



Dow Water & Process Solutions

DOW™ Ultrafiltration Treats Municipal Wastewater Reused by Arizona Community

DOW UF replaces existing competitor UF system to provide more output with reduced costs



Dow Water & Process Solutions, a business unit of The Dow Chemical Company, provided Ultrafiltration Membrane Technology to treat tertiary effluent for water reuse through aquifer recharge in Fountain Hills, Arizona. The town of Fountain Hills relies on water reclamation to maintain aquifers at sufficient levels while preserving their drinking water. The reclaimed water is then reused by residents and businesses by pulling it back up from the aquifer through municipal wells at a different location.

The existing microfiltration system had modules with 50 m² of membrane area to produce 2.5 MGD. The plant capacity was increased to 4.95 MGD using the larger, more efficient DOW™ SFD-2880 Module with 77 m² of membrane area. The hydrophilic PVDF fibers used in the Dow modules facilitate easy cleaning and long term performance at a flux of 36 gfd. Producing twice the clean water with fewer modules in the same building footprint, the overall capital cost of the project was cheaper to build new skids with Dow modules than to replace existing modules.

Upgrading the existing microfiltration membrane with Dow's 0.03 µm pore size PVDF hollow fiber ultrafiltration membrane has increased the rejection of bacteria and viruses. This has allowed the plant to cut costly feed water chlorination, reducing the formation of hazardous disinfection byproducts such as trihalomethanes (THM) helping to create a safe, long term water supply.

Fast Facts	
Country	USA
End-User	Fountain Hills Sanitary District
Start-Up Date	September 2013
Temperature	77°F (25°C)
Feed Water Source	Municipal Wastewater Tertiary Effluent

Performance	
# of Modules	162 SFD-2880 Modules
Design Flux	36 gfd (61.2 lmh)
Plant Capacity	4.95 MGD (782 m ² /hr)
Recovery	94.30%
Filtrate Quality	Turbidity <0.1 NTU 100% of the time

Operating Conditions	Frequency	Duration	Chemical Consumption
Filtration	–	40 min	None
Air Scour	Every 40 min	30 s	None
Backwash	Every 40 min	30 s	None
Forward Flush	Every 40 min	60 s	None
CEB	Oxidant every 24 hours	15 min	1000 ppm NaOCl
CIP	Every 30 days, typically longer	3 hr	0.2% HCl, 0.1% NaOH, 0.2% NaOCl

Wastewater Treatment Process



Call us directly

North America 1-800-648-9260
International 650-800-7818

Call our Customer Information Group

North America 1-800-447-4369
Europe + 800 3 694 6367
China 400-889-0789
Latin America + 55-11-5188-9555

www.dowwaterandprocess.com

Notice: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, 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 Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN EXCEPT FOR ANY SPECIFIC WARRANTY SET FORTH HEREIN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.