

# **Sedimentological description of vibrocore samples, Central North Sea, Denmark**

Blocks 5504/20, 5504/24, 5505/17 and 5505/21  
Data Report

Tibor Czakó



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# **Sedimentological description of vibrocore samples from the Central North Sea, Denmark**

## **Blocks 5504/20, 5504/24, 5505/17 and 5505/21, Data Report**

### **Survey Programme**

Mærsk Olie and Gas AS originally planned vibrocore sampling in the blocks 5504/16, 5504/20, 5504/24, 5505/13, 5505/17 and 5505/21 in the Danish sector of Central North Sea. It was planned to take samples partly in Mærsk license 5/99, partly in license 7/95, from the Contiguous area and partly between the licenses and along the Danish/German border.

Vibro coring was planned up till 0.5 m depth in a 1 km x 1 km network. A total of 650 samples were planned. Samples were planned for microbiological analysis.

The first part of the survey was carried out on October 24-25, 2001. 88 samples in all were collected in the blocks 5504/20, 5504/24, 5505/17 and 5505/21 (Enclosures 1 & 2). These samples were delivered by Mærsk to GEUS in November 2001 for sedimentological description.

### **Location**

The vibrocoring were carried out in the block 5504/20, 5504/24, 5505/17 and 5505/21 closed to KRAKA-1 site, along the Danish/German border (Enclosure 2). The 88 samples cover an area of approximately 72 km<sup>2</sup>.

The position of the samples are indicated on the table by Mærsk (Enclosure 3). All samples were registered by GEUS with DGU Well File No in the Jupiter well database (Enclosure 4).

Most of the samples (not cores) were taken from 0.3 m below seabed (Enclosure 3), and weighted between 100-150 g

The water depth at hydrocarbon wells are:

Well	Water Depth
John-1	45.1 m
John-Flanke-1	43.6 m
Kraka-1	44.5 m
Tove-1	41.8 m
Vagn-1	42.7 m
Vagn-2	42.7 m

In a shallow seismic line crosses the area from NE to SW the area appears flat.

### **Sedimentological description**

The result of the sedimentological description is given in Enclosure 4.

Explanation:

“Grain size” shows the sediment and bi-components

“Shells” shows the occurrence of molluscs, mainly bivalves, but also gastropodes. “x” - few, “xx” - moderate, “xxx” – many.

“Plants” shows the occurrence of recent plants. “x” – few, “xx” – moderate, “xxx” – many; “org. mat.” shows the occurrence of fine organic particles, which is mainly of Holocene age, but some of them probably occur as re-sedimentation of older organic particles, e.g. lignite and coal.

“Colour” and “colour code” is according to the Munsell Soil Color Chart.

“Calcareous” shows the occurrence of lime in the *sediment*.

“Environment & age” show the DGU symbols which is used in the Jupiter well database, “H” for Holocene and marine and “S” for sand, “I” for silt and “L” for clay.

### **Interpretation**

There are 5 types of sediment in the area.

1. “*Sand/fine*” is well sorted fine sand with few shells and shell fragments, with few plants and organic material. This sediment type is often non-calcareous.
2. “*Sand/fine/silty*” is moderately sorted fine sand with a slight or moderate content of silt. This type often contains shells, plants, organic materials (moderate or many). It is mainly a calcareous sediment.
3. “*Sand/fine/silty/clayey*” is unsorted fine sand with very high content of silt and a low or moderate content of clay. The clay content often occurs in small streaks, which is moderately or very silty. These samples are interpreted to represent a mainly sandy sediment with alternating silty and clayey intercalations, or a combination of coarsely and finely interlayered beds (a heterolith; Reineck and Singh, 1973). This sediment is almost always calcareous.
4. “*Silt/clayey*” is mainly silt with a moderate content of clay and slightly sandy. It is calcareous.
5. “*Clay/silty*” is dominantly clay with slight or moderate content of silt, gray and dark gray. The sediment holds very few to no shells, with very little organic material, and is calcareous.

## Sedimentological map

According to the water depth at the hydrocarbon wells the seafloor is almost flat. The samples represent the sedimentological condition at an average 30 cm depth under the seafloor.

The sedimentological map shows the distribution of the 5 types of sediment (Enclosure 5). The main type of sediment in the area is a *fine sand which is silty and clayey*. This area is probably almost flat.

In the southern part of the area *fine sand without silt and with silt* occurs. These samples probably represent some topographic features, like small ridges, which could be relatively higher than the northern part of the area.

The *clayey silt* of sample 1309 represents a transitional type.

The *silty clay* type (samples 1007 and 1406) occurs at the marginal part of the survey area. These presumably represent some channel features, where the direction of the channel is not known. Such a channel occurs e.g. at NINI-1 site (Gardline Survey Limited 2000).

## Conclusions

1. The vibrocore samples help to complete the first sedimentological map of this area along the Danish and German border, as a part of the geological mapping of the seabed in the Danish North Sea territory.
2. The northern part of the survey area probably represents a relatively lower energy area than the southern and south eastern part.
3. Few channel features possibly occur in the south east part of the area.
4. The samples are suggested to represent the Late Holocene comparable to the Nieuw Zeeland Gronden Formation (Laban, C. et al. 1995).

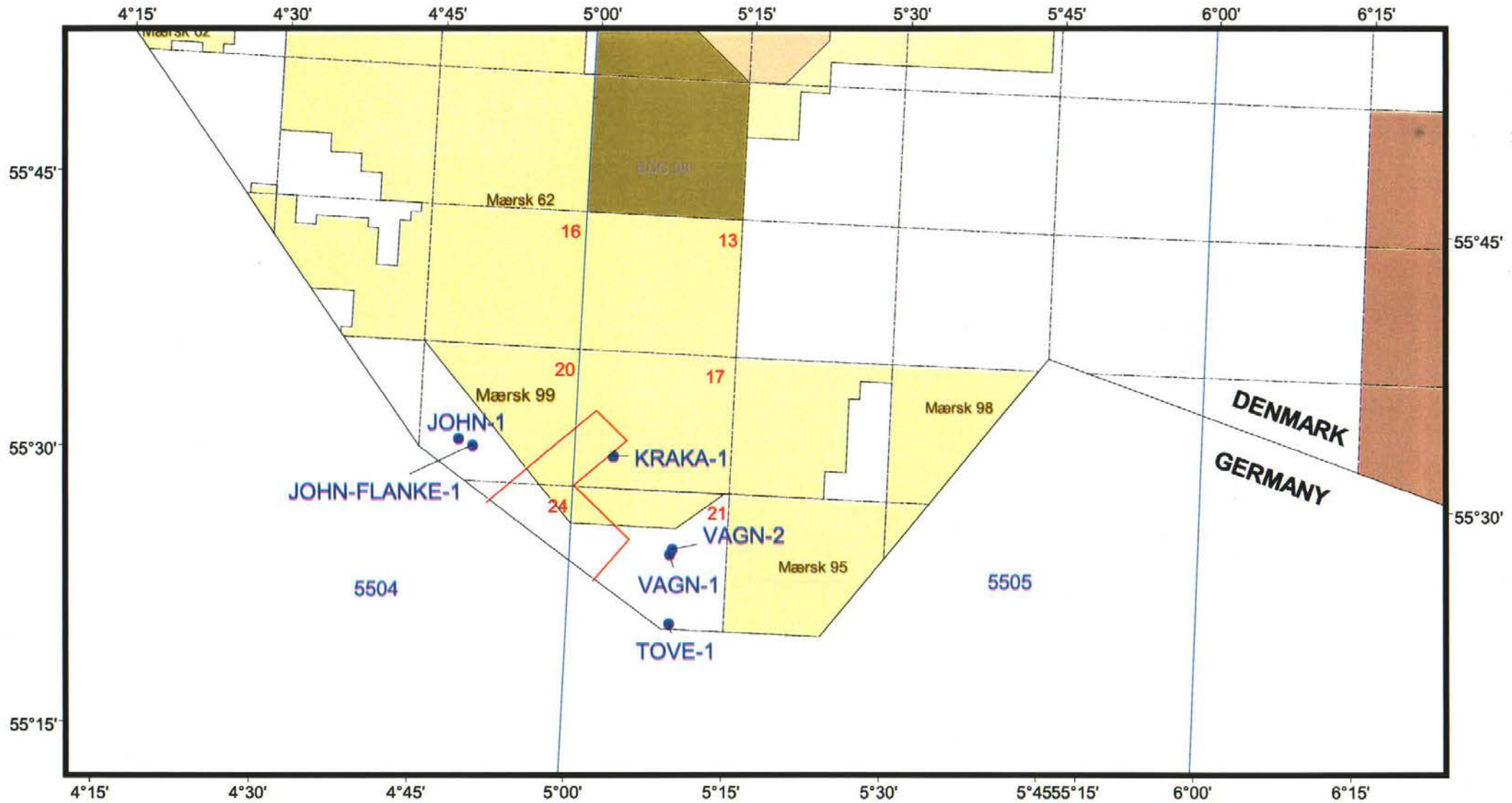
## References

Gardline Survey Limited 2000: Dong Efterforskning og Produktion A/S, NINI-1 (5605/10-1) site survey, May 2000, Survey report. GEUS Report File no 17936

Laban, C. et al., van der Klugt, P.C.M. & Frantsen, P.J. 1995: Oyster Grounds. Sheet 54dN-4dE. Holocene en oppervlakesedimenten. Rijks Geologische Dienst, 1:250.000 series.

Reineck, H.-E. & Singh, I.B., 1973: Depositional Sedimentary Environments. – Springer-Verlag, 439pp.

# Enclosure 1: Location map of Mærsk microbial survey, Danish North Sea.



Scale: 1:550000

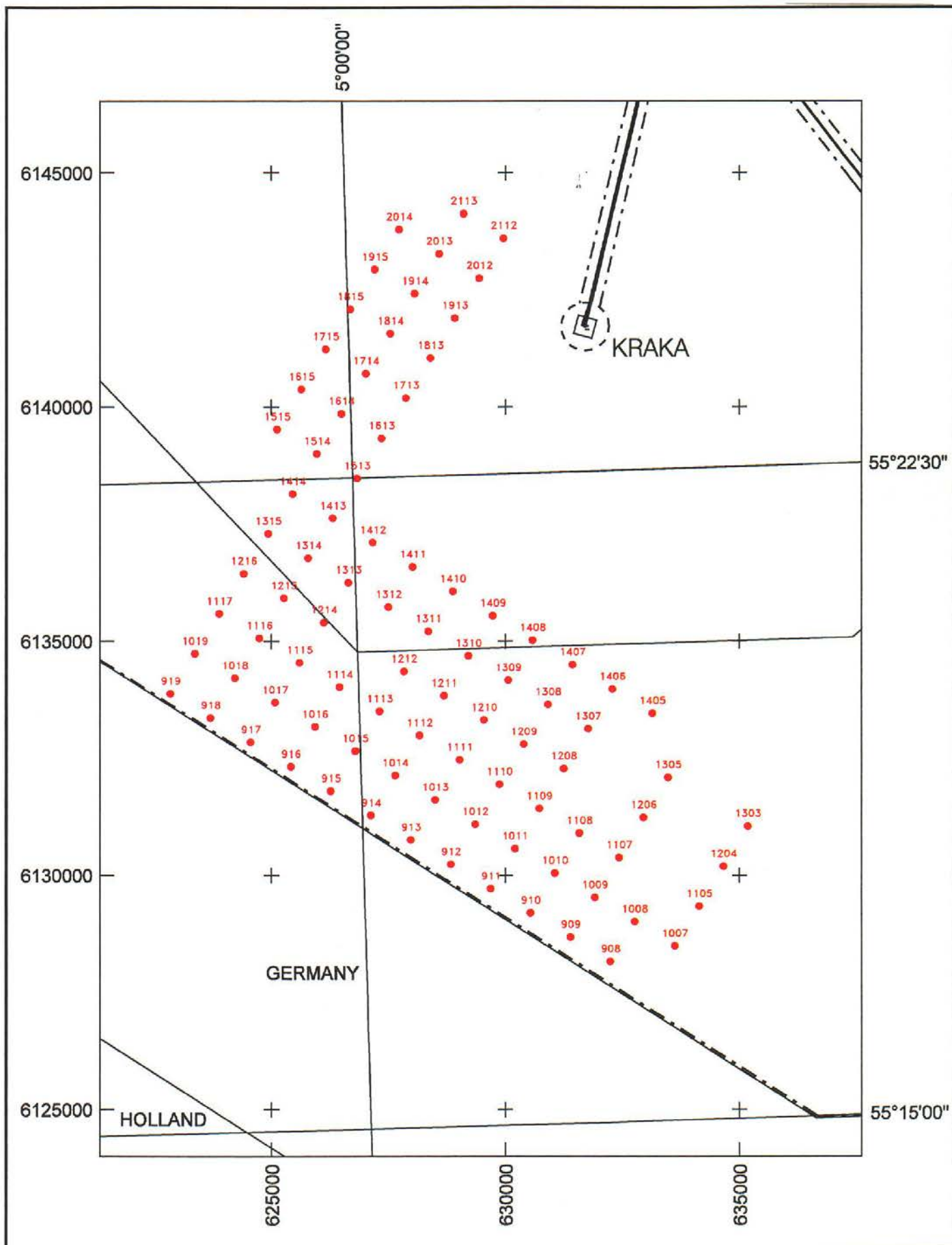
0 5 10 Kilometers



- Hydrocarbon well
- Mærsk microbial survey



**GEUS**



GEODETTIC MAP REFERENCE

ED 50  
UTM zone 31



**MAERSK OLIE OG GAS AS**

+ **MICROBIAL SAMPLING LOCATIONS**

DESIGN	DRAWN	APPR.	DATE	REV. DATE	PROJECT	GROUP	NO.	REV.
HRO	MEN		21.11.01.				lg ex0362dgn	00



Location	Date	Location		Sample	
		EASTING	NORTHING	Below seabed (m)	Content
908	24/10/01	632247.80	6128159.30	0.3	sand->0,8m
909	24/10/01	631394.90	6128684.60	0.3	sand->0,5m
910	24/10/01	630546.40	6129198.10	0.25	sand->0,3m
911	24/10/01	629679.90	6129726.50	0.3	sand/shells->0,5m
912	24/10/01	628836.50	6130255.80	0.3	sand->1,2m
913	24/10/01	627983.70	6130773.60	0.4	sand/shells->0,3m->sand->0,7m
914	24/10/01	627126.70	6131290.80	0.3	sand->0,5m
915	24/10/01	626274.30	6131807.90	0.3	sand->0,8m
916	24/10/01	625413.90	6132335.30	0.3	sand->0,4m
917	25/10/01	624586.30	6132847.20	0.3	sand/shells->0,5m
918	25/10/01	623707.70	6133366.70	0.3	sand->0,4m
919	25/10/01	622851.10	6133889.10	0.3	sand->0,7m
1007	24/10/01	633635.60	6128492.70	0.3	clay/sand->1,0m
1008	24/10/01	632775.80	6129017.40	0.4	sand/shells->0,3m->sand->0,5m
1009	24/10/01	631918.00	6129543.60	0.2	sand->0,2m->shells/sand->0,4m
1010	24/10/01	631064.50	6130071.60	0.3	sand/shells->0,3m->shells->0,4m
1011	24/10/01	630211.90	6130571.00	0.3	sand->0,3m->sand/shells->0,5m
1012	24/10/01	629360.30	6131099.30	0.5	shells/sand->0,4m->sand->0,6
1013	24/10/01	628497.80	6131627.60	0.3	sand->0,7m
1014	24/10/01	627645.70	6132146.80	0.4	sand(brown)->0,3m->sand->0,5
1015	24/10/01	626798.30	6132668.50	0.4	sand/shells->0,3m->sand->0,5m
1016	25/10/01	625938.10	6133182.10	0.3	sand/shells->0,6m
1017	25/10/01	625093.60	6133701.70	0.3	sand->0,5m
1018	25/10/01	624235.60	6134219.90	0.3	sand->0,5m
1019	25/10/01	623381.70	6134739.40	0.3	sand->0,5m
1105	24/10/01	634153.50	6129347.30	0.2	sand->0,25m
1107	24/10/01	632451.5	6130389.3	0.3	sand/shells->0,4m
1108	24/10/01	631597.50	6130904.30	0.3	sand->0,5m
1109	25/10/01	630710.00	6131414.90	0.3	sand/shells->0,4m
1110	25/10/01	629891.70	6131942.50	0.3	sand->0,5m
1111	25/10/01	629017.60	6132452.30	0.3	sand/shells->0,6m
1112	25/10/01	628172.60	6132979.30	0.3	sand->1,0m
1113	25/10/01	627328.60	6133500.60	0.3	sand->0,8m
1114	25/10/01	626462.70	6134026.60	0.3	sand->0,6m
1115	25/10/01	625612.60	6134555.40	0.3	sand->1,2m
1116	25/10/01	624761.50	6135083.70	0.3	sand->0,4m
1117	25/10/01	623890.40	6135591.00	0.3	sand->0,5m
1204	24/10/01	634675.00	6130199.50	0.3	sand->0,4m
1206	25/10/01	632986.50	6131220.20	0.3	sand->0,5m
1208	25/10/01	631264.70	6132280.60	0.3	sand->0,8m
1209	25/10/01	630402.20	6132803.60	0.3	sand->0,5m
1210	25/10/01	629560.30	6133313.80	0.3	sand->0,6m
1211	25/10/01	628703.10	6133841.30	0.3	sand/shells->0,5m
1212	25/10/01	627858.80	6134350.50	0.3	sand->0,8m
1214	25/10/01	626138.70	6135405.90	0.3	sand->0,4m
1215	25/10/01	625276.00	6135929.40	0.3	sand->1,0m
1216	25/10/01	624415.30	6136450.80	0.3	sand->0,6m
1303	24/10/01	635194.00	6131055.30	0.3	sand->0,8m
1305	25/10/01	633489.40	6132102.30	0.2	sand/shells->0,3m
1307	25/10/01	631767.50	6133140.50	0.2	sand/shells->0,3m
1308	25/10/01	630907.60	6133680.00	0.3	sand->1,5m
1309	25/10/01	630041.90	6134168.50	0.3	sand/shells->0,4m
1310	25/10/01	629212.20	6134668.50	0.3	sand/shells->0,6m
1311	25/10/01	628347.60	6135211.60	0.3	sand->0,8m

1312	25/10/01	627492.60	6135740.40	0.3	sand->0,5m
1313	25/10/01	626649.30	6136261.60	0.3	sand->0,7m
1314	25/10/01	625798.10	6136786.80	0.3	sand->0,6m
1315	25/10/01	624948.70	6137313.30	0.3	sand->0,8m
1405	25/10/01	633158.80	6133482.30	0.3	sand->0,4m
1406	25/10/01	632299.90	6134006.70	0.3	sand->2,0m
1407	25/10/01	631432.80	6134522.50	0.3	sand->0,7m
1408	25/10/01	630571.40	6135015.80	0.3	sand->0,8m
1409	25/10/01	629737.10	6135560.70	0.3	sand->1,0m
1410	25/10/01	628866.60	6136048.60	0.3	sand->1,0m
1411	25/10/01	628019.10	6136585.00	0.3	sand->1,0m
1412	25/10/01	627169.40	6137102.30	0.3	sand->1,0m
1413	25/10/01	626311.30	6137640.10	0.3	sand->0,6m
1414	25/10/01	625460.90	6138172.60	0.3	sand->1,0m
1513	25/10/01	626842.50	6138494.50	0.3	sand->0,6m
1514	25/10/01	625982.40	6139015.80	0.3	sand->1,0m
1515	25/10/01	625124.90	6139543.40	0.3	sand->0,8m
1613	25/10/01	627347.50	6139347.40	0.3	sand->1,0m
1614	25/10/01	626512.90	6139862.20	0.3	sand->0,8m
1615	25/10/01	625641.50	6140379.50	0.3	sand->1,1m
1713	25/10/01	627879.10	6140186.90	0.3	sand->1,0m
1714	25/10/01	627020.70	6140722.50	0.3	sand->1,0m
1715	25/10/01	626167.10	6141234.80	0.3	sand->1,0m
1813	25/10/01	628407.70	6141050.20	0.3	sand->0,9m
1814	25/10/01	627542.80	6141580.50	0.3	sand->1,1m
1815	25/10/01	626701.60	6142101.00	0.3	sand->1,0m
1913	25/10/01	628909.40	6141905.60	0.3	sand->1,0m
1914	25/10/01	628057.80	6142412.10	0.3	sand->1,0m
1915	25/10/01	627217.60	6142946.40	0.3	sand->0,9m
2012	25/10/01	629442.50	6142765.30	0.3	sand->0,9m
2013	25/10/01	628574.40	6143273.40	0.3	sand->0,8m
2014	25/10/01	627730.10	6143813.20	0.3	sand->1,0m
2112	25/10/01	629958.10	6143605.50	0.3	sand->0,8m
2113	25/10/01	629096.00	6144143.10	0.3	sand->0,7m

**Co-ordinates are in ED50, UTM31**

Information by Mærsk Olie og Gas AS, 21-11-2001

**Enclosure 3 : Vibrocore locations and samples, Mærsk Olie og Gas AS**

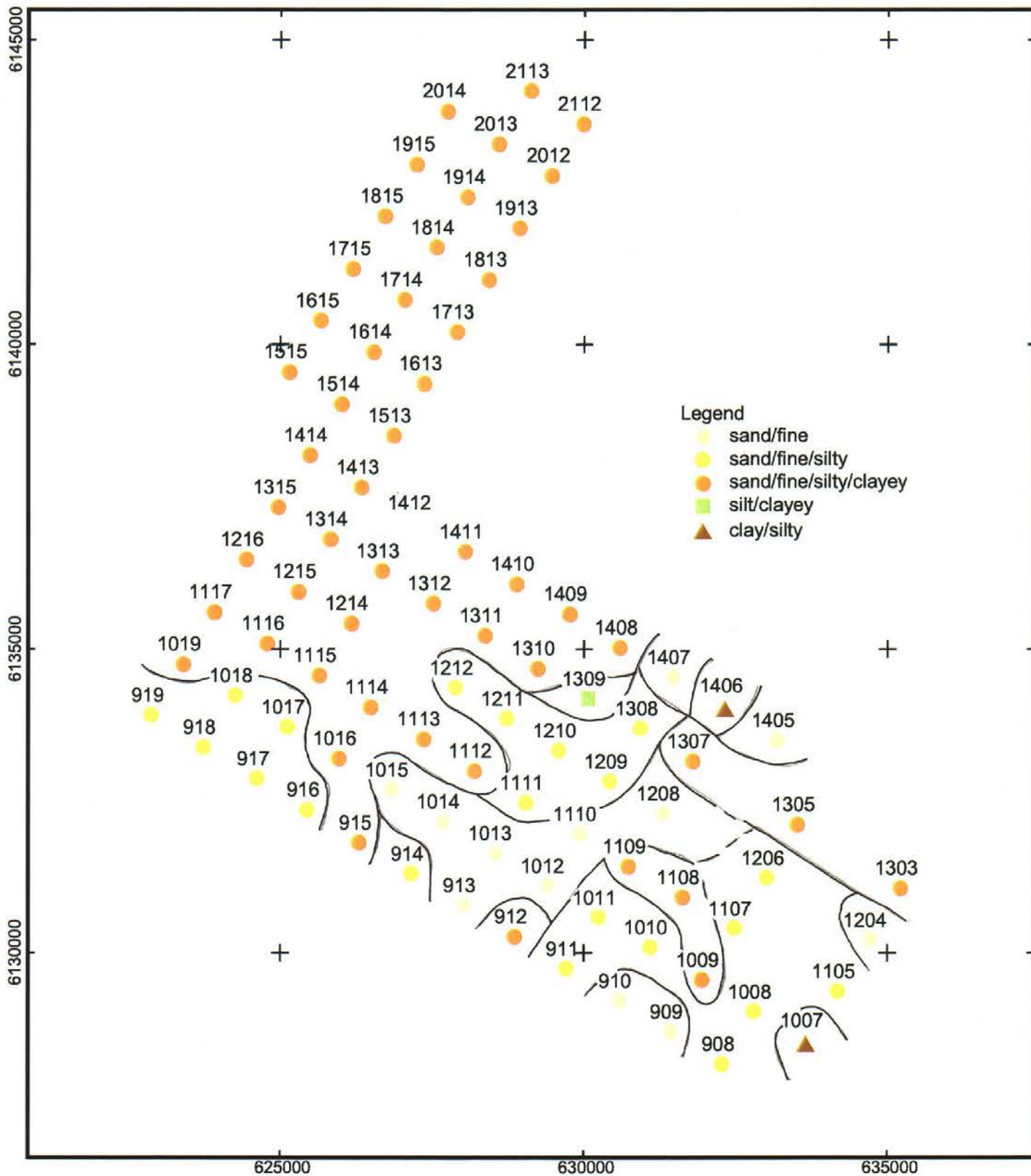
	DGU Well	Sample							
Location	File no	Grain size	Shells	Plants	Colour	Colour code	Calcareous	Environment & age	Note
908	550521.1	sand/fine/silty	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS	
909	550521. 2	sand/fine	x		yellowish brown	10YR 5/4		HS	
910	550521. 3	sand/fine		x / org.mat.	dark grayish brown	2.5Y 4/2		HS	
911	550521. 4	sand/fine/silty	xxx	xx / org.mat.	dark grayish brown	2.5Y 4/2	c	HS	
912	550521.5	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
913	550521. 6	sand/fine to medium	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS	
914	550521. 7	sand/fine/silty	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS	
915	550521.8	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
916	550424.9	sand/fine/silty	x	org.mat.	grayish brown	2.5Y 4/2	c	HS	f.glaucanite
917	550424.10	sand/fine/silty	xxx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS	
918	550424.11	sand/fine/silty	x	org.mat.	dark grayish brown	2.5Y 4/2	c	HS	f.glaucanite
919	550424. 12	sand/fine/silty	x		dark grayish brown	2.5Y 4/2	c	HS	m.glaucanite, flint
1007	550521. 9	clay/silty	x	org.mat.	dark gray	5Y 4/1	c	HL	
1008	550521. 10	sand/fine/silty	x	xxx	dark grayish brown	2.5Y 4/2		HS	
1009	550521. 11	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1010	550521. 12	sand/fine/silty	xxx	org.mat.	grayish brown	2.5Y 5/2	c	HS	
1011	550521. 13	sand/fine/silty	xxx	org.mat.	grayish brown	2.5Y 5/2	c	HS	
1012	550521. 14	sand/fine	x	xxx	grayish brown	2.5Y 5/2		HS	
1013	550521. 15	sand/fine	xx	x	dark grayish brown	2.5Y 4/2	c	HS	
1014	550521. 16	sand/fine			light olive brown	2.5Y 5/3		HS	
1015	550424. 13	sand/fine		x	grayish brown	2.5Y 5/2	c	HS	
1016	550424. 14	sand/fine/silty/clayey	xxx	x	grayish brown	2.5Y 5/2	c	HS / heterolith	1 ironconcretion
1017	550424. 15	sand/fine/silty	xx	x	grayish brown	2.5Y 5/2	c	HS	f.glaucanite
1018	550424. 16	sand/fine/silty	xx	xxx	grayish brown	2.5Y 5/2	c	HS	
1019	550424. 17	sand/fine/silty/clayey	xx	org.mat.	grayish brown	2.5Y 5/2	c	HS / heterolith	f.glaucanite
1105	550521. 17	san/fine/silty	xxx	xx / org.mat.	grayish brown	2.5Y 5/2	c	HS	
1107	550521. 18	sand/fine/silty	xxx	xxx	yellowish brown	10YR 5/4	c	HS	
1108	550521. 19	sand/fine/silty/clayey	xxx	xxx / org.mat.	grayish brown	2.5Y 5/2	c	HS / heterolith	
1109	550521. 20	sand/fine/silty/clayey	xxx	xx / org.mat.	grayish brown	2.5Y 5/2	c	HS / heterolith	
1110	550521. 21	sand/fine	x	org.mat.	grayish brown	2.5Y 5/2		HS	
1111	550521. 22	sand/fine/silty	xxx	x / org.mat.	grayish brown	2.5Y 5/2		HS	
1112	550521. 23	sand/fine/silty/clayey	xxx	xx / org.mat.	dark grayish brown	2.5Y 5/2		HS / heterolith	
1113	550521. 24	sand/fine/silty/clayey	xxx	xx / org.mat.	grayish brown	2.5Y 5/2		HS / heterolith	
1114	550424. 18	sand/fine/silty/clayey	xxx	xx / org.mat.	grayish brown	2.5Y 5/2	c	HS / heterolith	

1115	550424. 19	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1116	550424. 20	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1117	550424. 21	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1204	550521. 25	sand/fine	x	xxx /org.mat.	black	2.5Y 2.5/1		HS	
1206	550521. 26	sand/fine/silty		org.mat.	grayish brown	2.5Y 5/2	c	HS	
1208	550521. 27	sand/fine	x	org.mat.	olive brown	2.5Y 4/3	c	HS	
1209	550521. 28	sand/fine/silty	xxx	xxx /org.mat.	light olive brown	2.5Y 5/3	c	HS	
1210	550521. 29	sand/fine/silty	xxx	xx / org.mat.	dark grayish brown	2.5Y 4/2	c	HS	
1211	550521. 30	sand/fine/silty	xxx	xx / org.mat.	very dark grayish brown	2.5Y 3/2	c	HS	
1212	550521. 31	sand/fine/silty	x	org.mat.	grayish brown	2.5Y 5/2		HS	
1214	550424. 22	sand/fine/silty/clayey	xx	org.mat.	grayish brown	2.5Y 5/2		HS / heterolith	
1215	550424. 23	sand/fine/silty/clayey	x		dark grayish brown	2.5Y 4/2		HS / heterolith	
1216	550424. 24	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1303	550521. 32	sand/fine/silty/clayey	xxx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1305	550521. 33	sand/fine/silty/clayey	xxx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1307	550521. 34	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2		HS / heterolith	
1308	550521. 35	sand/fine/silty	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1309	550521. 36	silt/clayey	xx		dark grayish brown	2.5Y 4/2	c	HI / heterolith	slightly sandy
1310	550521. 37	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1311	550521. 38	sand/fine/silty/clayey	xxx	xxx /org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1312	550521. 39	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1313	550424. 25	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1314	550424. 26	sand/fine/silty/clayey	xx	xx / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1315	550424. 27	sand/fine/silty/clayey	xx	xx / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1405	550521. 40	sand/fine		x / org.mat.	grayish brown	2.5Y 5/2		HS	
1406	550521. 41	clay/silty			gray	5Y 5/1	c	HL	
1407	550521. 42	sand/fine		org.mat.	grayish brown	2.5Y 5/2		HS	
1408	550521. 43	sand/fine/silty/clayey	xxx	xx / org.mat.	grayish brown	2.5Y 5/2	c	HS / heterolith	
1409	550521. 44	sand/fine/silty/clayey	xxx	xx / org.mat.	grayish brown	2.5Y 5/2	c	HS / heterolith	
1410	550521. 45	sand/fine/silty/clayey	xxx	xx / org.mat.	light olive brown	2.5Y 5/3	c	HS / heterolith	
1411	550521. 46	sand/fine/silty/clayey	x	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1412	550521. 47								sample missing
1413	550424. 28	sand/fine/silty/clayey	xxx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1414	550424. 29	sand/fine/silty/clayey	x	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1513	550517. 17	sand/fine/silty/clayey	x	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1514	550420. 1	sand/fine/silty/clayey	x	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	smells very stinky

1515	550420. 2	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1613	550517. 18	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1614	550420. 3	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	
1615	550420. 4	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
1713	550517. 19	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite, f.coarse quartzgrain
1714	550517. 20	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
1715	550420. 5	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
1813	550517. 21	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
1814	550517. 22	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
1815	550517. 23	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
1913	550517. 24	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
1914	550517. 25	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
1915	550517. 26	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
2012	550517. 27	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
2013	550517. 28	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
2014	550517. 29	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
2112	550517. 30	sand/fine/silty/clayey	xx	org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite
2113	550517. 31	sand/fine/silty/clayey	xx	x / org.mat.	dark grayish brown	2.5Y 4/2	c	HS / heterolith	f.glaucanite

Information by GEUS

Enclosure 4 : Vibrocore samples sedimentology, GEUS



Enclosure 5: Sedimentological map,  
 Central North Sea, Denmark,  
 block 5504/20  
 5504/24  
 5505/17  
 5505/21

