

Table S1. Groundwater Quality Classification Based on GB/T 14848-2017 Standard

No.	Parameter	Class I	Class II	Class III	Class IV	Class V
1	Color (Platinum Cobalt Unit)	≤ 5	≤ 5	≤ 15	≤ 25	> 25
2	Smell and Taste	Absent	Absent	Absent	Absent	Present
3	Turbidity (NTU)	≤ 3	≤ 3	≤ 3	≤ 10	> 10
4	Visible to the Naked Eye	Absent	Absent	Absent	Absent	Present
5	pH Value	$6.5 \leq \text{pH} \leq 8.5$			$5.5 \leq \text{pH} < 6.5, 8.5 < \text{pH} \leq 9.0$	$\text{pH} < 5.5$ or $\text{pH} > 9.0$
6	Total Hardness (CaCO_3) (mg/L)	≤ 150	≤ 300	≤ 450	≤ 650	> 650
7	Total Dissolved Solids (mg/L)	≤ 300	≤ 500	≤ 1000	≤ 2000	> 2000
8	Sulfate (mg/L)	≤ 50	≤ 150	≤ 250	≤ 350	> 350
9	Chloride (mg/L)	≤ 50	≤ 150	≤ 250	≤ 350	> 350
10	Iron (mg/L)	≤ 0.1	≤ 0.2	≤ 0.3	≤ 2.0	> 2.0
11	Manganese (mg/L)	≤ 0.05	≤ 0.05	≤ 0.10	≤ 1.50	> 1.50
12	Copper (mg/L)	≤ 0.01	≤ 0.05	≤ 1.00	≤ 1.50	> 1.50
13	Zinc (mg/L)	≤ 0.05	≤ 0.5	≤ 1.00	≤ 5.00	> 5.00
14	Aluminum (mg/L)	≤ 0.01	≤ 0.05	≤ 0.20	≤ 0.50	> 0.50
15	Volatile Phenols (mg/L)	≤ 0.001	≤ 0.001	≤ 0.002	≤ 0.01	> 0.01
16	Anionic Surfactants (mg/L)	Not Detectable	≤ 0.1	≤ 0.3	≤ 0.3	> 0.3
17	Consumed Oxygen (CODMn, in terms of O_2) (mg/L)	≤ 1.0	≤ 2.0	≤ 3.0	≤ 10.0	> 10.0
18	Ammonia Nitrogen (mg/L)	≤ 0.02	≤ 0.10	≤ 0.50	≤ 1.50	> 1.50
19	Sulfides (mg/L)	≤ 0.005	≤ 0.01	≤ 0.02	≤ 0.10	> 0.10
20	Sodium (mg/L)	≤ 100	≤ 150	≤ 200	≤ 400	> 400
21	Nitrite (mg/L)	≤ 0.01	≤ 0.10	≤ 1.00	≤ 4.80	> 4.80
22	Nitrate (mg/L)	≤ 2.0	≤ 5.0	≤ 20.0	≤ 30.0	> 30.0
23	Cyanide (mg/L)	≤ 0.001	≤ 0.01	≤ 0.05	≤ 0.1	> 0.1
24	Fluorides (mg/L)	≤ 1.0	≤ 1.0	≤ 1.0	≤ 2.0	> 2.0
25	Iodide (mg/L)	≤ 0.04	≤ 0.04	≤ 0.08	≤ 0.50	> 0.50
26	Mercury (mg/L)	≤ 0.0001	≤ 0.0001	≤ 0.001	≤ 0.002	> 0.002
27	Arsenic (mg/L)	≤ 0.001	≤ 0.001	≤ 0.01	≤ 0.05	> 0.05
28	Selenium (mg/L)	≤ 0.01	≤ 0.01	≤ 0.01	≤ 0.1	> 0.1
29	Cadmium (mg/L)	≤ 0.0001	≤ 0.001	≤ 0.005	≤ 0.01	> 0.01

30	Chromium (VI) (mg/L)	≤ 0.005	≤ 0.01	≤ 0.05	≤ 0.10	> 0.10
31	Lead (mg/L)	≤ 0.005	≤ 0.005	≤ 0.01	≤ 0.10	> 0.10
32	Trichloromethane ($\mu\text{g/L}$)	≤ 0.5	≤ 6	≤ 60	≤ 300	> 300
33	Carbon Tetrachloride ($\mu\text{g/L}$)	≤ 0.5	≤ 0.5	≤ 2.0	≤ 50	> 50
34	Benzene ($\mu\text{g/L}$)	≤ 0.5	≤ 1.0	≤ 10.0	≤ 120	> 120
35	Toluene ($\mu\text{g/L}$)	≤ 0.5	≤ 140	≤ 700	≤ 1400	> 1400