



Guadalix basin  
Pedrezuela reservoir

## Pedrezuela reservoir

The Pedrezuela reservoir, formerly known as the El Vellón reservoir, is located at the foothills of the Guadarrama mountains. It was built in 1968, upstream from the El Mesto mill dam, to regulate the waters of the Guadalix basin.

A hydroelectrical power plant was built at the base of the reservoir in 2008 to use the energy from the waters that are discharged through the El Vellón channel that originates at this small power station. The new layout of the Canal Alto runs within a pipe under the crest of the dam. This allows the transfer to this reservoir of the waters from the Sorbe, Jarama and Lozoya rivers from the top reservoir of the Calerizas node, in Torrelaguna.

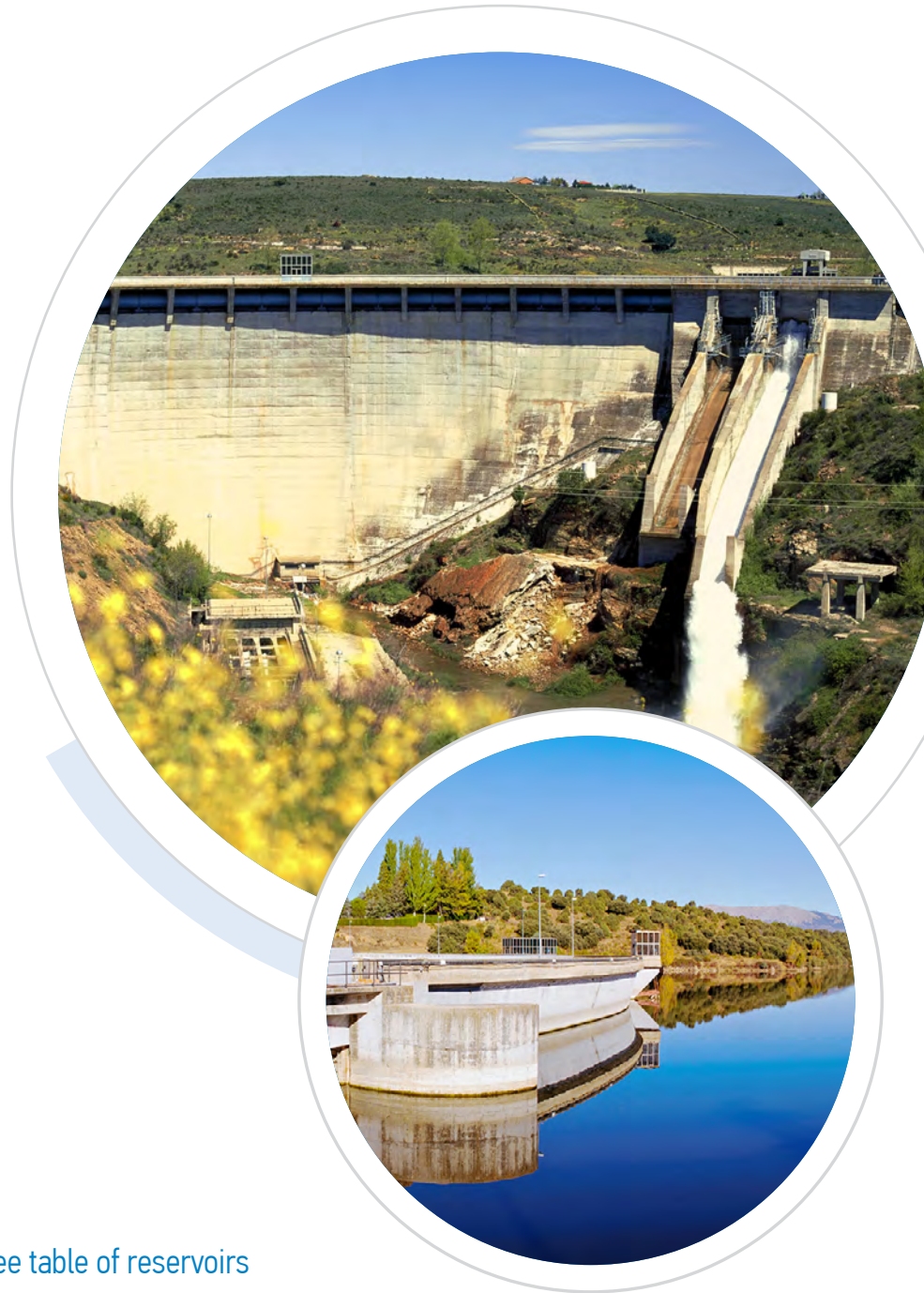
The El Mesto mill dam, which is the source of the Guadalix channel, has fallen into disuse since the construction of this dam. Although neither of these two facilities is currently in use, they are both in a perfect state to start operation if necessary.



Capacity  
**40.9 hm<sup>3</sup>**

Surface  
**393 ha**

Type  
**Thick arch  
dam**



 [See table of reservoirs](#)



## Reservoir

Capacity:	40.9 hm <sup>3</sup>
Average flow:	67 hm <sup>3</sup> /year
Basin surface:	218 km <sup>2</sup>
Maximum reservoir surface:	393 ha
Length of banks:	42 km
Length of river at the reservoir:	8 km

## Dam

Classification:	type A
Type :	thick arch
Height above foundations:	52 m
Crest length:	218 m
Crest width:	7 m
Face slope:	upstream: variable downstream: variable
Volume of masonry:	95,000 m <sup>3</sup>
Galleries:	1 perimeter 1 horizontal



## Operating elements

### Spillway

Number of spans:	2
Total length:	12 m
Operating mechanism:	sector gate height: 4.00 m
Spilling capacity:	360 m <sup>3</sup> /s

### Outlets

Location:	bottom
Number of ducts:	2
Operating mechanism:	upstream: sliding gate downstream: hollow jet valve
Dimensions:	upstream: 130 x 260 cm downstream: 180 cm
Dewatering capacity:	113 m <sup>3</sup> /s

## Monitoring elements

- 7 pendulums
- 37 joint meters
- 15 extensometers
- 57 thermocouples
- 18 pressure gauges
- 47 topographical bases for levelling and collimation
- 5 points of area gauging

## Automated monitoring elements

- Reservoir point gauge
- Thermometer
- Rain gauge
- 5 pendulums
- 5 pressure gauges
- 3 liquid level gauges

 See tapping PDF

 See tapping video

Canal   
de Isabel II