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HYDRANAUTICS

PRESS RELEASE – FOR IMMEDIATE RELEASE

Hydranautics' membrane technology helps solve water scarcity and bring environmental sustainability

Map of South America

Clean fresh water is vital to living. However, a myriad of water related issues – including population growth, increased water consumption, diminishing water supplies due to climate change, and contamination - are exacerbating water scarcity in most regions of the world. Tocopilla, a dormitory Chilean city off the coast of the Pacific, is no stranger to the fragility of freshwater ecosystems.

The city of Tocopilla needed a sustainable source of water as their water was supplied from the surface sources from its surrounding mountains. The ecosystems of mountains are highly fragile and are easily disturbed by high rainfall, steep slopes, and erodible soils – the latter being a major pollutant of surface waters. To address the growing need for a sustainable drinking water supply for Tocopilla, a desalination plant was built to turn seawater into drinking water using Nitto Hydranautics' innovative membrane technology, making this community the first Chilean city to adopt a more sustainable approach to water consumption.

Working with saltwater – a challenging liquid

Desalination is a process that removes dissolved salts and other minerals from water. But it can be challenging to do, as salt is very corrosive and can damage the devices designed to remove it.

Reverse Osmosis systems use external pressure to send water through a series of membranes to reduce the salinity level. Seawater has a high salinity level, which requires a higher level of pressure for proper permeability and salt rejection. This high pressure typically requires more energy and is more taxing on the membrane.


Reverse Osmosis System

Nitto's Hydranautics is a global leader in membrane technologies with extensive experience in high performance membranes. They have developed reverse osmosis membranes specifically designed for seawater use. Mr. Renato Ramos, the Hydranautics Sales Director in Latin America reccomended the SWC6-LD membrane for the plant's needs. "The SWC6-LD membrane has a unique combination of high flow, lower energy requirements, and low salt passage to support Tocopilla's requirements." The membrane was the optimal choice, and Tocopilla soon began enjoying the results.

A sustainable water supply

In addition to reducing the impact Tocopilla has on the freshwater system of the surrounding mountains, the systems built for the Tocopilla desalination plant provide a climate-independent source of drinking water to meet the current, and future, needs of the community. The daily desalinated water production reaches roughly 20 gallons per second, which equates to 1,711,835 gallons of drinking water per day. For the city of Tocopilla, with a population of roughly 25,000, this means the desalination plant will supply 100% of the community's needs.

Calcite Contact Tank

The sustainable viability of the desalination plant as a water source was assessed prior to plant construction. An environmental study was performed, as part of the engineering process, to determine the environmental impact of seawater purification using Hydranautics membrane technology.

The plant is dedicated to environmental protection and was diligent in mitigating the environmental impact of the desalination plant, particularly by the brine discharged into the sea. Modeling studies were conducted to evaluate the behavior of the marine currents in order to determine the best way to dilute the saltwater discharge as quickly as possible. The plant was able to create a method that preserved the same water quality in order to protect marine life.

An economic win for the city

In addition to the sustainable benefit of the desalination plant, in economic terms, the work associated with developing the plant contributed more than $4.6 million USD in local contracts for services associated with construction. Additionally, Good Neighbor Work Table, an association to create a permanent dialogue with the community, was established. The association contributed more than $210,000 USD to the community in the form of investment funds, trade development programs, and environmental education activities that focus on the production of desalinated water.

Tocopilla Desalination Plant

To learn more about Hydranautics, please visit the website www.membranes.com

ABOUT HYDRANAUTICS

Hydranautics is a part of the Nitto Group and one of the global leaders in the field of Integrated Membrane Solutions. Hydranautics offers complete membrane solutions like Reverse Osmosis, Nanofiltration, Ultrafiltration, and Microfiltration for Water, Wastewater and Process treatment and applications. Hydranautics membrane-based solutions are currently in use on seven continents throughout the world for diverse applications such as Seawater Desalination, Industrial High-Purity Water, Surface Water Treatment, Waste Water Treatment, Specialty Process Applications etc. Our Global Membrane Division is headquartered in Oceanside, CA, USA and we have 3 state-of-the-art manufacturing sites located in Oceanside – USA, Shiga – Japan and Shanghai – China. For further information on Hydranautics kindly visit our website www.membranes.com

ABOUT NITTO

Nitto is Japan's leading diversified materials manufacturer. Based on four core technologies: adhesion, coating, polymer function control, and polymer analysis & evaluation, Nitto provides customers with various products such as polarizing films for displays, industrial adhesive tapes, reverse osmosis membranes for desalination and transdermal drug delivery patches. Under the brand slogan of "Innovation for Customers", Nitto is contributing to a better life by solving social issues and improving corporate value. For further information on Nitto please visit www.nitto.com

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