

Table 4. Sediment type and content of fraction <0.01 mm and chemical elements in mud at the area of Bornholm Deep where CMI is buried. After Emelyanov, Kravtsov, Paka, 1999 (st. PSh-4030, 55° 21', 63 N, 95° 37', 13 E) 4 lentelė. Sedimentų pobūdis (Apm – aleuritinis-pelitinis dumbias, Pm – pelitinis dumbias (molis) <0,01 mm frakcijos ir cheminių elementų kiekis Bornholmo įdubos dumblyje, cheminio ginklo palaidojimo vietoje

Horizon, cm	Sed. type, Se	%													ppm or 10 ⁻⁴ %								Moisture W, %	Fraction < 0.01 mm, %
		SiO _{2det.}	Al	Fe	Mn	Ti	N	Ca	Mg	P	K	Na	Rb	Li	Cu	Zn	Cr	Ni	Co					
0-5	Pm	-	-	5.32	3.24	0.32	0.64	1.04	1.55	0.11	2.08	1.88	154	44	36	158	56	56	28	75.9	70.6			
15-20	Apm	-	-	3.52	2.76	0.31	0.77	1.28	1.53	0.11	1.96	1.30	137	44	36	128	44	60	24	75.5	66.7			
0-1	Apm	-	-	3.52	0.25	0.34	0.85	0.86	1.46	0.10	2.12	1.34	152	44	44	214	44	60	30	82.6	67.5			
2-3	Apm	-	-	3.52	0.33	0.38	0.93	0.62	1.42	0.09	2.12	1.14	156	46	44	192	56	56	28	-	-			
4-5	Apm	47.20	7.60	3.70	0.49	0.38	1.10	0.50	1.36	0.09	2.30	1.28	148	46	36	204	44	60	26	82.2	67.0			
6-7	Apm	-	-	3.62	0.22	0.38	0.88	0.66	1.36	0.09	2.34	1.16	146	46	32	192	56	56	28	-	-			
8-9	Apm	51.00	8.00	4.02	0.38	0.36	1.10	0.68	1.44	0.09	2.64	2.00	167	44	44	212	56	60	30	-	-			
9-10	Apm	-	-	3.26	0.32	0.34	1.08	0.86	1.44	0.10	2.60	1.88	160	46	58	226	56	56	32	78.4	68.2			
12-14	Apm	50.00	8.00	2.88	0.37	0.35	1.05	0.80	1.42	0.09	2.50	1.92	152	46	40	204	56	54	28	-	-			
16-18	Apm	51.00	7.90	3.70	1.03	0.35	1.10	1.10	1.35	0.25	2.50	1.72	148	46	32	180	64	52	26	-	-			
18-20	Apm	-	-	4.08	0.70	0.37	0.80	1.22	1.46	0.10	2.46	1.70	152	46	32	158	64	54	24	77.3	64.1			
22-24	Apm	51.00	8.00	5.58	0.47	0.38	0.72	1.14	1.54	0.10	2.64	1.84	136	46	32	120	56	54	26	-	-			
26-28	Apm	51.00	8.30	5.00	0.28	0.37	0.71	0.94	1.50	0.09	2.54	1.74	158	46	30	132	56	66	28	-	-			
32-34	Apm	51.00	8.10	4.02	0.32	0.36	0.88	0.98	1.57	0.10	2.60	1.66	168	46	30	122	56	56	28	73.1	66.2			
34-36	Apm	49.00	7.80	5.16	0.40	0.36	0.80	0.94	1.49	0.09	2.50	1.82	164	46	30	106	56	52	28	74.4	67.7			

Note. G – grab; NC – Niemisto Corer. Sediment type: Apm – aleuro-pelitic (silty) mud; Pm – pelitic mud (clay).

light subtraction and ilmenite, magnetite and garnet in the heavy one) are more frequent in the marginal areas, while mica and glauconite are more frequent in the deeper areas of the basin. Illite is the prevailing clay mineral, followed by kaolinite, montmorillonite and chlorite.

Vegetal remains are abundant in the upper layer of sediments, including dandelion of cereals, pollen grains, spores and diatom skeletons. Shells of the mollusk *Macoma baltica* and their fragments were also found.

Authigenic minerals are frequently represented by phosphates, including phosphates developed on fish bones, and Fe-sulphides. It seems to be a characteristic feature that despite of reduction of sediments, limonite and hydrogoethite are found in many cases. These hydrous oxides are apparently supplied from the surrounding land area, while sulphides are authigenic / diagenetic. At stations PSh-2545 and PSh-2554 (Figs. 5, 6), brown spheroidal and black sulphide microconcretions are found.

At stations PSh-2555 and PSh-2560, carbonate spherulites in amounts of 15.3% and 10.7% respectively occur. These spherulites are probably authigenic. Previously, siderite, barite and Mn-calcite were found in the Bornholm Deep sediments (Blazhchishin, 1976).

Some samples of aleuro-pelitic muds at three stations contain much calcium carbonate – up to 15.80% of clastic calcite and dolomite. This sediment type had the highest content of C_{org} in the upper layer in the Bornholm Deep – up to 6.28%. The content of SiO_{2am} was also increased (up to 3.53%), and at one station the content of Fe was increased up to 7.08% (Emelyanov, Christiansen, 1995).

For the rest of the elements, the contents are normal for Baltic Sea muds (Emelyanov, 1981, 1986, 1995).

The bulk SiO₂ makes up 46.92–53.63% in pelitic muds, Al₂O₃ 12.51 – 16.67%, K₂O up to 4.01%.

The contents of organic remains in the pelitic mud are high and the SiO_{2am} content is slightly increased (Emelyanov, Christiansen, 1995). The content of CaCO₃ is also increased (in one case even up to 16.75%, apparently the highest value for the Bornholm Deep). At some stations a high content of Mn was observed (up to 0.40%). It is apparently present as Mn-carbonates of complex composition.

Individual mud samples are enriched in one of the trace elements (Zn, Zr or Ba). The content of Ni is high for almost all mud samples studied (Baturin, Emelyanov, Kunzendorf, 1995).

New data on some sediment samples and on the short cores are shown in Tables 3, 4 and 5 and the content of trace metals and REE in Table 6.

II. 2. Sediment thickness

Mud in the Bornholm Basin accumulates below the 50 m isobath (Emelyanov, Trimonis, Slobodyanik and Nielsen, 1995). Thicknesses covered by cores