The relative contribution of sedimentation and diagenesis in colour formation of Quaternary bottom sediments from the southern part of Mendeleev Rise and the continental slope of the East Siberian Sea

M.A.LEVITAN[1*], K.V.SYROMYATNIKOV[1], I.A.ROSHCHINA[1] AND R.STEIN[2]

[11] Vernadsky Institute RAS, Moscow 119991, Russia (* correspondence: m-levitan@mail.ru)

[2]2 AWI, Bremerhaven 12 01 61 – 27515, Germany

The goal of this study is to determine the relative contribution of both factors based on XRF study of sediments and field colour descriptions of sediment cores using Munsell Soil Colour Chart. Four studied sediment cores are located at the area of Southern Mendeleev Rise and continental slope of the East Siberian Sea . We paid special attention to amounts of Mn, Cu, Ni, Co, As, quartz; Mn/Al and Mn/Fe ratios. Quarts amount mimics the influence of terrigenous matter during glacial/interglacial cycles; As is concentrated in diagenetic Fe sulfides; other abovelisted elements and ratios reflect the relative contribution of sedimentation and diagenesis.

It's important to note that according to V/Cr ratio the studied sediments have been accumulated in the oxic environment. Our study allowed to constrain the consequence of sediment colours reflecting the increasing of diagenesis/sedimentation ratio: dark brown – yellow brown – olive brown – olive grey – grey – dark grey. Pink sediments should be considered separately due to specifics of their composition (abundance of dolomite) but they have been underwent to diagenetic processes as well. The significant role in diagenesis played the type and amount of labile organic matter, sedimentation rates and facies environments of sediments. These conclusions are confirmed by results of dispersion analysis based on 333 samples.

The geochemical history of the Dead Sea from dissolved chemical species and isotopes in pore waters

E. J. LEVY [1]*, O. SIVAN [1], Y. YECHIELI [2], I. GAVRIELI [2], B. LAZAR[3] AND M. STEIN[2]

[1] Dept. of Geology and Environmental Sciences, Ben Gurion University of the Negev, Beer-Sheva, ISRAEL 84105 (*correspondance: elanl@post.bgu.ac.il)

[2] Geological Survey of Israel, 30 Malkhe Israel St., Jerusalem, ISRAEL 95501

[3] Institute of Earth Science, The Hebrew University of Jerusalem, ISRAEL 91904

During the winter of 2010-11 an ICDP-drilling project exposed a 456m long water saturated core from the centre of the hypersaline Dead Sea (Israel). This research provides a unique perspective on the geochemical evolution of the lake from the analysis of dissolved chemical species and isotope proxies within the interstitial water gathered from the samples collected at intervals along the core. In this study we intend to present initial pore water results for major ion concentrations (Na^+, K^+, Ca^{2+}, Mg^{2+}, Sr^{2+}, Cl^-, Br^-, SO_4^{2-}) and corresponding ratios (Na/Cl (fig. 1), Mg/Ca (fig. 2), Sr/Ca, Na/K), the carbon system (dissolved inorganic carbon (DIC) and $\delta^{13}C_{(DIC)}$), $\delta^{34}S_{(SO4)}$ and $\delta^{18}O_{(SO4)}$. Discussion of results will take place during the conference.

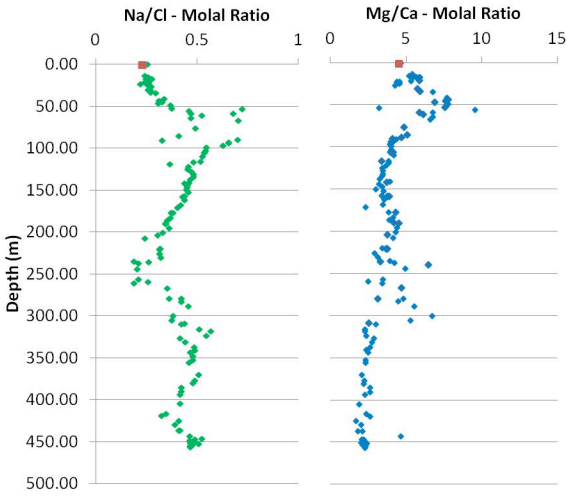

Figure 1 (top left) and figure 2 (top right): Molal ratios for Na/Cl and Mg/Ca from interstitial water concentrations. The depth is the length of the core in meters and the red squares indicate current Dead Sea water molal ratios.

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