

Location: California



Applied Membranes Inc. harvests success and boosts crop yields with advanced water treatment system

Efficient water management and purification is essential to optimize hydroponic crop health, yield, and water conservation.

Challenge

Our customer specializes in cultivating premium-quality tomatoes, cucumbers, lettuce, and an array of hydroponic fruits and vegetables.

With a commitment to providing local communities with healthy, non-GMO produce, their focus lies in eco-friendly, sustainable farming practices.

The customer wanted to improve crop yields and quality while reducing water consumption in their greenhouse operations.

The goal was to procure a system that not only purified water for irrigation but also recycled nutrients and maintained high-quality standards in a sustainable manner.

Solution

Applied Membranes designed and built an innovative, cost-effective **20 GPM (5 m3/h)** water treatment solution built inside a 40-foot container.

The 40ft RO high cube insulated industrial-grade container was designed for hassle-free onsite installation.

The integrated system included AMI ultrafiltration (UF) membranes. These UF membranes filter out bacteria, viruses, and fine silt/clay from water sources, ensuring high-quality irrigation while preserving essential nutrients.

AMI system delivered high-quality, low-conductivity product water, stored in a large nearby tank, while the concentrate was safely routed to drainage.

Results

AMI system enabled retention of nutrients within the water and facilitated water reuse in the irrigation process.

With the AMI system, the customer could efficiently water distinct crop varieties with specific nutrient blends.

- **Enhanced crop quality and yields:** AMI system significantly improved crop quality and yield by ensuring a consistent and purified water supply rich in essential nutrients.
- **Water conservation:** Through water reuse, the system reduced overall water consumption, promoting sustainable farming practices.
- **Nutrient management:** Separate irrigation for distinct crops with customized nutrient blends optimized the growth and health of different crop varieties.

Key Features:

- Storage tanks
- Pumps to handle higher turbidity water
- Multimedia filtration, carbon filtration, and other pretreatment
- Nutrient removal system

