

## **PROJECT BRIEF**

Kuttiyandiyur is located 40 km from Nagapattinam, in Tharangabadi Town Panchayat. 175 new houses (for an approximate population of 875 people) were constructed by the NGO EFICOR.

### PURPOSE

- Safe disposal of wastewater
- To improve deteriorating environmental and hygienic conditions due to absence of wastewater treatment or appropriate disposal.

### SYSTEM IN BRIEF

Wastewater from bathrooms and toilets will be collected in the Branch Manhole, then conveyed to the Trunk Manhole, which is provided in the backyard of individual houses. The wastewater then collects at the common manhole at Location-1, before being conveyed to the Primary Treatment Unit (Settler).

After the primary treatment, wastewater collects in the Collection Sump and is pumped into the feeding tank, from where it is distributed into the filter chambers of the anaerobic baffle reactor for secondary treatment at Location-2.

The partially treated wastewater is then conveyed into the Planted Gravel Filter, through gravity, for further treatment; and finally the treated wastewater collects in the collection tank for safe disposal.

- **1. Settler:** a sedimentation tank for retaining articles by settling over a specific time frame.
- 2. Anaerobic Baffle Reactor: ensures anaerobic degradation of suspended and dissolved solids by mixing fresh wastewater with an active sludge blanket.
- **3. Anaerobic Filter:** ensures fixed digestion of the suspended solids.
- **4. Planted Gravel Filter:** a tertiary treatment unit, which helps in the removal of odour and colour of the wastewater by aerobic processes.

#### **SALIENT FEATURES**

Source : Toilets, Bathrooms, Laundry Design capacity : 50 m³/d No of users : 875 Peak flow: 8 hours Influent quality : BOD 450mg/l ; COD 950mg/l

### **PROJECT SPECIFICATIONS**

Kind of Project: CBS-DEWATS with Simplified Sewer System Funding Agency: World Bank, Government of Tamil Nadu Implementing Agency: Project Management Unit Estimated Cost: Rs. 91.36 lakhs Commissioned: March 2012

### **MODULES ADOPTED**

Settler: Volume: 30 m<sup>3</sup> Area of construction : 25 m<sup>2</sup> Baffle reactor with Anaerobic Filter Volume : 85 m<sup>3</sup> Area of construction : 84 m<sup>2</sup> No. of chambers : 10+6 Planted Gravel Filter: Volume: 130 m<sup>3</sup> Area of construction: 287 m<sup>2</sup> Filter materials: Aggregates Plants to be used: Reed Juncas, Colacasia Collection Tank-1: Volume: 33 m<sup>3</sup> Area of construction: 35 m<sup>3</sup> Collection Tank-2: Volume: 13 m<sup>3</sup> Area of construction: 15 m<sup>3</sup> Feeding Tank: Volume: 17.50 m<sup>3</sup> Area of construction: 16 m<sup>3</sup> Pump House: Area of construction: 6 m3

Built up area : 810 m²



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# PROCESS FLOW DIAGRAM





Planted Gravel Filter (PGF

### **OPERATION AND MAINTENANCE**

The wastewater treatment plant is operated and maintained by trained members of the Kuttiyandiyur Colony. Regular maintenance includes: (a) checking wastewater flow in the sewer system and treatment system (b) de-weeding and harvesting of plants in the PGF.

Periodical maintenance includes:

- (a) Removal of sludge in settlers and anaerobic baffle reactors
- (b) Replacement of filter media in the in filter chambers and planted gravel

filter once in 5-6 years

(c) Re-plantation in the planted gravel filter

### **REUSE OPTIONS**

Presently there is no reuse option for the treated wastewater.

### **PERFORMANCE OF DEWATS**

Sample points	COD mg/l	рН
Date of sampling:		
Settler Inlet	403	7.29
PGF Outlet	131	7.84

### **PROJECT PHOTOS**

