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DIC analysis carried out using Apollo SciTech Dissolved Inorganic Carbon Analyzer following Cai, W. J., Wang, Z. A., & Wang, Y. (2003b). The role of marsh-dominated heterotrophic continental margins in transport of CO<sub>2</sub> between the atmosphere, the land-sea interface and the ocean. *Geophysical Research Letters*, 30(16). <https://doi.org/10.1029/2003GL017633>

<sup>223</sup>Ra and <sup>224</sup>Ra analysis were carried out using RaDeCC detectors following Moore, W. S., & Arnold, R. (1996). Measurement of <sup>223</sup>Ra and <sup>224</sup>Ra in coastal waters using a delayed coincidence counter. *Journal of Geophysical Research: Oceans*, 101(C1), 1321-1329. <https://doi.org/10.1029/95JC03139>

Samples were collected 1m below surface using a flow through system onboard RV Acardiana between June to September 2019 from Barataria Bay (BB) and Wax Lake Delta region of northern Gulf of Mexico.

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<b>Station ID</b>	<b>Transect ID</b>	<b>Salinity</b>	<b>Temp °C</b>	<b>DIC umol/kg</b>	<b>224Ra dpm/100L</b>	<b>223Ra dpm/100L</b>
NA19_A_SUR_7	WLD East	5.27	27.72	N.D.	68.07	8.84
NA19_A_SUR_8	WLD Tran	5.28	27.51	1841.36	22.61	1.55
NA19_A_SUR_9	WLD Tran	5.29	27.41	1825.10	24.65	1.90
NA19_A_SUR_10	WLD Tran	3.48	27.90	2175.88	49.36	4.91
NA19_A_SUR_11	WLD West	1.67	28.69	2053.62	32.02	2.43
NA19_A_SUR_12	WLD West	7.31	28.52	1765.20	46.10	4.62
NA19_A_SUR_13	WLD West	12.95	28.18	1934.47	42.52	4.69
NA19_A_SUR_14	WLD West	13.23	28.22	1920.95	32.88	4.60
NA19_A_SUR_15	WLD West	13.51	28.37	1929.68	22.01	3.03
NA19_A_SUR_16	WLD West	15.97	28.33	2290.43	25.35	3.25
NA19_A_SUR_17	WLD West	18.42	28.48	1965.65	19.11	3.23
NA19_A_SUR_18	WLD West	19.76	28.48	1973.39	16.53	2.81
NA19_A_SUR_19	WLD West	21.10	28.46	1917.77	10.81	2.03
NA19_A_SUR_20	WLD West	23.95	28.52	1869.57	8.13	1.55
NA19_A_SUR_21	WLD West	26.80	28.90	1947.34	6.68	1.10
NA19_A_SUR_22	WLD Tran	27.51	28.22	1964.51	N.D.	N.D.
NA19_A_SUR_23	WLD Tran	28.22	28.44	1979.59	4.88	0.88
NA19_A_SUR_24	WLD Tran	29.15	28.67	N.D.	3.25	0.77
NA19_A_SUR_25	WLD East	30.09	28.55	1990.98	4.06	0.92
NA19_A_SUR_26	WLD East	30.09	28.55	2024.06	4.38	0.94
NA19_A_SUR_28	WLD East	30.09	28.43	1951.87	6.63	1.41
NA19_A_SUR_29	WLD East	27.57	28.28	1980.89	9.20	2.10
NA19_A_SUR_30	WLD East	25.78	28.85	1994.86	20.07	4.13

NA19_A_SUR_31	WLD East	25.78	28.29	2024.13	39.40	7.73
NA19_A_SUR_32	WLD East	25.78	28.13	2085.42	29.37	7.65
NA19_A_SUR_33	WLD East	23.99	27.90	1986.89	18.26	2.93
NA19_B_DW	BB East	24.27	23.54	N.D.	4.85	1.74
NA19_B_SUR_1	BB East	26.51	28.63	1926.06	N.D.	N.D.
NA19_B_SUR_2	BB East	26.61	28.63	1970.13	6.49	1.31
NA19_B_SUR_3	BB East	13.03	29.27	2073.40	12.91	2.80
NA19_B_SUR_4	BB East	13.79	29.27	2048.19	12.16	1.91
NA19_B_SUR_5	BB East	13.43	29.42	2049.83	11.62	1.89
NA19_B_SUR_6	BB East	13.15	29.42	2054.64	12.11	3.22
NA19_B_SUR_7	BB East	13.28	29.74	2044.54	14.62	2.12
NA19_B_SUR_8	BB East	13.09	29.74	2029.32	11.22	2.04
NA19_B_SUR_9	BB East	13.39	29.44	2047.61	10.86	3.00
NA19_B_SUR_10	BB East	13.93	29.44	2022.41	18.14	2.88
NA19_B_SUR_11	BB East	12.76	30.20	2279.40	25.89	3.48
NA19_B_SUR_12	BB East	13.02	30.22	2167.91	54.06	7.20
NA19_B_SUR_14	BB Tran	16.72	30.00	2086.15	25.50	3.45
NA19_B_SUR_15	BB Tran	19.21	30.20	2168.37	27.37	3.07
NA19_B_SUR_16	BB Tran	18.97	30.23	2330.49	17.97	2.14
NA19_B_SUR_17	BB Tran	20.41	30.20	2108.45	15.85	3.99
NA19_B_SUR_18	BB Tran	17.67	30.24	2102.95	76.32	10.92
NA19_C_SUR_2	BB Tran	30.07	30.21	2028.62	1.62	1.08
NA19_C_SUR_3	BB Tran	28.06	30.20	2004.42	4.98	1.13
NA19_C_SUR_4	BB Tran	27.16	29.34	2005.83	2.99	1.01
NA19_C_SUR_5	BB West	26.35	29.56	2003.99	1.81	0.94
NA19_C_SUR_6	BB West	27.04	29.56	1995.51	2.06	0.82
NA19_C_SUR_7	BB West	25.58	29.24	2019.13	3.42	1.03
NA19_C_SUR_8	BB West	26.20	29.27	2040.20	3.35	1.15
NA19_C_SUR_9	BB West	24.76	29.67	2031.92	6.96	1.10
NA19_C_SUR_10	BB West	23.18	29.67	2042.06	10.97	2.15
NA19_C_SUR_11	BB West	23.85	29.67	2072.20	9.35	1.88
NA19_C_SUR_12	BB West	21.76	29.67	1998.96	10.42	2.29
NA19_C_SUR_13	BB West	13.59	29.90	1981.19	12.59	2.63
NA19_F_SUR_7	WLD East	6.26	29.50	2225.54	7.63	0.50
NA19_F_SUR_8	WLD Tran	4.54	29.50	2279.56	17.52	1.66
NA19_F_SUR_9	WLD Tran	2.85	29.68	2213.71	11.46	0.97
NA19_F_SUR_10	WLD Tran	1.64	29.68	2129.48	7.63	0.50
NA19_F_SUR_11	WLD West	4.82	29.71	1727.00	11.34	0.96
NA19_F_SUR_12	WLD West	7.02	29.35	1720.53	10.37	1.14
NA19_F_SUR_13	WLD West	21.83	30.57	1932.76	19.19	1.69
NA19_F_SUR_14	WLD West	24.89	30.23	2039.45	19.23	2.23
NA19_F_SUR_15	WLD West	24.35	31.09	1971.66	11.06	2.00
NA19_F_SUR_16	WLD West	23.76	31.19	1878.45	7.71	1.31

NA19_F_SUR_17	WLD West	22.59	31.18	1823.59	N.D.	N.D.
NA19_F2_SUR_17	WLD West	22.48	31.18	1897.33	1.23	0.35
NA19_F2_SUR_18	WLD West	23.14	31.11	1890.26	0.39	0.26
NA19_F2_SUR_19	WLD West	28.57	31.16	1914.44	1.12	0.57
NA19_F2_SUR_20	WLD West	28.99	29.74	1929.01	1.25	0.26
NA19_F2_SUR_21	WLD West	18.76	29.74	1916.15	N.D.	0.09
NA19_F3_SUR_7	WLD East	4.23	29.74	2153.23	N.D.	N.D.
NA19_F3_SUR_25	WLD East	29.04	29.73	1958.06	0.39	0.38
NA19_F3_SUR_26	WLD East	28.57	29.73	1951.85	0.20	0.31
NA19_F3_SUR_27	WLD East	28.10	29.65	1933.90	0.05	0.05
NA19_F3_SUR_28	WLD East	27.49	29.65	1937.88	0.08	0.34
NA19_F3_SUR_29	WLD East	26.89	29.58	1926.87	0.42	0.18
NA19_F3_SUR_30	WLD East	25.71	29.58	1932.03	8.37	0.92
NA19_F3_SUR_31	WLD East	24.54	29.90	1956.86	16.85	2.08
NA19_F3_SUR_32	WLD East	18.51	30.03	1983.16	12.46	1.23
NA19_F3_SUR_33	WLD East	24.54	30.10	1956.42	13.93	1.89
NA19_G_DW_SUR	BB East	28.13	30.16	2003.66	2.87	0.44
NA19_G_DW_MID	BB East	28.31	21.99	2151.63	2.09	0.25
NA19_G_SUR_B_1	BB East	29.17	30.07	1983.62	0.64	0.15
NA19_G_SUR_B_2	BB East	28.69	30.07	1994.12	0.45	0.50
NA19_G_SUR_B_3	BB East	28.21	30.24	1998.62	0.83	0.33
NA19_G_SUR_B_4	BB East	25.85	30.24	1994.62	N.D.	N.D.
NA19_G_SUR_B_5	BB East	23.49	30.74	2032.71	2.00	0.32
NA19_G_SUR_B_6	BB East	22.98	30.74	2030.34	1.73	1.03
NA19_G_SUR_B_7	BB East	22.46	31.14	2001.42	3.63	0.48
NA19_G_SUR_B_8	BB East	22.80	31.14	1985.79	5.07	0.95
NA19_G_SUR_B_9	BB East	23.15	31.39	1985.05	N.D.	N.D.
NA19_G_SUR_B_10	BB East	23.03	31.39	1978.42	2.79	0.82
NA19_G_SUR_B_11	BB East	22.91	31.24	1984.98	3.27	0.69
NA19_G_SUR_B_12	BB East	23.78	31.24	2007.20	11.21	1.36
NA19_G_SUR_C_13	BB West	24.66	30.86	1977.36	7.29	1.45
NA19_G_SUR_C_12	BB West	25.36	30.86	1972.32	6.16	1.01
NA19_G_SUR_C_11	BB West	26.06	30.53	1991.20	N.D.	0.15
NA19_G_SUR_C_10	BB West	25.62	30.53	2068.86	0.55	0.15
NA19_G_SUR_C_9	BB West	25.18	29.87	2170.51	N.D.	0.09
NA19_G_SUR_C_8	BB West	24.45	29.87	2267.01	N.D.	N.D.
NA19_G_SUR_C_7	BB West	23.71	30.25	2334.10	0.44	0.15
NA19_G_SUR_C_6	BB West	24.07	30.25	2390.01	0.65	N.D.
NA19_G_SUR_C_5	BB West	24.42	30.41	1850.74	0.52	0.16