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Electronic Newsletter on DEWATS Information for Sustainable Sanitation

Volume 7
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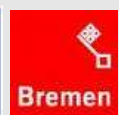
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Prologue:

Warm greetings from CDD Society! We have the pleasure to bring to you the July issue of e-Disha.

This issue covers the many activities that CDD has conducted and planned for in the coming months. Various training programmes and the inauguration of the Centre for Advanced Sanitation Solutions (CASS) are under preparation. The activities and programs showcase the decentralised basic need services being implemented by the CDD and BORDA Network.

The Editorial Team would be pleased to receive feedback and suggestions. Contributions to the Newsletter are most welcome.

Picture of the month:



Pic: CDD celebrates World Environment Day through 'Honge' Plantation at CASS on World Environment Day - 5th June 2009

BORDA and CDD commemorated the World Environment Day on 5th June by planting "Honge" tree saplings at CASS - the Centre for Advanced Sanitation Solutions at Kengeri, Bangalore. The event was graced by Sri Krishnaiah Setty, Honorable Minister for Housing, Government of Karnataka, Mr. Mahadeva Prasad, General Manager, Rajiv Gandhi Rural Housing Corporation Limited (RGRHCL), Mr. K.L. Mohan Rao, Director, Kaushalya Shaale and Mr. Pedro Kraemer, Project Coordinator, BORDA South Asia.

On this occasion, all dignitaries spoke about the need and challenges of environmental protection and sustainable development. Sri Setty laid stress on the fact that even though India has traditionally been planting and worshipping trees, today not enough importance is given to green cover. Mr. Pedro Kraemer, in his address states that **"Small trees of today are cities' lungs of tomorrow"**. Planting trees at CASS is a contribution to UNEP's world-wide billion tree campaign.

Project fact sheet:

DEWATS at Roopa Nagar, Mysore

<http://www.borda-sa.org/modules/wfdownloads/visit.php?cid=6&lid=95>

Research on sanitation:

"Toilets that Make Compost: Low-cost, sanitary toilets that produce valuable compost for crops in an African context" by Peter Morgan

Click here to read more: <http://www.ecosanres.org/EvalEcoSanSriLanka.htm>

DEWATS Elements:

Dimensional parameters for DEWATS

Dimensions of DEWATS are governed by two factors: one being wastewater characteristics and the other the treatment module itself. Aspects affecting the wastewater are hydraulic load, organic load, and constituents of wastewater, which cause sludge formation. The aspects influencing the treatment module are hydraulic retention time and the up-flow velocity.

In this issue of e-Disha, we will discuss the treatment module factor and its implications on the dimensions of the modules.

Certain wastewater treatment processes require wastewater to be retained for a definite time to ensure the desired degree of pollution reduction. This time period is known as the hydraulic retention time, which is a function of the level of treatment required.

Hydraulic retention time indicates the fraction of time during which a given volume of wastewater is retained in the treatment module. Hydraulic retention time (HRT) indicates a volume-by-volume relation. It does not distinguish between the solid and liquid fractions of the wastewater. In case of filter media, the actual hydraulic retention time depends on the effective pore space of the media. For example, with gravel that consists of 60% solids and 40% free space, the effective retention time decreases to only 40%.

Different treatment modules have maximum permissible velocities that cannot be exceeded. Hence, the dimensions of the treatment modules are such that these critical velocities are seldom exceeded for a given hydraulic load. Hydraulic loading rates within a reactor, especially in up-flow reactors like Up-flow Anaerobic Sludge Bed (UASB) or baffle reactors, the maximum up-flow velocity of liquid must be lower than the settling velocity of sludge particles. In such cases, the daily flow must be divided by the hours of actual flow (peak hour flow rate). The up-flow velocity is calculated as flow per hour divided by surface area or effective pore space of the respective treatment module. This means that the up-flow velocity increases when the length of flow is increased or when a given reactor volume is split up into several chambers. This is because the flow rate per hour remains the same while the surface area of the individual chamber is reduced to a fraction of the area of the total volume.

These two functions of the treatment modules are important for determining the dimensions of the modules.

Interesting Link:
<http://saniblog.org/>

Saniblog is a blog dedicated to sanitation. It is a floor for interchanging ideas and experiences as well as discussing sanitation topics in an atmosphere that has no formalities.....

Wastewater Analysis:

POTASSIUM CELL TEST

For the determination of potassium (K^+) concentration in the range of 5-50 mg/l.

1. Preparation

- Check the ammonium content. Samples containing $> 50 \text{ mg/l NH}_4^+$ must be diluted with distilled water.
- Check the potassium content. Samples containing $> 50 \text{ mg/l K}^+$ must be diluted with distilled water.
- The pH of the sample must be in the range 3-12. The pH of the solution must be in the range 10.0-11.5.
- The temperature of the pretreated sample should be $20^0\text{-}30^0\text{C}$.

2. Procedure

1. Pipette 2ml of sample into a reaction cell and mix.
2. Add 6 drop of reagent K-1K and mix.
3. Add 1 level blue micro spoon of reagent K-2K and dissolve completely by shaking the closed cell.
4. Allow to stand for 5 min
5. Measure the sample in the photometer



Important Tips

- The test reagents must not be disposed of with the wastewater

Interview:

An interview with Marianne Fujara, Unit Coordinator, Centre for Advanced Sanitation Solutions (CASS), CDD Society, on the implementation of CASS at Bangalore.

Short background of project

CASS is a joint venture project of CDD Society and its Associate partner, RGRHCL (Rajiv Gandhi Rural Housing Corporation Ltd.), a Government of Karnataka Company at Kengeri, Bangalore. CASS shares the building in Kengeri with RGRHCL and Koushalya Shaale, a Construction Training and Finishing School for unemployed youth, which has also been established in 2008 by RGRHCL and, among others, CDD Society.

1. What is the vision and mission of CASS?

If we see CASS as the main vehicle to disseminate know-how on safe sanitation in the context of the Millennium Development Goals, CDD Society aims to provide 1 million marginalised people in urban areas with safe sanitation by the year 2015. Training on decentralised basic need services (DBNS) and, in a next step through training of trainers for effective dissemination of knowledge about sanitation, will take place. CASS will also be a “one stop” information center where you find what you want to know about sanitation.

2. What are the components housed in CASS?

CASS will house for 5 Units:

The main Unit of CASS is the Training Unit. Theoretical training will be provided in classrooms. For practical training of masons and plumbers, facilities in the area behind the CASS Building would be used.

The other components are Exhibition Unit, a Library Unit, a Research and Development Unit and a Production Unit for prototypes and small prefabricated elements of DEWATS.



Pic1: CASS centre at Kengeri



Pic 2: Exhibition Unit at CASS

3. Who will be associated with the CASS in future?

The CDD Partner Network is associated and will be associated in future. Additionally, other organisations, who work in the field of sanitation, will be associated with CASS and become Associates.

4. When will the formal inauguration of CASS take place?

The date of the formal inauguration is yet to be scheduled. The first training will commence in the second half of August 2009.

Events:

• **An Introductory Seminar on Decentralized Wastewater Treatment Approaches**

An Introductory Seminar on: “Decentralised Wastewater Treatment Approaches” was organised jointly by the Consortium for DEWATS Dissemination (CDD) Society in collaboration with the Karnataka State Pollution Control Board at the auditorium of KSPCB, Bangalore on Saturday, 20th June 2009.

The main objective of this Seminar was to provide a platform for professionals and experts to discuss issues related decentralised wastewater treatment approaches as a solution for onsite wastewater treatment in cities. The target participants were real estate developers, housing and construction project developers, civil engineers, architects, city and town planners and like: more than 80 participants attended the Seminar.



The Meeting opened with a welcome by Mr. Joe D’Souza, representative of CDD Society. It was followed by a presentation on ‘Issues in Water Conservation and Management’ by Dr. H C Saratchandra, Chairman, Karnataka State Pollution Control Board. Mr. Avinash Shirode, President-elect, Association of Consulting Civil Engineers (India), then presented his views on ‘Challenges and Opportunities for Decentralised Wastewater Treatment Solutions’. Mr. Pedro Kramer, Regional Programme Coordinator, BORDA South Asia, made a presentation on ‘Principals of Decentralised Wastewater Treatment Systems’. Mr. B. R. Balachandran,

Director, Alchemy Urban Systems Pvt. Ltd., delivered his views on ‘Integration of Decentralised Wastewater Treatment Solutions in City-wide Planning’. This was followed by a panel discussion chaired by Mr. M. Ravindranath, Joint Adviser, Planning Commission, Government of India.

This Introductory Seminar was very helpful for exchanging various ideas and to create awareness in professionals on decentralised wastewater treatment solutions.

• **Half Yearly review of CDD Network’s activities**

The CDD Half Yearly Planning and Review Meeting for 2009 was held from June 9-10 at CDD Society, Bangalore. The Units in CDD Society met to review the last 6 months of working together focusing on the achievements. The presentation of each unit by the Team Leader provided qualitative and quantitative details on the results achieved. Each Unit also presented the activities for the next half year to fulfill the Phase III (2009-2011) goals. This was followed by deliberations on the activities that could be carried out in the next 6 months.

Phase III of the Project supported by BORDA and BMZ ‘Poverty Reduction and Sustainable Protection of Natural Resources in South Asia’, focuses on upgrading skills and capacity building for increased delivery of basic need services to the South Asia Region.

Quiz - Test your knowledge on Sanitation:

Q. What percentage of sewage and industrial wastes in developing countries are discharged into water courses without treatment?

Hint: Read the UN - Water for Life Factsheet