

# Vacuum Membrane Distillation Demonstration



## **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	480V/3Phz/50A/60Hz
Single Phase Power	110V/1Phz/40A/60Hz

## **Thermal Requirement**

Natural Gas/Waste Heat/Propane/Solar	1.8 MBTU per Hour
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## **Influent Water**

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

## **System Benefits**

### Design

- Low Operating Cost
- Mobile Design; Transport to any Location
- No Metal Components (corrosion resistant)
- Low Operating Pressure
- Simple Electrical Hook up
- Real Time Data Acquisition
- High Quality Permeate

### No Scaling

- No chemicals or antiscalants used
- PTFE Hollow Fiber Membranes
- Less down time and maintenance

### Less Energy

- Low operating temperature 35C – 75C
- Able to use waste heat
- Heat recovery within system design

### Water Recovery

- 95-98% feedwater recovery rates
- High recovery equals more water for reuse
- High purity water for reuse <50 mg/L TDS

### Less Brine

- Reduce brine disposal or pond costs
- Achieve super saturation of salt

### High TDS

- Feedwater streams up to 240,000 TDS (24% salt)

