

# Containerized



## Consistent Water Supply and Wastewater Treatment for Remote Islands, Rural Towns, and Urban Environments

From short-term solutions to long-term, reliable water treatment, we develop systems that work for you.

Oils For Africa Water's custom modular solutions for remote communities and urban populations cater to the needs of both rural and city dwellers, transient and

permanent populations. We specialize in Reverse Osmosis (RO), Ultrafiltration (UF), and membrane separation processes that allow the removal of a wide variety of dissolved materials from water and effluent.

### Ready-to-Use Modular Systems

Oils For Africa Water designs, manufactures, and supplies modular, containerized water treatment plants for the municipal and industrial sectors.

- ▶ Pre-assembled, containerized modules enable fast installation and commissioning.
- ▶ Skid-mounted pretreatment systems and RO units are shipped to site after complete validation testing at our production facility.
- ▶ Systems are supplied with central control systems for easy operation and remote monitoring.

## Fast & Easy Installation, Simple Relocation

Fully containerized plants can be designed for simple relocation, enabling the plants to be dismantled, transported, and then reassembled at a different

location. When the plant is removed from the site, there will be no trace of the complex water treatment system left behind.

## From Standalone Systems to Full-Scale Plants

Oils For Africa Water designs systems to meet clients' specific needs from self-contained systems to modular plants.

Our small-to medium-size desalination plants have capacities from 150-50,000 m<sup>3</sup>/d.

## Drinking Water for Municipalities

Our state-of-the-art RO desalination systems produce drinking water from almost any source, including sea, surface, and brackish water. Energy recovery systems reduce energy requirements by up to 40%, resulting in a more economical production of drinking water.

Implementing efficient systems under cost-effective business models can greatly reduce the cost of clean water.

## Process Water for Industrial Applications

Our advanced treatment systems deliver process water for the food & beverage, oil & gas, power, mining, metals, and other industries. Oils For Africa Water utilizes a wide range of technologies, including electrodeionization (EDI), meeting stringent international standards.

## Wastewater Treatment Prior to Reuse or Discharge

Our compact treatment plants provide on-site treatment of municipal and industrial wastewater. The fully automated plants enable rapid deployment and require minimal operator intervention. The cost-efficient systems do not require extensive local infrastructure and offer low operational costs.

Packaged wastewater treatment plants are custom configured, using proven designs and components to treat virtually any amount of wastewater.



*Oils For Africa Water's flexible approach allows every system to be customized to unique requirements and site-specific conditions, meeting the highest standards and regulations.*

Oils For Africa Corporation Ltd

Oils For Africa Water has more than 90 years of combined experience building highly successful water, wastewater, and waste-to-energy treatment solutions for diverse industries and municipalities around the world.



# Desalination



Municipal Water • Process Water • Industrial Wastewater  
& Reclamation • Seawater Reverse Osmosis

Oils For Africa  
Corporation Ltd

To ensure a consistent, reliable, and safe water supply, many communities, water authorities,

Implementing an efficient system under a cost-effective business model can greatly reduce the cost of clean, safe, and potable water. Oils For Africa Water's desalination systems produce drinking water from almost any source and are tailor-made based on site-specific feed water characteristics and specific product water quality requirements. Oils For Africa Water's state-of-the-art designs address the most demanding quality requirements, meeting and often exceeding our clients' expectations.

Providing potable water for island populations and remote communities presents special challenges. Where local water sources are limited or unfit for use, advanced treatment technologies must be utilized to purify and desalinate brackish, ground water, or seawater. Oils For Africa Water has extensive experience in developing and delivering water treatment plants to serve these needs. Oils For Africa Water's systems also provide emergency relief in the wake of natural disasters and ongoing water supply for troops in the field.

Our pre-assembled, pre-wired, and pre-piped containerized modules are specially designed for fast and easy installation and commissioning. The skid-mounted, pre-filtration systems and Reverse Osmosis (RO) units are shipped after complete validation testing at Oils For Africa Water's production facility. The systems are supplied with central control systems for easy operation and remote monitoring.

## Process Water Desalination

Oils For Africa Water designs, manufactures, and commissions advanced systems for the production of process water. The systems are able to treat water from a wide variety of water sources, including brackish and seawater, and deal with a wide range of contaminants, including turbidity, salinity, arsenic, nitrates, and more.

Oils For Africa Water's systems provide process water for a wide variety of applications, including supplying permeate for cooling and other uses, supplying demineralized water for high-pressure steam boilers, conditioning of permeate for potable use, and more.

## Industrial Wastewater and Reclamation Desalination

Oils For Africa Water designs, manufactures, and supplies wastewater treatment and reclamation systems for industrial use. Wastewater reclamation enables factories to minimize discharge and save on water costs by reusing effluent in various processes, while enabling municipalities to utilize effluents from biological wastewater treatment plants for irrigation processes.

Each system is designed and built to meet our clients' specifications, taking into consideration wastewater characteristics, effluent quality requirements, and potential for effluent recycling or reuse.

Designed to offer optimal process reliability and consistency, the systems offer a high level of automation and control, with minimal use of chemicals and minimization of wastes from the treatment process.

## Seawater Reverse Osmosis (SWRO)

SWRO systems are tailor-made based on site-specific feed water characteristics and specific water quality requirements. Seawater desalination systems incorporate Energy Recovery Devices (ERD), which reduce energy requirements by up to

40%, resulting in a more economical production of drinking or process water. Our systems feature components and equipment with the latest proven technologies, such as membranes with Nano particles and composite materials, special stainless steel alloys that are resistant to corrosion, and fully automated control and monitoring.

### NIROBOX™

Oils for Africa Water's Nirobox is a state-of-the-art seawater desalination plant designed to supply high-quality drinking water for 500 to 20,000 people per day. Offering a low carbon footprint and minimal maintenance, Nirobox is an economical and efficient solution to the drinking water needs of small communities, mining sites, oil & gas operations, islands, and remote locations.

### Typical Technologies Can Include:

- ▶ Sedimentation — gravity settling of suspended solids
- ▶ Floation—removal of colloidal and dispersed particles and materials
- ▶ Conventional filtration—media or activated carbon
- ▶ Ultrafiltration (UF) —removal of residual suspended solids, colloidal and organic matter, and bacteria and viruses prior to Reverse Osmosis (RO) desalination
- ▶ Brackish Water Reverse Osmosis (BWRO)
- ▶ Seawater Reverse Osmosis (SWRO)
- ▶ Biological treatment
- ▶ Activated carbon
- ▶ Ion-selective resins
- ▶ Disinfection

### System Configurations

- ▶ Mobile
- ▶ Skid mounted
- ▶ Containerized
- ▶ Full-scale plant

## Case Studies

### ▶ Episkopi Desalination Plant in Cyprus

The Episkopi Desalination Plant in Limassol, Cyprus was designed to provide the people of Cyprus with a reliable supply of potable water.

Oils For Africa Water manufactured, installed, and commissioned the main process equipment of the plant. The

treatment process comprises pre-treatment by ultrafiltration membranes and SWRO with energy recovery. The Episkopi plant offers an actual capacity of 50,000 m<sup>3</sup>/of drinking water for Limassol residents.

### ▶ Brackish Water Desalination at Oilfield in Colombia

At a remote oilfield in Colombia, Oils For Africa Water provided a high recovery, produced water treatment and a desalination system for reuse for client Pacific Rubiales. The feed water is brackish and contains oils, hydrocarbons, solids, and other contaminants, all of which must be removed before the desalination process.

To effectively treat the brackish water remaining from the drilling process and maximize water reuse while eliminating brine disposal, a multistage treatment plant was needed. The multistage, fully automated produced water treatment and desalination plant is designed to accommodate approximately 4,000 m<sup>3</sup>/h, or 500,000 barrels per day of treated produced water.



# Desalination

Founded in 2015, Oils For Africa Water was established with a vision to become the leading global water, wastewater, and reuse solutions provider in the middle market. Our mission is to provide leading-edge sustainable solutions by deploying our internationally experienced and highly responsive team, dedicated to achieving clients' economic and operational goals.



We have designed and built more than 7,000 plants for clients on all seven continents—in and riverside communities. Oils For Africa Water has a reputation for innovative engineering and fast municipal clients around the world.

effluent quality requirements. We perform a cost-benefit assessment, balancing investment costs with ongoing operation and maintenance costs to build a solution that is right for you.

Each custom water system is individually designed and built, considering the existing wastewater's characteristics and

Our core operations are strategically located in North & South America, the Middle East, and Europe to provide rapid response through our network of sales, service, technical, and engineering professionals worldwide.



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COUNTRIES WITH  
INSTALLATIONS

Oils For Africa Water offers any combination of tailored finance packages, as well as operation and maintenance services, for its treatment plants.

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# Mobile



Fresh Drinking Water, From any Water Source  
to any Location, Within 20 Minutes

Oils For Africa Water mobile water purification units maintain potable water supply following natural disasters and humanitarian crises. We provided emergency drinking water to international relief organizations in the wake of the Indian Ocean tsunami, after flooding in Bangladesh, and for refugees in Kosovo, Albania, and Sudan.

### When Disaster Strikes, A Fast Supply of Fresh Water is Critical

Regular sources of water can be disrupted with little warning in situations such as flood, fire, earthquake, drought, and population displacement. Where normal water supply is temporarily unavailable, our mobile water purification units stand ready to provide a constant supply of safe drinking water.

### Any Water Source, Anywhere in the World

Mobile units can produce drinking water from almost any source, including seawater, surface water, and brackish water. Produced water meets World Health Organization (WHO) drinking water quality guidelines.

### Setup Within 20 Minutes

Our mobile units are designed for fast operation and can be set up quickly and easily by field personnel with minimal technical skills.

### Operate and Relocate

Built-in power generators enable independent operation. The self-powered units can be mounted on trailers and skids or transported by truck, boat, or helicopter.

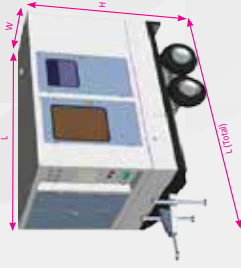
### Fast Delivery: 1-5 Units in Stock

Our expertise in designing and manufacturing mobile water purification units enables Oils For Africa Water to respond quickly in times of crisis. Units can be delivered within days of order, depending on the amount of units required. Our team worked around the clock to deliver 10 seawater desalination mobile units to the Maldives in a record time of 14 days.

### Any Water Source —

### Sea, Brackish, or Surface Water

Versatile, multi-source units are suitable for purifying lake, river, and well water, providing potable water around the clock.



### Compact Standalone Systems

A typical multi-source mobile unit has a capacity of 500-5,000 L / h (depending on feed salinity). Aside from emergency situations, mobile units serve military forces deployed in areas without reliable fresh water, as well as mining operations in remote locations.

### A Typical Multi-Source Unit Consists of:

- ▶ Feed pump on a floating pontoon
- ▶ Reverse Osmosis (RO)
- ▶ Semi Automatic screen filtration
- ▶ Disinfection
- ▶ Ultrafiltration (UF)
- ▶ Flexible pillow potable water tank
- ▶ Tap stand
- ▶ Quick Connection Piping and Cables
- ▶ Onboard diesel- power generator

Model	Caspien Seawater	Victoria Brackish Water	Omnoco Surface Water	Nile Surface Water
Portable Water Nominal Capacity WHO Standard (m <sup>3</sup> /day/gpd)	30/8,000	45/12,000	240/63,500	90/24,000
Population Served (For Emergency)	1,500	2,300	12,000	4,600
Technology:	UF	UF	Screen Filter UF	Media filter
Pretreatment	SWRO	BWRO	UF	Activated Carbon
Main treatment	Chlorination	Chlorination	Chlorination	Chlorination
Post treatment				
Dimensions (mm/ft)	L (Total) 4,090/161			
* Additional 240 mm dia. 1000 liter optional Bottom Storage Compartments	L 2,750/108			
	W 1,800/71			
	H 231/91			
Weight (Dry Including Trailer & Generator), kg/lb	2,300/5071	2,200/4850	1,300/2866	1,500/3307
Power Source	Autonomous Power Generator			
Trailer	Double Axial, Standard W/O Trailer, Low Ring, Standard Rear Lights & Brake, Spare Wheel			
Additional Items (included with all models)	Submerged pump on pontoon potable pillow foldable tank, Drinking Tap, Manifold, CIP Unit for Membranes, Spare Parts Kit & Toolbox			
Optional Items	Bottom Storage Compartments, Spare UF & RO Membranes, Grid Power, Connection			

UNICEF relief aid in Bangladesh.

Mobile emergency unit for seawater, with UF & RO membranes

Mobile unit for UN MINUSMA project in Guinea

Emergency mobile units for the Azerbaijan government



Founded in 2015, Oils For Africa Water was established with a vision to become the leading global water, wastewater, and reuse solutions provider in the middle market. We offer global solutions for desalination, water, wastewater, waste-to-energy, recovery & reuse, and food & beverage processing.



We have designed and built more than 7,000 plants for clients on all seven continents - in deserts and mountains, icy regions, seashores, and riverside communities. Oils For Africa Water has a reputation for innovative engineering and fast deployment to meet the needs of industrial and municipal clients around the world.

Our core operations are strategically located in North & South America, the Middle East, and Europe to provide rapid response through our network of sales, service, technical, and engineering professionals worldwide.



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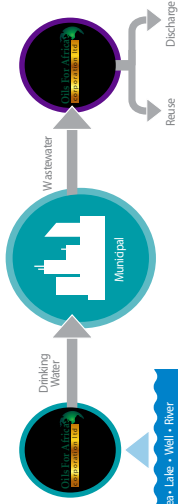
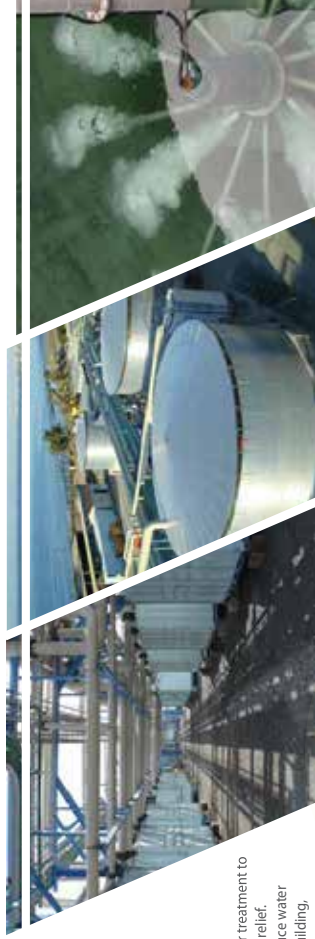


# Municipal



Drinking Water Treatment • Mobile Units  
Wastewater Treatment

Oils For Africa Water has global experience building highly successful water, wastewater, and reuse solutions for municipalities around the world.



Oils For Africa Water provides proven and affordable solutions for drinking water and wastewater treatment to municipalities, communities, commercial properties, industries, government, and for emergency relief. We have the expertise to deliver solutions to municipal authorities throughout the world to reduce water scarcity problems and drinking water-related health concerns. Our services include designing, building, operating & maintaining, and upgrading water and wastewater facilities.

## Drinking Water Treatment

Oils For Africa Water designs, manufactures, and supplies advanced water treatment systems and specializes in reverse osmosis and membrane separation processes for the provision of drinking water. The systems are able to treat water from a wide variety of water sources, including surface, well, and sea water, and eliminate a wide range of contaminants including, turbidity, salinity, arsenic, nitrates, and more.

### Typical Technologies

- ▶ Reverse osmosis (RO)
- ▶ Ultrafiltration (UF)
- ▶ Media filters
- ▶ Activated carbon
- ▶ Ion-selective resins
- ▶ Disinfection
- ▶ Clariflocculation
- ▶ Ozonation
- ▶ Biological Filtration

Our systems provide drinking water for urban and rural communities, as well as emergency relief in the wake of natural disasters and ongoing water supply for troops in the field. Systems are designed for fast installation and are equipped with central control for easy operation and remote monitoring.

### Case Study: City of Limassol

The groundwater from the local aquifer in the city of Limassol was unfit for human consumption due to high levels of nitrate (NO3). Oils For Africa Water implemented a cost-effective desalination solution to relieve the water storage without disturbing the local population. The plant was supplied on a Build Own Transfer (BOT) basis and was completed in record time – five months from order to completion. The desalination plant is designed to treat brackish water with high nitrate levels. The treatment process is comprised of:

- ▶ Pre-treatment by multimedia and cartridge filters
- ▶ Brackish water reverse osmosis
- ▶ Remineralization and post-chlorination

### Spring Water Arsenic Removal Plant, Trento, Italy

Oils For Africa Water supplied an arsenic removal plant to treat the well water in the municipality of Trento. In the treatment process, the resins are filled with iron hydroxide that absorbs the oxidized arsenic. The inlet of arsenic in this case, is 24 µg/L. The output is less than 2 µg/L and the treatment plant and process successfully produces 200 m<sup>3</sup>/h of drinking water for Trento. The filter can be used for one year without any maintenance of the resin.

## Mobile Units

Oils For Africa Water designs, manufactures, and supplies mobile units to provide a constant flow of safe drinking water in areas where a reliable supply is absent or disrupted. The easily operated and self-powered units have built-in generators and produce drinking water that always meets World Health Organization (WHO) standards.

### Case Study: Republic of Maldives

In the aftermath of the tsunami, restoring a reliable and steady supply of safe drinking water to affected populations was among the most important components of an international relief effort in the Maldives. Oils For Africa Water was selected to supply ten mobile, independent seawater desalination systems with a capacity of up to 25 m<sup>3</sup>/d each. The compact units enabled easy transportation: five units were roller-mounted for simple mobilization by vehicles and five units were designed to be mounted and transported between the islands by barge. The units were supplied within 14 days from order.



## Wastewater Treatment

Municipal wastewaters contain various types of pollutants, such as BOD5, dissolved organic matter, fats & oils, nitrogen compounds, suspended solids, heavy metals, surfactants, and more. Oils For Africa Water offers a wide range of treatment solutions and technologies, depending on the wastewater characteristics.

### Wastewater Technologies

- ▶ Aeration
- ▶ Sedimentation
- ▶ Conventional Activated Sludge Process
- ▶ Biological Nutrient Removal Process
- ▶ Anaerobic Digestion
- ▶ Tertiary Filtration
- ▶ Water Reuse (RO) and UF
- ▶ Disinfection
- ▶ Membrane Bioreactor (MBR)

### Tipton Series Packaged Wastewater Treatment

Oils For Africa Water's Tipton Series product line of packaged wastewater treatment plants provides complete solutions for on-site treatment. These extended-aeration, activated sludge plants are designed to treat municipal wastewater, providing excellent quality disinfected effluent. Packaged plants are custom configured using proven designs and components to treat virtually any volume and type of wastewater.

### Aerators

We offer a complete line of aerators, mixers, diffusers, and fountains for improving the quality of water and wastewater. Oils For Africa Water's aerators and aeration equipment are used worldwide for municipal wastewater treatment and lake rejuvenation.

## Case Studies

### Secondary Wastewater Treatment, City of Dillard, USA

Oils For Africa Water upgraded a 30-year-old Tipton packaged wastewater treatment plant in Dillard, GA to handle increased flows from a growing city. The final design included a 200,000 gallons per day (758 m<sup>3</sup>/d) extended-aeration, packaged wastewater treatment plant to treat domestic wastewater for the city. The effluent quality produced by the system has averaged better than 20 BOD5 (biochemical oxygen demand over a five day period) and 20 TSS (total suspended solids). The plant was designed as a "triple-wide" tank system to fit the existing site. The existing packaged wastewater plant was converted to serve as the sludge-holding chamber; new mechanical equipment was supplied and assembled inside this existing

# Municipal

Founded in 2015, Oils For Africa Water was established with a vision to become the leading global water, wastewater, and reuse solutions provider in the water, wastewater, waste-to-energy, recovery & reuse, and food & beverage processing.



With over 7,000 references around the world, Oils For Africa Water has been working with municipalities for decades to address their water and wastewater needs. Oils For Africa Water provides clients with integrated solutions to improve water quality, reduce waste, and reuse resources to reach economic and environmental sustainability goals. Our customers trust us to provide high-quality, reliable, and cost-effective solutions to their municipalities.

We have supplied systems to improve existing operations and have helped build new plants from the ground up. Oils For Africa Water's world-class solutions cover the complete water and wastewater cycle. Focusing on system performance, compliance with process and environmental requirements, and long-term cost-effectiveness, we are able to meet the most demanding standards of reliability, safety, and quality.



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