



**3D Global Solutions, INC**

**3D Global Solutions** is a leader in professional program management services to governments, corporations, and global organizations. We improve services by managing people, processes, technology, and assets more effectively. We provide advice to policy makers, provide innovative solutions, integrate systems, and - most importantly of all - deliver to our clients.

## **MobileRO\* Water Treatment System Description and Use**

### **MobileRO and Extended-Term Reverse Osmosis Water Treatment to serve a variety of needs**

For long-term supplemental or emergency reverse osmosis applications, 3D Global Solutions uses the GE MobileRO Water Treatment System because it provides quality, reliability and flexibility. (See Figure1 for MobileRO diagram.) Trailer-mounted for easy portability, the MobileRO System can reject most ionic contaminants as well as organics over 200 molecular weight. The MobileRO System has a total flow capacity of over 200 gpm (45 m<sup>3</sup>/hr) and can be modified to operate in single pass or two pass mode, with flows of 100 gpm (23 m<sup>3</sup>/hr) from each of two independently operated arrays. Two 60-inch (152.4 cm) diameter ASME code pressure vessels can be custom-loaded to provide additional treatment such as filtration, softening or dechlorination in either the pre- or post-RO position. Spiral-wound cellulose acetate or polyamide thin-film composite membranes are available, housed in 8-inch diameter stainless steel pressure vessels.

Included in the MobileRO System are chemical injection, full instrumentation and fail-safe shut down controls. Components are housed in a weather-proof, fully-insulated trailer with a self-contained propane heating system, set up and monitored to meet your water quality specifications by one of 3DGS's experienced, extensively trained Field Service Representatives.

### **Extended-Term Water Treatment with extra value**

Your multi-year installation can be designed to precise operating specs with the assurance that if circumstances require, our fleet of mobile equipment stands ready to supplement your permanent system.

3DGS provides components in custom skid-mount and mobile configurations to suit your specific requirements. Design features ensure system reliability for five years, ten years and beyond.

Value-added benefits include:

1. Guaranteed water quality and quantity.
2. Complete analytical and applications laboratory.
3. Technical, Engineering and Marketing Personnel qualified to meet specific plant requirements.
4. Full-time, experienced, and specifically-trained Field Service Representatives to operate and maintain your on-site system.
5. Full-service regional regeneration centers with regeneration and maintenance facilities, mobile equipment inventory, parts and resident personnel.
6. 24-hour staffed logistics, Operations and Communications Center which also monitors remote jobsite data acquisition systems.

In Extended-Term applications, 3DGS Reverse Osmosis systems provide treated water in quantities from 100 gpm (22.7 m<sup>3</sup>/h) to 2,000 gpm (453.5 m<sup>3</sup>/h) and more. RO units are also part of the DeltaFlow\* process. We can provide the engineering, structure, and operating personnel for Extended-Term applications.



## MobileRO\* Water Treatment System Description and Use

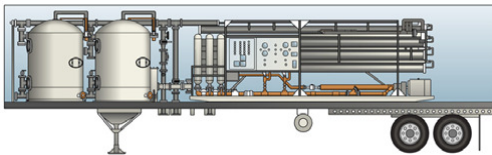


Figure 1: MobileRO

### Go with MobileRO for a variety of treatment needs

- 1) TOC reduction for boiler feedwater use.
- 2) TDS reduction prior to demineralization.
- 3) Supplemental or emergency service to support in-house equipment for water purification.
- 4) Post-treatment of DI water to remove bacteria, endotoxins and other contaminants such as colloidal silica in ultra pure water systems.
- 5) Full scale process testing for a wide variety of applications.

### General Properties

The MobileRO can be readily installed in either a pre- or post-DI position. Site requirements consist of adequate truck/trailer parking space on a compacted surface near adequate drains. The system can produce a minimum of 200 gpm (45 m<sup>3</sup>/hr) at 40°F (4.4°C) with a 300 gpm (67.5 m<sup>3</sup>/hr) feedwater supply at 50 psig (3 bar) minimum pressure. Rejection rates of 90% to 99+% can be obtained, at recovery rates of 65% to 85%, depending on influent TDS and ionic composition. See Table 1 for MobileRO specifications.

Table 1: MobileRO Specifications

	TRAILER	
Dimensions and weights	U.S. Version	International Version
Overall length with tractor	60'-0"	16.5 m
Trailer length	48'-0"	13.2 m
Trailer height	13'-6"	4 m
Trailer width	8'-0"	2.6 m
Gross trailer operating weight	41,400 lbs.	18,800 kg
Lighting and instrumentation	110V, 20 amps	220/240V, 20 amps
RO	480V, 200 amps	380-415V, 200 amps
Connections	All connections are located on underside of trailer, mid-trailer, curbside.	
Inlet/outlet	4" flange	4" flange
RO Reject	2" flange	2" flange
Heating	25,000 BTU/H propane fired heater and propane supply tank.	Electric heater, 3 KW
<b>RO SYSTEM - ON BOARD</b>		
Specifications	<ul style="list-style-type: none"> <li>• Two pre- or post-treatment ASME code vessels.</li> <li>• 200 GPM (45 m<sup>3</sup>/hr) @ 40 °F (4.4°C) Reverse Osmosis System.</li> <li>• Two x 100 GPM (23 m<sup>3</sup>/hr) arrays with stainless steel housings.</li> </ul>	
Membranes	<ul style="list-style-type: none"> <li>• Spiral wound cellulose acetate or polyamide thin film composite</li> </ul>	
Instrumentation	<ul style="list-style-type: none"> <li>• Flow indicator and totalizer</li> <li>• System pressure gauges</li> <li>• Conductivity or resistivity meter</li> <li>• Feed pressure control system</li> <li>• pH controller</li> <li>• Acid, chlorine &amp; inhibitor feed systems</li> <li>• 5 micron cartridge prefilter</li> </ul>	

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