

Water Quality Report for Irrigation

EFMA Primary Network

| Lab results | | Water Quality for Irrigation (annex XVI, DL n.º 236/98) | |
|--|------------------------------------|--|------------|
| Responsible Laboratory: Cesab | | (Bulletin n.º 809/19) | |
| Parameters | Units | Results | Conformity |
| Alkalinity | mg/L CaCO ₃ | 130 | |
| Ammonium | mg/L NH ₄ | >LD;<LQ | 0,03 |
| Nitrogen Kjeldahl | mg/L N | 0,7 | |
| Total Nitrogen | mg/L N | 0,7 | |
| Bicarbonates | mg/L CO ₃ H- | 159 | (a) |
| Boron | mg/L B | 0,0273 | ● |
| Calcium | mg/L Ca | 39 | |
| Chloride | mg/L Cl | 55 | ● |
| Total Hardness | mg/L CaCO ₃ | 175 | |
| Total Iron | mg/L Fe | 0,14 | ● |
| Phosphates | mg/L P ₂ O ₅ | <LQ | 0,007 |
| Total Phosphorus | mg/L P | 0,009 | |
| Magnesium | mg/L Mg | 19 | |
| Manganese | mg/L Mn | 0,021 | ● |
| Nitrates | mg/L NO ₃ | <LQ | 0,3 |
| Nitrites | mg/L NO ₂ | 0,027 | |
| Potassium | mg/L K | 6,95 | |
| Ratio of Sodium Absorption (SAR) | | 1,1 | ● |
| Ratio of Sodium Absorption adjusted (SAR _{aj}) | | 1,1 | |
| Sodium | mg/L Na | 33 | |
| Total Dissolved Solids (TDS) | mg/L | 301 | ● |
| Total Suspended Solids (TSS) | mg/L | <LQ | 3 |
| Sulphates | mg/L SO ₄ | 43 | ● |
| Total Coliforms | NPM/100 mL | 591 | |
| Fecal Coliforms | NPM/100 mL | 15 | ● |

Note: The tests to determine the parameters are included in the range of laboratory accreditation.

| Field Results | | Water Quality for Irrigation (annex XVI, DL n.º 236/98) | |
|--|-----------------|--|------------|
| (Determined with a multiparameter probe) | | | |
| Parameters | Units | Results | Conformity |
| Temperature | °C | 23,1 | |
| pH | Escala Sorensen | 8,4 | ● |
| Conductivity | µS/cm | 558 | ● |

- 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.

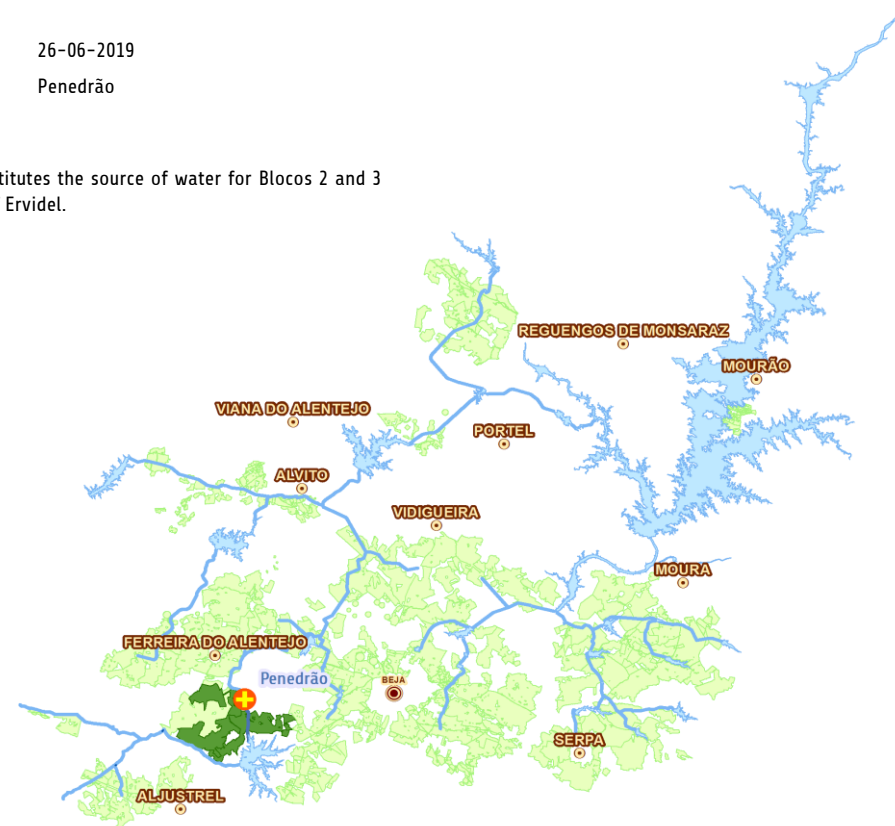
(b) The VMA defined in Annex XVI of the Decree-Law No. 236/98 refers to the dissolved iron (5 mg / L Fe).

Sampling Data: 26-06-2019

Sampling Place: Penedrão

Benefited areas:

The Penedrão reservoir constitutes the source of water for Blocos 2 and 3 of the irrigation perimeter of Ervidel.



Comments:

The bicarbonate values exceed the maximum value 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 remaining elements are within the range of expected values for this typology 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.