

# VACUUM MEMBRANE DISTILLATION PILOT SYSTEM



## Pilot Unit

53' Tractor Trailer VMD Pilot System

## System

Feed Tank Volume	1600 gallons
Feed Tank Volume - below the side inlet/outlet	200 gallons
Process Volume Minimum Per Batch	1000 gallons
Permeate Tank Volume on Trailer	40 gallons
System	6 Modules
Gallons Per Minute	4 to 5 GPM
Process Time - Full Feed Tank	6 to 7 hours
Operating Pressure	<10 psi
On Board Control Room for Data Acquisition	Included
Air Cooler	Included

## Electrical Requirements

3 Phase Power	460V/3Phz/50A/60Hz
Single Phase Power	110V/1Phz/40A/60Hz

## Thermal Requirement

Natural Gas/Waste Heat/Propane/Solar	2.6 MBTU per Hour
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## Influent Water to Pilot Unit

High TDS Loading	10,000 to 240,000 mg/L
Optimum Operating Water Temperature	60-75 C 140-170 F
Low Operating Water Temperature	35-75 C 95-170 F

## System Benefits

Design	<ul style="list-style-type: none"> <li>•Low Operating Cost</li> <li>•Mobile Design; Transport to any Location</li> <li>•No Metal Components</li> <li>•Low Operating Pressure</li> <li>•Minimal Electrical Needs</li> <li>•Real Time Data Acquisition during Operations</li> <li>•Converts Vapor Phase to High Quality Permeate</li> </ul>
No Scaling	<ul style="list-style-type: none"> <li>•No chemicals or antiscalants used in treatment</li> <li>•Homogenous PTFE Hollow Fiber Membranes</li> <li>•Less down time and maintenance</li> </ul>
Less Energy	<ul style="list-style-type: none"> <li>•Low operating temperature 35C – 75C</li> <li>•Efficient use of waste heat</li> <li>•Heat recovery within system design</li> </ul>
Water Recovery	<ul style="list-style-type: none"> <li>•95-98% feedwater recovery rates</li> <li>•High recovery equals more water for reuse</li> <li>•High purity water for reuse &lt;50 mg/L TDS</li> </ul>
Less Brine	<ul style="list-style-type: none"> <li>•Reduce brine disposal or pond costs</li> <li>•30 to 60% less concentrated brine for disposal</li> <li>•Achieve super saturation up to 46% salt</li> </ul>
High TDS	<ul style="list-style-type: none"> <li>•Feedwater streams up to 240,000 TDS (24% salt)</li> </ul>

