

Design of Wastewater Treatment Plant in Ar-Rass (Phase II)

Client

Saudi Ministry of Electricity & Water

Scope of Work

Conceptual design
Data collection
Detailed design
Preliminary design
Tender documents
Treatment alternatives study

Location

Ar-Rass Town, Al-Qassim Province, Saudi Arabia

Types of Activities

Architectural
Civil works
Communications and security systems
Electrical
HVAC
Instrumentation
Landscaping
Mechanical
Roads
Structural

The existing Ar-Rass Wastewater Treatment Plant is located in the northern west of Ar-Rass town in Al-Qassim province; one of the 13 regions of Saudi Arabia. The town is almost 400 km north of Riyadh and about 80 km southwest of Buraydah, the regional capital of Al-Qassim Province. The project aims to design the second phase of Ar-Rass Wastewater Treatment Plant with a total capacity of 25,000 m³ /day.

The number of process and non-process facilities are expected to be 25 buildings on an area of approximately 100,000 m² .

The plant is designed to achieve carbon and nutrients removal. The treatment facilities involve preliminary, primary, secondary and tertiary treatment processes.

Ar-Rass treatment system works as follows:

- The biological treatment is based on Anaerobic/ Anoxic/Oxic (A2O) systems.
- Rapid sand filter is used for tertiary treatment.
- Chlorine gas is used for treated sewage effluent disinfection.
- Gravity thickener and sludge centrifugal systems are used for sludge treatment.

