

# Water Quality Report for Irrigation

## EFMA Primary Network

Lab results			Water Quality for Irrigation (annex XVI, DL n.º 236/98)
Parameters	Units	Results	
Responsible Laboratory: ALS Life Sciences Portugal, S.A. (Bulletin nº 31221/2024)			Conformity
Alkalinity	mg/L CaCO3	80,5	
Ammonium	mg/L NH4	<L.Q.	0,026
Nitrogen Kjeldahl	mg/L N		0,63
Total Nitrogen	mg/L N		0,7
Bicarbonates	mg/L CO3H-	98,2	(a)
Boron	mg/L B	0,0278	●
Calcium	mg/L Ca	37,5	
Chloride	mg/L Cl	56,4	●
Total Hardness	mg/L CaCO3	169	
Total Iron (b)	mg/L Fe	0,046	●
Phosphates	mg/L P2O5	0,16	
Total Phosphorus	mg/L P	0,068	
Magnesium	mg/L Mg	18,2	
Manganese	mg/L Mn	0,0135	●
Nitrates	mg/L NO3	<L.Q.	2
Nitrites	mg/L NO2	0,0108	●
Potassium	mg/L K	6,9	
Ratio of Sodium Absorption (SAR)		1,178	●
Ratio of Sodium Absorption adjusted (SARaj)		1,35	
Sodium	mg/L Na	35,2	
Total Dissolved Solids (TDS)	mg/L	301	●
Total Suspended Solids (TSS)	mg/L	<L.Q.	3
Sulphates	mg/L CO4	42,1	●
Total Coliforms	UFC/100 mL	10000	
Fecal Coliforms	UFC/100 mL	3300	●

**Note:** With the exception of the SARaj parameter, test to determine the remaining parameters are included in the range of laboratory accreditation.

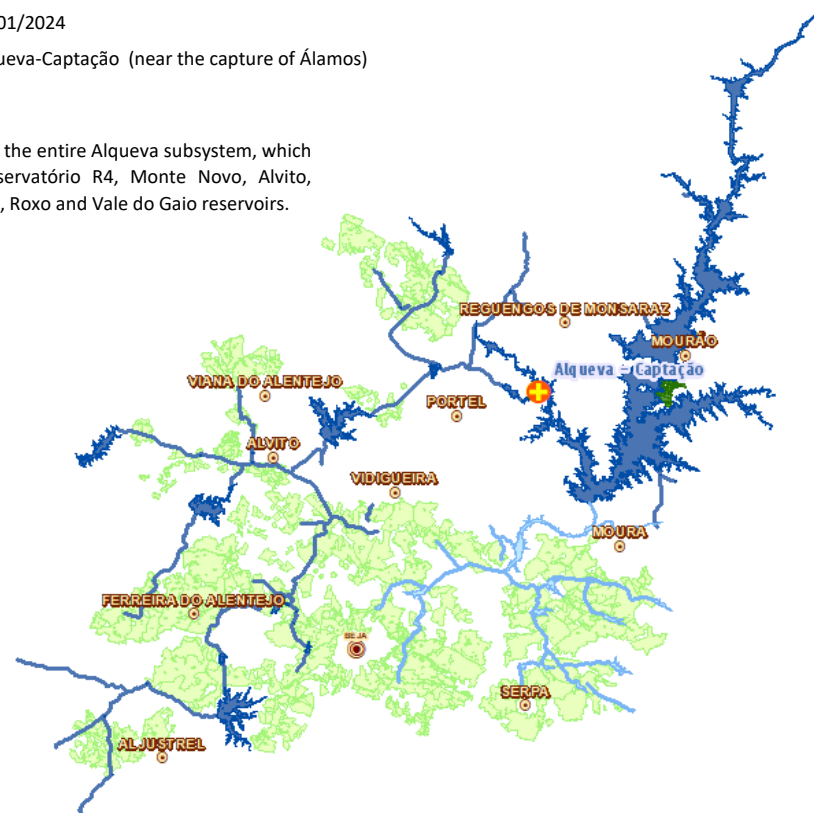
Field Results (Determined with a multiparameter probe)			Water Quality for Irrigation (annex XVI, DL n.º 236/98)
Parameters	Units	Results	
Temperature	°C	14,4	
pH	Escala Sorensen	8,00	●
Conductivity	µS/cm	512	●

- Lower than the VMR (Maximum Value Recommended)
- Higher than VMR and below the VMA (Maximum Permitted Value)
- Higher than VMR. For this parameter is not defined one VMA.
- Higher than the VMA

(a) The maximum value recommended in the Integrated Production Standards, for most crops, is 90 mg / L.  
(b) The VMA in Annex XVI of the Decree-Law nº 236/98 refers to the dissolved iron (5 mg/L Fe).

**Sampling Data:** 18/01/2024  
**Sampling Place:** Alqueva-Captação (near the capture of Álamos)

**Benefited areas:**  
The capture of Álamos adds water to the entire Alqueva subsystem, which includes the Álamos, Loureiro, Reservatório R4, Monte Novo, Alvito, Odivelas, Pisão, Cinco Reis, Penedrão, Roxo and Vale do Gaio reservoirs.



**Comments:**  
The result of fecal coliforms exceeds the Maximum Recommended Value for irrigation water (VMR: 100 NMP/100mL). A maximum allowed value (VMA) is not defined for this parameter. The results of fecal coliforms in february 2024 campaign (140 UFC/100mL) remained higher than the VMR, despite being much lower than those in january. The main problem associated with the presence of fecal coliforms in the irrigation water is related to the irrigation of crops for direct consumption. The bicarbonates results exceed the maximum recommended in the Integrated Production Standards. High concentrations of bicarbonates can affect crop yields, making it difficult to absorb some mineral nutrients. The results of the other parameters are within the ranges of normal values for this type of water bodies. In the document "Water Quality - Complementary Information", EDIA recommends some general measures to reduce the concentration of salts in the water bodies.