Kalmeshwar is a town located 25 km away from Nagpur. It has a population of ~30,000. DEWATS™ has been constructed for a 12-seater public toilet complex at Mowade Layout. The toilet is maintained by Kalmeshwar Municipal Council; and comprises of a urinal, 6 cubicles for men and 6 cubicles for woman.

**SALIENT FEATURES**

- **Source:** 12-seater public toilet, urinals, washbasin
- **Design Capacity:** 10 m³/d
- **No. of users:** 480
- **Peak Flow:** 8 hours
- **Influent quality:**
  - BOD: 1,100 mg/l
  - COD: 2,300 mg/l
- **Effluent Quality:** After tertiary treatment
  - BOD: 25 mg/l
  - COD: 40 mg/l
- **Efficiency:** 95%

**PROJECT OUTCOMES**

- Efficient management of wastewater generated at the public toilet.
- To meet PCB's regulatory norms for wastewater treatment and reuse.
- To protect the environment from direct pollution.

**SYSTEM IN BRIEF**

Wastewater from domestic sources from the Public Toilet building is conveyed to the treatment unit through a sewer network. The Treatment system consists of 3 modules:

- **Settler:** is a sedimentation tank for retaining articles by settling over a specific time frame.
- **The Anaerobic Baffle Reactor:** ensures anaerobic degradation of suspended and dissolved solids by mixing fresh wastewater with an active sludge blanket.
- **The 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.

There is also a collection tank, for collection of the treated water.

**PROJECT SPECIFICATIONS**

- **Funding Agency:** Kalmeshwar Municipal Council
- **Implementing Agency:** M/s Rajat Lambat, Nagpur
- **Construction cost:** Rs. 17.09 lakhs
- **Construction period:** 9 months
- **Start of operation:** December 2020
- **Current status:** Commissioned & operational
- **Area per beneficiary:** 0.21 m²
- **CapEx per beneficiary:** Rs. 3,561
- **OpEx per beneficiary:** Rs. 83

**MODULES ADOPTED**

- **Settler** - Volume: 14.10 m³
  - Area of construction: 9.35 m²
- **Anaerobic Baffled reactor** - Volume: 18.90 m³
  - Area of construction: 11.64 m²
  - No. of chambers: 4
- **Anaerobic Filter** - Volume: 12.75 m³
  - Area of construction: 9.70 m²
  - No. of chambers: 2
- **Collection Tank** – Volume: 9 m³
  - Area: 15 m²
  - Built up area: 104.64 m²
OPERATION AND MAINTENANCE

- The wastewater treatment plant is operated and maintained by the client. OpEx costs are in the range of Rs. 34,000 - 40,000 per year.
- A regular schedule will be followed for maintenance and includes periodic check of all modules, removal of sludge in baffled reactor and other required tanks.
- The filter media in the anaerobic filter will be washed once in five / seven years.

REUSE OPTIONS

- (After Tertiary Treatment), the treated wastewater is being reused for gardening.