Consortium for DEWATS Dissemination Society

DEWATS FOR KESAR CITY, AHMEDABAD

PROJECT BRIEF

Kesar city is one of the popular residential developments in Changodar, a neighborhood of Ahmedabad. A total of 2,382 affordable houses are constructed. A total of 1,000 m3 (1 MLD) of wastewater will be generated from the layout. The client intends to treat the wastewater and reuse the treated wastewater for flushing and landscaping. The client contacted CDD Society for technical support in the implementation of DEWATS at Kesar city.

PROJECT OUTCOMES

- Efficient management of wastewater which is collected from the Apartment building.
- To meet the regulatory norms of PCB of wastewater treatment and reuse.
- To protect the environment from direct pollution
- To treat and reuse the treated wastewater for non-human contact purpose

SYSTEM IN BRIEF

The wastewater from toilets is conveyed to treatment unit through sewer network. Treatment system consists of 3 modules:

- Settler - 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.
- Vortex - Uses the principle of continuous spiral movement whereby oxygen uptake in water in increased. Removes color and odor.

SALIENT FEATURES

Source: Domestic wastewater from the Township
Design capacity: 1.05 MLD
No of users: 1,275 families (6,375 people)
Peak flow: 6 hours
Influent Quality: BOD: 300 mg/l
COD: 600 mg/l
Effluent Quality: BOD : <25 mg/l
COD : <60mg/l
Efficiency: BOD – 91.66%
COD – 90.00%

PROJECT SPECIFICATIONS

Funding Agency: Kesar City, Ahmadabad, Gujarat
Implementing Agency:
Kesar City, Ahmadabad, Gujarat
Construction Period : 8 Months
Construction start date: 2015
Construction end date: 2015
Current status: Commissioned & operational
Construction Cost: Rs. 1.75 Cr.
Operation Cost: NA

MODULES ADOPTED

Settler (3 compartments)
Volume: 303.84 m3
Area of construction: 101.28 m2
Anaerobic Baffle Reactor
Volume: 1895.04 m3
Area of construction: 631.68 m2
No. of chambers: 3
Anaerobic Filter
Volume: 950.04 m3
Area of construction: 316.68 m2
No. of chambers: 3
Collection Tank
Area: 174 m2
Volume: 522 m3

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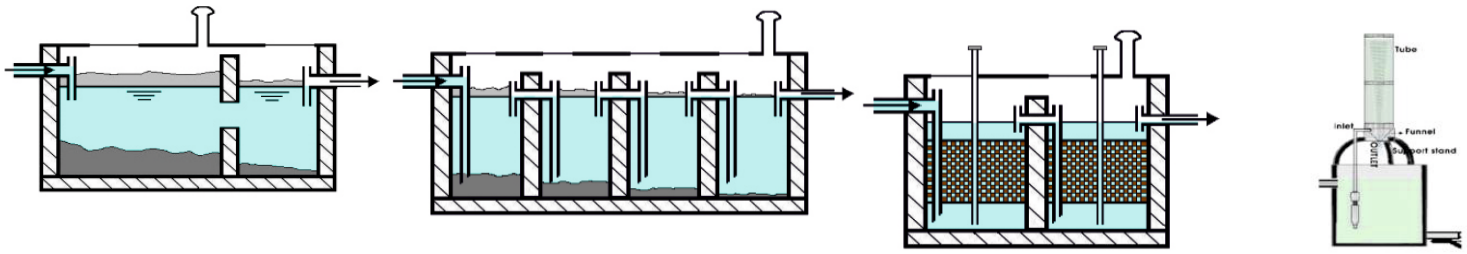
PROCESS FLOW DIAGRAM



Settler **Anaerobic Baffled Reactor (ABR)** **Anaerobic Filter (AF)** **Vortex**

OPERATION AND MAINTENANCE

O&M cost was Rs. 4 lakhs /Month when Vortex was in use. This mainly includes the electricity charges.

Now Vortex system is not in use so the O&M cost is Rs.40,000/ month. (Client has stopped the use of Vortex because of Smell issue)

LEARNINGS

- Use of pump reduce the actual area required which ultimately reduce the cost of the project.
- Trained team of construction worker minimize the construction time.

REUSE OPTIONS

AT present there is no Reuse of Treated water. Its disposed into nearby Nallah after secondary.

PERFORMANCE OF DEWATS

Sample points	COD mg/l	BOD mg/l	pH
Date of sampling 26/06/2016			
ABR Outlet	206	67	23