

Supporting information

Additional methods

Table S 1. Detailed list of methods used for physicochemical parameter measurements. Detection limit and accuracy are given.

General objective	Parameter details	Reference documents / Analysis methods	Unit	Detection limit	Accuracy (%)
Major ions and recommended	Cl ⁻	St. Methods 4500 Cl ⁻ B	mg/L	0.5	0.7
	SO ₄ ²⁻	St. Methods 4500 SO42 D	mg/L	1.5	4.5
	HCO ₃ ⁻	St. Methods 2320-B	mg/L	2.5	1.3
	CO ₃ ²⁻	St. Methods 2320-B	mg/L	0.0004	5.0
	NO ₂ ⁻	St. Methods 4500 NO2- B	mg/L	0.04	3.0
	NO ₃ ⁻	St. Methods 4500 NO3- B	mg/L	0.05	3.0
	Na ⁺	St. Methods 3111 B	mg/L	0.01	2.0
	K ⁺	St. Methods 3111 B	mg/L	0.01	1.2
	Mg ²⁺	St. Methods 3111 B	mg/L	0.01	1.5
	Ca ²⁺	St. Methods 3111 B	mg/L	0.01	1.5
	NH ₄ ⁺	St. Methods 4500-NH3- D	mg/L	0.01	2.0
	PO ₄ ²⁻	St. Methods 4500 P/C	mg/L	0.01	2.5
	F ⁻	St. Methods 4500-F C	mg/L	0.01	2.5
Microelements	Al	St. Methods 3111 D	mg/L	0.01	1.5
	Ba	St. Methods 3111 D	mg/L	0.01	1.5
	Br	St. Methods 4500	mg/L	0.01	2.2
	Co	St. Methods 3111 B	mg/L	0.01	1.2
	Cu	St. Methods 3111 B	mg/L	0.01	1.2
	Fe	St. Methods 3111 B	mg/L	0.01	1.5
	V	St. Methods 3111 B	mg/L	0.01	2.5
	Zn	St. Methods 3111 B	mg/L	0.01	2.5
Physicochemical parameters measured in laboratory	Total dissolved solids (TDS)	St. Methods 2540 C	mg/L	10.0	5.0
	Chemical oxygen demand (COD)	St. Methods 5220 D	mg/L	5.0	2.0
	pH at 25°C	St. Methods 4500-H B	-	0.0	0.1
	Turbidity	St. Methods 2130 B	NTU	0.2	10.0
	Color	St. Methods 2120 B	Pt-Co	0.0	0.0
	Electric conductivity	St. Methods 2510 B	μS/cm	0.0	1.2
Microbiology parameters	Total coliforms	St. Methods 9221 B	MPN/100 mL	0.0	0.0
	Fecal coliforms	St. Methods 9221 E	MPN/100 mL	1.8	0.2

Additional results – Water quality for irrigation

From the analysis of the Riverside diagrams (Figure 8), it is recognized that the stream in all its extension (*Del Sauce* and *Las Cenizas*) corresponds to a high salinity water (C3 to C4), which should only be used in well-drained soils, using very salinity-tolerant crops. On the other hand, sodicity (S1 to S2), indicates waters with low to medium sodium content, which generates a certain danger of sodium accumulation in the soil, especially in those of fine texture and low permeability. The aquifer waters in its inland zone (C2-S1) are waters of medium salinity and low sodium content, suitable for irrigation. In the middle zone (C3-S1), the groundwaters are of high salinity and can be used for irrigation in well-drained soils, in salinity-tolerant crops and with proper management methods; it should be noted that there is some danger of sodium accumulation in the soil. Finally, the waters from the coastal zone of the aquifer (C4-S1) correspond to very high salinity waters, not suitable for irrigation in general.

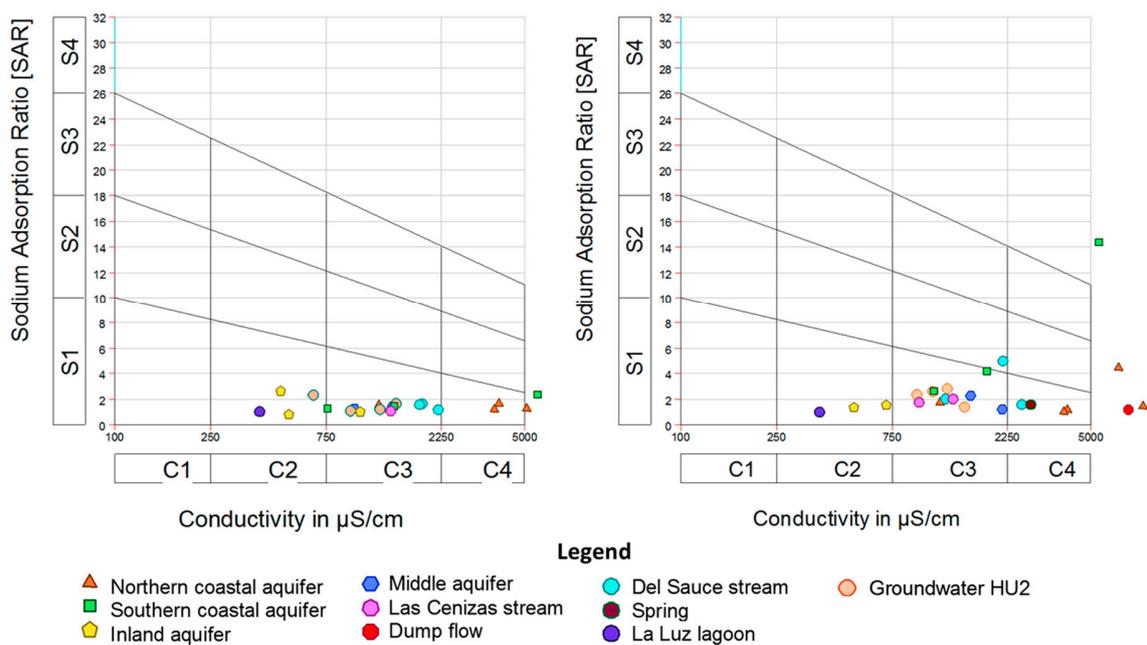


Figure S1. Riverside diagrams (USDA, 1975) for all samples of the hydric system in summer 2022 (left) and winter 2022 (right).