

Table 1 - Whole rock stable isotope data

Samples	Sediment type	fossils	Bulk sediment				Bulk organic			
			$\delta^{13}\text{C}$ VPDB	std.	$\delta^{18}\text{O}$ VPDB	$\delta^{18}\text{O}$ VSMOW	std.	Yield (%)	$\delta^{13}\text{C}_{\text{org}}$ VPDB	TOC wt%
S1	marl	m	+							
S2	marl	m	+							
S21	phosphorite	p		-11.0	0.1	-4.5	26.2	0.1	13.1	
S22	marl	m	+	-8.8	0.1	-1.8	29.0	0.0	17.7	-24.7
S23	phosphorite	p		-12.2	0.1	-5.2	25.5	0.1	11.9	0.3
S24	phosphorite	p		-12.5	0.1	-5.5	25.3	0.1	9.2	
S25	phosphorite	p		-12.1	0.1	-5.7	25.1	0.1	12.4	
S26	phosphorite	p		-12.3	0.1	-5.7	25.0	0.1	11.7	-25.3
S27	phosphorite	p		-12.7	0.1	-5.7	25.1	0.2	11.8	0.4
S28	carbonate	c		-10.5	0.1	-3.2	27.6	0.1	84.1	
S29	phosphorite	p		-12.4	0.1	-5.7	25.1	0.1	11.9	
S30	phosphorite	p		-12.2	0.1	-5.8	25.0	0.1	15.6	
S31	phosphorite	p		-12.4	0.1	-5.7	25.0	0.1	16.3	
S32	carbonate	c		-14.1	0.0	-1.3	29.6	0.1	65.0	
S33	carbonate	c		-12.8	0.1	-2.0	28.8	0.1	91.7	
S34	phosphorite	p		-12.7	0.1	-5.1	25.6	0.1	16.6	
S35	carbonate	c		-13.9	0.1	-1.5	29.3	0.1	67.2	
S36	marl	m	-	-10.7	0.1	-2.7	28.2	0.1	3.6	-24.3
S37	marl	m	+	-12.6	0.1	-4.4	26.4	0.1	5.6	-25.1
S39	carbonate	c		-10.7	0.1	-3.0	27.8	0.1	74.5	-26.2
S40	marl	m	-	-9.9	0.0	-2.0	28.9	0.1	8.0	-24.8
S41	marl	m	+	-11.9	0.0	-3.9	26.9	0.1	6.4	-25.1
S42	phosphorite	p		-12.9	0.1	-4.9	25.9	0.1	10.7	
S43	phosphorite	p		-13.0	0.2	-5.3	25.5	0.2	11.1	
S44	marly phosphorite	p		-12.5	0.1	-4.4	26.4	0.1	6.9	
S45	marly phosphorite	p		-12.5	0.1	-4.0	26.8	0.1	3.9	-25.4
S46	phosphorite	p		-12.6	0.1	-5.2	25.5	0.1	10.7	0.3
S47	phosphorite	p		-12.7	0.1	-5.3	25.5	0.1	9.9	-25.8
* averaged for figure 3/b				-12.7	0.2	-4.8	25.9	0.6	8.9	-25.6
S48	carbonate	c		-12.7	0.1	-1.5	29.4	0.1	80.0	-26.1
S49	marl	m	+	-10.2	0.1	-2.3	28.6	0.1	11.4	-26.4
S50	marl	m	+	-9.1	0.1	-2.6	28.2	0.1	7.4	-25.7
S51	phosphorite	p	p	-13.1	0.1	-5.3	25.5	0.1	9.8	
S52	carbonate	c		-12.3	0.0	-2.3	28.6	0.1	77.0	
S53	marl	m	+	-7.5	0.1	-2.5	28.4	0.1	7.8	-25.9
S54	phosphorite	p		-12.8	0.1	-4.7	26.1	0.1	9.5	
S55	marl	m	+	-9.0	0.1	-2.8	28.0	0.1	3.2	-25.7
S56	phosphorite	p		-12.6	0.1	-5.1	25.6	0.1	11.2	
S57	carbonate	c		-12.5	0.0	-2.0	28.8	0.1	70.3	
S58	marl	m		-10.0	0.1	-2.7	28.1	0.1	7.7	-25.6
S59	carbonate	c		-12.8	0.1	-2.0	28.8	0.1	93.0	
S60	marl	m		-9.0	0.1	-2.5	28.3	0.1	17.5	-25.8
S61	carbonateous-phosphorite	p		-8.7	0.0	-2.8	28.0	0.1	38.2	
S62	marl	m		-8.5	0.0	-2.5	28.3	0.1	11.9	
S63	phosphorite	p		-10.5	0.1	-4.5	26.3	0.1	17.4	-25.6
S64	carbonateous-phosphorite	p		-8.8	0.1	-2.7	28.2	0.1	20.2	
S65	carbonate	c		-12.8	0.1	-1.7	29.1	0.1	77.2	
S66	marl	m	+	-9.1	0.0	-2.0	28.9	0.1	16.0	-24.9
S67	phosphorite	p		-12.1	0.1	-5.1	25.6	0.1	9.9	-25.5
S68	phosphorite	p		-7.9	0.1	-2.4	28.4	0.1	16.4	
S69	phosphorite	p		-11.9	0.1	-4.8	26.0	0.1	9.2	
S70	marl with phosphate grains	m		-8.9	0.1	-3.3	27.5	0.1	7.7	
S71	phosphorite	p		-11.8	0.1	-5.2	25.5	0.1	12.6	
S72	carbonate	c		-13.0	0.0	-1.6	29.3	0.1	83.7	
S73	phosphorite	p		-8.6	0.1	-4.2	26.6	0.1	10.5	
S74	phosphorite	p		-12.0	0.1	-5.0	25.8	0.1	11.3	-25.7
S75	carbonate	c		-12.0	0.0	-2.0	28.9	0.1	83.9	
S76	chert	ch		-7.0	0.0	-2.4	28.5	0.1	12.9	
S77	phosphorite	p		-10.1	0.1	-4.5	26.3	0.2	15.0	
S78	carbonate	c		-13.1	0.1	-1.6	29.3	0.1	73.6	
S79	marl	m	-	-10.3	0.1	-2.7	28.1	0.2	5.0	-25.8
S80	phosphorite	p		-12.6	0.1	-5.5	25.3	0.1	9.4	
S81	carbonate	c		-11.4	0.1	-1.8	29.0	0.1	57.4	
S82	layerd marly phosphate	p		-9.1	0.1	-3.1	27.7	0.1	12.0	
S83	phosphorite	p		-12.6	0.1	-5.5	25.2	0.1	10.1	-25.6

Table 2 - Rock-Eval data

Sample			PC [%]	RC [%]	TOC [%]	MINC [%]	HI [mg HC/g TOC]	OI [mg CO2/g TOC]	S1 [mg HC/g TOC]	S2a [mg HC/g TOC]	S2b [mg HC/g TOC]	S3
S21	marl	m	0.06	0.03	0.09	1.85	23	2383	0.00	0.02	0.00	2.11
S22	marl	m	0.07	0.11	0.19	2.41	137	422	0.37	0.26	0.00	0.78
S23	phosphorite	p	0.06	0.07	0.14	1.62	15	1634	0.01	0.02	0.00	2.22
S26	phosphorite	p	0.07	0.04	0.11	1.62	0	2338	0.00	0.00	0.00	2.62
S29	phosphorite	p	0.07	0.03	0.10	1.70	10	2646	0.01	0.01	0.00	2.56
S31	phosphorite	p	0.06	0.02	0.08	1.80	0	2537	0.01	0.00	0.00	2.07
S32	carbonate	c	0.01	0.02	0.04	11.02	0	1290	0.00	0.00	0.00	0.48
S33	carbonate	c	0.01	0.02	0.03	11.99	0	1448	0.00	0.00	0.00	0.50
S34	phosphorite	p	0.06	0.01	0.07	1.80	0	2889	0.01	0.00	0.00	2.06
S35	carbonate	c	0.01	0.03	0.04	11.42	0	1108	0.00	0.00	0.00	0.41
S36	marl	m	0.07	0.06	0.13	0.61	151	341	0.48	0.19	0.00	0.43
S37	marl	m	0.05	0.07	0.12	1.00	70	967	0.13	0.08	0.00	1.12
S39	carbonate	c	0.01	0.03	0.04	11.73	0	989	0.00	0.00	0.00	0.37
S40	marl	m	0.07	0.16	0.23	1.03	95	228	0.49	0.22	0.00	0.53
S41	marl	m	0.08	0.15	0.23	0.86	140	440	0.35	0.32	0.00	1.01
S41			0.04	0.15	0.19	0.65	6	534	0.11	0.01	0.00	1.01
S42	phosphorite	p	0.05	0.02	0.07	1.56	70	2346	0.01	0.05	0.00	1.68
S45	marly phosphorite	p	0.05	0.11	0.16	1.09	45	822	0.05	0.07	0.00	1.29
S46	phosphorite	p	0.05	0.01	0.06	1.47	18	2950	0.00	0.01	0.00	1.67
S47	phosphorite	p	0.05	0.02	0.07	1.47	29	2633	0.00	0.02	0.00	1.79
S48	carbonate	c	0.01	0.02	0.04	11.65	0	1229	0.00	0.00	0.00	0.44
S49	marl	m	0.08	0.49	0.57	1.85	48	363	0.00	0.27	0.00	2.05
S50	marl	m	0.03	0.17	0.20	0.91	0	548	0.00	0.00	0.00	1.10
S51	phosphorite	p	0.04	0.03	0.07	1.11	0	1949	0.00	0.00	0.00	1.42
S52	carbonate	c	0.01	0.03	0.04	9.05	0	744	0.00	0.00	0.00	0.32
S53	marl	m	0.06	0.43	0.49	1.07	46	295	0.01	0.22	0.00	1.44
S54	phosphorite	p	0.04	0.04	0.09	1.01	0	1859	0.00	0.00	0.00	1.60
S55	marl	m	0.09	0.56	0.66	0.59	77	200	0.18	0.50	0.00	1.31
S56	phosphorite	p	0.06	0.02	0.08	1.55	85	2634	0.01	0.07	0.00	2.08
S57	carbonate	c	0.01	0.02	0.03	9.99	52	1167	0.01	0.01	0.00	0.30
S58	marl	m	0.05	0.19	0.23	1.64	72	458	0.04	0.17	0.00	1.07
S59	carbonate	c	0.01	0.02	0.03	9.87	102	731	0.01	0.03	0.00	0.19
S60	marl	m	0.11	0.54	0.66	2.80	72	342	0.15	0.48	0.00	2.25
S61	carbonateous-phosphorite	p	0.06	0.02	0.08	5.24	53	2681	0.01	0.04	0.00	2.04
S62	marl	m	0.06	0.11	0.17	1.87	84	926	0.04	0.14	0.00	1.55
S63	phosphorite	p	0.06	0.03	0.08	2.16	32	2335	0.01	0.03	0.00	1.97
S64	carbonateous-phosphorite	p	0.09	0.05	0.14	2.49	96	2097	0.04	0.13	0.00	2.92
S65	carbonate	c	0.01	0.02	0.04	11.44	110	939	0.01	0.04	0.00	0.34
S66	marl	m	0.08	0.43	0.50	2.60	67	326	0.06	0.34	0.00	1.64
S67	phosphorite	p	0.06	0.02	0.08	1.77	124	2486	0.03	0.10	0.00	1.98
S68	phosphorite	p	0.09	0.13	0.23	2.61	100	1110	0.08	0.23	0.00	2.52
S69	phosphorite	p	0.06	0.06	0.12	1.30	99	1515	0.03	0.12	0.00	1.84
S70	marl with phosphate grains	m	0.11	0.61	0.72	1.25	67	301	0.10	0.48	0.00	2.16
S71	phosphorite	p	0.07	0.05	0.13	1.71	54	1878	0.01	0.07	0.00	2.37
S72	carbonate	c	0.01	0.03	0.04	12.78	103	882	0.01	0.04	0.00	0.35
S73	phosphorite	p	0.05	0.03	0.08	1.26	126	1911	0.01	0.10	0.00	1.44
S74	phosphorite	p	0.07	0.04	0.11	1.37	99	1934	0.03	0.11	0.00	2.13
S75	carbonate	c	0.02	0.03	0.05	11.17	148	980	0.03	0.07	0.00	0.45
S76	chert	ch	0.08	0.21	0.29	1.43	144	466	0.07	0.42	0.00	1.36
S77	phosphorite	p	0.06	0.06	0.12	2.01	90	1518	0.03	0.11	0.00	1.82
S78	carbonate	c	0.02	0.03	0.05	11.96	57	1472	0.01	0.03	0.00	0.70
S79	marl	m	0.05	0.29	0.34	0.63	94	237	0.07	0.32	0.00	0.81
S80	phosphorite	p	0.06	0.04	0.10	1.31	68	1999	0.01	0.07	0.00	1.98
S81	carbonate	c	0.02	0.04	0.05	13.74	123	664	0.03	0.07	0.00	0.36
S82	layerd marly phosphate	p	0.11	0.48	0.59	1.48	111	329	0.07	0.66	0.00	1.95
S83	phosphorite	p	0.06	0.03	0.09	1.32	72	2177	0.01	0.07	0.00	2.04

Table 3 - Stable isotopic composition of the microfossils

Samples		$\delta^{13}\text{C}$ VPDB	std.	$\delta^{18}\text{O}$ VPDB	std.	$\delta^{18}\text{O}$ VSMOW
S1	echinoderm spines	-5.4	0.1	-2.7	0.1	28.1
S2	echinoderm spines	-5.8	0.0	-2.6	0.1	28.3
		-2.6	0.1			
S1	ostracoda	-7.3	0.1	-5.3	0.1	25.4
S1	ostracoda	-6.3	0.3	-3.5	0.2	27.3
S2	ostracoda	-6.9	0.1	-4.8	0.1	26.0
S2	ostracoda	-6.7	0.1	-4.8	0.1	26.0
S41	ostracoda	-5.8	0.1	-1.5	0.2	29.4
S49	ostracoda	-6.1	0.1	-0.9	0.1	30.0
S49	ostracoda	-9.0	0.0	-1.5	0.1	29.4
S49	ostracoda	-4.2	0.1	-0.6	0.1	30.2
S49	ostracoda	-7.9	0.2	-1.8	0.2	29.0
S50	ostracoda	-9.4	0.3	-1.5	0.4	29.4
S53	ostracoda	-6.1	0.1	-1.2	0.1	29.7
S55	ostracoda	-4.3	0.2	-0.9	0.4	30.0
S66	ostracoda	-6.0	0.2	-0.8	0.3	30.1
		-6.5		-1.2		
		1.9		0.4		
		-6.8		-4.6		
		0.4		0.8		
S49	foram-buliminiids	-12.6	0.1	-2.7	0.1	28.1
S49	foram-buliminiids	-12.3	0.0	-2.6	0.1	28.2
S50	foram-buliminiids	-12.8	0.1	-3.3	0.2	27.6
		-12.6		-2.9		
		0.3		0.4		
S2	foram-rotaliids	-7.9	0.1	-2.5	0.1	28.3
S22	foram-rotaliids	-5.3	0.1	-2.1	0.2	28.7
S22	foram-rotaliids	-6.2	0.1	-2.5	0.1	28.4
S53	foram-rotaliids	-5.6	0.1	-2.2	0.1	28.6
S55	foram-rotaliids	-7.1	0.1	-2.3	0.1	28.6
S66	foram-rotaliids	-7.1	0.0	-2.0	0.0	28.9
S87	foram-rotaliids	-5.3	0.0	-2.3	0.1	28.6
		-6.3		-2.3		
		1.0		0.2		