



DEWATS FOR MUTTON MARKET, WARORA

PROJECT BRIEF

Warora is a town, located 90 km from Nagpur, with a population of more than 25,000. The client for this project is Warora Municipal Council. The Chief Officer was well aware of multiple benefits of DEWATS (Low maintenance , Low cost & efficient treatment), from his previous experience with Umred DEWATS plant. The construction of Plant is completed and not yet commissioned.

PROJECT OUTCOMES

- Efficient management of wastewater collected from the Slaughter House & Mutton Market
- To meet the regulatory norms of PCB for wastewater treatment and reuse
- To protect the environment from direct pollution.
- To safely dispose the treated wastewater.

SYSTEM IN BRIEF

The wastewater streams are channeled from the Slaughter House and Mutton Market collected in a common register near the treatment system, which consists of following modules:

1. **Biogas Settler:** is a gas tight dome structure, which accumulates gas for utilization. It also acts as a sedimentation tank for retaining heavier and lighter particles by sedimentation & floatation.
2. **Anaerobic Baffled Reactor:** ensures anaerobic degradation of suspended and dissolved solids by mixing fresh wastewater with an active sludge blanket
3. **Anaerobic Filter:** comprises of filter bed for treatment of dissolved organic matter. Wastewater comes in contact with active bacterial mass which grows on filter material.
4. **Planted Gravel Filter:** is used as tertiary treatment unit where aerobic and facultative degradation of dissolved organic occurs.

SALIENT FEATURES

- Source:** Slaughter House & Mutton Market Warora
Design capacity: 10 m³
No of users: Nearby population of 5,000 will be benefitted from foul smell.
Peak flow: 8 hrs
Influent quality: BOD: 2,000 mg/l/
 COD: 4,000 mg/l
Effluent Quality: BOD: 18 mg/l
 COD: 60 mg/l
Efficiency: BOD – 95.0% (expected)
 COD – 98.0% (expected)

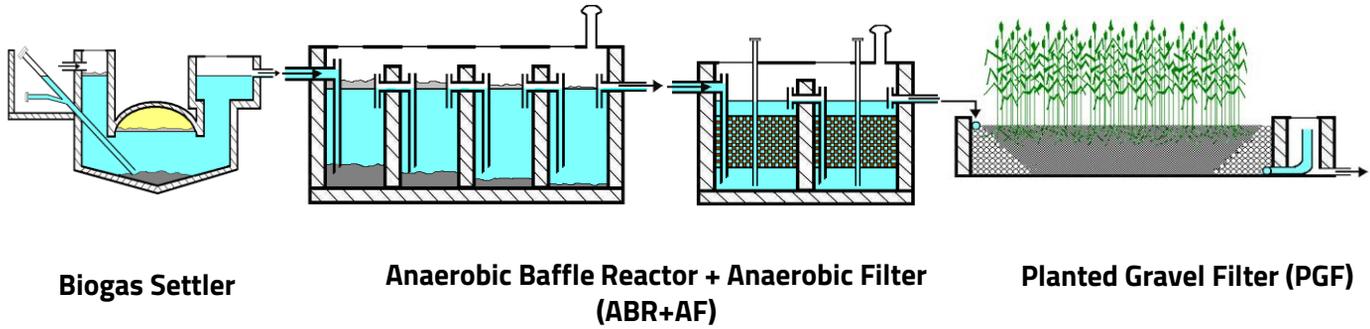
PROJECT SPECIFICATIONS:

- Funding Agency:** Warora Municipal Council
Implementing Agency: Shri Ram Constructions Pvt. Ltd.
Supporting Agency: CDD Regional Office, Nagpur
Construction Period: 13 months
Construction start date: May 2018
Construction end date: May 2019
Current status: Construction completed, not commissioned
Construction Cost: Rs. 23.01 lac
Operation Cost: Rs. 40,000 p.a.

MODULES ADOPTED

- Bio-Gas Settler**
 Volume: 72.05m³
 Area of construction: 23.1 m²
Anaerobic Baffle Reactor
 Volume: 40.924 m³
 Area of construction: 11.931 m²
 No. of chambers: 5
Anaerobic Filter
 Volume: 49.926 m³
 Area of construction: 14.56 m²
 No. of chambers: 3
Planted Gravel Filter
 Volume: 97.34 m³
 Area of Construction: 40.224 m²

PROCESS FLOW DIAGRAM



Biogas Settler

Anaerobic Baffle Reactor + Anaerobic Filter (ABR+AF)

Planted Gravel Filter (PGF)

OPERATION AND MAINTENANCE

- The wastewater treatment plant is operated and maintained by Warora Municipal Council with Municipal Sanitary Staff.
- A regular schedule is followed for maintenance, like periodic check, removal of sludge in Biogas Settler & Baffle reactor.
- In the planted gravel filter, regular harvesting of plants is done and the filter media is washed once in 4-5 years.

REUSE OPTIONS

The treated water after Planted Gravel Filter (PGF) will be disposed safely into the open drain near the Mutton Market.

LEARNINGS

- Successfully implementation of demo project helps to replicate the project on different project sites.
- Successful functioning of the project depends on quality of construction work.

PHOTOS

