

on the Helan leaning pluvial plain could be used to increase artificial recharge of the groundwater system.

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## Appendix A. Supplementary data

**Table A1.** General information of samples.

Samples	pH	TH	TDS	Ca <sup>2+</sup>	Mg <sup>2+</sup>	K <sup>+</sup>	Na <sup>+</sup>	Cl <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>	HCO <sub>3</sub> <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	NH <sub>4</sub> <sup>+</sup>	F <sup>-</sup>
C01	8.06	227	715	38.4	37.25	2	168.1	135.75	174.65	282.83	0	0	0.4
C02	8.1	224	680	48	26.77	1.5	161.4	129.13	154.69	282.83	0	0	0.5
C03	8.07	315	796	65.28	39.58	2	168.1	218.53	162.34	245.12	0.23	0.93	0.2
C04	8.11	296	462	55.68	43.07	2.5	46.2	69.53	97.49	263.97	0	0	0.2
C05	8.07	190	361	19.2	44.23	1.5	52.8	39.73	43.67	289.11	0	0.38	0.2
C06	8.09	178	308	11.52	47.72	2	34.2	26.49	32.4	276.54	0.23	0.03	0.16
C07	8.41	226	324	34.74	40.74	2	27.2	26.49	30.12	282.83	0	0	0.1
C08	8.1	215	315	40.32	31.43	2	32	29.8	23.49	282.83	0.34	0	0.1
C09	8.43	260	376	46.08	40.74	2.5	33.6	29.8	51.23	289.11	0	0	0.1
C10	8.1	306	501	51.84	50.05	3.5	56.8	69.53	95.32	314.25	0	0	0.1
C11	8.08	223	345	38.4	36.08	3	33	33.11	61.69	245.12	2.26	0	0.1
C12	8.41	204	327	36.48	31.43	2	39.2	26.49	38.79	251.4	0	0	0.2
C13	8.41	256	368	42.24	43.07	2	29.3	26.49	64.52	263.97	0	0	0.16
C14	8.42	236	350	40.32	38.41	2	32	23.18	60.24	251.4	0.11	0	0.1
C15	8.42	206	307	38.4	30.26	2	33.3	23.18	17.65	270.26	0.23	0	0.2
C16	8.42	227	347	32.64	43.07	1.5	33.6	26.49	53.21	257.69	0	0	0.1
C17	8.4	219	361	34.56	38.41	2	39.2	19.87	81.67	245.12	0	0	0.2
C18	8.09	221	682	42.24	31.43	1.5	161.4	149	154.32	251.4	0	0	0.3
C19	8.42	189	440	26.88	36.08	2	81.5	69.53	82.31	213.69	0	0	0.2
C20	8.41	221	546	42.24	31.43	1.5	117.3	69.53	95.67	320.54	0	0	0.4
C21	8.41	129	353	17.28	25.61	1	79	26.49	46.87	270.26	0	0	0.5
C22	8.1	242	524	74.88	5.82	1.5	109.2	72.84	95.46	295.4	0	0	0.4
C23	8.11	192	448	38.4	25.61	2	88	52.98	92.54	263.97	0	0	0.7
C24	8.09	196	340	38.4	26.77	1	49	19.87	51.29	276.54	0.34	0	0.16
C25	8.08	146	320	23.04	25.61	1	58.4	19.87	51.23	251.4	0	0	0.2
C26	8.1	337	553	63.36	48.89	1.5	68	59.6	106.58	377.1	0	0	0.1
C27	8.11	399	799	59.52	73.33	2.5	128.8	115.89	158.97	483.95	0	0	0.1
C28	8.1	389	623	80.64	48.89	2	76	66.22	125.46	414.81	0	0	0.1
C29	8.12	441	726	86.4	60.53	3.5	90.3	99.33	154.67	427.38	0	0	0.1
C30	8.07	189	417	38.4	24.44	2	76	59.6	103.6	194.84	0	0.31	0.3
C31	8.02	1016	2222	230.4	108.25	5	388	807.88	613.65	87.99	0	1.32	0.2
C32	8.07	307	736	94.08	8.15	2	168.1	258.26	68.71	238.83	0	0	0.3
C33	8.41	217	351	21.12	51.22	2	34.5	36.42	50.12	257.69	0	0	0.2

## References