

# **GLOBAL WATER GROUP** DALLAS, TEXAS U.S.A.

# MANUFACTURER OF THE WORLD'S BEST WATER PURIFICATION AND WASTEWATER EQUIPMENT

# Wastewater Processing & Wastewater Effluent Recycling



US Patent Application No.:13/087,086 SYSTEM and METHOD for WASTEWATER TREATMENT Inventor: Alan M. Weiss Applicant: Global Water Group, Inc.

Global Water Group, Inc., Dallas, Tx. www.globalwater.com Tel: 214-678-9866 E-mail: amweiss@globalwater.com



Global Water Group incorporated Global Water Technologies Global Water Home Systems Global Water Home Systems Global Water Design & Consulting 8601 Sovereign Row, Dallas, Texas 75247 Internet: http://www.globalwater.com

# The SOLUTION to WASTEWATER PROCESSING

These past few years it seems that everyone in the world is waking up to the real problems with "water": how it is affecting our everyday lives and how it is beginning to affect our future. Global Water Group has been a "niche" provider of the highest quality water purification and wastewater treatment equipment for over 27 years, primarily to the U.S. Military. Global Water has deployed all types of water systems on 5 continents and into over 40 countries.

The number one contaminant in the world is wastewater. Its "sludge" and dirty effluent has polluted our rivers, lakes, oceans and reservoirs. Many municipal systems are archaic and broken. Many are using the latest technologies that reduce sludge and some municipalities have started to recycle wastewater effluent for reuse.

Global's first patent filing is the "<u>only green, environmentally correct</u>" wastewater processing system which eliminates <u>all</u> of the harmful sludge and the wastewater-effluent is recycled for total re-usability, including to the quality of potable water.



ExxonMobil Rig 257 - Caspian Sea

Over the past 15 years, Global has proven these systems for the oil & gas industry (on drilling rigs) and for the U.S. Military: Navy EOD and Seals, as well as for base camps in Iraq and Afghanistan.

Global's WWR-M2.5K Wastewater-Recycling System Delivered to the U.S. Navy, EOD, San Diego, CA. Selfcontained wastewater-recycling system (including generator) to dispose of 2,500 GPD of wastewater and convert the effluent to potable water.



Building 20,000 GPD Wastewater-Recycling Systems for the U.S. Military





A 20K GPD Global Wastewater – Recycling System on the way to Iraq

Global Wastewater's modular and deployable, proprietary wastewater systems provide:

# **NO SLUDGE NO ODOR MINIMUM MAINTENANCE**

## ...AND EFFLUENT THAT IS TOTALLY RE-USABLE; EVEN POTABLE!

Global can build these systems faster, more efficiently and more cost effective than other wastewater systems; and provide every municipality, from a village to a major city, with the only environmentally correct system.

These modular systems are applicable for municipalities, villages, condominiums, schools, restaurants, motels, hotels, mobile home parks, processing plants, industrial plants, animal farms, oilfield platform rigs, oilfield jack-up rigs, oilfield posted and inland drilling barges, fixed structures offshore or anywhere sewage processing is required. These systems can be constructed of standard configurations or engineered for custom designed special configurations.

As you are the engineers who are designing the systems for tomorrow, Global offers you its expertise and product lines to help solve these emerging wastewater problems. Our engineers are ready to work hand-in-hand with you to make your business more profitable and to make our environment the friendly place it should be.

Everywhere lately, we hear the cry: RECYCLE... RECYCLE ... RECYCLE. Now what do we really need to do?

First we need to <u>ELIMINATE the SLUDGE</u>... and then we need to <u>RECYCLE</u> the wastewater-effluent back to re-usable levels... including POTABLE water.

## **THE SYSTEM**

As with a normal WTP, thorough pre-screening is required, followed by a quality, VFD-grinder pump system to send the raw sewage into the system. A super-diffuser system introduces air into the Digester: an aeration chamber using a constant air flow and enzymes to sustain a significant bacteria floc. Aside from the bacteria floc in the Digester, there is <u>no "anaerobic" process to accumulate sludge</u>. The constant air flow with the bacteria create a self-devouring floc but not an anaerobic settling process.

After a suitable digestive time, a slow volume of the cleaner effluent is displaced from the aeration chamber to the Clarifier chamber. There the remaining suspended solids settle to the bottom of the Clarifier and, via a vacuum system, are being constantly returned to the aeration Digester chamber. Particles and foam that rise to the surface are also vacuumed back into the Digester chamber. <u>At no time does the Clarifier have any "anaerobic" processing</u> that would create more sludge.

The clear liquid near the top of the Clarifier chamber flows into the Global Recycling Process. In this step, all suspended solids above 5-Microns are captured by a filtration/separation system. Activated by pressure, when the Recycler reaches its designated saturation level, a clean water back-flush is activated to flush all of those captured suspended solids back to the Digester.

Effluent at the 5-Micron level or below now flow into Global's LS3 Water Purification Component which will: (1) Filter to 1-Micron and below to remove parasites; (2) Pass through Global's proprietary multi-media component to remove all hazardous chemicals; and (3) Utilizing Ultra-Violet (or Nano-Processing) to kill any disease-carrying bacteria and viruses that remain.

There is NO SLUDGE to remove and there is no harmful effluent to release into the environment. The effluent is purified, totally reusable, and can supplement quality drinking water.

## Water Purification Systems

- Exceed EU, WHO, International & U.S. EPA Standards
- Finest quality drinking water
- Easier to operate
- Easier to maintain
- More cost efficient
- **Other Tangible Benefits:**
- Reduce health care cost
- Reduce illness for children and the elderly
- Reduce death rates among children
- Improve the quality of life
- Create jobs
- Create revenues
- Provide capital for future systems growth

#### Wastewater Processing & Effluent Recycling

- ✓ Exceed EU, WHO, International & U.S.-EPA Standards
- ✓ Eliminate the hazards and costs of sludge disposition
- ✓ Eliminate the health hazards of sewage system overflows
- ✓ Eliminate odor and other problems with waste processing
- Eliminate the distribution of over-chlorinated effluent
- Prevent the contamination of effluent runoff
- ✓ Improve the quality of life

#### Create additional potable resources

- $\checkmark$  Easier to maintain
- $\checkmark$  Easier to operate
- ✓ Cost efficient
- ✓ Create additional jobs
- Provide additional substantial Revenues
- ✓ Create capital for further improvements

#### Infrastructure Repairs and Improvements The tangibles are:

- > The cost of equipment and infrastructure
- > The revenues directly related for 20 or more years
- > Jobs
- Create a better business community

## The intangibles are:

- Quality of life improvements
- Meeting US-EPA, EU or other government standards
- > Health improvements and reduced medical costs



