



Cretaceous carbonate aquifer

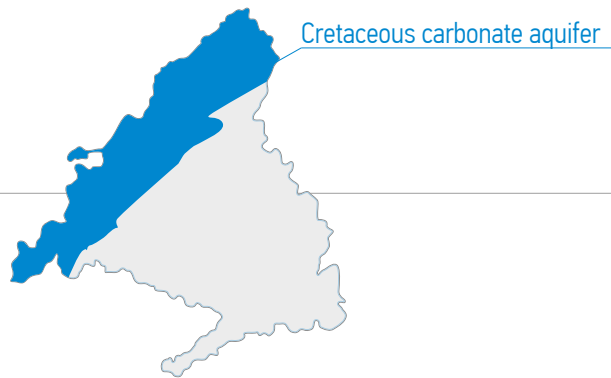
The integrated water cycle • Water collection

Cretaceous carbonate aquifer

The incorporation of groundwater, cretaceous carbonate and tertiary detrital aquifers, into the Community of Madrid supply system marked an important milestone in the management of water resources, as it makes a greater volume of fresh water available to address demand during periods of drought, when the volume stored in surface reservoirs decreases. This makes their sustainable and more efficient use possible.

Lithologically, and from the upper plane to the lower, this aquifer is characterised by its variable saturated thickness -of between 20 m and 30 m, it is comprised of Tertiary age clays, conglomerates and gypsum, below which there are Cretaceous carbonate rocks- with a medium-high permeability and a thickness of up to 150 m.

Underlying these deposits the series ends with some detrital-marly layers of medium-low permeability.



Ground water body

Torrelaguna

Extent of the outcrop

56 km²

Recharge capacity

12 hm³/year

Cretaceous carbonate aquifer

It behaves as an unconfined aquifer in the areas of outcropping and as a confined aquifer in other areas.

The recharge occurs by the infiltration of rainwater in the areas of calcareous outcropping and from creeks from the mountains that cross the area.

In the area stretching between Pontón de la Oliva and Patones, where the River Jarama flows over these materials there is a connection between this aquifer and one formed by the alluvial terraces, this increases the possibility of joint usage.

Its waters, which have calcium carbonate and calcium sulphate facies, are highly mineralised and have a conductivity of around 800 $\mu\text{s}/\text{cm}$. They are treated in El Bodonal Drinking Water Treatment Plant before being included in the water supply system.



Watch a video about water collection

Relevant technical data

Subterranean water body: Torrelaguna (Madrid)

Extent of the outcrops: 56 km²

Recharge: 12 hm³/year

Thickness: 140-170 m

Useful thickness: 140-170 m

Horizontal permeability (K_h): 0,06-0,3 m/d

Porosity (m): 2-5%

Specific capacity (Q_e): 1.5-3.0 l/s/m

Transmissivity (T): 10-1,000 m²/day



Canal
de Isabel II

