

**Table 1.** Seawater temperature, salinity and nutrient concentration data from RV Meteor cruises M77/3 and M77/4, as well as Cr concentrations and  $\delta^{53}\text{Cr}$  data

Station	Longitude [°W]	Latitude [°S]	Depth [m]	Temperature [°C]	Salinity [PSU]	Oxygen [ $\mu\text{mol/kg}$ ]	Potential Density [ $\text{kg/m}^3$ ]	$\text{NO}_3^-$ [ $\mu\text{mol/kg}$ ]	$\text{NO}_2^-$ [ $\mu\text{mol/kg}$ ]	$\text{Si(OH)}_4$ [ $\mu\text{mol/kg}$ ]	[Fe] <sup>c)</sup> [nmol/kg]	[Cr] [nmol/kg]	$\delta^{53}\text{Cr}$ [‰]	2SE <sup>d)</sup> [‰]
2	80.224	9.922	2	23.60	35.26	219.8	23.96	5.19	0.11	0.35		2.94	1.09	0.03
2			102	14.60	35.02	4.6	26.08	30.23	0.03	17.02		3.09	1.16	0.03
			b)									3.09	1.14	0.02
2			999	4.57	34.52	49.5	27.38	49.15	-	-		4.23	0.86	0.03
19	77	12.363	2	19.64	34.89	191.4	24.72	2.34	1.05		82.85	2.14	0.92	0.02
19			97	13.72	34.97	2.0	26.23	0.13	0.05		188.13	2.17	1.00	0.05
			b)									2.17	1.08	0.05
22	76.785	13.666	3	17.20	34.93	211.7		8.16	0.51			2.55	1.16	0.02
22			153	13.02	34.94	2.0		11.79	8.63			2.70	1.30	0.02
22			302	11.69	34.85	2.2		21.23	5.62			3.05	1.18	0.02
28	76.998	15.999	8	23.24	35.30	206.4	24.10	0.03	0.02	1.04	1.25	2.93	1.07	0.04
28			201	12.18	34.88	2.1	26.47	-	-	-	2.26	2.86	1.25	0.03
28			1001	4.58	34.53	47.8	27.37	-	-	-		4.26	0.88	0.03
			a)									4.36	0.90	0.03
28			1800	2.55	34.63	91.2	27.65	-	-	-		4.86	0.79	0.03
			a)									5.02	0.79	0.05
41	72.841	16.819	2	21.17	34.95	242.0	24.41	0	7.08			2.91	1.06	0.07
41			100	12.86	34.89	2.0	26.35	12.63	6.45			2.52	1.24	0.04
41			250	12.30	34.87	2.3	26.45	13.87	7.77			2.54	1.14	0.05
103	85.833	9	2	26.75	35.52	215.5	23.19	2.76	-	0.77		2.96	1.11	0.02
103			151	13.06	34.95	10.7	26.35	30.89	-	21.54		3.22	1.09	0.02
103			221	12.34	34.91	33.6	26.46	29.41	-	21.74		3.30	1.08	0.02
103			800	5.53	34.55	34.0	27.27	45.26	-	66.41		3.95	0.92	0.03
			a)									3.94	0.89	0.03
103			1500	2.96	34.61	83.2	27.59	41.26	-	121.64		4.68	0.80	0.03
103			2501	1.92	34.67	118.3	27.74	38.17	-	147.57		5.22	0.73	0.02

103			4290	1.81	34.69	146.5	27.77	35.86	-	138.86	5.51	0.72	0.02
109	85.833	3.583	2	25.49	34.49	215.0	22.81	6.33	-	1.03	3.04	1.11	0.02
109			151	13.53	34.96	46.4	26.27	27.64	-	19.57	3.31	1.03	0.03
109			500	8.18	34.64	8.6	26.96	40.64	-	46.14	3.51	1.15	0.02
109			700	6.28	34.58	22.1	27.19	44.72	-	61	3.80	0.97	0.02
109			1500	3.24	34.61	80.0	27.57	40.83	-	118.06	4.56	0.83	0.02
109			3201	1.78	34.68	134.3	27.76	37.09	-	143.63	5.29	0.73	0.02
806	79.845	8	1	19.39	34.99	212.8	24.92	6.75	0.55		2.31	1.02	0.04
806			81	14.08	34.99	9.1	26.17	31.49	0.06		3.28	1.05	0.04
806			141	13.74	34.97	2.1	26.23	14.71	9.02		1.50	1.59	0.03
807	78.380	10.001	2	16.38	35.00	65.5	25.54	20.87	1.77	2.44	2.57	1.17	0.03
807			80	13.65	34.97	2.0	26.23	1.92	10.75	30.44	1.71	1.41	0.03
			b)								1.71	1.43	0.02
807			110	13.65	34.97	2.0	26.23	1.68	10.51		1.67	1.49	0.04
			b)								1.67	1.52	0.02
812	79.134	9.999	3	21.85	35.13	225.0	24.36	5.57	0.22		2.53	1.11	0.03
812			51	14.59	35.00	13.7	26.06	30.51	0.07		3.21	0.98	0.04
			b)								3.21	1.00	0.02
812			101	13.65	34.98	3.7	26.25	32.29	0.03		3.23	1.06	0.03
			b)								3.23	1.08	0.02
812			201	12.89	34.93	2.0	26.37	31.65	0.16		3.09	1.13	0.03
812			302	11.78	34.86	2.2	26.53	29.48	2.56		3.05	1.19	0.02
OSIL	Saskatchewan Isotope Laboratory (16/9/2015)										3.24	0.95	0.02
OSIL	University of Bern (5/12/2017), Bottle 2										4.17	0.81	0.03
			a)								4.16	0.81	0.03
			a)								4.18	0.80	0.03

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- a) Processed replicate - a separate seawater aliquot of a sample was processed through the entire sample treatment protocol
- b) Replicate measurement - a single seawater sample was processed once through the sample treatment protocol, but measured twice
- c) From Schlosser et al. 2018
- d) Represents the internal error of a sample measurement
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