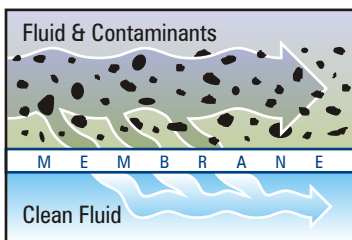


# Clean Up Heavy Solids-Laden Waters and Brines with Cross-Flow Filtration from Total Separation Solutions.

Finally, there is a solution for removing contaminants never before possible from your heavy, solids-laden waters and brines. When normal filtration methods are no longer practical or economical, Cross-flow Filter Tube Bundles from TSS get the job done!



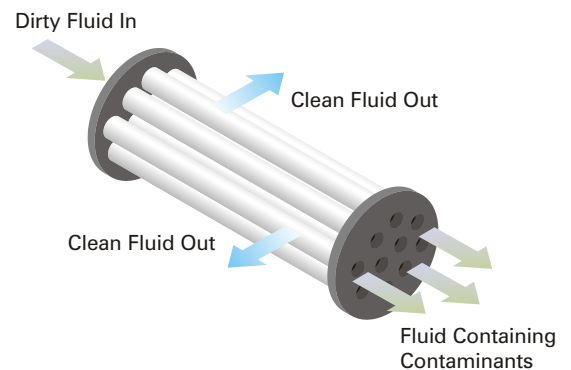
In cross-flow filtration, the fluid flows into the top of the tubes and down through the middle, where it passes through a membrane. The feed

water itself is used to carry contaminants away from the surface of the filter, thereby preventing solids buildup. The fluid still containing contaminants travels at a high enough rate of speed so that the particles actually "clean" the filter. This self-cleaning property extends the life of the tube, making cross-flow filtration an economically viable method. Any fluid with remaining contaminants is then re-circulated to the feed reservoir, where it continues to go through the filtration process until no more clean fluid can be removed. While dead end filters require change outs, and D.E. filters require frequent blow downs, cross-flow filtration keeps on filtering.

Total Separation Solutions offers two types of cross-filtration tube bundles - small mouth and large mouth. Both the small and large mouth bundles are comprised of ten tubes, and are furnished in porous plastic or sintered metal, depending upon your application.



One Tube Bundle



**TOTAL SEPARATION SOLUTIONS, LLC**

*Innovative Technologies in Fluid Filtration, Processing and Reclamation*

[www.totalsep.com](http://www.totalsep.com)

# Cross-Flow Filtration from Total Separation Solutions

## Small Mouth Tube Filters

- Operate at low differential pressure
- Filter to a 0.5 - 2 micron range
- Permeate, or clean flow, is less than 3% of the total flow

## Applications:

- Recovery of contaminated brines
  - Iron
  - Solids
  - Cleanup of backwash waters

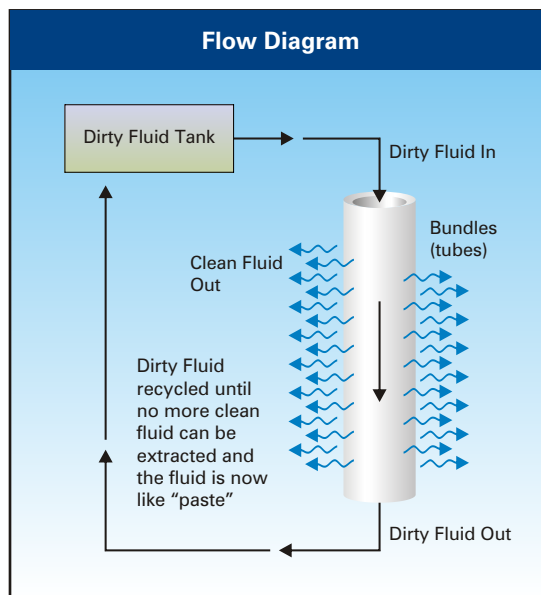
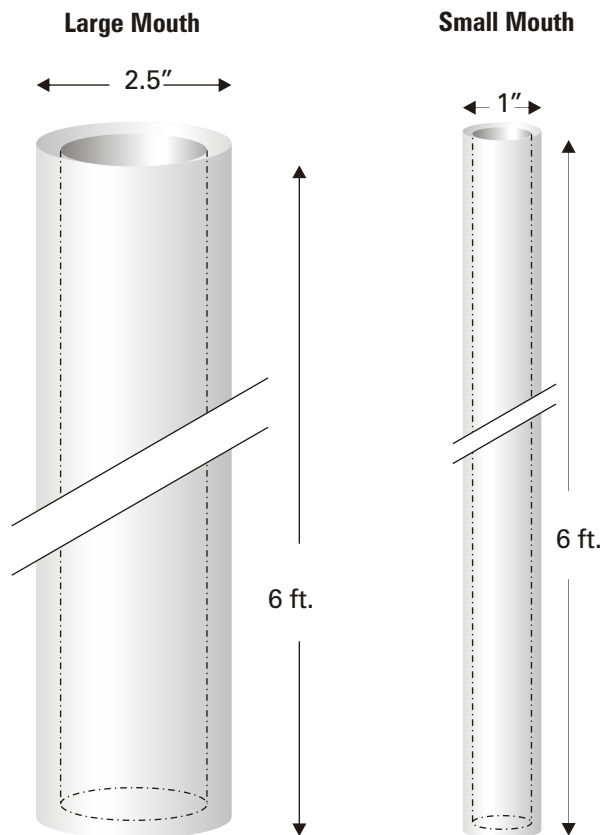
## Large Mouth Tube Filters

- Designed to operate at higher differential pressure
- Filter down to a 20 - 40 micron range
- Clean flow is 5 - 90% of the total flow

## Applications:

- Pre-filter for brine filtration
- Recovery of return frac fluids

Total Separations Cross-Flow Filtration tubes operate almost continuously, and can help you reclaim expensive fluid and lower your disposal costs. For more information, contact Total Separation Solutions today.



**TOTAL SEPARATION SOLUTIONS, LLC**

*Innovative Technologies in Fluid Filtration, Processing and Reclamation*

6650 W. Sam Houston Parkway N. • Suite 450 • Houston, Texas 77041  
Phone: 832-467-3400 • Fax: 832-467-4800  
[www.totalsep.com](http://www.totalsep.com)