# Brushy Creek MUD – Filtration Evaluation

Round Rock, Texas

BCMUD operates a surface water treatment plant (WTP) that treats raw water from Lake Georgetown and groundwater from the District's water wells. The WTP has been in operation for approximately eight (8) years and is equipped with Pall Microza membrane filtration modules with a total rated capacity of approximately 8 MGD.

The WTP has four (4) membrane trains (racks) currently at various stages in their life cycles. Three do not recover to expected levels after cleaning. A strategic plan was needed to address capital investments in this critical infrastructure.

MRB Group developed a joint process study plan which included Brushy Creek staff as well as Pall, the manufacturer. Objectives included:

- A comprehensive plan for replacement of membrane modules,
- Expansion of the plant capacity to meet projected future demands,
- Operational guidance to assess membrane performance, and
- Guidance to determine when future module replacements are necessary.

Several process improvements were identified in the plan:

- Programming changes improved recovery to the design target set by Pall (95.3%) which reduced backwash waste by approximately 68,000 gpd.
- Changed CIP cleaning protocol to more closely match Pall standard which reduced chemical cost by $10,500 per year and improved cleaning.
- Provided clear operational guidelines that allow operators to reduce the frequency of chemical cleaning (CIP) when production levels are low.
- Recommended Integrity Testing (IT) at separate intervals from Enhanced Flux Maintenance (EFM) saving costs and providing more operational flexibility.
- Reprogrammed the flow control valves to reduce required feed header pressure and allow older modules to process less flow than newer modules.

Client: Brushy Creek Municipal Utility District

Location: Round Rock, Texas

Completion Date: 2015

Engineer: MRB Group

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