Table S1 Data of fluid geochemical components in the study area

	longitude (°)	latitude (°)	T (℃)	Li^+ mg/L	Na^+ mg/L	K^+ mg/L	Mg^{2+} mg/L	Ca^{2+} mg/L	F^- mg/L	Cl^- mg/L	Br^- mg/L	SO_4^{2-} mg/L	NO_3^- mg/L	CO_3^{2-} mg/L	HCO_3^- mg/L	pH	conductivity μs/cm	$\delta^{18}O_{V\text{-}SMOW}$ (‰)	$\delta D_{V\text{-}SMOW}$ (‰)
S1	75.02	40.45	5.0	0.27	66.54	4.52	46.45	538.95	3.75	31.92	0.00	76.03	0.00	0.00	1959.57	6.39	2701.00	-11.89	-77.96
S2	73.90	39.77	7.8	0.00	10.42	1.18	17.64	69.78	3.43	9.50	0.00	120.66	4.13	0.00	168.15	7.96	539.00	-12.27	-82.99
S3	74.09	39.77	8.3	0.16	89.96	3.48	61.56	98.00	3.56	97.29	0.00	285.58	6.75	0.00	294.62	8.11	1300.00	-13.22	-93.34
S4	74.35	39.84	7.8	0.00	19.13	2.14	21.84	105.00	3.48	15.55	0.00	229.26	6.48	0.00	181.08	8.00	769.60	-12.13	-78.90
S5	74.45	39.97	9.1	0.00	22.25	1.69	53.68	74.78	3.38	22.59	0.00	232.96	7.31	0.00	214.86	8.12	832.90	-11.34	-74.85
S6	74.73	39.73	10.4	0.00	96.50	4.49	12.30	61.18	3.72	55.71	0.00	150.43	8.56	0.00	196.17	8.17	836.70	-9.69	-58.12
S7	75.59	39.96	13.8	0.36	466.90	10.08	116.15	164.85	4.89	675.64	4.89	797.38	10.92	0.00	342.04	7.96	3635.00	-11.50	-76.96
S8	75.88	40.23	8.1	0.20	100.43	3.89	105.60	162.26	3.43	85.53	0.00	387.14	9.00	0.00	617.26	7.76	1795.00	-9.16	-52.03
S9	78.68	41.20	6.3	0.03	21.65	2.34	38.08	42.11	0.64	29.95	0.00	126.63	6.53	0.00	155.16	6.54	622.30	-9.08	-52.33
S10	78.60	41.26	4.7	0.03	21.83	2.37	39.28	49.02	0.64	28.06	0.00	124.01	7.08	0.00	184.18	6.73	639.30	-8.95	-51.50
S11	79.22	41.21	5.4	0.03	22.49	2.31	24.00	52.99	0.71	40.74	0.00	83.98	5.20	0.00	153.90	6.93	570.30	-10.84	-67.71
S12	78.30	40.92	5.3	0.02	38.94	2.10	27.58	28.76	0.64	47.11	0.00	94.07	6.24	0.00	132.46	7.06	561.50	-10.18	-60.26
S13	77.08	40.74	36.7	0.82	484.61	11.54	6.95	20.93	3.38	141.93	0.53	162.59	0.21	0.00	865.38	7.23	2188.00	-9.99	-63.65
S14	77.27	40.20	50.0	0.10	270.35	8.31	33.26	84.34	1.69	367.25	4.00	315.28	6.56	0.00	118.58	7.11	2008.00	-10.13	-65.64
S15	77.11	40.20	12.7	0.05	104.07	6.23	58.36	52.74	0.96	124.68	0.00	180.02	6.29	0.00	251.03	7.15	1163.00	-9.66	-58.09
S16	78.80	40.50	13.0	0.05	421.17	12.28	58.82	171.17	1.19	585.68	0.00	638.43	34.04	0.00	140.02	7.39	3187.00	-6.16	-29.81
S17*	76.11	39.76	13.0	0.08	186.84	8.13	88.02	94.83	1.46	319.05	0.04	390.03	21.35	0.00	408.00	-	-	-8.80	-56.10
S18*	75.18	39.72	22.5	3.16	1018.80	39.49	104.89	216.71	1.82	2195.86	0.00	742.15	0.73	0.00	499.00	-	-	-9.80	-68.60

‘-’represent No data. The data of S17 and S18 are quoted in [73].