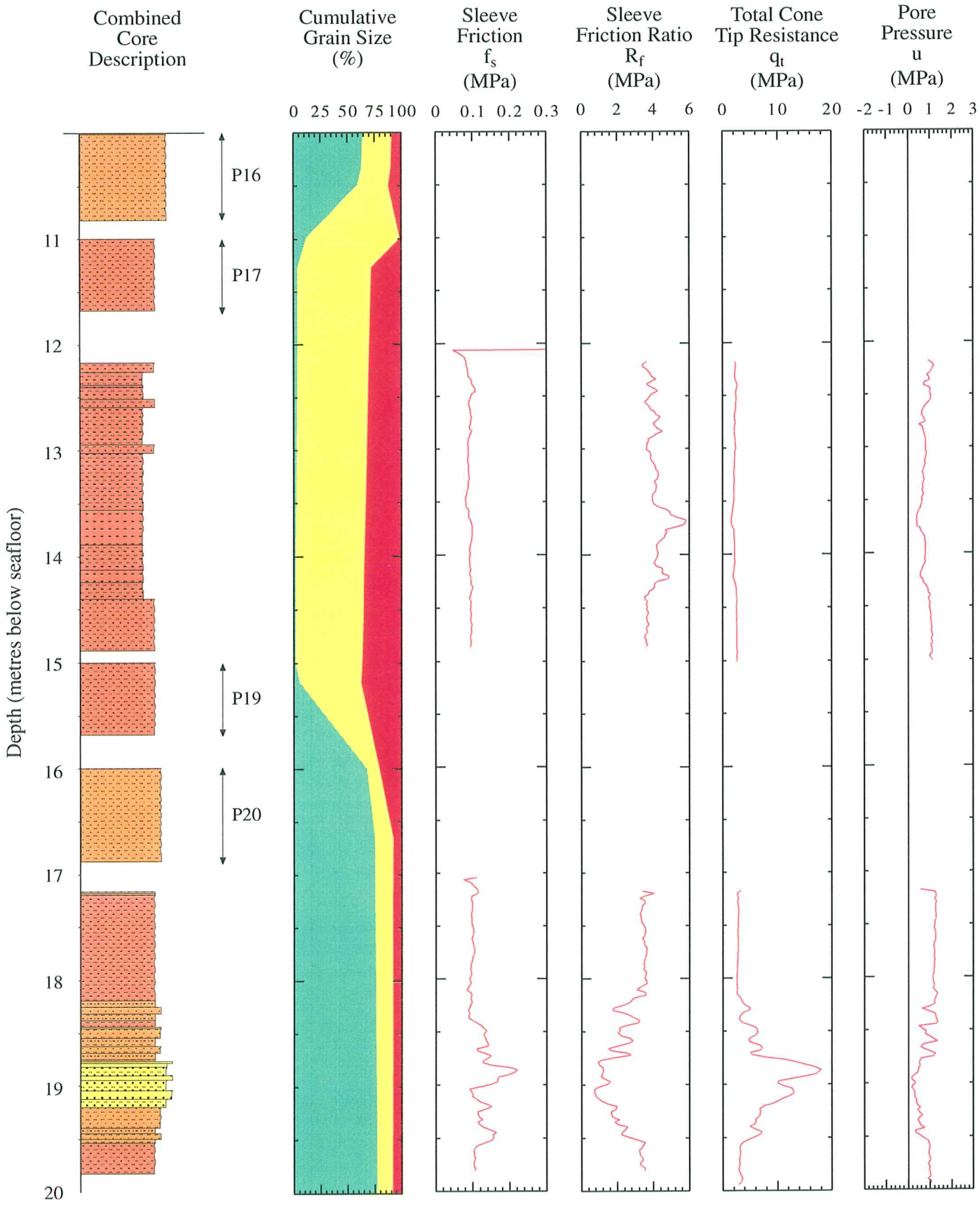

Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.1 0.2
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 10 20
Pore Pressure u (MPa)
-2 -1 0 1 2 3
Depth (metres below seafloor)
41
42
43
44
45
46
47
48
49
50
H28A
R29
R30
R31
R32
R33
R34
R36
R37

GS1_97

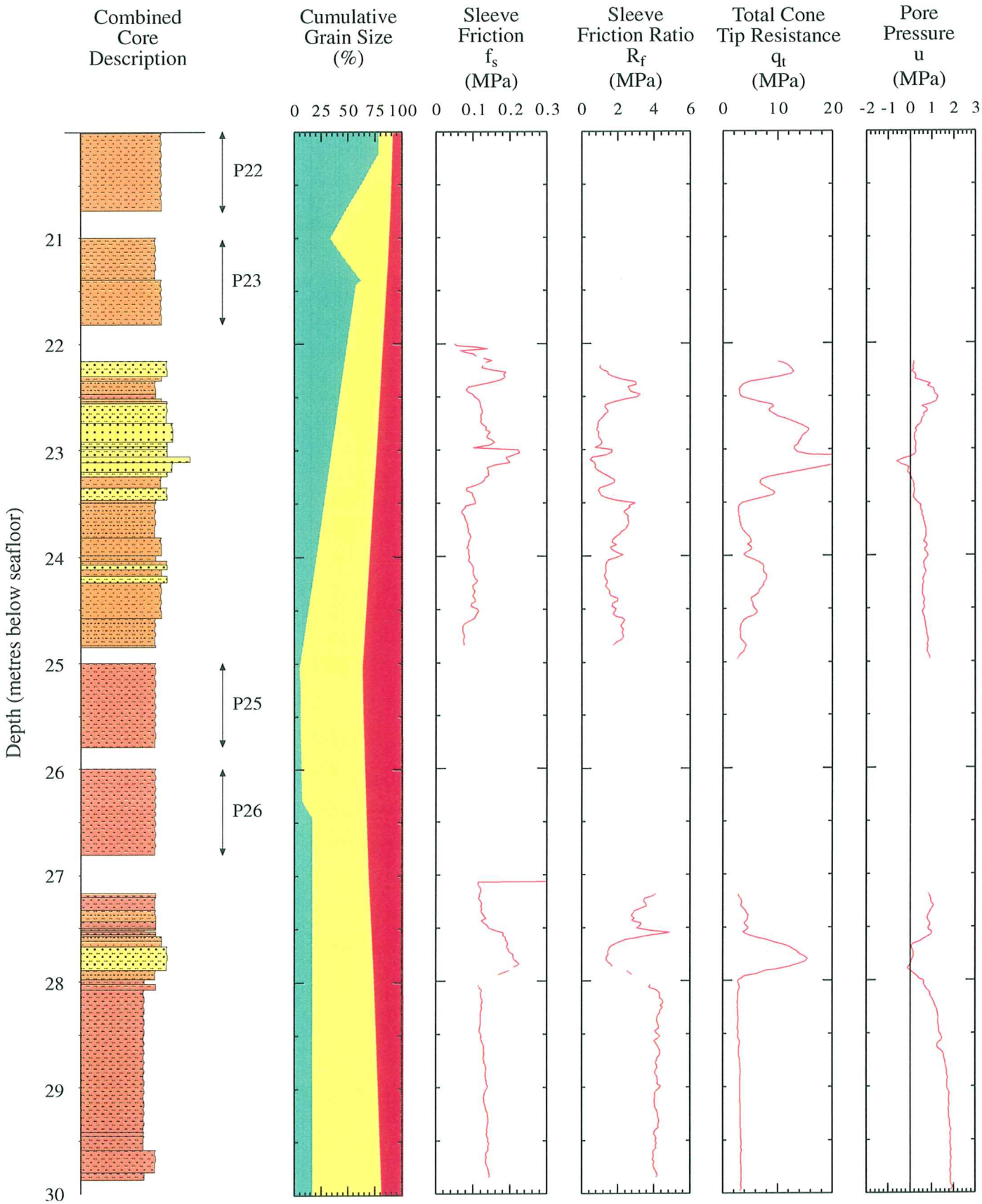

Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
Sleeve Friction Ratio R_f (MPa)
Total Cone Tip Resistance q_t (MPa)
Pore Pressure u (MPa)
R38
R39
R40
Depth (metres below seafloor)
51
52
53
54
55
56
57
58
59
60

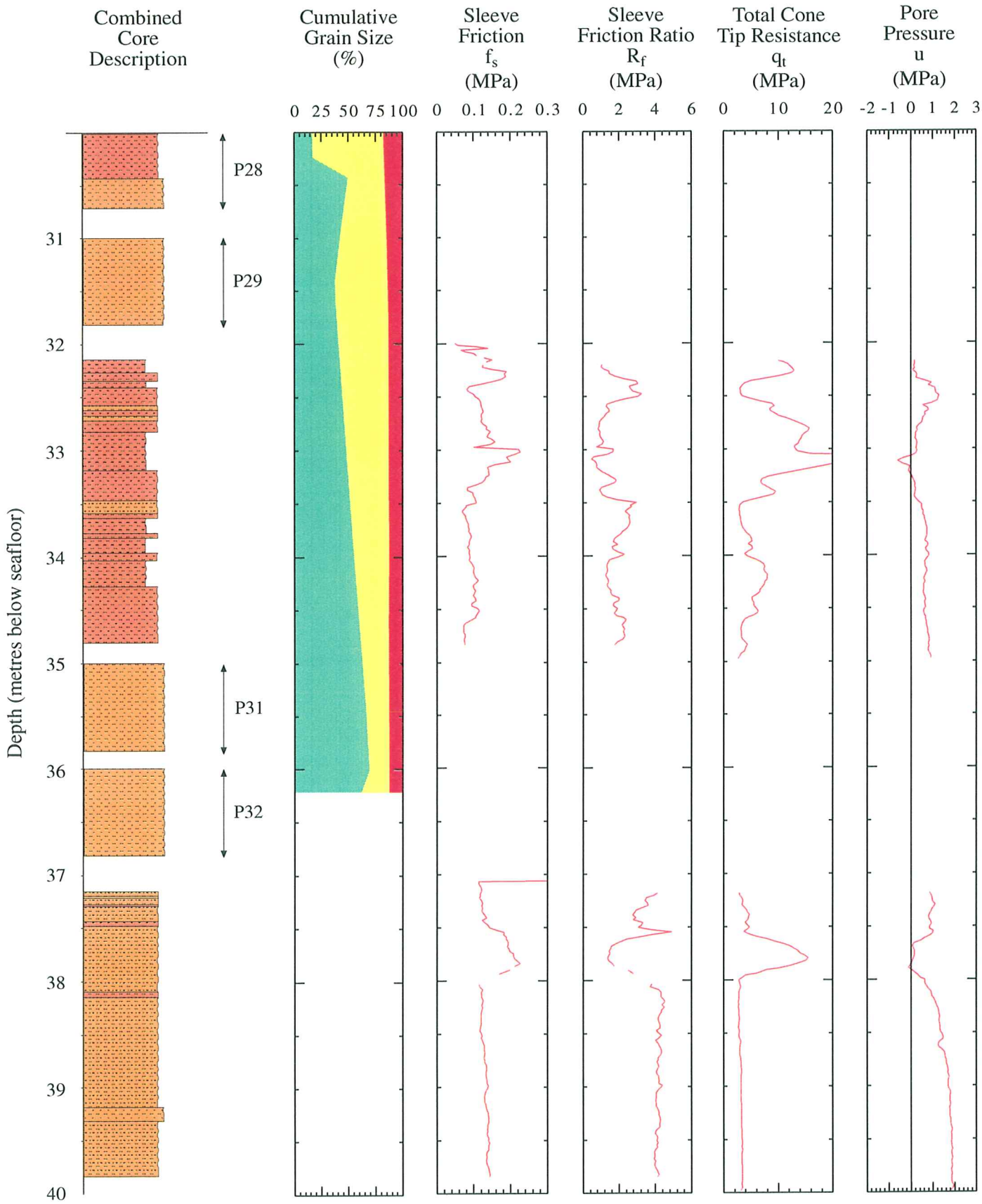
A3_97


Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6 8
Total Cone Tip Resistance q_t (MPa)
0 20 40 60
Pore Pressure u (MPa)
-2 -1 0 1 2 3
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10
H1
H2
H3
H4
H5
H6
H7
H8
H9
H10

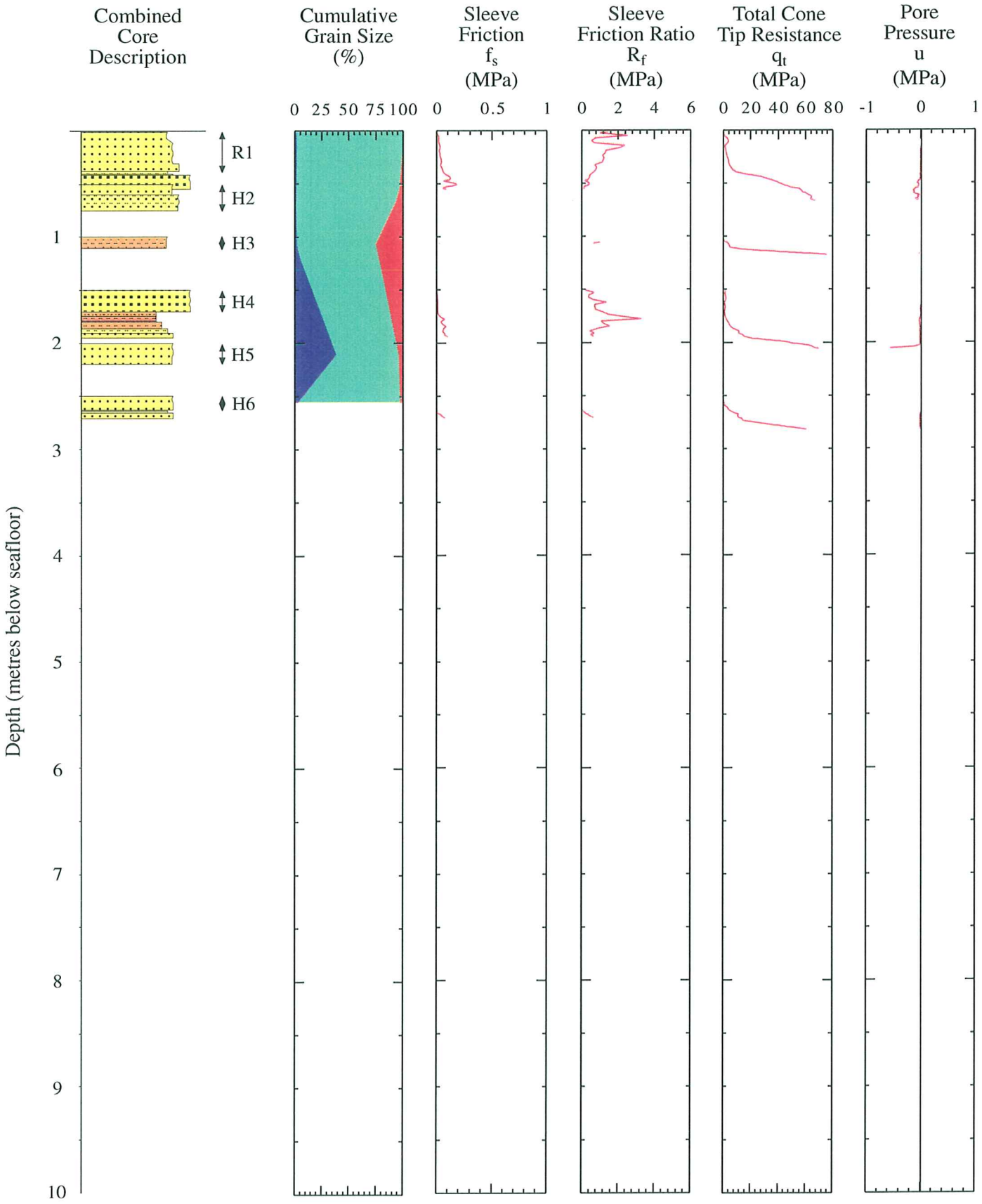

Combined Core Description
Cumulative Grain Size (%)
Sleeve Friction f_s (MPa)
Sleeve Friction Ratio R_f (MPa)
Total Cone Tip Resistance q_t (MPa)
Pore Pressure u (MPa)
0 25 50 75 100
0 0.1 0.2 0.3
0 2 4 6
0 10 20
-2 -1 0 1 2 3
Depth (metres below seafloor)
11
12
13
14
15
16
17
18
19
20
P16
P17
P19
P20

A3_97

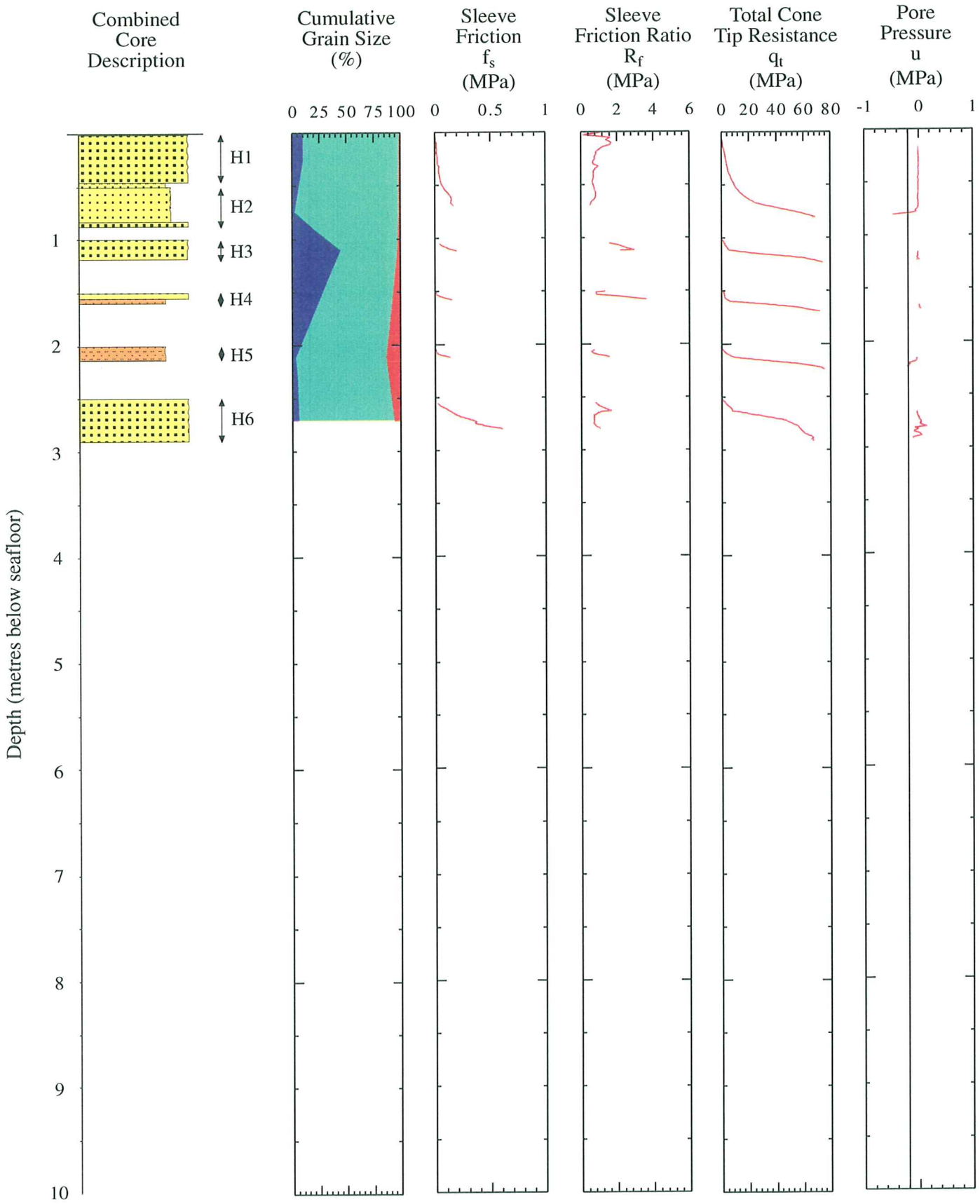

Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.1 0.2 0.3
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 10 20
Pore Pressure u (MPa)
-2 -1 0 1 2 3
Depth (metres below seafloor)
21
22
23
24
25
26
27
28
29
30
P22
P23
P25
P26


Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.1 0.2 0.3
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 10 20
Pore Pressure u (MPa)
-2 -1 0 1 2 3
Depth (metres below seafloor)
31
32
33
34
35
36
37
38
39
40
P28
P29
P31
P32

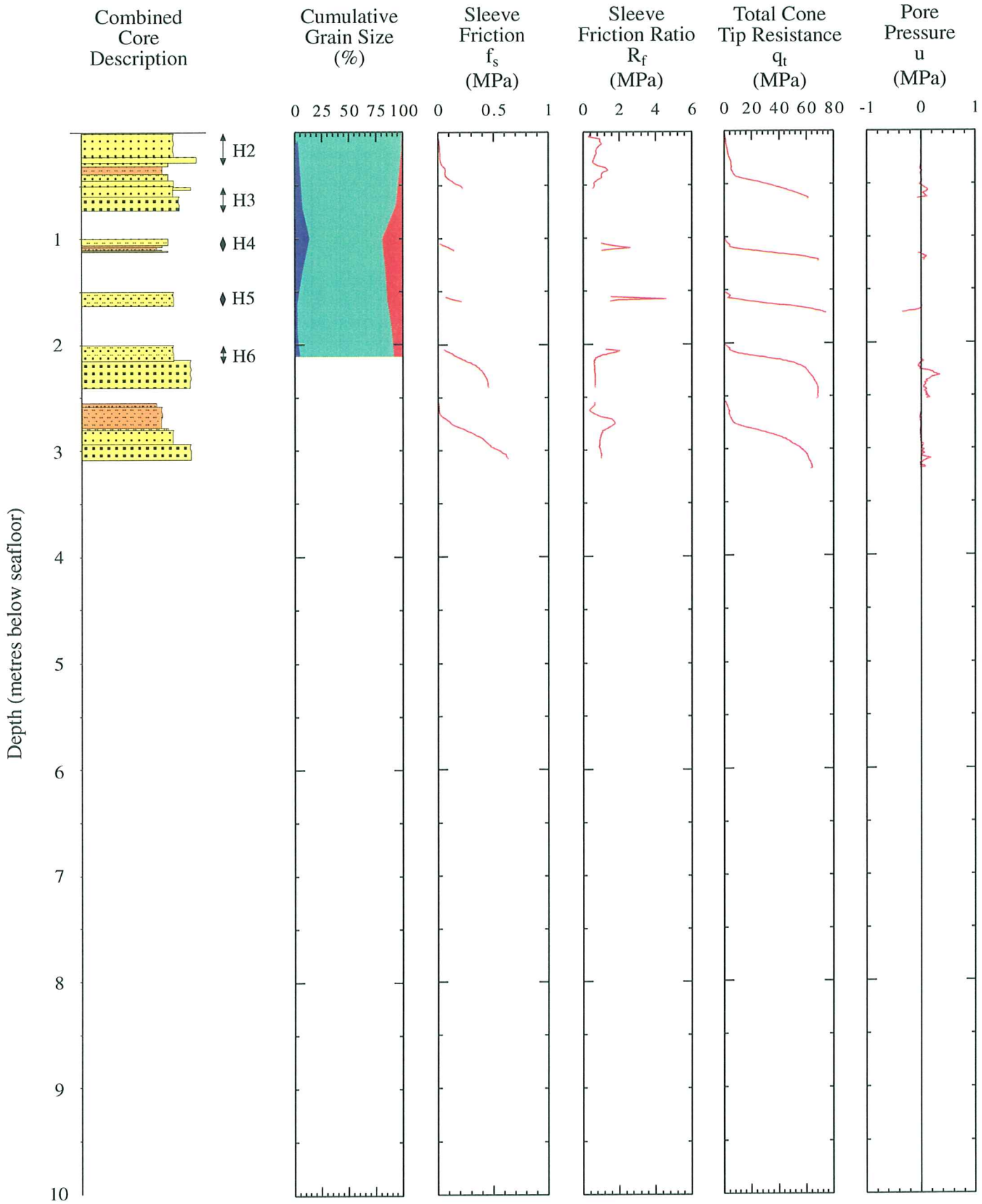
FPSO_B


Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 20 40 60 80
Pore Pressure u (MPa)
-1 0 1
R1
H2
H3
H4
H5
H6
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10

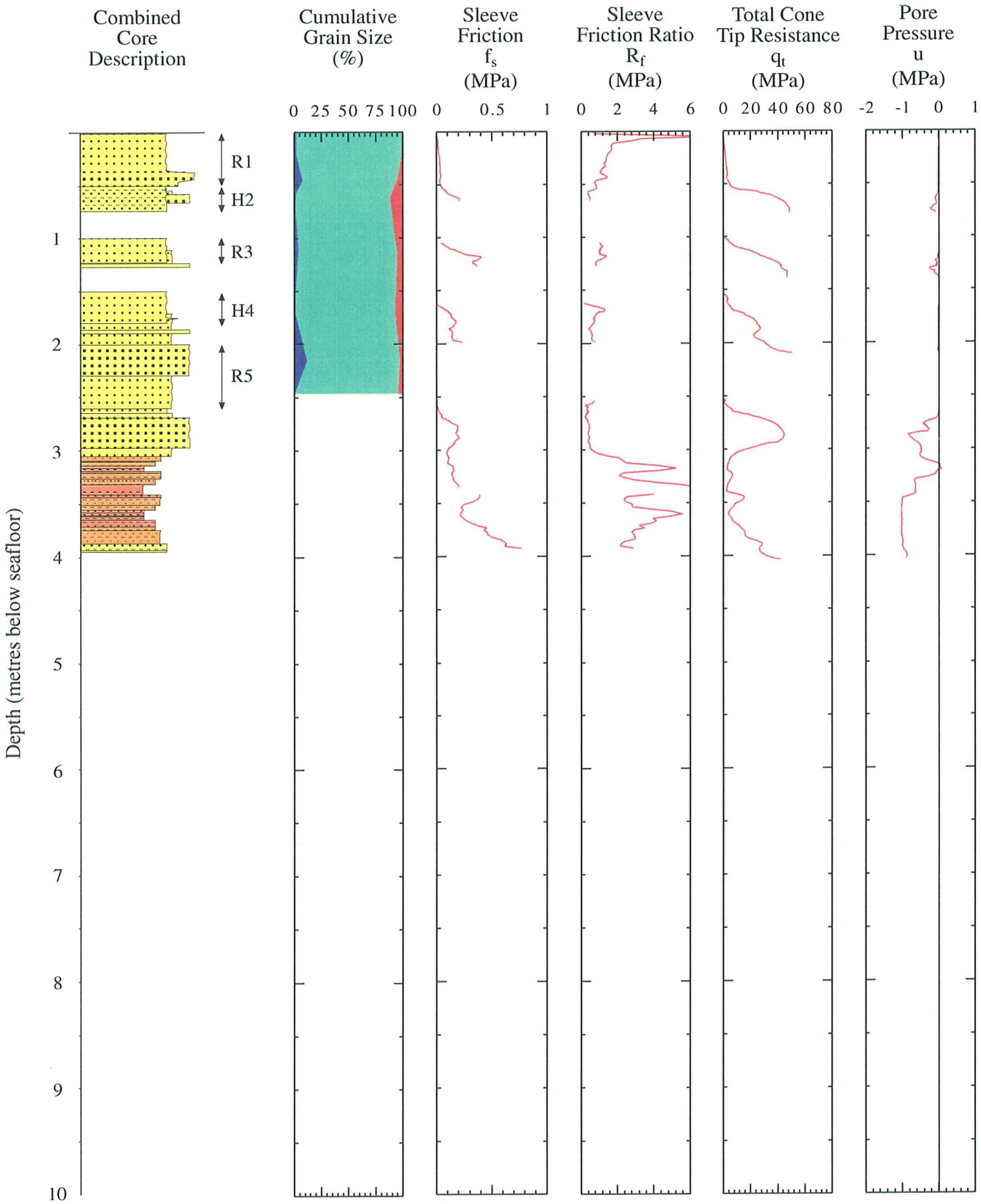
FR1_1B


Combined Core Description
Cumulative Grain Size (%)
Sleeve Friction f_s (MPa)
Sleeve Friction Ratio R_f (MPa)
Total Cone Tip Resistance q_t (MPa)
Pore Pressure u (MPa)
0 25 50 75 100
0 0.5 1
0 2 4 6
0 20 40 60 80
-1 0 1
H1
H2
H3
H4
H5
H6
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10

FR1_3B


Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 20 40 60 80
Pore Pressure u (MPa)
-1 0 1
H2
H3
H4
H5
H6
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10

FR4_1B


Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Sleeve Friction f_s (MPa)
0 0.5 1
Sleeve Friction Ratio R_f (MPa)
0 2 4 6
Total Cone Tip Resistance q_t (MPa)
0 20 40 60 80
Pore Pressure u (MPa)
-2 -1 0 1
R1
H2
R3
H4
R5
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10

Appendix 1

97 Norskald :Terra Nova

Borehole : FPSOB - all unsplit core.

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
R1	0	0.38		fpsob-r1	
h2	0.5	0.25		fpsob-h2	
h3	1.0	0.10		fpsob-h3	
h4	1.5	0.20		fpsob-h4	- driller thinks "hardpan" - but highly disturbed - says not an accurate sample in photo
h5	2.0	0.20		fpsob-h5	
h6	2.5	0.13		fpsob-h6	

Borehole : FR1-1B - flow line route - all unsplit core

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
h1	0	0.46		fr1-1b h1	
h2	0.5	0.37		fr1-1b h2	
h3	1.0	0.18		fr1-1b h3	
h4	1.5	0.10		fr1-1b h4	"hardpan"
h5	2.0	0.13		fr1-1b h5	"hardpan" but not as hard as h4
h6	2.5	0.40		fr1-1b h6	

Borehole : FR1-2B Flow Line Route - all unsplit core

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
r1	0	0.50		fr1-2br1	
r2	1.0	0.30		fr1-2br2	
r3	1.5	0.46		fr1-2br3	
r4	2.0	0.24		fr1-2br4	Cuttings on top (jacques notes)
h5	2.5	0.30		fr1-2b h5	Disturbed ?

97 Norskald :Terra Nova

Borehole : FR1-3B Flow Line Route - all unsplit core

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
r1	- -	- -	- -	- - .	no recovery
h2	0.0	0.28		fr1-3bh2	
h3	0.5	0.23		fr1-3b h3	
h4	1.0	0.06		fr1-3bh4	"cemented sand" but does not look like
					"hardpan" in FE1-97 and FR1-1
h5	1.50	0.13		fr1-3b h5	very dense - not quite cemented
h6	2.0	0.15		fr1-3bh6	

97 Norskald :Terra Nova

Borehole : FR1_6B Flow Line Route - all unsplit core

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
h1	0.0	0.15		fr1-6bh1	
r2	0.5	0.08		fr1-6br2	dense sand - jacques notes say "hard pan"
h3	?	0.02		fr1-6bh3	depth labelled 0.5m in book - repeat ?
					called hardpan in jacques notes.
h4	1.0	0.56		fr1-6bh4	
h5	-	-	-	-	no recovery
h6	2.0	0.08		—	no image

97 Norskald :Terra Nova

Borehole : FR1_7 Flow line Route - all unsplit core.

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
r1	0	0.20		fr1-7r1	
r2	1.0	0.55		fr1-7r2	Dessication cracks - laminated ? missing bottom
r3	2.0	0.51		fr1-7r3	" " - foliated ?

97 Norskald :Terra Nova

Borehole : FR4-1b Flow Line Route - all unsplit core

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
r1	0.0	0.5		fr4-1br1	
h2	0.5	0.24		fr4-1bh2	looks like "hardpan" - but softer not cemented
r3	1.0	0.23		fr4-1br3	
h4	1.5	0.30		fr4-1bh4	
r5	2.0	0.60		fr4-1br5	

Borehole : FR4-3C Flow Line Route - all unsplit core

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
h1	0.5	0.22		fr4-3ch1	
h2	1.0	0.35		fr4-3ch2	missing top of image. Jacques calls this
					"hardpan" but Meghans notes say very
					dense sand
h3	1.5	0.23		fr4-3ch3	
h3(2)	"	"		fr4-3ch3(2)	labelled H3 (2) but looks like last image
h4	2.0	0.13		fr4-3ch4	says redo on photo but no other image
h5	2.5	0.18		fr4-3ch5	

97 Norskald :Terra Nova

Borehole : FR4-4B Flow Line Route - all unsplit cores

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
r1	–	–	–	–	no recovery
h2	0.0	0.36		fr4-4bh2	missing bottom of image
h3	0.5	0.25		fr4-4bh3	labelled as redo
h4	1.0	0.10		fr4-4bh4	
h5	1.5	0.25		fr4-4bh5	missing bottom of image
p6	2.0	0.31		fr4-4bp6	initially called hardpan but then changed
p7	2.5	0.35		fr4-4bp7	

97 Norskald :Terra Nova

Borehole : A3_97 Anchor Pile - no information in Meghan's log book so Jacques field notes only

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
h1	0.0		0.40	a3-97h1	
h2	0.5		0.25	a3-97h2	
h3	1.0		0.20	a3-97h3	
h4	1.5		0.20 ?	a3-97h4	
h5	2.0		0.10	a3-97h5	
h6	2.5		0.20	a3-97h6	
h7	-	-	-	-	no image
h8	-	-	-	-	" "
h9	-	-	-	-	" "
h10	-	-	-	-	" "
p16	-	-	-	-	" "
p17	-	-	-	-	" "
p19	15.0			a3-97p19	missing top & bottom of image
p20	16.0			a3-97p20	" " " " "
p22	20.0			a3-97p22	" " " " "
p23	21.0			a3-97p23	" " " " "
p25	25.0			a3-97p25	missing top of image
p26	26.0			a3-97p26	missing top & bottom of image
p28	30.0			a3-97p28	" " " " "
p29	31.0			a3-97p29	" " " " "
p31	35.0			a3-97p31	" " " " "
p32	36.0			a3-97p32	" " " " "

97 Norskald :Terra Nova

Borehole : EFN1A-97 Glory Hole - all unsplit core

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
c2	0	0.16	0.18	efn1a-97c	2
h3	0.5	0.23	0.30?	efn1a-97h3	upside down? -no
h4	1.0	0.15	0.16	" h4	" "
h5	1.5	0.13	0.15	" h5	
c6	2.0	0.09	0.15	" c6	
h8	2.5	0.20	0.30	" h8	very disturbed
h10	3.5	0.17	0.20	" h10	semi cemented - calcareous - jacques notes
h12	4.0				cuttings ?

97 Norskald :Terra Nova

Borehole : EFN1B.97 Glory Hole - all unsplit core

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
h1	-	-	-	-	no recovery
h2	5.5	0.20		efn1b-97h2	
h3	6.0	?		" h3	
p5	9.5	0.55	0.60	efn1b.97p5	
p6	10.5	0.73	0.72	" p6	missing top of image
p8	14.5	0.71	0.72	" p8	missing top & bottom of image
p9	15.5	0.73	0.72	" p9	" " " "
p11	19.5	0.80	0.72	" p11	" " " "
p12	20.5	0.78	0.72	" p12	" " " "
p14	24.5	0.76	"	" p14	missing top of image
p15	25.5	0.81	"	" p15	missing top & bottom of image
p17	29.5	0.71	0.72	" p17	" " " " "
p18	30.5	0.71	0.72	" p18	missing top of image
p20	34.5	0.70	0.72	" p20	" " " "
p21	35.5	0.76	"	" p21	" " " "
p23	39.5	0.78	0.72	" p22	missing top & bottom of image - labelled as p22 renamed as efn1b-97p23

97 Norskald :Terra Nova

Borehole : EFN 2-97 Glory Hole -original files in folder extra 13ms. Not listed in Meghans' log book

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
h1	0.0	0.32		efn2-97h1	
h2	0.5	0.15		" h2	
h3	1.0	0.20		" h3	
h4	1.5	0.16		" h4	-change in colour of image - bluer
h5	2.0	0.22		" h5	-image still bluer - probable "hardpan written in Jacques notes
~~h6~~	~~2.5~~	~~0~~			
h6	2.5	0.19		" h6	- image still bluer - "hardpan" written in image
h7	3.0	0.13		" h7	
p8	3.5	0.53		" p8	
p9	4.5	0.65		" p9	missing top of image, still bluer
p10	–	–		–	no image —
p11	6.5	0.73		efn2-97p11	missing top of image "
p12	7.5	0.66		" p12	" " " " "
p13	8.5	0.60		" p13	" " " "
p14	9.5	0.60		" p14	OK "
p15	10.5	0.82		" p15	missing top of image "
p16	11.5	0.81		" p16	" " " "
p17	12.5	0.63		" p17	" " "

97 Norskald :Terra Nova

Borehole : EFS1_97 Glory Hole all unsplit core

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
r1	0.0	0.6		efs1-97r1	- missing bottom of image ?
r2	1.0	0.39		" r2	
p3	2.0	0.16		" p3	
h4	2.5	~0.25		" h4	
p6	6.0	0.53		" p6	
p7	7.0	0.80		" p7	- labelled as piston core in book missing top and bottom of image
p9	11.0	0.85			- no image
p10	12.0	0.85		efs1-97p10	missing top & bottom of image
p12	16.0	0.76		" p12	" " " " "
p13	17.0	"		" p13	" " " " "
p15	21.0	0.84		" p15	" " " " "
p16	22.0	0.67		" p16	" " " " "
p18	26.0	0.82		" p18	" " " " "
p19	27.0	0.72		" p19	missing bottom of image - knife in image
p21	31.0	0.74		" p21	missing top & bottom of image
p22	32.0	0.83		" p22	" " " " "
p24	36.0	0.77		" p24	" " " " "
p25	37.0	0.76		" p25	" " " " "

Borehole : FE1_97 Glory Hole

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
h2	–	–	–	–	no image
h3	1.0	0.08	0.08	fe1-97h3	
	1.0			" h3a	" hard pan "
	1.0			" h3b	" " "
h5	–	–	–	–	no image
h6	1.5	?	~0.03	fe1-97h6	piece of "hardpan" at top
h7	2.0	~0.10	?	" h7	" " " "
h8	2.5	~0.10	?	" h8	very disturbed - Jacques says softened "hardpan"
h9	3.0	0.30	~0.10	" h9	cuttings ?
h10	3.5	0.25		" h10	"
h11	4.0	0.10	~0.11	" h11	
h12	–	–	–	–	no image
h14	5.5	0.05	0.05	fe1-97h14	
h15	6.0	0.15	0.15	" h15	cuttings on top ?
p16	–	–	–	–	no recovery
h17	6.5	0.40	0.43	fe1-97 h17	labelled as h18(b) but depth says 6.5 - relabelled as 17
h18	7.0	0.10	0.40?	" h18	cuttings ?
h19	7.5	0.24	0.25	" h19	labelled in book as h18 but h19 on image
p20	8.0	0.10	0.20	" p20	
p21	8.5	0.13	0.20-0.3	" p21	labelled "hardpan" in image
p22	8.5 ?	0.09	0.12	" p22	" " "
p24	10.0	0.24	0.25	" p24	
p26	14.0	0.62	0.60	" p26	missing top & bottom of image
p27	15.0	0.80	0.60	" p27	" " " "
p29	19.0	0.72	0.60	" p29	" " " "
p30	20.0	0.73	0.60	" p30	" " " "
p32	24.0	0.80	0.60	" p32	" " " "
p33	25.0	0.67	0.60	" p33	" " " "
p35	27.0	0.73	0.60	" p35	labelled P34 by mistake
p37	31.0	0.79	0.60	" p37	
p38	32.0	0.27	0.25	" p38	missing bottom of image
p40	36.0	0.68	0.6-0.65	" p40	missing top & bottom of image
p41	37.0	0.65	"	" p41	" " "

97 Norskald :Terra Nova

Borehole : GN1-97 Glory Hole all unsplit core

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
r2	0	?	0.72	gn1-97r2	file mislabelled as r1. Not listed in log book
					missing bottom of image
r3	1.0	?	0.52	gn1-97r3	file mislabelled as r2. Not listed in log book
r4	2.0	?	0.16	" r4	" " " r3. " " "
p4	2.0?	?	~0.65	" p4a	" " " p4 " " "
					missing bottom of image
p6	6.0	?	~0.75	" p6	missing top & bottom of image
p7	-	-	-	-	no image
p8	7.5	?	0.74	gn1-97p8	missing top of image
p10	9.5	0.69	0.85	" p10	
p11	12.5	0.83	"	" p11	missing top of image
p13	16.5	0.81	"	" p13	" " " "
p14	17.5	0.84	"	" p14	" " " "
p16	-	-	-	-	no image
p17	-	-	-	-	no recovery
p18	-	-	-	-	no image
p20	27.0	0.89	0.85	gn1-97p20	missing top & bottom of image
p21	28.0	0.82	"	" p21	" " " " "
p23	32.0	0.66	0.72	" p23	
p24	33.0	0.85	0.85	" p24	missing top & bottom of image
p26	37.0	0.90	0.85	" p26	" " " "
p27	38.0	?	0.85	" p27	" " " "

97 Norskald :Terra Nova

Borehole : GSI_97 Glory Hole upsplit and split cores.

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
r2	0.0	0.29	0.37	gsi-97r2	
p3	1.0	0.4-0.5	.5-0.6	" p3	missing top of image - disturbed
h4	1.5	0.12	0.20	" h4	labelled as 1.5 redo.
p5	3.0	0.40	0.60	" p5	missing bottom of image
p6	4.0	0.57	0.60	" p6	" " " " - cuttings?
p8	8.0	0.62	0.65	" p8	" " " "
p9	9.0	0.66	0.70	" p9	missing bottom of image
p11a	13.0	0.57	0.60	" p11a	disturbed sample
p12	14.0	0.74	0.75	" p12	missing top & bottom of image
p14	18.0	0.80	0.75	" p14	" " " " "
p15	19.0	"	"	" p15	" " " " "
p17	23.0	0.70	0.75	" p17	" " " " "
p18	24.0	0.74	"	" p18	" " " " "
p20	28.0	0.74	0.70	" p20	missing top of image
p21	29.0	0.78	0.70	" p21	missing top & bottom of image
p23	33.0	0.75	0.75	" p23	" " " " "
p24	34.0	0.78	0.82-0.90	" p24	" " " " "
p28	—	—	—	—	no recovery
Split core begins			GSC-	Atlantic	
h28a	42.0	0.40	0.46	gsi-97h28a	disturbed core
r29	42.9	0.80	0.55	" r29(1)	
			0.80	" r29(2)	
r30	43.8	0.74	0.55	" r30(1)	
			0.74	" r30(2)	
r31	44.7	0.53	0.56	" r31	
r32	45.6	0.74	0.50	" r32(1)	missing top of image
			0.73	" r32(2)	
r33	46.5	0.51	0.54	" r33	
r34	47.4	0.60	0.64	" r34	missing top of image
r36	48.3	0.68	0.64	" r36	" " " "
r37	49.2	0.49	0.50	" r37	
r38	50.10	0.80	0.40	" r38(1)	
			0.81	" r38(2)	

Borehole : GSL-97 Glory Hole (cont)

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
r39	51.0	0.69	0.40	gsl-97r39	(1)
			0.69	" r39	(2)
r40	51.9	0.73	0.40	" r40	(1) - lighter colour
			0.73	" r40	(2)

Borehole : GS2-97 Glory Hole all unsplit core.

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
p1	0	0.35		gs2-97p1	file labelled p11 but should be p1
					image looks like it's upside down
p2	–	–	–	–	no recovery
h3	0.5	0.23		gs2-97h3	
h4	1.0	0.20		" h4	
h5	1.5	0.14		" h5	
h6	2.0	–	–	–	no image
h7	2.5	0.16		gs2-97h7	
h8	3.0	0.09		" h8	
h9	3.5	–	–	–	no image
h10	4.0	0.10		gs2-97h10	
h11	4.5	0.20		" h11	file named h1 renamed h11
h12	5.0	0.15	–	–	no image
h13	5.5	0.20	–	–	no image
h14					- no penetration
p15					"
p15					"

Borehole : GS2B-97 Glory Hole - unable to find any digital images for this bore hole

Sample No.	Depth (m)	Book Length (m)	Photo Length (m)	Tiff filename	Comments
h1	6.0	0.30			
h2	6.5	0.50			
h3	7.0	0.30			
h4	7.5	0.20			" possible hardpan "
p5	8.0	0.51			
p6	9.0	0.71			
p7	10.0	0.85			
p8	11.0	0.70			
p9	12.0	0.76			

Legend

Unified Soil Classification


GW - well graded gravels, gravel sand mixtures, little or no fines


SW - poorly graded gravels, gravel sand mixtures, little or no fines


SP - poorly graded sands, gravelly sand, little or no fines


SM - silty sands, sand silt mixtures


SC - clayey sands, sand clay mixtures


CL - inorganic clays of low to medium plasticity, gravelly clays, sandy clays and silty clay


CH - inorganic clays of high plasticity, fat clays

CPT Soil Classification


Gravelly sand to sand


Sand


Sand to silty sand


Sand to clayey sand


Clayey sand


Silty sand to sandy silt


Sandy silt to clayey silt


Silt


Clayey silt to silty clay


Silty clay to clay


Clay


Very stiff fine grained

Grain Size Analysis


Gravel


Sand


Silt/Clay


Silt


Clay

Legend

Contacts

Sharp

Gradational

Bioturbated

Physical Structures

- Graded Bedding

- Reverse Graded Bedding

Lithologic Accessories

	Cobble		Sand Lenses		Shell Fragments
	Pebble		Silty/Clay Lenses	Wd	Wood Fragments
	Gravel				Organic Black Flecks
	Pebbles/Granules			Py	Pyritized Worm Burrow

Core Disturbance

Slightly Disturbed

Very Disturbed

Bioturbation

Abundant

Common

Moderate

Rare

Barren

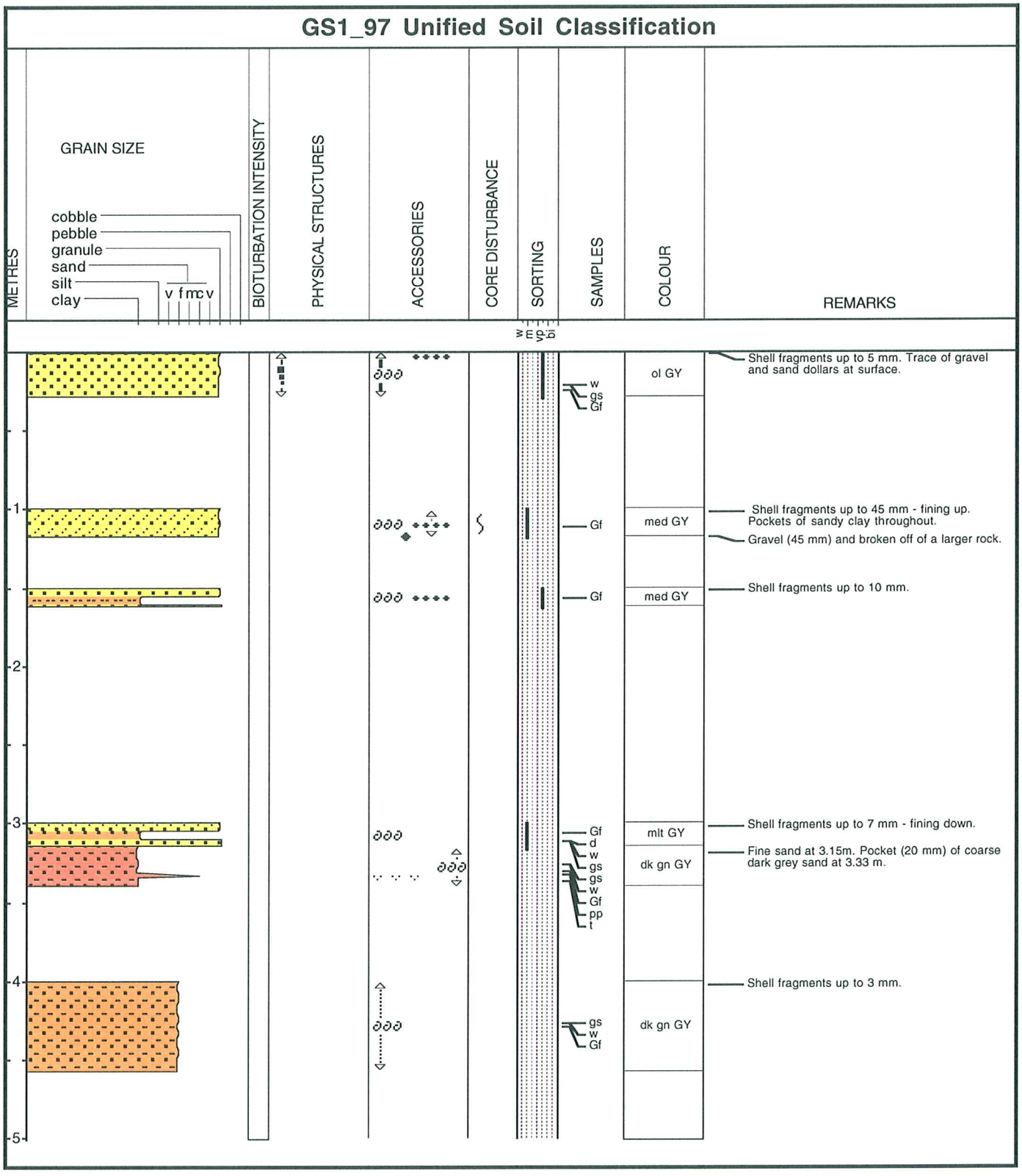
Legend

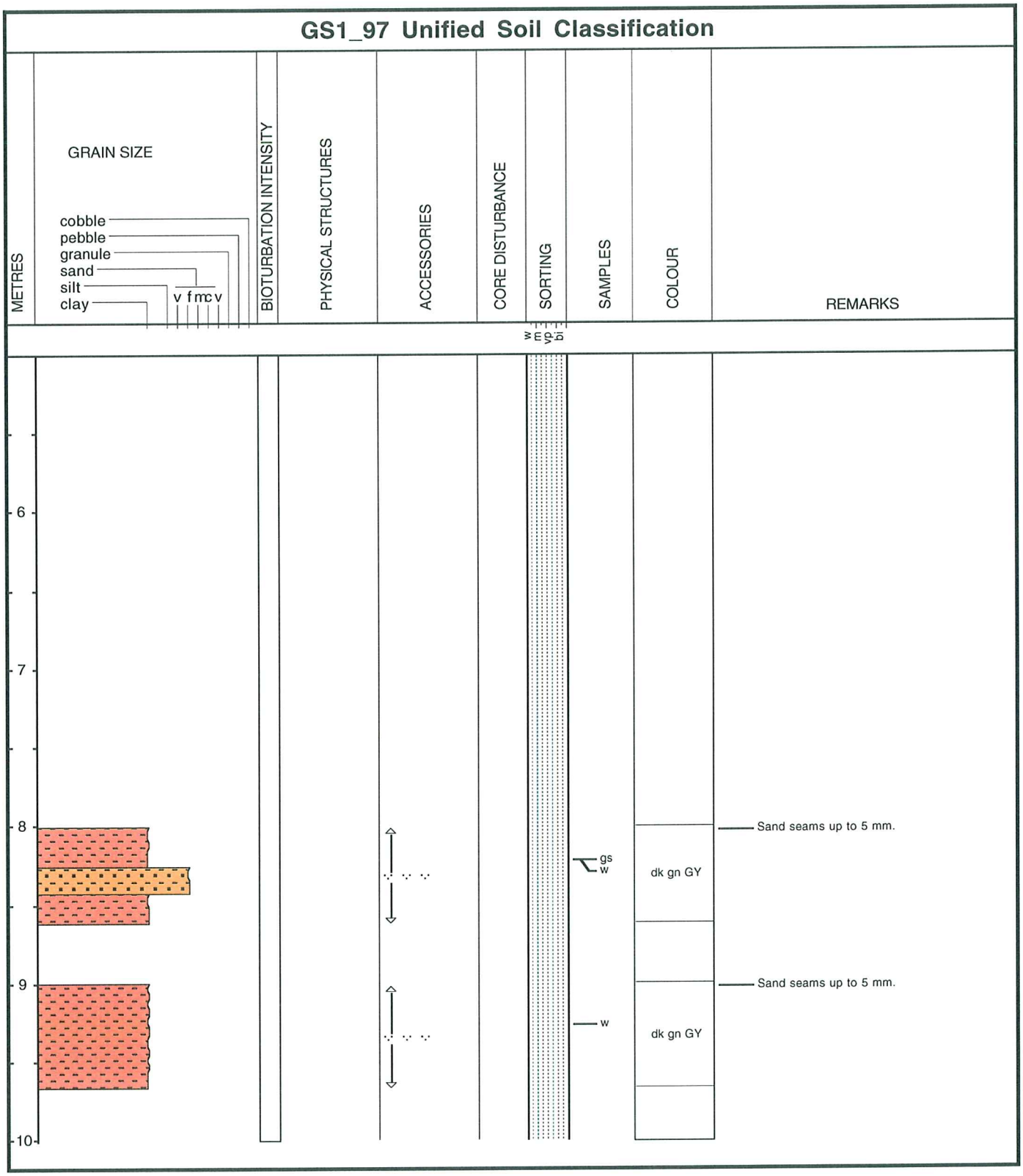
Subsamples

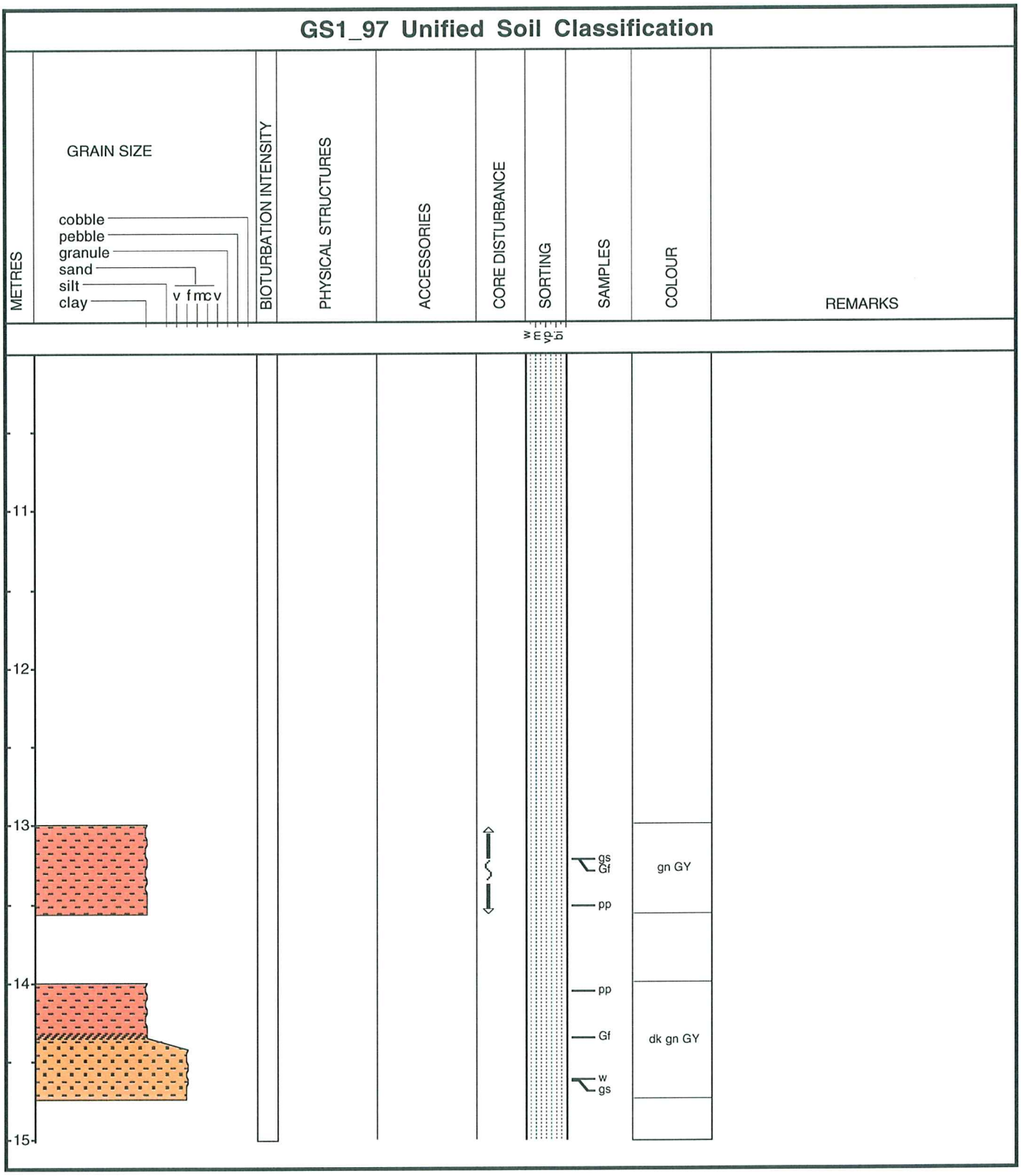
d	JMGI density
w	JMGI water content
gs	JMGI grain size
pp	JMGI pocket penetrometer
t	JMGI torvane
Gb	GSC-Atlantic bulk
Gf	GSC-Atlantic foram
Ggs	GSC-Atlantic grain size

Appendix 3

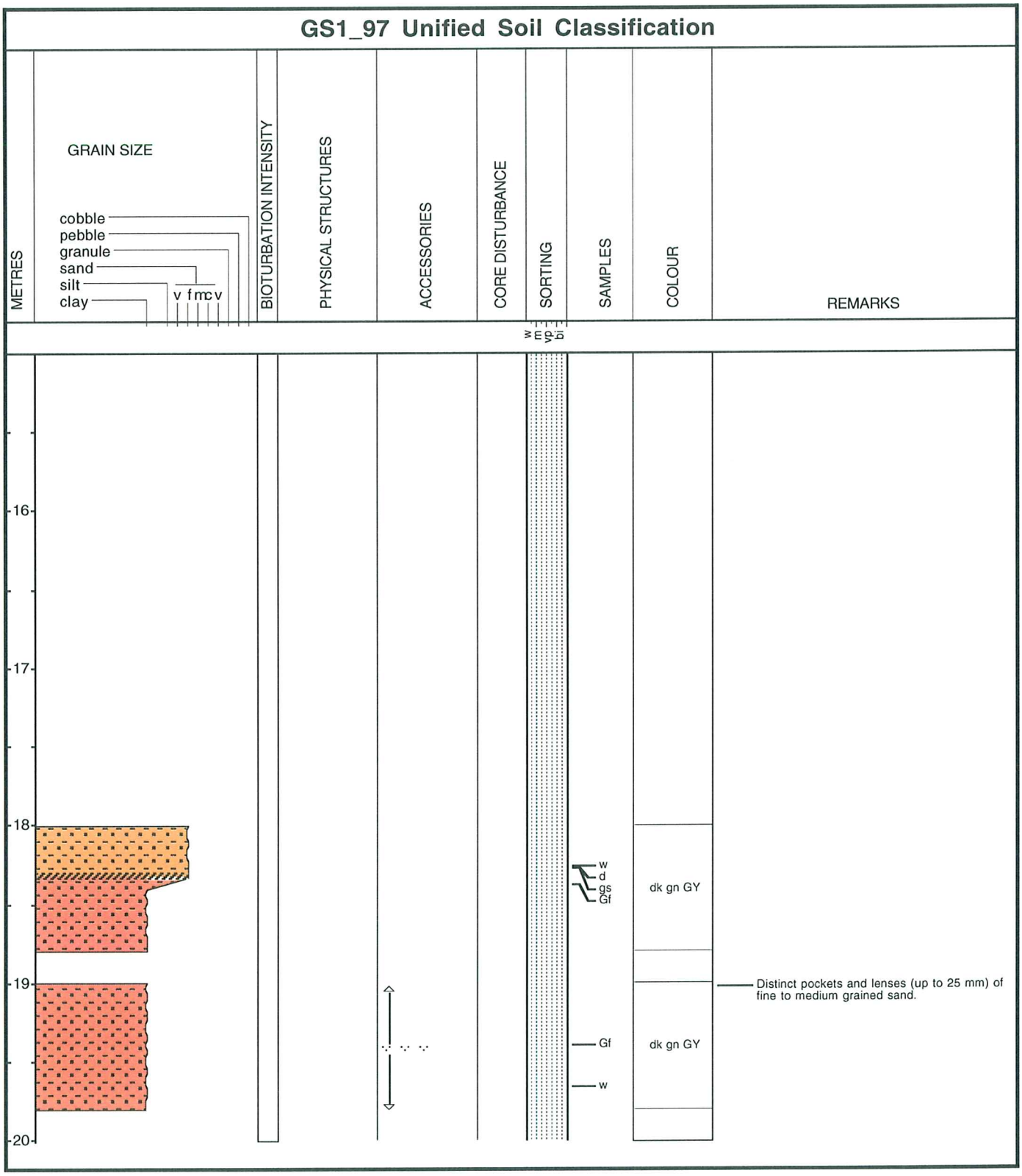
GS1_97 Unified Soil Classification



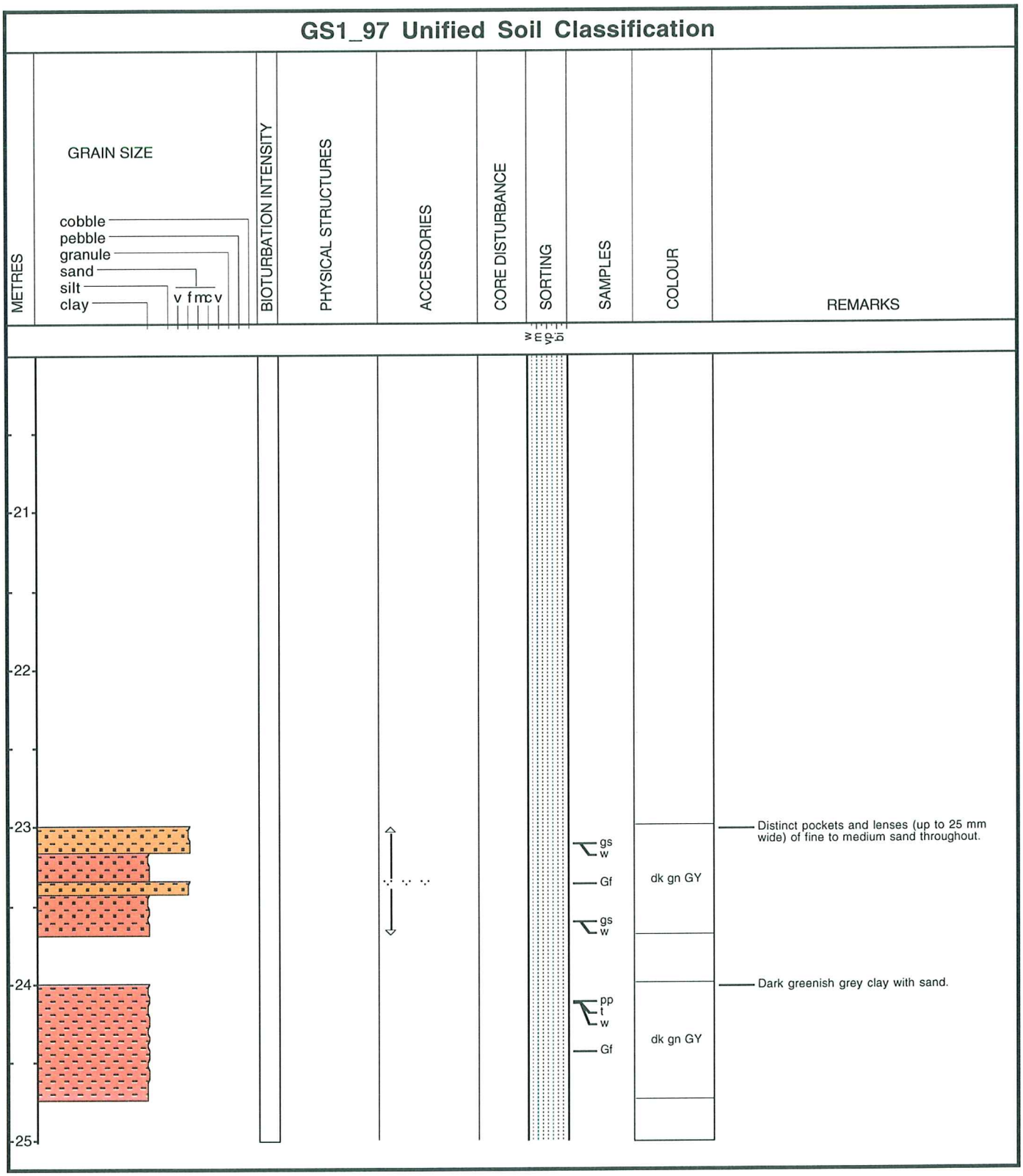

GS1_97 Unified Soil Classification
METRES
GRAIN SIZE
cobble
pebble
granule
sand
silt
clay
v f m c v
BIOTURBATION INTENSITY
PHYSICAL STRUCTURES
ACCESSORIES
CORE DISTURBANCE
SORTING
w
p
bi
SAMPLES
COLOUR
REMARKS
6
7
8
9
10
gs
w
w
dk gn GY
dk gn GY
Sand seams up to 5 mm.
Sand seams up to 5 mm.


GS1_97 Unified Soil Classification
METRES
GRAIN SIZE
cobble
pebble
granule
sand
silt
clay
v f m c v
BIOTURBATION INTENSITY
PHYSICAL STRUCTURES
ACCESSORIES
CORE DISTURBANCE
SORTING
w m p vp
SAMPLES
COLOUR
REMARKS
11
12
13
14
15
gs
Gf
pp
pp
Gf
w
gs
gn GY
dk gn GY

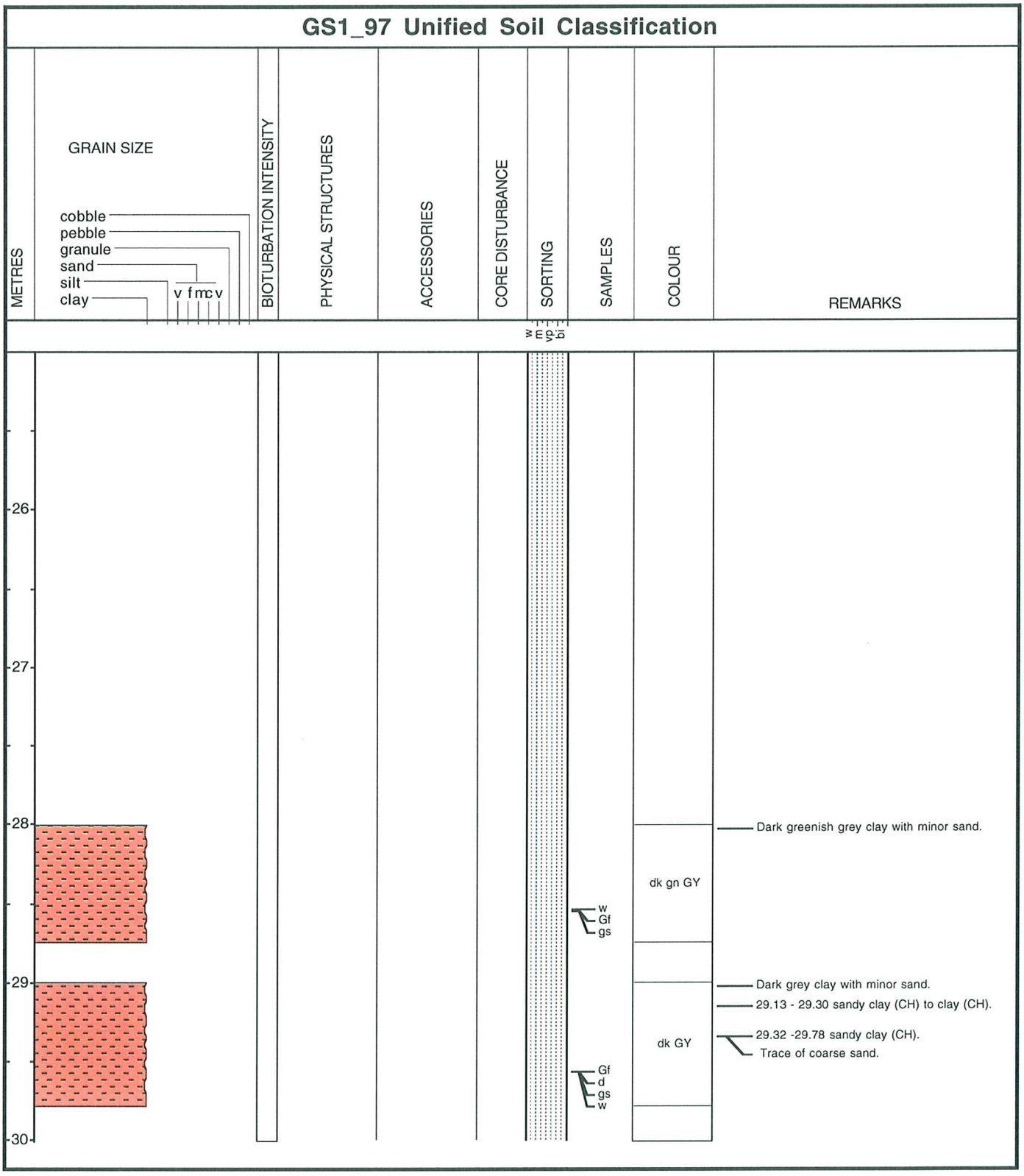
GS1_97 Unified Soil Classification

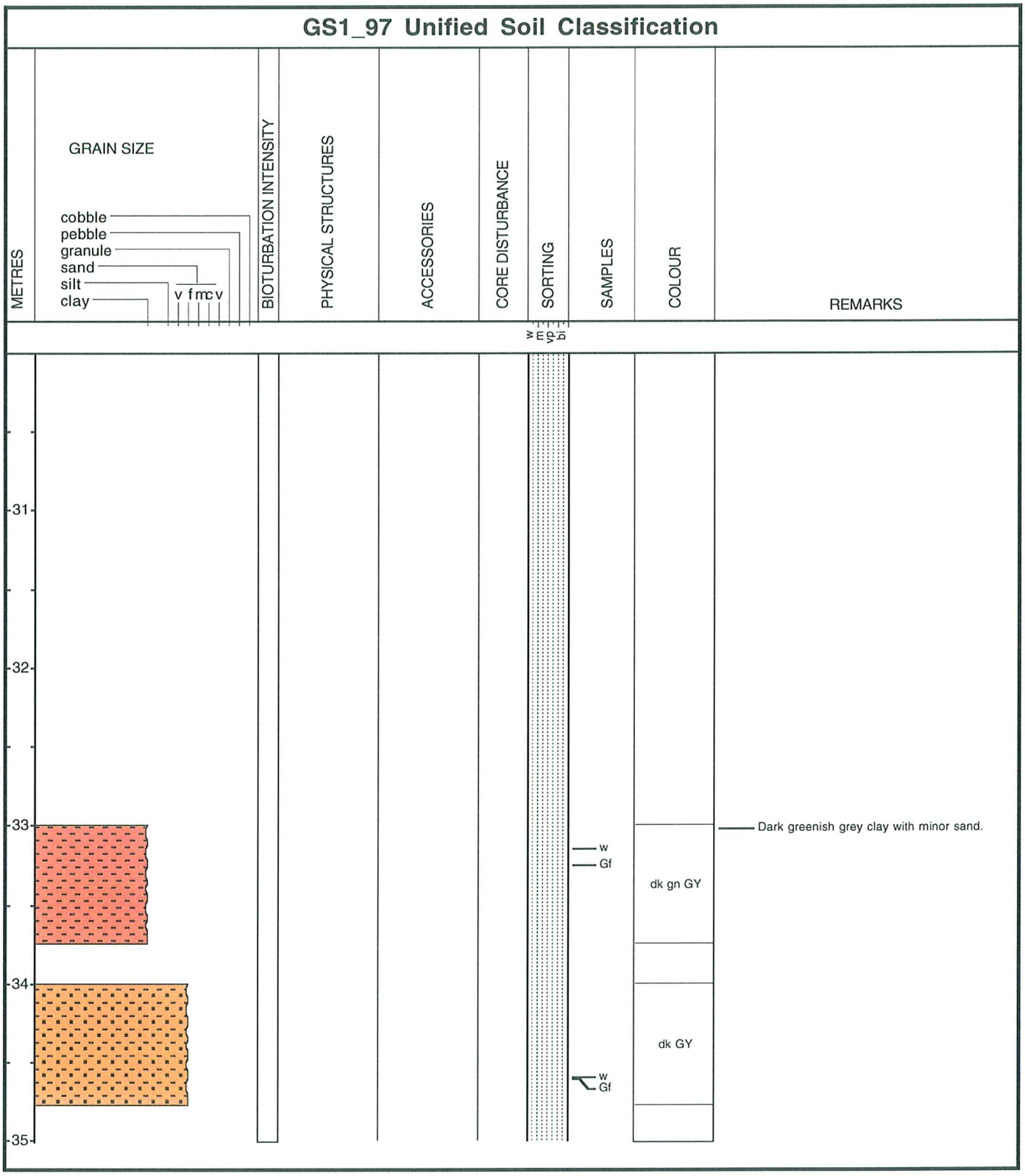


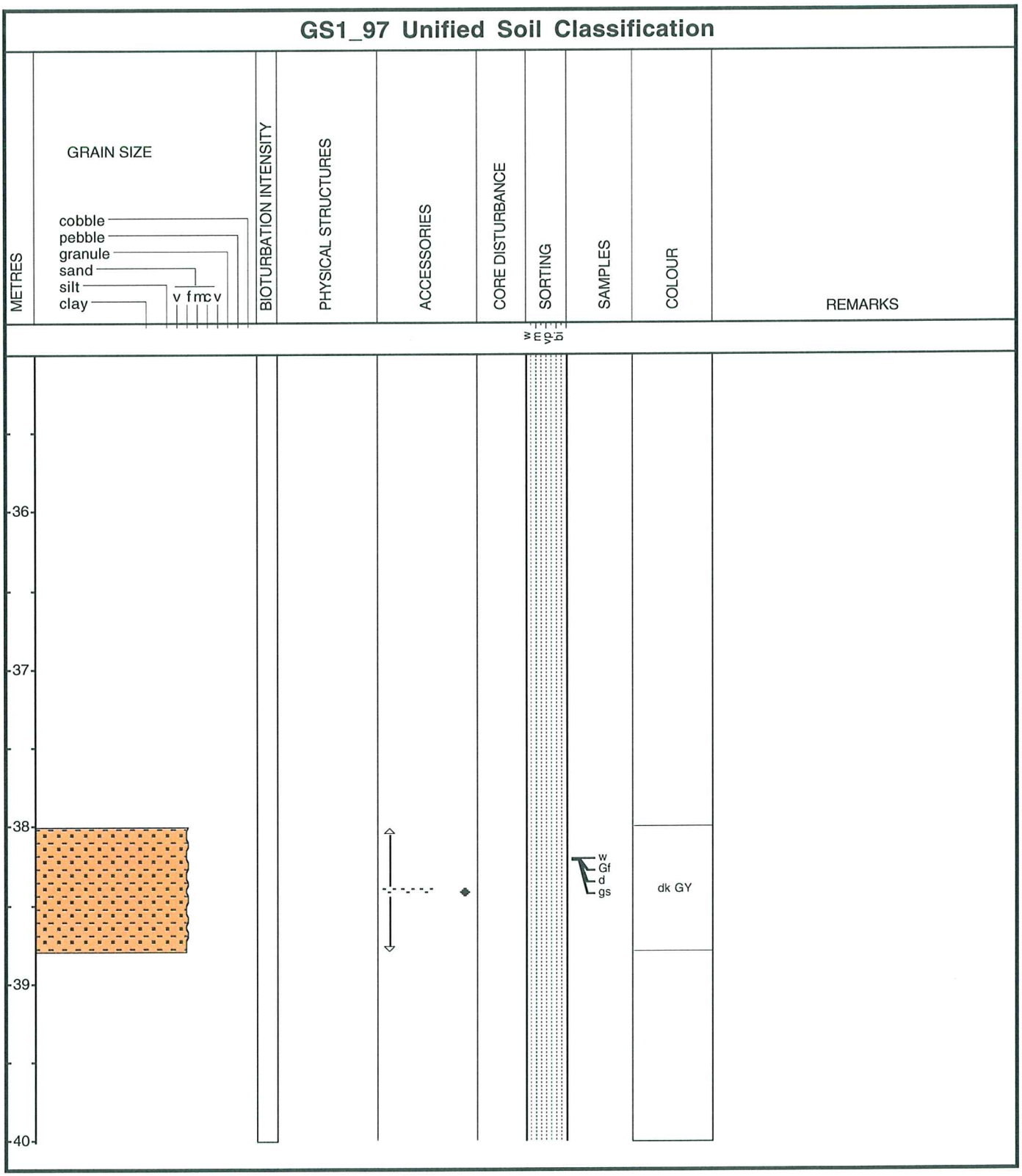
GS1_97 Unified Soil Classification



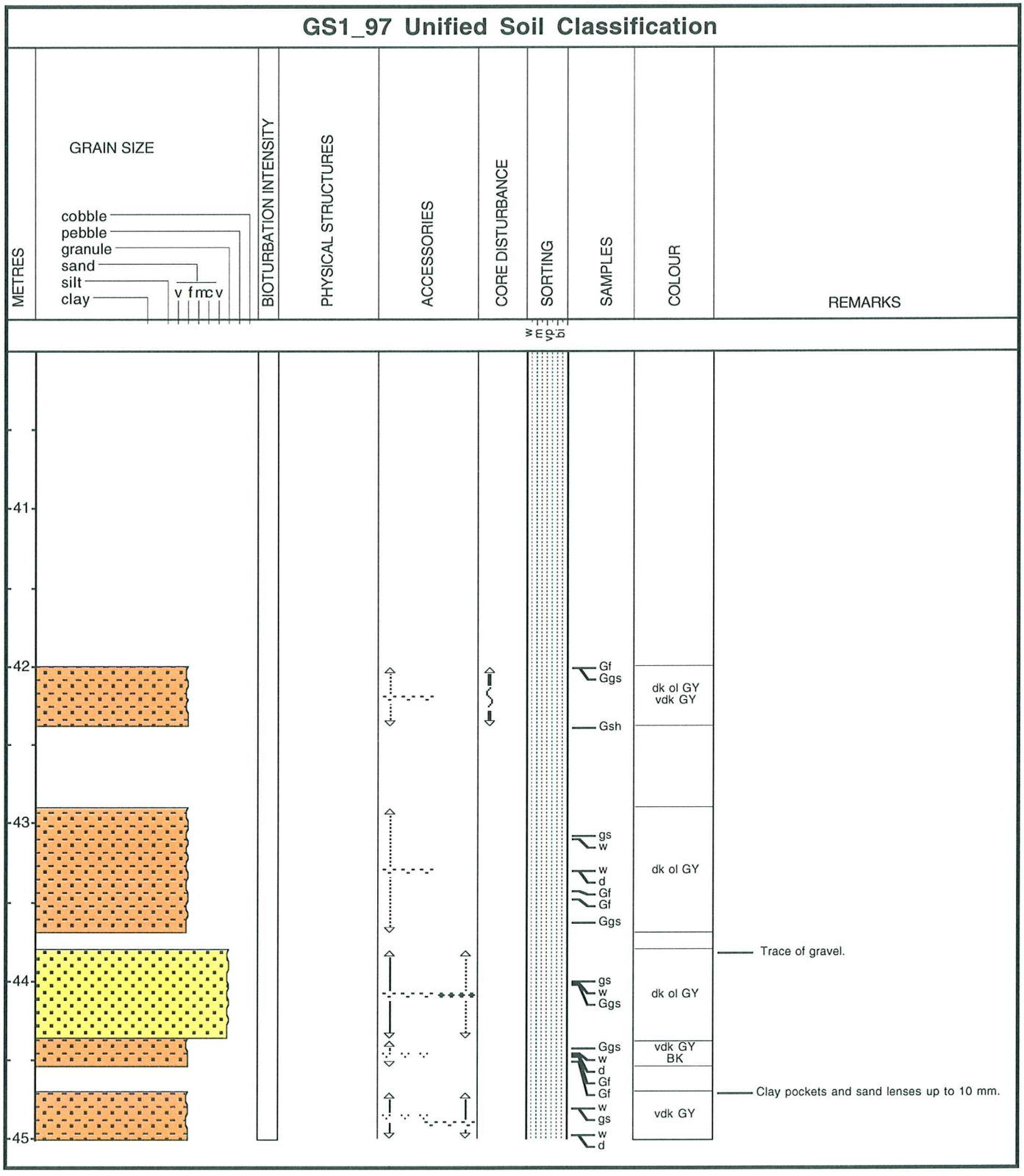
GS1_97 Unified Soil Classification



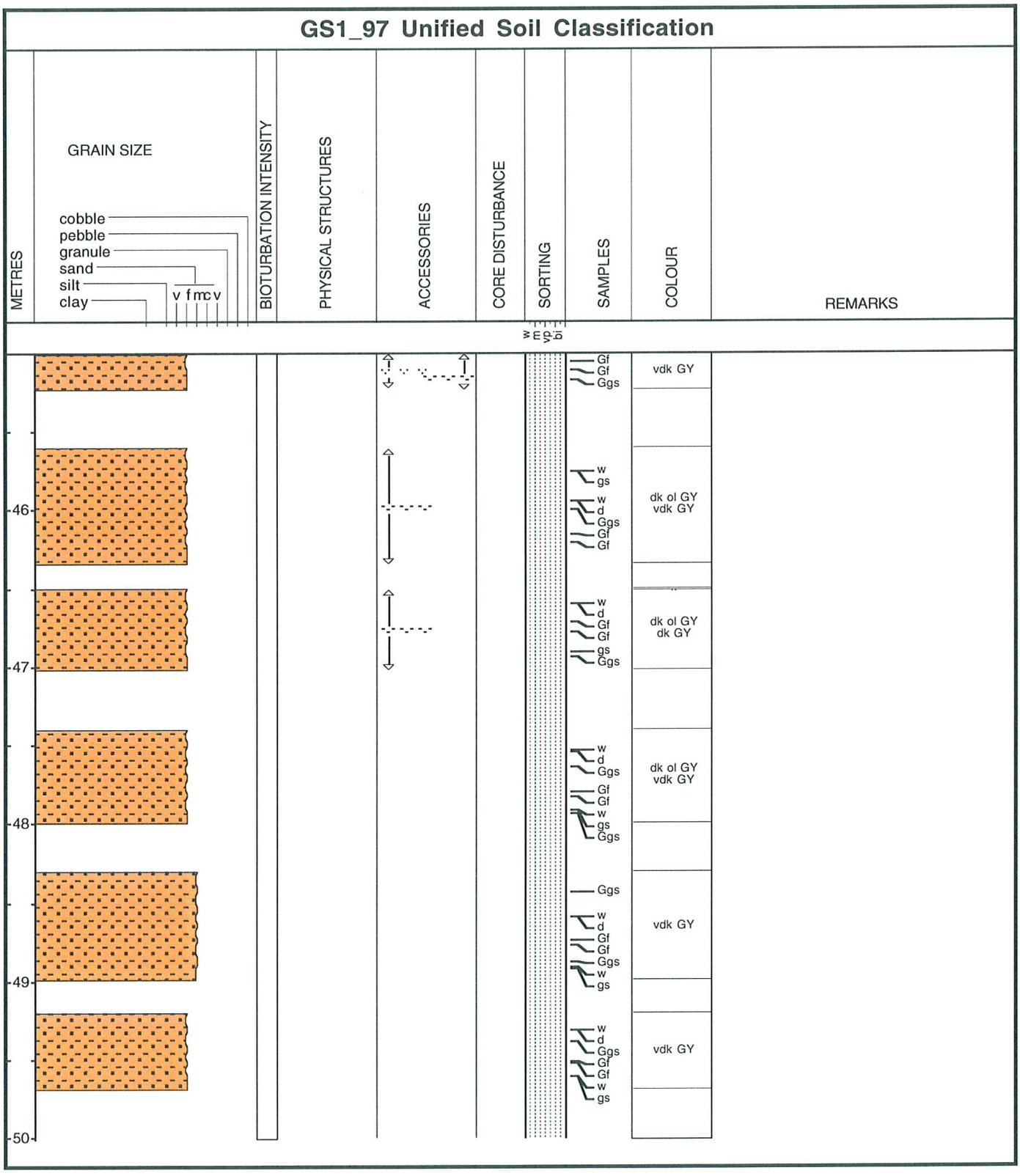

GS1_97 Unified Soil Classification
METRES
GRAIN SIZE
cobble
pebble
granule
sand
silt
clay
v f m c v
BIOTURBATION INTENSITY
PHYSICAL STRUCTURES
ACCESSORIES
CORE DISTURBANCE
SORTING
w m p bi
SAMPLES
COLOUR
REMARKS
31
32
33
34
35
w
Gf
dk gn GY
dk GY
w
Gf
Dark greenish grey clay with minor sand.


GS1_97 Unified Soil Classification
METRES
GRAIN SIZE
cobble
pebble
granule
sand
silt
clay
v f m c v
BIOTURBATION INTENSITY
PHYSICAL STRUCTURES
ACCESSORIES
CORE DISTURBANCE
SORTING
w
m
p
vp
bi
SAMPLES
w
Gf
d
gs
COLOUR
dk GY
REMARKS
36
37
38
39
40

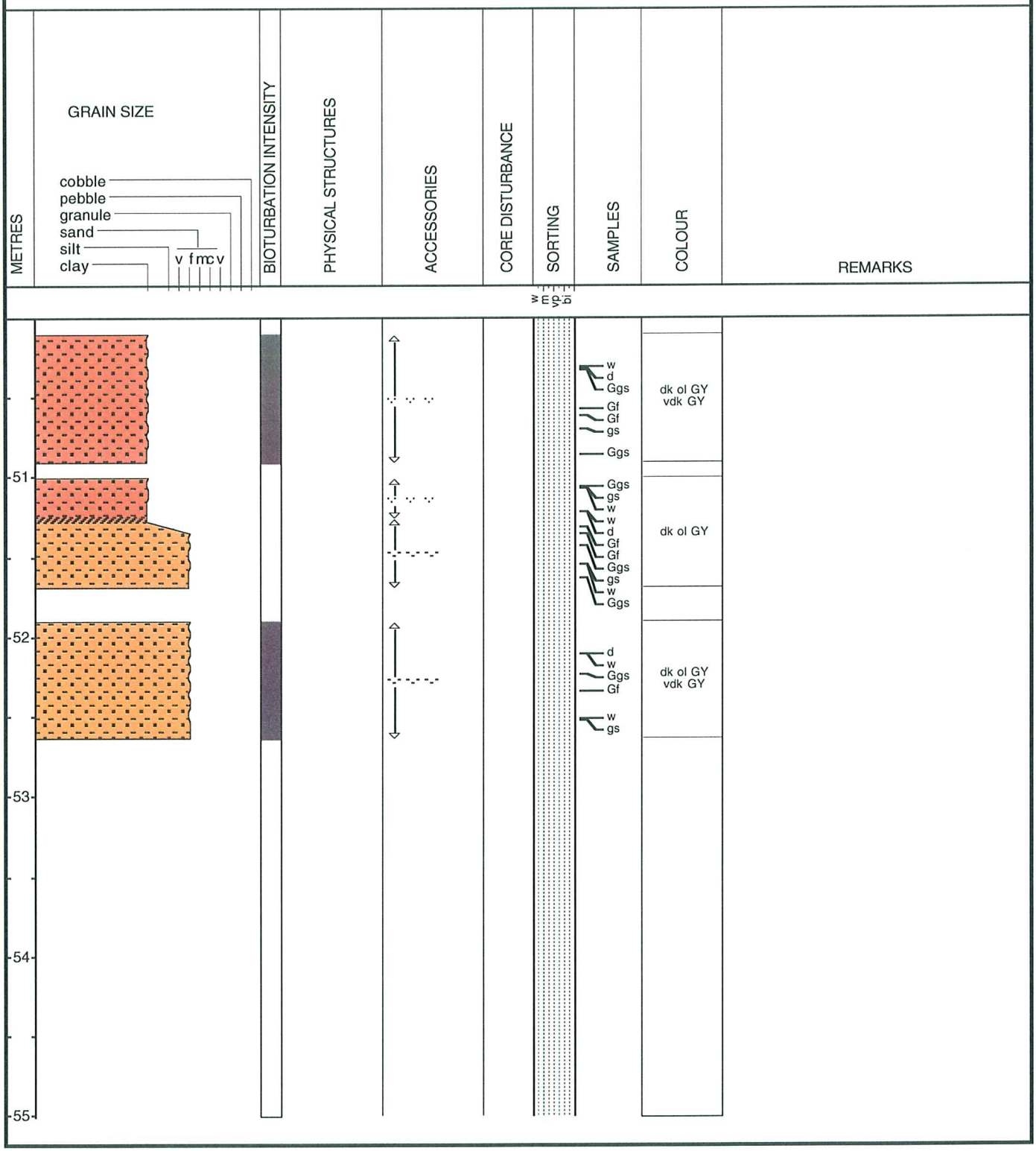
GS1_97 Unified Soil Classification



GS1_97 Unified Soil Classification



GS1_97 Unified Soil Classification



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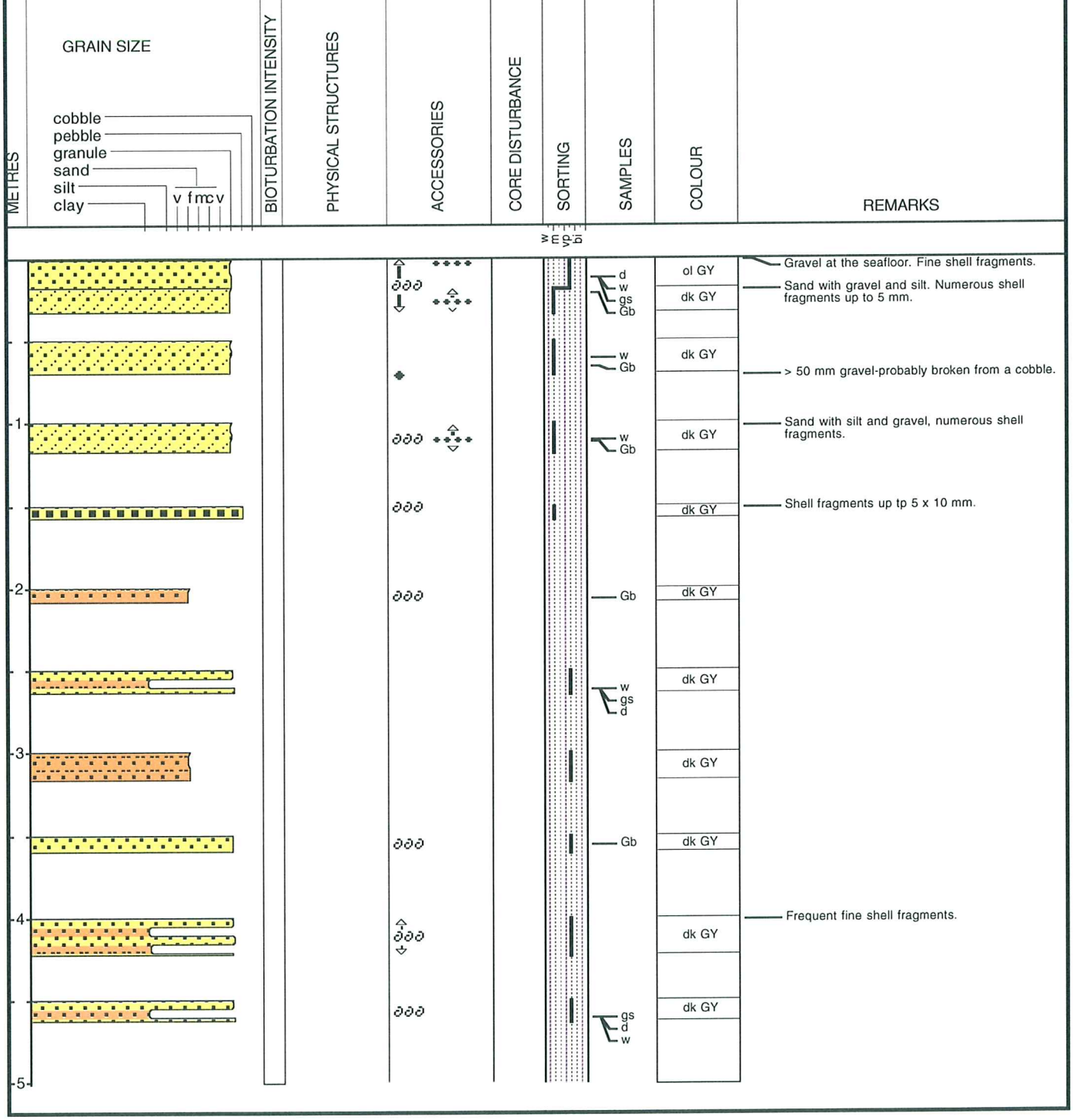

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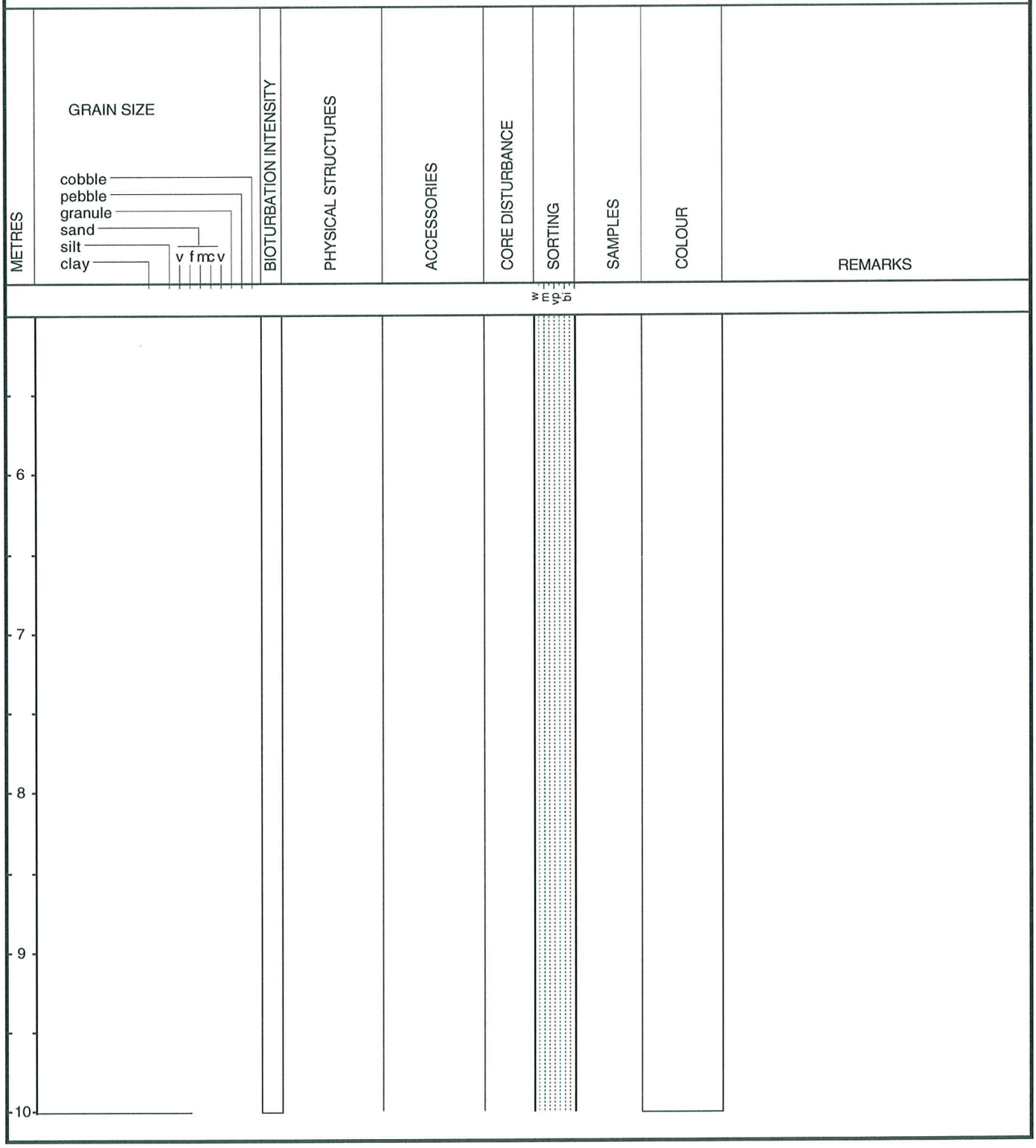

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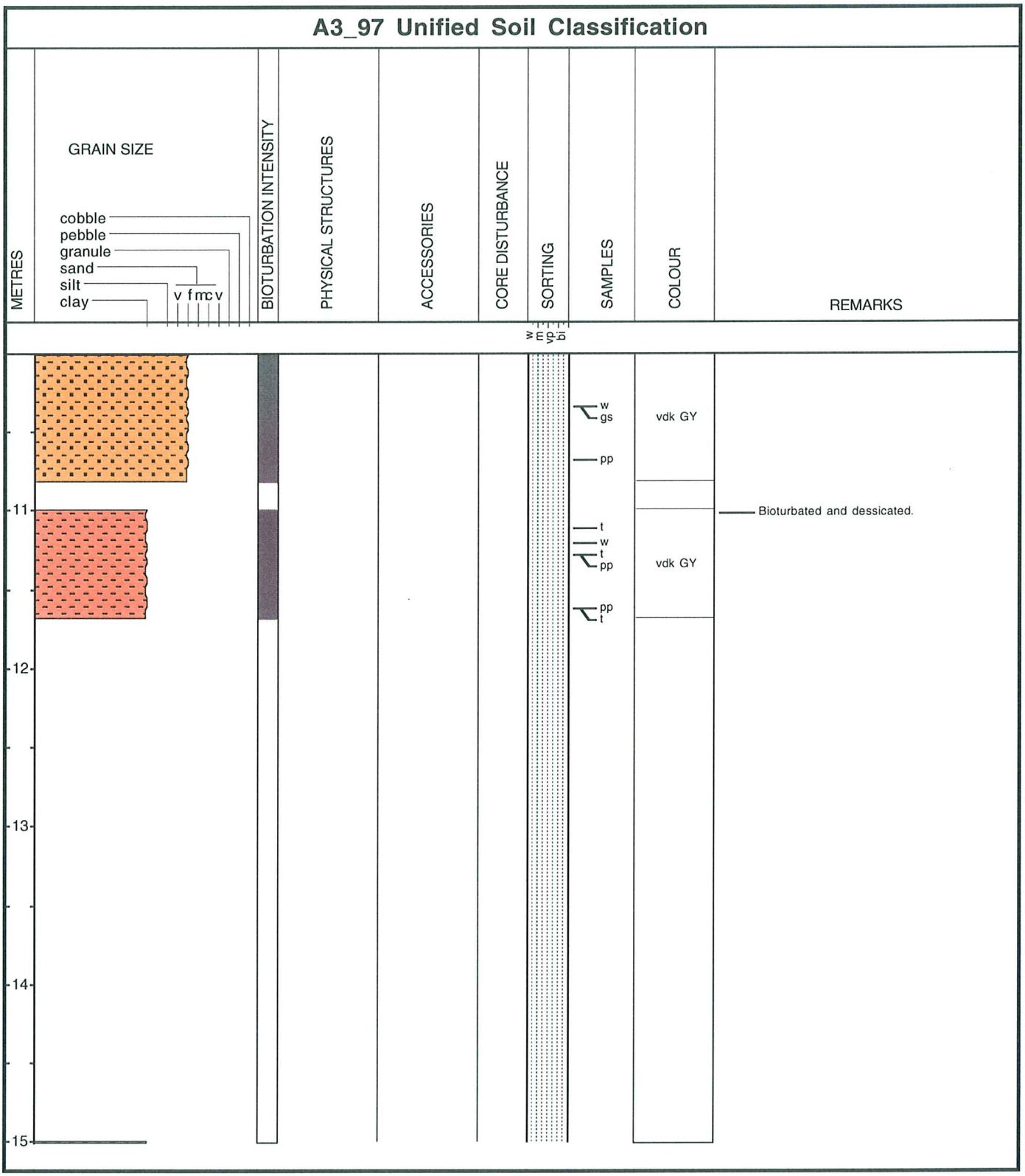

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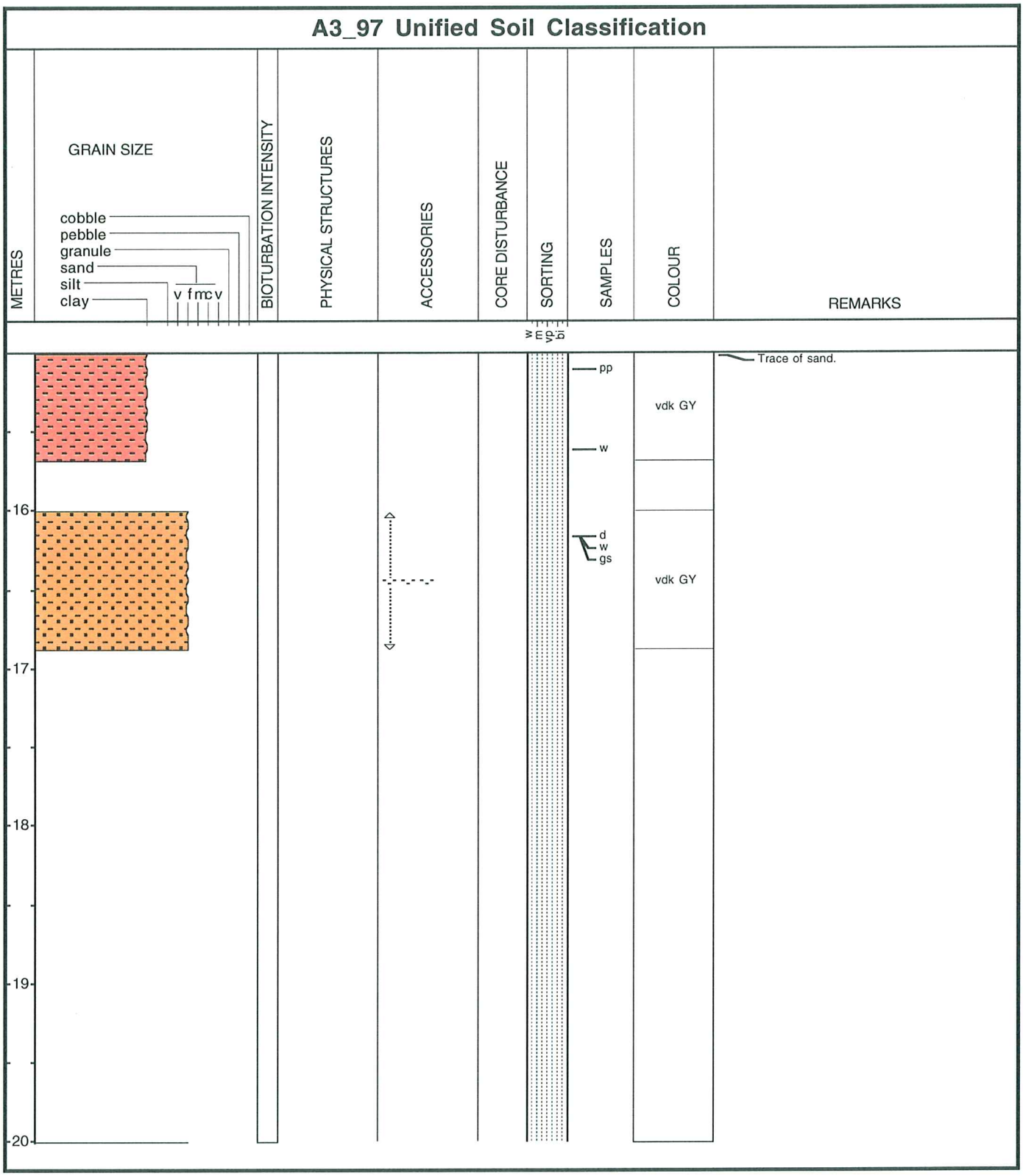

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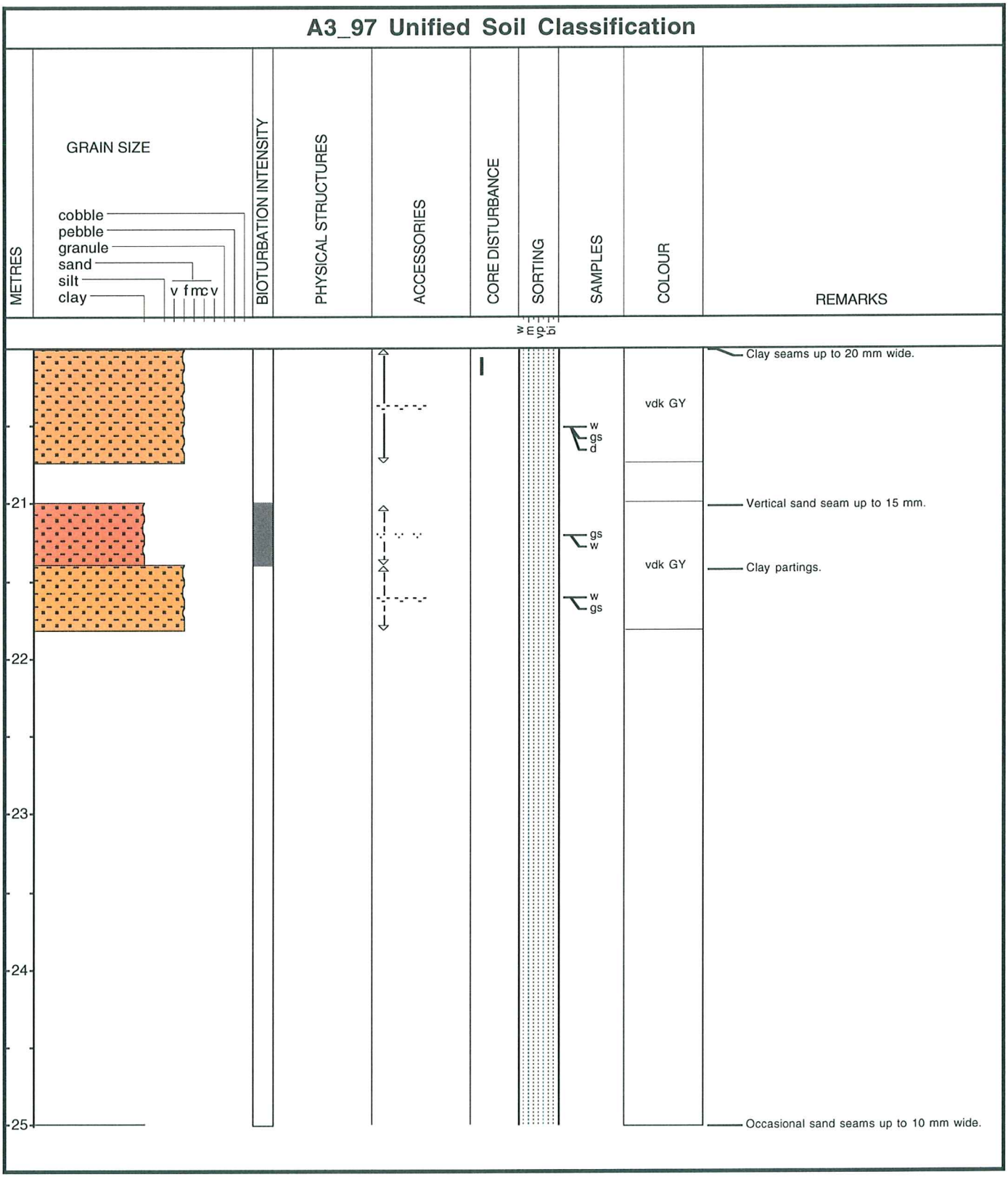

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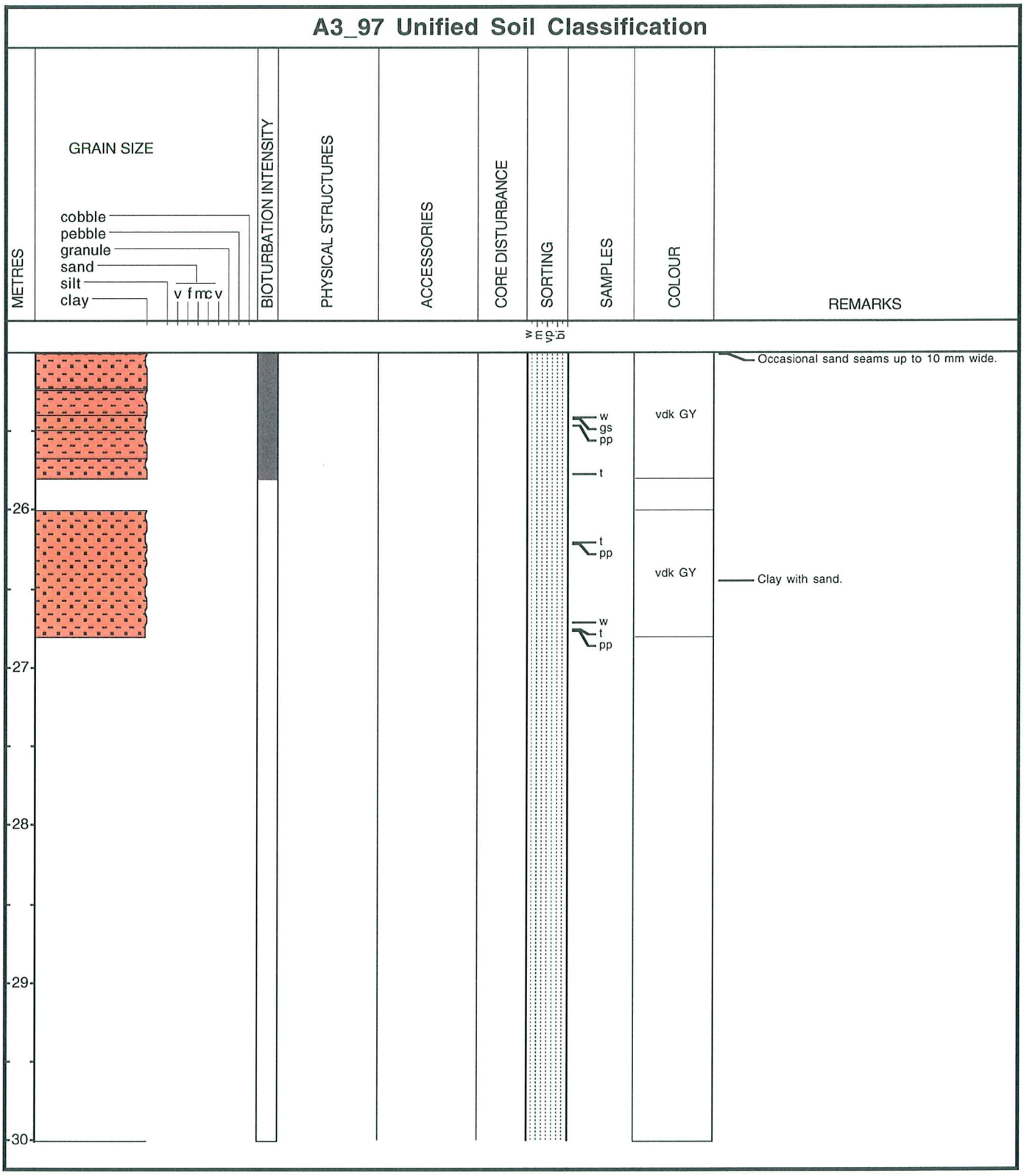

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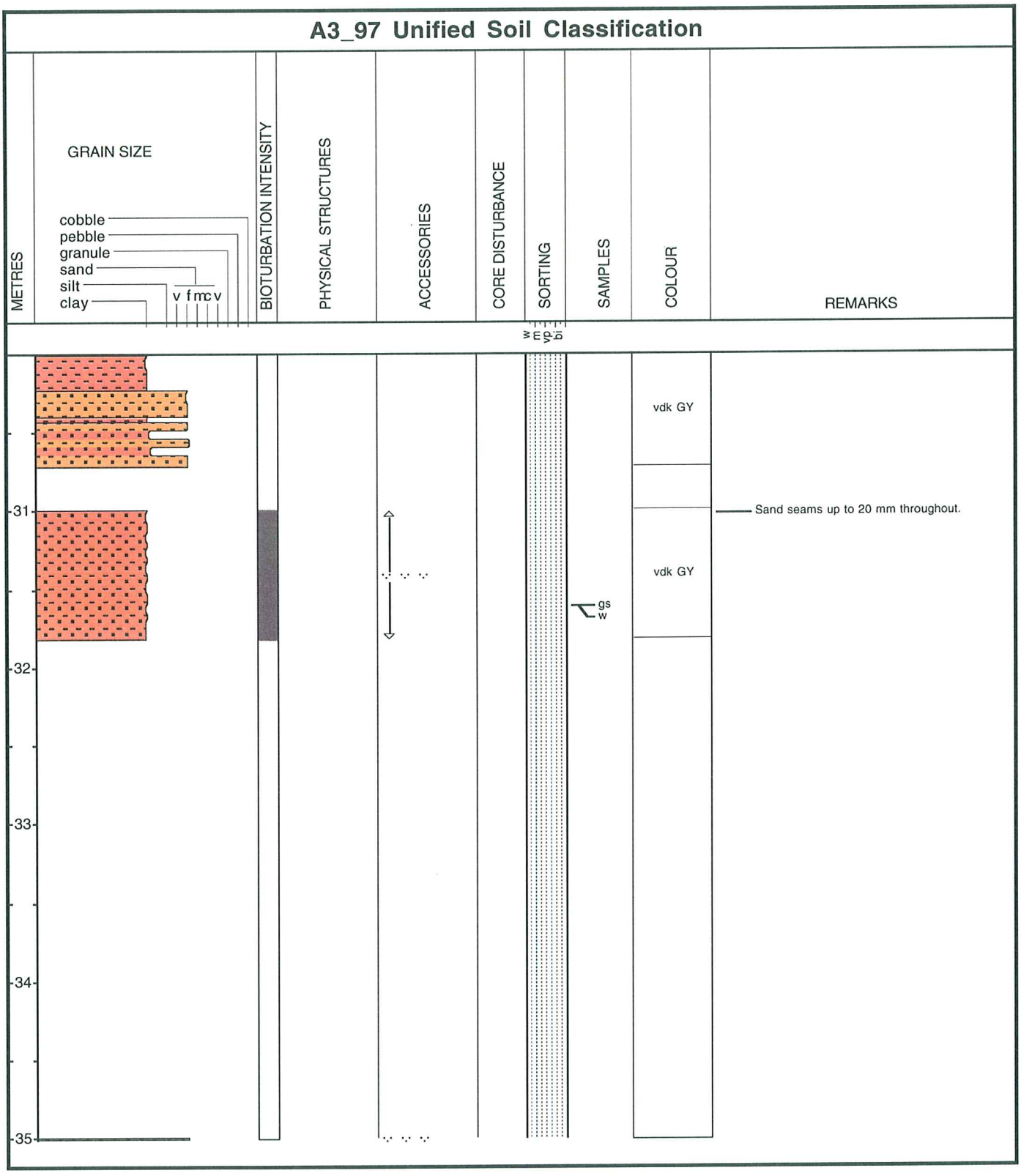

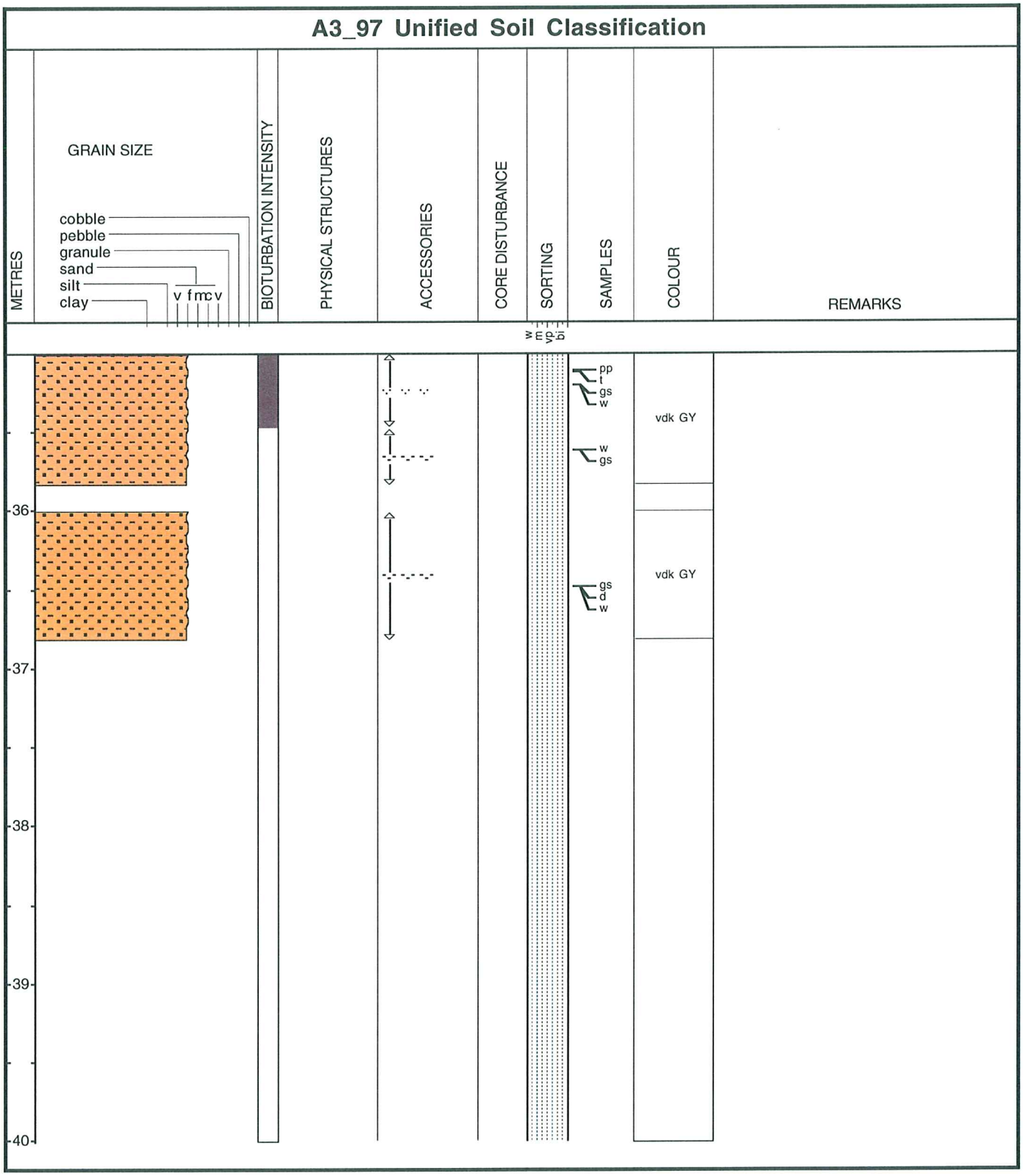
A3_97 Unified Soil Classification
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GRAIN SIZE
cobble
pebble
granule
sand
silt
clay
v f m c v
BIOTURBATION INTENSITY
PHYSICAL STRUCTURES
ACCESSORIES
CORE DISTURBANCE
SORTING
w m p vp bi
SAMPLES
pp
t
gs
w
w
gs
gs
d
w
COLOUR
vdk GY
vdk GY
REMARKS
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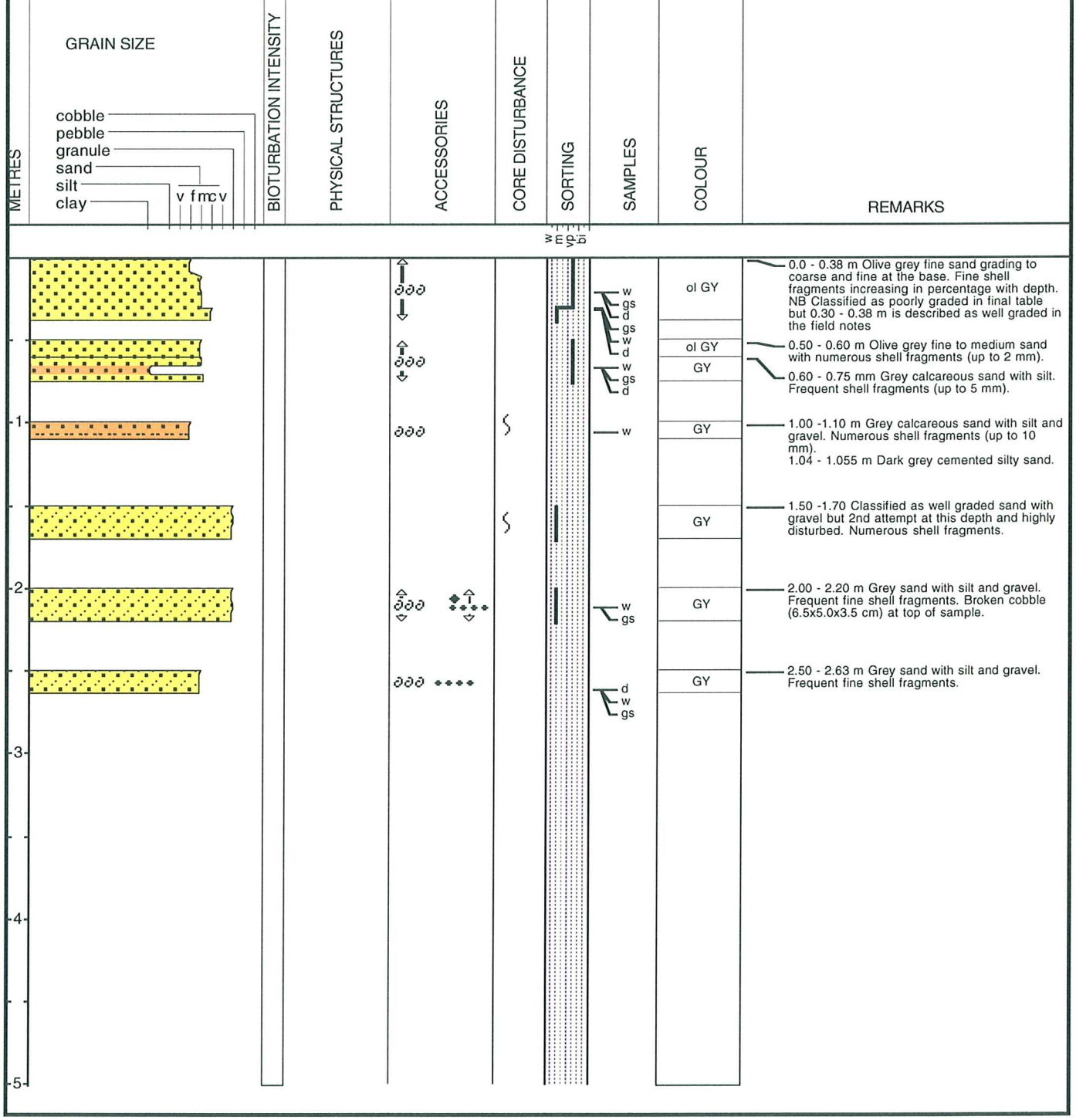
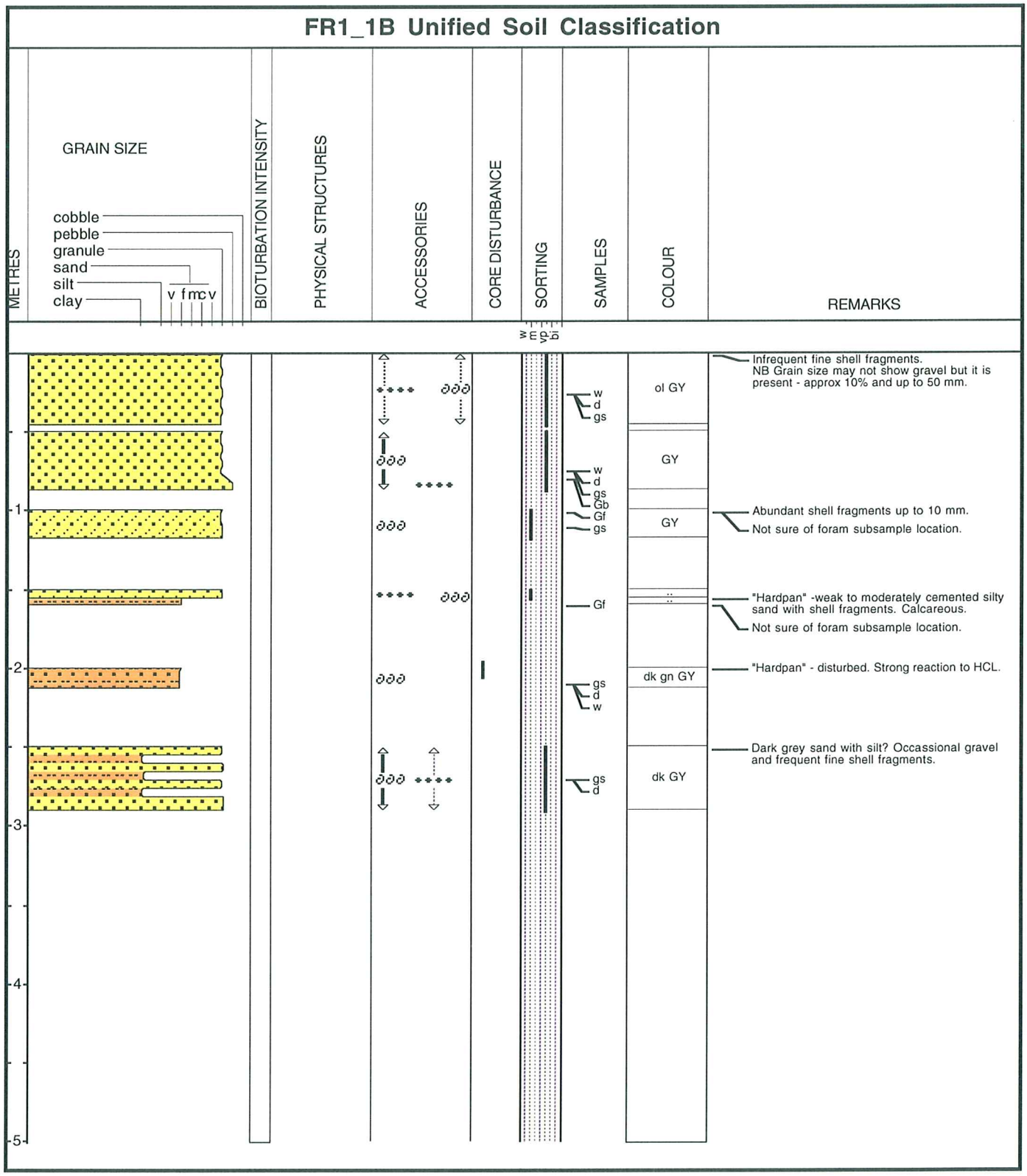
37
38
39
40

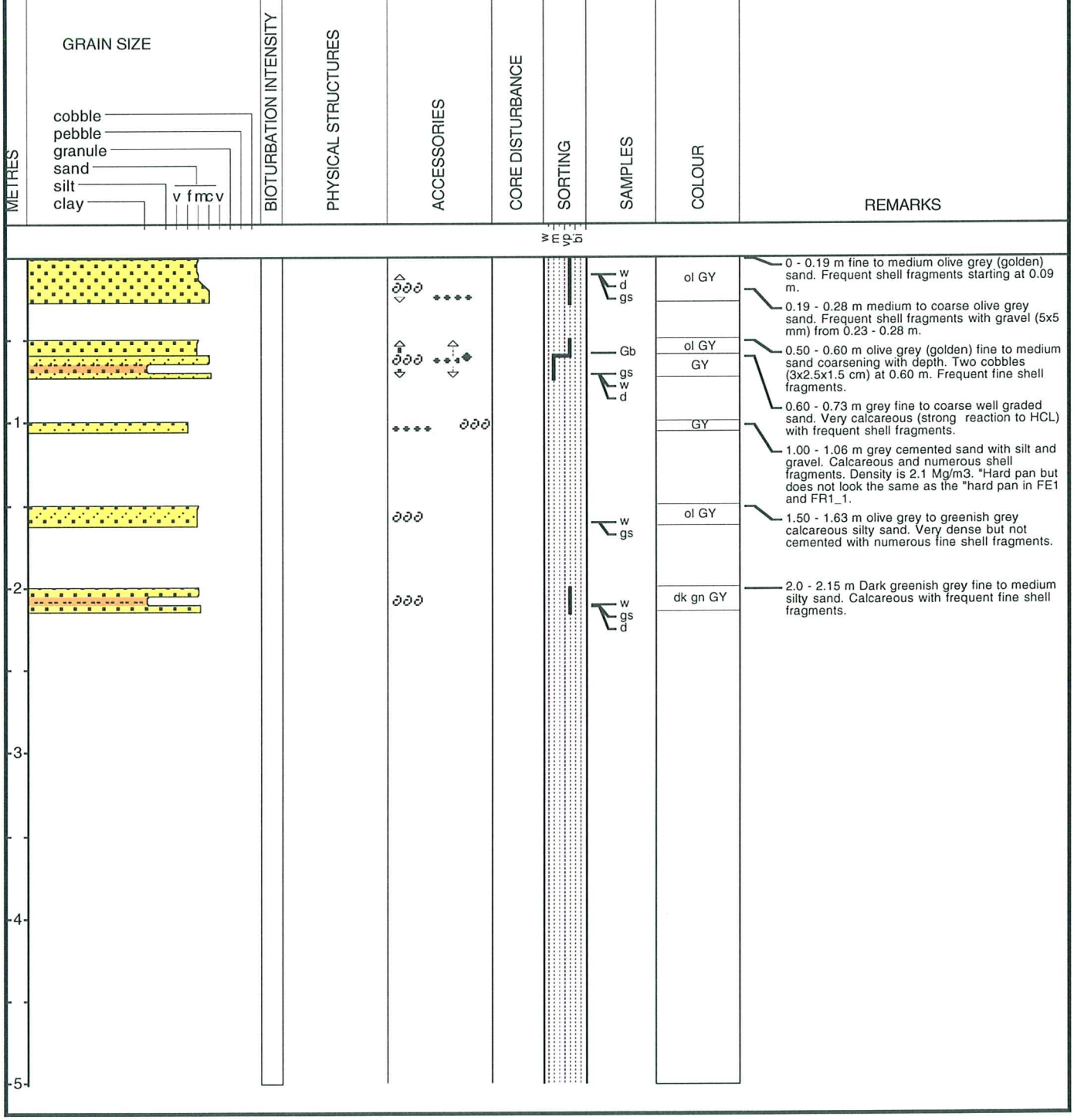
FPSO_B Unified Soil Classification



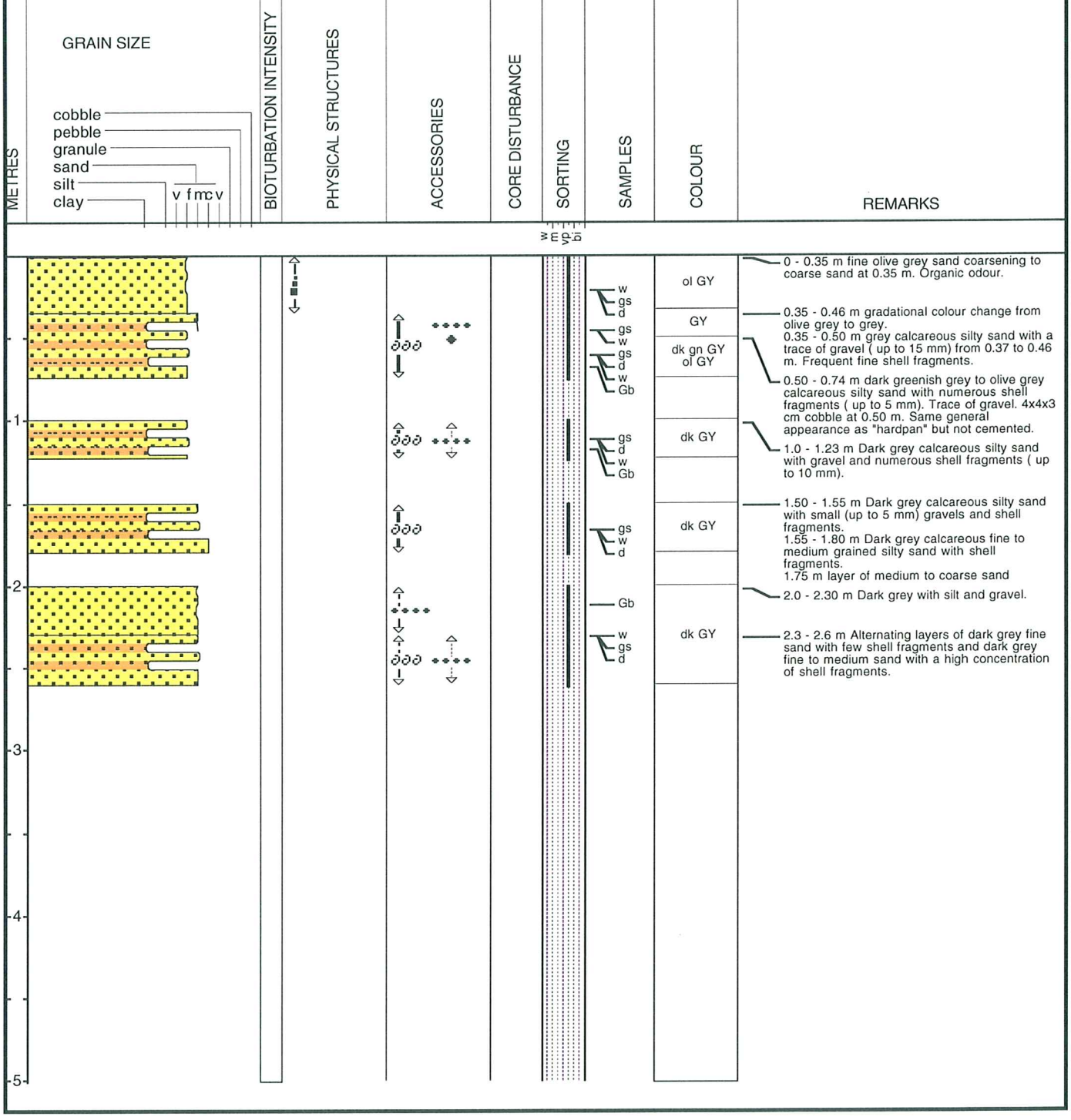
FR1_1B Unified Soil Classification



FR1_3B Unified Soil Classification



FR4_1B Unified Soil Classification



Appendix 4

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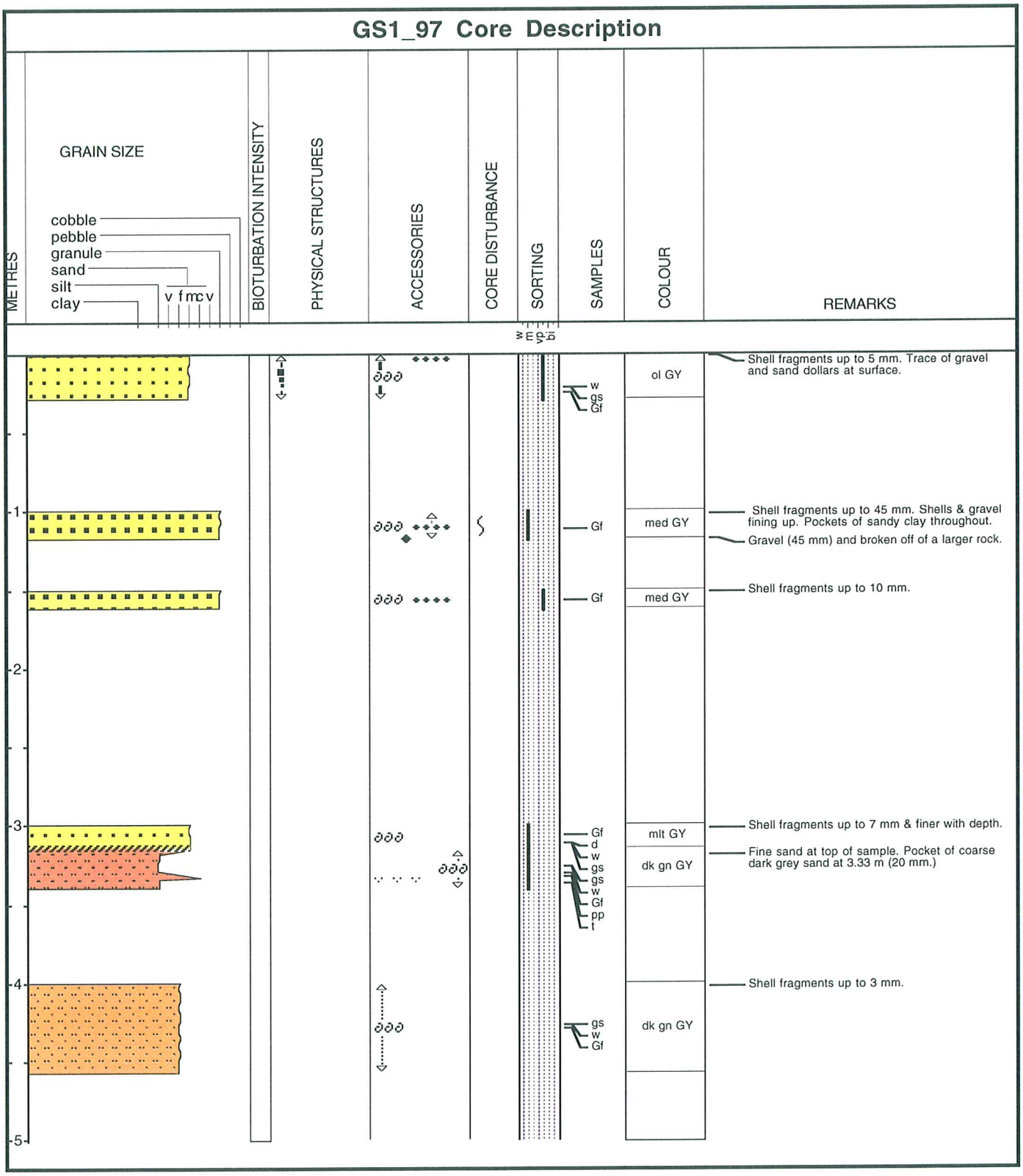

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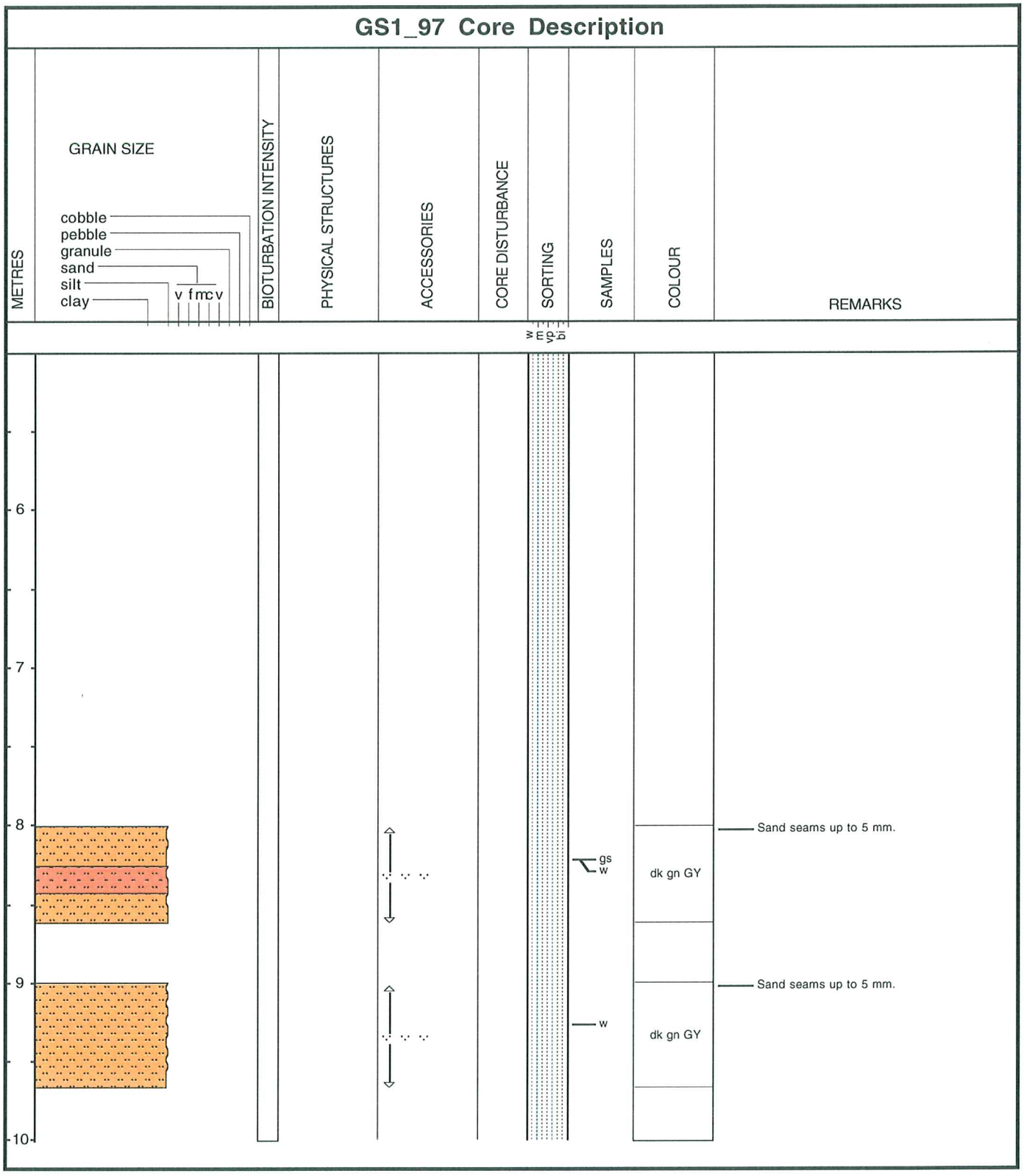

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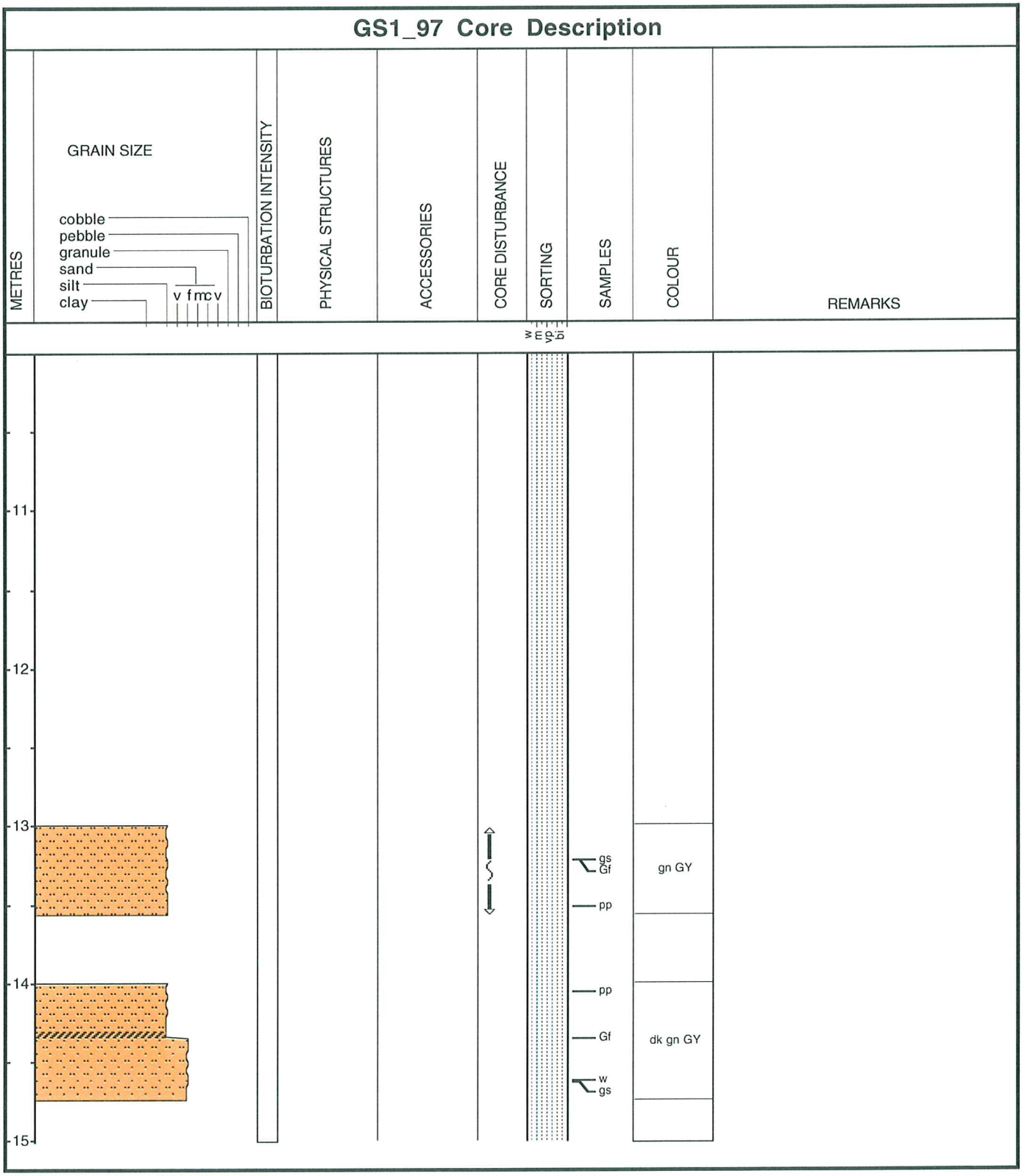

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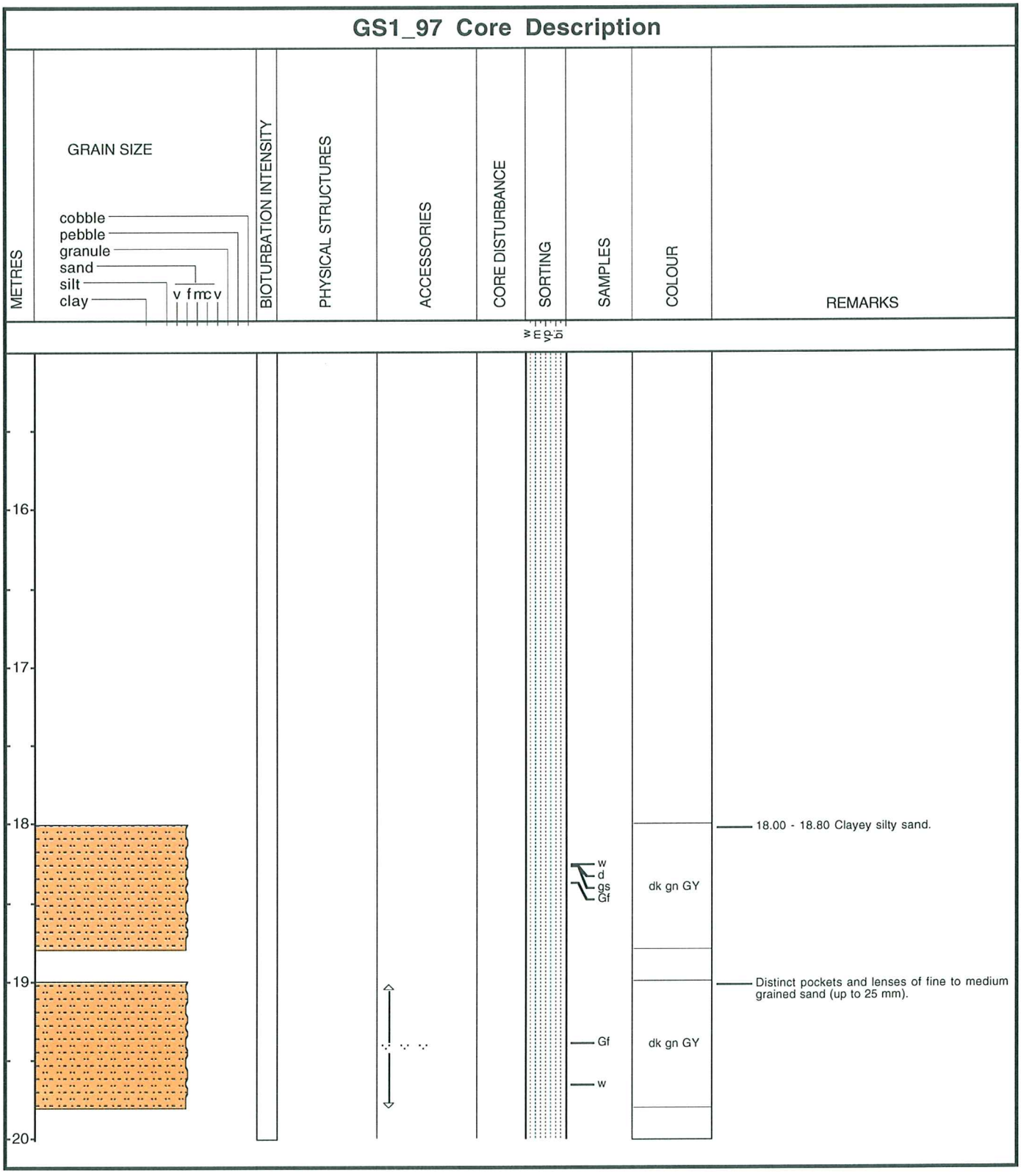

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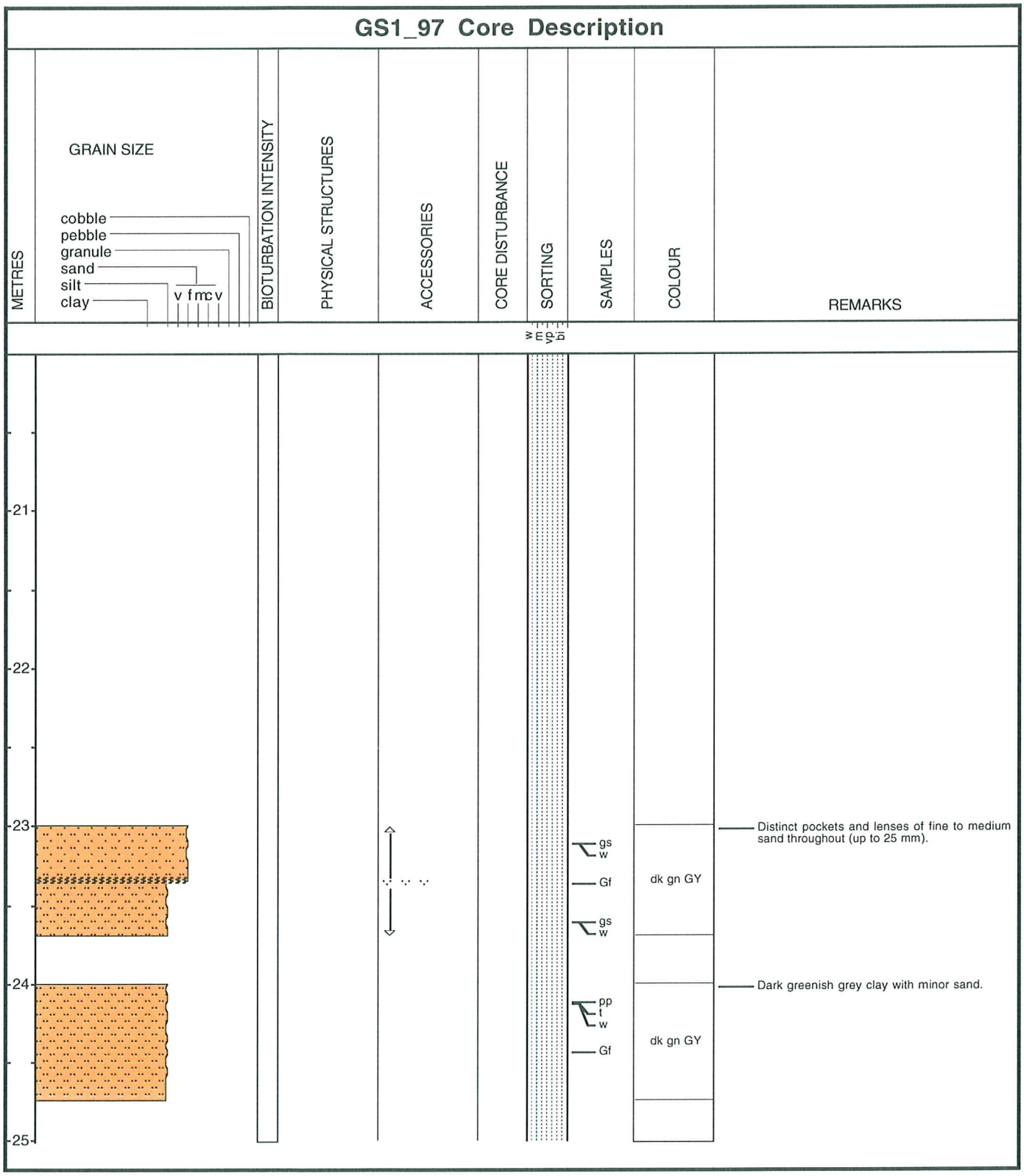

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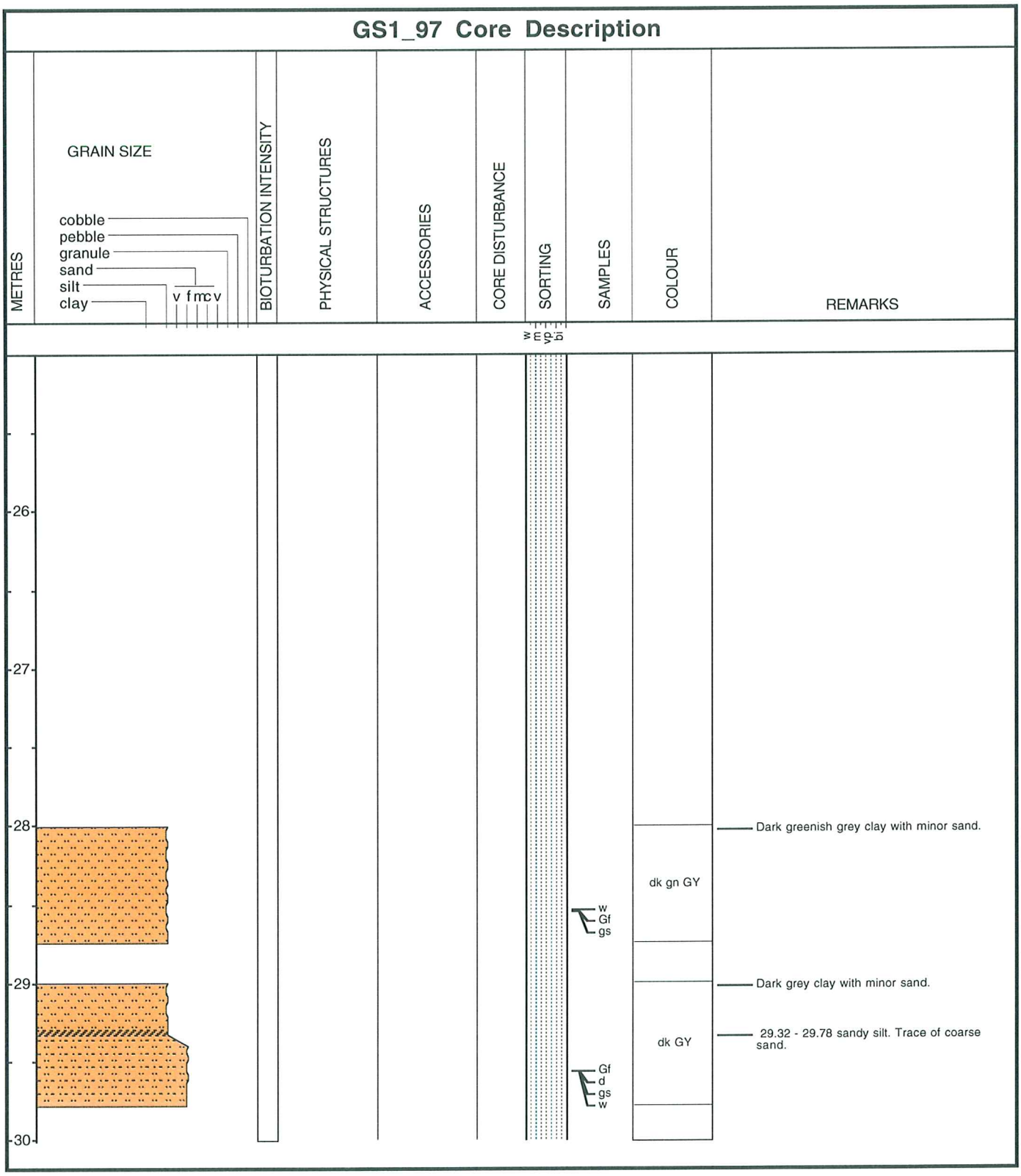

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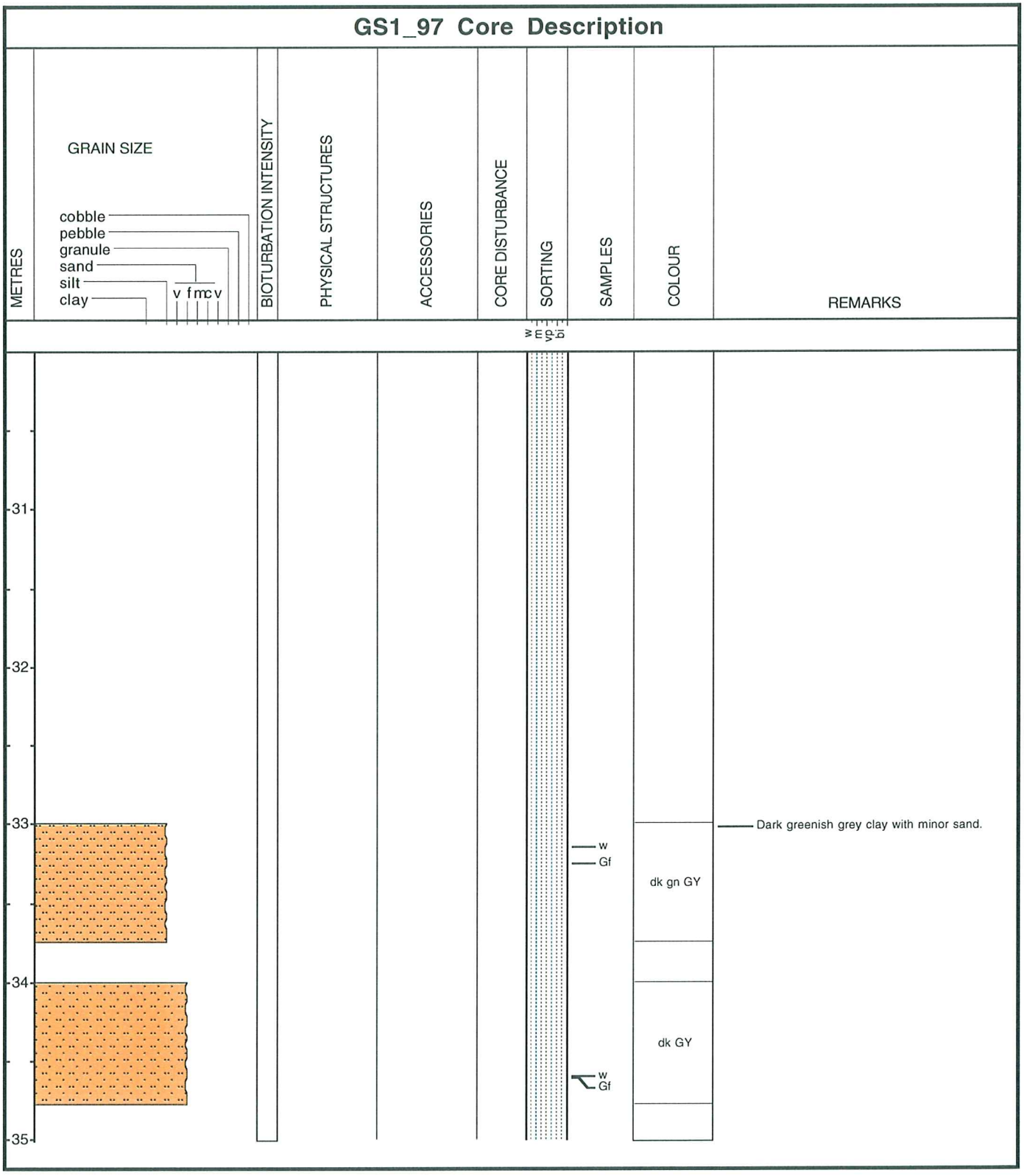

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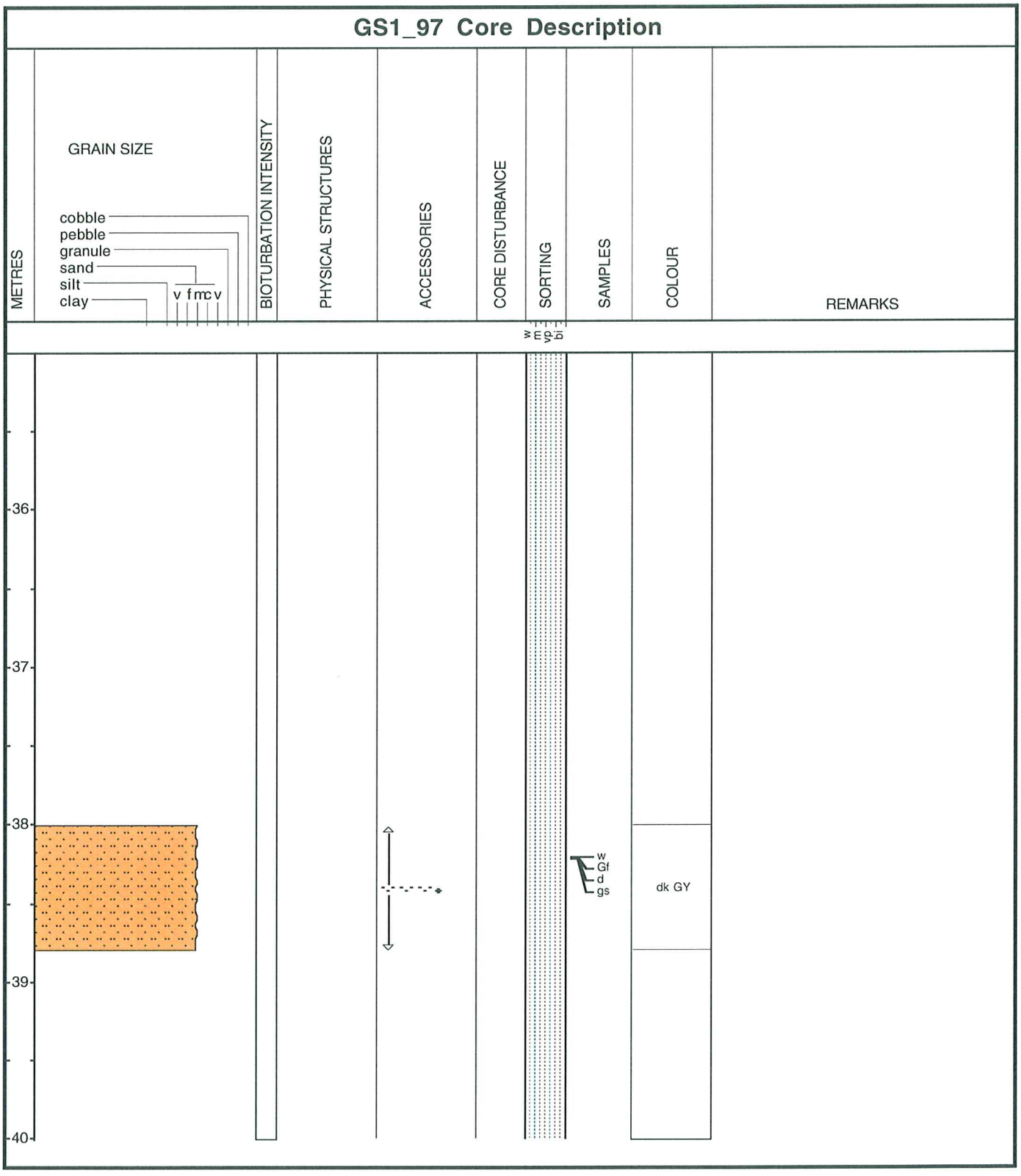

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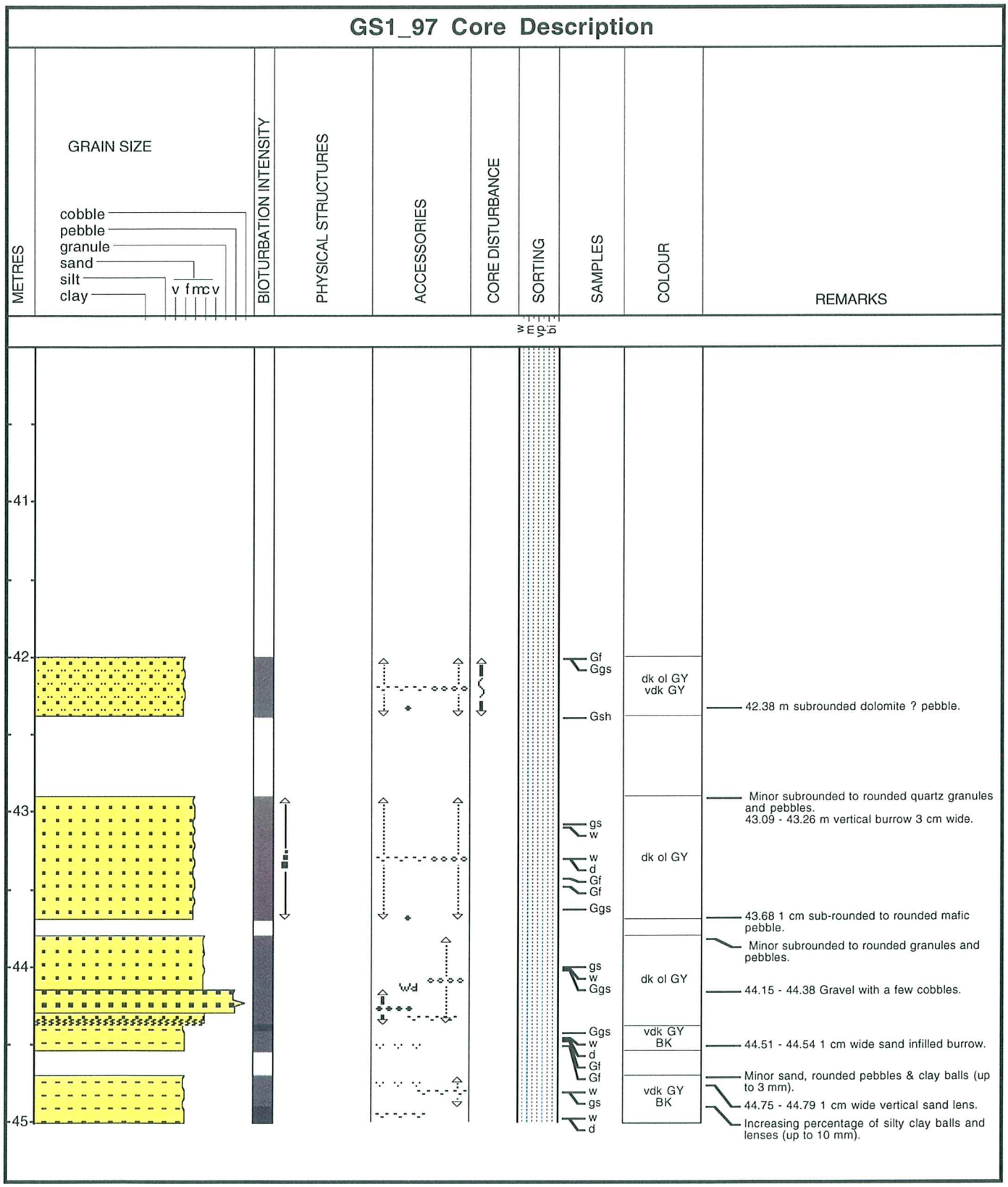

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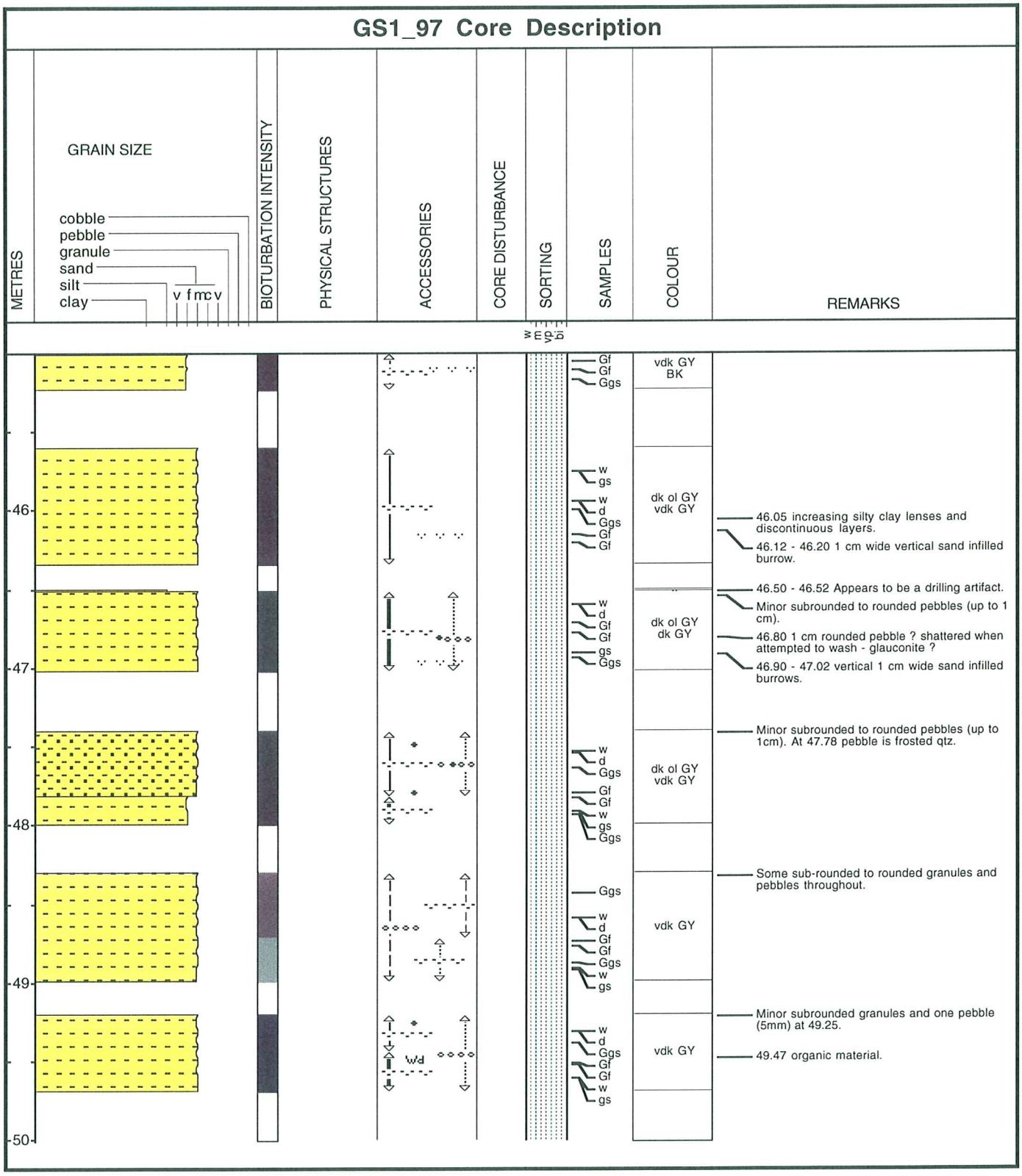

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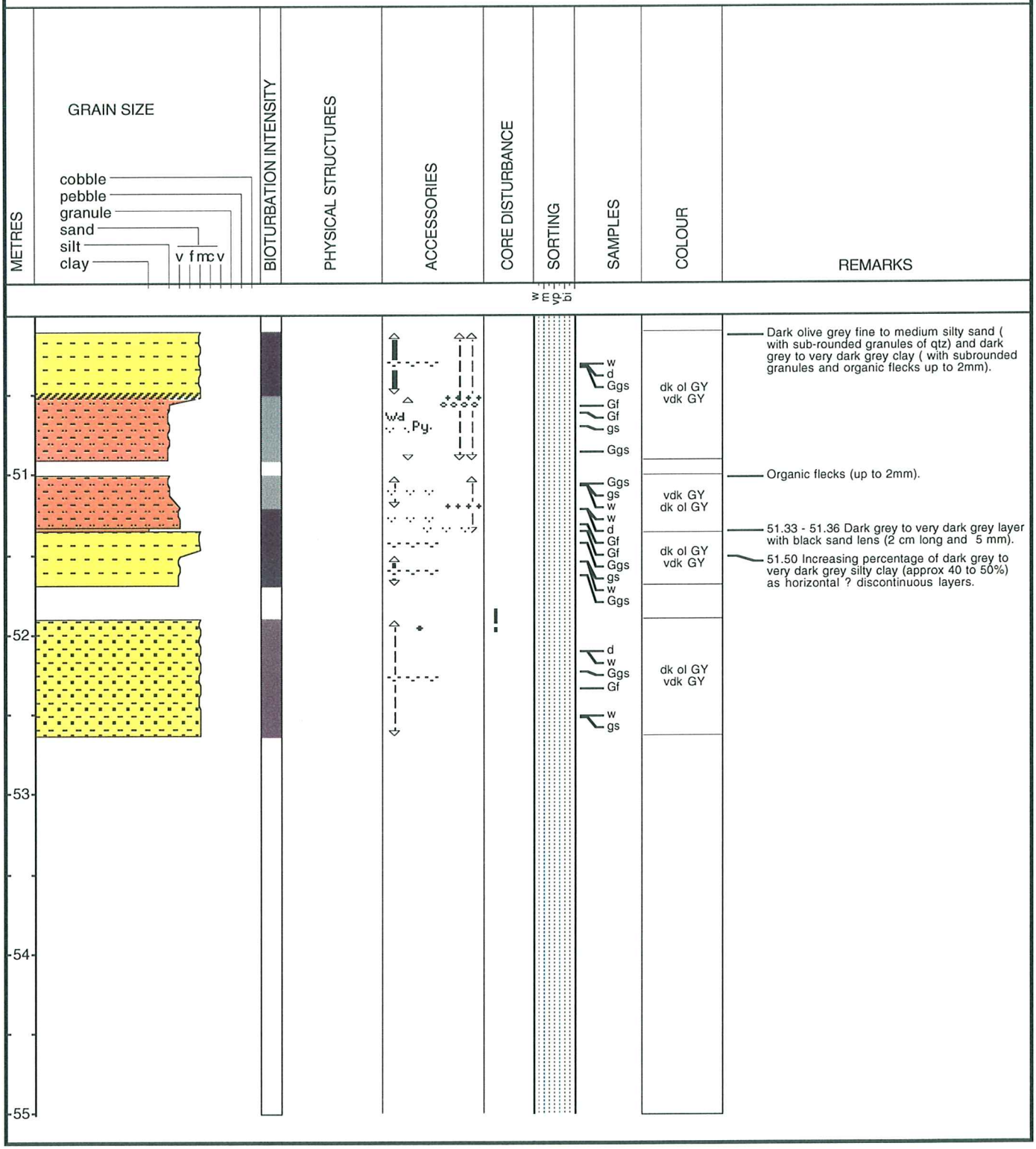

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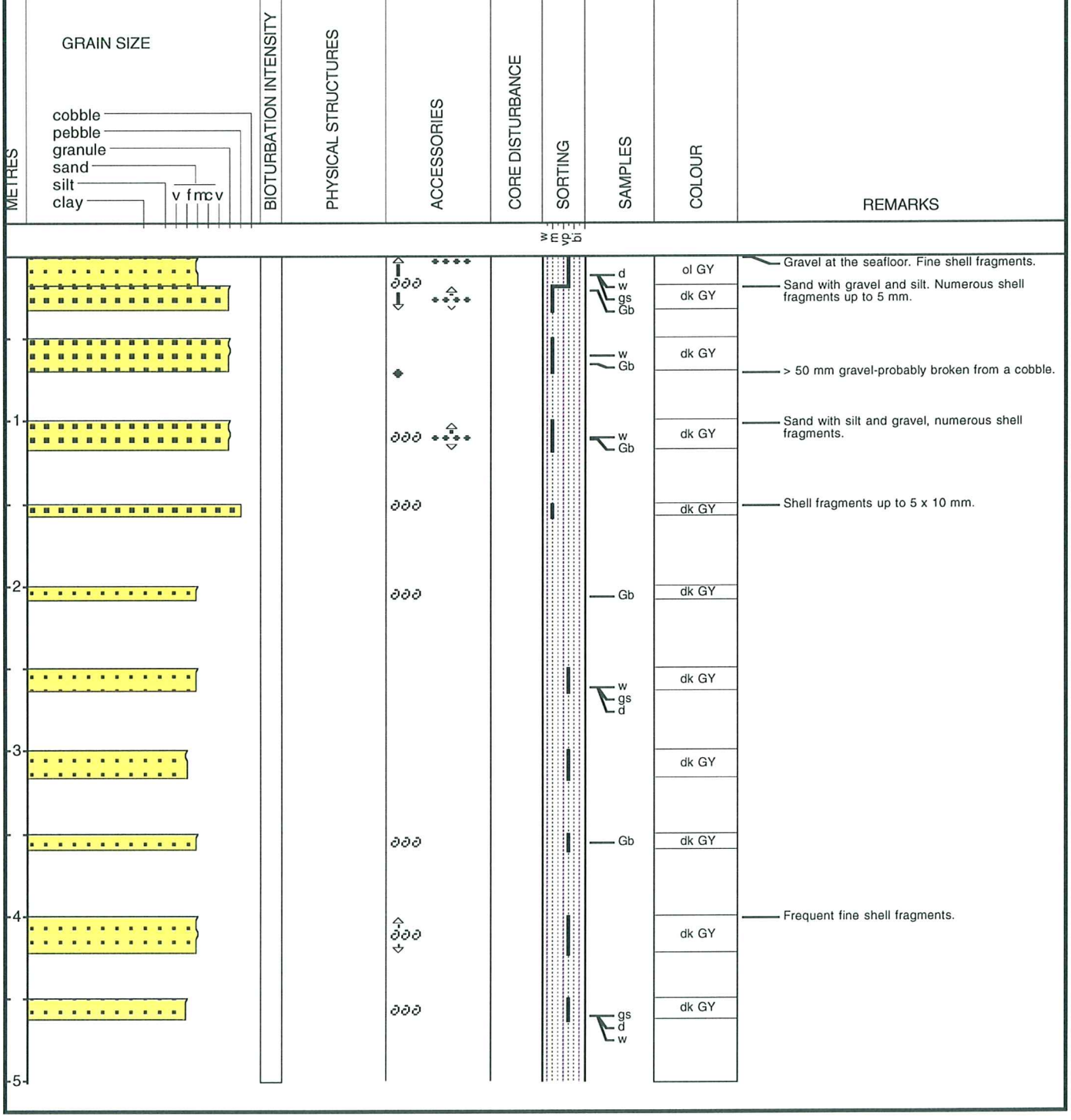

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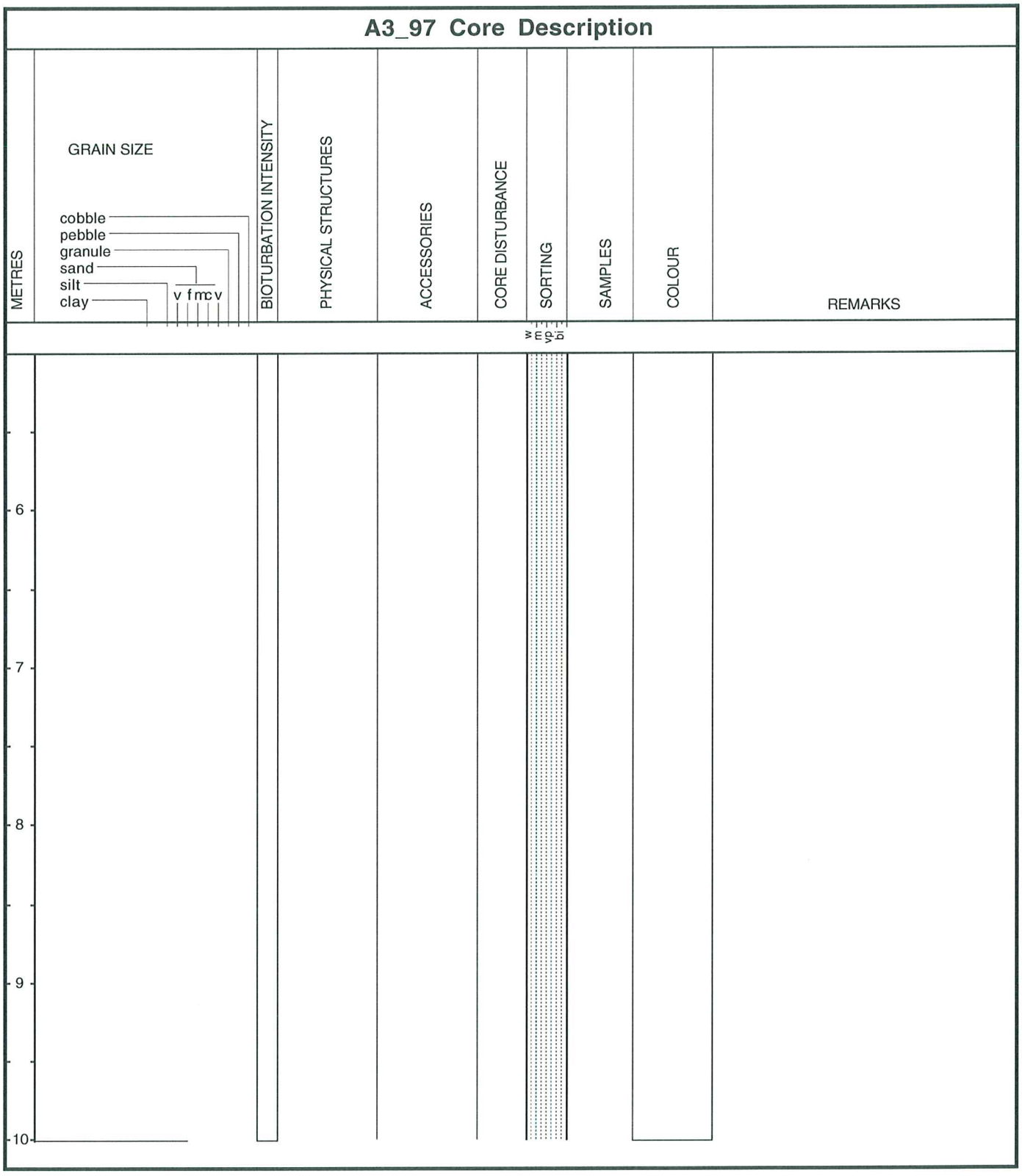

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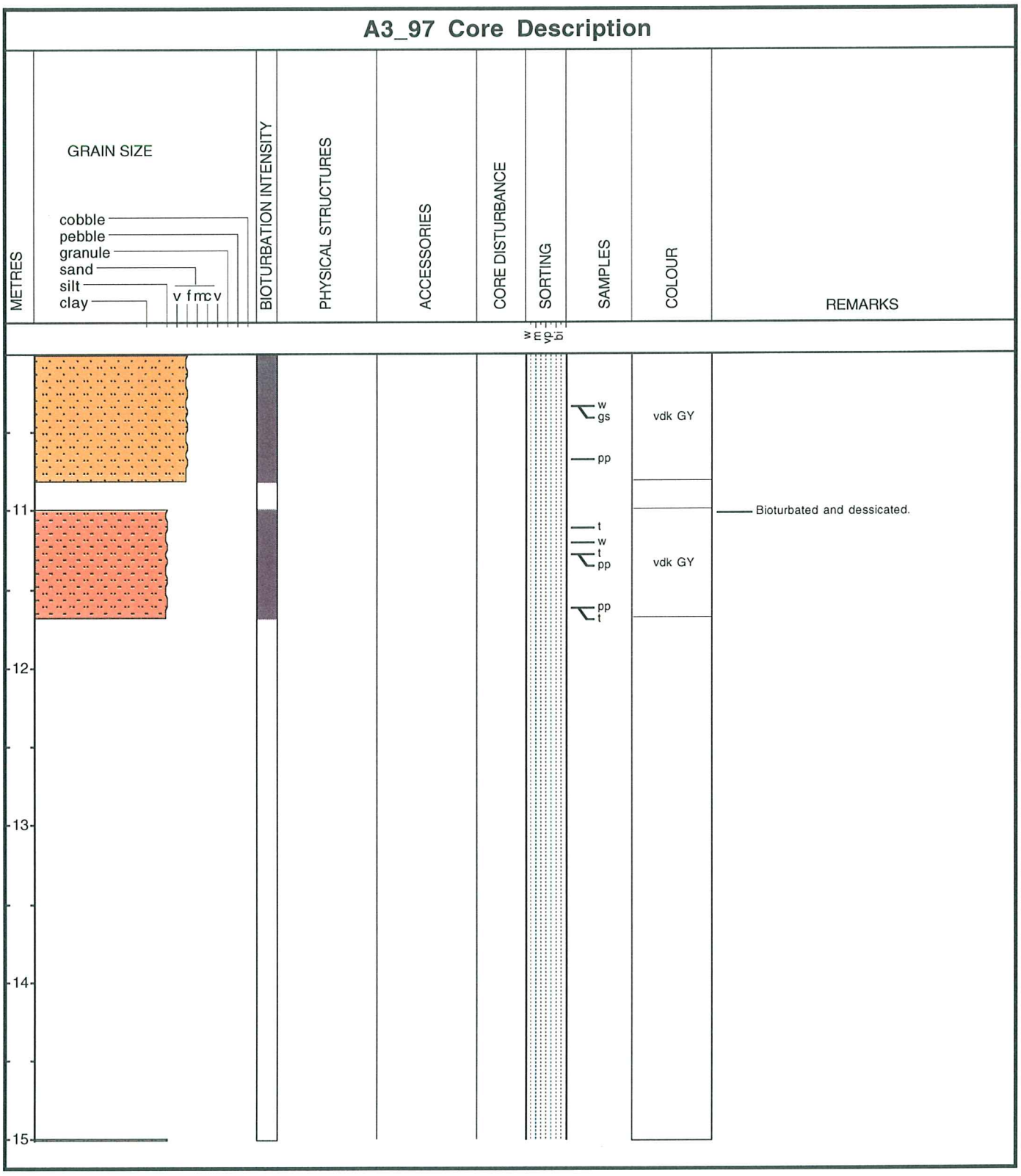

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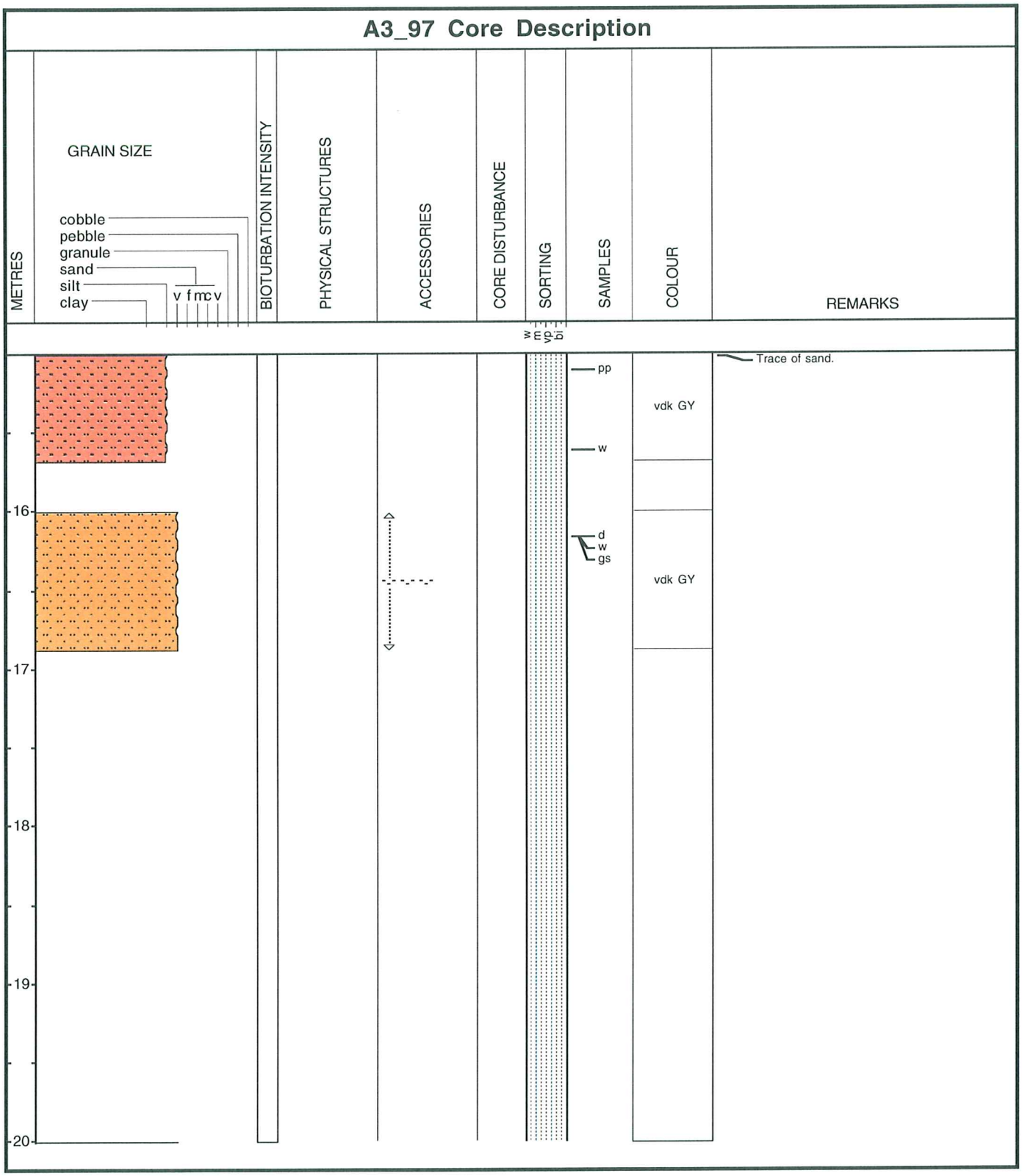

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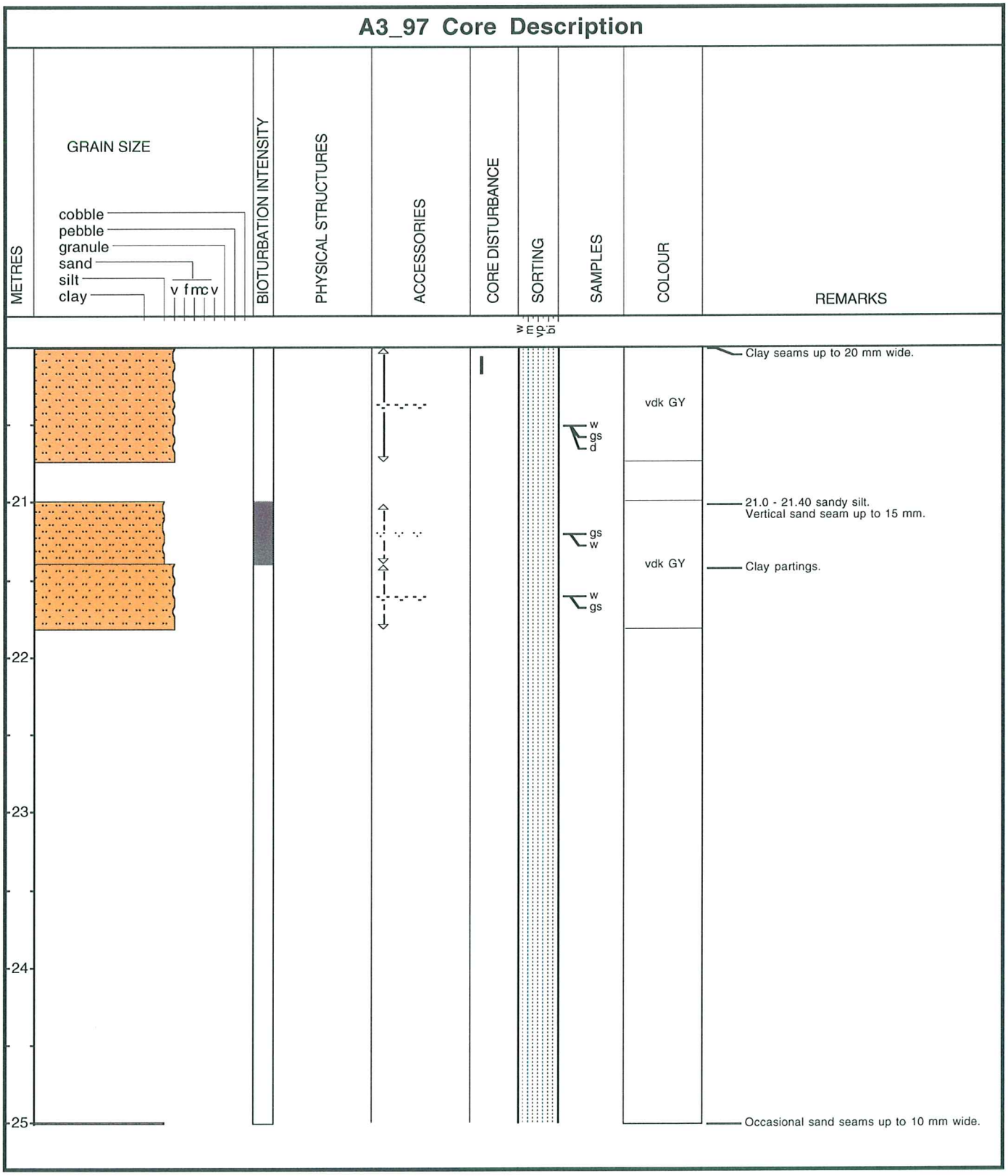

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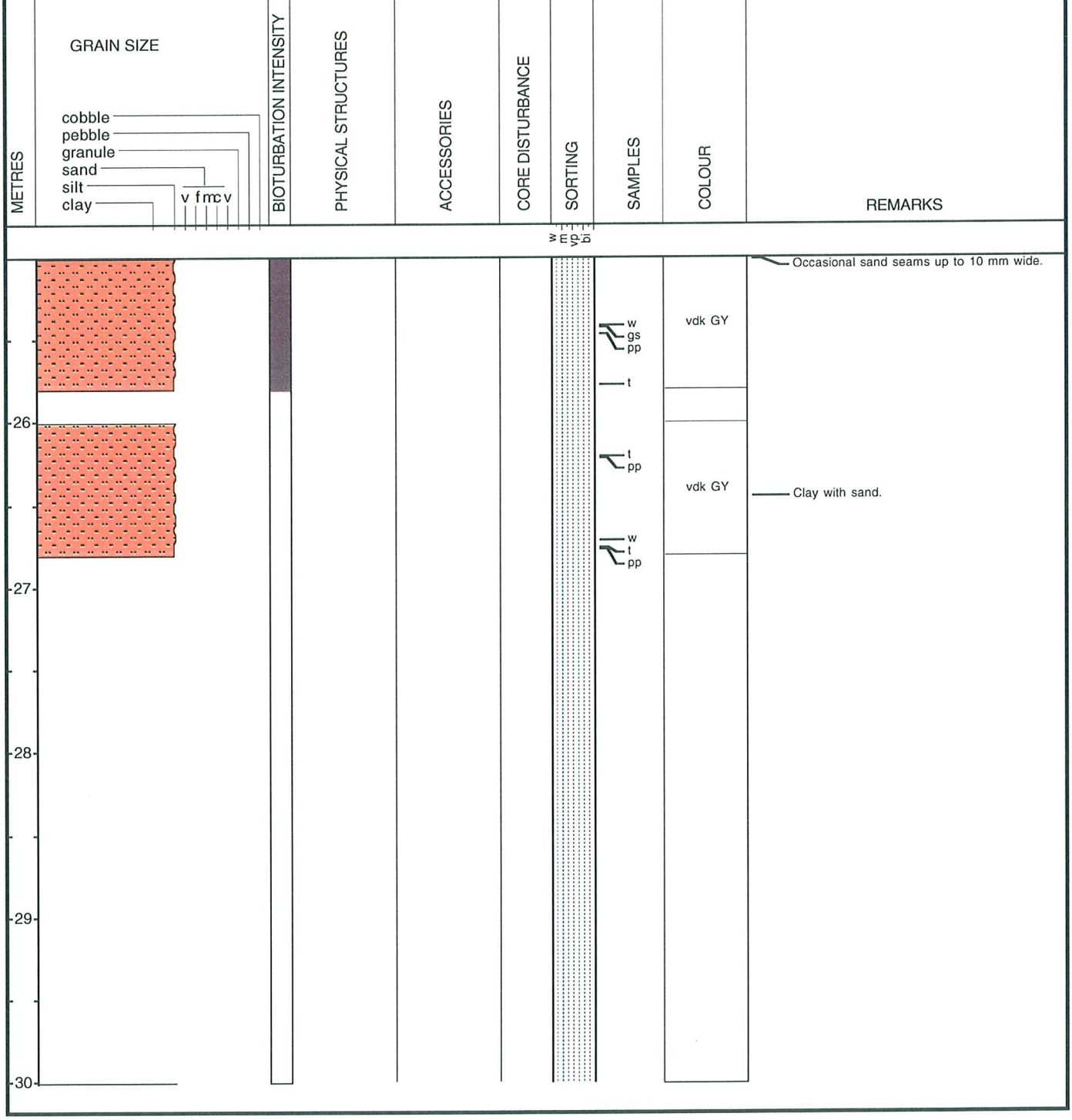

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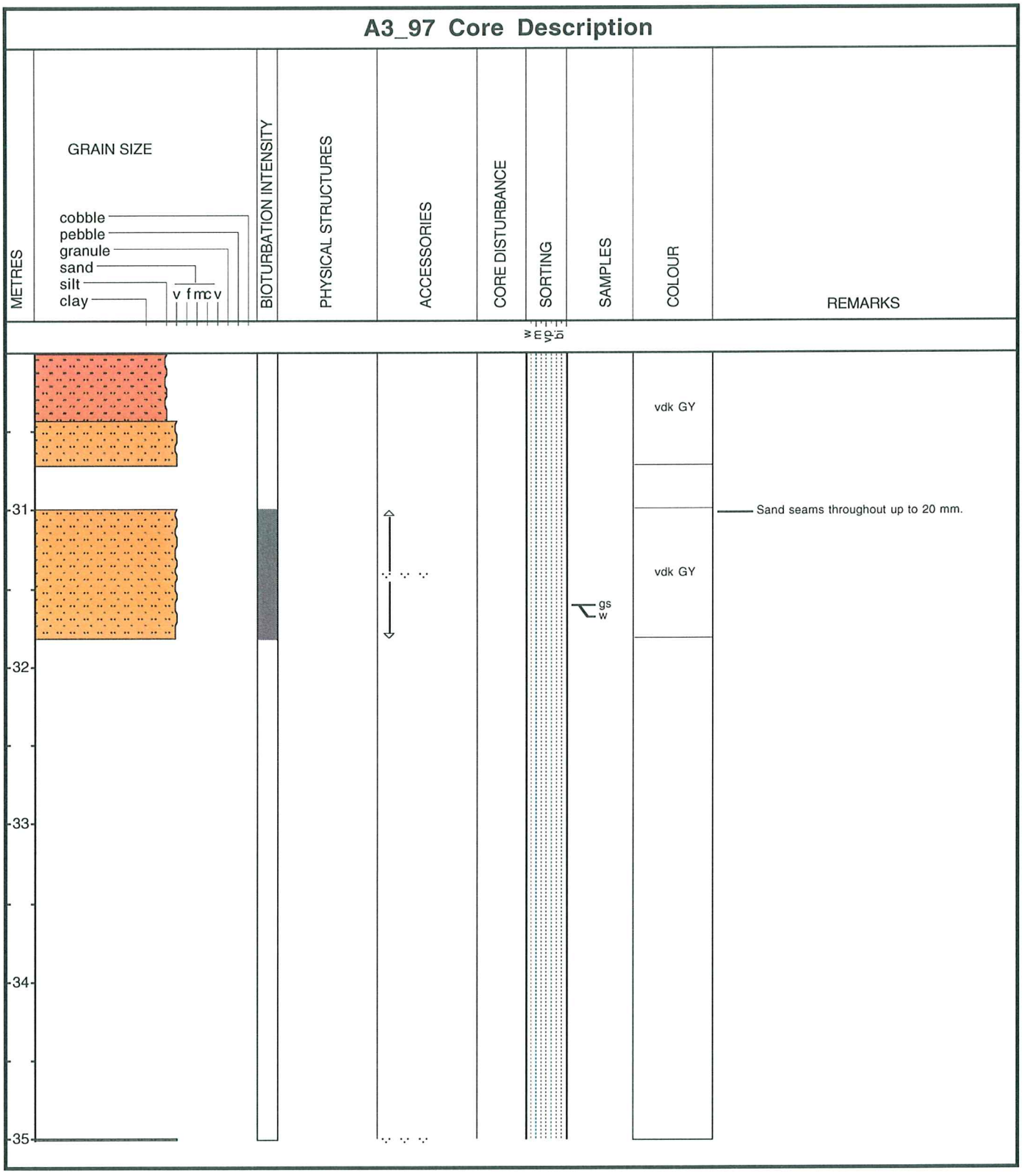

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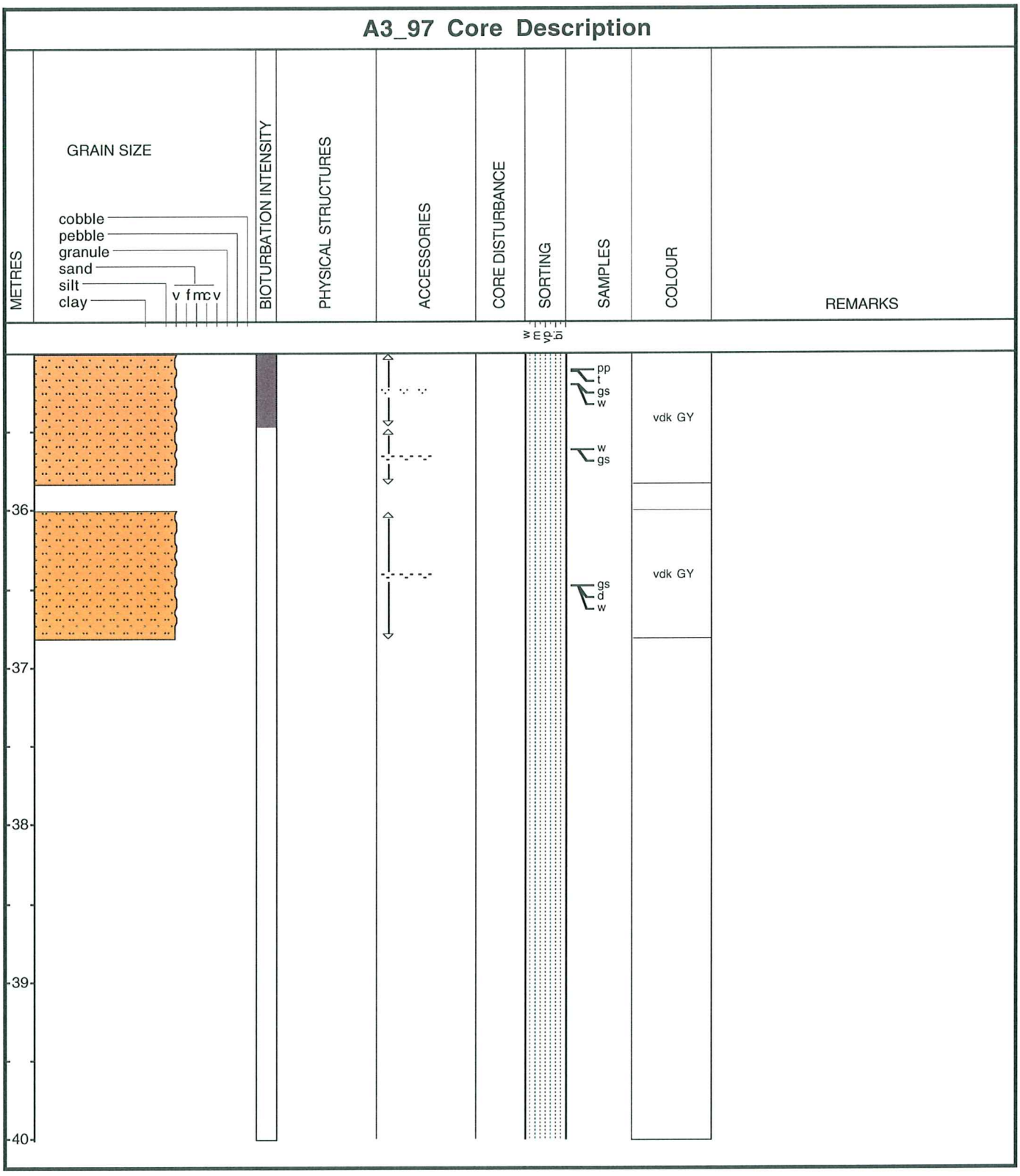

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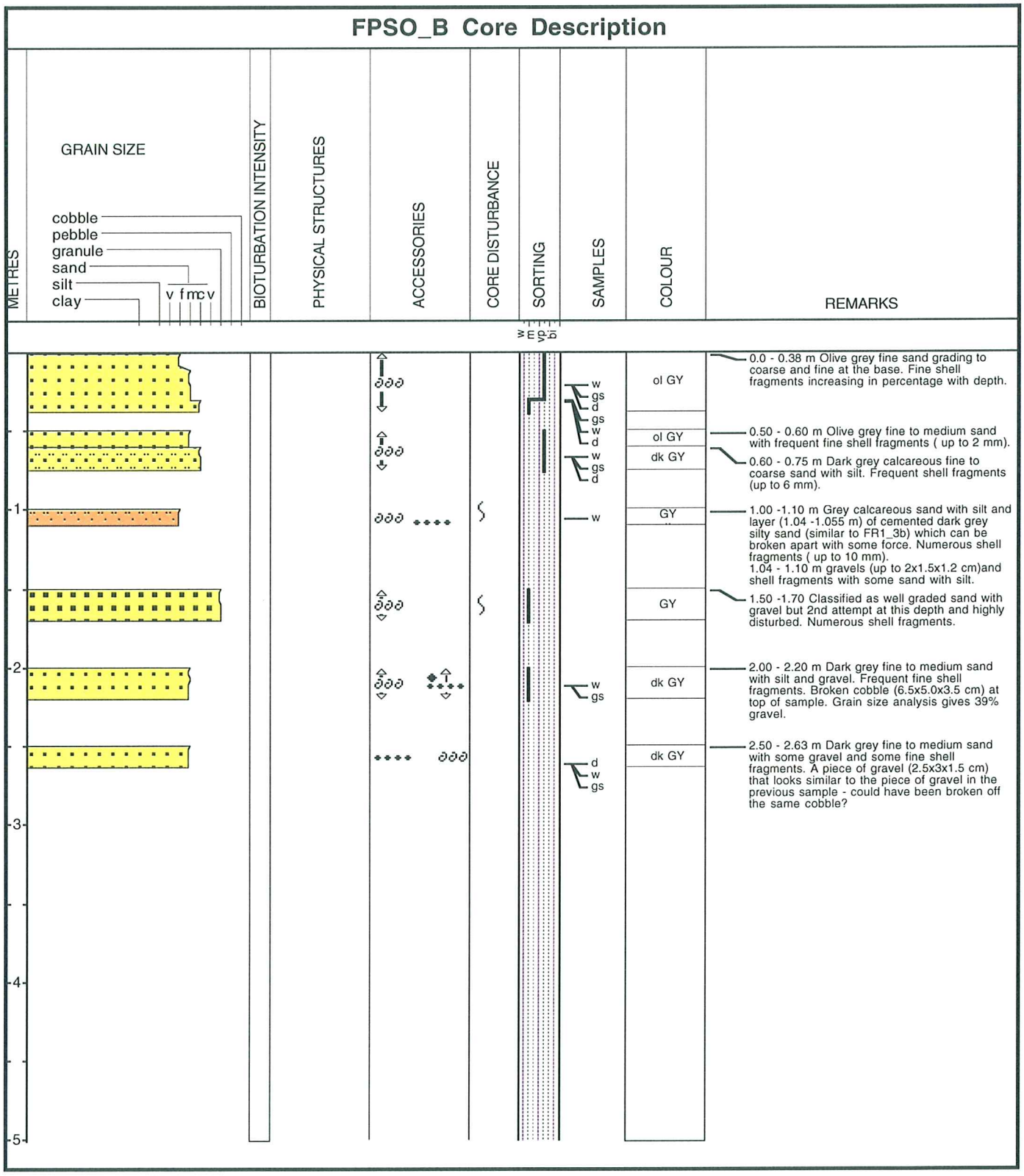

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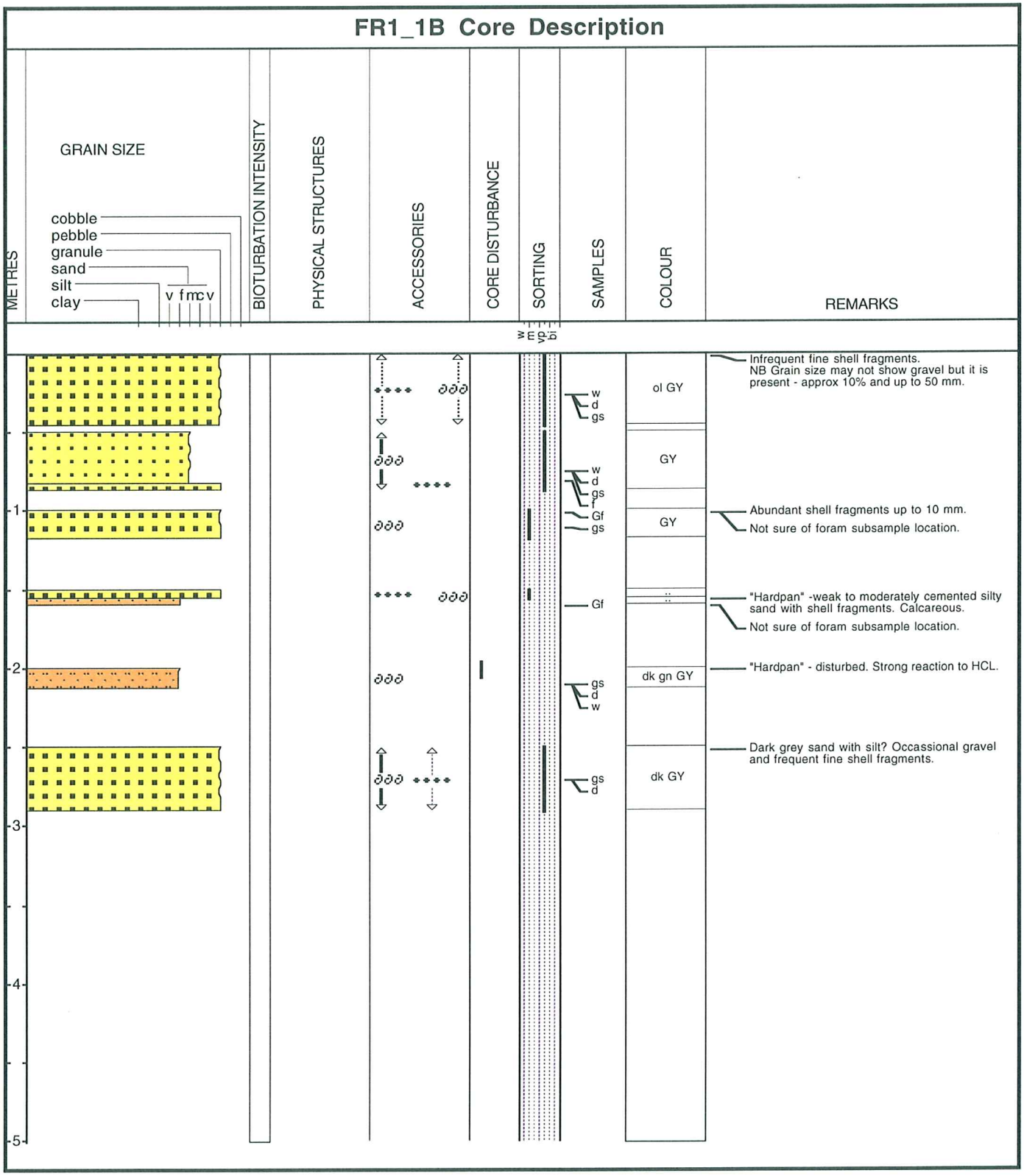

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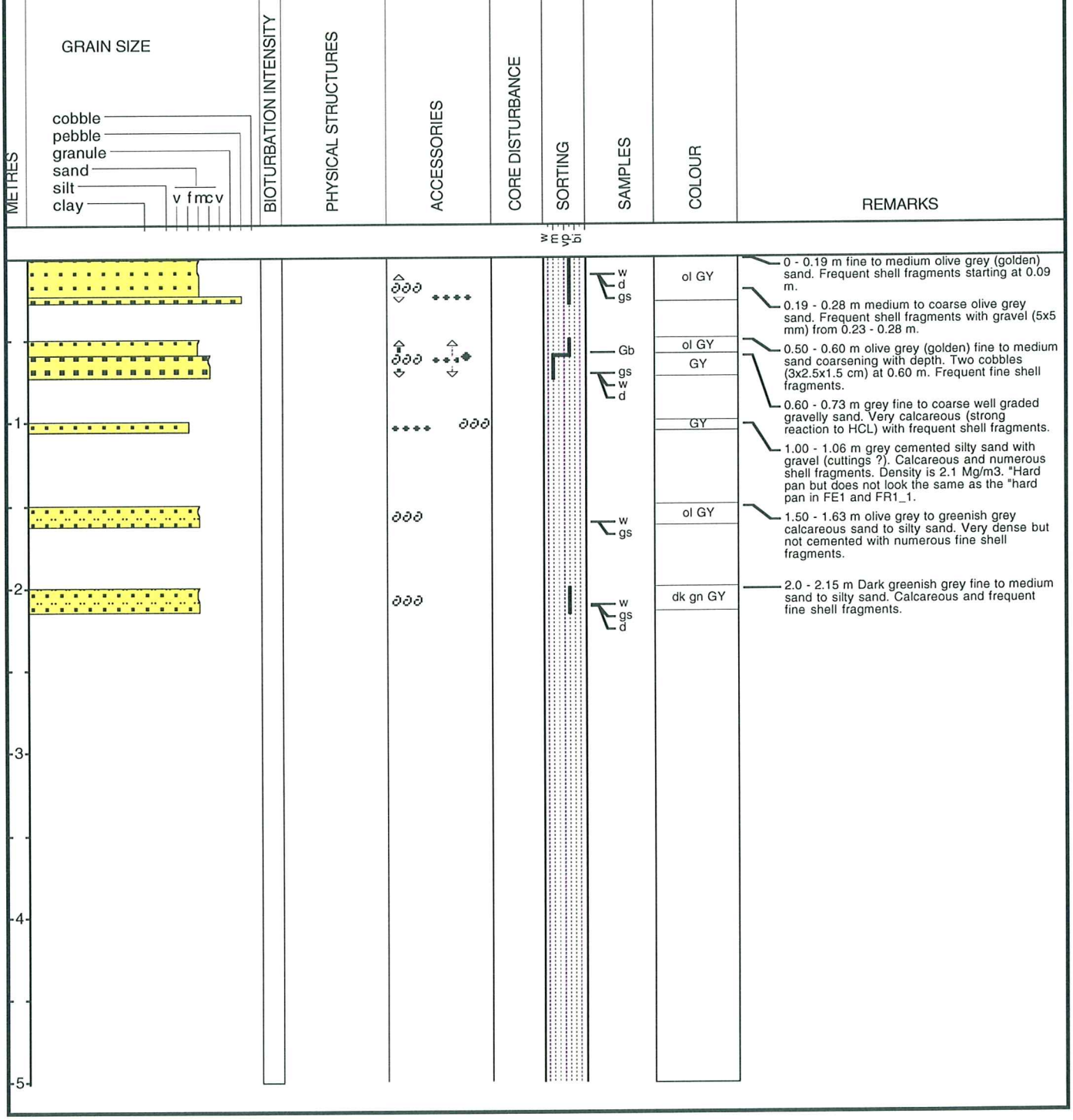

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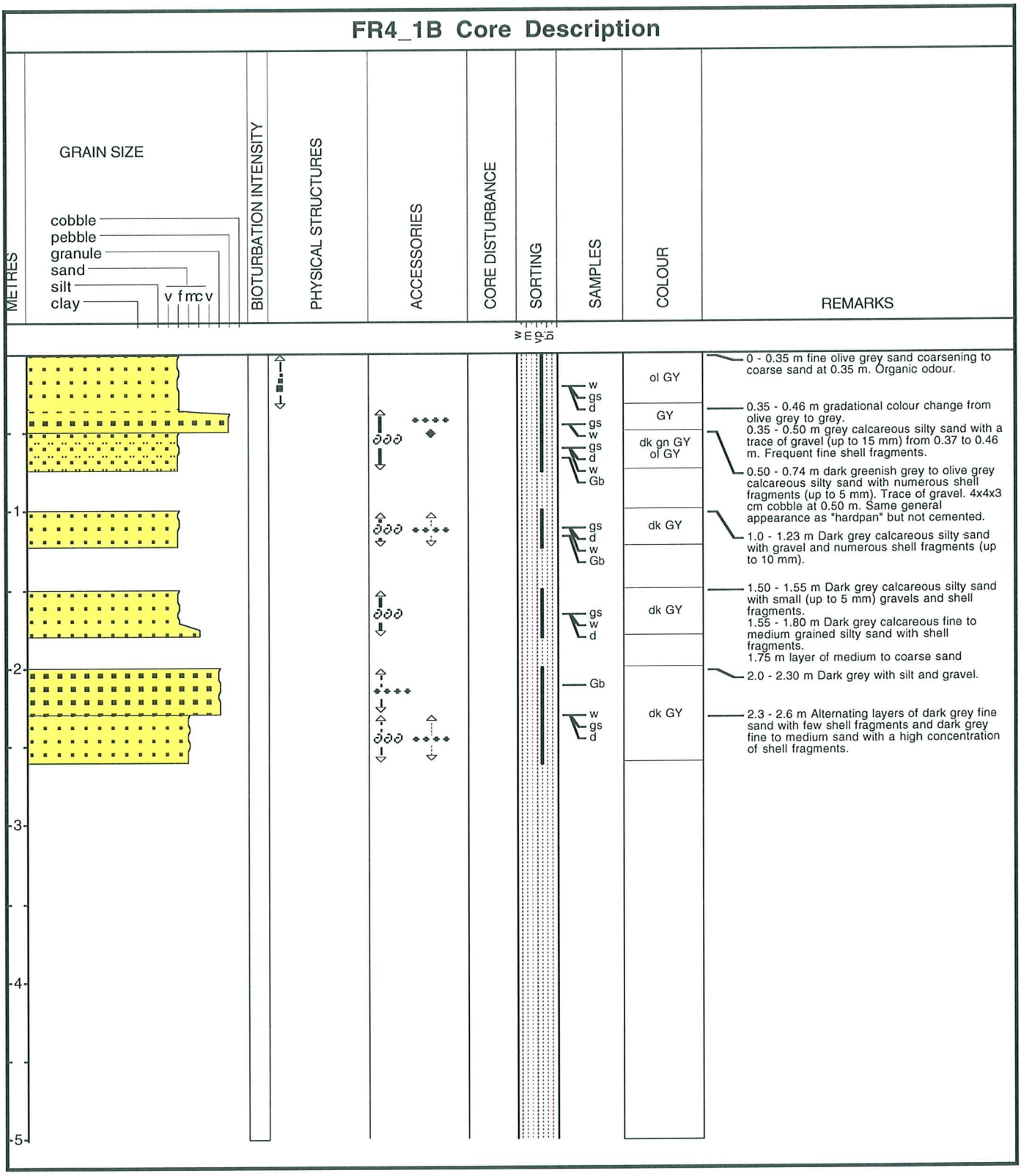
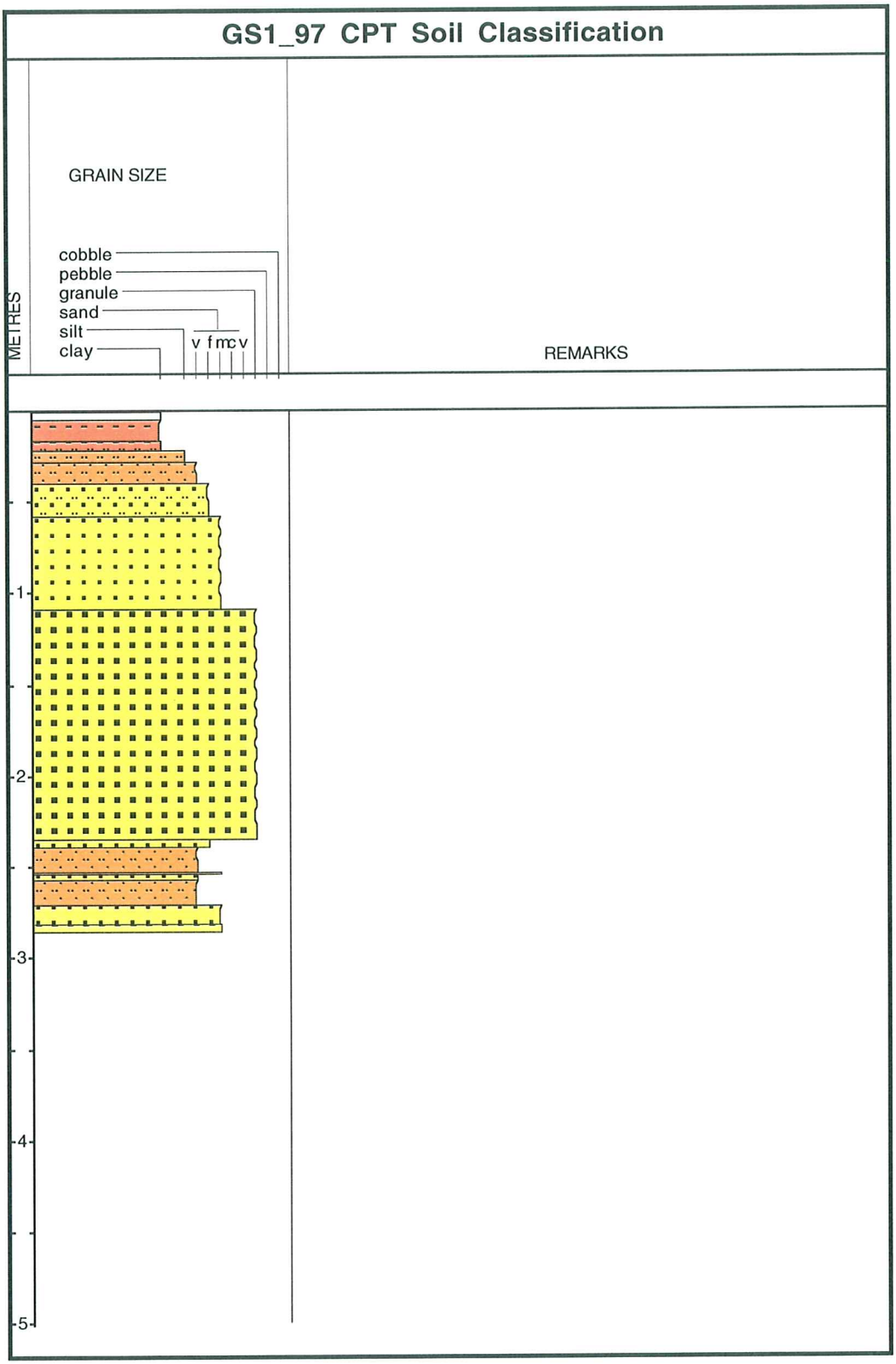
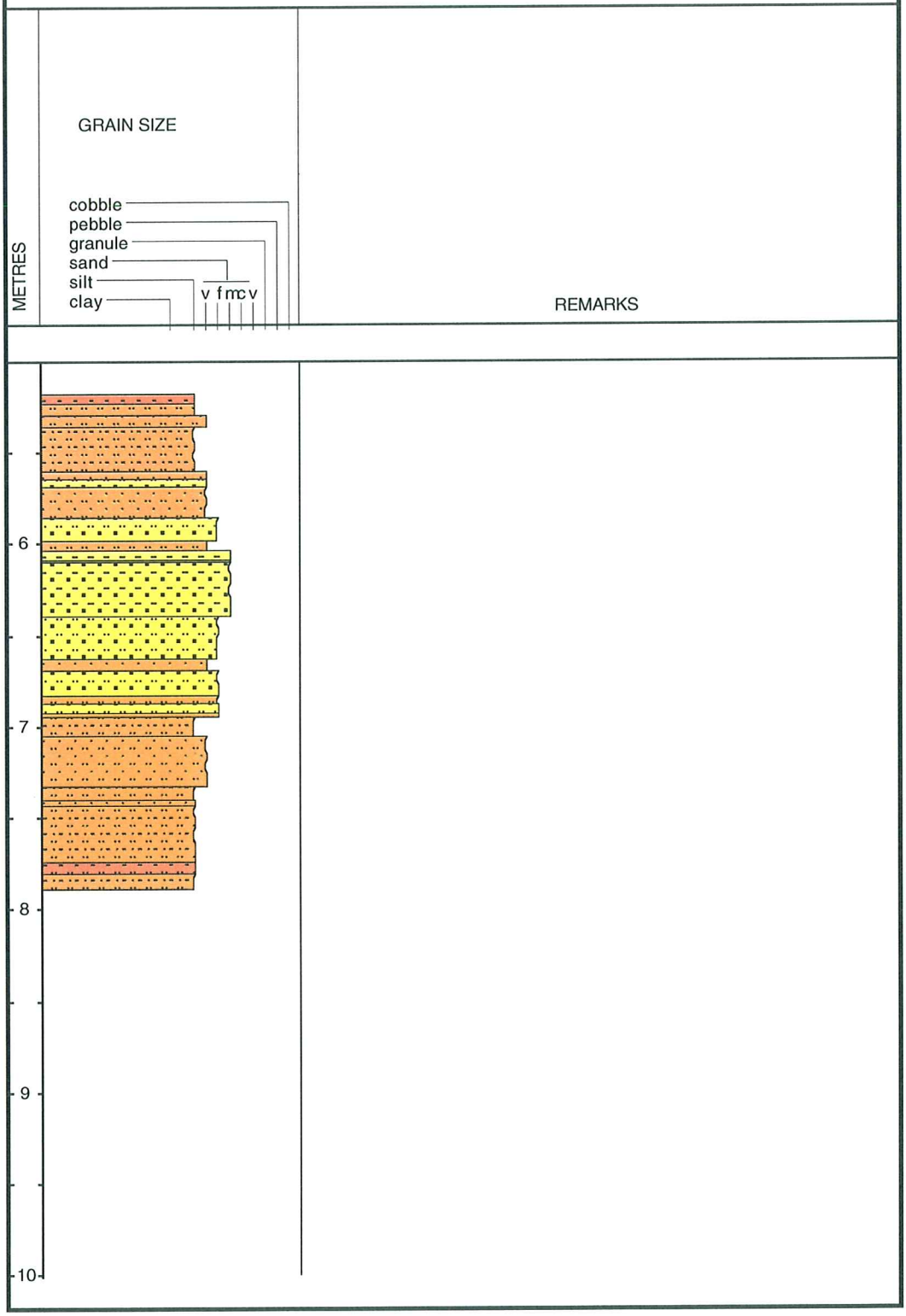


Appendix 5

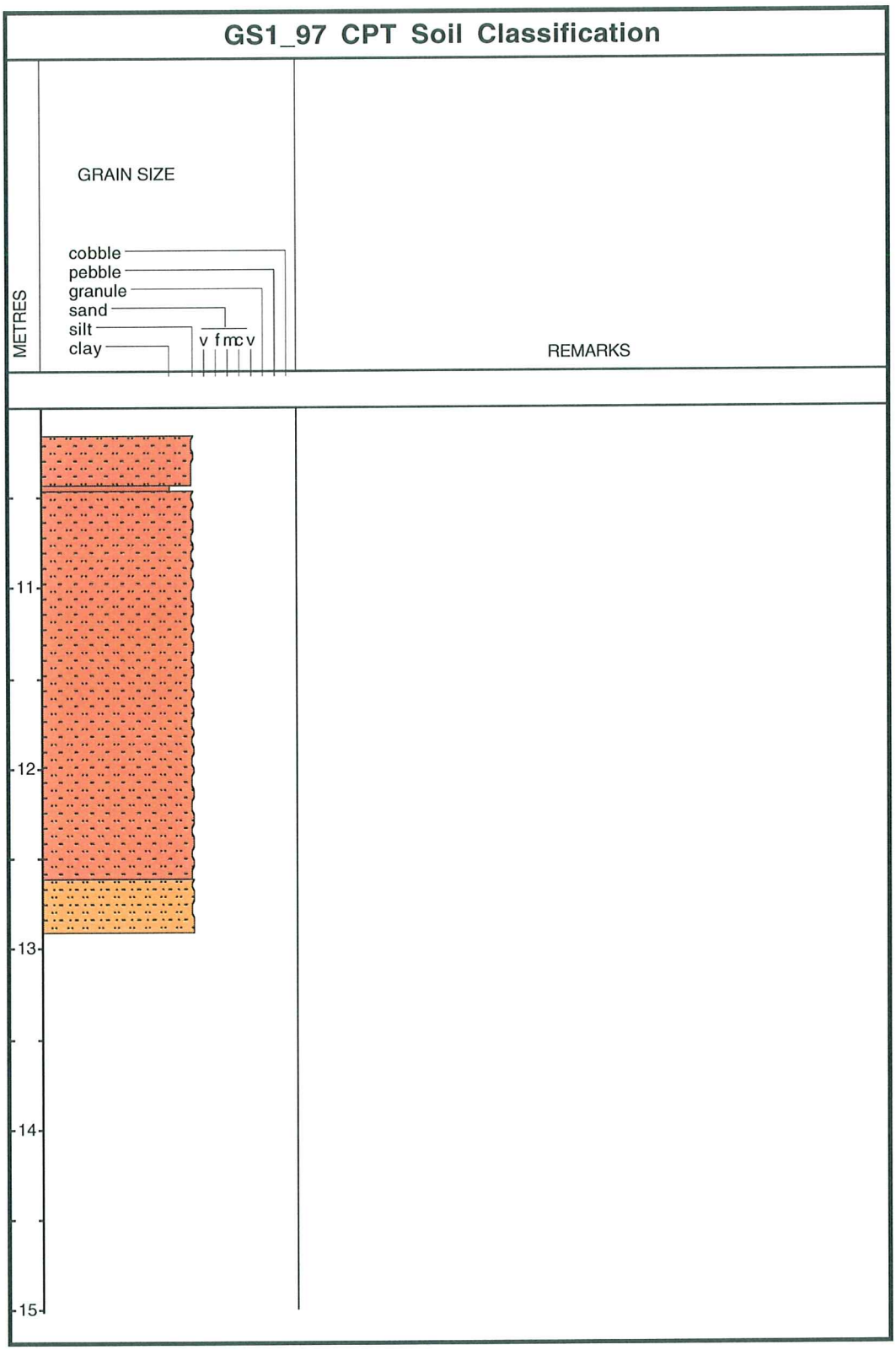
GS1_97 CPT Soil Classification



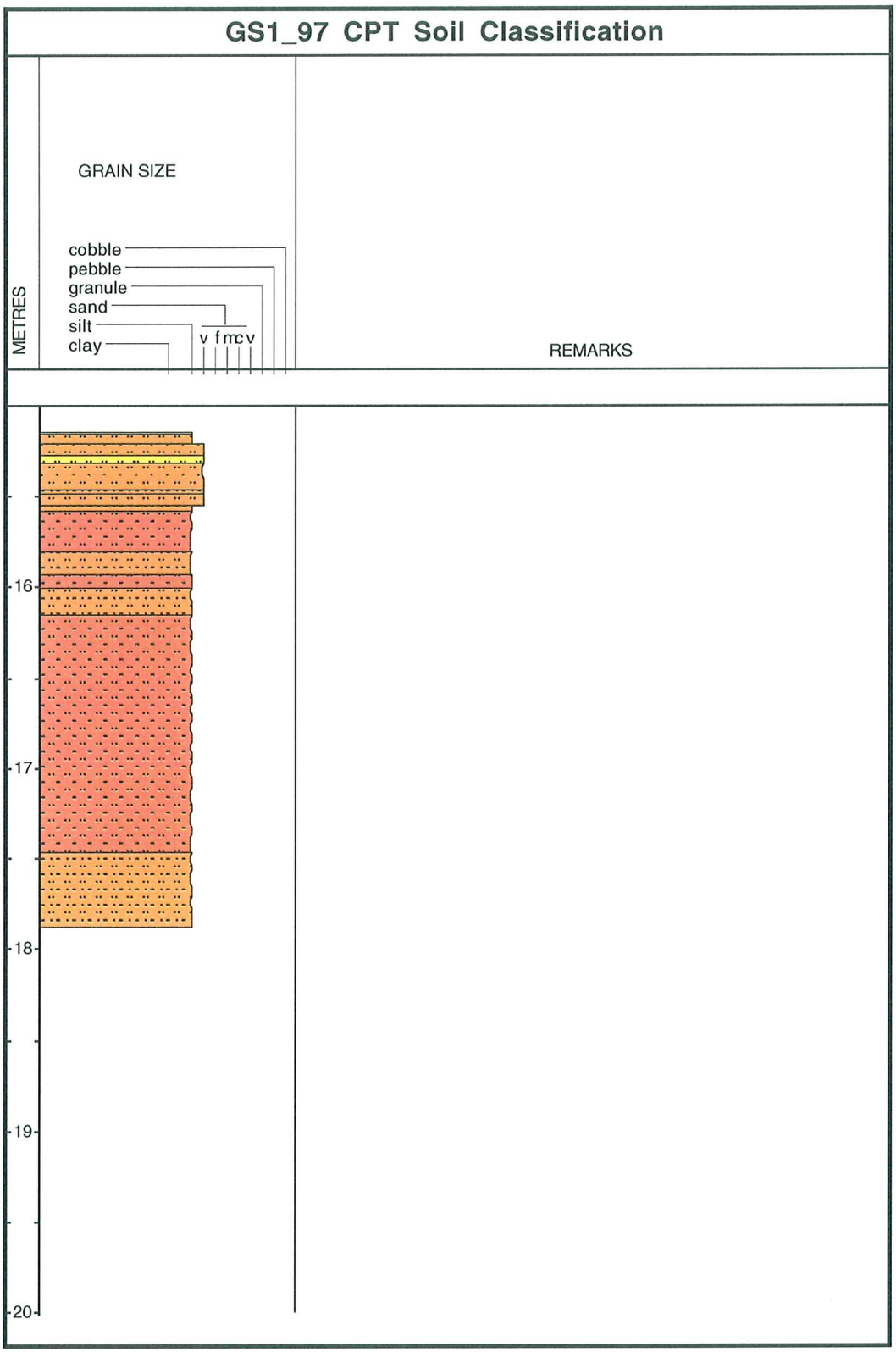
GS1_97 CPT Soil Classification



GS1_97 CPT Soil Classification



GS1_97 CPT Soil Classification



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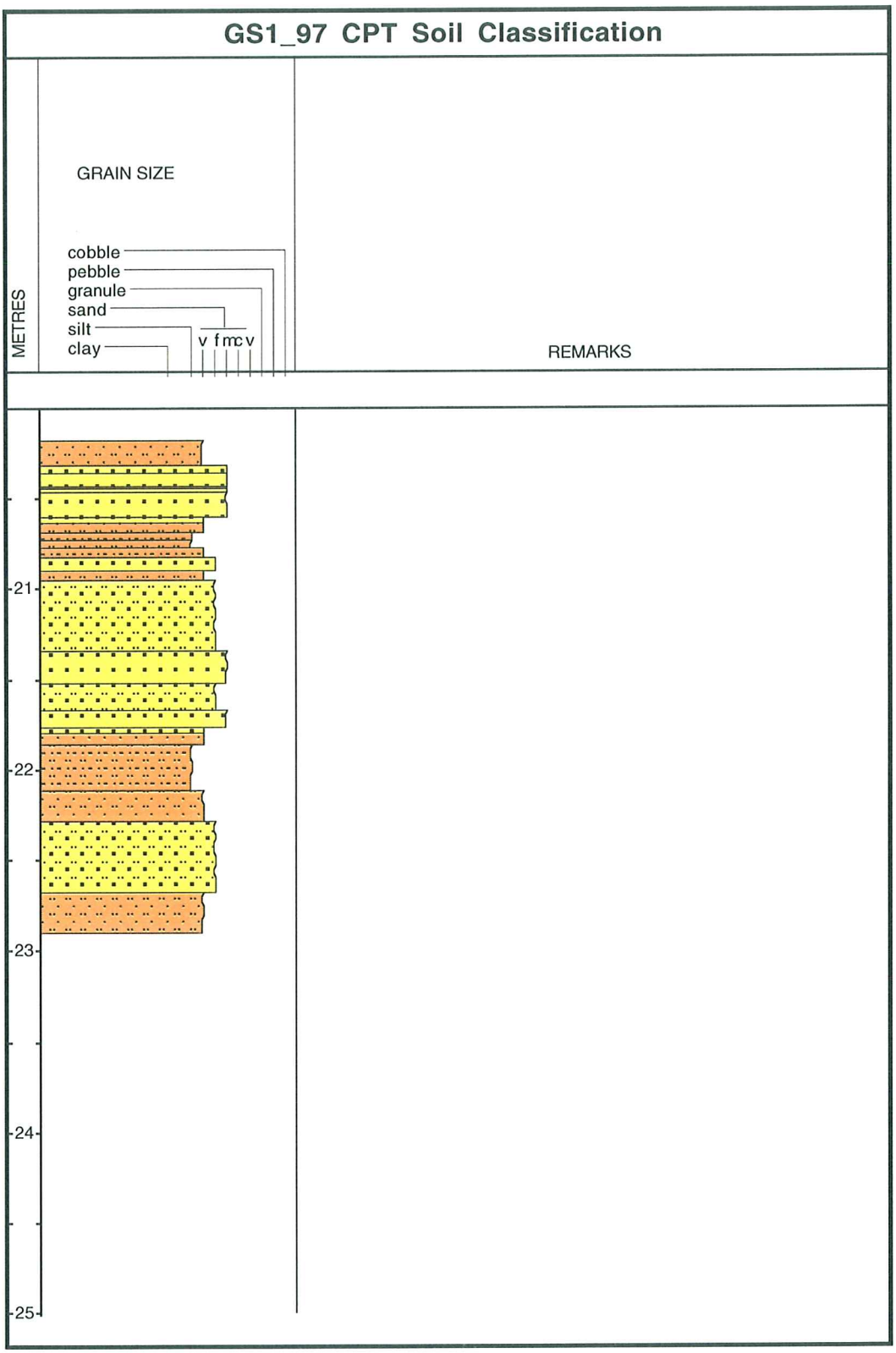

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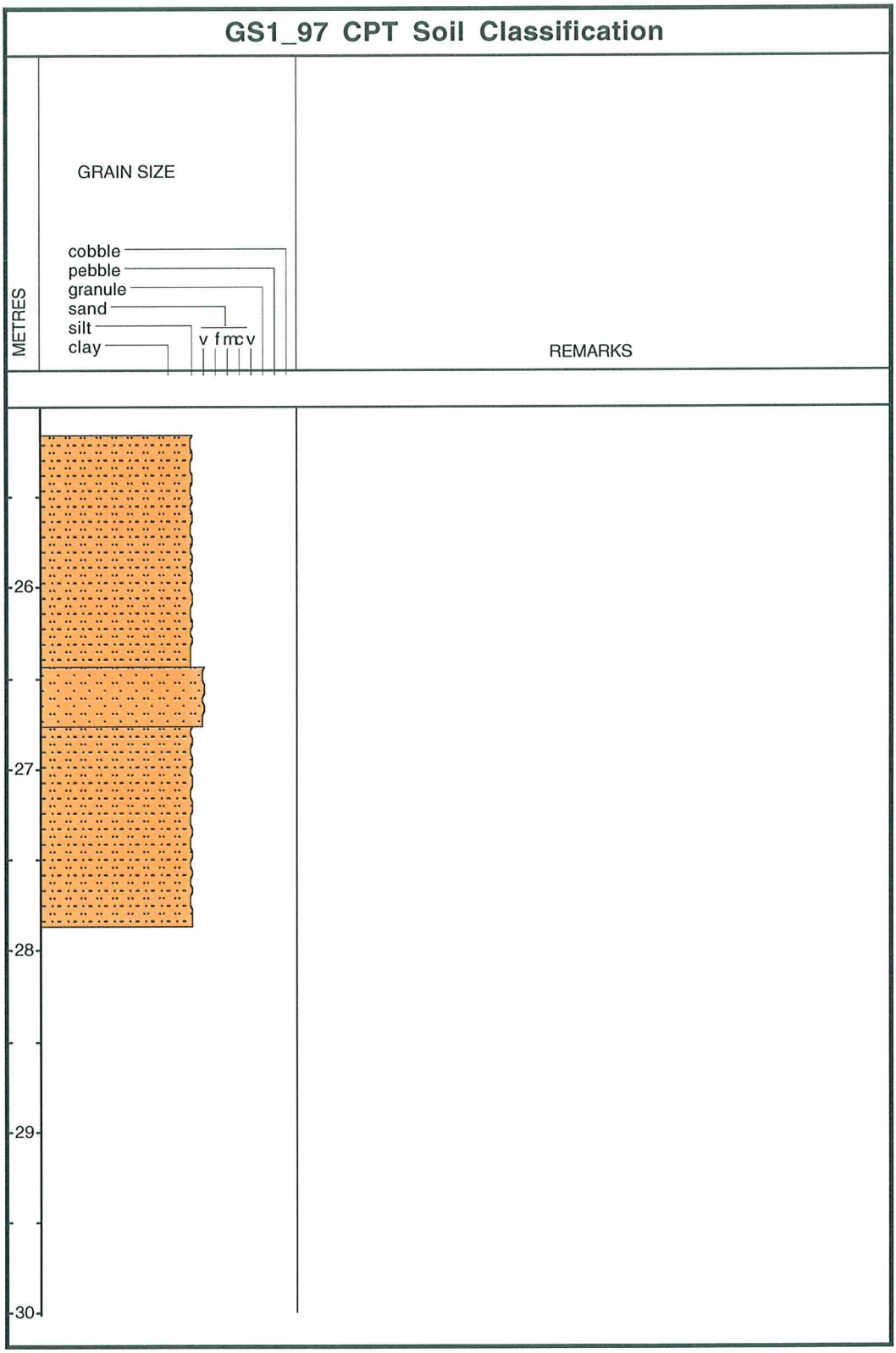

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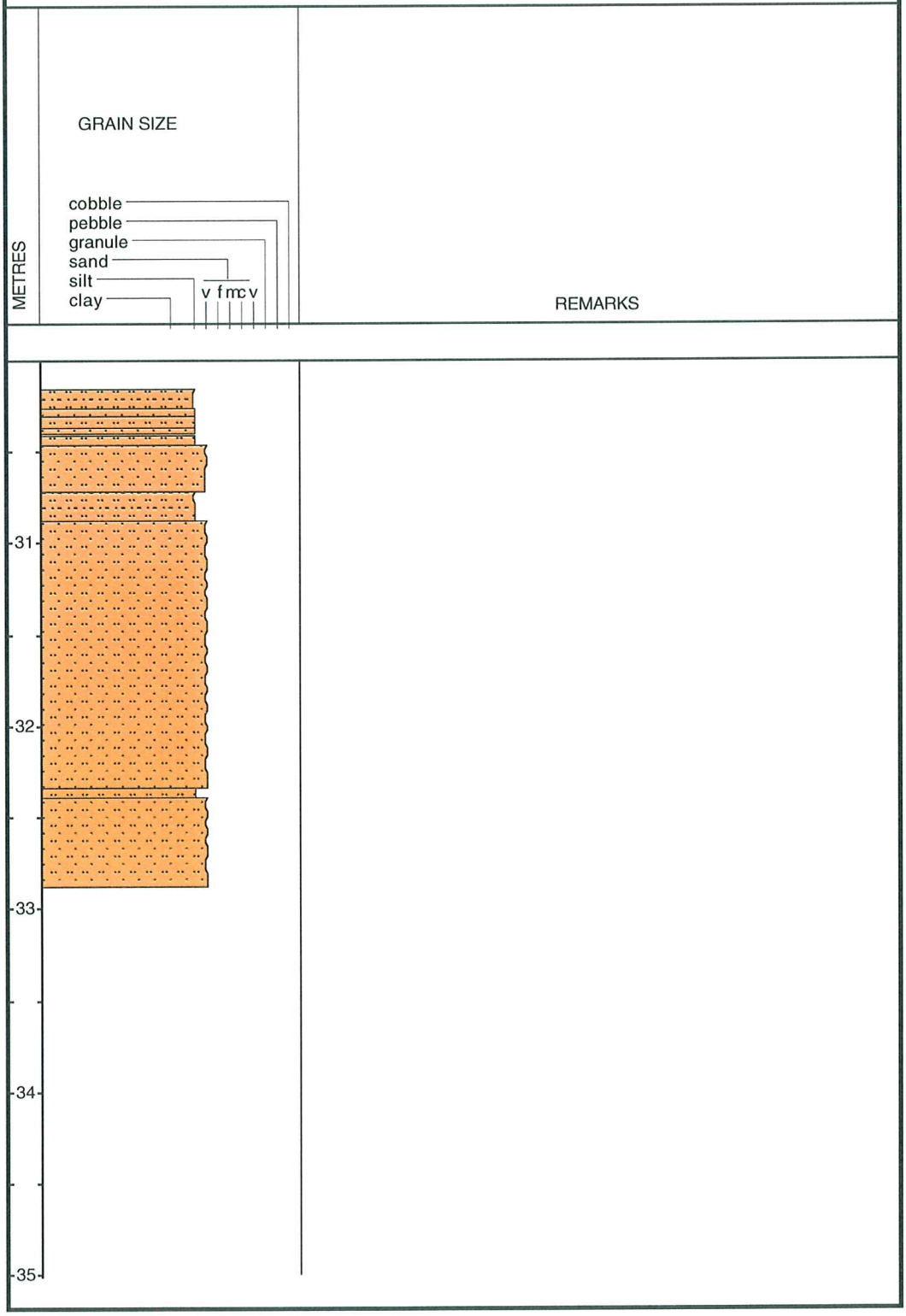

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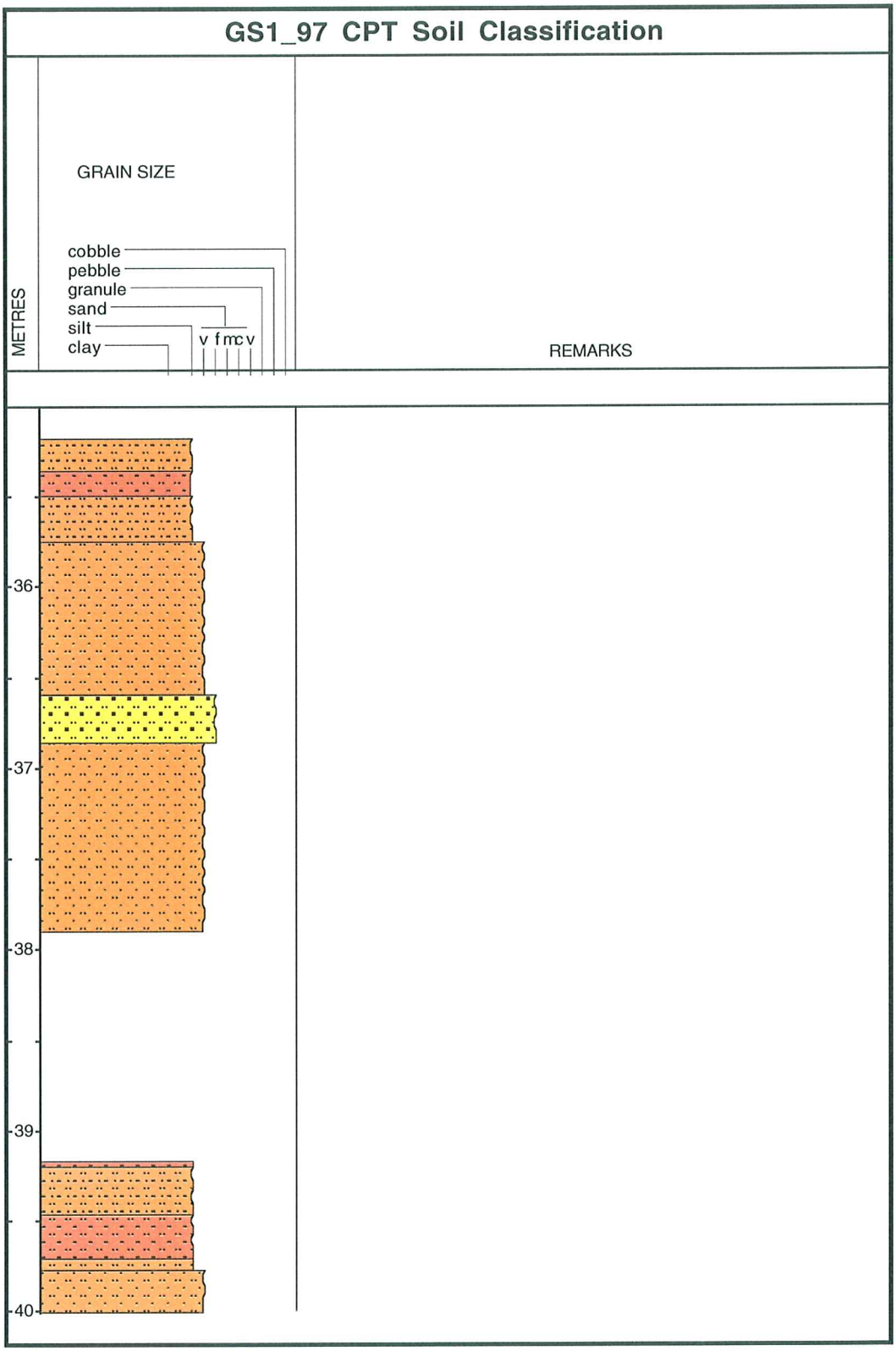

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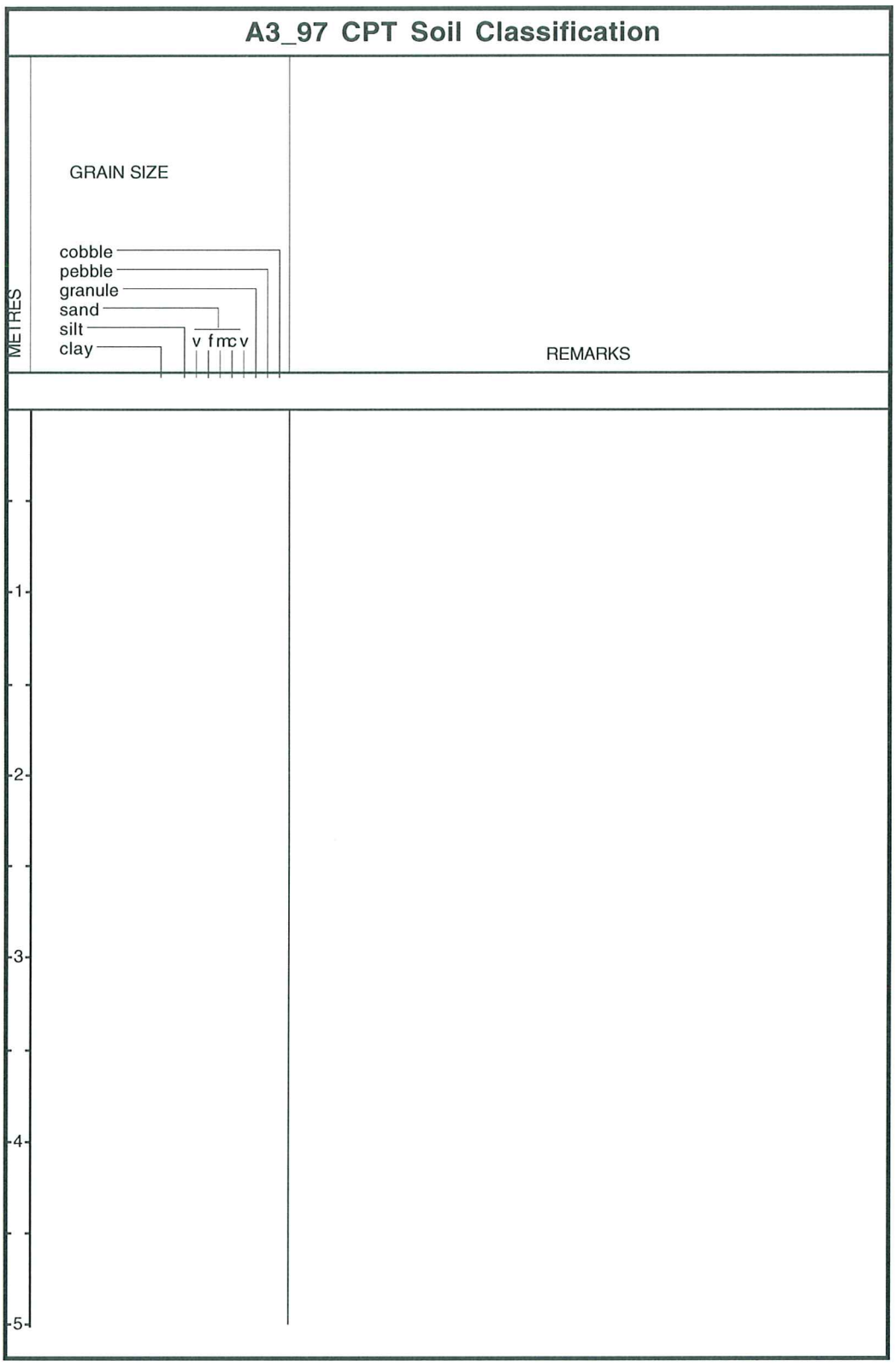

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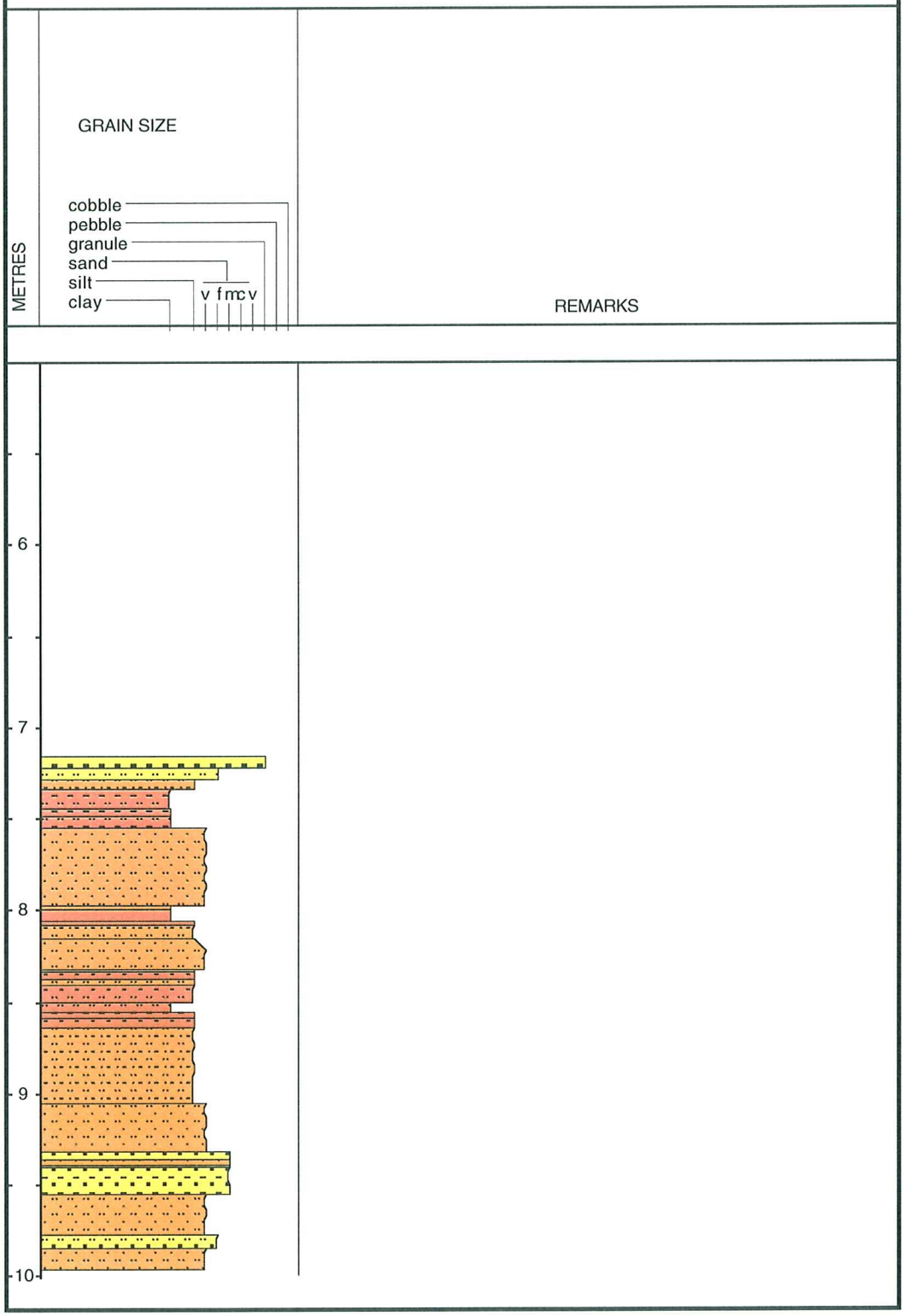

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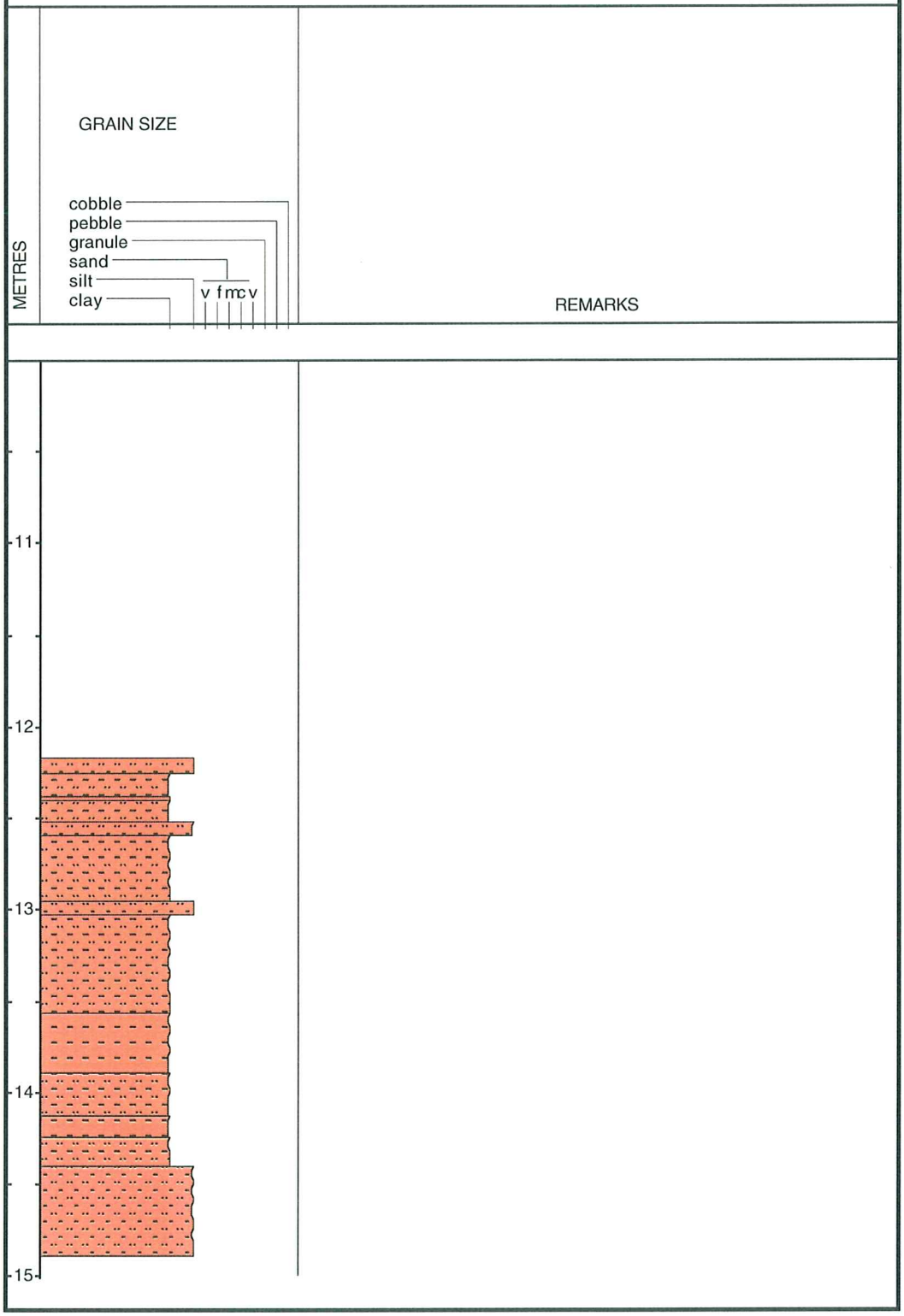

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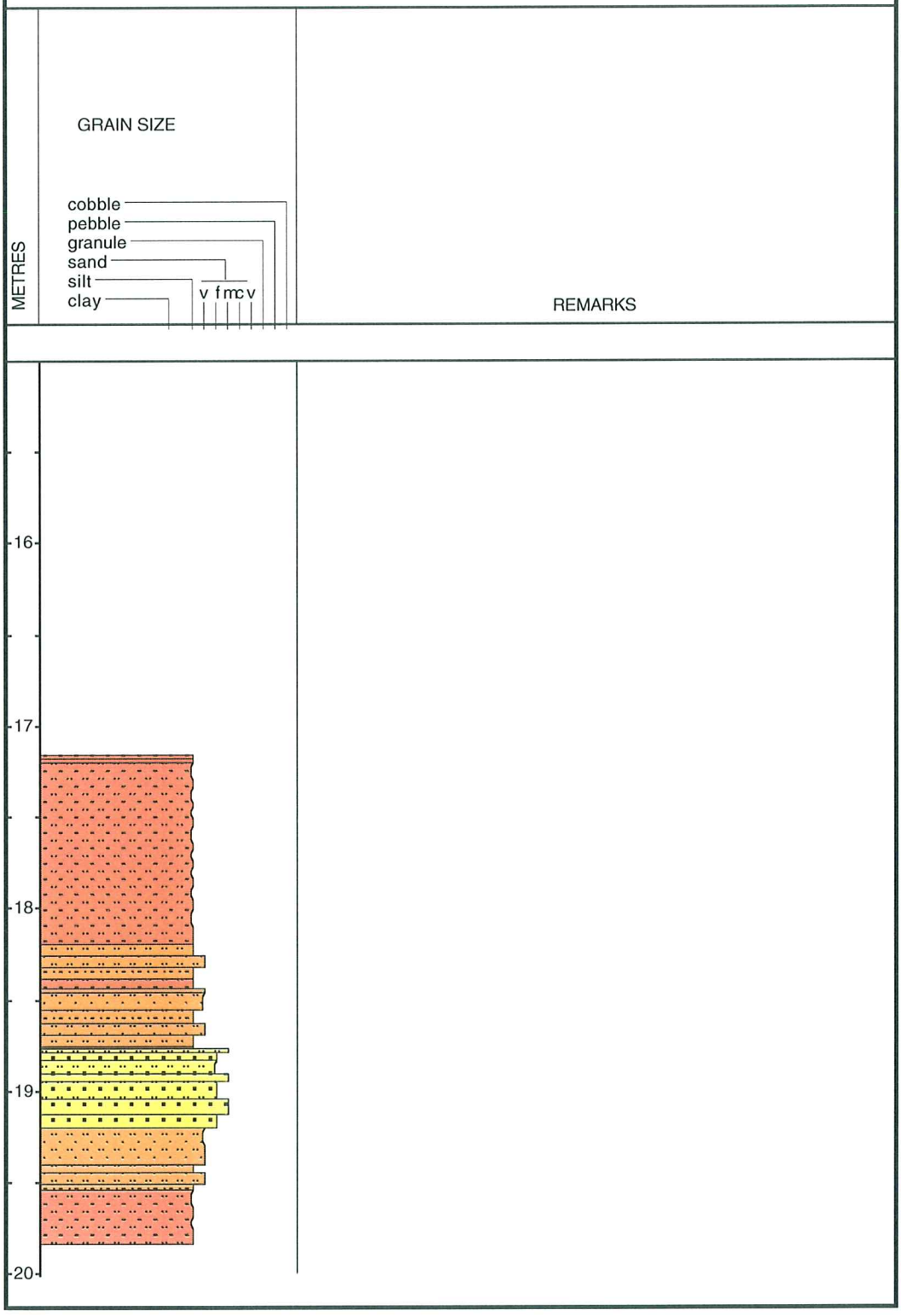

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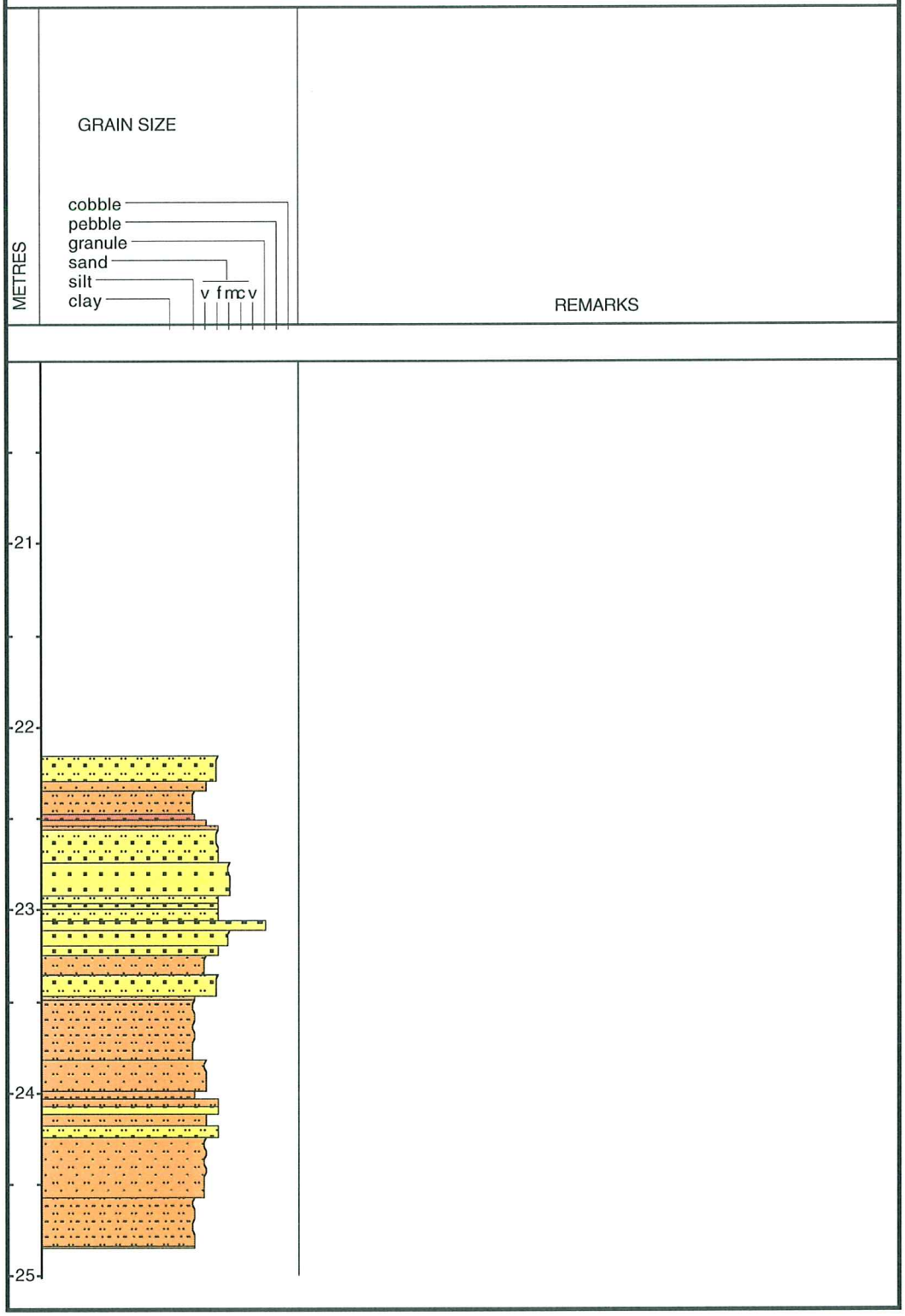

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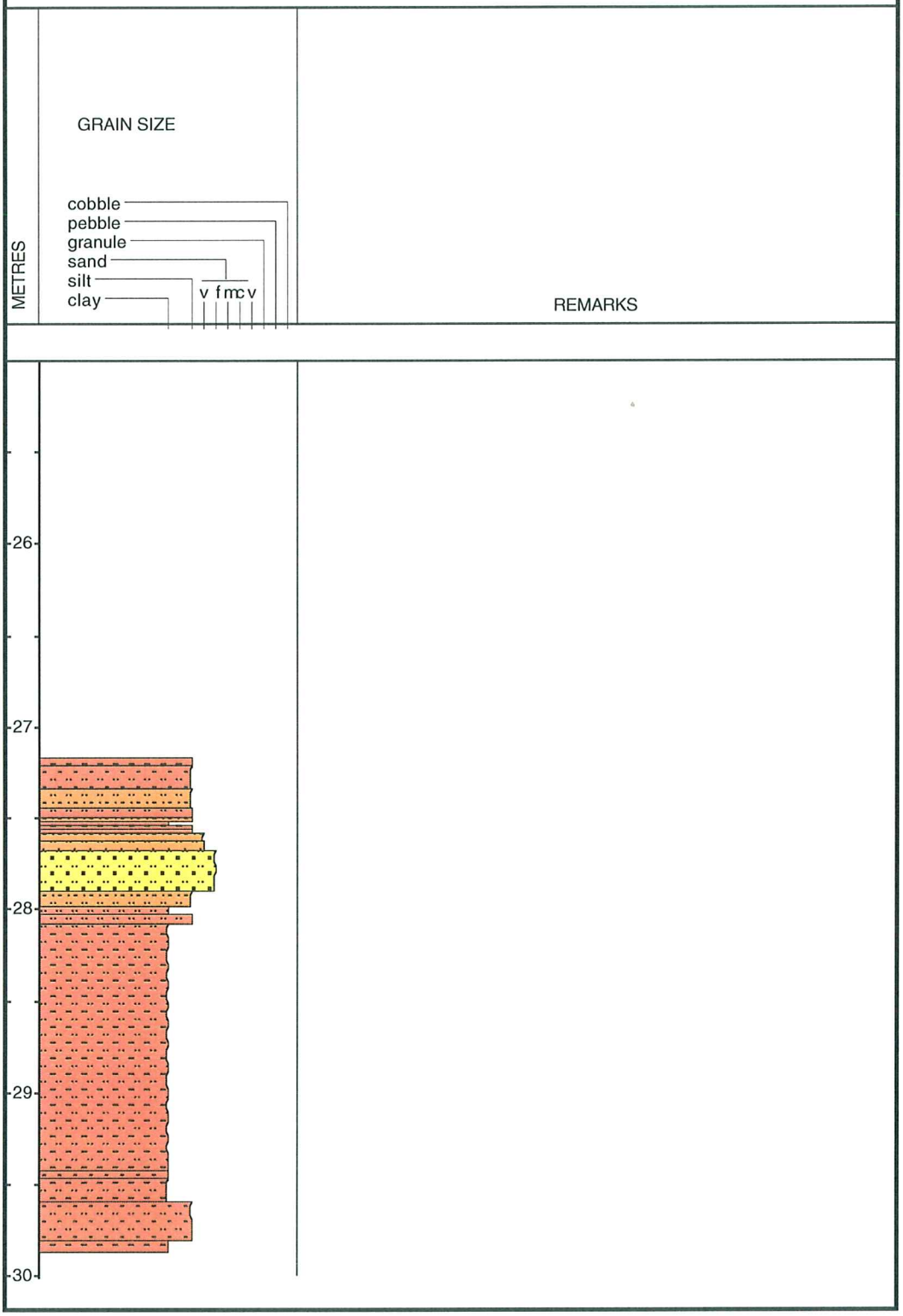

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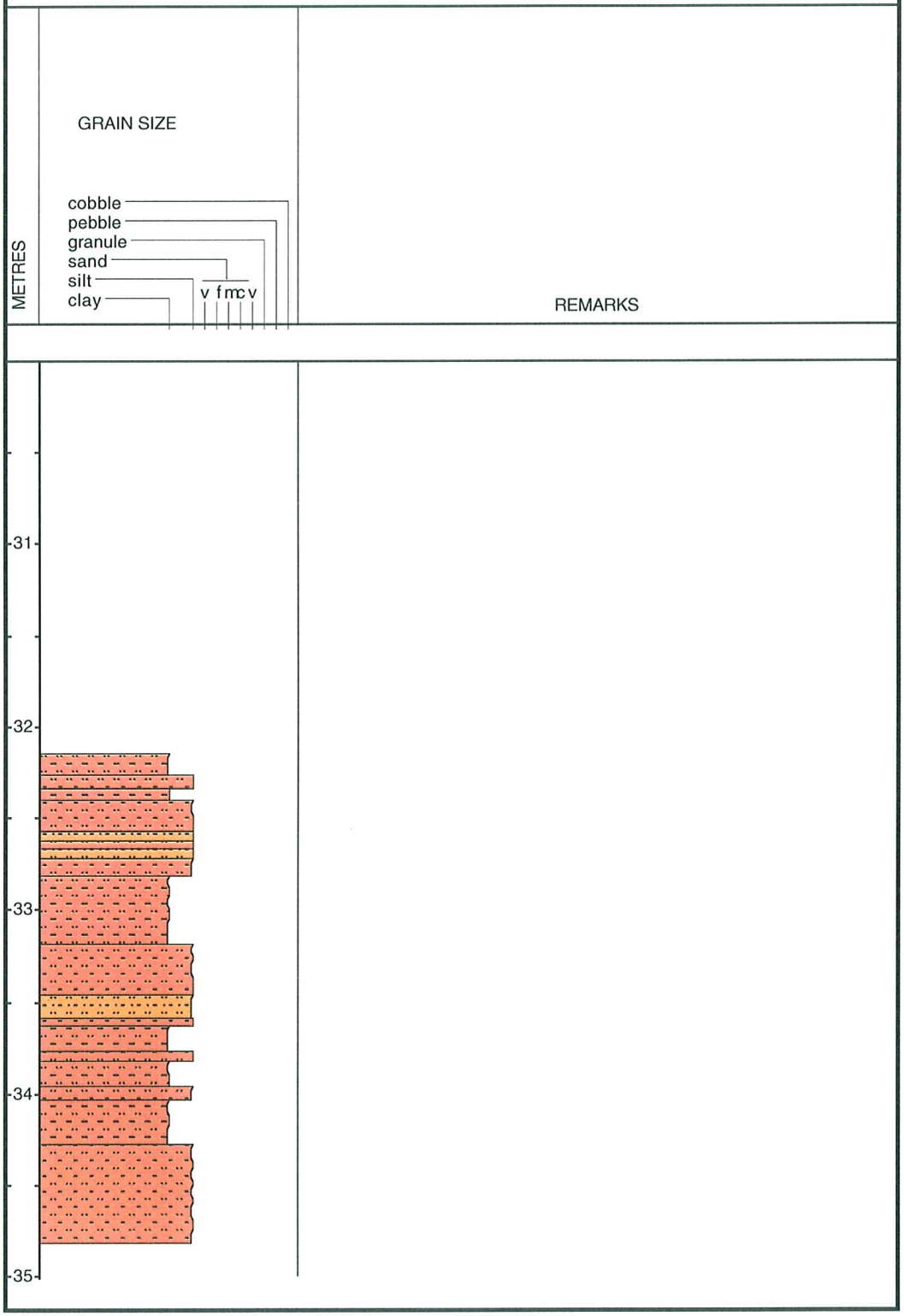

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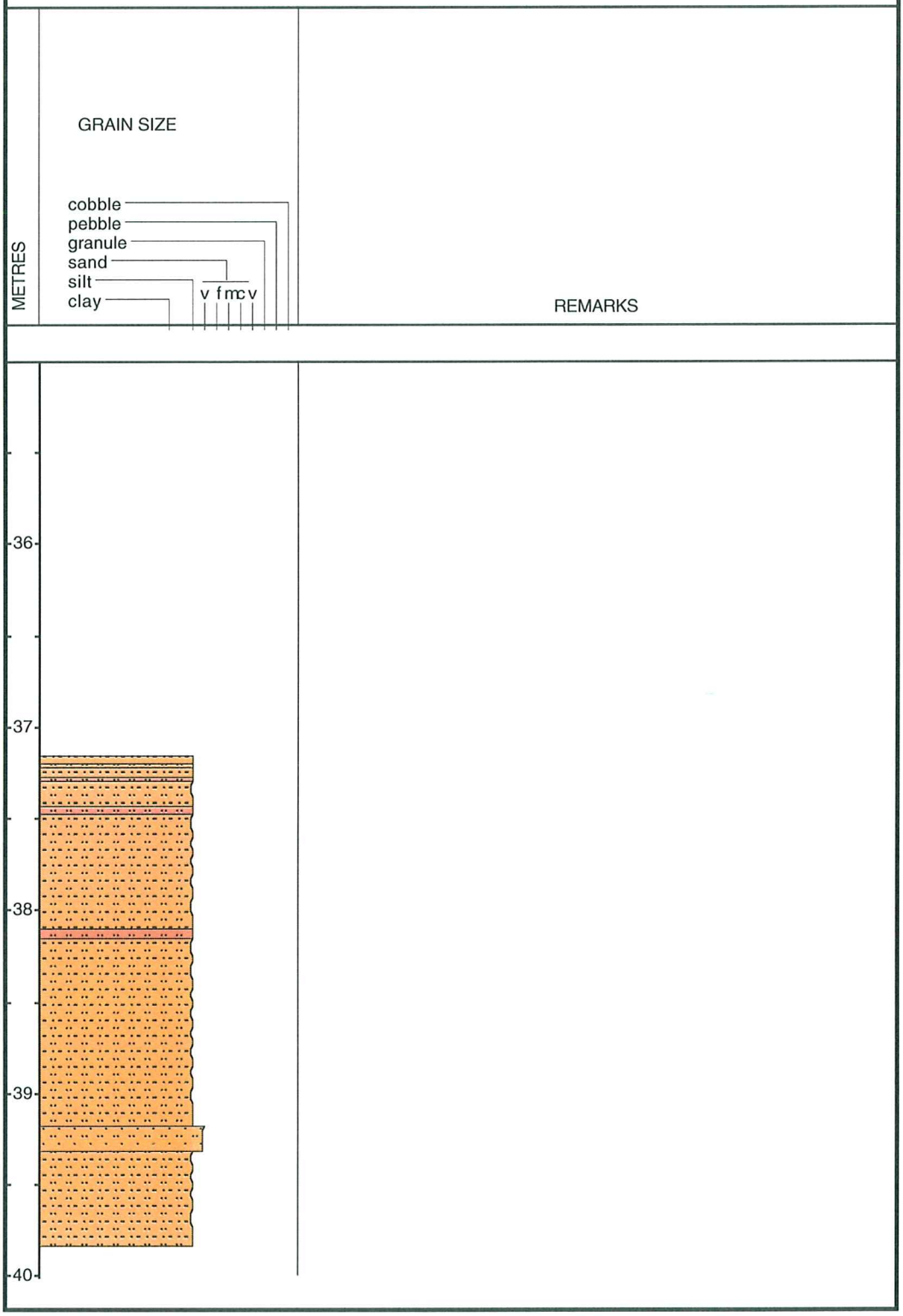
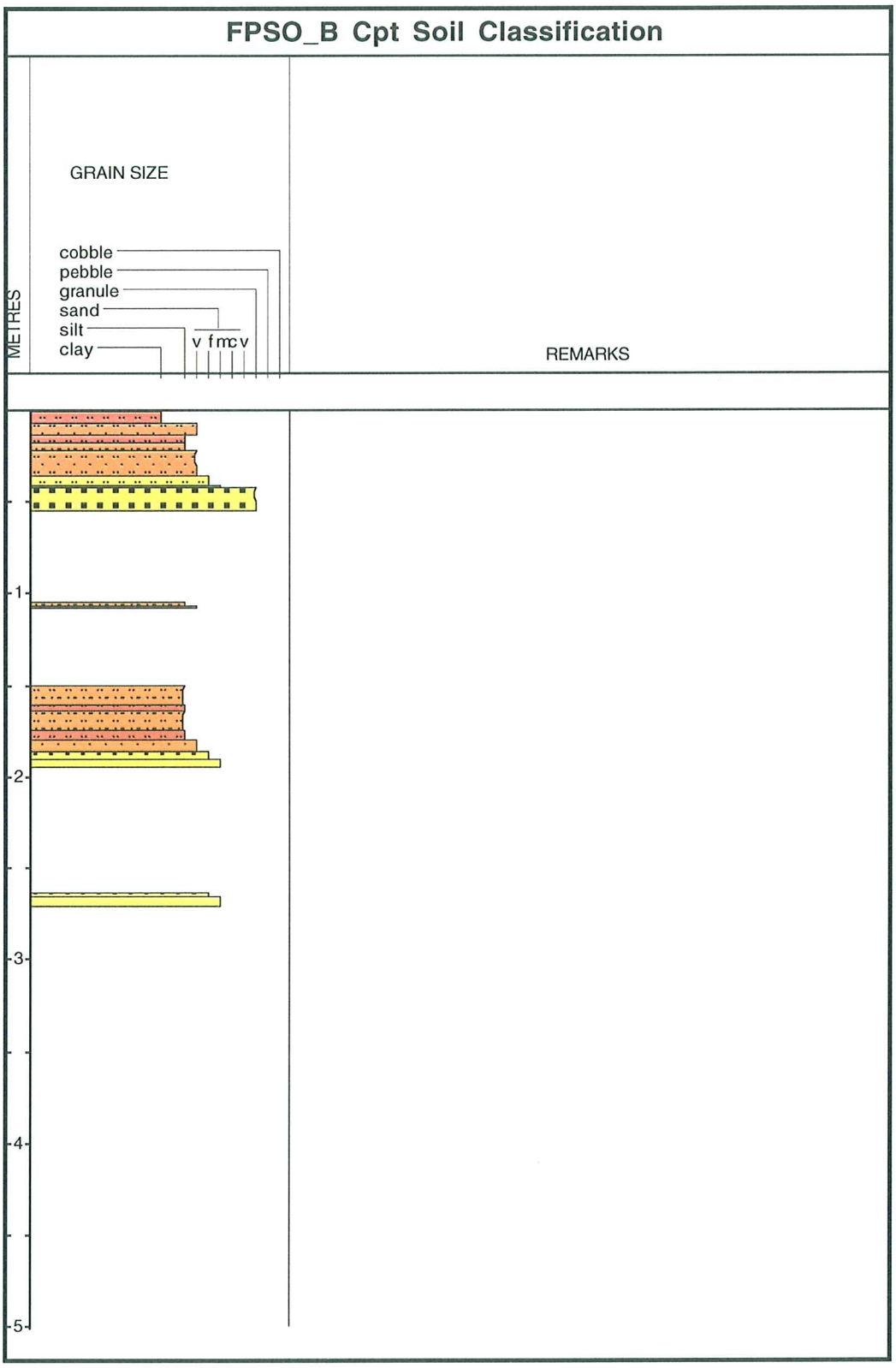
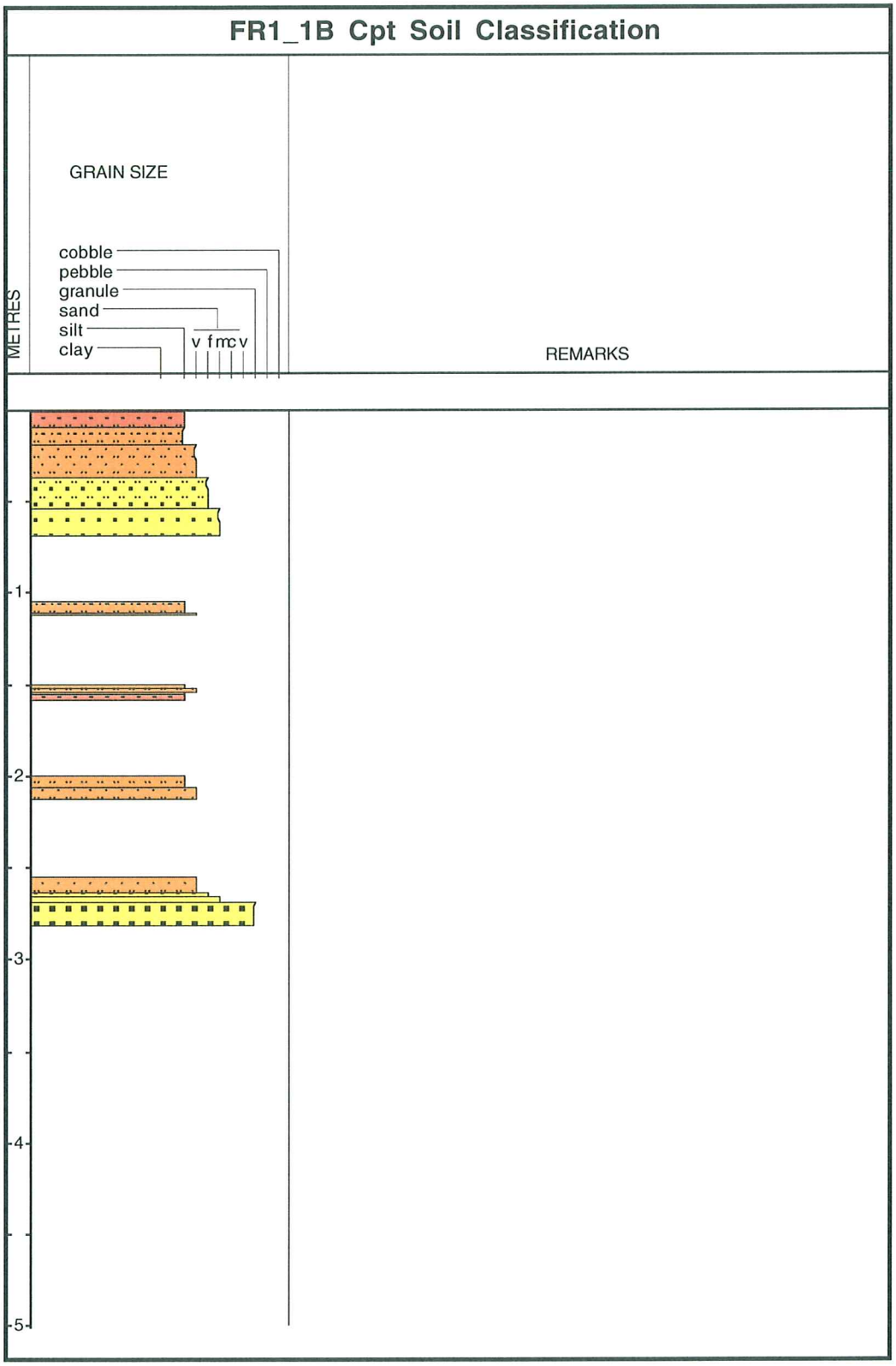


FPSO_B Cpt Soil Classification



FR1_1B Cpt Soil Classification



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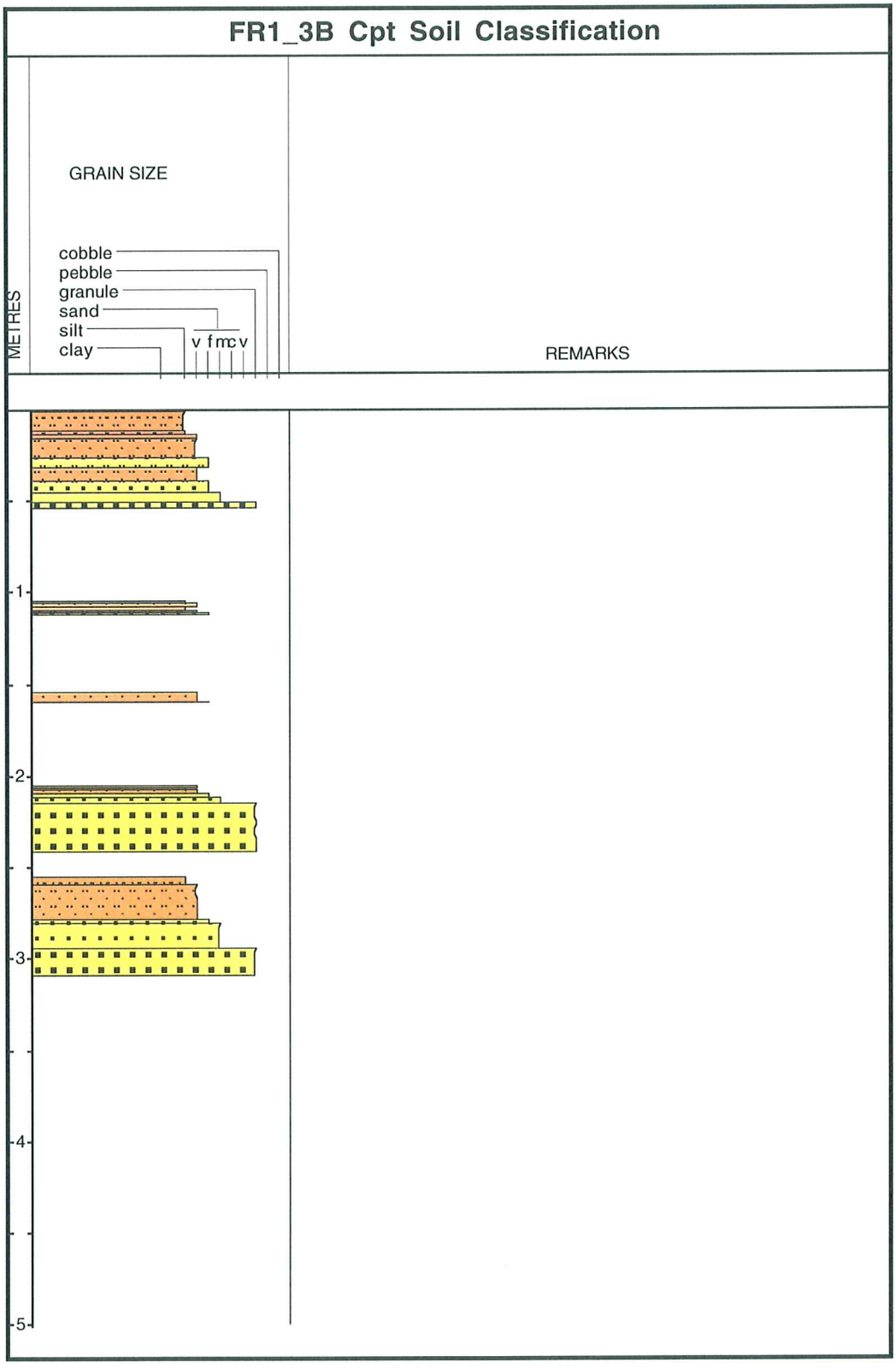
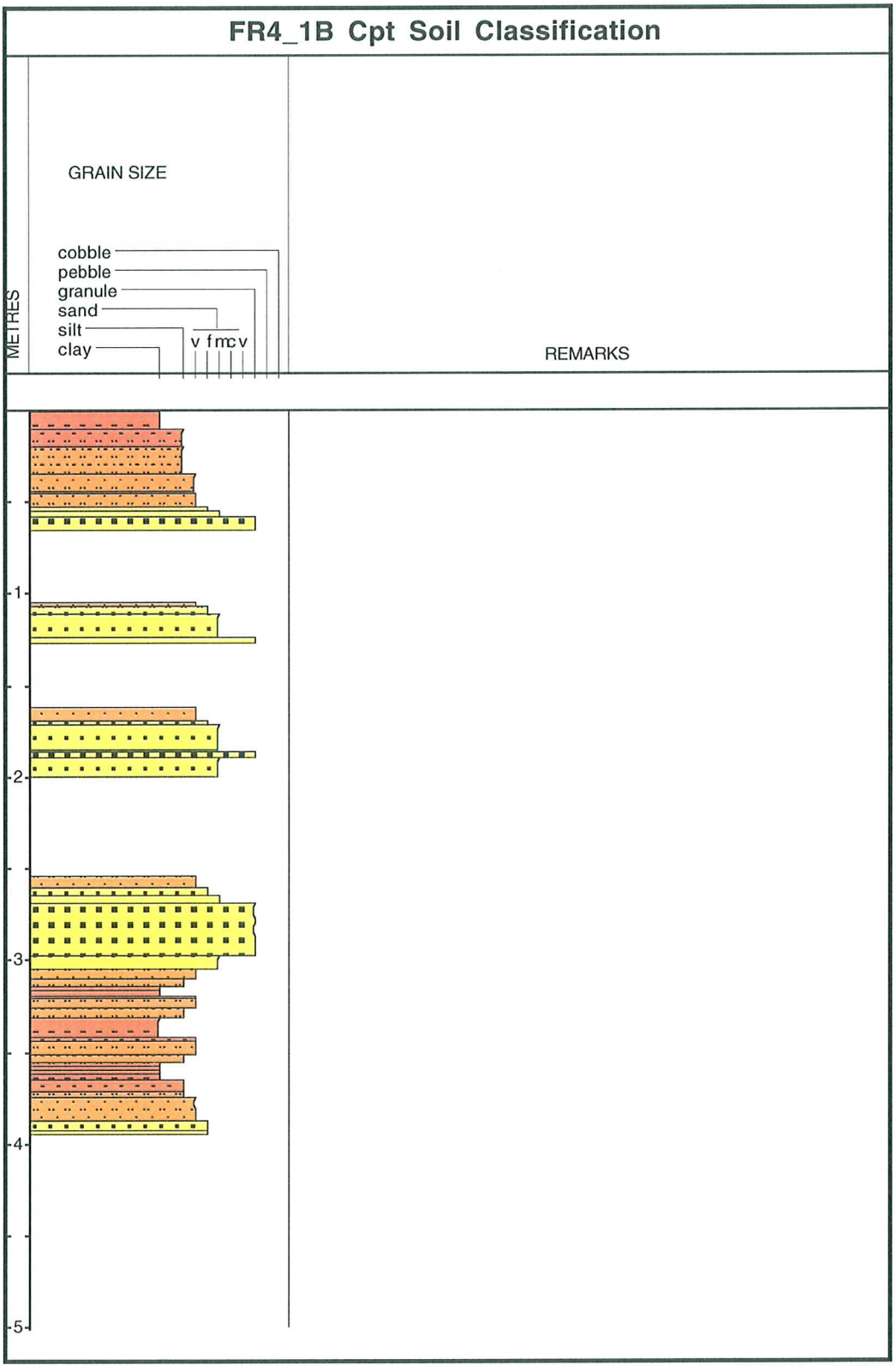
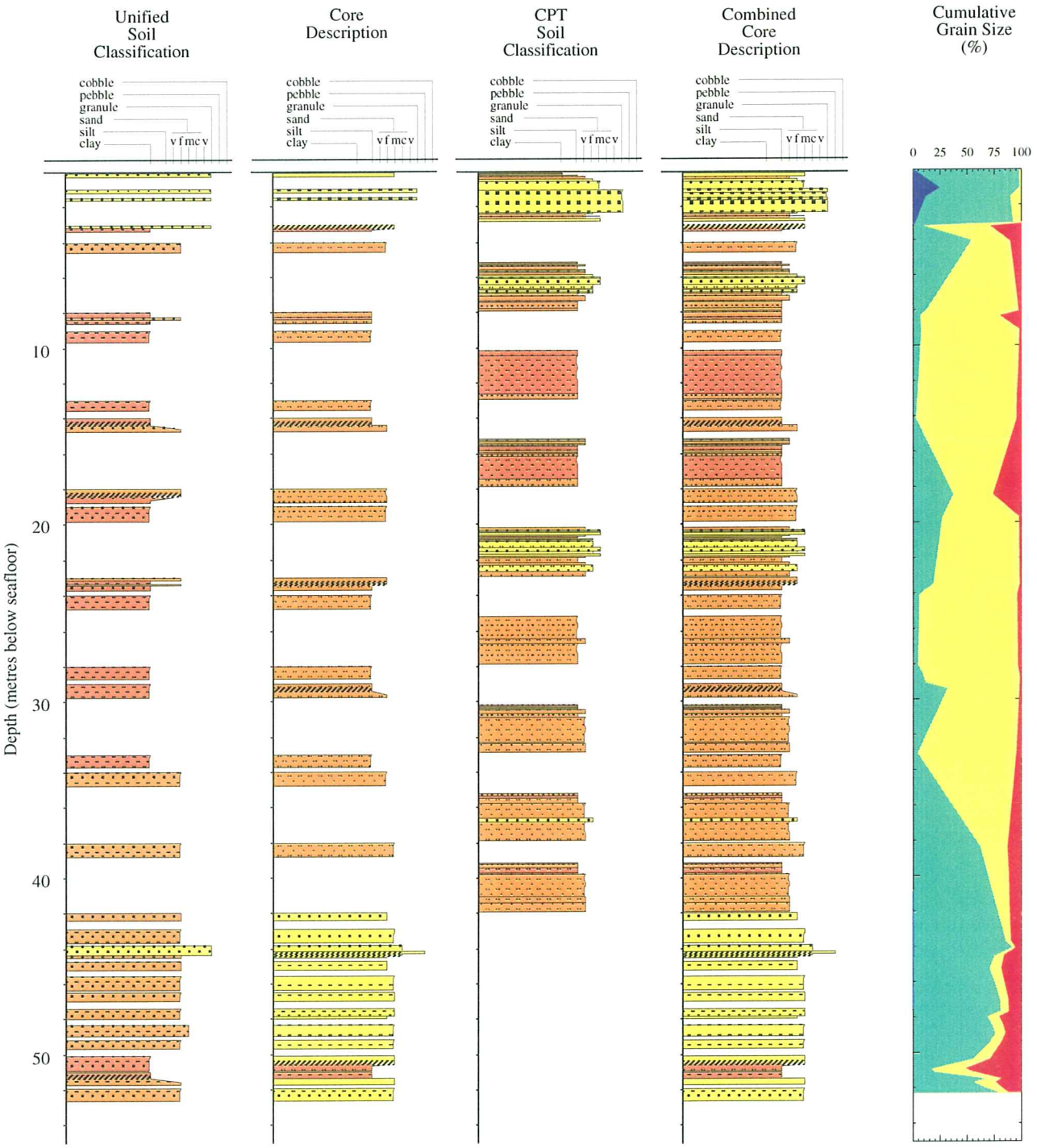


FR4_1B Cpt Soil Classification

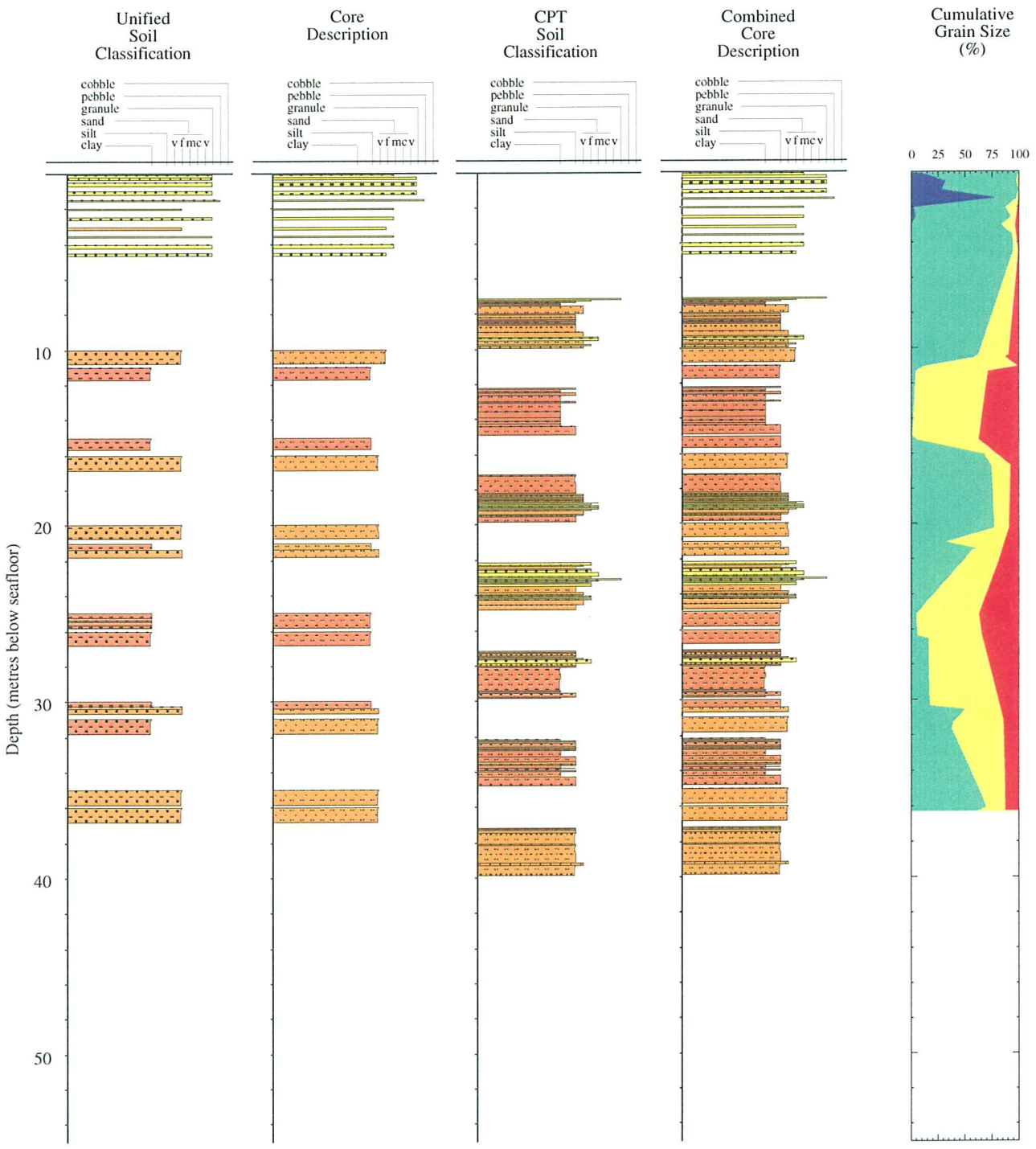


Appendix 6

GS1_97


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
cobble
pebble
granule
sand
silt
clay
v f m c v
0 25 50 75 100
Depth (metres below seafloor)
10
20
30
40
50

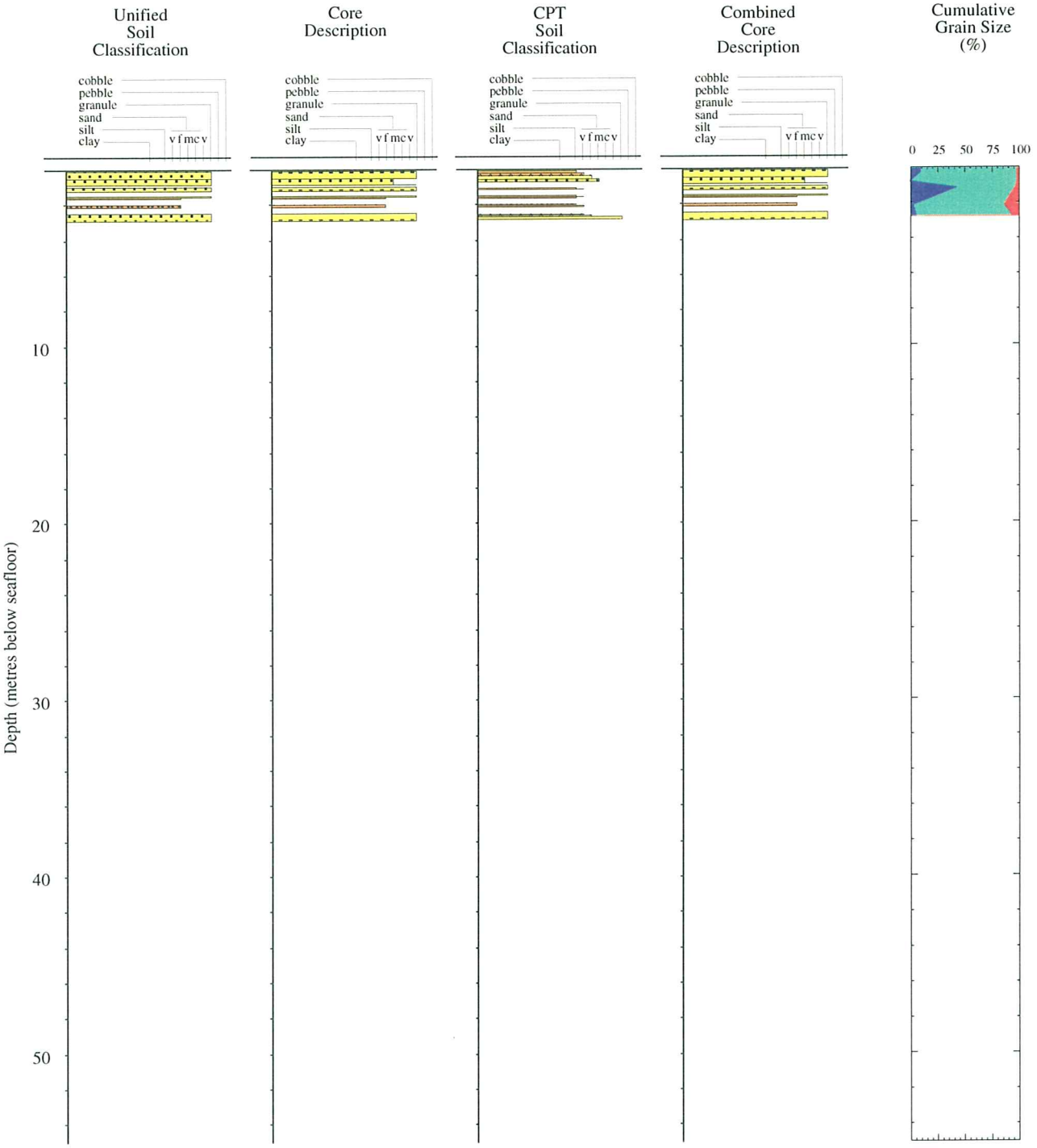
A3_97


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
cobble
pebble
granule
sand
silt
clay
v f m c v
0 25 50 75 100
Depth (metres below seafloor)
10
20
30
40
50

FPSO_B


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
cobble
pebble
granule
sand
silt
clay
v f m c v
0 25 50 75 100
Depth (metres below seafloor)
10
20
30
40
50

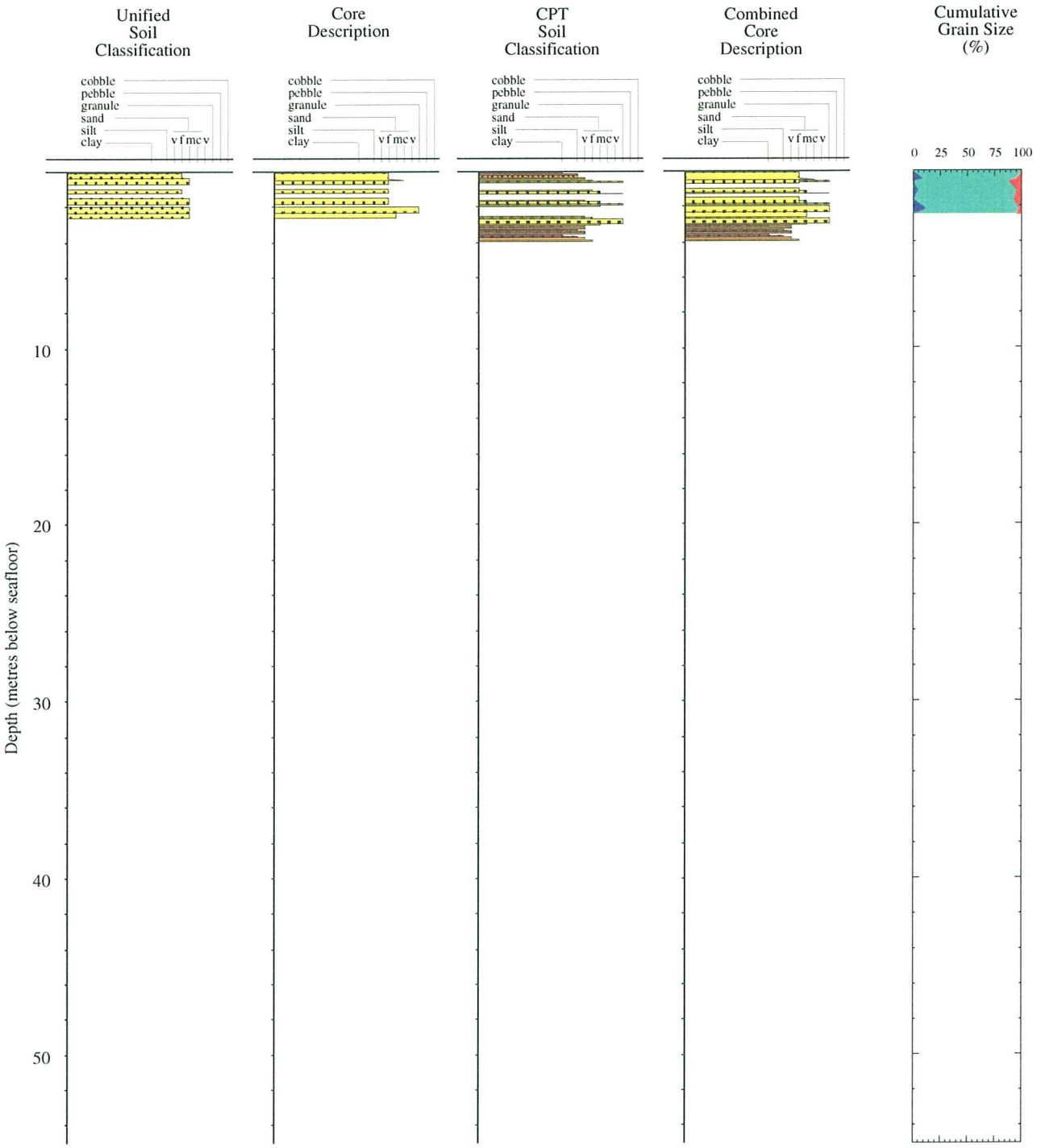
FR1_1B


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
cobble
pebble
granule
sand
silt
clay
v f m c v
0 25 50 75 100
Depth (metres below seafloor)
10
20
30
40
50

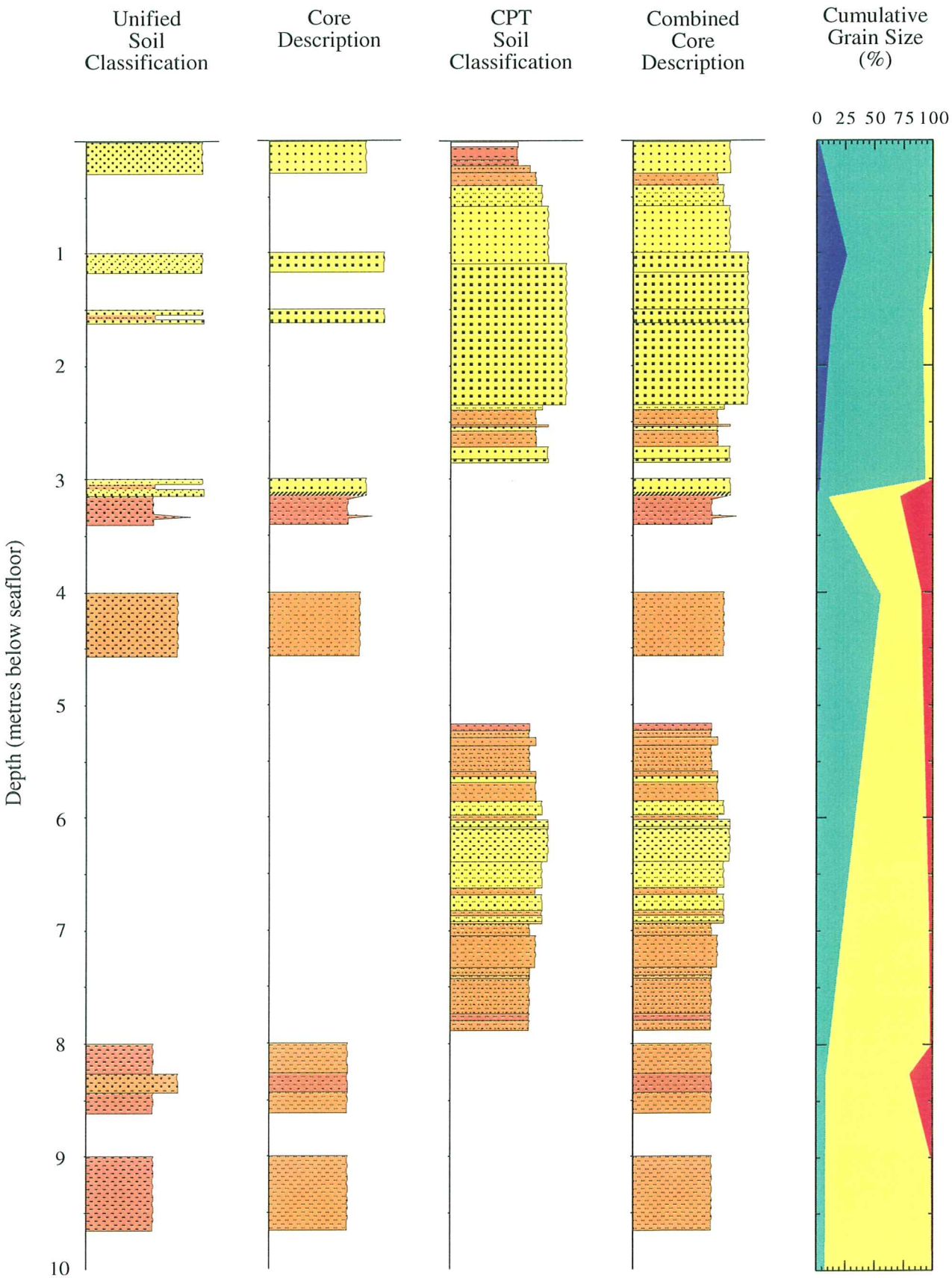
FR1_3B


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
cobble
pebble
granule
sand
silt
clay
v f m c v
0 25 50 75 100
Depth (metres below seafloor)
10
20
30
40
50

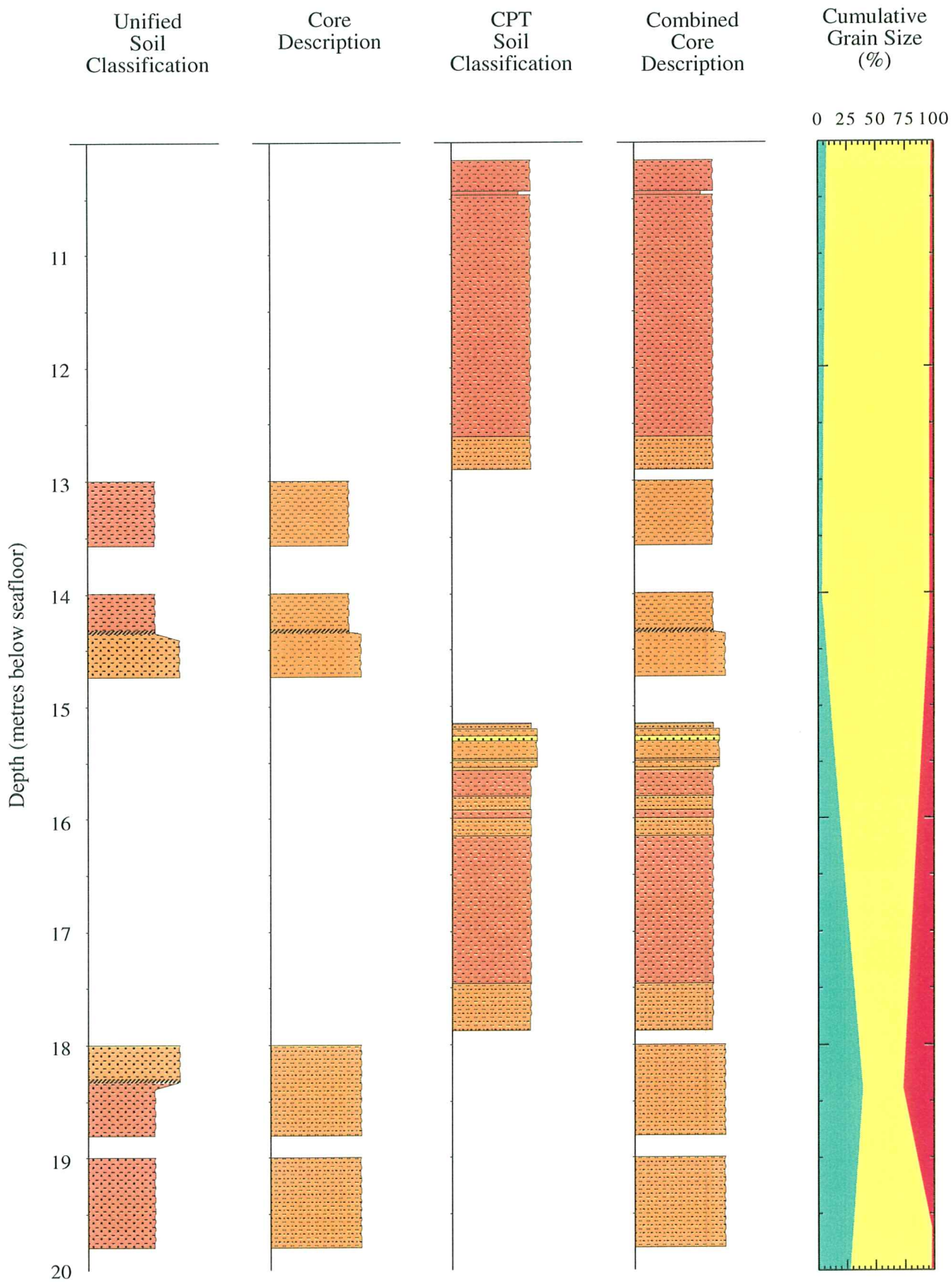
FR4_1B


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
cobble
pebble
granule
sand
silt
clay
v f m c v
0 25 50 75 100
Depth (metres below seafloor)
10
20
30
40
50

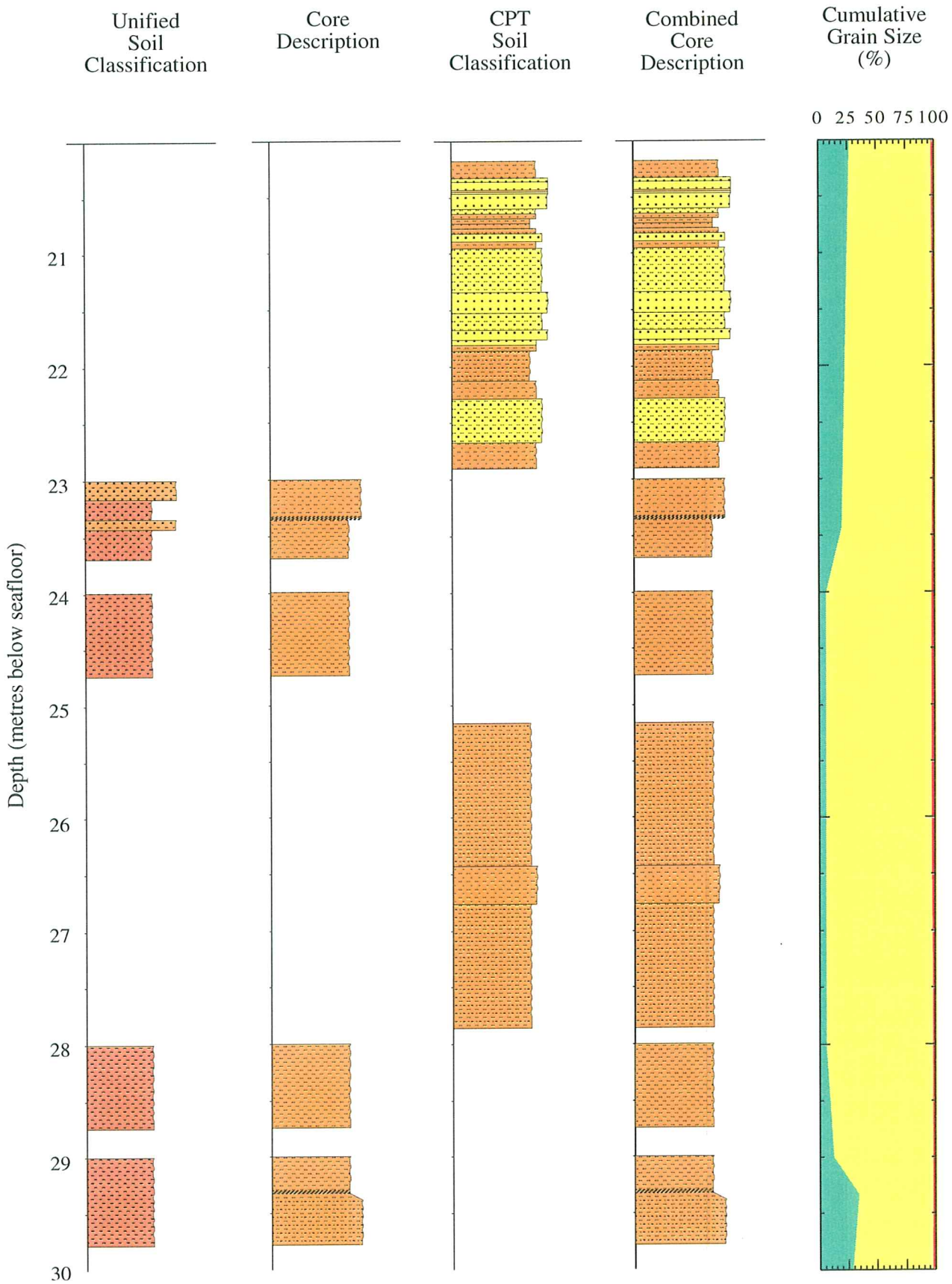
GS1_97


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10

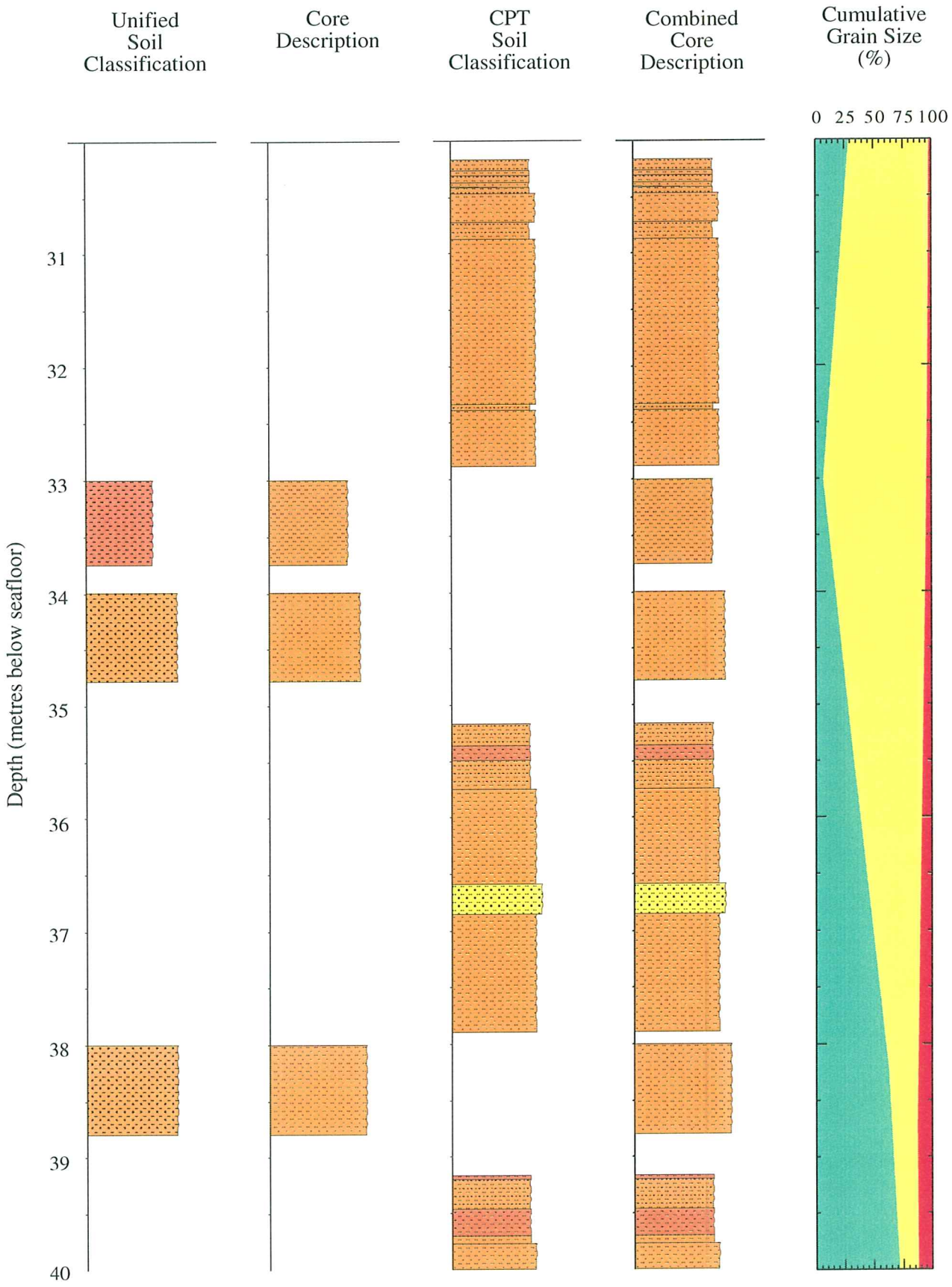
GS1_97


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
11
12
13
14
15
16
17
18
19
20

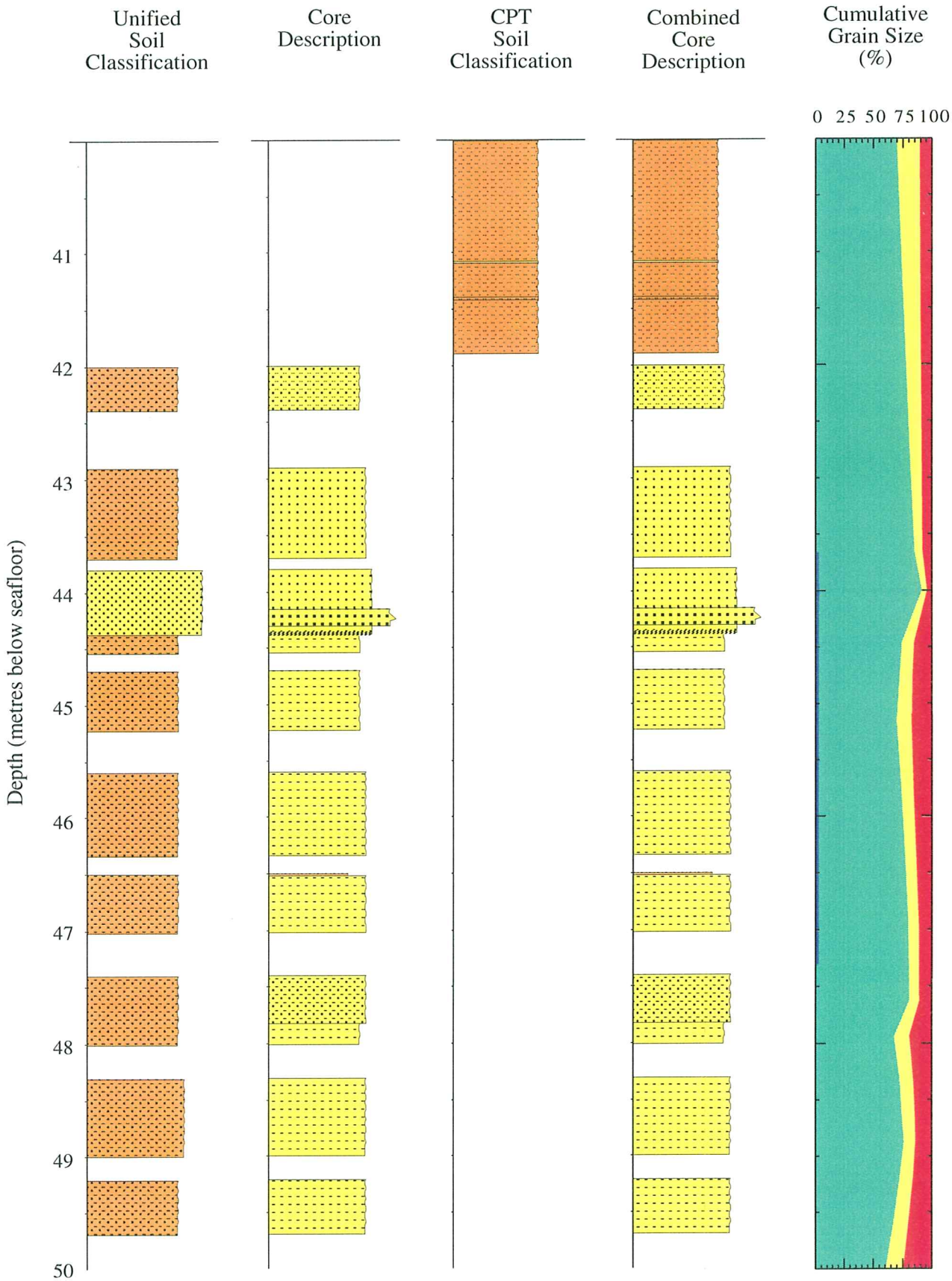
GS1_97


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
21
22
23
24
25
26
27
28
29
30

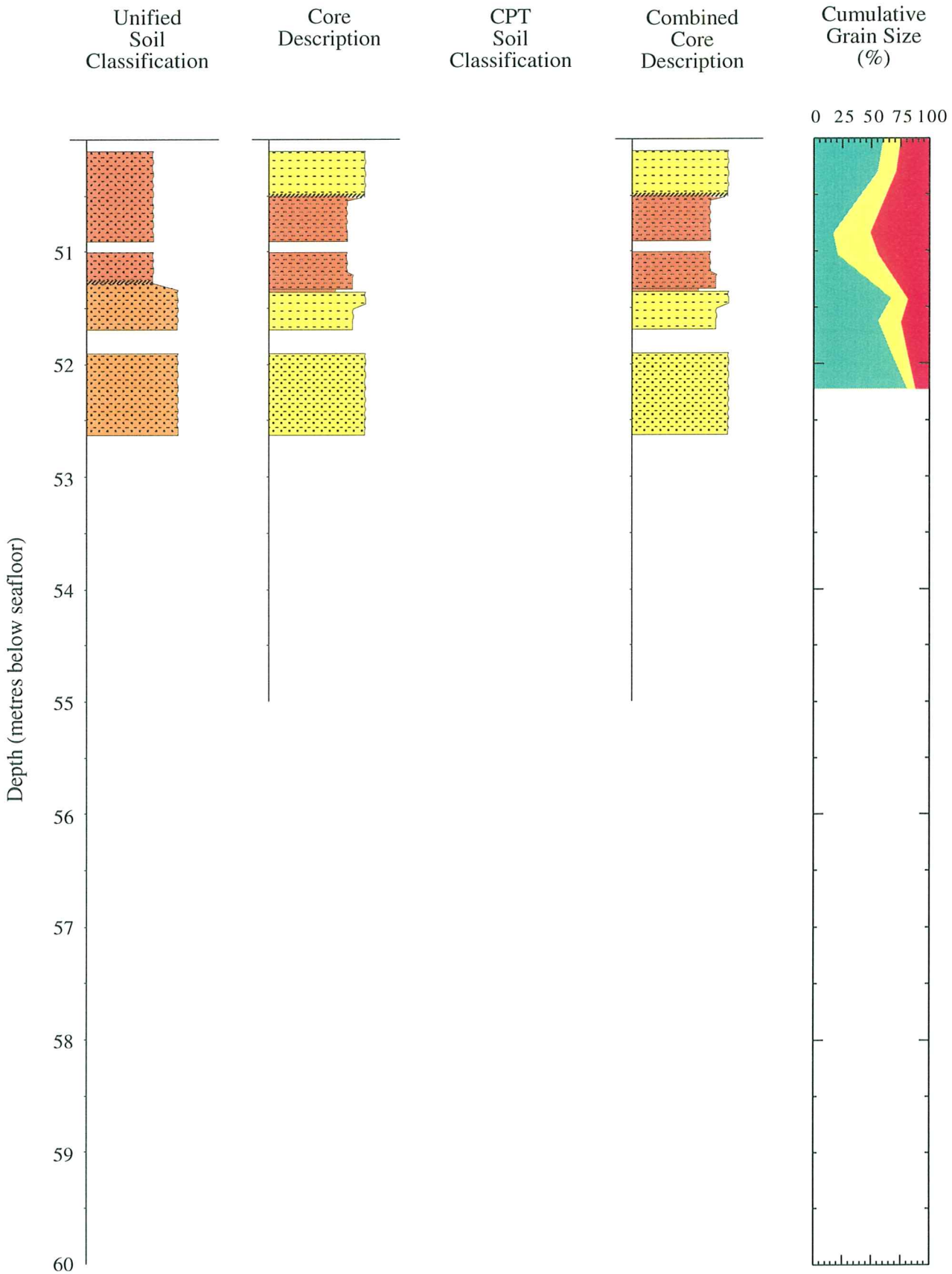
GS1_97


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
31
32
33
34
35
36
37
38
39
40

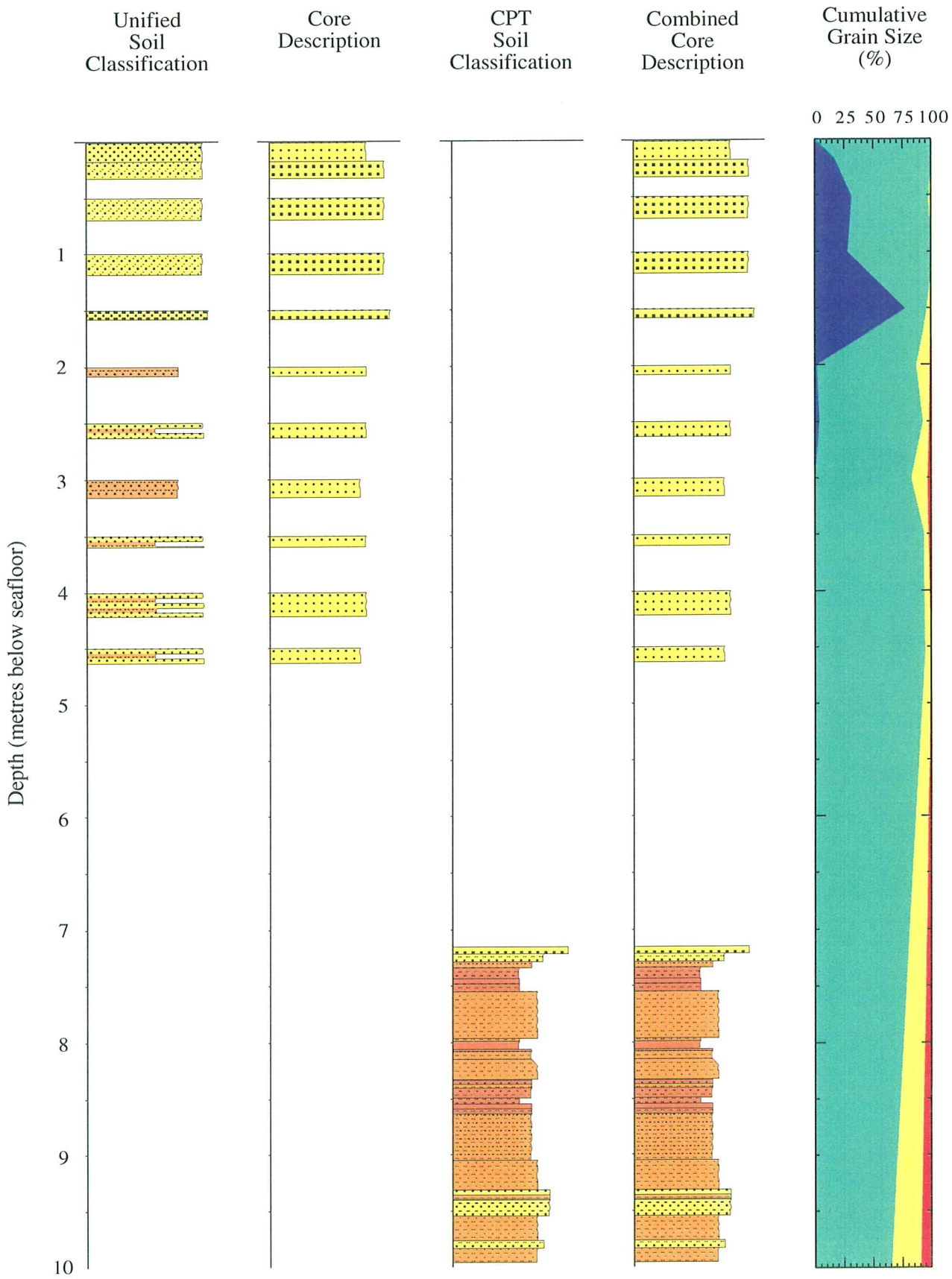
GS1_97

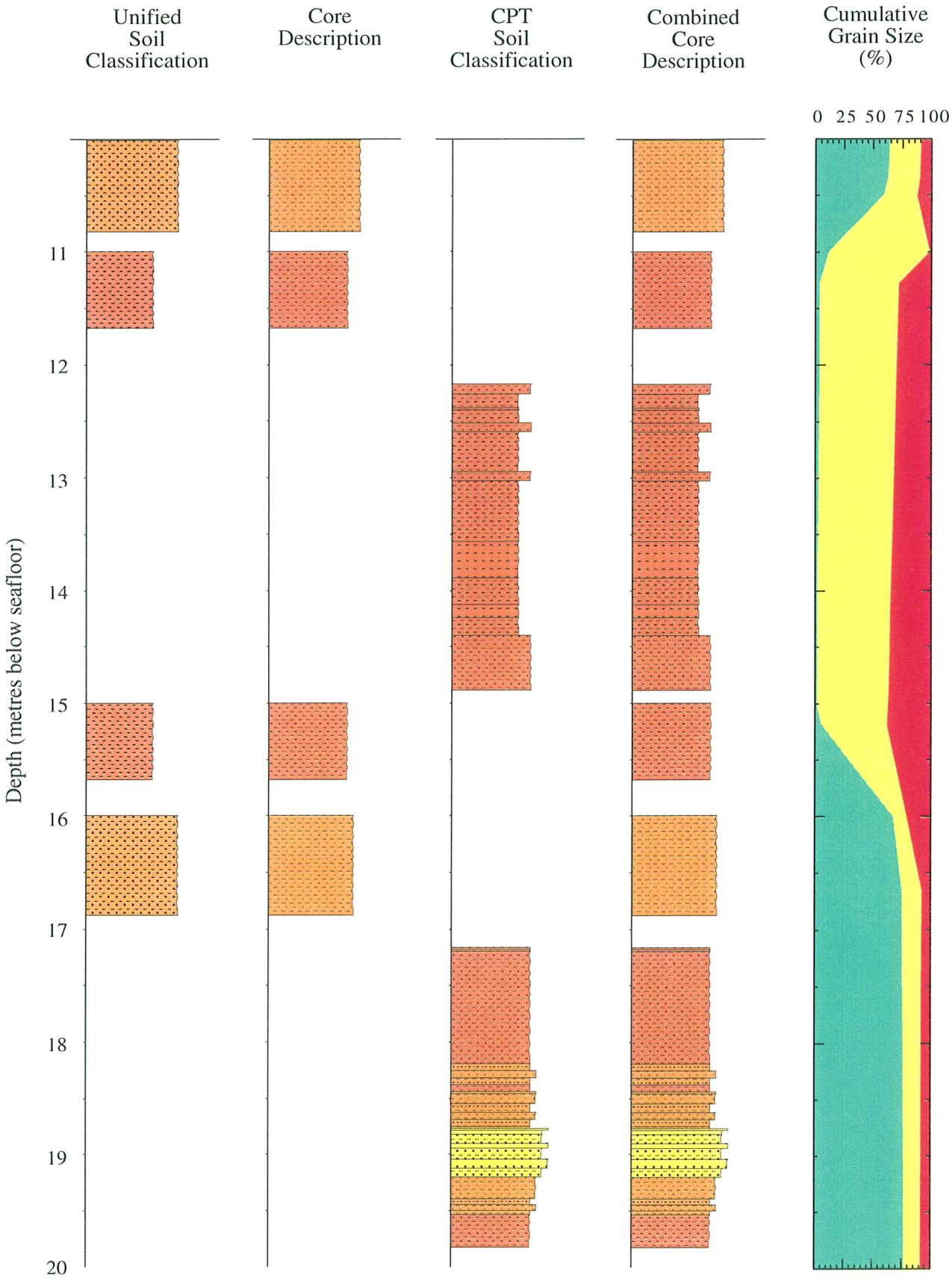

Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
41
42
43
44
45
46
47
48
49
50

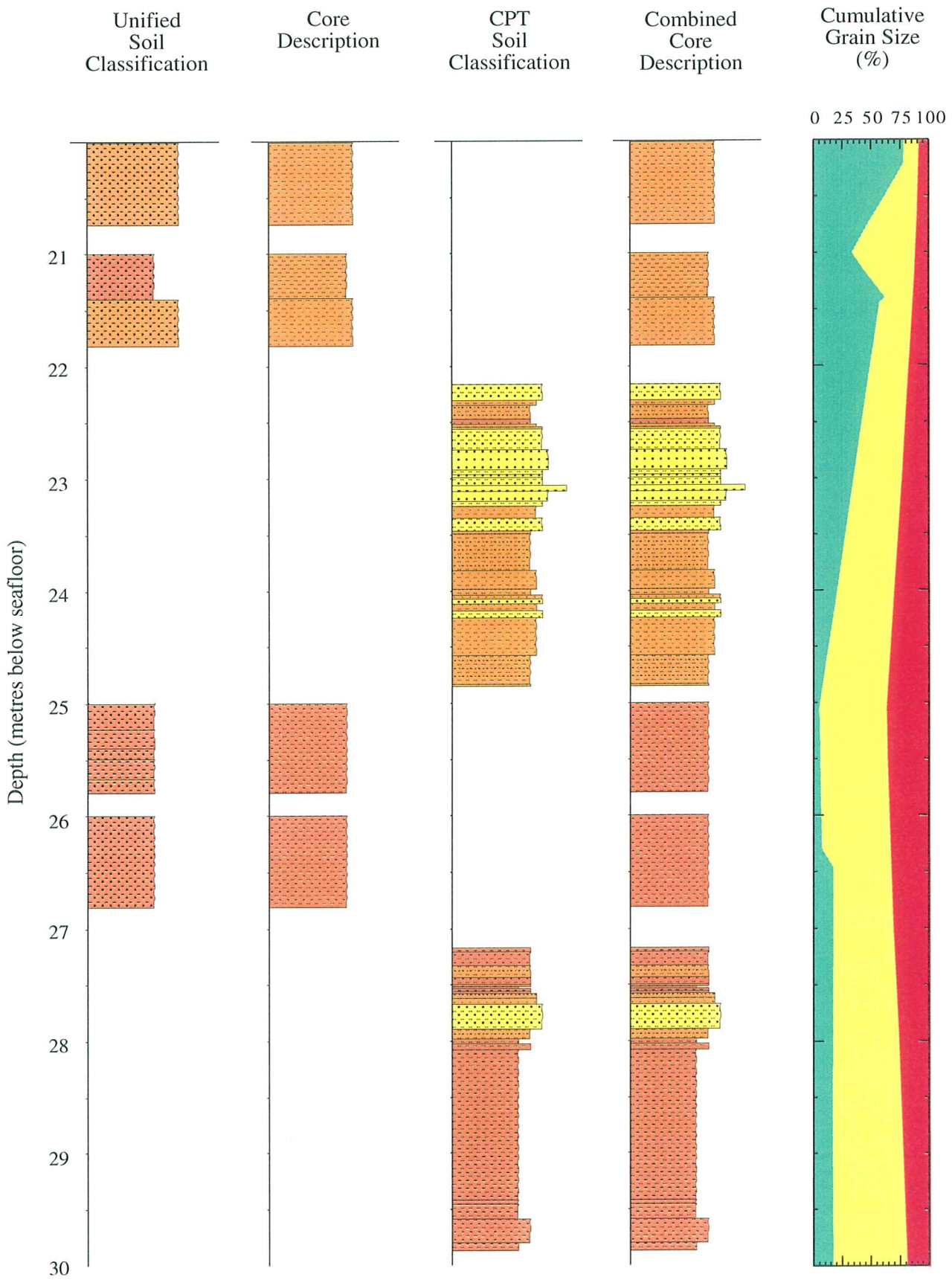
GS1_97

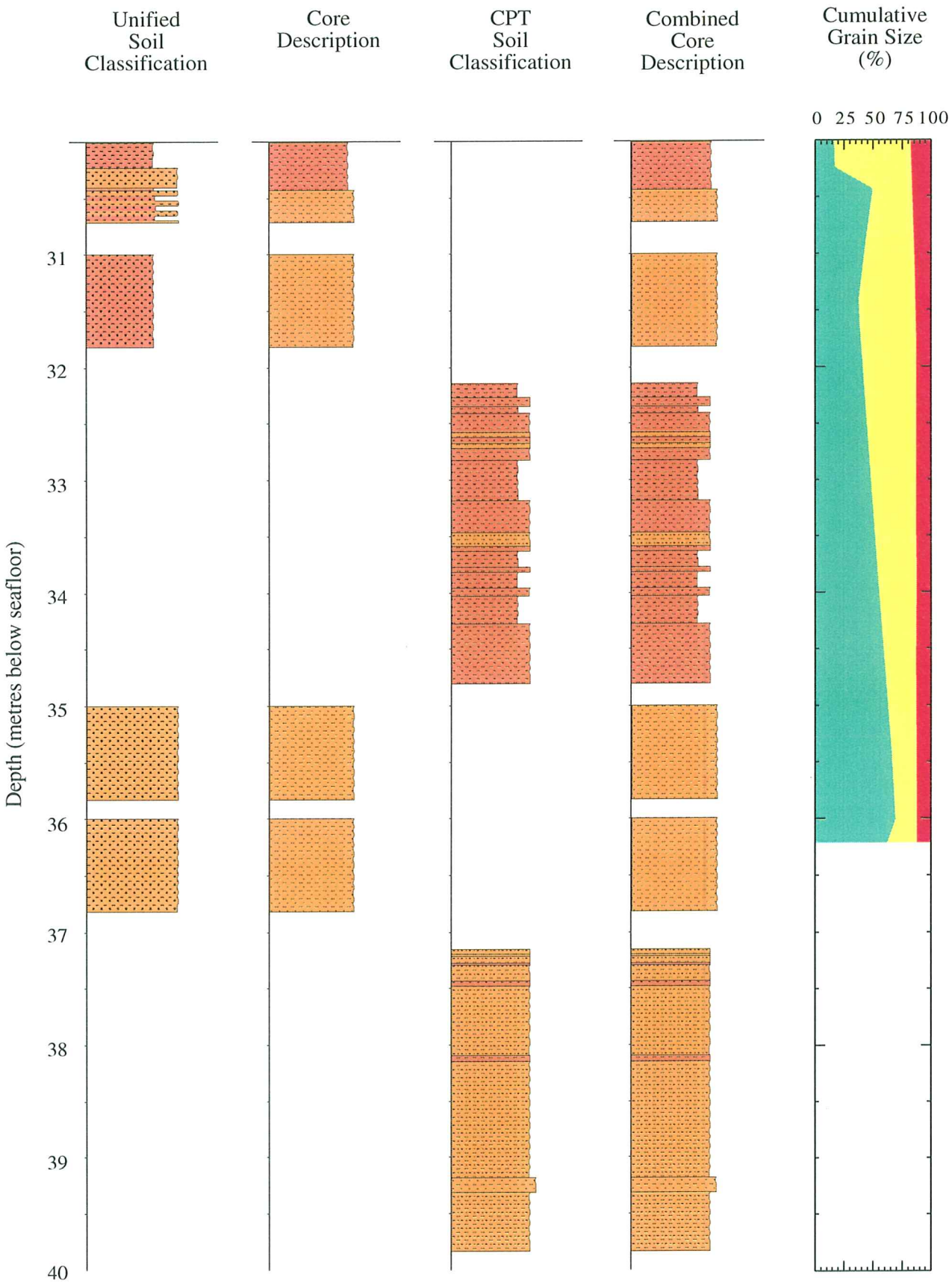

Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
51
52
53
54
55
56
57
58
59
60

A3_97

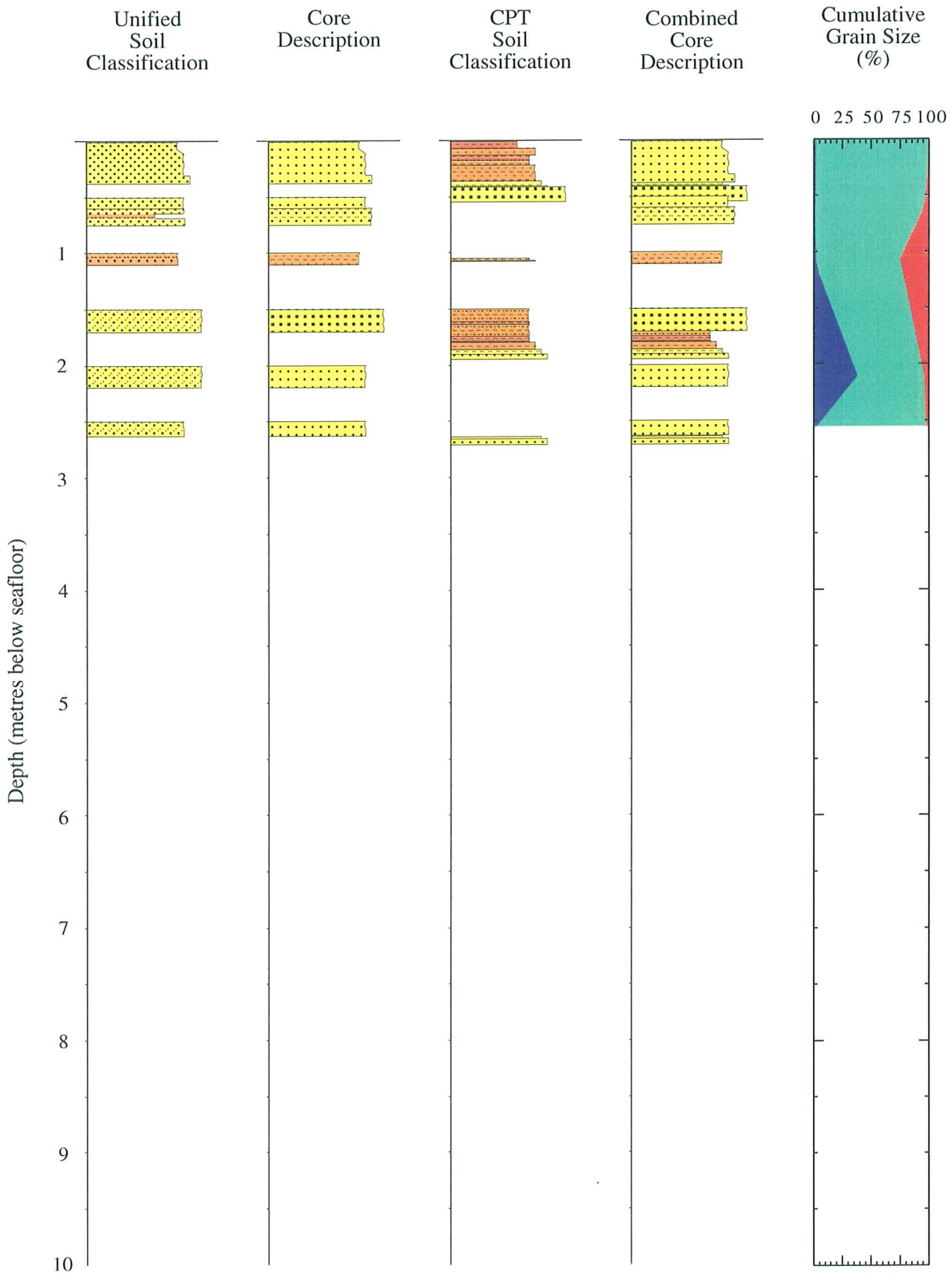

Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
11
12
13
14
15
16
17
18
19
20

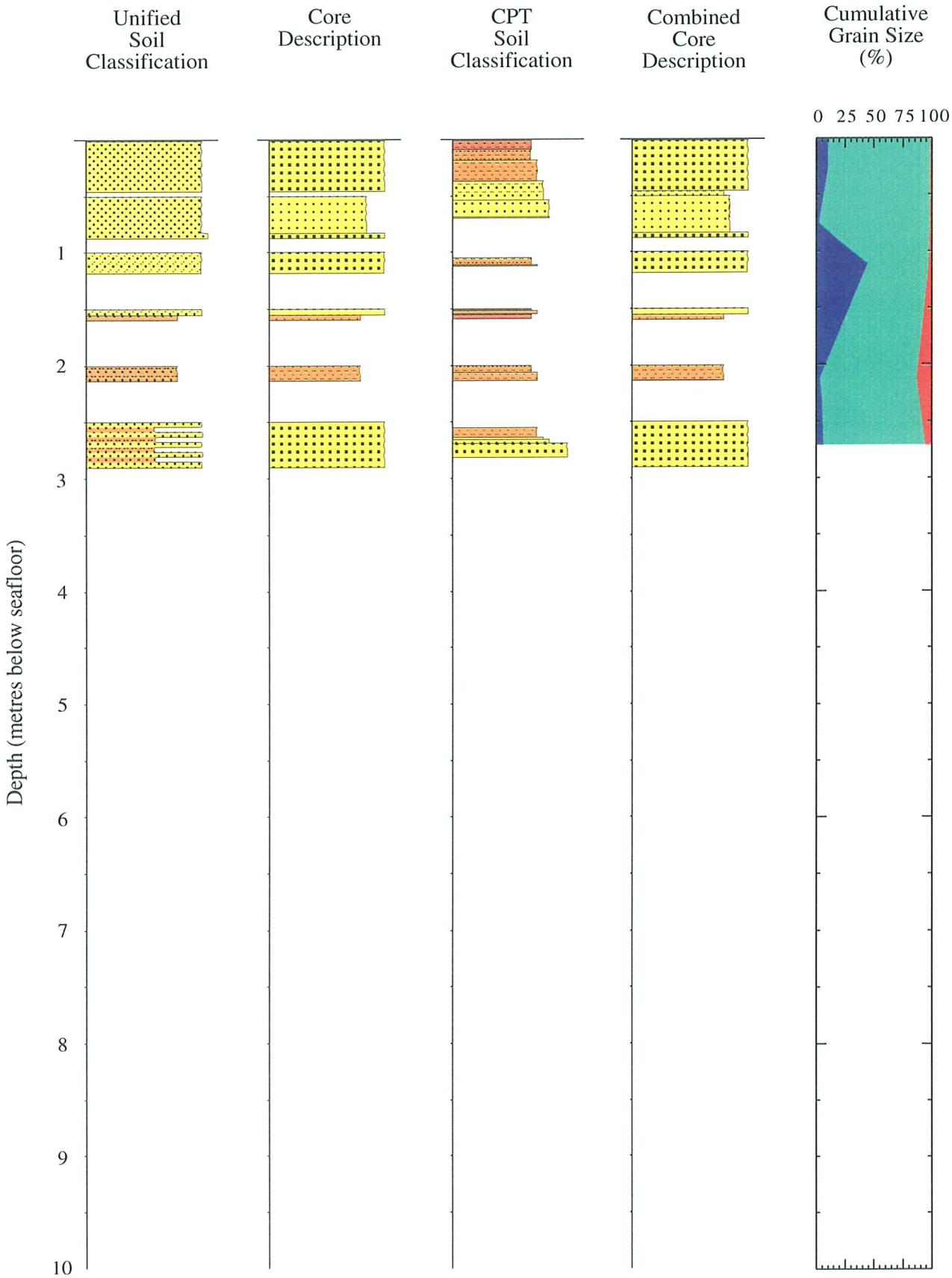

Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
21
22
23
24
25
26
27
28
29
30


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
31
32
33
34
35
36
37
38
39
40

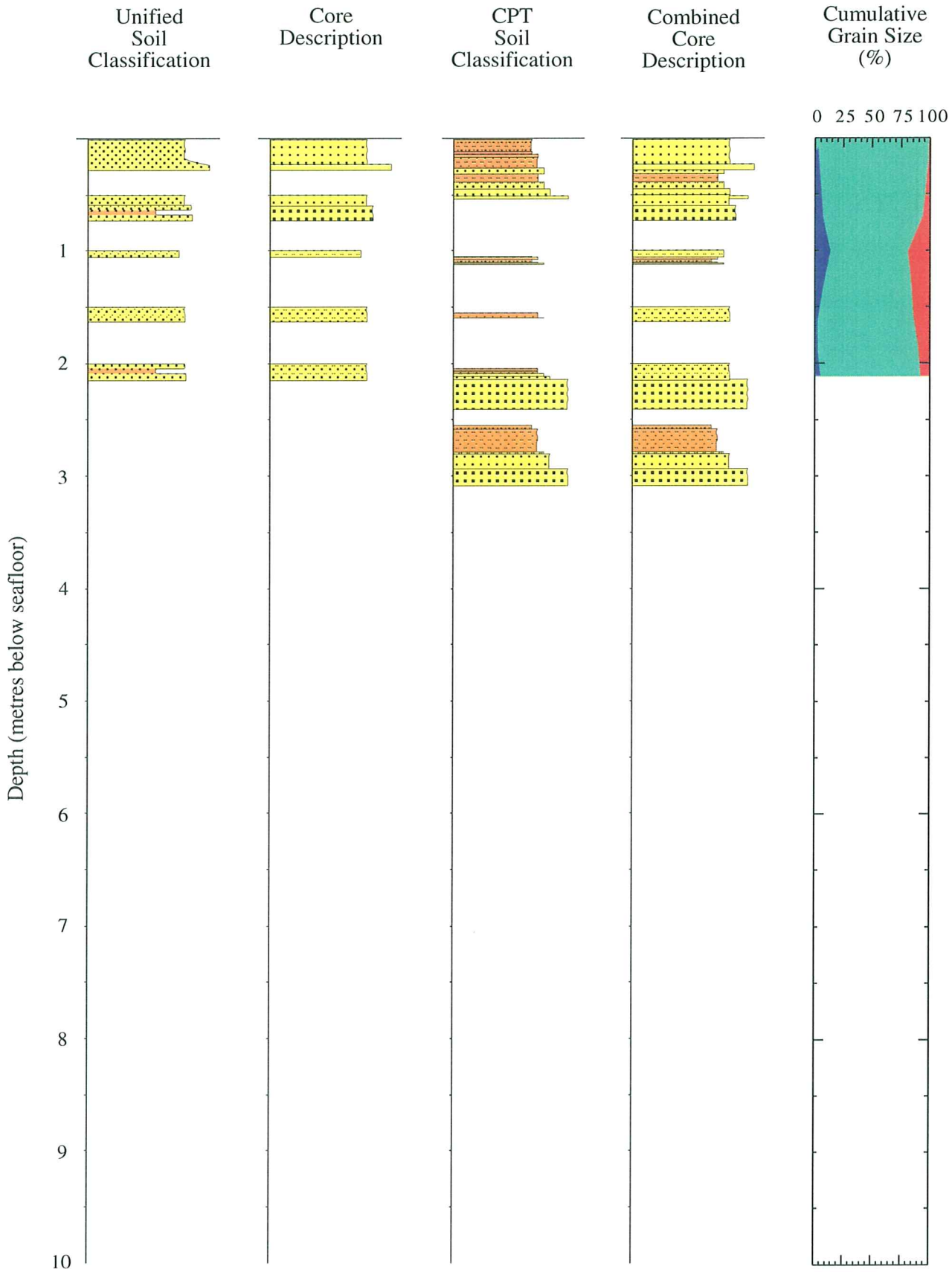
FPSO_B


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10

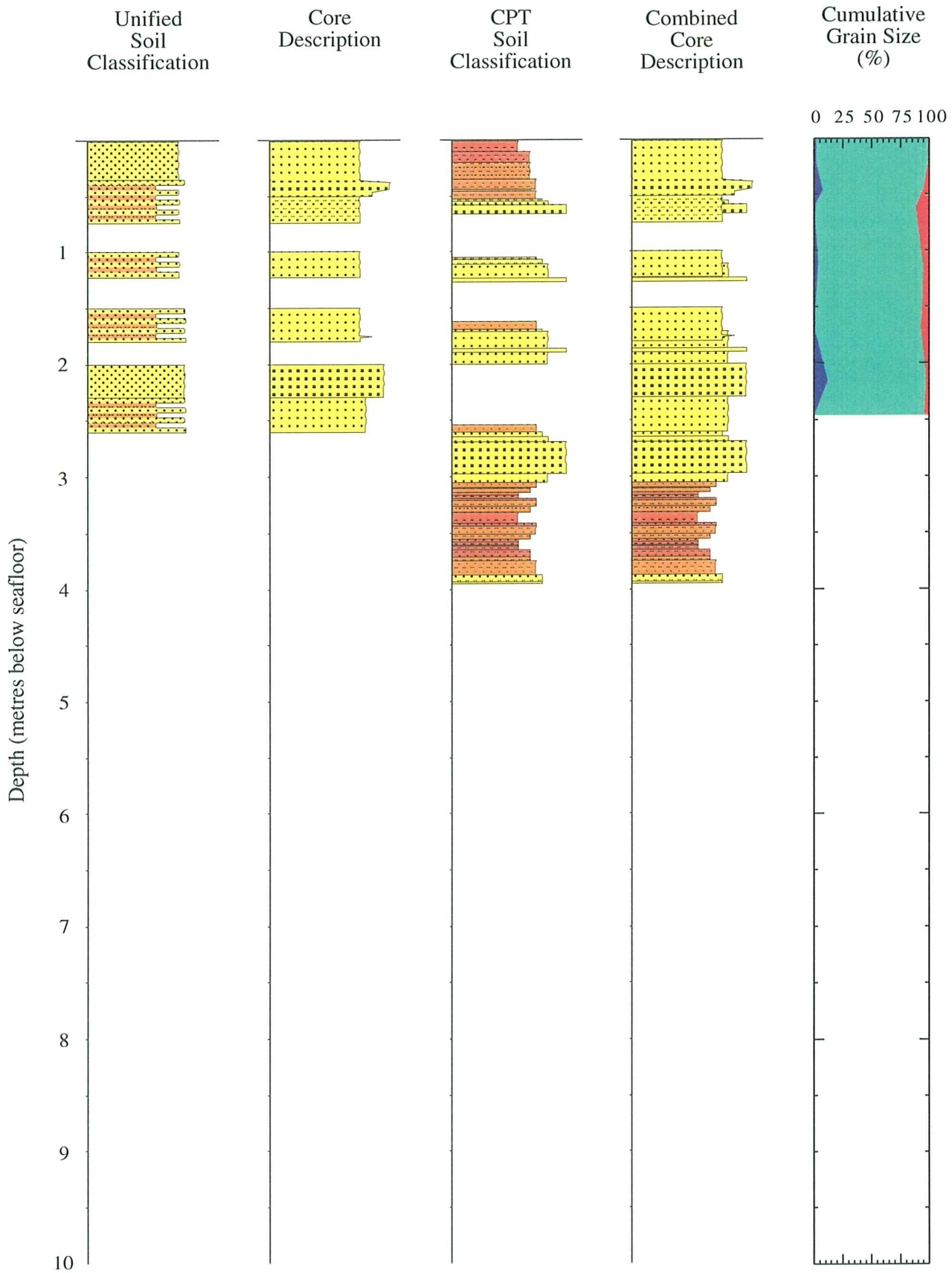
FR1_1B


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10

FR1_3B


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10

FR4_1B


Unified Soil Classification
Core Description
CPT Soil Classification
Combined Core Description
Cumulative Grain Size (%)
0 25 50 75 100
Depth (metres below seafloor)
1
2
3
4
5
6
7
8
9
10

Appendix 2

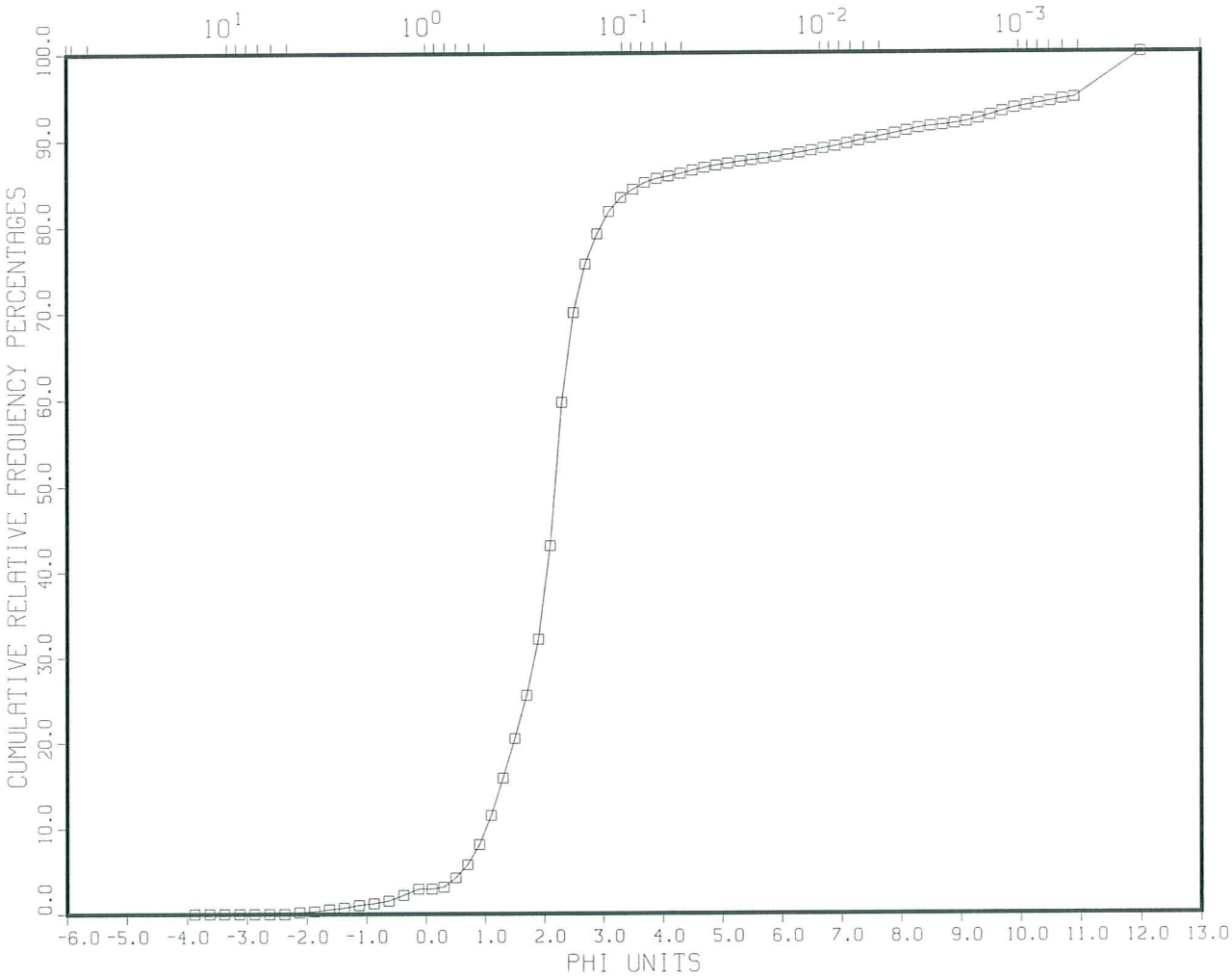
Calculation Results for
The Sample with the Identifier:

V4.0
5: 2:1998
11421
72
GS1-97-4360-4364
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011421
SWF00425
4.36000000000000E+0003
4.36400000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

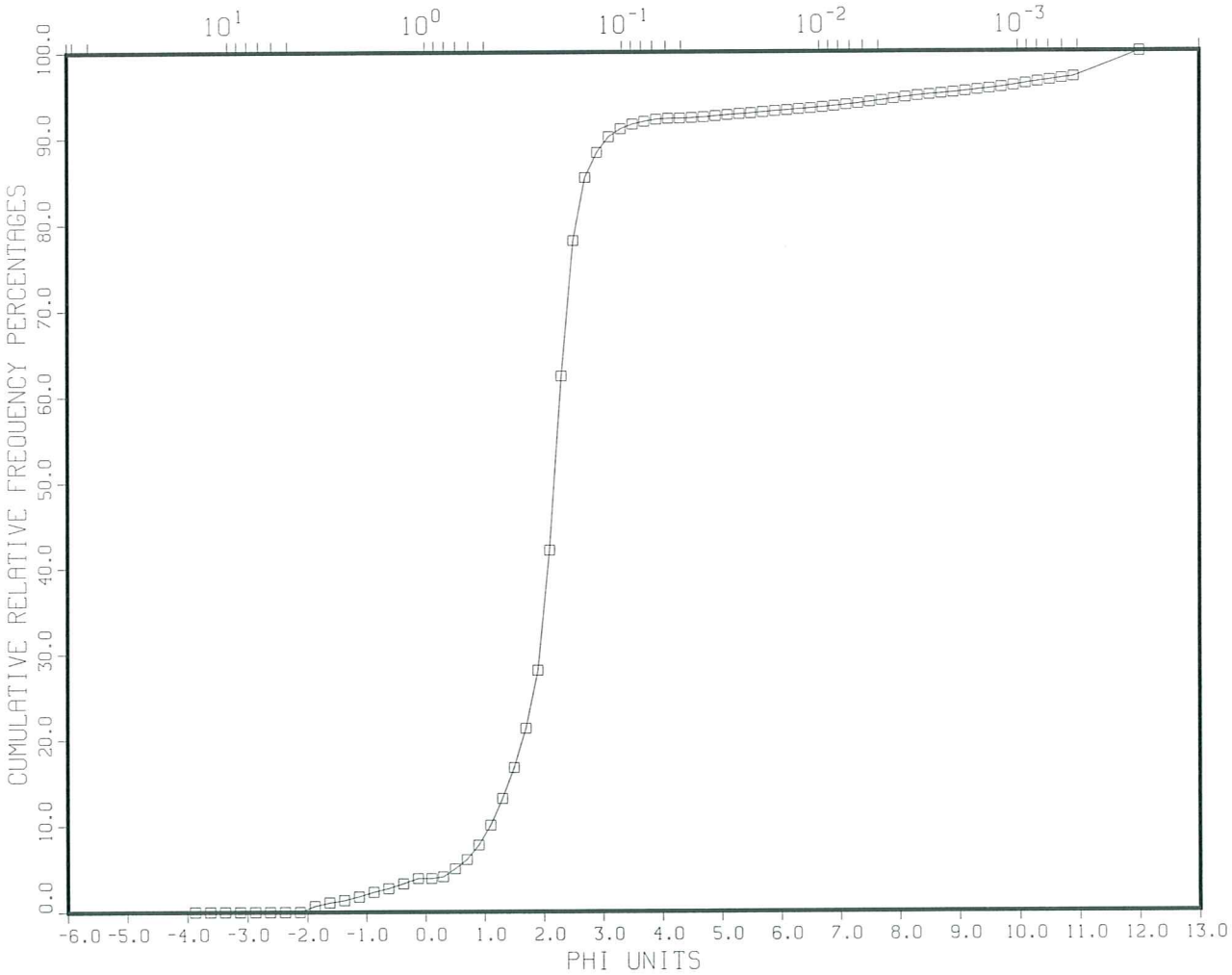
Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00
8.72e+00	-3.12	0.00	0.00

GS1-97-4360-4364,RD011421, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



GS1-97-4400-4404,RD011422, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.20	0.20
3.67e+00	-1.88	0.09	0.30
3.08e+00	-1.62	0.22	0.52
2.59e+00	-1.38	0.17	0.69
2.18e+00	-1.12	0.32	1.01
1.83e+00	-0.88	0.19	1.20
1.54e+00	-0.62	0.31	1.51
1.30e+00	-0.38	0.66	2.17
1.09e+00	-0.12	0.72	2.89
9.33e-01	0.10	0.01	2.90
8.12e-01	0.30	0.22	3.12
7.07e-01	0.50	1.09	4.21
6.16e-01	0.70	1.54	5.75
5.36e-01	0.90	2.35	8.10
4.67e-01	1.10	3.39	11.49
4.06e-01	1.30	4.36	15.86
3.54e-01	1.50	4.58	20.44
3.08e-01	1.70	5.14	25.58
2.68e-01	1.90	6.54	32.12
2.33e-01	2.10	10.95	43.07
2.03e-01	2.30	16.57	59.64
1.77e-01	2.50	10.35	69.99
1.54e-01	2.70	5.66	75.66
1.34e-01	2.90	3.48	79.13
1.17e-01	3.10	2.59	81.72
1.02e-01	3.30	1.62	83.35
8.84e-02	3.50	0.95	84.30
7.69e-02	3.70	0.78	85.08
6.70e-02	3.90	0.47	85.55
5.83e-02	4.10	0.27	85.82
5.08e-02	4.30	0.31	86.13
4.42e-02	4.50	0.35	86.48
3.85e-02	4.70	0.33	86.81
3.35e-02	4.90	0.25	87.06
2.92e-02	5.10	0.21	87.27
2.54e-02	5.30	0.23	87.50
2.21e-02	5.50	0.17	87.67
1.92e-02	5.70	0.15	87.82
1.67e-02	5.90	0.21	88.03
1.46e-02	6.10	0.23	88.26
1.27e-02	6.30	0.22	88.48
1.10e-02	6.50	0.24	88.73

9.62e-03	6.70	0.26	88.99
8.37e-03	6.90	0.25	89.23
7.29e-03	7.10	0.30	89.54
6.35e-03	7.30	0.32	89.85
5.52e-03	7.50	0.30	90.15
4.81e-03	7.70	0.26	90.41
4.19e-03	7.90	0.28	90.69
3.64e-03	8.10	0.31	91.01
3.17e-03	8.30	0.30	91.31
2.76e-03	8.50	0.20	91.51
2.40e-03	8.70	0.14	91.64
2.09e-03	8.90	0.16	91.80
1.82e-03	9.10	0.23	92.03
1.59e-03	9.30	0.33	92.36
1.38e-03	9.50	0.39	92.76
1.20e-03	9.70	0.42	93.17
1.05e-03	9.90	0.39	93.56
9.11e-04	10.10	0.25	93.81
7.93e-04	10.30	0.23	94.04
6.91e-04	10.50	0.25	94.29
6.01e-04	10.70	0.27	94.56
5.23e-04	10.90	0.19	94.75
2.44e-04	12.00	5.25	100.00

Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
1.01	84.54	5.14	9.31	14.45

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
3.05	2.82	6.82	2.12

Calculation Results for
The Sample with the Identifier:

V4.0
5: 2:1998
11422
72
GS1-97-4400-4404
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011422
SWF00425
4.40000000000000E+0003
4.40400000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.67	0.67
3.08e+00	-1.62	0.38	1.05
2.59e+00	-1.38	0.27	1.32
2.18e+00	-1.12	0.41	1.73
1.83e+00	-0.88	0.53	2.26
1.54e+00	-0.62	0.41	2.67
1.30e+00	-0.38	0.55	3.22
1.09e+00	-0.12	0.61	3.83
9.33e-01	0.10	0.00	3.83
8.12e-01	0.30	0.19	4.02
7.07e-01	0.50	0.93	4.95
6.16e-01	0.70	1.10	6.05
5.36e-01	0.90	1.69	7.74
4.67e-01	1.10	2.32	10.06
4.06e-01	1.30	3.08	13.14
3.54e-01	1.50	3.60	16.74
3.08e-01	1.70	4.57	21.30
2.68e-01	1.90	6.79	28.09
2.33e-01	2.10	13.98	42.07
2.03e-01	2.30	20.32	62.39
1.77e-01	2.50	15.69	78.08
1.54e-01	2.70	7.38	85.45
1.34e-01	2.90	2.90	88.35
1.17e-01	3.10	1.80	90.15
1.02e-01	3.30	0.91	91.07
8.84e-02	3.50	0.53	91.60
7.69e-02	3.70	0.32	91.91
6.70e-02	3.90	0.24	92.15
5.83e-02	4.10	0.11	92.26
5.08e-02	4.30	0.02	92.28
4.42e-02	4.50	0.04	92.32
3.85e-02	4.70	0.10	92.42
3.35e-02	4.90	0.12	92.53
2.92e-02	5.10	0.12	92.66
2.54e-02	5.30	0.10	92.75
2.21e-02	5.50	0.10	92.85
1.92e-02	5.70	0.13	92.98
1.67e-02	5.90	0.11	93.09
1.46e-02	6.10	0.10	93.19
1.27e-02	6.30	0.12	93.31

1.10e-02	6.50	0.10	93.41
9.62e-03	6.70	0.12	93.53
8.37e-03	6.90	0.13	93.66
7.29e-03	7.10	0.16	93.81
6.35e-03	7.30	0.15	93.96
5.52e-03	7.50	0.17	94.14
4.81e-03	7.70	0.18	94.31
4.19e-03	7.90	0.20	94.51
3.64e-03	8.10	0.18	94.69
3.17e-03	8.30	0.16	94.85
2.76e-03	8.50	0.13	94.98
2.40e-03	8.70	0.12	95.10
2.09e-03	8.90	0.12	95.22
1.82e-03	9.10	0.15	95.38
1.59e-03	9.30	0.16	95.54
1.38e-03	9.50	0.15	95.68
1.20e-03	9.70	0.17	95.85
1.05e-03	9.90	0.20	96.05
9.11e-04	10.10	0.23	96.27
7.93e-04	10.30	0.20	96.48
6.91e-04	10.50	0.19	96.67
6.01e-04	10.70	0.20	96.87
5.23e-04	10.90	0.18	97.05
2.44e-04	12.00	2.95	100.00

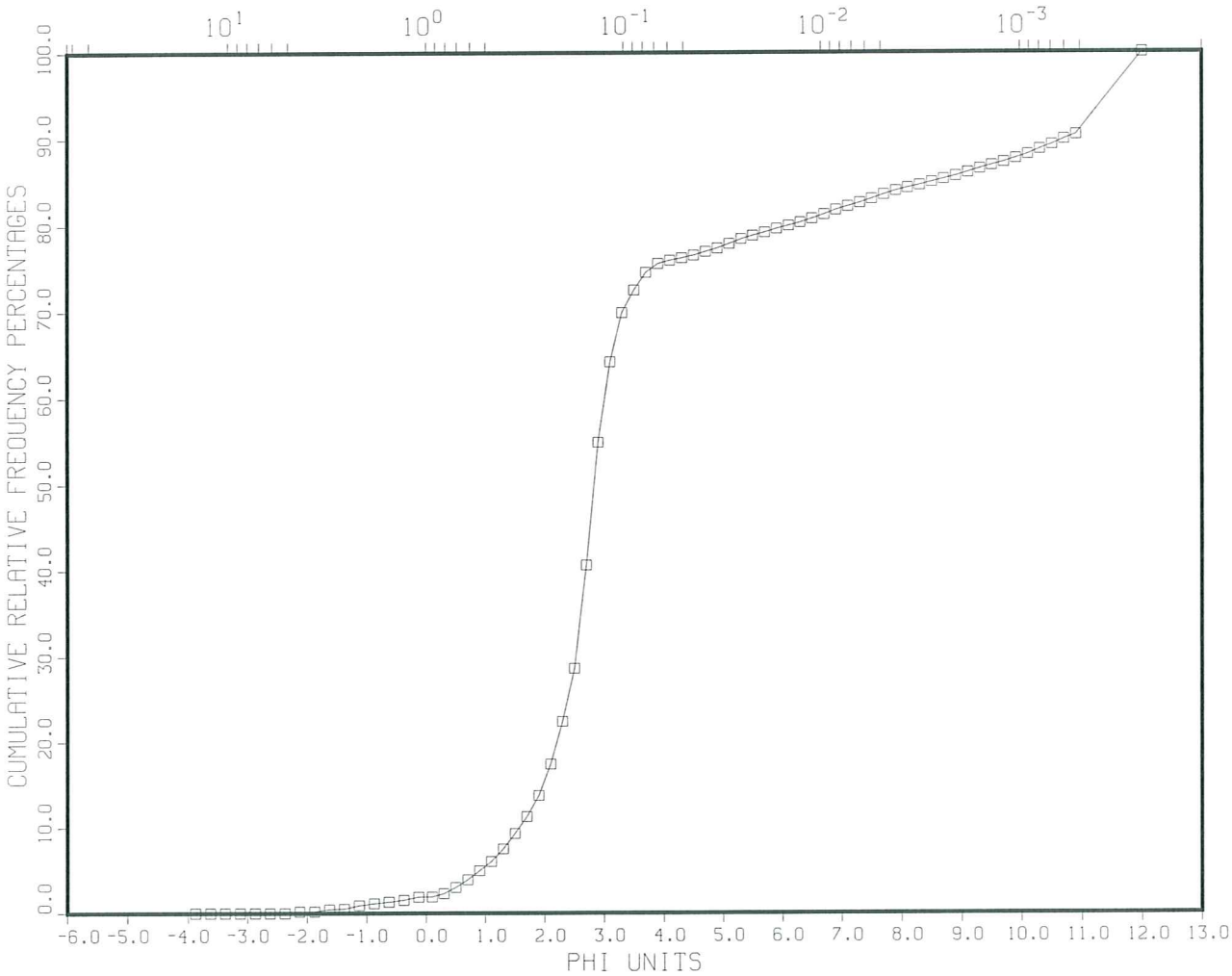
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
1.73	90.42	2.36	5.49	7.85

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
2.63	2.27	11.56	2.75

GS1-97-4442-4445,RD011423, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
5: 2:1998
11423
72
GS1-97-4442-4445
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011423
SWF00425
4.44200000000000E+0003
4.44500000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.20	0.20
3.67e+00	-1.88	0.00	0.20
3.08e+00	-1.62	0.25	0.45
2.59e+00	-1.38	0.05	0.49
2.18e+00	-1.12	0.41	0.90
1.83e+00	-0.88	0.22	1.12
1.54e+00	-0.62	0.18	1.30
1.30e+00	-0.38	0.23	1.53
1.09e+00	-0.12	0.36	1.88
9.33e-01	0.10	0.02	1.90
8.12e-01	0.30	0.40	2.30
7.07e-01	0.50	0.70	3.00
6.16e-01	0.70	0.90	3.90
5.36e-01	0.90	1.05	4.95
4.67e-01	1.10	1.06	6.02
4.06e-01	1.30	1.48	7.50
3.54e-01	1.50	1.82	9.32
3.08e-01	1.70	1.98	11.30
2.68e-01	1.90	2.46	13.76
2.33e-01	2.10	3.68	17.44
2.03e-01	2.30	4.96	22.40
1.77e-01	2.50	6.25	28.65
1.54e-01	2.70	12.02	40.67
1.34e-01	2.90	14.27	54.95
1.17e-01	3.10	9.34	64.28
1.02e-01	3.30	5.65	69.93
8.84e-02	3.50	2.59	72.52
7.69e-02	3.70	2.03	74.55
6.70e-02	3.90	1.01	75.56
5.83e-02	4.10	0.38	75.94
5.08e-02	4.30	0.27	76.22
4.42e-02	4.50	0.32	76.53
3.85e-02	4.70	0.43	76.96
3.35e-02	4.90	0.40	77.35
2.92e-02	5.10	0.52	77.87
2.54e-02	5.30	0.54	78.42
2.21e-02	5.50	0.40	78.82
1.92e-02	5.70	0.38	79.20
1.67e-02	5.90	0.43	79.62
1.46e-02	6.10	0.35	79.97
1.27e-02	6.30	0.37	80.34

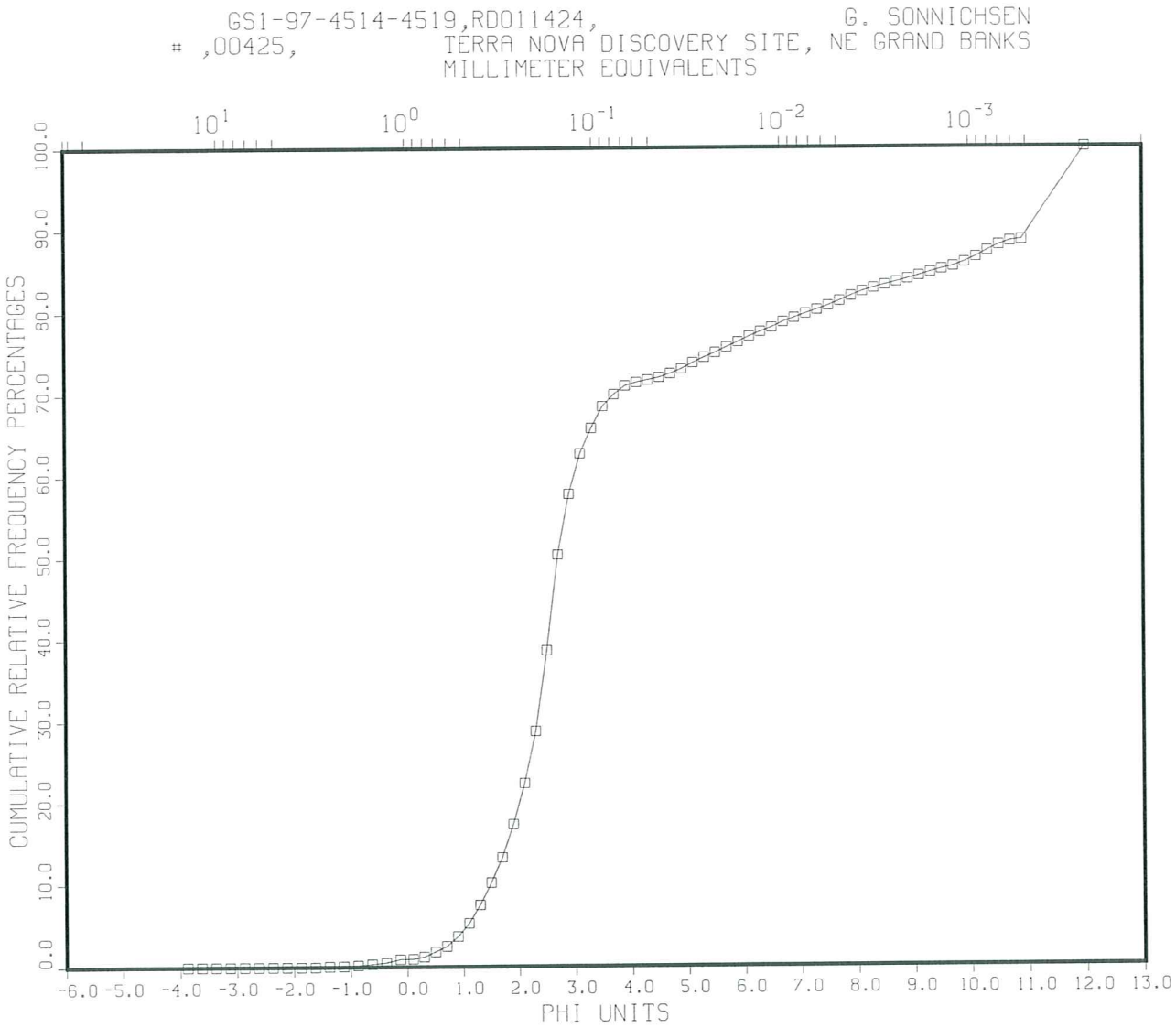
1.10e-02	6.50	0.44	80.79
9.62e-03	6.70	0.48	81.27
8.37e-03	6.90	0.52	81.79
7.29e-03	7.10	0.40	82.19
6.35e-03	7.30	0.41	82.60
5.52e-03	7.50	0.45	83.05
4.81e-03	7.70	0.48	83.53
4.19e-03	7.90	0.44	83.97
3.64e-03	8.10	0.34	84.31
3.17e-03	8.30	0.30	84.61
2.76e-03	8.50	0.37	84.97
2.40e-03	8.70	0.34	85.32
2.09e-03	8.90	0.34	85.66
1.82e-03	9.10	0.42	86.08
1.59e-03	9.30	0.43	86.51
1.38e-03	9.50	0.39	86.90
1.20e-03	9.70	0.37	87.27
1.05e-03	9.90	0.44	87.71
9.11e-04	10.10	0.46	88.17
7.93e-04	10.30	0.60	88.77
6.91e-04	10.50	0.54	89.31
6.01e-04	10.70	0.62	89.93
5.23e-04	10.90	0.53	90.46
2.44e-04	12.00	9.54	100.00

Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.90	74.66	8.41	16.03	24.44

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
4.19	3.30	3.79	1.40


GS1-97-4514-4519,RD011424,
,00425,
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS
10^{1} 10^{0} 10^{-1} 10^{-2} 10^{-3}
CUMULATIVE RELATIVE FREQUENCY PERCENTAGES
0.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100.0
-6.0 -5.0 -4.0 -3.0 -2.0 -1.0 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0
PHI UNITS

Calculation Results for
The Sample with the Identifier:

V4.0
5: 2:1998
11424
72
GS1-97-4514-4519
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011424
SWF00425
4.51400000000000E+0003
4.51900000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.00	0.00
3.08e+00	-1.62	0.00	0.00
2.59e+00	-1.38	0.07	0.07
2.18e+00	-1.12	0.04	0.11
1.83e+00	-0.88	0.08	0.20
1.54e+00	-0.62	0.14	0.34
1.30e+00	-0.38	0.19	0.53
1.09e+00	-0.12	0.40	0.92
9.33e-01	0.10	0.02	0.95
8.12e-01	0.30	0.27	1.22
7.07e-01	0.50	0.61	1.83
6.16e-01	0.70	0.62	2.45
5.36e-01	0.90	1.18	3.63
4.67e-01	1.10	1.60	5.23
4.06e-01	1.30	2.25	7.47
3.54e-01	1.50	2.74	10.22
3.08e-01	1.70	3.05	13.27
2.68e-01	1.90	4.07	17.33
2.33e-01	2.10	5.04	22.37
2.03e-01	2.30	6.44	28.81
1.77e-01	2.50	9.82	38.63
1.54e-01	2.70	11.73	50.36
1.34e-01	2.90	7.43	57.78
1.17e-01	3.10	4.95	62.74
1.02e-01	3.30	3.09	65.83
8.84e-02	3.50	2.65	68.48
7.69e-02	3.70	1.46	69.94
6.70e-02	3.90	1.05	71.00
5.83e-02	4.10	0.41	71.41
5.08e-02	4.30	0.29	71.70
4.42e-02	4.50	0.31	72.00
3.85e-02	4.70	0.46	72.46
3.35e-02	4.90	0.56	73.02
2.92e-02	5.10	0.74	73.77
2.54e-02	5.30	0.65	74.42
2.21e-02	5.50	0.57	74.99
1.92e-02	5.70	0.66	75.64
1.67e-02	5.90	0.62	76.27
1.46e-02	6.10	0.66	76.93
1.27e-02	6.30	0.58	77.51

1.10e-02	6.50	0.52	78.03
9.62e-03	6.70	0.66	78.69
8.37e-03	6.90	0.51	79.20
7.29e-03	7.10	0.51	79.71
6.35e-03	7.30	0.47	80.17
5.52e-03	7.50	0.51	80.68
4.81e-03	7.70	0.56	81.24
4.19e-03	7.90	0.62	81.86
3.64e-03	8.10	0.54	82.40
3.17e-03	8.30	0.43	82.82
2.76e-03	8.50	0.36	83.19
2.40e-03	8.70	0.36	83.54
2.09e-03	8.90	0.37	83.91
1.82e-03	9.10	0.39	84.30
1.59e-03	9.30	0.42	84.72
1.38e-03	9.50	0.37	85.09
1.20e-03	9.70	0.35	85.44
1.05e-03	9.90	0.50	85.93
9.11e-04	10.10	0.64	86.58
7.93e-04	10.30	0.75	87.33
6.91e-04	10.50	0.67	88.00
6.01e-04	10.70	0.48	88.47
5.23e-04	10.90	0.16	88.64
2.44e-04	12.00	11.36	100.00

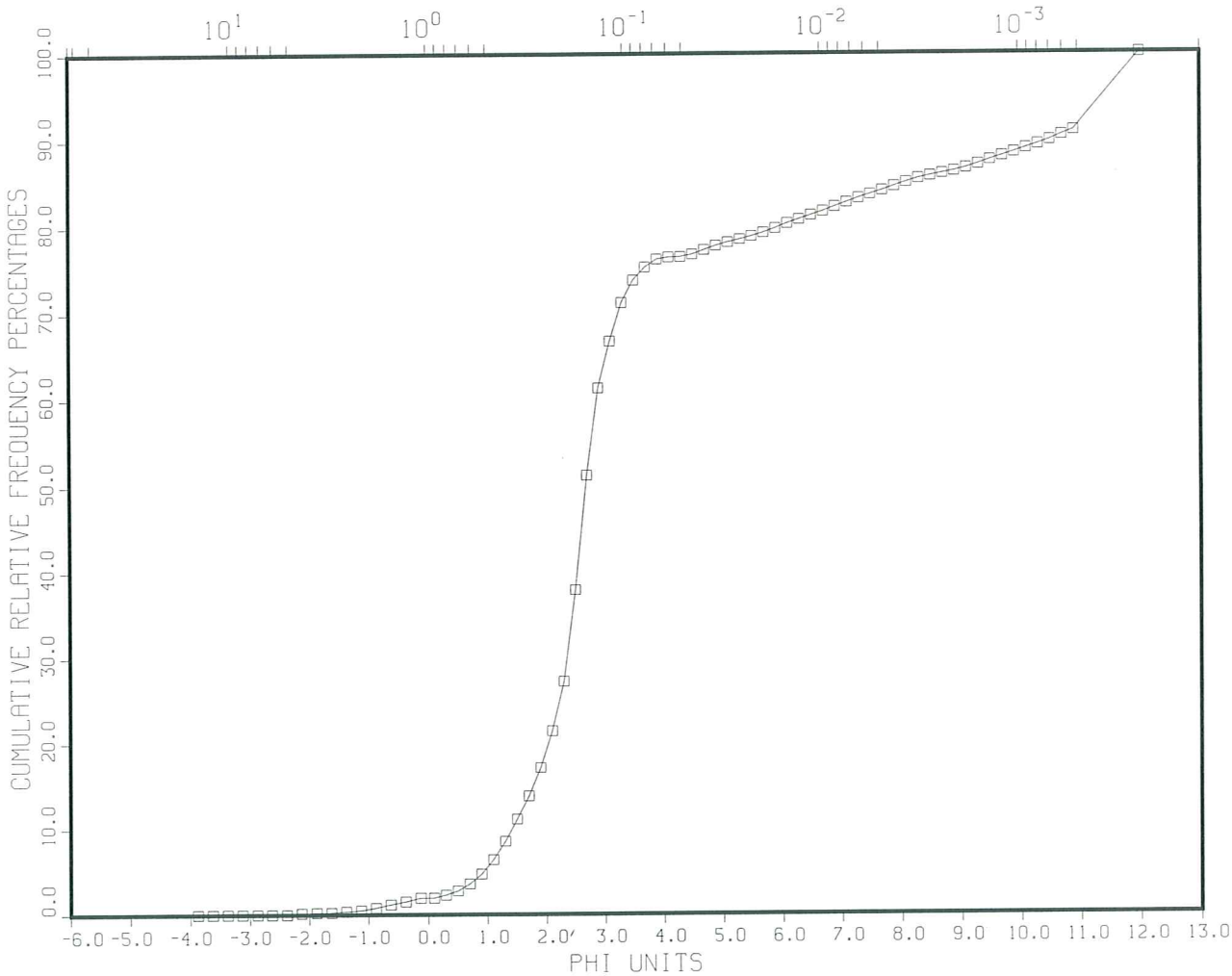
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.11	70.88	10.86	18.14	29.00

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
4.38	3.48	3.20	1.27

GS1-97-4598-4602,RD011425, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
6: 2:1998
11425
72
GS1-97-4598-4602
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011425
SWF00425
4.59800000000000E+0003
4.60200000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.17	0.17
3.67e+00	-1.88	0.07	0.24
3.08e+00	-1.62	0.00	0.24
2.59e+00	-1.38	0.11	0.36
2.18e+00	-1.12	0.13	0.49
1.83e+00	-0.88	0.30	0.79
1.54e+00	-0.62	0.38	1.17
1.30e+00	-0.38	0.33	1.50
1.09e+00	-0.12	0.44	1.94
9.33e-01	0.10	0.00	1.94
8.12e-01	0.30	0.34	2.28
7.07e-01	0.50	0.47	2.75
6.16e-01	0.70	0.81	3.56
5.36e-01	0.90	1.15	4.71
4.67e-01	1.10	1.68	6.39
4.06e-01	1.30	2.16	8.55
3.54e-01	1.50	2.58	11.13
3.08e-01	1.70	2.70	13.83
2.68e-01	1.90	3.31	17.14
2.33e-01	2.10	4.31	21.45
2.03e-01	2.30	5.82	27.27
1.77e-01	2.50	10.69	37.95
1.54e-01	2.70	13.33	51.28
1.34e-01	2.90	10.06	61.34
1.17e-01	3.10	5.42	66.76
1.02e-01	3.30	4.47	71.22
8.84e-02	3.50	2.57	73.79
7.69e-02	3.70	1.50	75.29
6.70e-02	3.90	0.91	76.20
5.83e-02	4.10	0.23	76.43
5.08e-02	4.30	0.05	76.48
4.42e-02	4.50	0.27	76.76
3.85e-02	4.70	0.52	77.27
3.35e-02	4.90	0.50	77.77
2.92e-02	5.10	0.40	78.18
2.54e-02	5.30	0.34	78.52
2.21e-02	5.50	0.36	78.88
1.92e-02	5.70	0.42	79.30
1.67e-02	5.90	0.50	79.80
1.46e-02	6.10	0.57	80.37
1.27e-02	6.30	0.47	80.84

1.10e-02	6.50	0.48	81.31
9.62e-03	6.70	0.47	81.78
8.37e-03	6.90	0.51	82.29
7.29e-03	7.10	0.50	82.79
6.35e-03	7.30	0.50	83.29
5.52e-03	7.50	0.43	83.72
4.81e-03	7.70	0.43	84.15
4.19e-03	7.90	0.50	84.65
3.64e-03	8.10	0.46	85.11
3.17e-03	8.30	0.43	85.54
2.76e-03	8.50	0.30	85.84
2.40e-03	8.70	0.28	86.12
2.09e-03	8.90	0.26	86.38
1.82e-03	9.10	0.36	86.74
1.59e-03	9.30	0.43	87.17
1.38e-03	9.50	0.49	87.66
1.20e-03	9.70	0.45	88.10
1.05e-03	9.90	0.43	88.54
9.11e-04	10.10	0.47	89.01
7.93e-04	10.30	0.44	89.45
6.91e-04	10.50	0.48	89.93
6.01e-04	10.70	0.59	90.51
5.23e-04	10.90	0.53	91.05
2.44e-04	12.00	8.95	100.00

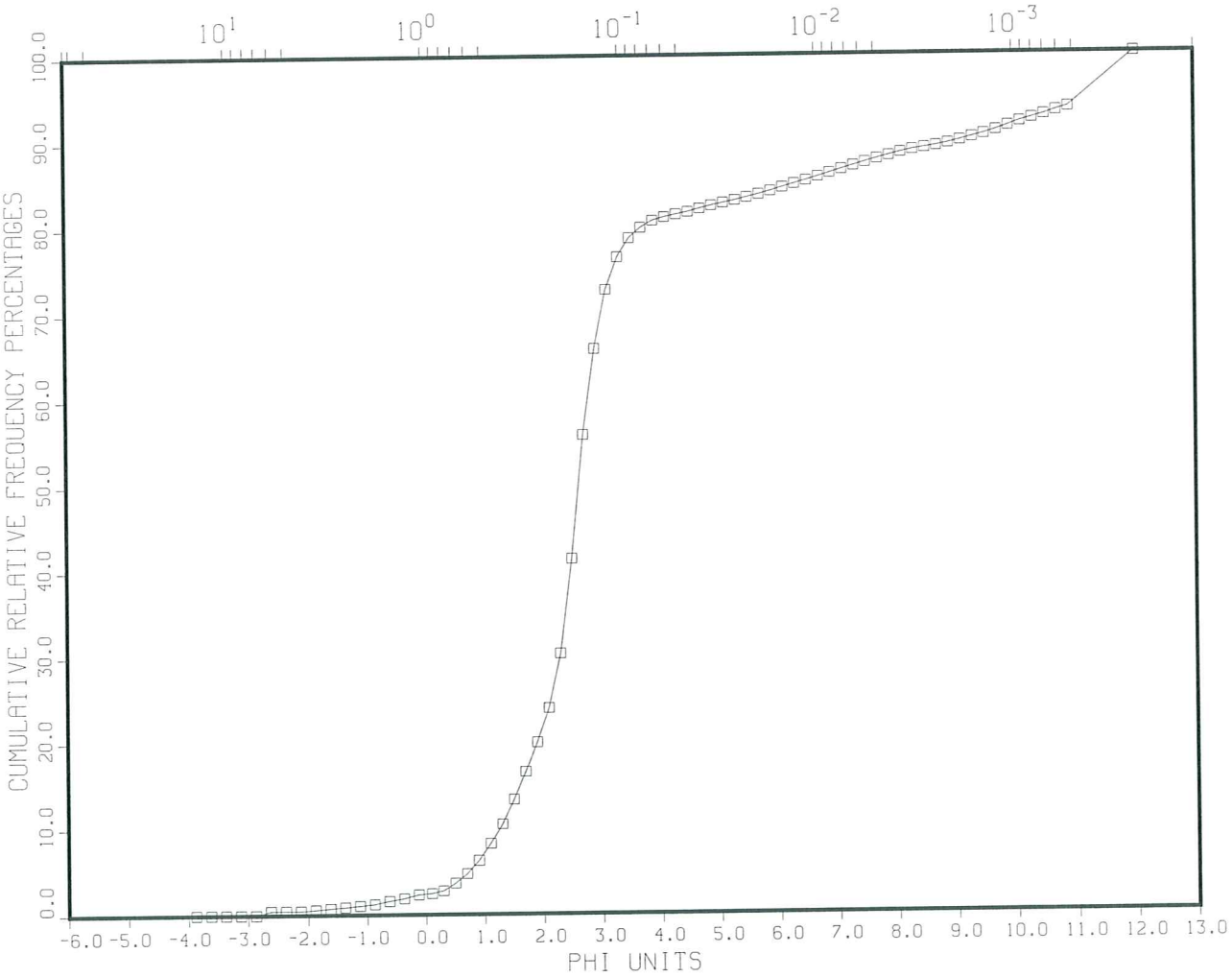
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.49	75.71	8.45	15.35	23.80

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
4.05	3.28	3.92	1.45

GS1-97-4691-4695,RD011426, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
6: 2:1998
11426
72
GS1-97-4691-4695
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011426
SWF00425
4.69100000000000E+0003
4.69500000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.47	0.47
5.19e+00	-2.38	0.00	0.47
4.36e+00	-2.12	0.00	0.47
3.67e+00	-1.88	0.12	0.59
3.08e+00	-1.62	0.15	0.74
2.59e+00	-1.38	0.13	0.87
2.18e+00	-1.12	0.17	1.05
1.83e+00	-0.88	0.17	1.22
1.54e+00	-0.62	0.36	1.58
1.30e+00	-0.38	0.29	1.87
1.09e+00	-0.12	0.44	2.31
9.33e-01	0.10	0.13	2.43
8.12e-01	0.30	0.33	2.76
7.07e-01	0.50	0.87	3.63
6.16e-01	0.70	1.11	4.74
5.36e-01	0.90	1.53	6.26
4.67e-01	1.10	1.98	8.24
4.06e-01	1.30	2.24	10.49
3.54e-01	1.50	2.89	13.38
3.08e-01	1.70	3.21	16.58
2.68e-01	1.90	3.39	19.98
2.33e-01	2.10	4.00	23.97
2.03e-01	2.30	6.37	30.34
1.77e-01	2.50	11.06	41.40
1.54e-01	2.70	14.47	55.87
1.34e-01	2.90	10.04	65.91
1.17e-01	3.10	6.85	72.76
1.02e-01	3.30	3.78	76.54
8.84e-02	3.50	2.19	78.73
7.69e-02	3.70	1.22	79.95
6.70e-02	3.90	0.81	80.75
5.83e-02	4.10	0.41	81.16
5.08e-02	4.30	0.30	81.46
4.42e-02	4.50	0.28	81.75
3.85e-02	4.70	0.38	82.12
3.35e-02	4.90	0.35	82.48
2.92e-02	5.10	0.30	82.78
2.54e-02	5.30	0.29	83.07
2.21e-02	5.50	0.34	83.41
1.92e-02	5.70	0.33	83.74
1.67e-02	5.90	0.37	84.12
1.46e-02	6.10	0.42	84.53
1.27e-02	6.30	0.41	84.94

1.10e-02	6.50	0.39	85.32
9.62e-03	6.70	0.42	85.74
8.37e-03	6.90	0.43	86.17
7.29e-03	7.10	0.42	86.59
6.35e-03	7.30	0.41	87.00
5.52e-03	7.50	0.40	87.40
4.81e-03	7.70	0.38	87.79
4.19e-03	7.90	0.36	88.15
3.64e-03	8.10	0.36	88.51
3.17e-03	8.30	0.29	88.81
2.76e-03	8.50	0.22	89.02
2.40e-03	8.70	0.22	89.24
2.09e-03	8.90	0.28	89.52
1.82e-03	9.10	0.34	89.86
1.59e-03	9.30	0.36	90.22
1.38e-03	9.50	0.36	90.57
1.20e-03	9.70	0.43	91.01
1.05e-03	9.90	0.50	91.50
9.11e-04	10.10	0.49	92.00
7.93e-04	10.30	0.40	92.39
6.91e-04	10.50	0.39	92.78
6.01e-04	10.70	0.47	93.25
5.23e-04	10.90	0.41	93.66
2.44e-04	12.00	6.34	100.00

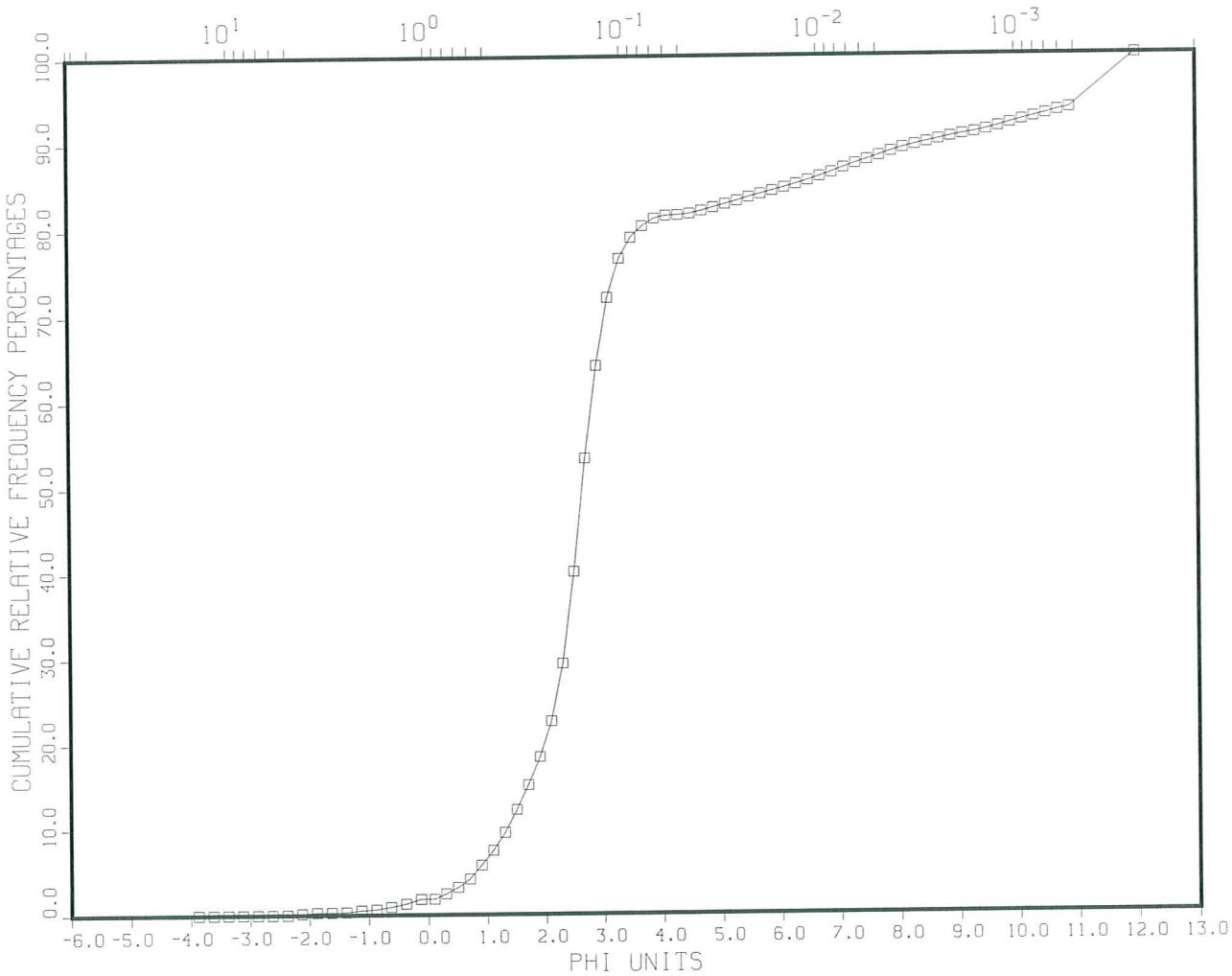
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
1.05	79.71	7.40	11.85	19.25

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
3.63	3.01	5.10	1.68

GS1-97-4760-4764,RD011427, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
6: 2:1998
11427
72
GS1-97-4760-4764
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011427
SWF00425
4.76000000000000E+0003
4.76400000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.17	0.17
3.67e+00	-1.88	0.12	0.29
3.08e+00	-1.62	0.00	0.29
2.59e+00	-1.38	0.03	0.32
2.18e+00	-1.12	0.20	0.51
1.83e+00	-0.88	0.11	0.63
1.54e+00	-0.62	0.28	0.90
1.30e+00	-0.38	0.37	1.27
1.09e+00	-0.12	0.54	1.81
9.33e-01	0.10	0.02	1.83
8.12e-01	0.30	0.62	2.44
7.07e-01	0.50	0.73	3.17
6.16e-01	0.70	0.96	4.14
5.36e-01	0.90	1.63	5.76
4.67e-01	1.10	1.71	7.47
4.06e-01	1.30	2.11	9.58
3.54e-01	1.50	2.70	12.28
3.08e-01	1.70	2.92	15.20
2.68e-01	1.90	3.27	18.47
2.33e-01	2.10	4.19	22.66
2.03e-01	2.30	6.75	29.41
1.77e-01	2.50	10.72	40.13
1.54e-01	2.70	13.26	53.40
1.34e-01	2.90	10.76	64.15
1.17e-01	3.10	7.87	72.02
1.02e-01	3.30	4.51	76.53
8.84e-02	3.50	2.42	78.96
7.69e-02	3.70	1.34	80.30
6.70e-02	3.90	0.88	81.18
5.83e-02	4.10	0.32	81.50
5.08e-02	4.30	0.06	81.56
4.42e-02	4.50	0.16	81.72
3.85e-02	4.70	0.31	82.03
3.35e-02	4.90	0.39	82.41
2.92e-02	5.10	0.38	82.80
2.54e-02	5.30	0.38	83.18
2.21e-02	5.50	0.42	83.60
1.92e-02	5.70	0.36	83.96
1.67e-02	5.90	0.35	84.31
1.46e-02	6.10	0.38	84.69
1.27e-02	6.30	0.39	85.08

1.10e-02	6.50	0.42	85.50
9.62e-03	6.70	0.46	85.96
8.37e-03	6.90	0.46	86.41
7.29e-03	7.10	0.53	86.94
6.35e-03	7.30	0.49	87.43
5.52e-03	7.50	0.44	87.87
4.81e-03	7.70	0.46	88.33
4.19e-03	7.90	0.46	88.79
3.64e-03	8.10	0.41	89.20
3.17e-03	8.30	0.35	89.55
2.76e-03	8.50	0.30	89.85
2.40e-03	8.70	0.31	90.16
2.09e-03	8.90	0.30	90.46
1.82e-03	9.10	0.27	90.73
1.59e-03	9.30	0.22	90.95
1.38e-03	9.50	0.29	91.25
1.20e-03	9.70	0.37	91.61
1.05e-03	9.90	0.39	92.00
9.11e-04	10.10	0.37	92.37
7.93e-04	10.30	0.34	92.71
6.91e-04	10.50	0.35	93.07
6.01e-04	10.70	0.37	93.44
5.23e-04	10.90	0.29	93.73
2.44e-04	12.00	6.27	100.00

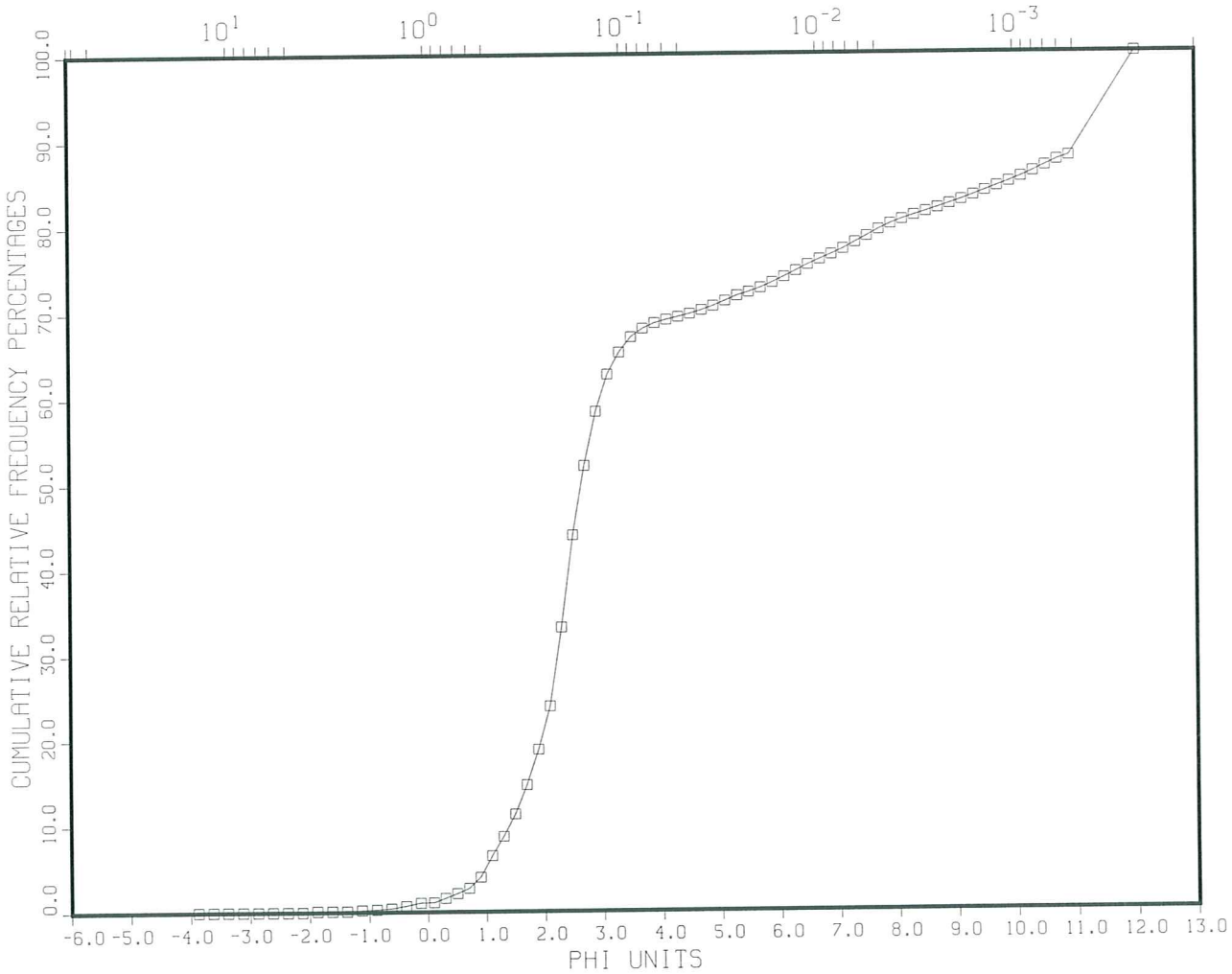
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.51	80.67	7.61	11.21	18.82

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
3.65	2.93	5.35	1.78

GS1-97-4790-4795,RD011428, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
6: 2:1998
11428
72
GS1-97-4790-4795
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011428
SWF00425
4.79000000000000E+0003
4.79500000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.11	0.11
3.08e+00	-1.62	0.00	0.11
2.59e+00	-1.38	0.00	0.11
2.18e+00	-1.12	0.12	0.22
1.83e+00	-0.88	0.07	0.29
1.54e+00	-0.62	0.11	0.40
1.30e+00	-0.38	0.29	0.69
1.09e+00	-0.12	0.36	1.05
9.33e-01	0.10	0.03	1.07
8.12e-01	0.30	0.51	1.58
7.07e-01	0.50	0.53	2.12
6.16e-01	0.70	0.60	2.72
5.36e-01	0.90	1.30	4.01
4.67e-01	1.10	2.47	6.48
4.06e-01	1.30	2.23	8.71
3.54e-01	1.50	2.60	11.31
3.08e-01	1.70	3.42	14.73
2.68e-01	1.90	4.12	18.86
2.33e-01	2.10	5.11	23.96
2.03e-01	2.30	9.24	33.21
1.77e-01	2.50	10.73	43.93
1.54e-01	2.70	8.18	52.11
1.34e-01	2.90	6.28	58.39
1.17e-01	3.10	4.34	62.73
1.02e-01	3.30	2.58	65.31
8.84e-02	3.50	1.77	67.08
7.69e-02	3.70	0.98	68.06
6.70e-02	3.90	0.63	68.69
5.83e-02	4.10	0.39	69.08
5.08e-02	4.30	0.32	69.40
4.42e-02	4.50	0.34	69.74
3.85e-02	4.70	0.41	70.16
3.35e-02	4.90	0.49	70.64
2.92e-02	5.10	0.58	71.22
2.54e-02	5.30	0.60	71.82
2.21e-02	5.50	0.41	72.24
1.92e-02	5.70	0.48	72.72
1.67e-02	5.90	0.60	73.33
1.46e-02	6.10	0.67	73.99
1.27e-02	6.30	0.70	74.69

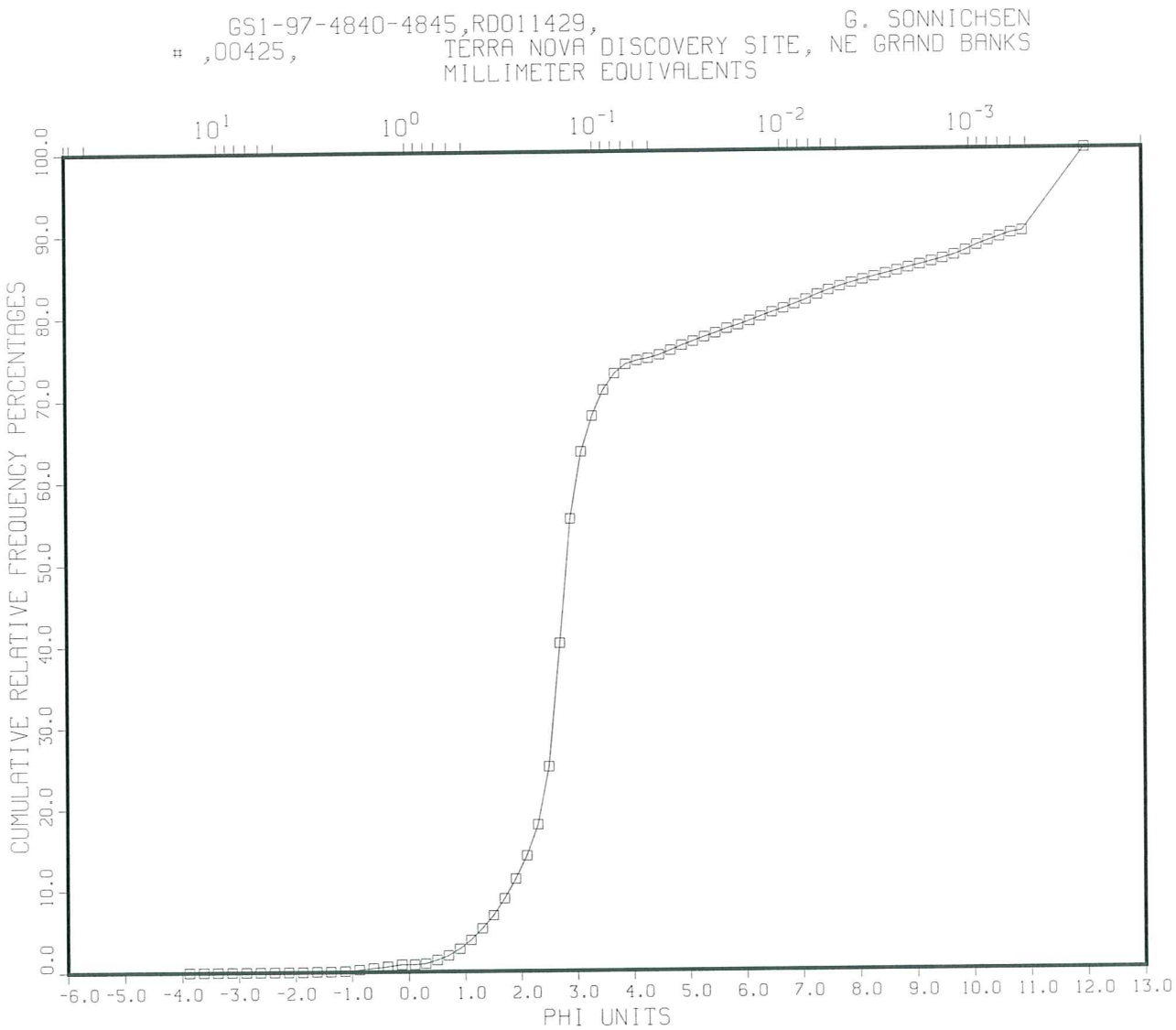
1.10e-02	6.50	0.71	75.39
9.62e-03	6.70	0.62	76.01
8.37e-03	6.90	0.58	76.59
7.29e-03	7.10	0.62	77.21
6.35e-03	7.30	0.74	77.95
5.52e-03	7.50	0.73	78.68
4.81e-03	7.70	0.74	79.42
4.19e-03	7.90	0.65	80.07
3.64e-03	8.10	0.51	80.59
3.17e-03	8.30	0.45	81.04
2.76e-03	8.50	0.44	81.48
2.40e-03	8.70	0.44	81.91
2.09e-03	8.90	0.45	82.37
1.82e-03	9.10	0.47	82.84
1.59e-03	9.30	0.50	83.34
1.38e-03	9.50	0.52	83.87
1.20e-03	9.70	0.53	84.40
1.05e-03	9.90	0.50	84.90
9.11e-04	10.10	0.56	85.46
7.93e-04	10.30	0.63	86.09
6.91e-04	10.50	0.66	86.75
6.01e-04	10.70	0.65	87.40
5.23e-04	10.90	0.47	87.87
2.44e-04	12.00	12.13	100.00

Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.22	68.47	11.38	19.93	31.31

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
4.49	3.62	2.81	1.13


GS1-97-4840-4845,RD011429,
,00425,
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS
10^{1} 10^{0} 10^{-1} 10^{-2} 10^{-3}
CUMULATIVE RELATIVE FREQUENCY PERCENTAGES
0.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100.0
-6.0 -5.0 -4.0 -3.0 -2.0 -1.0 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0
PHI UNITS

Calculation Results for
The Sample with the Identifier:

V4.0
6: 2:1998
11429
72
GS1-97-4840-4845
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011429
SWF00425
4.84000000000000E+0003
4.84500000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.00	0.00
3.08e+00	-1.62	0.06	0.06
2.59e+00	-1.38	0.00	0.06
2.18e+00	-1.12	0.03	0.10
1.83e+00	-0.88	0.15	0.25
1.54e+00	-0.62	0.18	0.43
1.30e+00	-0.38	0.18	0.61
1.09e+00	-0.12	0.25	0.86
9.33e-01	0.10	0.00	0.86
8.12e-01	0.30	0.11	0.97
7.07e-01	0.50	0.42	1.39
6.16e-01	0.70	0.54	1.93
5.36e-01	0.90	0.81	2.75
4.67e-01	1.10	1.08	3.83
4.06e-01	1.30	1.41	5.24
3.54e-01	1.50	1.59	6.82
3.08e-01	1.70	2.06	8.89
2.68e-01	1.90	2.42	11.30
2.33e-01	2.10	2.86	14.16
2.03e-01	2.30	3.81	17.97
1.77e-01	2.50	7.12	25.09
1.54e-01	2.70	15.18	40.27
1.34e-01	2.90	15.11	55.38
1.17e-01	3.10	8.14	63.52
1.02e-01	3.30	4.36	67.88
8.84e-02	3.50	3.16	71.04
7.69e-02	3.70	1.97	73.01
6.70e-02	3.90	1.12	74.14
5.83e-02	4.10	0.46	74.59
5.08e-02	4.30	0.23	74.83
4.42e-02	4.50	0.41	75.24
3.85e-02	4.70	0.56	75.80
3.35e-02	4.90	0.58	76.38
2.92e-02	5.10	0.49	76.87
2.54e-02	5.30	0.52	77.39
2.21e-02	5.50	0.45	77.85
1.92e-02	5.70	0.53	78.38
1.67e-02	5.90	0.42	78.80
1.46e-02	6.10	0.50	79.29
1.27e-02	6.30	0.53	79.82

1.10e-02	6.50	0.50	80.33
9.62e-03	6.70	0.46	80.79
8.37e-03	6.90	0.50	81.29
7.29e-03	7.10	0.54	81.83
6.35e-03	7.30	0.61	82.44
5.52e-03	7.50	0.52	82.96
4.81e-03	7.70	0.47	83.43
4.19e-03	7.90	0.43	83.85
3.64e-03	8.10	0.38	84.24
3.17e-03	8.30	0.36	84.59
2.76e-03	8.50	0.34	84.94
2.40e-03	8.70	0.35	85.29
2.09e-03	8.90	0.36	85.65
1.82e-03	9.10	0.35	86.00
1.59e-03	9.30	0.36	86.36
1.38e-03	9.50	0.36	86.72
1.20e-03	9.70	0.40	87.12
1.05e-03	9.90	0.53	87.65
9.11e-04	10.10	0.62	88.27
7.93e-04	10.30	0.52	88.79
6.91e-04	10.50	0.47	89.26
6.01e-04	10.70	0.47	89.73
5.23e-04	10.90	0.22	89.95
2.44e-04	12.00	10.05	100.00

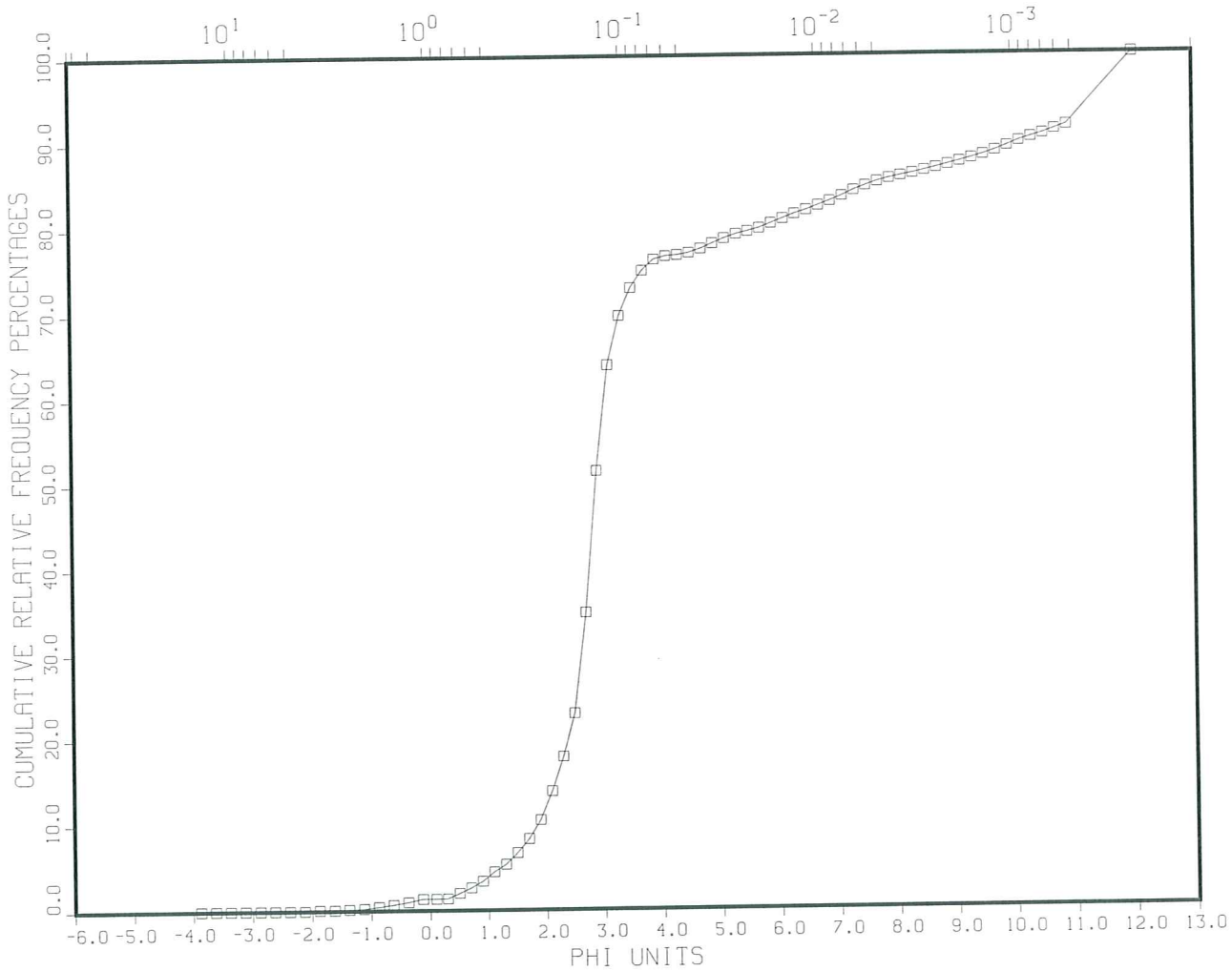
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.10	74.04	9.72	16.15	25.86

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
4.32	3.26	3.77	1.45

GS1-97-4884-4890,RD011430, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
6: 2:1998
11430
72
GS1-97-4884-4890
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011430
SWF00425
4.88400000000000E+0003
4.89000000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.09	0.09
3.08e+00	-1.62	0.00	0.09
2.59e+00	-1.38	0.08	0.17
2.18e+00	-1.12	0.07	0.24
1.83e+00	-0.88	0.22	0.46
1.54e+00	-0.62	0.23	0.69
1.30e+00	-0.38	0.29	0.98
1.09e+00	-0.12	0.37	1.35
9.33e-01	0.10	0.00	1.35
8.12e-01	0.30	0.03	1.38
7.07e-01	0.50	0.62	2.00
6.16e-01	0.70	0.63	2.63
5.36e-01	0.90	0.78	3.40
4.67e-01	1.10	1.08	4.48
4.06e-01	1.30	0.87	5.36
3.54e-01	1.50	1.33	6.68
3.08e-01	1.70	1.62	8.30
2.68e-01	1.90	2.17	10.47
2.33e-01	2.10	3.38	13.86
2.03e-01	2.30	4.02	17.87
1.77e-01	2.50	5.06	22.94
1.54e-01	2.70	11.88	34.81
1.34e-01	2.90	16.66	51.47
1.17e-01	3.10	12.39	63.86
1.02e-01	3.30	5.78	69.64
8.84e-02	3.50	3.24	72.88
7.69e-02	3.70	2.02	74.90
6.70e-02	3.90	1.31	76.21
5.83e-02	4.10	0.38	76.59
5.08e-02	4.30	0.11	76.70
4.42e-02	4.50	0.24	76.95
3.85e-02	4.70	0.47	77.42
3.35e-02	4.90	0.61	78.02
2.92e-02	5.10	0.57	78.60
2.54e-02	5.30	0.48	79.08
2.21e-02	5.50	0.32	79.40
1.92e-02	5.70	0.36	79.77
1.67e-02	5.90	0.54	80.31
1.46e-02	6.10	0.53	80.84
1.27e-02	6.30	0.54	81.38

1.10e-02	6.50	0.44	81.82
9.62e-03	6.70	0.52	82.34
8.37e-03	6.90	0.52	82.86
7.29e-03	7.10	0.58	83.44
6.35e-03	7.30	0.64	84.08
5.52e-03	7.50	0.54	84.62
4.81e-03	7.70	0.48	85.09
4.19e-03	7.90	0.37	85.46
3.64e-03	8.10	0.29	85.75
3.17e-03	8.30	0.28	86.03
2.76e-03	8.50	0.31	86.34
2.40e-03	8.70	0.33	86.67
2.09e-03	8.90	0.36	87.03
1.82e-03	9.10	0.35	87.38
1.59e-03	9.30	0.37	87.75
1.38e-03	9.50	0.40	88.14
1.20e-03	9.70	0.47	88.61
1.05e-03	9.90	0.55	89.16
9.11e-04	10.10	0.56	89.72
7.93e-04	10.30	0.45	90.17
6.91e-04	10.50	0.40	90.57
6.01e-04	10.70	0.50	91.07
5.23e-04	10.90	0.50	91.57
2.44e-04	12.00	8.43	100.00

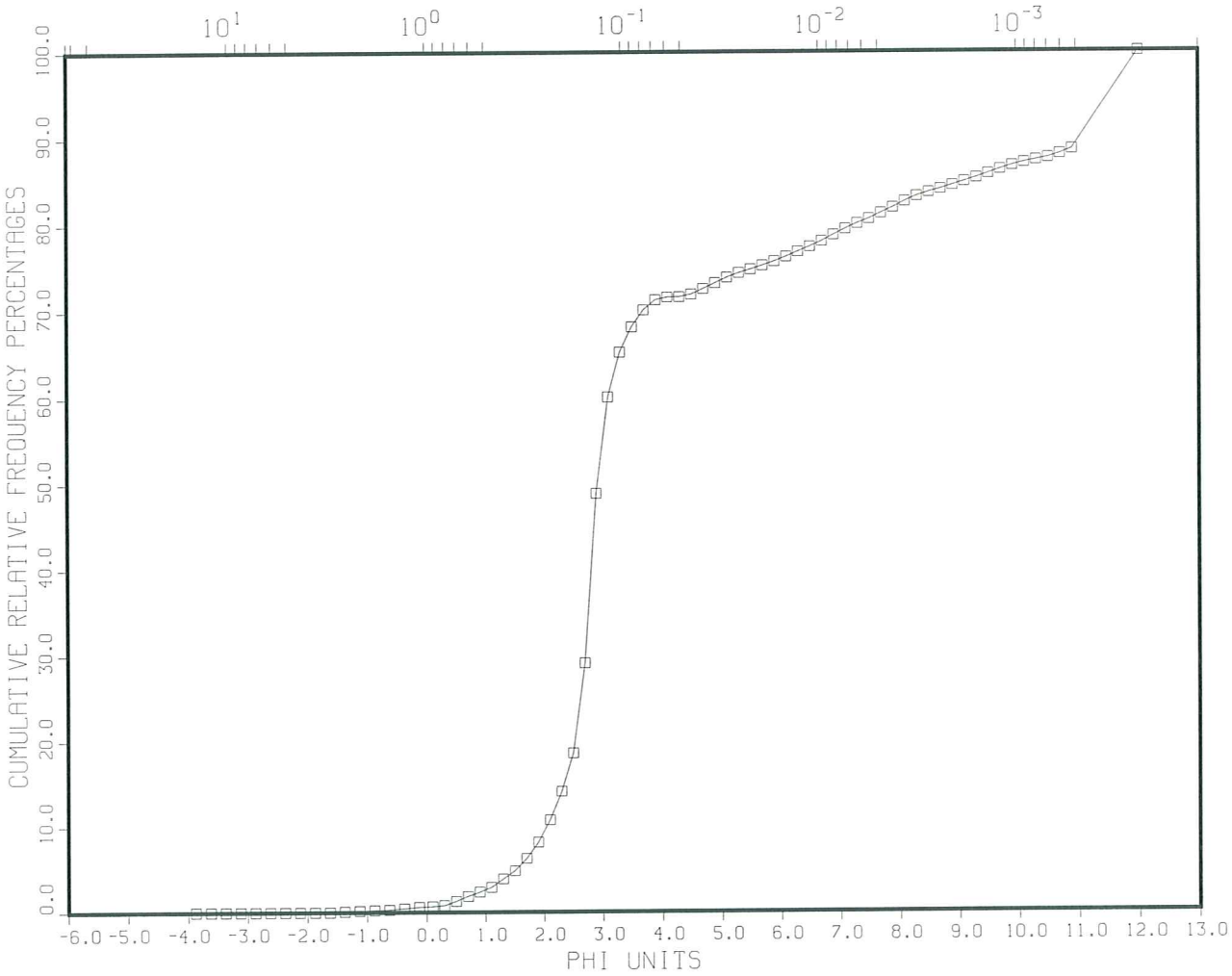
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.24	75.97	9.25	14.54	23.79

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
4.20	3.12	4.19	1.53

GS1-97-4935-4940,RD011431, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
6: 2:1998
11431
72
GS1-97-4935-4940
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011431
SWF00425
4.93500000000000E+0003
4.94000000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.00	0.00
3.08e+00	-1.62	0.00	0.00
2.59e+00	-1.38	0.08	0.08
2.18e+00	-1.12	0.09	0.17
1.83e+00	-0.88	0.07	0.24
1.54e+00	-0.62	0.04	0.28
1.30e+00	-0.38	0.14	0.42
1.09e+00	-0.12	0.16	0.58
9.33e-01	0.10	0.08	0.66
8.12e-01	0.30	0.12	0.79
7.07e-01	0.50	0.48	1.27
6.16e-01	0.70	0.58	1.85
5.36e-01	0.90	0.49	2.34
4.67e-01	1.10	0.55	2.89
4.06e-01	1.30	0.98	3.87
3.54e-01	1.50	0.95	4.82
3.08e-01	1.70	1.44	6.26
2.68e-01	1.90	1.90	8.16
2.33e-01	2.10	2.60	10.76
2.03e-01	2.30	3.34	14.10
1.77e-01	2.50	4.49	18.59
1.54e-01	2.70	10.51	29.10
1.34e-01	2.90	19.78	48.88
1.17e-01	3.10	11.25	60.13
1.02e-01	3.30	5.13	65.26
8.84e-02	3.50	2.90	68.16
7.69e-02	3.70	1.97	70.13
6.70e-02	3.90	1.16	71.29
5.83e-02	4.10	0.31	71.60
5.08e-02	4.30	0.03	71.63
4.42e-02	4.50	0.30	71.93
3.85e-02	4.70	0.63	72.56
3.35e-02	4.90	0.66	73.22
2.92e-02	5.10	0.64	73.85
2.54e-02	5.30	0.52	74.37
2.21e-02	5.50	0.41	74.79
1.92e-02	5.70	0.45	75.23
1.67e-02	5.90	0.47	75.70
1.46e-02	6.10	0.54	76.24
1.27e-02	6.30	0.59	76.83

1.10e-02	6.50	0.58	77.41
9.62e-03	6.70	0.62	78.03
8.37e-03	6.90	0.73	78.75
7.29e-03	7.10	0.68	79.44
6.35e-03	7.30	0.63	80.07
5.52e-03	7.50	0.53	80.61
4.81e-03	7.70	0.66	81.27
4.19e-03	7.90	0.64	81.90
3.64e-03	8.10	0.71	82.62
3.17e-03	8.30	0.61	83.23
2.76e-03	8.50	0.46	83.68
2.40e-03	8.70	0.37	84.05
2.09e-03	8.90	0.44	84.49
1.82e-03	9.10	0.43	84.92
1.59e-03	9.30	0.44	85.36
1.38e-03	9.50	0.48	85.84
1.20e-03	9.70	0.50	86.33
1.05e-03	9.90	0.44	86.77
9.11e-04	10.10	0.36	87.14
7.93e-04	10.30	0.27	87.41
6.91e-04	10.50	0.28	87.69
6.01e-04	10.70	0.44	88.12
5.23e-04	10.90	0.54	88.66
2.44e-04	12.00	11.34	100.00

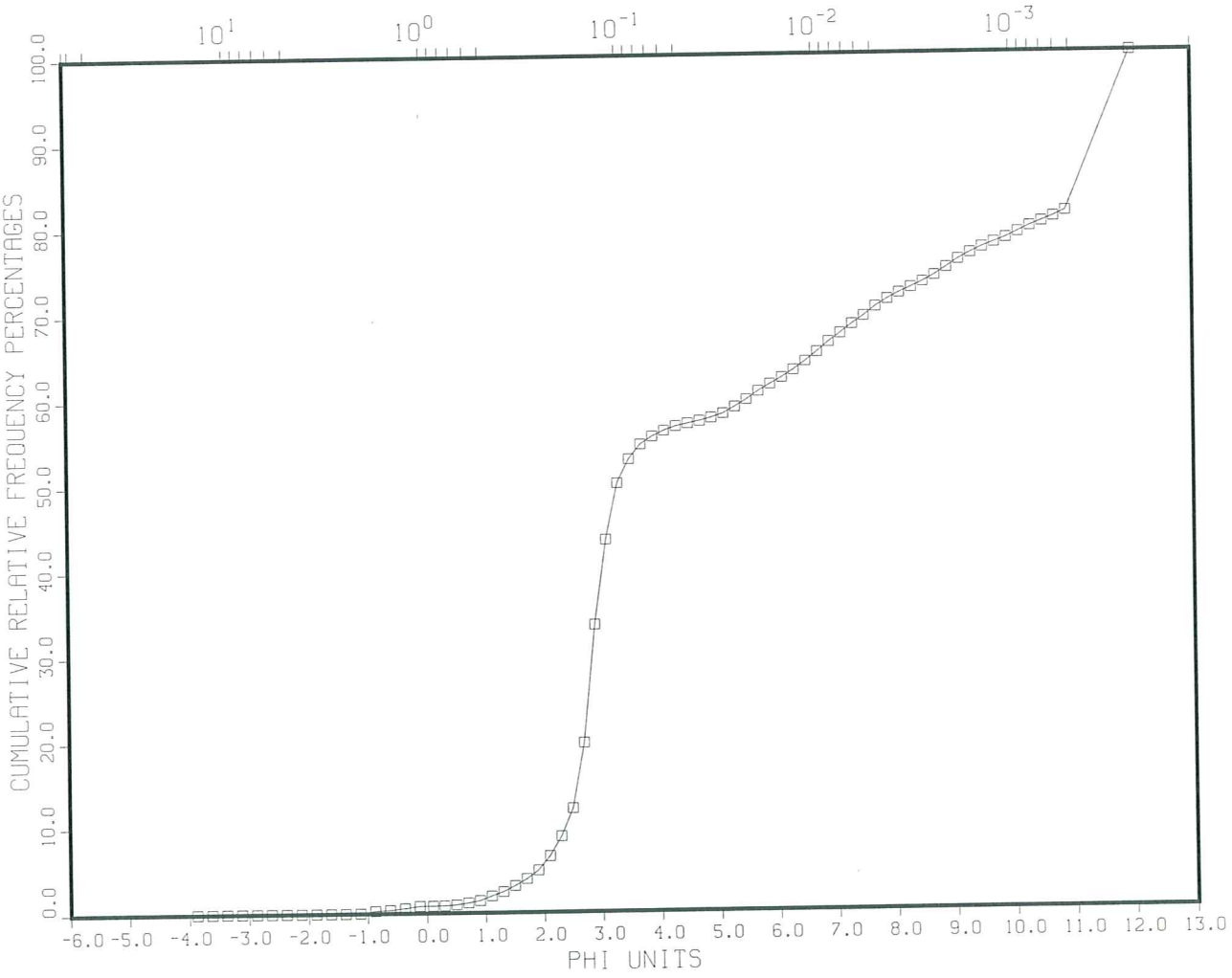
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.17	71.12	10.61	18.10	28.71

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
4.60	3.33	3.33	1.31

GS1-97-5027-5033,RD011432, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
6: 2:1998
11432
72
GS1-97-5027-5033
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011432
SWF00425
5.02700000000000E+0003
5.03300000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.00	0.00
3.08e+00	-1.62	0.00	0.00
2.59e+00	-1.38	0.00	0.00
2.18e+00	-1.12	0.03	0.03
1.83e+00	-0.88	0.27	0.30
1.54e+00	-0.62	0.08	0.38
1.30e+00	-0.38	0.20	0.58
1.09e+00	-0.12	0.24	0.82
9.33e-01	0.10	0.01	0.82
8.12e-01	0.30	0.02	0.84
7.07e-01	0.50	0.11	0.95
6.16e-01	0.70	0.21	1.16
5.36e-01	0.90	0.25	1.41
4.67e-01	1.10	0.53	1.94
4.06e-01	1.30	0.49	2.43
3.54e-01	1.50	0.68	3.11
3.08e-01	1.70	0.80	3.91
2.68e-01	1.90	1.00	4.91
2.33e-01	2.10	1.63	6.53
2.03e-01	2.30	2.28	8.82
1.77e-01	2.50	3.25	12.07
1.54e-01	2.70	7.70	19.76
1.34e-01	2.90	13.79	33.56
1.17e-01	3.10	9.94	43.50
1.02e-01	3.30	6.65	50.14
8.84e-02	3.50	2.80	52.94
7.69e-02	3.70	1.72	54.66
6.70e-02	3.90	0.91	55.57
5.83e-02	4.10	0.68	56.25
5.08e-02	4.30	0.50	56.75
4.42e-02	4.50	0.30	57.05
3.85e-02	4.70	0.30	57.35
3.35e-02	4.90	0.35	57.70
2.92e-02	5.10	0.47	58.17
2.54e-02	5.30	0.77	58.94
2.21e-02	5.50	0.82	59.76
1.92e-02	5.70	0.96	60.73
1.67e-02	5.90	0.82	61.54
1.46e-02	6.10	0.76	62.30
1.27e-02	6.30	0.89	63.19

1.10e-02	6.50	1.00	64.20
9.62e-03	6.70	1.09	65.28
8.37e-03	6.90	1.16	66.44
7.29e-03	7.10	0.98	67.42
6.35e-03	7.30	1.05	68.47
5.52e-03	7.50	0.93	69.40
4.81e-03	7.70	1.07	70.47
4.19e-03	7.90	0.86	71.33
3.64e-03	8.10	0.71	72.04
3.17e-03	8.30	0.63	72.66
2.76e-03	8.50	0.64	73.31
2.40e-03	8.70	0.74	74.05
2.09e-03	8.90	0.91	74.96
1.82e-03	9.10	0.93	75.89
1.59e-03	9.30	0.75	76.64
1.38e-03	9.50	0.64	77.28
1.20e-03	9.70	0.53	77.81
1.05e-03	9.90	0.52	78.33
9.11e-04	10.10	0.66	78.99
7.93e-04	10.30	0.66	79.65
6.91e-04	10.50	0.54	80.20
6.01e-04	10.70	0.56	80.75
5.23e-04	10.90	0.64	81.39
2.44e-04	12.00	18.61	100.00

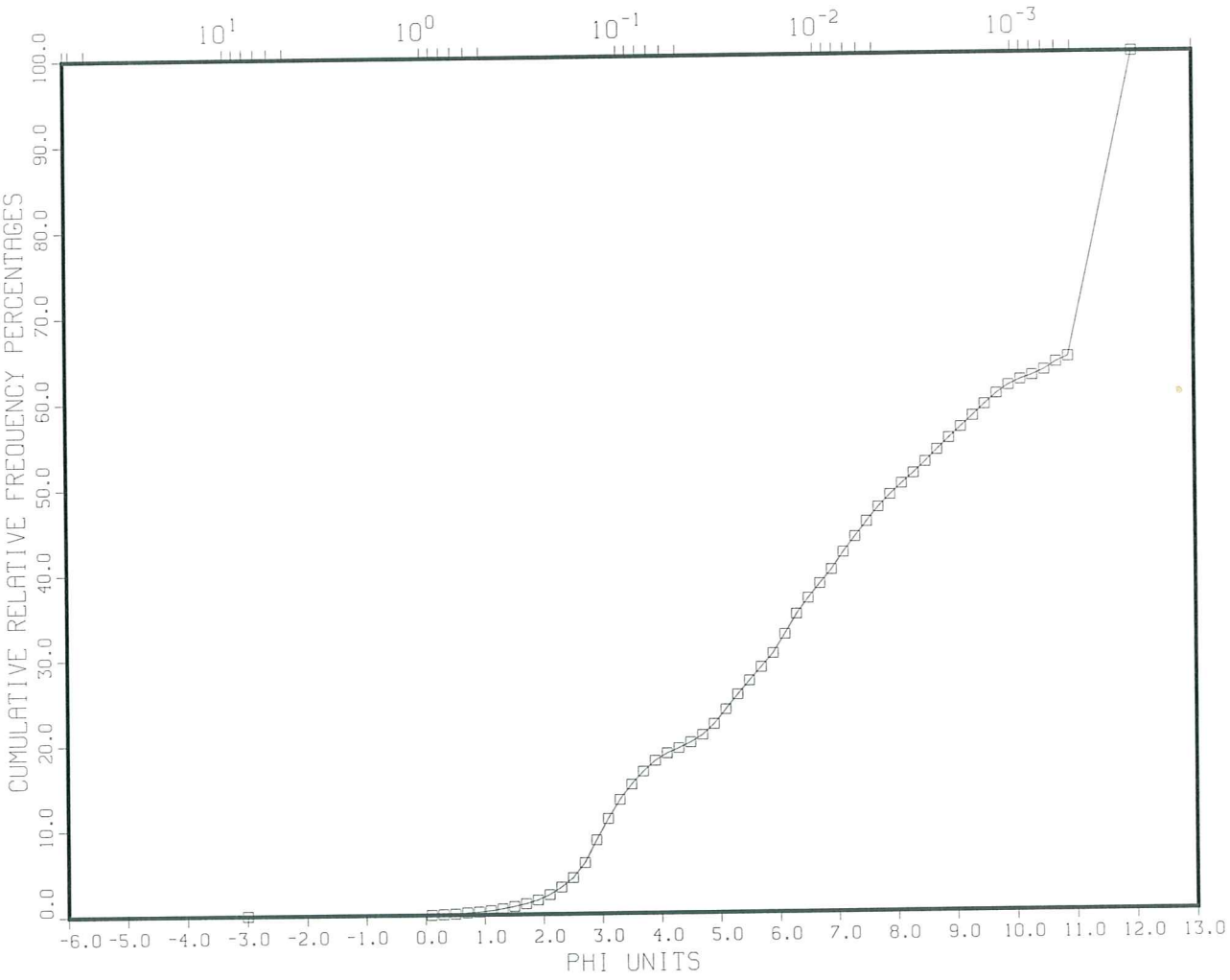
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.03	55.55	15.75	28.67	44.43

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
5.73	3.75	1.90	0.67

GS1-97-5082-5086,RD011433, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
9: 2:1998
11433
57
GS1-97-5082-5086
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011433
SWF00425
5.08200000000000E+0003
5.08600000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
8.00e+00	-3.00	0.00	0.00
9.33e-01	0.10	0.00	0.00
8.12e-01	0.30	0.05	0.06

7.07e-01	0.50	0.06	0.12
6.16e-01	0.70	0.11	0.23
5.36e-01	0.90	0.09	0.32
4.67e-01	1.10	0.13	0.45
4.06e-01	1.30	0.22	0.67
3.54e-01	1.50	0.26	0.93
3.08e-01	1.70	0.31	1.24
2.68e-01	1.90	0.41	1.64
2.33e-01	2.10	0.61	2.26
2.03e-01	2.30	0.86	3.11
1.77e-01	2.50	1.08	4.20
1.54e-01	2.70	1.75	5.94
1.34e-01	2.90	2.64	8.58
1.17e-01	3.10	2.47	11.05
1.02e-01	3.30	2.21	13.26
8.84e-02	3.50	1.81	15.08
7.69e-02	3.70	1.51	16.59
6.70e-02	3.90	1.28	17.87
5.83e-02	4.10	0.85	18.72
5.08e-02	4.30	0.59	19.31
4.42e-02	4.50	0.68	19.99
3.85e-02	4.70	0.85	20.84
3.35e-02	4.90	1.27	22.11
2.92e-02	5.10	1.71	23.81
2.54e-02	5.30	1.75	25.57
2.21e-02	5.50	1.61	27.18
1.92e-02	5.70	1.56	28.74
1.67e-02	5.90	1.59	30.33
1.46e-02	6.10	2.24	32.57
1.27e-02	6.30	2.38	34.95
1.10e-02	6.50	1.86	36.80
9.62e-03	6.70	1.70	38.50
8.37e-03	6.90	1.61	40.11
7.29e-03	7.10	2.02	42.13
6.35e-03	7.30	1.79	43.92
5.52e-03	7.50	1.73	45.65
4.81e-03	7.70	1.67	47.32
4.19e-03	7.90	1.42	48.74
3.64e-03	8.10	1.31	50.04
3.17e-03	8.30	1.21	51.25
2.76e-03	8.50	1.31	52.56
2.40e-03	8.70	1.39	53.95
2.09e-03	8.90	1.35	55.30
1.82e-03	9.10	1.28	56.57
1.59e-03	9.30	1.29	57.87

1.38e-03	9.50	1.31	59.17
1.20e-03	9.70	1.25	60.43
1.05e-03	9.90	0.97	61.40
9.11e-04	10.10	0.65	62.05
7.93e-04	10.30	0.48	62.53
6.91e-04	10.50	0.63	63.16
6.01e-04	10.70	0.89	64.05
5.23e-04	10.90	0.61	64.66
2.44e-04	12.00	35.34	100.00

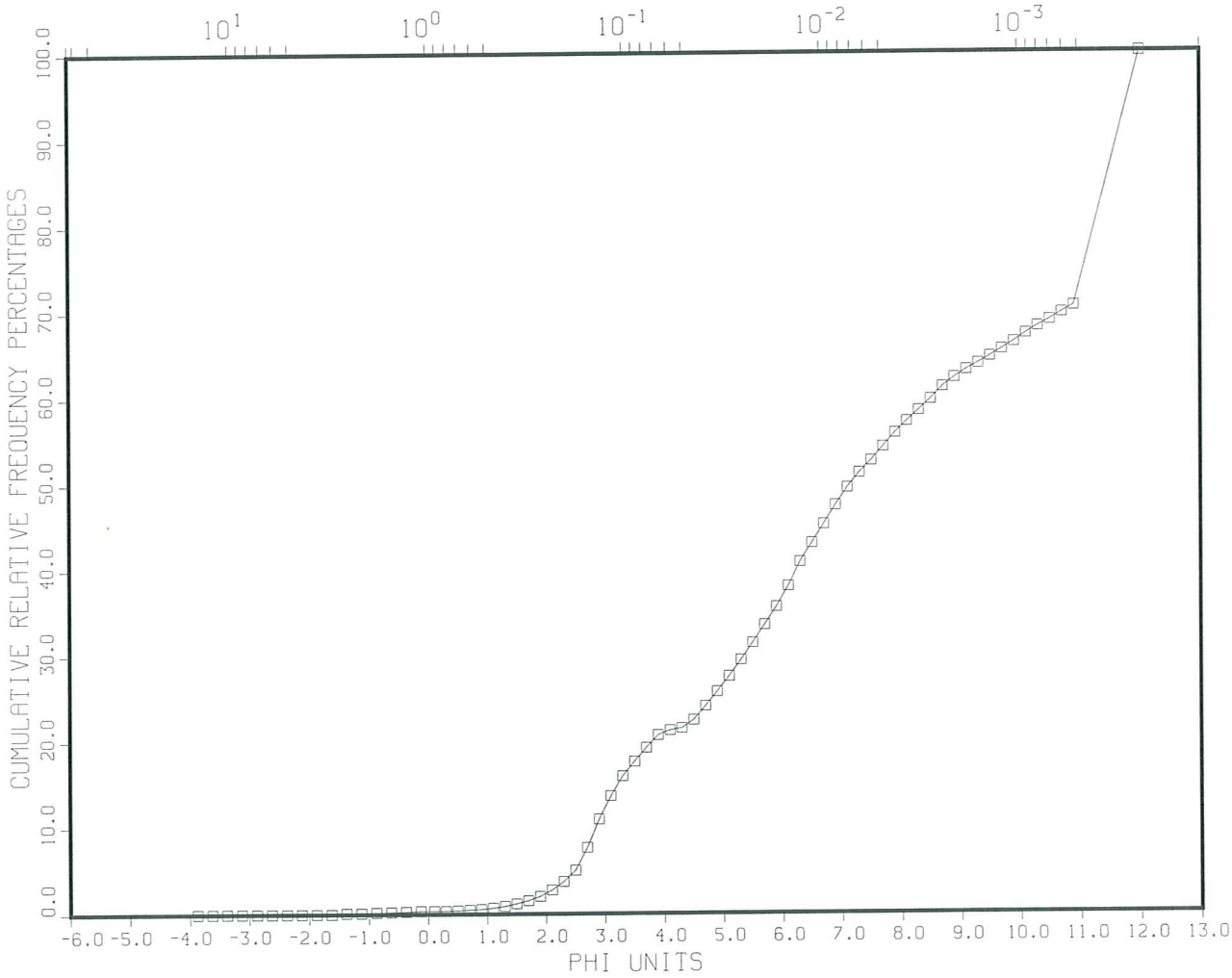
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.00	17.87	30.87	51.26	82.13

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
8.17	3.46	1.67	-0.26

GS1-97-5101-5105,RD011434, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
9: 2:1998
11434
72
GS1-97-5101-5105
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011434
SWF00425
5.10100000000000E+0003
5.10500000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.00	0.00
3.08e+00	-1.62	0.00	0.00
2.59e+00	-1.38	0.13	0.13
2.18e+00	-1.12	0.00	0.13
1.83e+00	-0.88	0.07	0.20
1.54e+00	-0.62	0.04	0.24
1.30e+00	-0.38	0.05	0.29
1.09e+00	-0.12	0.07	0.35
9.33e-01	0.10	0.00	0.35
8.12e-01	0.30	0.01	0.37
7.07e-01	0.50	0.05	0.42
6.16e-01	0.70	0.08	0.49
5.36e-01	0.90	0.07	0.56
4.67e-01	1.10	0.13	0.69
4.06e-01	1.30	0.21	0.90
3.54e-01	1.50	0.29	1.19
3.08e-01	1.70	0.36	1.55
2.68e-01	1.90	0.49	2.03
2.33e-01	2.10	0.73	2.77
2.03e-01	2.30	0.97	3.74
1.77e-01	2.50	1.29	5.03
1.54e-01	2.70	2.64	7.66
1.34e-01	2.90	3.28	10.94
1.17e-01	3.10	2.66	13.60
1.02e-01	3.30	2.31	15.91
8.84e-02	3.50	1.71	17.62
7.69e-02	3.70	1.62	19.24
6.70e-02	3.90	1.47	20.71
5.83e-02	4.10	0.55	21.26
5.08e-02	4.30	0.26	21.52
4.42e-02	4.50	0.94	22.46
3.85e-02	4.70	1.62	24.08
3.35e-02	4.90	1.67	25.75
2.92e-02	5.10	1.78	27.53
2.54e-02	5.30	1.91	29.44
2.21e-02	5.50	2.00	31.44
1.92e-02	5.70	2.09	33.53
1.67e-02	5.90	2.11	35.63
1.46e-02	6.10	2.41	38.04
1.27e-02	6.30	2.82	40.86

1.10e-02	6.50	2.19	43.05
9.62e-03	6.70	2.20	45.26
8.37e-03	6.90	2.20	47.45
7.29e-03	7.10	2.03	49.49
6.35e-03	7.30	1.75	51.23
5.52e-03	7.50	1.41	52.64
4.81e-03	7.70	1.63	54.27
4.19e-03	7.90	1.60	55.87
3.64e-03	8.10	1.35	57.23
3.17e-03	8.30	1.26	58.49
2.76e-03	8.50	1.29	59.77
2.40e-03	8.70	1.43	61.20
2.09e-03	8.90	1.05	62.25
1.82e-03	9.10	0.89	63.15
1.59e-03	9.30	0.74	63.89
1.38e-03	9.50	0.80	64.69
1.20e-03	9.70	0.82	65.51
1.05e-03	9.90	0.85	66.36
9.11e-04	10.10	0.97	67.33
7.93e-04	10.30	0.86	68.19
6.91e-04	10.50	0.74	68.93
6.01e-04	10.70	0.87	69.80
5.23e-04	10.90	0.79	70.59
2.44e-04	12.00	29.41	100.00

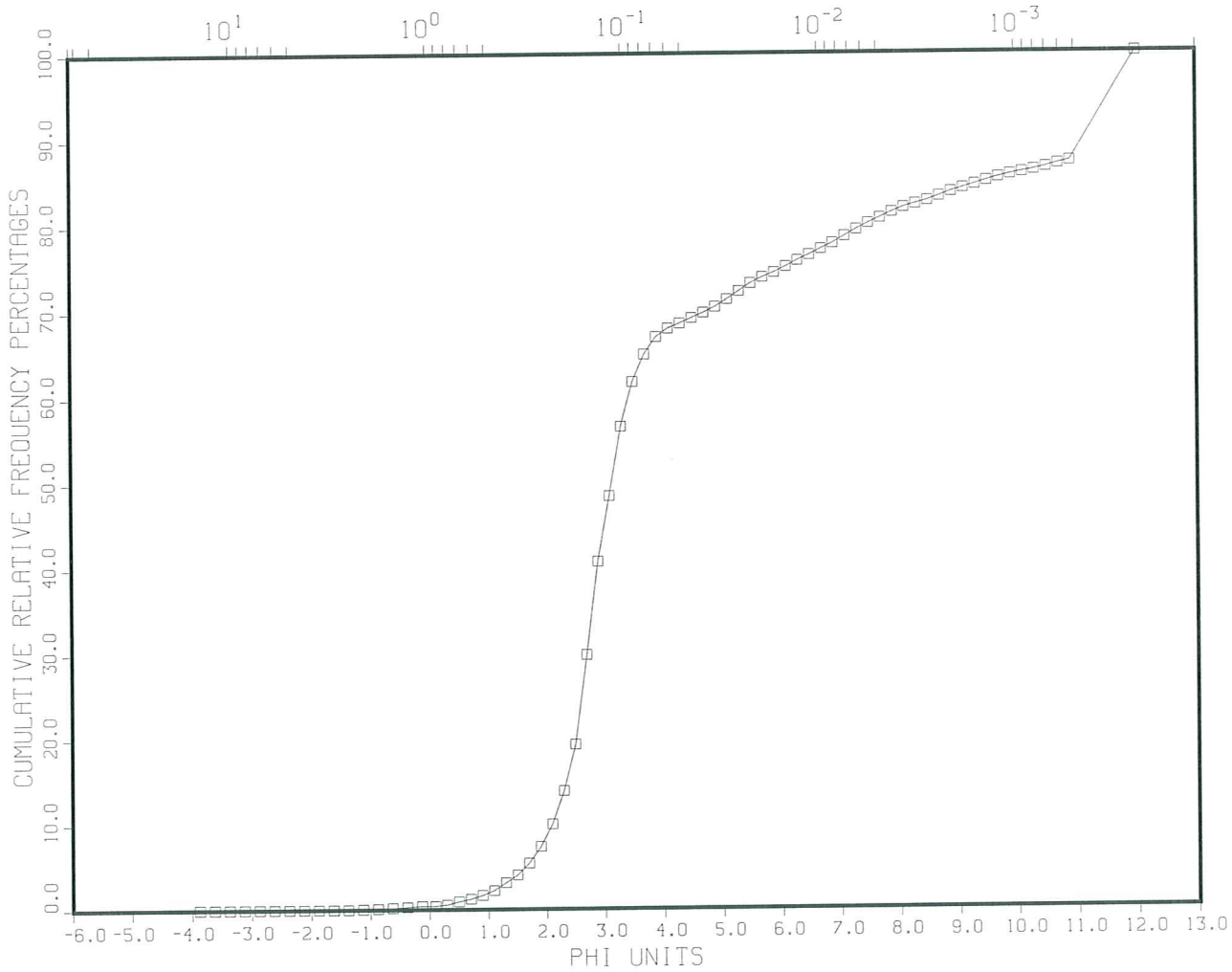
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.13	20.58	35.17	44.13	79.29

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
7.67	3.47	1.70	-0.06

GS1-97-5140-5144,RD011435, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
9: 2:1998
11435
72
GS1-97-5140-5144
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011435
SWF00425
5.14000000000000E+0003
5.14400000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.00	0.00
3.08e+00	-1.62	0.00	0.00
2.59e+00	-1.38	0.00	0.00
2.18e+00	-1.12	0.06	0.06
1.83e+00	-0.88	0.05	0.11
1.54e+00	-0.62	0.08	0.19
1.30e+00	-0.38	0.10	0.30
1.09e+00	-0.12	0.12	0.41
9.33e-01	0.10	0.00	0.41
8.12e-01	0.30	0.15	0.56
7.07e-01	0.50	0.37	0.92
6.16e-01	0.70	0.31	1.23
5.36e-01	0.90	0.43	1.66
4.67e-01	1.10	0.57	2.23
4.06e-01	1.30	0.91	3.14
3.54e-01	1.50	0.90	4.04
3.08e-01	1.70	1.40	5.44
2.68e-01	1.90	1.94	7.38
2.33e-01	2.10	2.64	10.02
2.03e-01	2.30	3.93	13.95
1.77e-01	2.50	5.43	19.38
1.54e-01	2.70	10.54	29.92
1.34e-01	2.90	10.94	40.86
1.17e-01	3.10	7.63	48.49
1.02e-01	3.30	8.17	56.66
8.84e-02	3.50	5.16	61.83
7.69e-02	3.70	3.19	65.02
6.70e-02	3.90	2.00	67.01
5.83e-02	4.10	0.97	67.98
5.08e-02	4.30	0.58	68.56
4.42e-02	4.50	0.62	69.18
3.85e-02	4.70	0.60	69.78
3.35e-02	4.90	0.68	70.46
2.92e-02	5.10	0.86	71.32
2.54e-02	5.30	0.96	72.27
2.21e-02	5.50	0.91	73.19
1.92e-02	5.70	0.69	73.87
1.67e-02	5.90	0.56	74.43
1.46e-02	6.10	0.69	75.12
1.27e-02	6.30	0.72	75.84

1.10e-02	6.50	0.63	76.47
9.62e-03	6.70	0.69	77.16
8.37e-03	6.90	0.65	77.81
7.29e-03	7.10	0.81	78.62
6.35e-03	7.30	0.77	79.39
5.52e-03	7.50	0.71	80.10
4.81e-03	7.70	0.64	80.73
4.19e-03	7.90	0.65	81.39
3.64e-03	8.10	0.55	81.94
3.17e-03	8.30	0.39	82.34
2.76e-03	8.50	0.38	82.72
2.40e-03	8.70	0.50	83.22
2.09e-03	8.90	0.51	83.73
1.82e-03	9.10	0.42	84.15
1.59e-03	9.30	0.40	84.55
1.38e-03	9.50	0.42	84.98
1.20e-03	9.70	0.39	85.37
1.05e-03	9.90	0.32	85.69
9.11e-04	10.10	0.28	85.97
7.93e-04	10.30	0.25	86.22
6.91e-04	10.50	0.31	86.53
6.01e-04	10.70	0.40	86.93
5.23e-04	10.90	0.32	87.25
2.44e-04	12.00	12.75	100.00

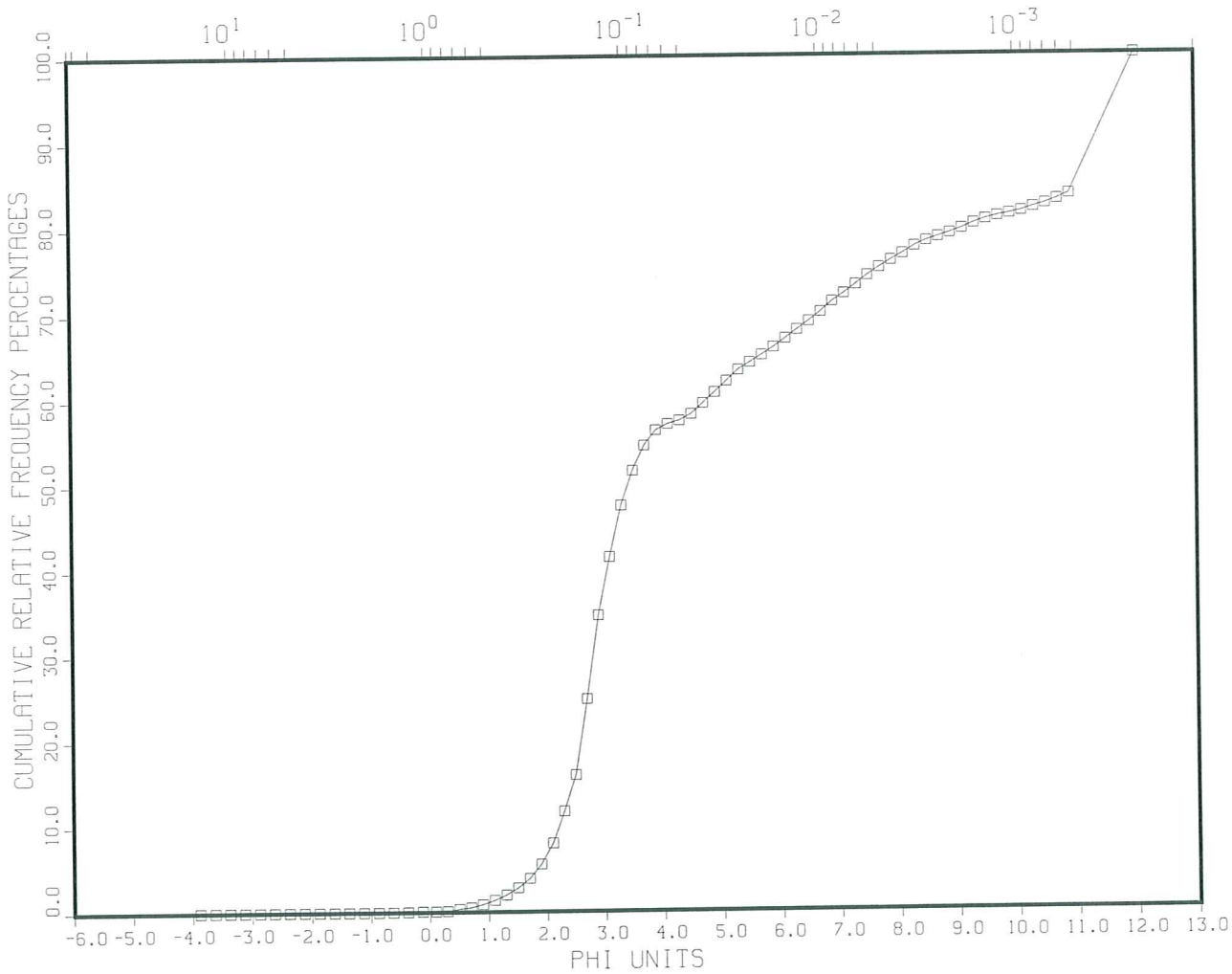
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.06	66.96	14.37	18.61	32.99

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
4.80	3.36	3.11	1.23

GS1-97-5160-5164,RD011436, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
9: 2:1998
11436
72
GS1-97-5160-5164
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011436
SWF00425
5.16000000000000E+0003
5.16400000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.00	0.00
3.08e+00	-1.62	0.00	0.00
2.59e+00	-1.38	0.00	0.00
2.18e+00	-1.12	0.00	0.00
1.83e+00	-0.88	0.00	0.00
1.54e+00	-0.62	0.02	0.02
1.30e+00	-0.38	0.02	0.04
1.09e+00	-0.12	0.05	0.09
9.33e-01	0.10	0.00	0.09
8.12e-01	0.30	0.04	0.13
7.07e-01	0.50	0.22	0.35
6.16e-01	0.70	0.18	0.53
5.36e-01	0.90	0.36	0.89
4.67e-01	1.10	0.48	1.37
4.06e-01	1.30	0.61	1.98
3.54e-01	1.50	0.82	2.80
3.08e-01	1.70	1.10	3.90
2.68e-01	1.90	1.65	5.55
2.33e-01	2.10	2.43	7.98
2.03e-01	2.30	3.71	11.70
1.77e-01	2.50	4.20	15.90
1.54e-01	2.70	8.96	24.86
1.34e-01	2.90	9.78	34.64
1.17e-01	3.10	6.82	41.46
1.02e-01	3.30	6.07	47.53
8.84e-02	3.50	4.02	51.56
7.69e-02	3.70	2.97	54.52
6.70e-02	3.90	1.80	56.32
5.83e-02	4.10	0.73	57.05
5.08e-02	4.30	0.40	57.44
4.42e-02	4.50	0.76	58.20
3.85e-02	4.70	1.25	59.45
3.35e-02	4.90	1.27	60.72
2.92e-02	5.10	1.30	62.02
2.54e-02	5.30	1.29	63.32
2.21e-02	5.50	0.86	64.17
1.92e-02	5.70	0.85	65.02
1.67e-02	5.90	0.90	65.92
1.46e-02	6.10	1.00	66.92
1.27e-02	6.30	1.03	67.95

1.10e-02	6.50	1.00	68.95
9.62e-03	6.70	1.06	70.01
8.37e-03	6.90	1.22	71.23
7.29e-03	7.10	0.93	72.16
6.35e-03	7.30	1.03	73.18
5.52e-03	7.50	1.05	74.23
4.81e-03	7.70	0.92	75.15
4.19e-03	7.90	0.85	76.00
3.64e-03	8.10	0.75	76.75
3.17e-03	8.30	0.86	77.60
2.76e-03	8.50	0.60	78.20
2.40e-03	8.70	0.46	78.66
2.09e-03	8.90	0.43	79.10
1.82e-03	9.10	0.50	79.60
1.59e-03	9.30	0.61	80.20
1.38e-03	9.50	0.48	80.68
1.20e-03	9.70	0.35	81.03
1.05e-03	9.90	0.27	81.30
9.11e-04	10.10	0.30	81.60
7.93e-04	10.30	0.46	82.05
6.91e-04	10.50	0.40	82.45
6.01e-04	10.70	0.51	82.96
5.23e-04	10.90	0.61	83.57
2.44e-04	12.00	16.43	100.00

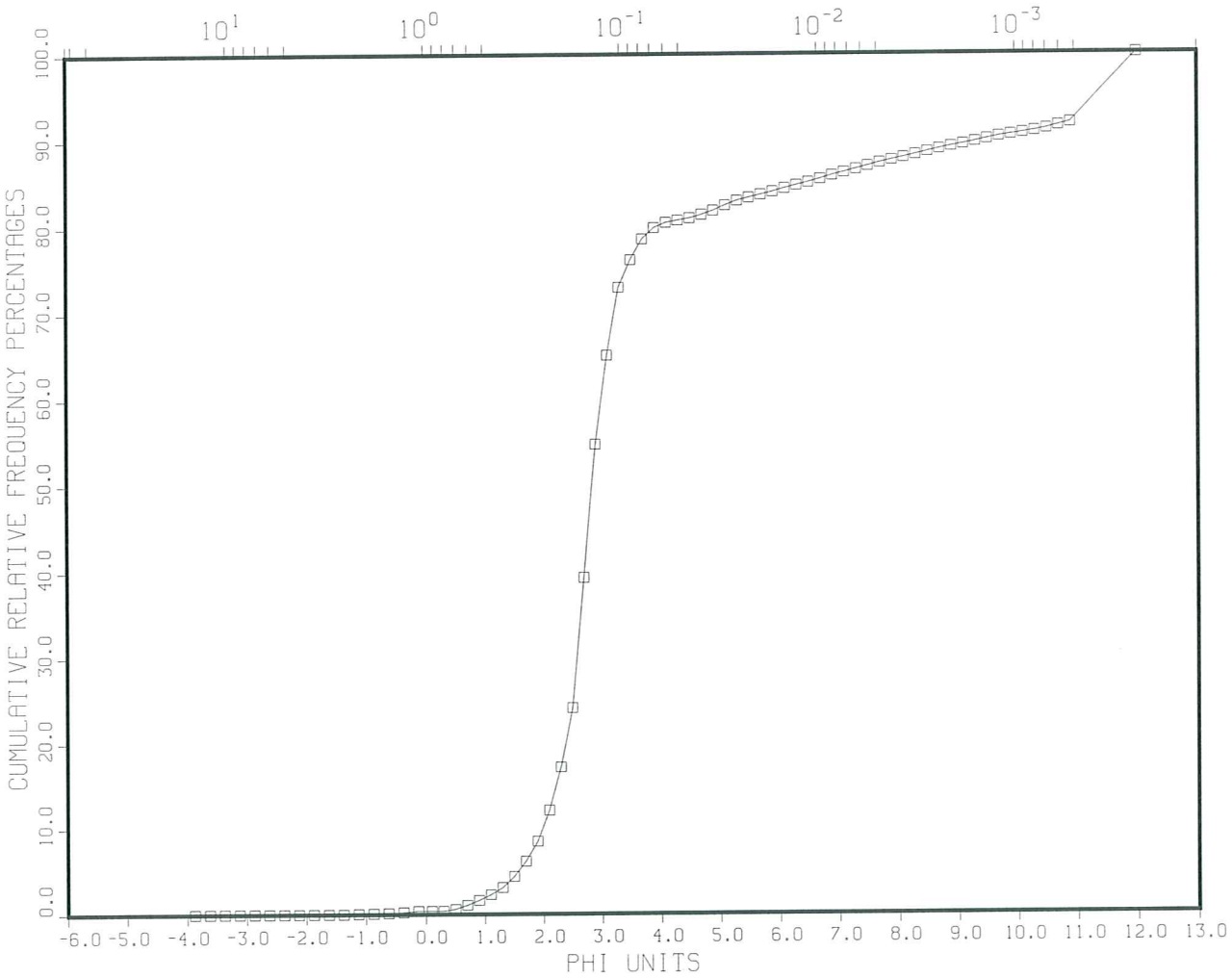
Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.00	56.32	19.68	24.00	43.68

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
5.45	3.57	2.26	0.87

GS1-97-5220-5224,RD011437, G. SONNICHSEN
,00425, TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
MILLIMETER EQUIVALENTS



Calculation Results for
The Sample with the Identifier:

V4.0
9: 2:1998
11437
72
GS1-97-5220-5224
97NORSKALD
970001
G. SONNICHSEN
TERRA NOVA DISCOVERY SITE, NE GRAND BANKS
RD011437
SWF00425
5.22000000000000E+0003
5.22400000000000E+0003
0
0
0
0
0
0
0
0
53292
GS1-97
GS1-97
BOREHOLE
BOREHOLE
46:27.72
-48:29.27
92.90
n lines for future expansion
#

Results

Midpoints		Relative Frequency	Cumulative Frequency
MM	PHI	Percentages	Percentages
1.47e+01	-3.88	0.00	0.00
1.23e+01	-3.62	0.00	0.00
1.04e+01	-3.38	0.00	0.00

8.72e+00	-3.12	0.00	0.00
7.34e+00	-2.88	0.00	0.00
6.17e+00	-2.62	0.00	0.00
5.19e+00	-2.38	0.00	0.00
4.36e+00	-2.12	0.00	0.00
3.67e+00	-1.88	0.00	0.00
3.08e+00	-1.62	0.00	0.00
2.59e+00	-1.38	0.00	0.00
2.18e+00	-1.12	0.05	0.05
1.83e+00	-0.88	0.04	0.10
1.54e+00	-0.62	0.04	0.14
1.30e+00	-0.38	0.09	0.23
1.09e+00	-0.12	0.15	0.38
9.33e-01	0.10	0.00	0.38
8.12e-01	0.30	0.00	0.38
7.07e-01	0.50	0.22	0.60
6.16e-01	0.70	0.47	1.07
5.36e-01	0.90	0.58	1.65
4.67e-01	1.10	0.65	2.30
4.06e-01	1.30	0.83	3.13
3.54e-01	1.50	1.29	4.41
3.08e-01	1.70	1.76	6.18
2.68e-01	1.90	2.32	8.50
2.33e-01	2.10	3.65	12.14
2.03e-01	2.30	5.06	17.20
1.77e-01	2.50	6.96	24.16
1.54e-01	2.70	15.21	39.37
1.34e-01	2.90	15.47	54.84
1.17e-01	3.10	10.34	65.18
1.02e-01	3.30	7.84	73.02
8.84e-02	3.50	3.18	76.21
7.69e-02	3.70	2.38	78.59
6.70e-02	3.90	1.31	79.90
5.83e-02	4.10	0.61	80.51
5.08e-02	4.30	0.24	80.75
4.42e-02	4.50	0.24	81.00
3.85e-02	4.70	0.38	81.38
3.35e-02	4.90	0.47	81.85
2.92e-02	5.10	0.59	82.45
2.54e-02	5.30	0.52	82.97
2.21e-02	5.50	0.35	83.32
1.92e-02	5.70	0.32	83.64
1.67e-02	5.90	0.34	83.98
1.46e-02	6.10	0.38	84.36
1.27e-02	6.30	0.35	84.71

1.10e-02	6.50	0.33	85.05
9.62e-03	6.70	0.38	85.43
8.37e-03	6.90	0.41	85.84
7.29e-03	7.10	0.35	86.20
6.35e-03	7.30	0.37	86.56
5.52e-03	7.50	0.37	86.93
4.81e-03	7.70	0.37	87.30
4.19e-03	7.90	0.32	87.62
3.64e-03	8.10	0.30	87.92
3.17e-03	8.30	0.32	88.23
2.76e-03	8.50	0.34	88.57
2.40e-03	8.70	0.32	88.89
2.09e-03	8.90	0.29	89.18
1.82e-03	9.10	0.27	89.45
1.59e-03	9.30	0.28	89.73
1.38e-03	9.50	0.31	90.04
1.20e-03	9.70	0.29	90.33
1.05e-03	9.90	0.21	90.54
9.11e-04	10.10	0.19	90.73
7.93e-04	10.30	0.22	90.95
6.91e-04	10.50	0.27	91.22
6.01e-04	10.70	0.36	91.58
5.23e-04	10.90	0.35	91.93
2.44e-04	12.00	8.07	100.00

Grain Size Breakdown

% Gravel	% Sand	% Silt	% Clay	% Mud
0.05	79.85	7.72	12.38	20.10

Statistical Measures

Mean (PHI)	Standard Deviation (PHI)	Kurtosis (No Dim.)	Skewness (No Dim.)
4.01	2.91	5.34	1.89