

MANDAWA DAM: A MULTIPURPOSE RESERVOIR ON GREATER ZAB CASCADE¹

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ABSTRACT

As part of an important regional plan to regulate and use natural water resources, Mandawa Dam has recently been designed for drinking water supply, irrigation, and hydropower production.

It is located in the Iraqi Kurdistan along the main course of the Greater Zab River, a major left tributary of the Tigris River, about 40 km North of Erbil.

The dam is a 65 m high embankment with gravel and sand shells and a central silty core. It extends straight for about 1000 m and includes, on the left side, a concrete structure consisting of three blocks housing the temporary diversion, the bottom outlets, the water supply and irrigation intake and the inlets of the penstocks of the hydropower plant.

The subtended reservoir has a maximum storage capacity of about 520 million m³.

A 278.1 m large spillway structure, with two lateral free sills and a central gated sill, is located on the right side, separated from the dam and followed by a 525 m long evacuation channel, with a design flow of 15,272 m³/s (1000 years RP).

To protect the fish populations and permit their movement a fish passway has been introduced on the right side, near the spillway channel.

The powerhouse, at the foot of the concrete blocks, is equipped with 3 groups of 33 MW with a design discharge of 100 m³/s each.

The area of the works is characterized by an average seismicity.

¹ *Barrage de Mandawa: un réservoir à buts multiples sur la Cascade du Fleuve Greater Zab*