



A joint effort of the
Orange County Water District and Orange County Sanitation District

What Is The GWRS?

- New 70-million-gallons per day advanced water purification facility
- Takes sewer water that otherwise would be wasted to the ocean, purifies it to near distilled quality and then recharges it into the groundwater basin
- Provides a new 72,000 acre-feet per year source of water, which is enough water for over 500,000 people
- Operational since January 2008



Why Do We Need The GWRS?



*San Luis Reservoir before
and now. Gov.
Schwarzenegger declares
emergency*

- **Extended drought**
- **Imported water shortages**
 - **Colorado River losses**
 - **State Water Project losses**
 - **Environmental restrictions**
 - **Potential levee failures**
- **Local Projects lessen dependency on outside sources**

GWRS Advanced Water Purification Process

Microfiltration (MF)



Backwash
Sent to OCSD

Reverse
Osmosis
(RO)



Brine Treated
in OCSD Outfall

Ultraviolet Light (UV)
with Hydrogen Peroxide



Expanded
Seawater
Barrier

Recharge
Basins in
Anaheim

OCSD
Secondary
Effluent

Normally
Goes to
Ocean

How Does The GWRS Work?

100% of water is treated through microfiltration, reverse osmosis and ultraviolet light with hydrogen peroxide

- Microfiltration: Tiny, straw-like plastic membranes filter out bacteria, particles and protozoa
- Reverse Osmosis: Water is forced through the molecular structure of the RO membranes where dissolved chemicals, pharmaceuticals and viruses are removed
- Ultraviolet Light with Hydrogen Peroxide: As a safety barrier, water is exposed to UV with H₂O₂ that disinfects and destroys potential harmful trace organics



GWRS Proven Reliability

- **California Department of Public Health developed permit requirements**
- **Test for over 200 compounds with all results well below permit levels or at non-detection (ND) levels**
 - **28 Volatile Organic Compounds – All ND**
 - **39 Non-Volatile Synthetic Organic Compounds – All ND**
 - **8 Disinfection By-Products – All ND**
 - **10 Unregulated Chemicals – All but one ND, all below permit levels**
 - **51 Priority Pollutants – All ND**
 - **16 Endocrine Disrupting Chemicals and Pharmaceuticals – All ND**

Benefits Of GWRS



- **Creates a new water supply**
- **Reuses a wasted resource**
- **Expands the seawater barrier**
- **Increases water supply reliability**
- **Offsets imported water cutbacks**
- **Costs comparable to imported water**
- **Saves half the energy over imported water or desalinated seawater**
- **Improves quality of water in the basin**

Strong Community Support

Proactive face-to-face outreach with more than 1,200 presentations, 700 tours and many news stories that resulted in:

No active opposition and support from:

- **100% support from cities in OCWD service area**
- **100% support from OC State and Federal elected officials**
- **100% support from Chambers of Commerce & OCBC**
- **Many business including Edison and Semper Energy**
- **All major environmental groups**
- **Several health experts, medical doctors, hospitals, pharmacists and scientists**
- **Several key minority leaders**
- **Educational, religious, police and fire leaders**
- **More than 200 community groups like Kiwanis, Rotary, etc.**
- **OC Tax, AARP, OC Farm Bureau and others**



GWRS Aerial View

