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OPENING THE OCEANS TO THE WORLD



Sea Water Desalination Simplified



Desalination - Points To Ponder

Water is a source of life and the world has only a total of 1.65 billion km³ of water. However, only 0.3% of this total quantity is theoretically usable as fresher water and only 10% of that (i.e. 0.03% of the world's water) is capable of economical utilization. In the environment report "Global 2000" the following comments occur:

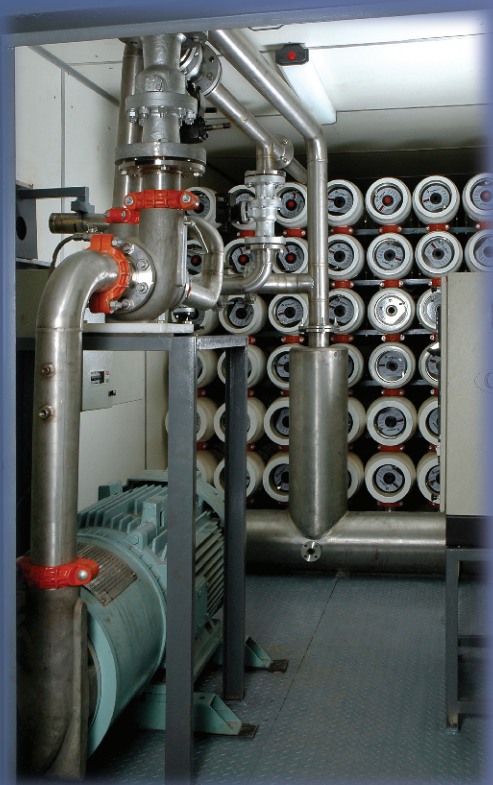
The notion that water is a freely available resource will no longer be encountered anywhere in the world in 20 years time.

Worldwide sea water Desalination has been a very effective and economical way of producing potable water for drinking and industries. It is a myth that seawater Desalination is exorbitantly expensive. But the fact is it is affordable.

Reverse Osmosis plants to convert sea water to potable drinking water and for other usages have been prevalent throughout the world for more than 3 decades. The sea water Reverse Osmosis membranes have improved in technology and efficiency over the last 15 years.



VFD & Electrical Panel - Containerized.



Internal View of Containerized Desalination Plant

The current technology available for sea water Desalination through reverse Osmosis System has proven to be cost effective and easily maintainable. With proper process design and efficient conservation of energy sea water Desalination system with Reverse Osmosis can be a long-term solution at an affordable price. With technologies to save power such as "energy recovery turbines" cost per ltr. of Desalinated sea water to potable water can work as low as US\$0.001 per litre. Including cost of running maintenance and power.



Advantages Of Canadian Clear

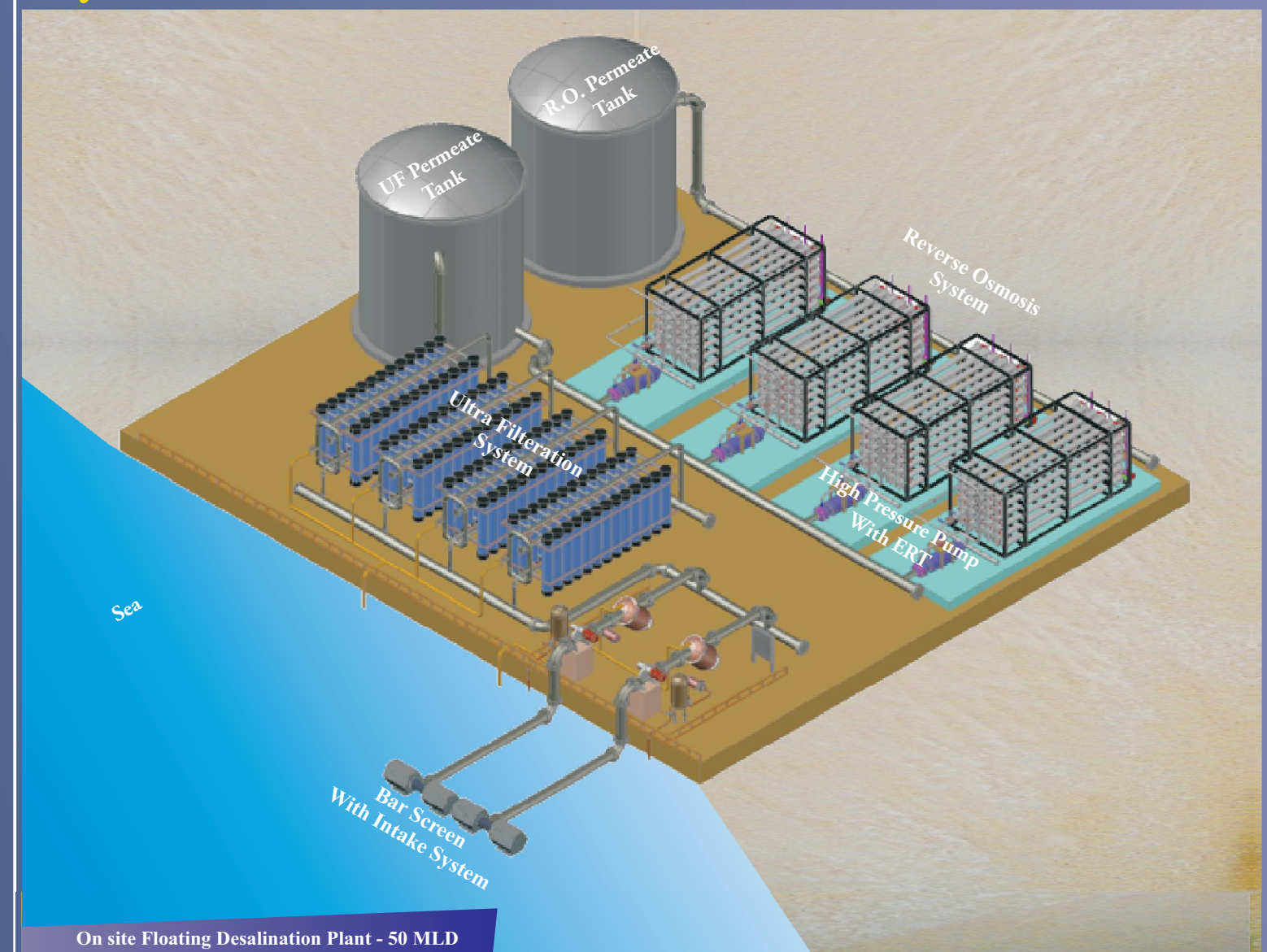
- ✓ Pure Water can be extracted from tap, Brackish and sea water.
- ✓ Low cost desalination with reduced initial investment.
- ✓ Superior quality of desalination water.
- ✓ R.O process operation in different operating temperature.
- ✓ Simple operation and easy maintenance.
- ✓ Eco Friendly Systems.
- ✓ Modular design, easily expandable.
- ✓ Immediate delivery and preinstalled equipments.
- ✓ Off the shelf modules.



PRE - FILTERS

Applications

- ✓ Drinking water for municipalities, Townships, Ships and Barges.
- ✓ Drinking water for tourist resorts, development sites and start-up power



On site Floating Desalination Plant - 50 MLD

Economics

Our efficient high end technological design is implemented with the following engineering techniques:

- ERCPC – Energy Re-claim Critical Points.
- EEO – Energy Exchange Osmosis.
- EF – Environmental Friendly Systems.

Our systems can desalinate seawater at a low cost.

Technical Features

Pretreatment:-

Wide range of selectivity in Pre-treating Seawater for various applications, including Beach wells, Sea Floors and on Shelf intake systems.

Filtration Techniques :-

- Clarifiers
- Media Filters
- Ultra Filtration

Energy Reclaim :-

The process include

- Energy Recovery Turbines
- Pelton Wheels
- Pressure Exchangers

STANDARD SIZES

500 m³/day
1000 m³/day
2000 m³/day
5000 m³/day
10,000 m³/day



BAG FILTERS

Our Flexibility

Canadian Clear desalination plants are the complete solutions with readily assembled standard modules and modular building systems. This increases quality and reduces expenses and time is saved on assembly and commissioning.

Canadian Clear comprise materials and components of the highest and are manufactured in the best industrial environment and under strict specifications.

Canadian Clear Plants come in various sizes based on standard modules with all principal components.

The production capacity can be modified using standard modules combining different trains to construct broader range of capacities depending on the needs.



Efficiency & Expertise

Canadian Clear Group of Companies was established in 1972. Canadian Clear Research and Development wing has the ability to design and develop complete Water Treatment and Purification Systems to the ultimate user. For the last four decades CANADIAN CLEAR has successfully designed manufactured, installed and commissioned number of Water Treatment Plants with indigenous and foreign technical know-how to prime industries, fertilizers, hospitals, Government and semi-Government organization, off-shore oil rigs, refineries, soft drink manufacturers, breweries and mineral water manufacturers for various applications.

With proper selection of sea water source understanding the factors of high tide and low tide, backwaters of sea can be exploited with much higher efficiency through the Recover Osmosis System than directly drawing water from the sea. The sea is an endless resource of water and will never deplete even if large quantities of water are drawn from its resource. The reject water from the Reverse Osmosis System can be sent back to the sea as they constitute only with concentrated salts which has originated from the sea water itself. The concentrated salt is of such micro-level that it can never increase the concentration of salts in the sea water.

Alternatively, the reject water from the Reverse Osmosis System can be utilized for producing common salt by natural drying method or by flash evaporators or other salt recovery methods. The investments on Desalination plants today are not highly exorbitant as it was 15 to 20 year ago. With world market opening up to open trade the viabilities of such projects are very encouraging.

Canadian Clear with its vast expertise in the field of Water Treatment in the last 4 decades has come out with cost effective and high efficiency RO recovery systems for sea water Desalination



Aerial View of Satellite Mapping - Site Layout

Design & Conceptualization

Canadian Clear with vivid innovation and development has created different designs and concepts for Desalination. All our system are compact by eliminating the high investment on civil infrastructures. The cost of implementing the Desalination plant is concentrated towards technology, plant and machinery rather than dumping money on gigantic civil structures

Canadian Clear has focused its expertise on compactness and readily available complete systems, which saves the essential factor of time. Technology is other primary core sector of Canadian Clear, which allows us to be different from our competitors.

We revel in technology, structuring layout. compactness, operation cost and in deliverance.



Containerized Plant



Internal view - Container

Containerized Reverse Osmosis systems

(Brackish Water/Sea Water):

Canadian clear has over the years built specialized brackish water and sea water plants keeping in focus relief and green cities, war time army requirements, make shift facilities as well as sea side resorts.

Containerized Brackish/Sea water Desalination Systems are assembled in 20 feet and 40 feet containers to meet the

Features

The containers are well equipped with the following:

- ✓ Air Conditioning
- ✓ Internal Lighting
- ✓ Metal Checkered Floor
- ✓ Total Internal Piping with Water Treatment Plant
- ✓ Centralized Power Panel
- ✓ Voltage Protection Devices
- ✓ Windows (Optional)
- ✓ Power Jack Cabling between Generator & Container Main Panel
- ✓ Wall Panelling
- ✓ Back Up Generator
- ✓ Polyurethane Insulation
- ✓ Instrumentation Panel
- ✓ Overload Protection Devices
- ✓ Input Output Water Pipelines with Enclosed Boxes



Apart from the above, Canadian Clear uses special CPVC Frontal Piping for the pre-filtration along with advance composite FRP vessels for the Multi Media Filters. The raw Water Pump is inbuilt in the container to provide required feed to the pre-filtration. Specialized hi-tech supports are provided throughout the container to hold equipments and pipings from vibration and also to take the endurance of shifting the container from one place to another. Stainless Steel High Pressure Multistage Pumps from worlds leading brands like Pump Engineering, FEDCO Sulzer, ERI, Danfos or Canadian Clear (Canada) are used. State of the art Advance Composite FRP Epoxy Vessels, which can stand pressures from 400 to 1000 psi, are used as Reverse Osmosis Housings. Reverse Osmosis systems, CIP systems complete with CIP pump, CIP cartridge filter and CIP tank are provided for turnkey projects

Pre Micron Bag filters as well as Cartridge Filters are provided prior to the Reverse Osmosis system. All pipings in the RO Systems are made out of Duplex SS / SS 316L, 316 and the Permeate line out of 304. Magnetic Flow Meters are provided in the product and reject output. Pressure cutoff switches for high pressure/low pressure, TDS, pH as well as ORP Digital Display cum Controller are provided interlocked with Annunciator Panel. Input, Output water jacks are provided with hoses for easy connection between containers. User-Friendly manuals are provided along with containerized project for easy start-up at site. The above systems are totally

Skid Mounted RO Systems

