

Geological description of six vibrocores from the Hejre-1 site, Store Fiske Banke area, Danish North Sea

(Formerly East Gert-1 site)

Peter Konradi and Tibor Czakó



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Geological description of six vibrocores from the Hejre-1 site, Store Fisker Banke area, Danish North Sea (formerly East Gert-1 site)

Six vibrocorings were carried out as part of a site survey by Gardline Surveys Ltd. for Phillips Petroleum International Corporation as operator in the Danish Block 5603/28 (Gardline Surveys Ltd. 2000).

The cores have been delivered to GEUS by DONG according to law no. 293, § 34, of 10. June 1981 and no. 13 of 7. January 1991.

Geological description of vibrocores

Location

DONG E & P A/S presented six vibrocores from the Hejre-1 site, originally named East Gert-1 site, to GEUS. The Hejre-1 site is situated at 56°14'36"N, 03°58'00"E.

The vibrocores are situated in a survey area of 2km x 2km. This area is situated between the Store Fisker Banke area and the Outer Rough area. The position of the cores is indicated on the map, Enclosure 1 and on the table, Enclosure 2.

Geological setting

The Hejre-1 hydrocarbon well is located in northern part the Danish Central Graben area (Enclosure 3).

According to the industrial report (Gardline Surveys Ltd. 2000) water depths within the survey area range from 66.4m in the north to 71.6 m in the southeast, and the seabed gently deepens to the southeast of the survey area.

A number of units can be identified on the seismic records. An uppermost acoustically quiet unit is expected to comprise silty sand. It is up to 7 m thick but locally it is less than a metre or absent. The base (Enclosure 1) is expected to mark a distinct unconformity.

The underlying unit is acoustically well layered and exhibits prograding geometry. It is expected to consist of sand prone sediments. The undulating base at depth of 6 - 13 metres below seabed is regarded as an erosion surface.

The underlying sand prone sediments are acoustically quiet and fill in a palaeochannel event till 62 m below seabed. This event has cut into well-layered, subhorizontal, interbedded sands and clays including a palaeochannel with a maximum depth at 350 m below seabed.

According to seismics the base of the Quaternary expected at 342 m below seabed.

Sedimentological core log

The result of the geological description of the core **DGU no. 560328.1**, Havb 131-31-590007, Gardline Survey East Gert-1 VC1, is given in Enclosure 5.

This 5.04 m core is made up of fine sand: in the upper 1.75 m with shells and shell fragments and in the interval 1.75 - 2.15 m with few shells. In the lower part below 2.15 m core depth the fine sand is silty, finely laminated with several thin beds of silty clay and few small, possibly reworked, shell fragments. A sample from 0.80 m holds a Holocene, shallow water foraminifer fauna with a minor content of reworked glacial specimens. A sample from 2.73 m holds a Holocene, marine, shallow water foraminifer fauna with some reworked specimens of a cold Quaternary fauna.

The result of the geological description of the core **DGU no. 560328.2**, Havb 131-31-590008, Gardline Survey East Gert-1 VC2, is given in Enclosure 6.

The 4.20 m core is made up of fine sand with a little gyttja in the uppermost 0.30 m and in the upper 1.30 m with several shells. In the interval 1.30 - 4.01 m the fine sand has only few shells. In the lowermost part of the core a thin bed of silty clay is noticed and the slightly silty fine sand holds a few, small, rounded shell fragments.

The result of the geological description of the core **DGU no. 560328.3**, Havb 131-31-590009, Gardline Survey East Gert-1 VC3, is given in Enclosure 7.

The 4.10 m core consists of fine sand, in the upper 0.35 m with some gyttja. In the upper 1.58 m the sand holds several shells and below that level only fewer shells are noticed.

The result of the geological description of the core **DGU no. 560328.4**, Havb 131-31-590010, Gardline Survey East Gert-1 VC4, is given in Enclosure 8.

The 3.20 m core is made up of fine sand, in the uppermost 0.15 m with some gyttja. In the upper 1.0 m of the core several shells are seen. Below 1.0 m core depth the fine sand has fewer shells. A sample from the base of the core, at 3.20 m, holds a Holocene foraminifer fauna with reworked specimens of a cold Quaternary fauna.

The result of the geological description of the core **DGU no. 560328.5**, Havb 131-31-590011, Gardline Survey East Gert-1 VC5, is given in Enclosure 9.

The upper 1.25 m of this 4.25 m core is made up of fine sand with several shells, in the uppermost 0.30 m with some gyttja. In the interval 1.25 - 3.09 m a lower number of shells are noticed. From 3.09 m core depth to the base of the core laminated fine sand is seen with few thin layers of silty clay as well as with few, small shell fragments.

The result of the geological description of the core **DGU no. 560328.6**, Havb 131-31-590012, Gardline Survey East Gert-1 VC6, is given in Enclosure 10.

The core is 4.67 m and the upper 0.35 m consists of fine sand with shells and with some gyttja. Till 4.30 m core depth the fine sand holds few shells and in the lower meter lamination is seen. The base of this section includes silty, clayey laminae partly rich in shells. The lower part of the core, 4.30 - 4.45 m, is made up of laminated, slightly silty fine sand with thin layers of silty clay. Below 4.45 m horizontally laminated, slightly silty, fine sand occurs with streaks of charred organic particles. A sample from 4.57 m core depth holds only reworked foraminifers, primarily originating from Neogene sediments.

Core photos

The photos of the core DGU no. 560328.1 are seen in Enclosure 12a and 12b.
The photos of the core DGU no. 560328.2 are seen in Enclosure 13a and 13b.
The photos of the core DGU no. 560328.3 are seen in Enclosure 14a and 14b.
The photos of the core DGU no. 560328.4 are seen in Enclosure 15a and 15b.
The photos of the core DGU no. 560328.5 are seen in Enclosure 16a and 16b.
The photos of the core DGU no. 560328.6 are seen in Enclosure 17a and 17b.

Correlation between cores

Generally the cores are made up of fine sand. This sand can be divided according to its proportions (Enclosure 11a and 11b): The upper section in most cores includes a toplayer with some gyttja and holds several shells as well as a Holocene, shallow water foraminifer fauna. The middle section includes fewer shells and may be laminated in the lower part and includes silty clay laminae. The lower section is made up of horizontally laminated fine sand and includes laminae of silty clay and only few shells or rounded shells or shell fragments are noticed. In this section a Holocene, shallow water foraminifer fauna, including a reworked cold fauna, is identified. In core 560328.6 the lower 0.27 m is made up an extra section of laminated fine and very fine, slightly silty sand with streaks of charred organic particles. This section holds only reworked foraminifers.

Interpretation of genesis

All three sections of the sand in the cores, except the extra basal section seen in core 560328.6, hold shells and is marine deposits. The lower section, with laminae of silty clay and few rounded shells and a foraminifer fauna including reworked glacial specimens, is expected to originate in the early stage of the Holocene marine inundation possibly deposited in a tidal flat-like environment. The middle section with few shells is thought to have been deposited also in the early part of the Holocene marine period when minerogenic sedimentation was still high due to erosion and substantial resedimentation. The upper section with several shells and a shallow water foraminifer fauna is believed also to have been deposited in the first part of the marine period but when minerogenic sedimentation was much less than the period before. The uppermost toplayer of the cores with some gyttja probably reflect the present sedimentation at the locality. The basal part of core 560328.6, with the laminated, silty fine sand with charred fine organic particles and a reworked foraminifer fauna of Neogene origin, is supposed to originate in a periglacial lake deposit or the distal part of a sandur plain.

Correlation with seismic

It is the opinion of Gardline Survey Ltd. (2000), that the uppermost unit is expected to comprise silty sand. The first seismic reflector is situated between 3 and 7 m below seabed

(Enclosure 1). The underlying unit comprises sand-prone sediments and has a marked base at depths of between 6 and 13 m below seabed.

According to the sedimentological core logs there is an apparent correlation with the first seismic reflector: The top of the lower section, the slightly fine sand with silty, clayey laminae seems to represent the first reflector. This occurs between 2.15 and 4.45 m below seabed from the North to South (Enclosure 11a-11b).

Nearby boreholes

At the nearby well site Kit-1x, situated approximately 10.5 km Southeast of the Hejre-1 site, one cored, geotechnical borehole is described (Fugro Engineers 2001). The sediment is made up of 2.6 m of silty, fine sand overlying 4.9 m of firm to stiff clay becoming interbedded with silt and fine to medium sand the lower part. This is underlain by 13 m (limit of borehole) of very dense, silty, fine to medium sand with occasional seams of clay. In the site survey report from this site (Svitzer Limited 2000) a first reflector is identified at <2 m to 6-7 m and interpreted as an erosional surface. The upper unit is dense fine sand. A second discontinuous reflector is identified at 9.5 m. The second unit is well bedded and made up of stiff clay laminated with fine/medium sand. A third reflector is identified at 25 m and the unit is dense, fine to medium sand. Several reflectors are identified below this and a reflector at 380 m below seabed is expected to represent the base of the Quaternary.

The upper unit at the Kit-1 site compares to the upper unit at the Hejre-1 site. The second clayey unit at the Kit-1 site does not compare to the Hejre-1 site. The interpreted base Quaternary at the Kit-1 site probably can be compared to the base Quaternary at the Hejre-1 site, allowing the base Quaternary be an irregular surface.

Conclusion and suggested correlation to stratigraphy

The upper and middle section of the cores, the fine sand with the toplayer with gyttja, is suggested to represent an Early to Late Holocene equivalent to the Western Mud Hole member of the Nieuw Zeeland Gronden Formation (Laban, C. *et al.* 1995). The lower section of the cores, the fine sand with silty clay laminae, is suggested to represent the Early Holocene comparable to the Elbow Formation. The lowermost part of core 560328.6, the laminated, silty fine sand, is suggested to be an equivalent to the Twente Formation (Cameron *et al.* 1989).

Holocene	Nieuw Zeeland Gronden Formation	Western Mud Hole Member
	Elbow Formation	
Weichselian	Twente Formation	

Table 1: Generalised stratigraphy of the Late Weichselian and Holocene of the southern North Sea (after Cameron *et al.* 1989 and Jeffery *et al.* 1990).

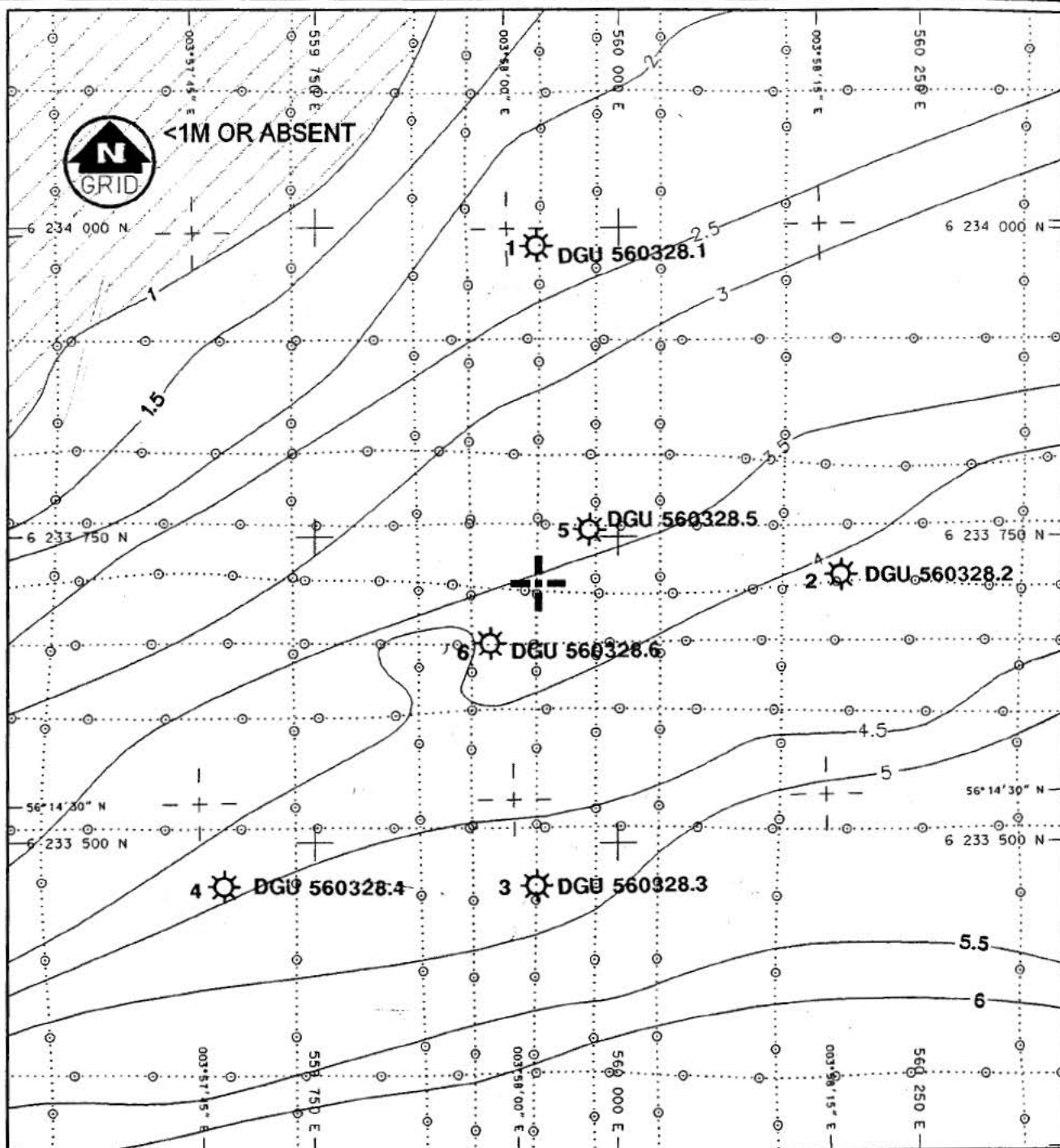
Stored cores

The core DGU no. 560328.1 and core DGU no. 560328.6 is stored at the GEUS core stores for comparison and further stratigraphic studies.

Literature

- Cameron, T.D.J., Schüttenhelm, R.T.E. & Laban, C. 1989: Middle and Upper Pleistocene and Holocene stratigraphy in the southern North Sea between 52° and 54° N, 2° to 4° E. *In*: Henriot J.P. & de Moor, G. (Eds.) The Quaternary and Tertiary geology of the Southern Bight, North Sea.
- Fugo Engineers B.V. 2001: Soil investigation and spudcan penetration analysis, Kit-1X location, Danish sector, North Sea, Februar 2001. GEUS report File no. 18185.
- Gardline Surveys Ltd. 2000: Phillips Petroleum International Corporation-Denmark, East Gert -1 Site Survey, Danish Block 5603, November 2000, Survey Report. GEUS Report File no. 19186.
- Jeffery, D., Graham, C., Wright, S., Laban, C. and Schüttenhelm, R.T.E. 1990: Dogger. Sheet 55° N - 2° E. Sea bed sediments and Holocene geology. Holocene en oppervlaktessedimenten. British Geological Survey and Rijks Geologische Dienst, 1:250.000 Series
- Laban, C. et al., van der Klugt, P.C.M. & Frantsen, P.J. 1995: Oyster Grounds. Sheet 54° N - 4° E. Holocene en oppervlaktessedimenten. Rijks Geologische Dienst, 1:250.000 series.
- Svitzer Limited 2000: Mærsk Olie og Gas A/S, KIT-1X, Site Survey, Volume 2: Results, Final Report, November 2000. GEUS Report File no. 18183.

Enclosures



Shallow Soils 1 (Extract of Chart 6)



PROPOSED EAST GERT-1 LOCATION (559 934 E 6 233 712 N)

-6.5-

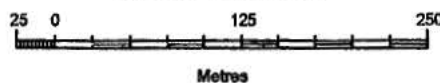
DEPTH IN METRES BELOW SEABED TO BASE OF ACOUSTICALLY QUIET UNIT
(MAPPED REFLECTOR 1) CONTOURED AT 0.5M INTERVALS



AREA WHERE UPPERMOST UNIT IS <1M THICK OR ABSENT

1 DGU 560328.1 VIBROCORE LOCATION (DGU WELL No)

Scale 1 : 5 000

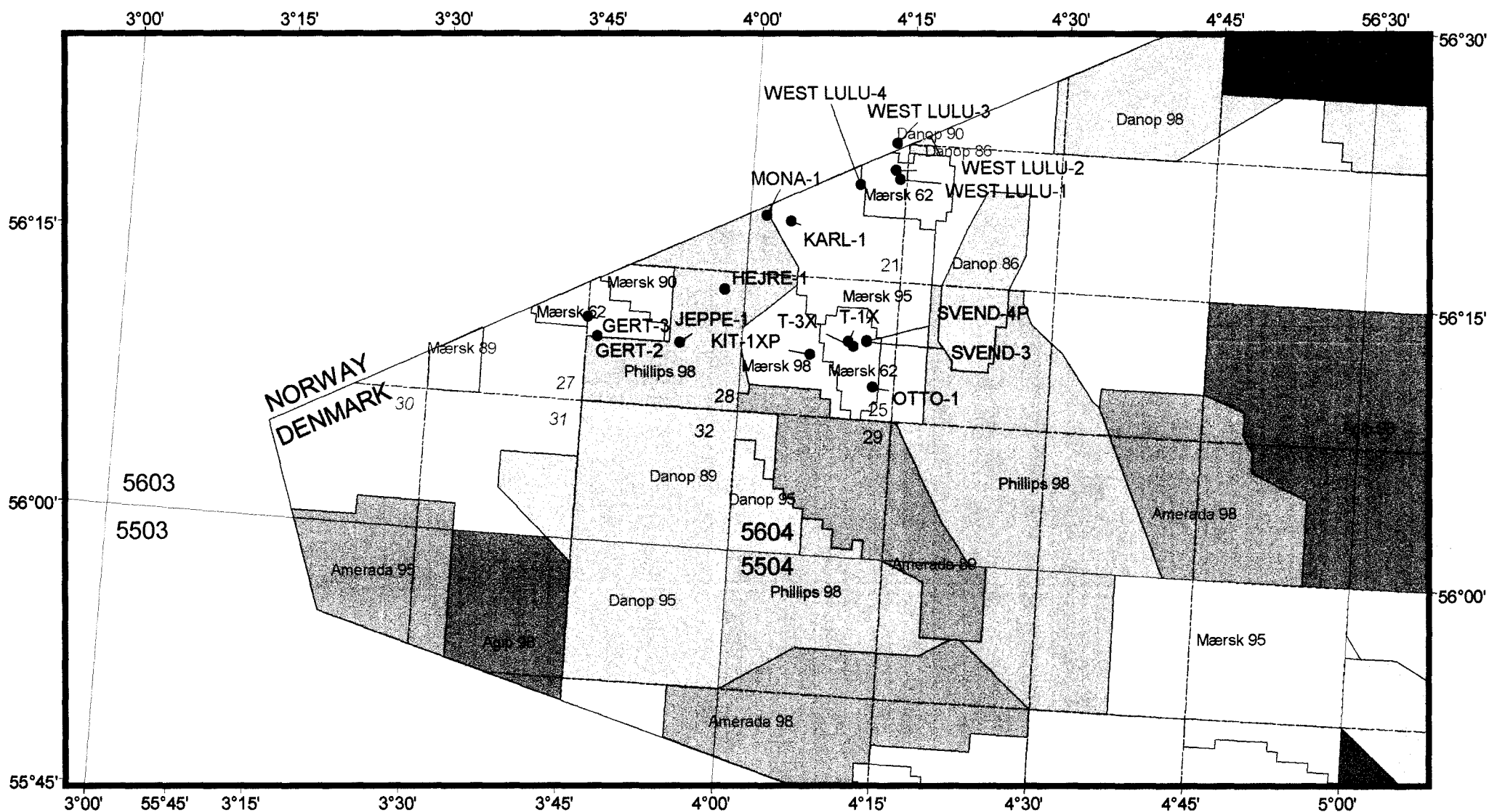


GARDLINE Figure 2.3

Vibrocores from Hejre-1 (East Gert-1) site, Danish North Sea
Enclosure 2

Gardlines original numbering	Core Recovery depth(m)	Shoe sample	Foraminifera sample	Water depth(m)	UTM 3d E Easting Northing		Geographical Latitude	position Longitude	DGU Well File no in Jupiter database	Danish North Sea Well no in Samba database
Station No:1	0.00-1.00 1.00-2.00 2.00-3.00 3.00-4.00 4.00-4.89 x		0.80 m 2.73 m	67.8	559931	6233973	56d14'44" N	3d58'1" E	560328.1	HAVB 131-31-590007
Station No:2	0.00-1.00 1.00-2.00 2.00-3.00 3.00-4.01 x			68	560184	6233718	56d14'36" N	3d58'16"E	560328.2	HAVB 131-31-590008
Station No:3	0.00-1.00 1.00-2.00 2.00-3.00 3.00-4.00 x			68.3	559933	6233464	56d14'28" N	3d58'1" E	560328.3	HAVB 131-31-590009
Station No:4	0.08-1.00 1.00-2.00 2.00-3.20		3.20 m	68.1	559676	6233708	56d14'35.7"N	3d57'46.3"E	560328.4	HAVB 131-31-590010
Station No:5	0.00-1.00 1.00-2.00 2.00-3.00 3.00-4.15 x			67.8	559976	6233753	56d14'37" N	3d58'4" E	560328.5	HAVB 131-31-590011
Station No:6	0.00-1.00 1.00-2.00 2.00-3.00 3.00-4.00 4.00-4.57		4.57m	67.9	559895	623366.5	56d14'34" N	3d57'59" E	560328.6	HAVB 131-31-590012

Enclosure 3: Location map of Hejre-1 site, Store Fisker Banke area, Danish North Sea.



Scale: 1:550000

0 5 10 Kilometers



• Hydrocarbon well



GEUS

Map Completed: GEUS/Lotte Møller/march 2002.

LEGEND

LITHOLOGY



Gravel



Sand and gravel
(conglomeratic)



Sand, coarse



Sand, medium



Sand, fine



Heterolith,
clay/fine sand



Heterolith,
clay/silt



Silt



Clay

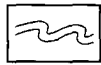
PRIMARY SEDIMENT STRUCTURES



Parallel lamination



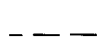
Indistinct
parallel lamination



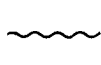
Disturbed
parallel lamination



Sharp boundary

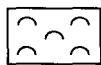


Gradual boundary



Unconformity,
(erosions boundary, hiatus)

FOSSILS



Shells


ENVIRONMENT AND AGE

HL : Holocene marine clay

HS : Holocene marine sand

S : Periglacial
lacustrine sand

Enclosure 4

SEDIMENTOLOGICAL CORE LOG										Environment and age			
CORE NO.:		Havb 131-31-590007 DGU 560328.1		POSITION: 56°14'44" N 3°58'01" E		Water depth: 67,8 m							
Lab. sample	Core	PKVno	Scale	Lithology	Grain size and Sedimentary structure					Description	HS		
	V	203405								0.00-0.20: SAND, fine, well-sorted, shells, fine disseminated organic material, calcareous, olive grey (5Y 4/2).			
	IV	203406	1							0.20-1.75: SAND, fine, well-sorted, shells scattered, calcareous, olive grey (5Y 5/2), upper colour boundary: gradual and short.			
	III	203407	2							1.75-2.15: SAND, fine, well-sorted, few shells, scattered between, 1.75-2.15, calcareous, olive grey (5Y 5/2), darker than the upper layer; upper colour boundary: gradual and long.			
	II	203408	3							2.15-4.89: SAND, fine and very fine, slightly silty, laminated, disseminated charred organic particles, few rounded shell fragments, grey (5Y 5/1), clay-streaks with horizontal lamination between 2.15-2.20 rather sticky, 2.50-2.52, 2.58-2.60, 2.90-2.92, 3.40-3.42 rather sticky, 3.50-3.51, 3.85-3.86, 4.80-4.82 rather sticky; streaks rich in organic particles, 2 mm thick at 4.30, 4.40 and 4.56.			
	I	203409	4							4.89-5.04: Shoe sample: SAND, see 2.15-4.89.			
			5							Penetration: 5.0 m			
			6							Photo: Enclosure 12a-12b			
			m		Clay	Silt	F	M	C	F	C	Enclosure 5	
							Sand			Gravel			
					0.002	0.02	0.06	0.2	0.6	2	6	20 mm	
Feb.9 -2001			TC/PK	Geological Survey of Denmark and Greenland									
Date:			Described by:										

SEDIMENTOLOGICAL CORE LOG

CORE NO.: Havb 131-31-590008
DGU 560328.2

POSITION: 56°14'36" N
3°58'16" E

Water depth: 68,0 m

Lab. sample	Core	PKV no.	Scale	Lithology	Grain size and Sedimentary structure	Description	Environment and age					
	IV		1			<p>0.00-0.30: SAND, fine, well-sorted, shells, fine disseminated organic particles, calcareous, olive grey (5Y 4/2).</p> <p>0.30-4.01: SAND, fine, well-sorted; shells, especially between 0.30-1.30, scattered between 1.30-4.01; calcareous, olive grey (5Y 5/2); upper colour boundary: gradual and long.</p>	HS					
	III		2									
	II		3									
	I		4			<p>4.01-4.10: SAND, fine, well-sorted, slightly silty; disseminated charred organic particles; few scattered, very small rounded shell fragments; grey (5Y 5/1), darker than upper layer; clay-streak with horizontal lamination at 4.01-4.03, rather sticky; upper boundary: sharp.</p> <p>4.10-4.20: Shoe sample: SAND, see 4.01-4.10.</p> <p>Penetration: 4.3 m</p>		S				
			5									
			6			Photo: Enclosure 13a-13b						
				Clay	Silt	<div style="display: flex; justify-content: space-around;"> <div>F M C</div> <div>F C</div> </div>	Enclosure 6					
				0.002	0.02	0.06	0.2	0.6	2	6	20	mm

Master: Grafisk

Feb.9-2001

TC/PK

Date:

Described by:

Geological Survey of Denmark
and Greenland



SEDIMENTOLOGICAL CORE LOG

CORE NO.: Havb 131-31-590009
DGU 560328.3

POSITION: 56°14'28" N
3°58'01" E

Water depth: 68,3 m

Lab. sample	Core	PKV no.	Scale	Lithology	Grain size and Sedimentary structure						Description	Environment and age
	IV		1								0.00-0.35: SAND, fine, well-sorted, gyttja content, shells, calcareous, olive grey (5Y 3/2).	HS
	III		2								0.35-1.58: SAND, fine, well-sorted, scattered shells, calcareous, grey brown (2.5Y 5/2); upper colour boundary: gradual transition between 0.35-0.50.	
	II		3								1.58-4.00: SAND, fine, well-sorted, scattered shells, disseminated very small organic particles, calcareous, olive grey (5Y 4/2); upper colour boundary: gradual transition between 1.28-1.58.	
	I		4								4.00-4.10: Shoe sample: SAND, see 1.58-4.00.	
			4								Penetration: 4.63 m	
			5									
			6									
			m		Clay	Silt	F	M	C	F	C	Enclosure 7
							Sand			Gravel		
					0.002	0.02	0.06	0.2	0.6	2	6	20 mm

Master Grafisk

Feb.9-2001

TC

Date:

Described by:

Geological Survey of Denmark
and Greenland



SEDIMENTOLOGICAL CORE LOG

CORE NO.: Havb 131-31-590010 **POSITION:** 56°14'35,7" N 3°58'46,3" E **Water depth:** 68,1 m
DGU 560328.4

Lab. sample	Core	PKV no.	Scale	Lithology	Grain size and Sedimentary structure	Description	Environment and age											
	III		1			<p>0.00-0.15: SAND, fine, well-sorted, gyttja content, shells (many big), calcareous, olive grey (5Y 4/2).</p> <p>0.15-1.00: SAND, fine, well-sorted, scattered shells, calcareous, grey brown (2.5Y 5/2); upper colour boundary: gradual and short.</p> <p>1.00-3.20: SAND, fine, well-sorted, shells, very small organic particles, calcareous, olive grey (5Y 4/2); upper colour boundary: gradual and short.</p>	HS											
	II		2															
	I		3															
			4			Penetration: 3.5 m												
			5															
			6			Photo: Enclosure 15												
				Clay	Silt	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>F</td><td>M</td><td>C</td> </tr> <tr> <td colspan="3" style="text-align: center;">Sand</td> </tr> </table> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>F</td><td>C</td> </tr> <tr> <td colspan="2" style="text-align: center;">Gravel</td> </tr> </table>	F	M	C	Sand			F	C	Gravel		Enclosure 8	
F	M	C																
Sand																		
F	C																	
Gravel																		
Master Grafisk Feb.12-2001 Date:				TC Described by:		Geological Survey of Denmark and Greenland 												

0.002
0.02
0.06
0.2
0.6
2
6
20
mm

SEDIMENTOLOGICAL CORE LOG

CORE NO.: Havb 131-31-590011
DGU 560328.5

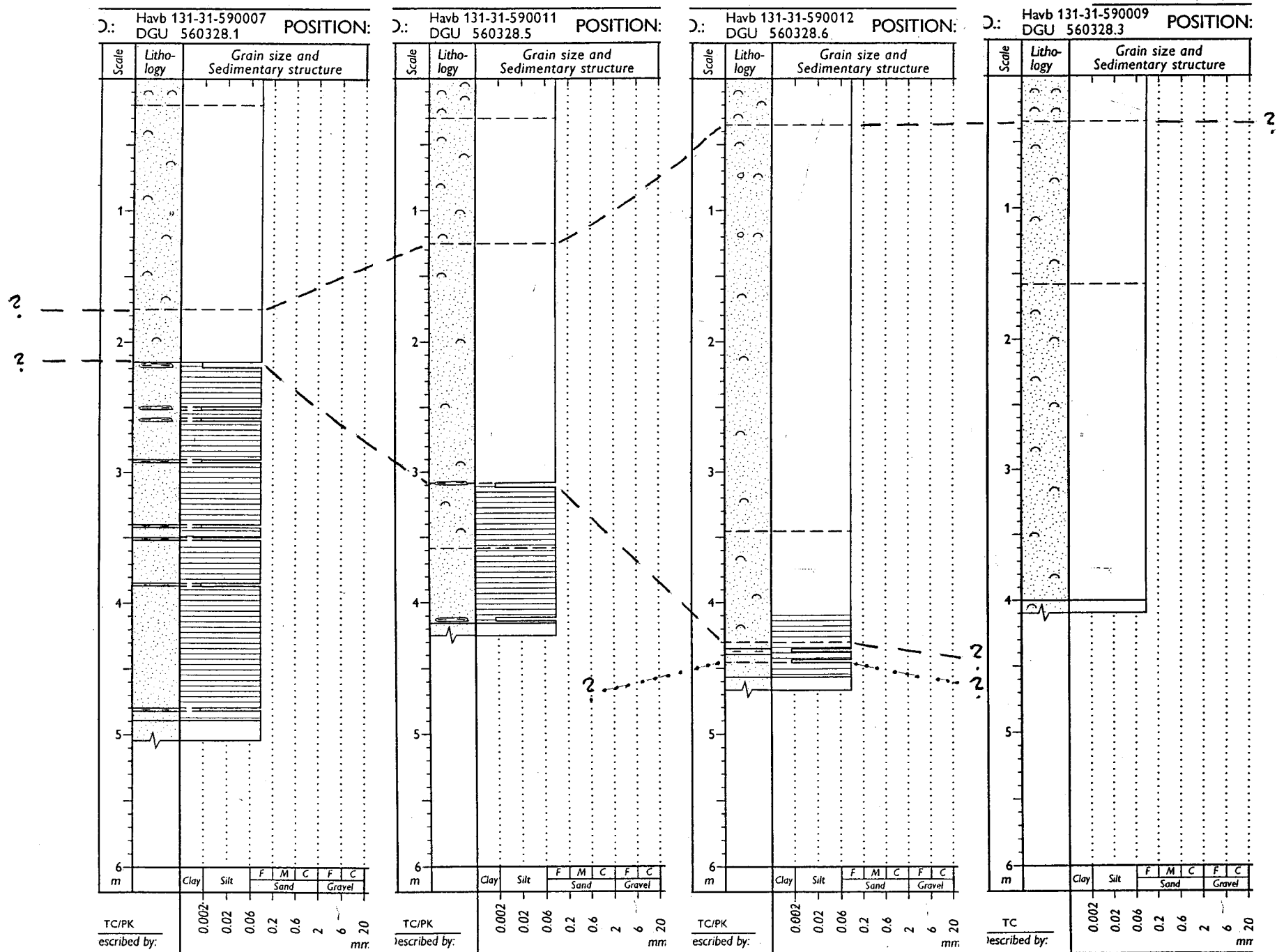
POSITION: 56°14'37" N
3°58'04" E

Water depth: 67,8 m

Lab. sample	Core	PKV.no.	Scale	Litho-logy	Grain size and Sedimentary structure						Description	Environs	
	IV		1									0.00-0.30: SAND, fine, well-sorted, gyttje contents, shells (many big), calcareous, olive grey (5Y 4/2).	
												0.30-1.25: SAND, fine, well-sorted, shells, few very small organic particles, calcareous, grey brown (2.5Y 5/2); upper boundary: gradual, short (5cm).	
	III		2									1.25-3.09: SAND, fine, well-sorted, scattered shells, few very small organic particles, calcareous, grey brown (2.5Y 5/2), darker than upper layer; upper boundary: gradual and long.	HS
												3.09-3.58: SAND, fine, well-sorted, scattered shell fragments, disseminated very small organic particles, horizontal laminated, calcareous, olive grey (5Y 5/2), clay-streak at 3.09-3.10 (5 cm long), rather sticky; upper boundary: sharp.	
	II		3									3.58-4.15: SAND, fine, slightly silty, streaks of silty sand, very small rounded shell fragments, disseminated charred organic particles, horizontal laminated, calcareous, grey (5Y 5/1); upper boundary: gradual and indistinct.	
			4									4.15-4.25: Shoe sample: SAND, see 3.58-4.15	
	I											Penetration: 4.3 m	
			5										
			6										
			m		Clay	Silt	F	M	C	F	C		
							Sand			Gravel		Enclosure 9	
					0.002	0.02	0.06	0.2	0.6	2	6	20	
												mm	
													Geological Survey of Denmark and Greenland
													GEUS

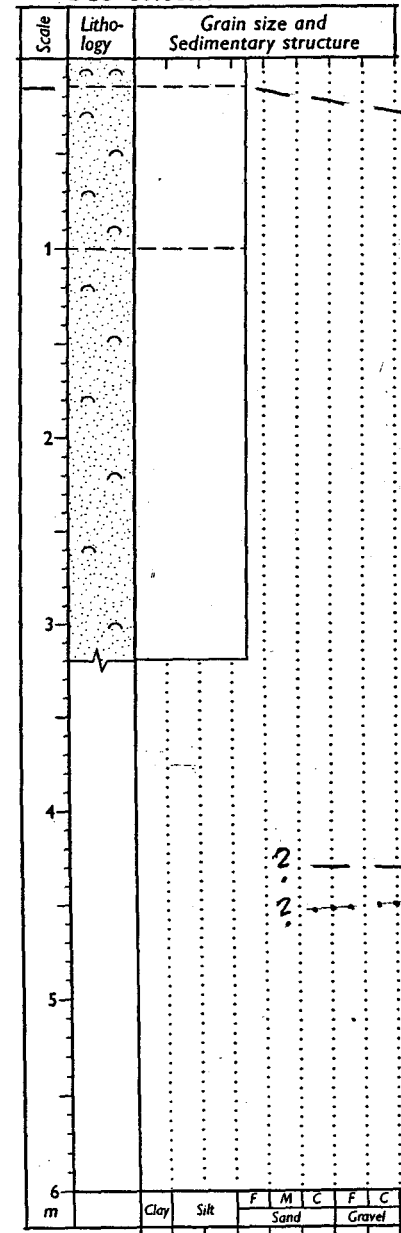
SEDIMENTOLOGICAL CORE LOG										Environment and age		
CORE NO.:		Havb 131-31-590012 DGU 560328.6		POSITION:		56°14'34" N 3°57'59" E		Water depth: 67,9 m				
Lab. sample	Core	PKVno.	Scale	Lithology	Grain size and Sedimentary structure				Description	Environment and age		
	V	203425	1		<p>0.00-0.35: SAND, fine, well-sorted, gyttja content, shells (many big), calcareous, olive grey (5Y 3/2).</p> <p>0.35-3.45: SAND, fine, well-sorted, scattered shell fragments, disseminated very small organic particles, calcareous, grey brown (2.5Y 5/2); at 0.74 and 1.20 small pockets of 1 coarse gravel with shell fragments; upper boundary: gradual with transition.</p> <p>3.45-4.30: SAND, fine, well-sorted, scattered shells, horizontal laminated, slightly calcareous, olive grey (5Y 5/2); at 4.20-4.30 clayey laminae, laminae with shells and laminae with charred organic particles; upper boundary: gradual, long transition.</p> <p>4.30-4.45: SAND, fine, well-sorted, silty, slightly calcareous olive grey (5Y 5/2), disseminated charred organic particles; clay-streaks between 4.30-4.45 (1-4 cm thick), calcareous; horizontal laminated; upper boundary: indistinct.</p> <p>4.45-4.57: SAND, fine, well sorted, slightly silty, streaks of charred organic particles, calcareous, grey (5Y 5/1); upper boundary: indistinct.</p> <p>4.57-4.67: Shoe sample: SAND, see 4.45-4.57</p> <p>Penetration: 4.7 m</p> <p>Photo: Enclosure 17a-17b</p>				<p>HS</p> <p>S</p>			
	IV	203426	2									
	III	203427	3									
	II	203428	4									
	I	203429	5									
			6					Enclosure 10				
			m	Clay	Silt	F	M	C	F	C		
						Sand		Gravel				
				0.002	0.02	0.06	0.2	0.6	2	6	20	
				mm								
				Geological Survey of Denmark and Greenland								
				G E U S								

Enclosure 11a. Correlation between sedimentological core logs, Hejre-1 vibrocores



Enclosure 11b. Correlation between sedimentological core logs, Hejre-1 vibrocores

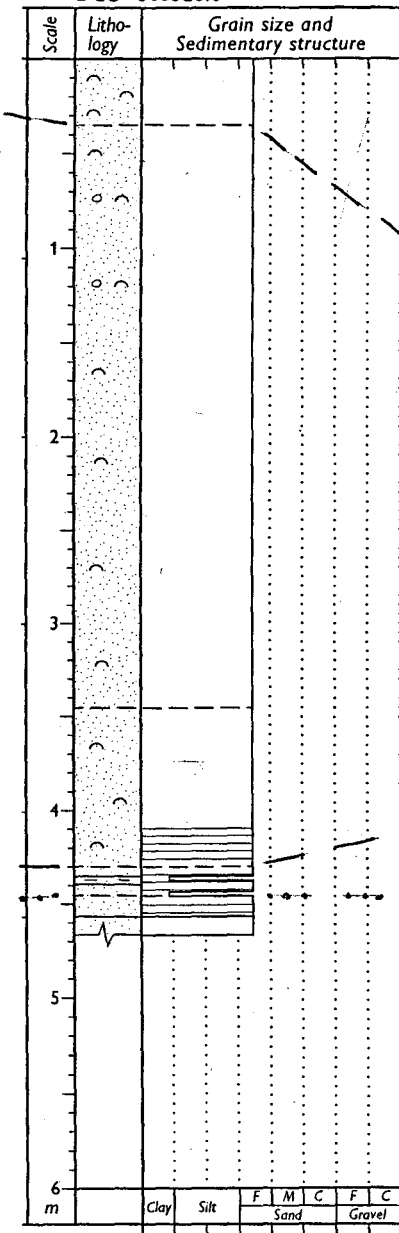
D.: Havb 131-31-590010
DGU 560328.4 POSITION:



TC
described by:

0.002 0.02 0.06 0.2 0.6 2 6 20 mm

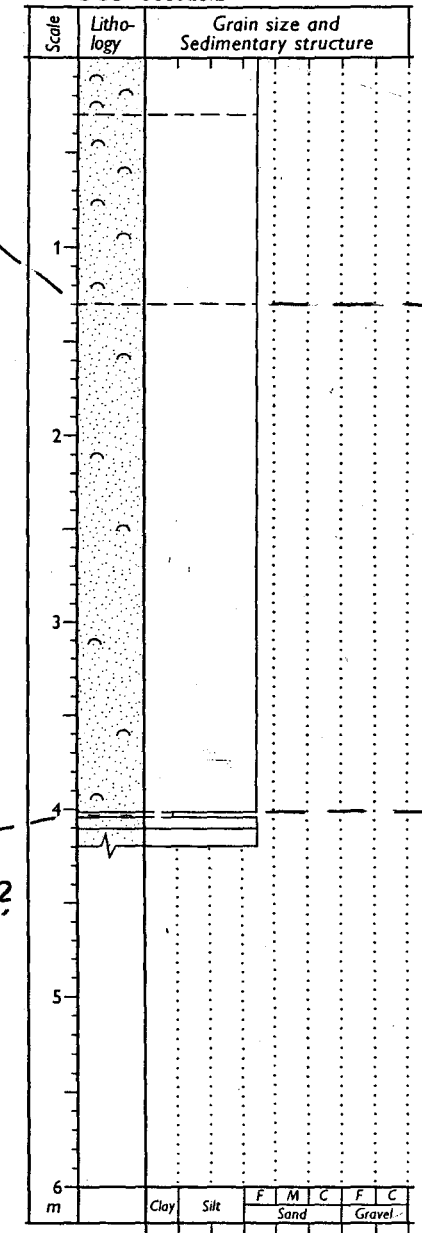
D.: Havb 131-31-590012
DGU 560328.6 POSITION:



TC/PK
described by:

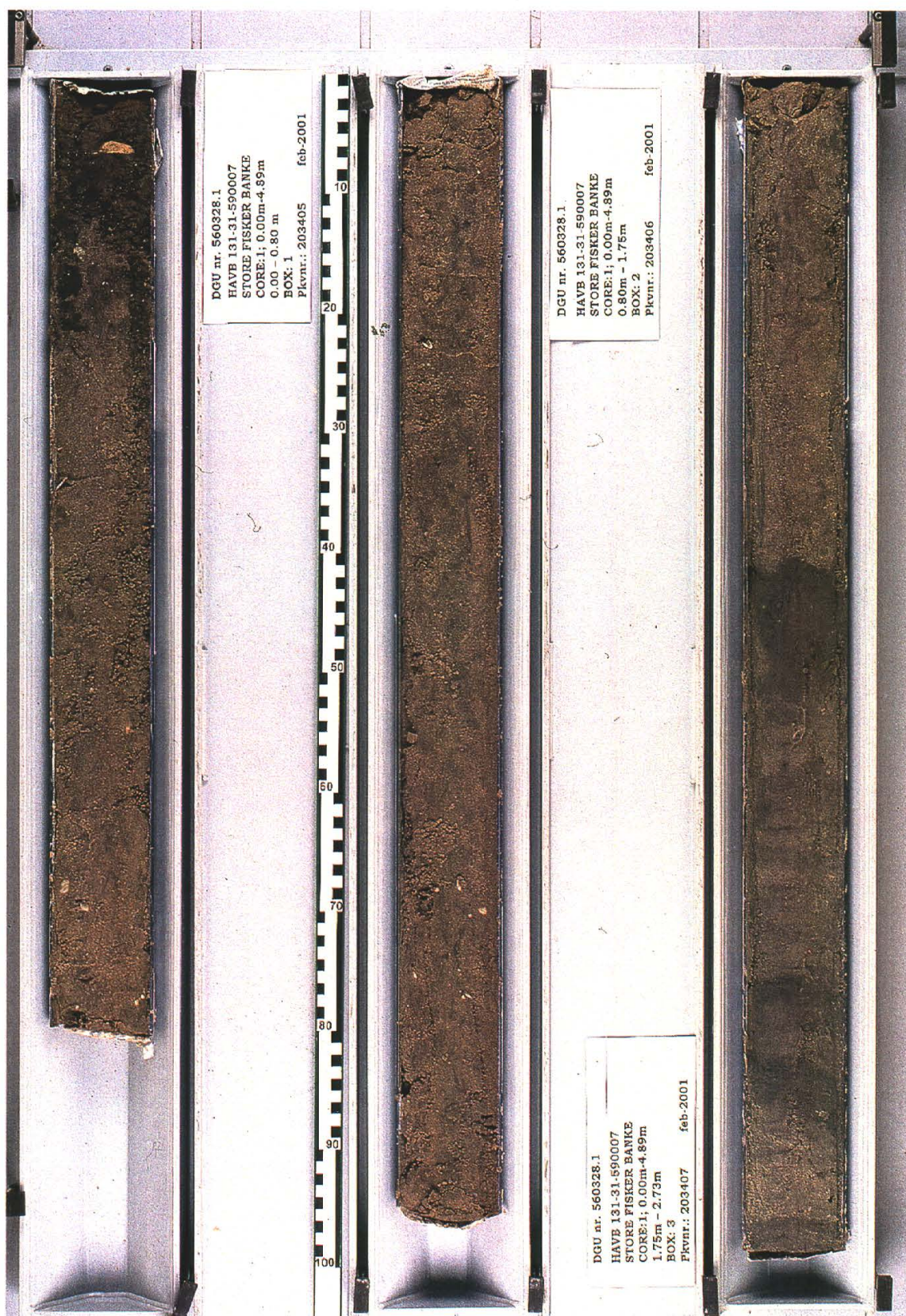
0.002 0.02 0.06 0.2 0.6 2 6 20 mm

D.: Havb 131-31-590008
DGU 560328.2 POSITION:

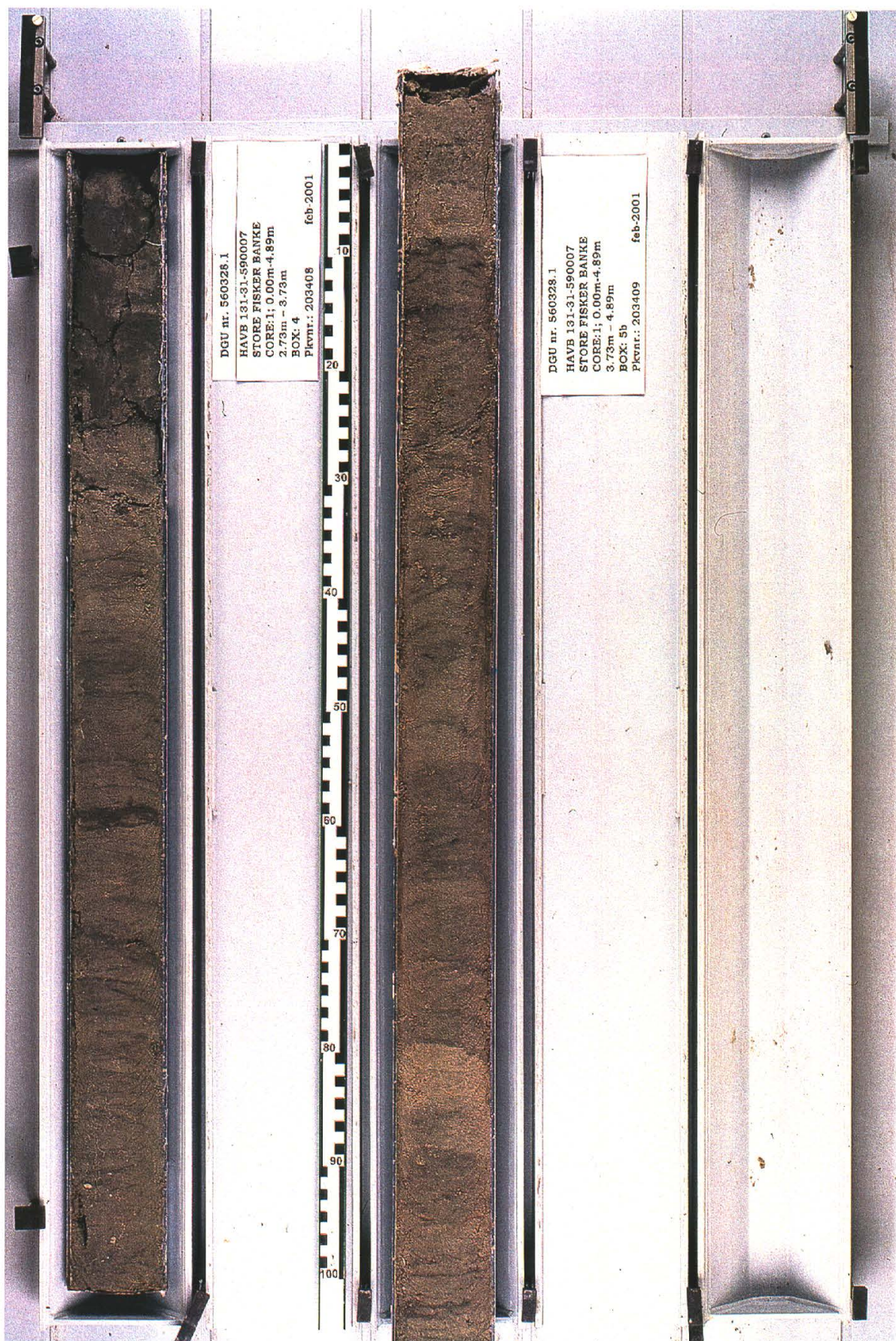


TC/PK
described by:

0.002 0.02 0.06 0.2 0.6 2 6 20 mm



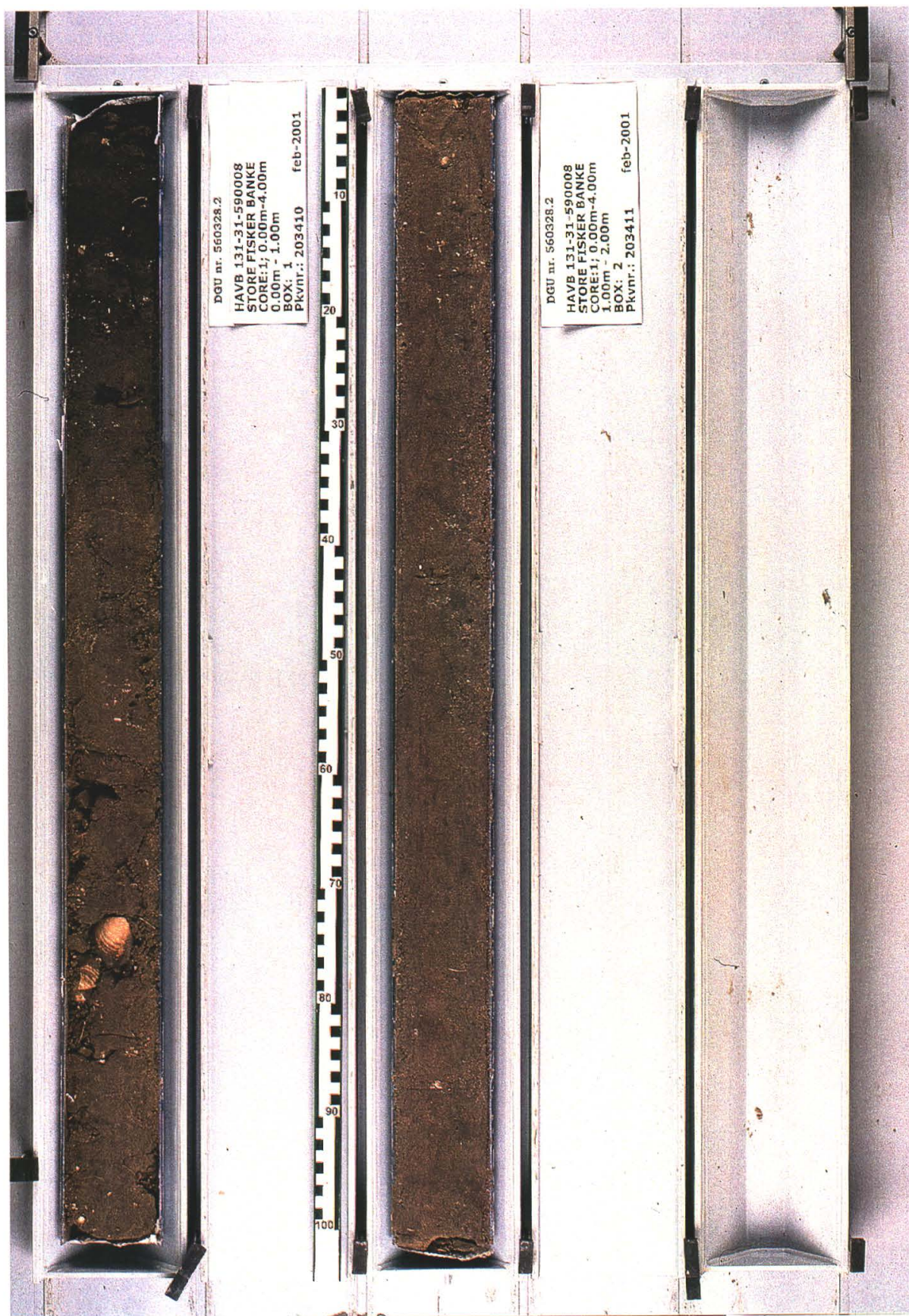
Enclosure 12a



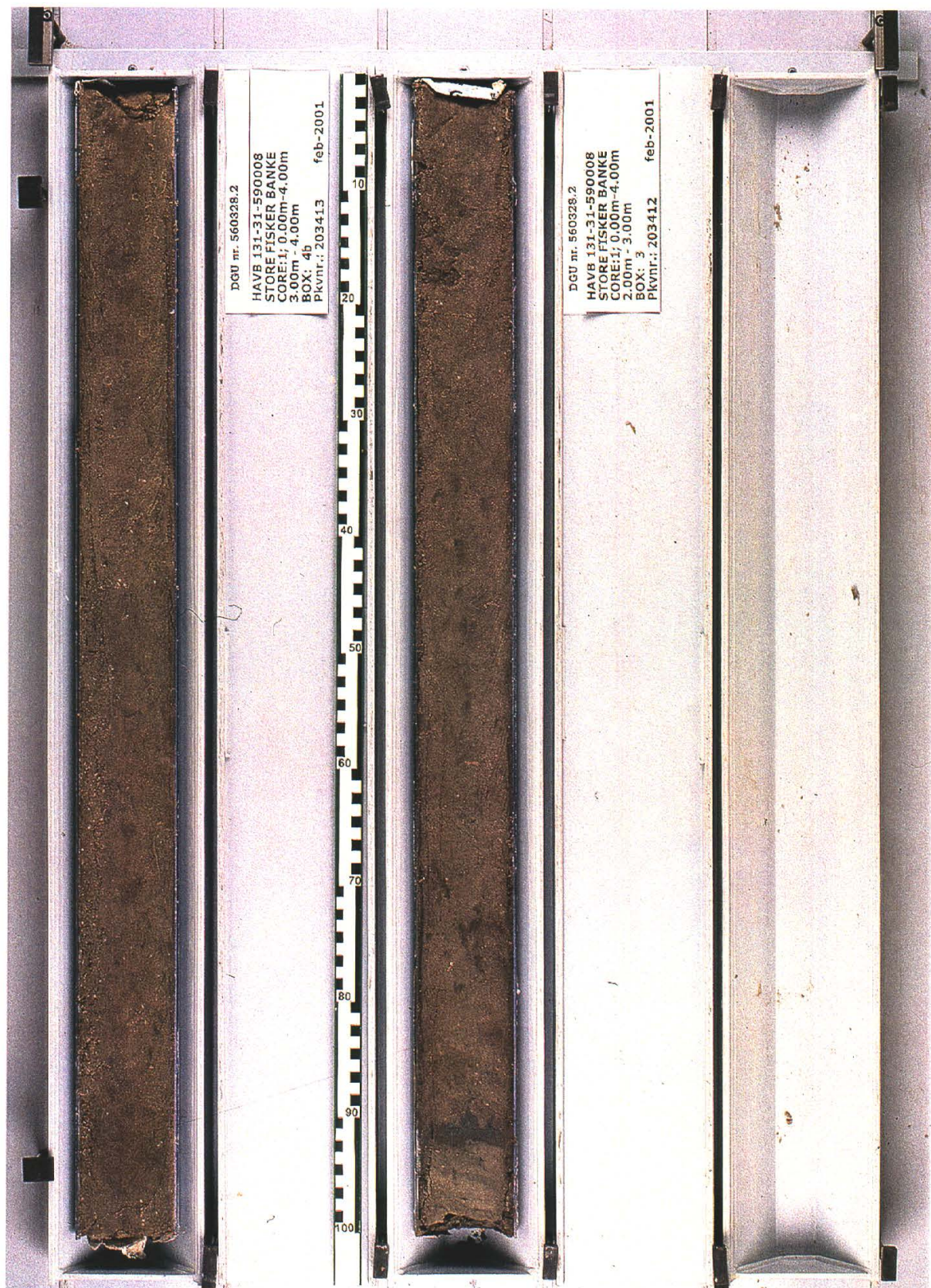
DGU nr. 560328.1
HABV 131-31-590007
STORE FISKEBANKEN
CORE: 1; 0.00m-4.89m
2.73m - 3.73m
BOX: 4
PKENT.: 203408 feb-2001

DGU nr. 560328.1
HABV 131-31-590007
STORE FISKEBANKEN
CORE: 1; 0.00m-4.89m
3.73m - 4.89m
BOX: 5b
PKENT.: 203409 feb-2001

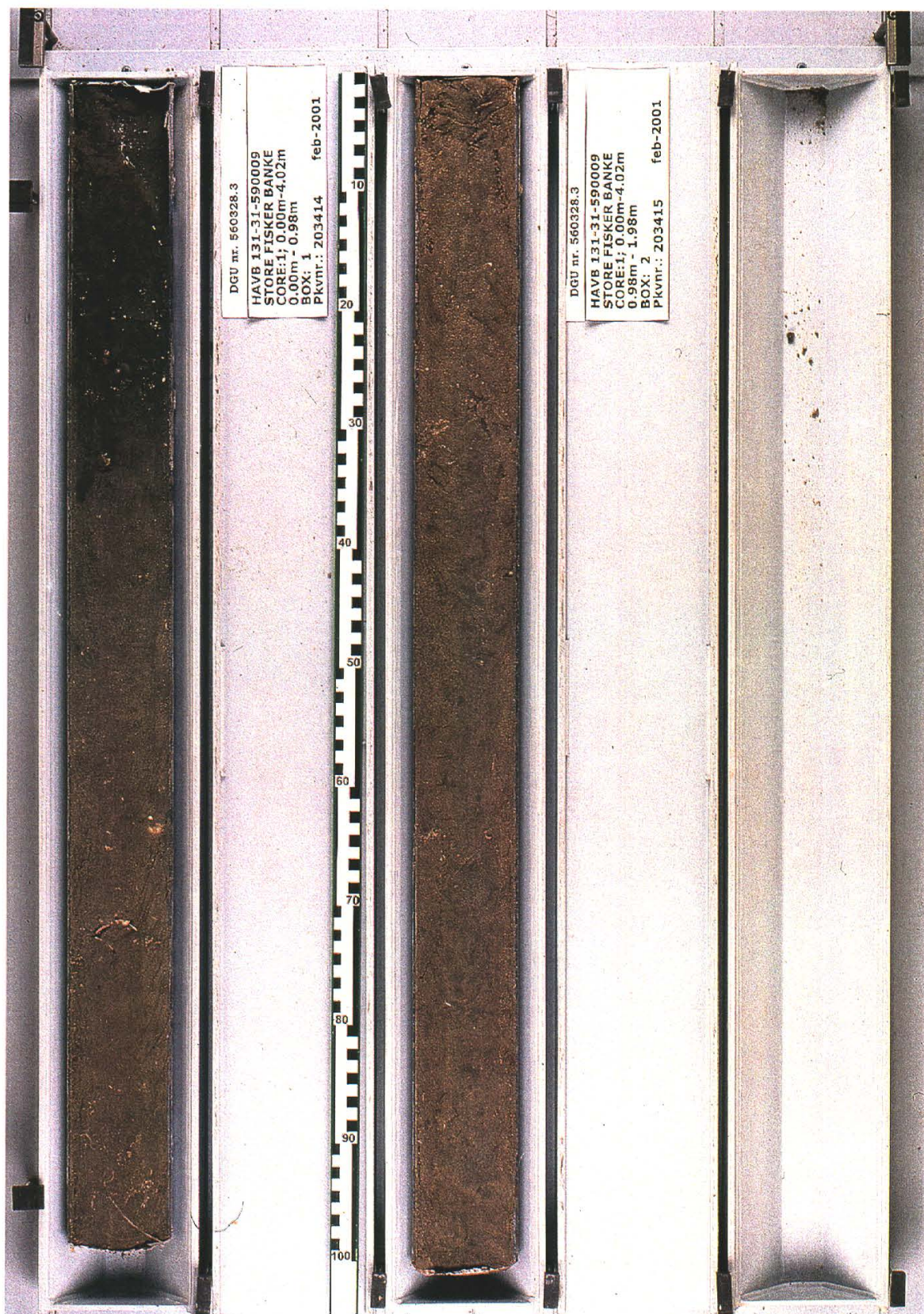
Enclosure 12b



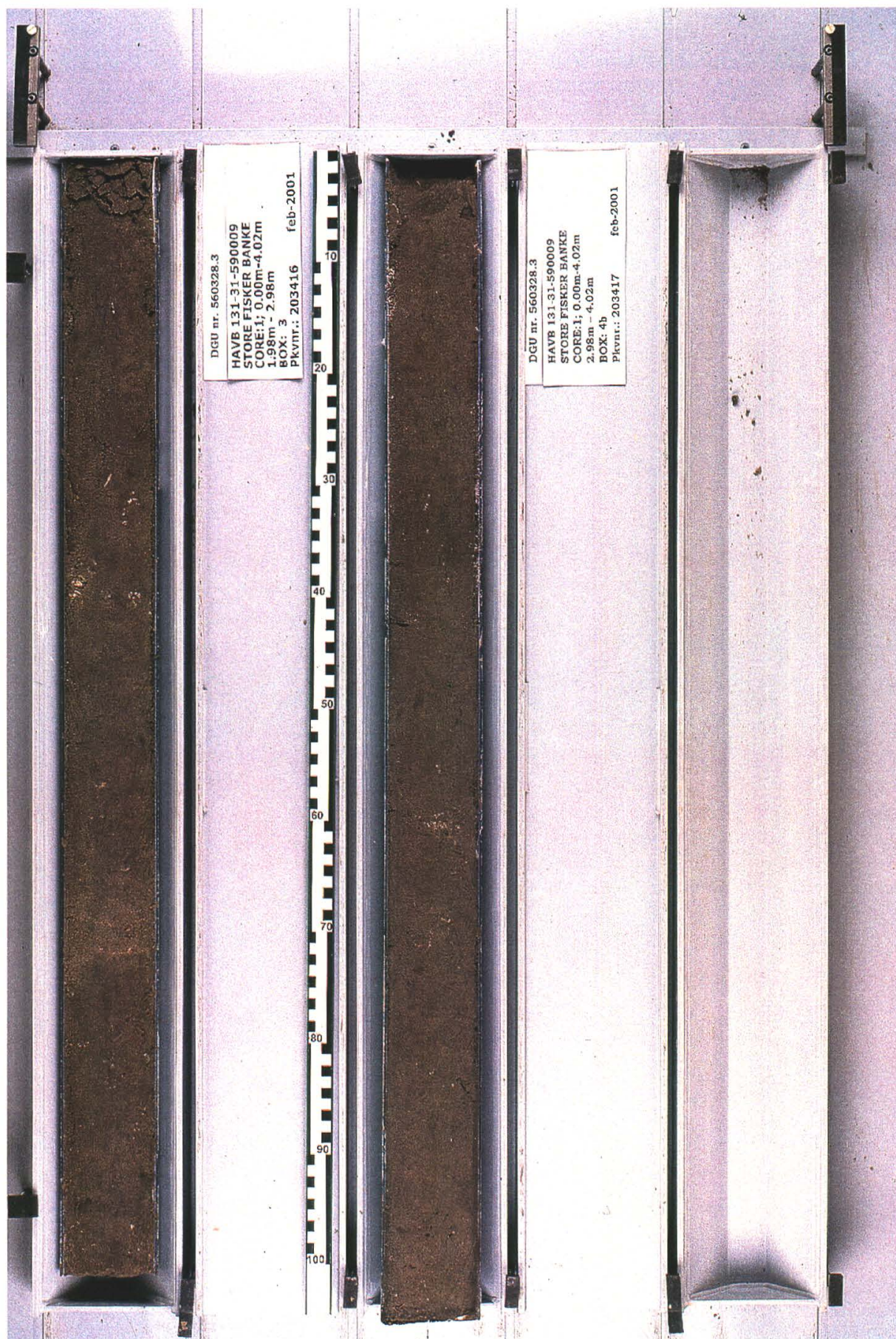
Enclosure 13a



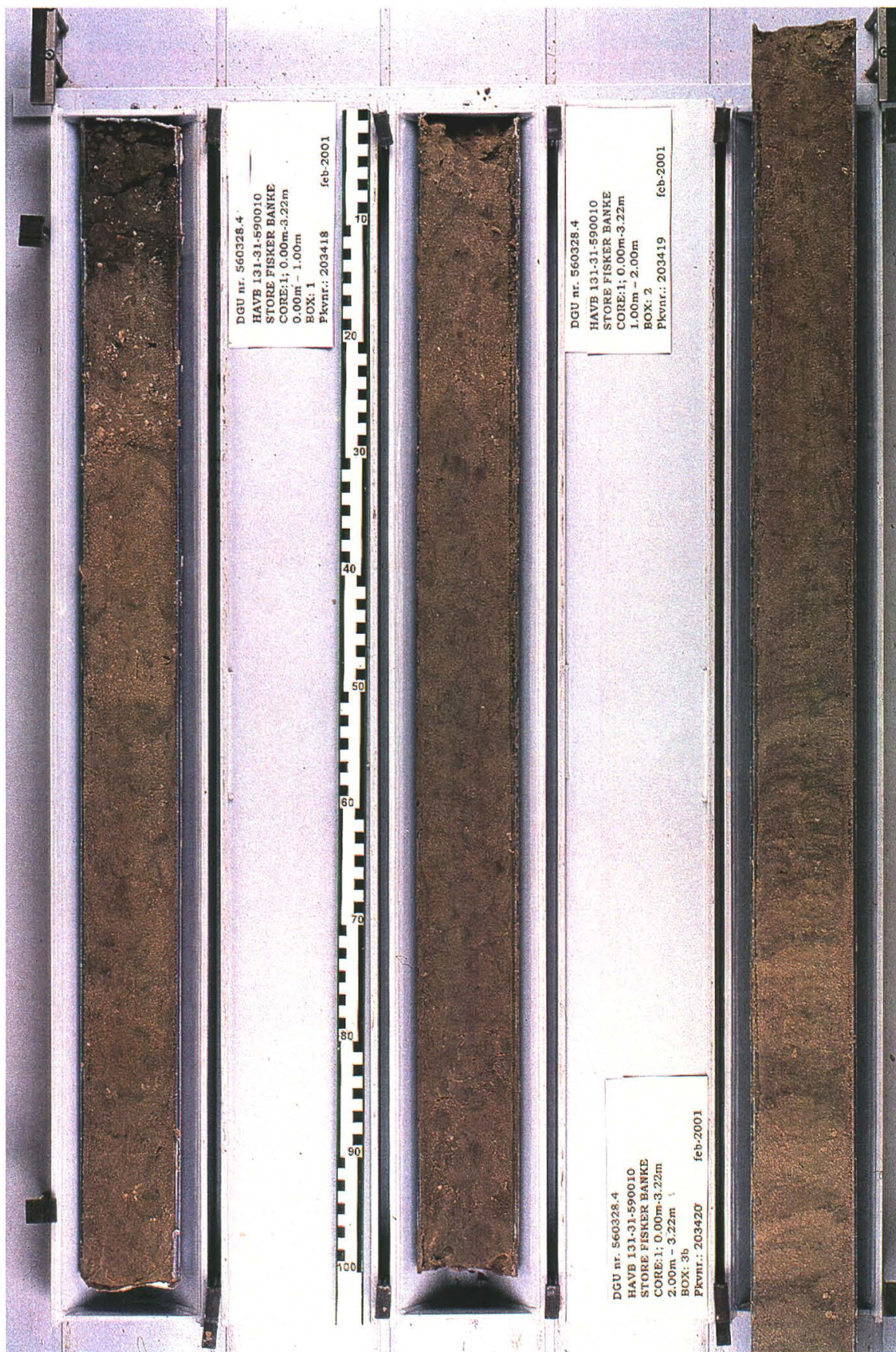
Enclosure 13b

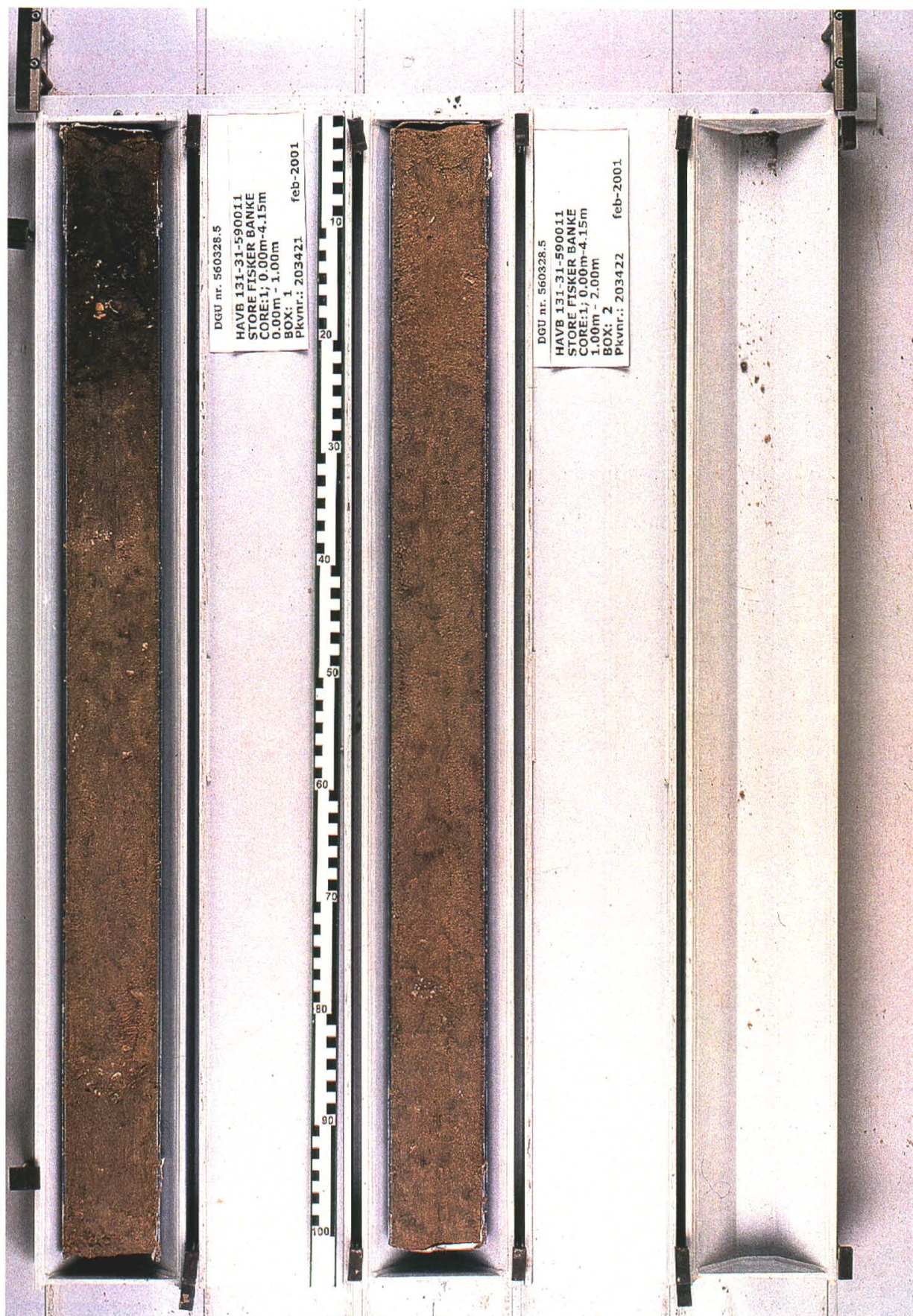


Enclosure 14a



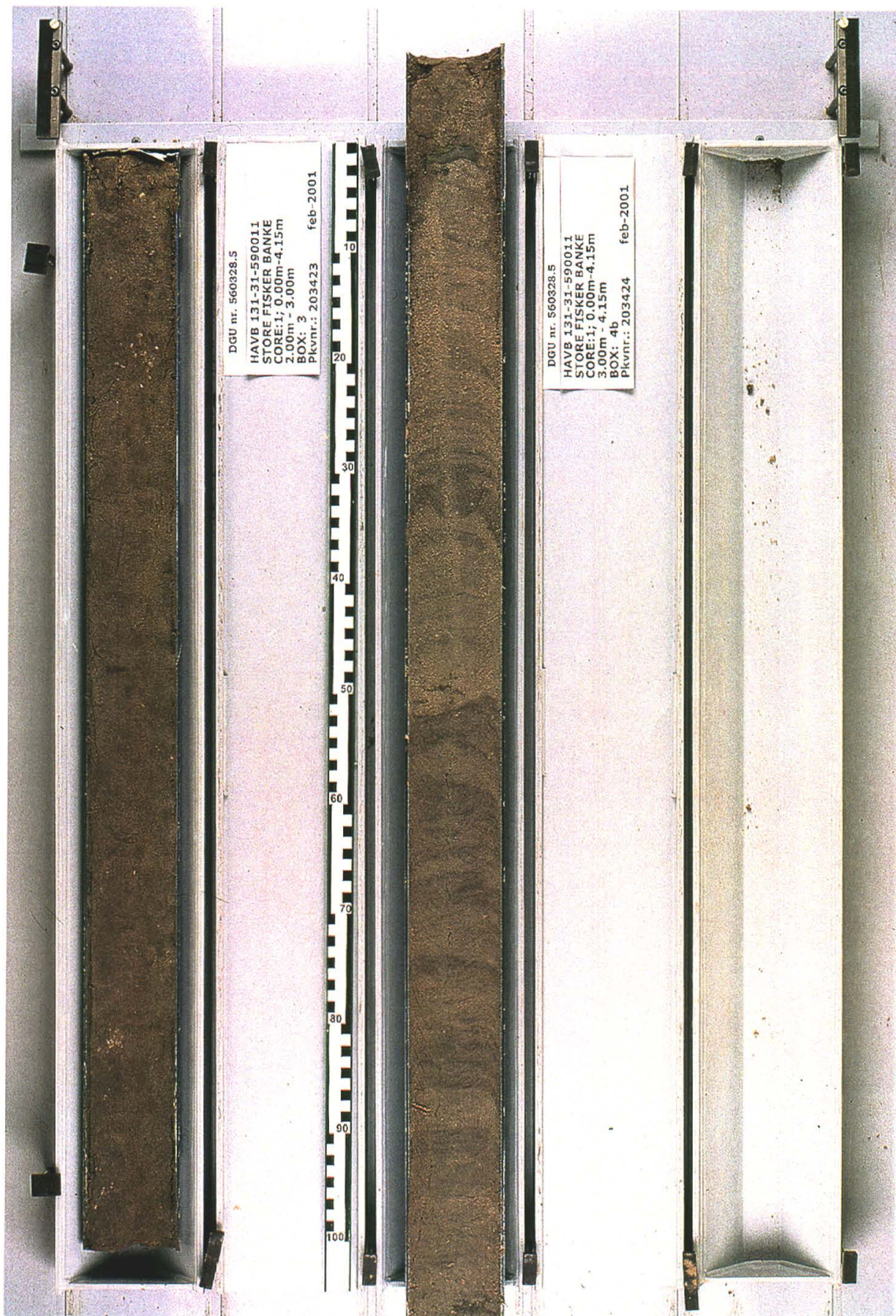
Enclosure 14b



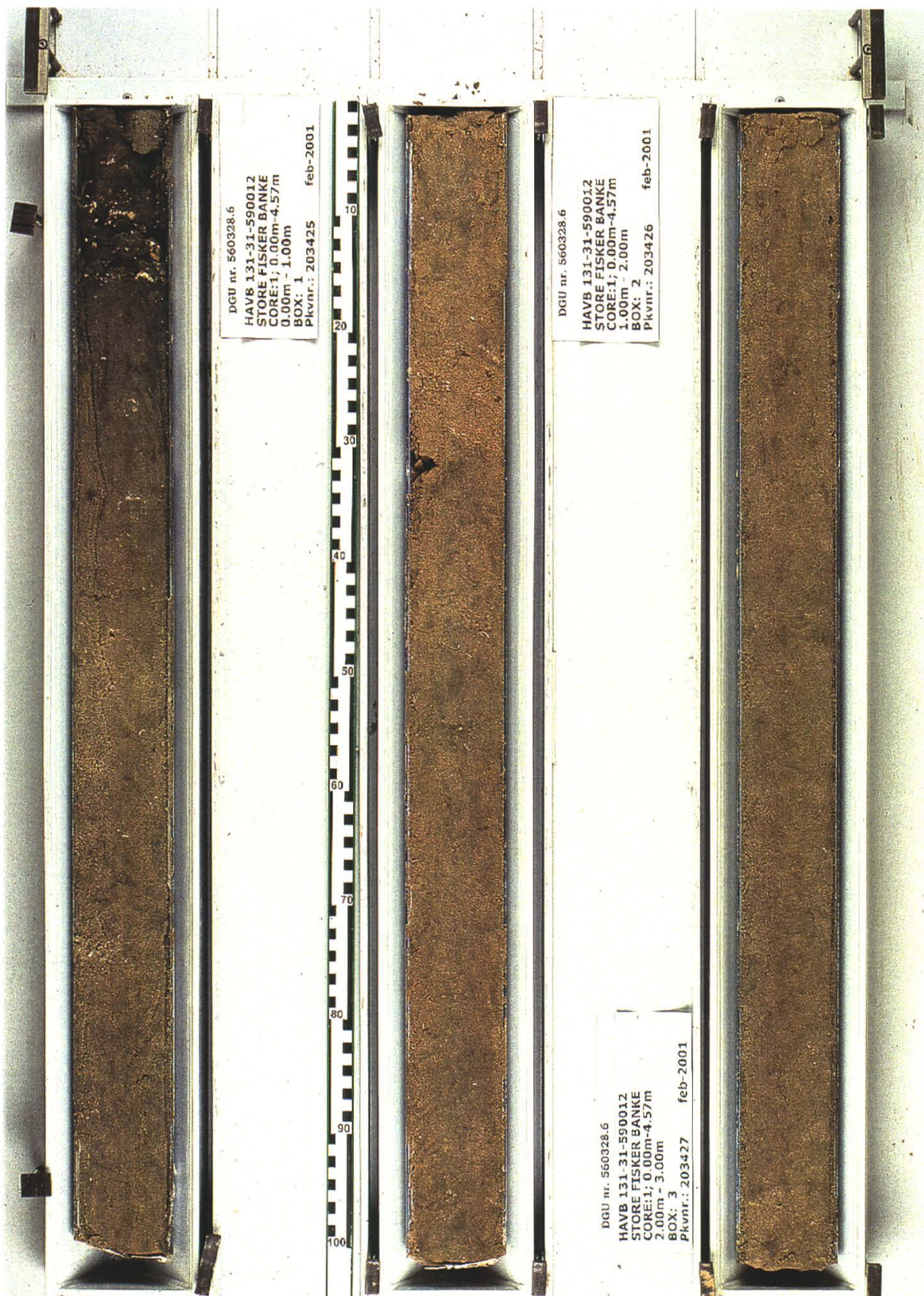


DGU nr. 560328.5
HAYB 131-31-590011
STORE FISKEK BANKE
CORE:1; 0.00m-4.15m
BOX: 1; 1.00m
PKVnr.: 203421 feb-2001

DGU nr. 560328.5
HAYB 131-31-590011
STORE FISKEK BANKE
CORE:1; 0.00m-4.15m
BOX: 2
PKVnr.: 203422 feb-2001



Enclosure 16b



Enclosure 17a



DGU nr. 560328.6
HAB 131-31-590012
STORE FISKEKOR
CORE: 1; 0.00m-4.57m
3.00m - 4.00m
BOX: 4
Pkvnr.: 203428 feb-2001

DGU nr. 560328.6
HAB 131-31-590012
STORE FISKEKOR
CORE: 1; 0.00m-4.57m
4.00m - 4.57m
BOX: 5b
Pkvnr.: 203429 feb-2001