

Table 1. Statistics of the parameters of water samples.

Location ID	K ⁺ (mg/L)	Na ⁺ (mg/L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)	Cl ⁻ (mg/L)	SO ₄ ²⁻ (mg/L)	HCO ₃ ⁻ (mg/L)	pH (STA)	EC (μs/cm)	TDS (mg/L)	δ ² H (STA)	δ ¹⁸ O (STA)
375-1-1	248.4	10400	761.5	1287.9	19852	2305.4	219.6	7.19	44900	35074.8	-11.247	-2.304
375-1-2	197	9750	801.6	1222.3	18453.5	2334.3	233.7	7.74	39600	32995.0	-16.907	-1.458
375-1-3	205	10031.2	849.7	1239.3	18916.1	2497.6	244.6	7.07	42300	33991.5	-17.518	-1.895
375-1-4	190.2	9800	841.7	1215	19224.5	624.4	250.7	7.31	42100	32147.5	-23.531	-2.076
375-1-5	179.7	9875	721.4	1166.4	18402.1	2372.7	253.2	7.34	40000	32974.6	-6.478	-2.258
375-2-1	286	10650	697.4	1312.2	19852	2286.2	207.4	7.03	45200	35292.8	-15.69	-1.350
375-3-1	299.2	9445	537.1	1132.4	17583.2	2017.3	219.6	7.36	40800	31233.8	-13.573	-1.215
375-3-2	241	8900	681.4	1040	16705.8	2190.2	233.7	7.56	37000	29992.1	-8.703	-1.916
375-3-3	275.8	9200	753.5	1069.2	17579.7	2286.2	273.3	7.45	39800	31437.9	-21.602	-2.404
375-4-1	316.8	9825	641.3	1044.9	17583.2	2017.3	170.8	7.49	41100	31629.8	-15.387	-1.330
375-4-2	258	8900	921.8	945.3	17014.2	2295.8	168.4	7.46	37200	30516.3	-14.047	-1.983
375-4-3	282.5	9725	1122.2	1001.2	18607.7	2516.8	170.8	7.11	41800	33433.8	-14.633	-1.807
375-4-4	285.5	9900	1314.6	831.1	18710.5	2401.5	168.4	7.32	40800	33614.5	-23.488	-2.207
375-4-5	285.1	10000	1154.3	916.1	18874.3	2401.5	170.8	7.03	10900	33821.3	-7.886	-2.256
375-5-1	260	12050	1146.3	1020.6	21979	2459.1	119.6	7.29	50400	39052.7	-24.546	-2.694
375-5-2	208	10886.2	1523	972	20818	2454.6	114.1	7.41	42500	37081.6	-18.458	-2.583
375-5-3	195	10900	1595.2	957.4	19738.6	2708.9	108	7.05	45800	36216.5	-24.136	-2.830
375-5-4	226.5	11250	1643.3	823.8	21280.6	2603.2	85.4	7.32	44700	37916.2	-29.882	-3.328
375-5-5	252.5	11500	1971.5	517.6	21417.7	2353.5	81.8	7.03	44700	38156.3	-11.362	-2.880
375-6-1	337.5	11450	2084.2	777.6	22156.3	2497.6	107.4	7.02	49700	39411.6	-18.473	-2.129
375-6-2	262	11819	2276.5	726.6	22411.5	2488	108	7.06	44400	40117.1	-17.286	-2.525
375-6-3	257.8	9062.5	505	1142.1	17560.5	2315	236.1	7.64	34500	31080.1	-12.476	-1.515
375-7-1	305	10700	1723.4	923.4	21270	2363.1	134.2	7.17	48100	37424.9	-24.256	-2.234
375-7-2	251	9562.5	521	1154.3	17624.4	2353.5	225.7	7.16	39300	31716.5	-8.355	-1.972
375-7-3	265.6	9187.5	481	1161.5	17731.7	2238.2	230	7.66	34400	31296.2	-11.432	-1.288
375-8-1	290.4	10350	1026	1078.9	18965.7	1729.1	158.6	7.3	44100	33598.7	-18.479	-1.564

375-8-2	294	10937.5	2312.6	626.9	21794.7	2257.4	102.5	7.66	43900	38344.7	-12.581	-2.135
375-8-3	198.1	10438	721.4	1287.9	19597.1	2401.5	233.7	7.22	43000	34884.0	-2.827	-1.787
375-8-4	281.3	9062.5	521	1154.3	17389.3	2353.5	230	7.54	35000	30992.4	-14.187	-1.492
375-9-1	205	10375	681.4	1268.5	18919	2449.5	256.2	7.63	42500	34154.6	-4.946	-1.784
375-9-2	262.5	9250	521	1154.3	17731.7	2343.9	222.7	7.57	39400	31486.7	-10.337	-1.205
375-10-1	250	10500	713.4	1285.5	20558.9	2372.7	236.1	7.51	37600	35917.5	-15.907	-2.122
375-11-1	198.4	13570	1563.1	2043.6	28011.2	3146	254.4	7.46	48500	48787.0	-16.983	-1.052
375-12-1	192.2	13570	1474.9	1946.4	27411.7	3001.9	266	7.47	47100	47863.8	-16.264	-1.774
375-13-1	185.9	14740	1723.4	2259.9	30666.7	3290.1	266	7.46	50900	53133.2	-19.461	-2.098
510-1-1	360	9800	721.4	1253.9	18611.2	2459.1	217.2	7.3	44900	33422.8	-13.216	-1.454
510-1-2	264	8745	597.2	1010.9	16037.6	2257.4	197.1	7.63	35600	29109.2	-8.862	-1.768
510-1-3	251	9950	833.7	1239.3	17476.9	3102.7	205	7.64	40300	33065.3	-15.807	-1.825
510-2-1	370	9350	561.1	1117.8	17370.5	2267	205	7.45	42100	31241.9	-13.181	-1.300
510-2-2	280	8904	481	1069.2	16037.6	2305.4	195.8	7.76	35500	29275.9	-6.932	-1.475
510-2-3	251	8700	609.2	1027.9	16037.6	2257.4	79.9	7.56	38100	28969.1	-16.17	-1.813
510-3-1	335	9600	625.2	1176.1	11795.9	2267	207.4	7.27	43100	32006.6	-15.323	-1.606
510-3-2	237	9407.5	721.4	1105.7	17476.9	2286.2	205	7.46	37600	31447	-11.051	-1.948
510-4-1	344	9520	801.6	1117.8	17795.9	2497.6	213.5	7.47	43200	32293	-16.81	-1.682
510-4-2	221	8904	609	1088.6	16037.6	2305.4	248.3	7.8	36000	29414.1	-10.631	-1.611
510-5-1	290	9100	625.2	1088.6	16661.5	2343.9	244	7.8	41000	30353.2	-17.41	-1.684
510-6-1	281	8700	625.2	1054.6	16484.2	2055.7	244	7.44	39200	29444.7	-16.434	-2.247
510-6-2	234	9036.5	641.3	1069.2	16551.6	2257.4	250.8	7.71	36100	30043.7	-9.961	-1.617
510-7-1	256	12300	1362.7	1375	25435.4	2785.7	195.2	7.22	56500	44070.0	-21.463	-2.247
510-8-1	262.5	9250	489	1013.3	16037.6	2084.5	319.1	7.64	37200	29457.6	-13.565	-1.813
510-9-1	237.5	8500	593.2	1044.9	15934.8	2286.2	250.8	7.52	37400	28849.8	-20.97	-2.290
510-10-1	230	9050	581.2	1032.8	16757.2	2209.4	256.2	7.47	37600	30120.7	-24.182	-2.167
510-11-1	190.6	14950	1683.4	2235.6	30409.7	3338.1	215.4	7.36	50800	53022.8	-21.2252	-1.876
510-12-1	204.7	11375	921.8	1526	22014.8	2785.7	230	7.52	40200	39058.9	-15.8052	-1.949
510-13-1	220	12000	917.8	1509	22087.1	2718.5	236.1	7.4	40100	39691.7	-13.6086	-1.718
510-14-1	225	11750	837.7	1431.3	21685	2593.6	242.2	7.42	39000	38766.8		

510-15-1	215	11800	921.8	1501.7	22087.1	2622.4	242.2	7.46	40200	39392.6	-15.074	-1.716
510-15-2	200	12350	1078.2	1606.2	23693.4	2708.9	242.2	7.41	42100	41880.7	—	—
600-1-1	254.4	12000	1346.7	1579.5	24903.6	2632	189.1	7.26	54200	42905.4	-20.031	-2.098
600-1-2	197.5	12000	1154.3	1487.2	22411.5	2612.8	205	7.39	45200	40077.2	-9.508	-2.56
600-1-3	206	11650	1054.1	1450.7	22156.3	2737.7	211.1	7.25	47100	39470.7	15.129	-1.755
600-1-4	228	10000	1050.1	1137.2	19018.9	2228.6	199.5	7.27	41200	33862.3	-22.971	-1.915
600-1-5	173.1	11187.5	2505	940.4	22938.3	2420.7	108	6.68	47500	40275.4	-13.167	-2.533
600-2-1	254.5	12000	1226.4	1569.8	23840.1	2632	202	7.11	53000	41725.4	-18.81	-1.982
600-2-2	195	11875	1114.2	1535.8	22925.5	2785.7	205	7.33	45400	40640.7	-10.978	-1.838
600-2-3	186	11787.5	1102.2	1518.7	22617.1	2833.8	205	7.25	47900	40250.0	-15.026	-1.741
600-2-4	237.5	10000	901.8	1044.9	17990	2276.6	205	7.05	39400	32659.6	-23.345	-1.804
600-3-1	253.3	13200	1547.1	1822.5	27296.5	3035.5	170.8	7.2	59300	47325.7	-21.321	-2.076
600-3-2	202.5	13312.5	1398.8	1696.1	25906.9	2872.2	187.9	7.28	49600	45576.9	-11.2	-2.446
600-3-3	191	12275	1290.6	1550.3	23903.9	2737.7	205	7.34	49100	42158.3	-16.375	-1.529
600-4-1	195	12125	1162.3	1458	22205.9	2689.7	194	7.25	45900	40032.5	-10.769	-1.977
600-4-2	217.5	12700	1322.6	1623.2	25084.4	2862.6	194	6.98	50400	44009.7	-14.637	-1.56
600-5-1	187.5	13437.5	1523	1696.1	26112.5	2670.5	182.4	7.11	50900	45814.3	-15.46	-2.201
600-5-2	191	11300	1334.7	1462.9	22360.1	2641.6	194	6.99	46800	39485.6	-18.642	-1.823
600-5-3	170	12100	1442.9	1555.2	23748	2641.6	170.8	7.05	47300	41833.4	-29.637	-2.083
600-6-1	228	11200	909.8	1270.9	20252.6	2449.5	222.1	7.17	43500	36536.4	-16.269	-1.376
600-6-2	175	12250	2196.4	1730.2	25598.4	2324.6	125.1	7.14	50500	44399.7	-32.536	-2.711
600-6-3	185	9625	833.7	1057.1	17348.5	2142.1	210.5	7.16	40700	31408	-3.715	-2.174
600-7-1	182.5	12150	1134.3	1462.9	22617.1	2689.7	239.2	7.12	46700	40482.4	-15.405	-1.475
600-8-1	182.5	13450	1302.6	1579.5	27878.8	2833.8	256.2	7.05	50200	44486.0	-16.067	-1.484
600-8-2	185	10750	961.9	1300.1	19841.4	2545.6	205	7.39	43100	35789.0	-24.093	-1.555
600-9-1	186	13400	1194.4	1552.8	24467.5	2853	187.9	7.07	49000	43844.2	-15.988	-1.542
600-9-2	173	12600	1202.4	1579.5	23336.7	2901	182.4	7.22	48700	41979.9	-19.309	-1.51
600-10-1	281	9300	557.1	998.7	16739.5	2276.6	222.1	7.37	36800	30376.7	-21.062	-1.537
600-11-1	213.1	14187.5	3919.8	1646.3	32447.7	1777.1	11.6	5.71	59000	54210.2	-21.664	-3.659
600-12-1	189.4	12750	2264.5	1572.2	26665.1	2324.6	119.6	6.7	52000	45892.5	-13.769	-2.931

600-13-1	201.2	11187.5	1282.6	1227.1	21524.9	2660.9	165.3	6.95	45400	38259	-11.232	-2.333
600-14-1	205	9937.5	921.8	1093.5	18954.8	2353.5	187.9	7.24	41400	33661.5	-11.36	-2.143
600-15-1	215	9437.5	653.3	1081.4	16513	2305.4	213.5	7.25	37600	30420.8	-4.216	-2.137
600-16-1	225	8937.5	609.2	1015.7	16063.1	2228.6	210.5	7.34	36300	29296.9	-7.351	-2.33
600-17-1	262.5	8937.5	533.1	1008.4	15729.2	2267	194	7.14	35600	28941.2	-12.538	-2.134
600-17-2	265	10700	1342.7	857.8	19677.6	2190.2	169.6	7.4	37000	35205.5	-18.734	-2.849
600-18-1	255	8750	521	1008.4	15523.6	2209.4	195.8	7.2	35700	28471.2	-6.874	-2.192
600-19-1	252.5	8626	440.9	1018.2	15112.3	2199.8	199.5	7.29	35200	27859.9	-6.454	-2.233
600-20-1	250	11100	929.9	1229.6	20480.5	2382.3	162.3	7.47	37900	36537.7	-16.7647	-1.950
600-21-1	265	10968.7	1799.6	828.6	21244.1	2219	230	7.05	40100	37563.5	-19.5052	-2.666
600-22-1	270	9156.3	440.9	1117.8	16875.6	2305.4	205.6	7.72	33800	30373.2	-15.0503	-1.489
600-23-1	265	8968.8	505	1076.5	16447	2247.8	205.6	7.65	33800	29723.9	-11.7542	-1.652
Quaternary	280.14	10273.5	454.9	1131.64	17965.38	2438.96	222.06	7.21	46680	32784.58	-24.462	-2.315
Sea water	354.17	9283.33	384.53	1146.17	17160.77	2648.4	162.27	7.44	42666.67	30789.9	-56.865	-7.956
Freshwater	6.03	191.8	131.98	24.8	284.85	217.33	204.98	7.43	1670.5	1121.75	-5.33	-0.196

Note: EC = electrical conductivity; TDS = total dissolved solutions; STA = standard value. The water samples were collected in -375 m sublevel, -510 m sublevel and -600 m sublevel from 2009 to 2016. The Table S2 shows the statistics of 12 parameters value which were analyzed in laboratory.