



Decentralized MBR Solutions for a Residential Complex – Hyderabad, India

The background

Hyderabad is one of the top eight cities in India, which has recently undergone rapid industrialization and urbanization that has impacted the supply of clean water in many parts of the city. This has resulted in urban water insecurity with insufficient and unreliable water supply.

While Hyderabad experiences semi-arid tropical climatic conditions, with an average annual rainfall of 810 mm, several areas in the city are facing potable water shortage due to irregular supply. The majority of water supply in the city depends on the surface water received through river Musi and several natural and manmade lakes around the city.

The local government has mandated for companies as well as residential and commercial properties to set up decentralized STPs on their premises and to use the treated water for secondary applications like gardening, flushing, car washing, etc.

To upgrade and operate existing plants in the city, DuPont Water Solutions joined hands with Banka Bio Limited. Banka Bio is a pioneer in Water, Sanitation, and Hygiene (WaSH) infrastructure. Under this arrangement, DuPont is responsible for the technical design and supply of MEMCOR® MBR membranes, whereas Banka Bio supplies, installs, tests, and commissions (SITC) for the balance of the plant.

The challenges of the existing STP

The implementation of decentralized STPs was well understood, but this project faced several challenges, not least of which is the operation of the existing STP and maintenance of treatment services. Some of the challenges that Banka Bio had initially faced were:

1. **Raw water availability:** Sourcing of raw water for all primary as well as secondary applications through tankers, was one of biggest challenge faced by residential clients of Banka Bio.
2. **Cost of raw water:** Because tankers are the only source of raw water, the cost of water is significantly high.
3. **Odor issues:** The existing STP was undersized and giving 500-600KLD of treated sewage, whereas, actual requirement was for 1200KLD, which left a huge amount of sewage partially treated, resulting in foul odor affecting the habitants in that area.
4. **Height issues:** The height available to install STP was only 4.4 meters which was making it difficult to go ahead with other membranes.

Fast Facts

Customer: Banka Bioloo

Location: Hyderabad, India

Market Segment: Muni WW for a residential building

Application: Wastewater reuse

Technology/Product/Solution(s):
Membrane Bioreactor / MEMCOR®
MemPulse® B40N Modules

Commissioning date: year 2022

UF Capacity: 1200 KLD

Water type: wastewater

Technical specifications:

Feed parameters

Flow: 1200KLD

BOD: 300 PPM

COD: 550-600 PPM

TSS: 200-250 PPM

TN: 50 PPM

TP: 10 PPM

Outlet parameters

Flow: 1200KLD

BOD: <10 PPM

COD: <30 PPM

TSS: <2 PPM

Turbidity: <1 NTU

TN: <10 PPM

TP: <1 PPM

The solution

With consideration of the challenges faced by Banka Bio, DuPont offered its MEMCOR® AMB40N modules for setting up the plant. MEMCOR® MBR, with its unique design and flexibility, helped Banka Bio get tertiary treated water directly at the outlet of the MBR tank, eliminating the need of clarifier, sand filter, and carbon filters. This not only enabled the client to upgrade the existing treatment system to MBR, but also led to capacity augmentation while delivering ultrafiltration (UF) grade treated water at the outlet. In addition, the newly developed Header plate assembly for the AMB40N Modules enabled the client to install the plants in low height areas where maximum heights are 4 meters.



The benefits

With the help of DuPont's MEMCOR® MBR, the client has been able to achieve log 3 reduction in bacteria, log 2 reduction in virus, attained Turbidity less than 1 and TSS less than 2. Some other benefits for clients include:

1. Shorter lead times as the local stock is maintained by DuPont.
2. Strong technical support by the DuPont team.
3. Lower energy consumption for MBR membrane air scouring.

DuPont's MEMCOR® MBR is thus proved to be a cost-effective, reliable solution to the clients.

Customer quote:

"When we meet our end user expectations by delivering 100% recycled water to meet their environmental social goals, it gives us biggest joy as a service provider"

– Vishal Murarka
CEO, Banka Bio



Water Solutions
Have a question? Contact us at:
[dupont.com/water/contact-us](https://www.dupont.com/water/contact-us)

All information set forth herein is for informational purposes only. This information is general information and may differ from that based on actual conditions. Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where DuPont is represented. The claims made may not have been approved for use in all countries. Please note that physical properties may vary depending on certain conditions and while operating conditions stated in this document are intended to lengthen product lifespan and/or improve product performance, it will ultimately depend on actual circumstances and is in no event a guarantee of achieving any specific results. DuPont assumes no obligation or liability for the information in this document. References to "DuPont" or the "Company" mean the DuPont legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED. No freedom from infringement of any patent or trademark owned by DuPont or others is to be inferred.

DuPont™, the DuPont Oval Logo, and all trademarks and service marks denoted with™, SM or ® are owned by affiliates of DuPont de Nemours, Inc. unless otherwise noted. © 2022 DuPont.

45-D04363-en Rev 1 CDP
December 2022