

Membrane Recovery Systems

Sustainable Solutions for Cooling Tower Water recovery applications



Beta's breakthrough developments in automated water recovery technology provide a cost effective solution for recovering process water from various industries.

Beta's automatic membrane system yields the highest possible product to waste ratio. Beta also offers a full line of evaporative and crystallization technologies that synchronize with our membrane systems to produce a minimal discharge alternative.

Advantages

- Produces good quality water
- Lowest operating cost
- Skid-mounted and container protected
- No chemicals required
- Lowest possible environmental footprint
- Automated for minimal supervision
- Modular design reduces downtime
- Digital tracking and recording of performance



Lowers Operating Cost

Beta's membrane recovery system conserves energy, requires no chemicals and costs less than 30% of the alternative technologies to own and operate. The system has a very small installed footprint and runs without an on site operator. Since it produces no increased disposal cost or environmental liability, this process is the least expensive and most sustainable process available. The system typically pays for itself within a few months.



No Chemicals Required

For over 30 years, Beta has pioneered sustainability through our focus on recycle and reuse of hazardous waste product streams. We make it our mission to invent and apply technologies that minimize both personal and corporate exposure. Our engineers design technologies that are energy efficient, automated, and cost effective.

In our experience, nothing good ever happens when harsh chemicals must be used and handled. The membrane process uses only pump pressure and robust membranes to produce the highest quality product. Since no chemicals are required, safety and environmental liabilities are minimal.

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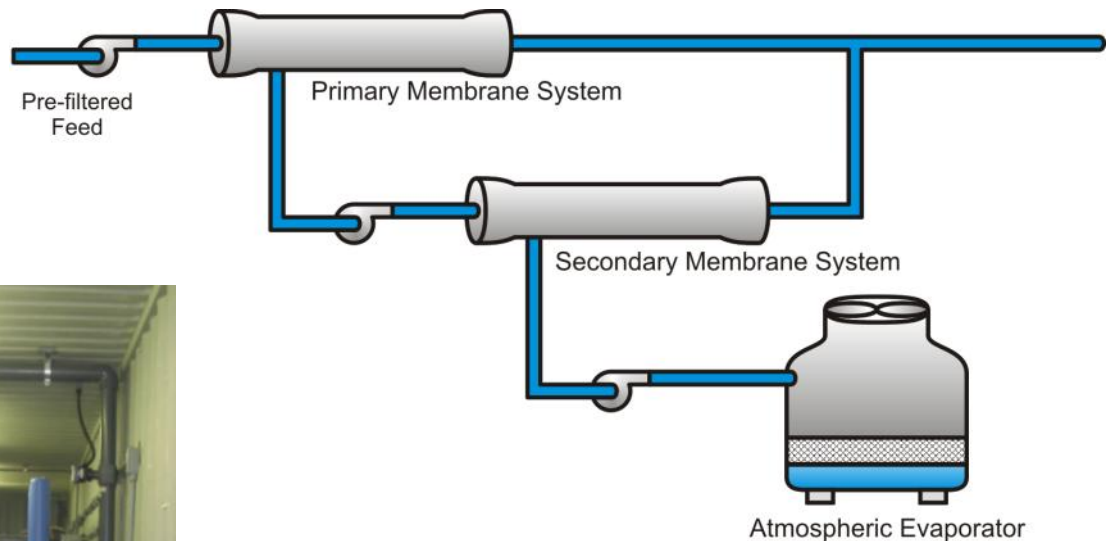
Operation

Our oxidation and pre-filtration system produces a high quality, suspended-solids-free filtrate.

After pre-filtration, the salt removal begins. A centrifugal pump drives the filtrate through the Primary Membrane System equipped with our special low energy membranes. This stage recovers about 80% of the water as a very high quality permeate product. The remaining 20% of the feed volume continues to the Secondary stage.

In the Secondary stage, the concentrated brine from the first stage feeds through a booster pump into the membrane concentrator. In this stage, the membrane process generates permeate well below discharge limits while concentrating the brine to levels far above seawater. The volume of the Secondary permeate, when added to the Primary permeate, represents recovery of over 98% of the initial well water.

The super-concentrated brine from the Secondary process is then fed to the final step—atmospheric evaporation. The evaporator further increases the final salt concentration and reduces the brine volume. We utilize recovered energy from the membrane pumping system to drive the motors required for the tower, rendering this step of the process essentially energy free. This brine is then collected and either evaporated and crystallized offsite or trucked to an injection well after solids extraction.



Sustainable Solutions

Beta designs, manufactures, installs, and supports its own resource recovery equipment. We provide cost effective, robustly engineered systems that recover your assets and attain your company's environmental and financial goals.

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