

APPENDIX

Table 1. Measured and calculated water parameters given for all replicates and days (0-6) for four different CO₂-groups (ppm). Carbon chemistry values were computed based on daily measurements of pH_{NIST} in all replicates, hourly temperature measurements in three tanks, salinity and total alkalinity in seawater running into the lab. * Used to calculate CO₂-values for d2 deformity results only

CO ₂ -group	Replicate	Date	Day	Measured parameters				Calculated parameters					
				pH _{NIST}	Salinity	Daily mean temperature (°C)	A _T (mmol/kgSW)	pCO ₂ (µatm)	HCO ₃ ⁻ (µmol/kgSW)	CO ₃ ²⁻ (µmol/kgSW)	CO ₂ (µmol/kgSW)	Ω _{aragonite}	CO ₂ (ppm)
478	1	21.03.2012	0	7.97	35.0	16.1 ± 0.3	2341	487.4	1979.0	146.8	17.6	2.25	496.1
478	1	22.03.2012	1	7.99	35.0	15.7 ± 0.4	2341	461.9	1969.6	150.5	16.9	2.31	470.0
478	1	23.03.2012	2	7.99	35.0	15.8 ± 0.3	2341	462.0	1967.3	151.5	16.8	2.32	470.2
478	1	24.03.2012	3	7.98	35.0	15.8 ± 0.2	2341	474.5	1974.6	148.5	17.3	2.28	482.9
478	1	25.03.2012	4	7.97	35.0	15.3 ± 0.1	2341	487.0	1987.9	143.0	18.0	2.19	495.3
478	1	26.03.2012	5	7.98	35.0	15.4 ± 0.2	2341	474.3	1979.9	146.3	17.5	2.24	482.5
478	1	27.03.2012	6	7.98	35.0	15.7 ± 0.2	2341	474.4	1976.3	147.8	17.3	2.27	482.8
478	2	21.03.2012	0	7.98	35.0	16.1 ± 0.3	2341	474.6	1971.9	149.7	17.2	2.30	483.1
478	2	22.03.2012	1	7.99	35.0	15.7 ± 0.4	2341	461.9	1969.6	150.5	16.9	2.31	470.0
478	2	23.03.2012	2	7.99	35.0	15.8 ± 0.3	2341	462.0	1967.3	151.5	16.8	2.32	470.2
478	2	24.03.2012	3	7.98	35.0	15.8 ± 0.2	2341	474.5	1974.6	148.5	17.3	2.28	482.9
478	2	25.03.2012	4	7.98	35.0	15.3 ± 0.1	2341	474.3	1981.0	145.8	17.6	2.23	482.4
478	2	26.03.2012	5	7.99	35.0	15.4 ± 0.2	2341	461.8	1972.8	149.2	17.0	2.29	469.8
478	2	27.03.2012	6	7.99	35.0	15.7 ± 0.2	2341	462.0	1969.1	150.7	16.9	2.31	470.1
478	3	21.03.2012	0	7.98	35.0	16.1 ± 0.3	2341	474.6	1971.9	149.7	17.2	2.30	483.1
478	3	22.03.2012	1	7.99	35.0	15.7 ± 0.4	2341	461.9	1969.6	150.5	16.9	2.31	470.0
478	3	23.03.2012	2	7.99	35.0	15.8 ± 0.3	2341	462.0	1967.3	151.5	16.8	2.32	470.2

478	3	24.03.2012	3	7.98	35.0	15.8 ± 0.2	2341	474.5	1974.6	148.5	17.3	2.28	482.9
478	3	25.03.2012	4	7.98	35.0	15.3 ± 0.1	2341	474.3	1981.0	145.8	17.6	2.23	482.4
478	3	26.03.2012	5	7.99	35.0	15.4 ± 0.2	2341	461.8	1972.8	149.2	17.0	2.29	469.8
478	3	27.03.2012	6	7.98	35.0	15.7 ± 0.2	2341	474.4	1976.3	147.8	17.3	2.27	482.8
478	4	21.03.2012	0	7.97	35.0	16.1 ± 0.3	2341	487.4	1979.0	146.8	17.6	2.25	496.1
478	4	22.03.2012	1	7.99	35.0	15.7 ± 0.4	2341	461.9	1969.6	150.5	16.9	2.31	470.0
478	4	23.03.2012	2	7.99	35.0	15.8 ± 0.3	2341	462.0	1967.3	151.5	16.8	2.32	470.2
478	4	24.03.2012	3	7.99	35.0	15.8 ± 0.2	2341	462.0	1967.5	151.4	16.8	2.32	470.2
478	4	25.03.2012	4	7.99	35.0	15.3 ± 0.1	2341	461.8	1973.9	148.7	17.1	2.28	469.7
478	4	26.03.2012	5	7.99	35.0	15.4 ± 0.2	2341	461.8	1972.8	149.2	17.0	2.29	469.8
478	4	27.03.2012	6	7.99	35.0	15.7 ± 0.2	2341	462.0	1969.1	150.7	16.9	2.31	470.1
820	1	21.03.2012	0	7.69	35.0	16.1 ± 0.3	2341	1002.4	2136.0	83.2	36.2	1.28	1020.4
820	1	22.03.2012	1	7.84	35.0	15.7 ± 0.4	2341	684.2	2065.3	111.7	25.0	1.71	696.2
820	1	23.03.2012	2	7.82	35.0	15.8 ± 0.3	2341	720.6	2074.6	108.0	26.2	1.66	733.4
820	1	24.03.2012	3	7.82	35.0	15.8 ± 0.2	2341	720.6	2074.7	107.9	26.2	1.66	733.4
820	1	25.03.2012	4	7.78	35.0	15.3 ± 0.1	2341	796.9	2100.2	97.6	29.5	1.49	810.5
820	1	26.03.2012	5	7.77	35.0	15.4 ± 0.2	2341	817.6	2104.4	95.9	30.2	1.47	831.6
820	1	27.03.2012	6	7.76	35.0	15.7 ± 0.2	2341	839.3	2106.8	95.0	30.7	1.46	854.1
820	2	21.03.2012	0	7.68	35.0	16.1 ± 0.3	2341	1027.8	2140.2	81.4	37.1	1.25	1046.2
820	2	22.03.2012	1	7.82	35.0	15.7 ± 0.4	2341	720.3	2076.3	107.3	26.4	1.64	732.9
820	2	23.03.2012	2	7.81	35.0	15.8 ± 0.3	2341	739.3	2080.0	105.8	26.9	1.62	752.4
820	2	24.03.2012	3	7.76	35.0	15.8 ± 0.2	2341	839.7	2105.6	95.4	30.6	1.46	854.6
820	2	25.03.2012	4	7.79	35.0	15.3 ± 0.1	2341	776.9	2095.2	99.6	28.8	1.53	790.2
820	2	26.03.2012	5	7.78	35.0	15.4 ± 0.2	2341	797.1	2099.4	97.9	29.4	1.50	810.8
820	2	27.03.2012	6	7.76	35.0	15.7 ± 0.2	2341	839.3	2106.8	95.0	30.7	1.46	854.1
820	3	21.03.2012	0	7.69	35.0	16.1 ± 0.3	2341	1002.4	2136.0	83.2	36.2	1.28	1020.4
820	3	22.03.2012	1	7.86	35.0	15.7 ± 0.4	2341	649.8	2053.9	116.4	23.8	1.78	661.2
820	3	23.03.2012	2	7.85	35.0	15.8 ± 0.3	2341	667.1	2057.9	114.8	24.3	1.76	678.9
820	3	24.03.2012	3	7.82	35.0	15.8 ± 0.2	2341	720.6	2074.7	107.9	26.2	1.66	733.4
820	3	25.03.2012	4	7.81	35.0	15.3 ± 0.1	2341	738.3	2084.8	103.8	27.3	1.59	750.9
820	3	26.03.2012	5	7.78	35.0	15.4 ± 0.2	2341	797.1	2099.4	97.9	29.4	1.50	810.8
820	3	27.03.2012	6	7.75	35.0	15.7 ± 0.2	2341	860.9	2111.6	93.0	31.5	1.43	876.0

820	4	21.03.2012	0	7.69	35.0	16.1 ± 0.3	2341	1002.4	2136.0	83.2	36.2	1.28	1020.4
820	4	22.03.2012	1	7.82	35.0	15.7 ± 0.4	2341	720.3	2076.3	107.3	26.4	1.64	732.9
820	4	23.03.2012	2	7.8	35.0	15.8 ± 0.3	2341	758.5	2085.3	103.7	27.6	1.59	771.9
820	4	24.03.2012	3	7.76	35.0	15.8 ± 0.2	2341	839.7	2105.6	95.4	30.6	1.46	854.6
820	4	25.03.2012	4	7.71	35.0	15.3 ± 0.1	2341	950.8	2132.8	84.3	35.2	1.29	967.1
820	4	26.03.2012	5	7.81	35.0	15.4 ± 0.2	2341	738.4	2084.0	104.1	27.3	1.59	751.1
820	4	27.03.2012	6	7.77	35.0	15.7 ± 0.2	2341	818.3	2101.9	96.9	29.9	1.49	832.7
1187	1*	21.03.2012	0	7.49	35.0	16.1 ± 0.3	2341	1641.7	2207.3	54.2	59.3	0.83	1671.2
1187	1*	22.03.2012	1	7.57	35.0	15.7 ± 0.4	2341	1347.6	2184.4	63.5	49.3	0.97	1371.2
1187	1*	23.03.2012	2	7.57	35.0	15.8 ± 0.3	2341	1348.6	2183.4	63.9	49.1	0.98	1372.5
1187	2	21.03.2012	0	7.49	35.0	16.1 ± 0.3	2341	1641.7	2207.3	54.2	59.3	0.83	1671.2
1187	2	22.03.2012	1	7.7	35.0	15.7 ± 0.4	2341	976.2	2134.6	83.7	35.7	1.28	993.3
1187	2	23.03.2012	2	7.7	35.0	15.8 ± 0.3	2341	976.8	2133.2	84.2	35.5	1.29	994.1
1187	2	24.03.2012	3	7.61	35.0	15.8 ± 0.2	2341	1222.0	2169.4	69.6	44.5	1.07	1243.6
1187	2	25.03.2012	4	7.61	35.0	15.3 ± 0.1	2341	1219.3	2172.6	68.2	45.1	1.05	1240.1
1187	2	26.03.2012	5	7.65	35.0	15.4 ± 0.2	2341	1104.7	2157.0	74.5	40.8	1.14	1123.7
1187	2	27.03.2012	6	7.6	35.0	15.7 ± 0.2	2341	1251.8	2173.8	67.8	45.8	1.04	1273.8
1187	3	21.03.2012	0	7.5	35.0	16.1 ± 0.3	2341	1602.2	2204.4	55.4	57.9	0.85	1631.0
1187	3	22.03.2012	1	7.7	35.0	15.7 ± 0.4	2341	976.2	2134.6	83.7	35.7	1.28	993.3
1187	3	23.03.2012	2	7.65	35.0	15.8 ± 0.3	2341	1106.7	2154.0	75.8	40.3	1.16	1126.3
1187	3	24.03.2012	3	7.6	35.0	15.8 ± 0.2	2341	1252.5	2173.0	68.1	45.6	1.04	1274.7
1187	3	25.03.2012	4	7.63	35.0	15.3 ± 0.1	2341	1160.5	2165.2	71.2	42.9	1.09	1180.3
1187	3	26.03.2012	5	7.7	35.0	15.4 ± 0.2	2341	975.3	2136.5	82.8	36.0	1.27	992.0
1187	3	27.03.2012	6	7.69	35.0	15.7 ± 0.2	2341	1001.1	2138.6	82.0	36.6	1.26	1018.6
1187	4	21.03.2012	0	7.49	35.0	16.1 ± 0.3	2341	1641.7	2207.3	54.2	59.3	0.83	1671.2
1187	4	22.03.2012	1	7.69	35.0	15.7 ± 0.4	2341	1000.9	2138.9	81.9	36.6	1.26	1018.4
1187	4	23.03.2012	2	7.68	35.0	15.8 ± 0.3	2341	1026.9	2141.8	80.8	37.4	1.24	1045.1
1187	4	24.03.2012	3	7.62	35.0	15.8 ± 0.2	2341	1192.1	2165.7	71.1	43.4	1.09	1213.2
1187	4	25.03.2012	4	7.7	35.0	15.3 ± 0.1	2341	974.9	2137.2	82.6	36.1	1.26	991.6
1187	4	26.03.2012	5	7.68	35.0	15.4 ± 0.2	2341	1025.2	2145.0	79.4	37.8	1.22	1042.9
1187	4	27.03.2012	6	7.65	35.0	15.7 ± 0.2	2341	1106.1	2155.0	75.4	40.4	1.16	1125.5
1625	1	21.03.2012	0	7.32	35.0	16.1 ± 0.3	2341	2474.0	2249.0	37.3	89.4	0.57	2518.6

1625	1	22.03.2012	1	7.58	35.0	15.7 ± 0.4	2341	1314.9	2181.0	64.9	48.1	0.99	1337.9
1625	1	23.03.2012	2	7.54	35.0	15.8 ± 0.3	2341	1451.6	2193.2	59.9	52.8	0.92	1477.4
1625	1	24.03.2012	3	7.43	35.0	15.8 ± 0.2	2341	1896.7	2224.7	47.2	69.0	0.72	1930.3
1625	1	25.03.2012	4	7.5	35.0	15.3 ± 0.1	2341	1596.5	2208.1	53.8	59.1	0.82	1623.8
1625	1	26.03.2012	5	7.51	35.0	15.4 ± 0.2	2341	1558.7	2204.8	55.2	57.5	0.85	1585.5
1625	1	27.03.2012	6	7.53	35.0	15.7 ± 0.2	2341	1486.6	2197.2	58.3	54.3	0.89	1512.7
1625	2	21.03.2012	0	7.32	35.0	16.1 ± 0.3	2341	2474.0	2249.0	37.3	89.4	0.57	2518.6
1625	2	22.03.2012	1	7.6	35.0	15.7 ± 0.4	2341	1251.6	2174.0	67.7	45.8	1.04	1273.6
1625	2	23.03.2012	2	7.59	35.0	15.8 ± 0.3	2341	1283.9	2176.5	66.7	46.7	1.02	1306.6
1625	2	24.03.2012	3	7.5	35.0	15.8 ± 0.2	2341	1600.5	2205.5	54.9	58.3	0.84	1628.8
1625	2	25.03.2012	4	7.45	35.0	15.3 ± 0.1	2341	1802.4	2221.9	48.3	66.7	0.74	1833.2
1625	2	26.03.2012	5	7.56	35.0	15.4 ± 0.2	2341	1379.4	2189.2	61.5	50.9	0.94	1403.1
1625	2	27.03.2012	6	7.5	35.0	15.7 ± 0.2	2341	1599.5	2206.2	54.6	58.5	0.84	1627.5
1625	3	21.03.2012	0	7.31	35.0	16.1 ± 0.3	2341	2533.9	2251.0	36.5	91.6	0.56	2579.5
1625	3	22.03.2012	1	7.68	35.0	15.7 ± 0.4	2341	1026.3	2143.1	80.2	37.6	1.23	1044.2
1625	3	23.03.2012	2	7.61	35.0	15.8 ± 0.3	2341	1222.0	2169.3	69.6	44.5	1.07	1243.7
1625	3	24.03.2012	3	7.51	35.0	15.8 ± 0.2	2341	1561.9	2202.6	56.1	56.9	0.86	1589.6
1625	3	25.03.2012	4	7.51	35.0	15.3 ± 0.1	2341	1558.1	2205.2	55.0	57.7	0.84	1584.7
1625	3	26.03.2012	5	7.6	35.0	15.4 ± 0.2	2341	1250.2	2175.6	67.0	46.1	1.03	1271.7
1625	3	27.03.2012	6	7.6	35.0	15.7 ± 0.2	2341	1251.8	2173.8	67.8	45.8	1.04	1273.8
1625	4	21.03.2012	0	7.32	35.0	16.1 ± 0.3	2341	2474.0	2249.0	37.3	89.4	0.57	2518.6
1625	4	22.03.2012	1	7.61	35.0	15.7 ± 0.4	2341	1221.1	2170.4	69.2	44.7	1.06	1242.5
1625	4	23.03.2012	2	7.58	35.0	15.8 ± 0.3	2341	1315.9	2180.0	65.3	47.9	1.00	1339.2
1625	4	24.03.2012	3	7.45	35.0	15.8 ± 0.2	2341	1807.1	2219.5	49.3	65.8	0.76	1839.2
1625	4	25.03.2012	4	7.59	35.0	15.3 ± 0.1	2341	1280.9	2179.6	65.4	47.4	1.00	1302.8
1625	4	26.03.2012	5	7.54	35.0	15.4 ± 0.2	2341	1448.7	2195.6	58.9	53.5	0.90	1473.6
1625	4	27.03.2012	6	7.49	35.0	15.7 ± 0.2	2341	1638.9	2209.1	53.5	59.9	0.82	1667.6