WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

# THE PURIFICATION PROCESS

## STAGE 1

### MICROFILTRATION

**REMOVES:**

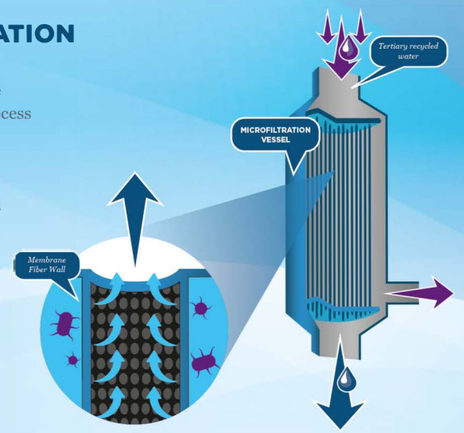
> Most Bacteria
> Fine Particles
> Sediments

> Pre-treatment before Reverse Osmosis process

> Extends the useful life of the Reverse Osmosis membranes

> Makes treatment more efficient

> Filters are the size of 1/300 of a hair




## STAGE 2

### REVERSE OSMOSIS

**REMOVES:**

> Organic Material
> Most Viruses
> Pesticides
> Salt
> Ions

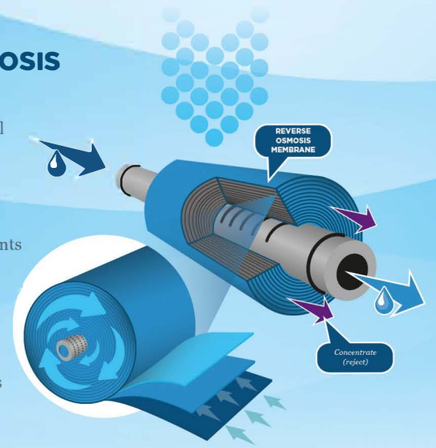
> Thin film membrane filters at molecular level

> Only water molecules can go through

> Over 99% of contaminants are removed at this process

> Best available technology for removing contaminants

> Microscopic Level




## STAGE 3

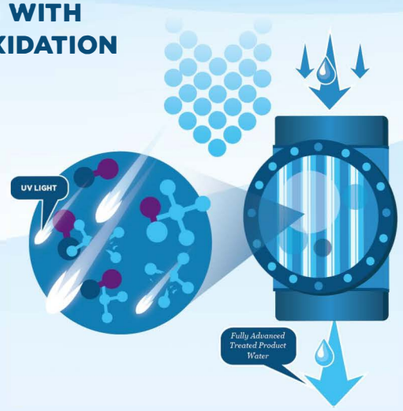
### DISINFECTION WITH ADVANCED OXIDATION

**REMOVES:**

> Pharmaceuticals
> Viruses
> Carcinogens
> Personal Care Products
> Industrial Additives/ Chemicals

> Sodium Hypochlorite and UV light breaks chemical bonds

> Another layer of disinfection

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# ABOUT WRD

Established in 1959, the Water Replenishment District of Southern California (WRD) is charged with:

» Replenishing the Central and West Coast Groundwater Basins
» Protection and cleanup of the groundwater basins against natural and man-made contaminants
» Regular and comprehensive monitoring of the quality and quantity of water in the groundwater basins

***WRD manages two of the most utilized urban groundwater basins in the nation. Groundwater from these basins provides 40% of the total water supply for four million people within WRD's service area, which includes 43 cities within 420 square miles. Through WRD's Water Independence Now (WIN) program, the two basins will become locally sustainable and will be completely independent of imported water by 2018.***

*Water Replenishment District of Southern California's service area in southern Los Angeles County*


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# GROUNDWATER RELIABILITY IMPROVEMENT PROJECT (GRIP)


GROUNDWATER RELIABILITY IMPROVEMENT PROJECT

WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

# GROUNDWATER REPLENISHMENT

The Water Replenishment District of Southern California (WRD) was established by a vote of the people in 1959 for the purpose of protecting and replenishing the groundwater resources of the Central and West Coast Groundwater Basins located in southern Los Angeles County. Prior to the formation of WRD in 1959, over-pumping caused many water wells to go dry. Lower groundwater levels also enabled contamination of the groundwater basins from coastal seawater intrusion.

Present demand for groundwater continues to exceed nature's ability to replenish the groundwater basins. As a result, WRD protects the basins through supplemental replenishment. WRD uses stormwater, recycled water imported water to "spread" in large spreading basins operated by the Los Angeles County Department of Public Works along the San Gabriel River and Rio Hondo. Once in the spreading basins, the water percolates down into the aquifers to replenish the groundwater supplies.

*Spreading Basins for Groundwater Replenishment*

# THE GROUNDWATER RELIABILITY IMPROVEMENT PROJECT (GRIP)

WRD developed a suite of projects through its Water Independence Now (WIN) program to further develop local and sustainable sources of water for use in all groundwater replenishment activities and to eliminate the need for imported water. The cornerstone project for WIN is the Groundwater Reliability Improvement Project (GRIP), a new advanced water treatment facility being constructed in the city of Pico Rivera.

The purpose of the Groundwater Reliability Improvement Project is to fully eliminate the current demand for imported water at the Rio Hondo and San Gabriel Coastal Basin Spreading Grounds (also known as spreading basins or percolation basins).

GRIP will accomplish this by providing an additional 21,000 acre-feet of local recycled water annually. This new advanced water treatment facility will purify approximately 10,000 acre-feet (3.25 billion gallons) of tertiary treated (recycled) water annually to near distilled levels. With advanced treated purified water, WRD will be able to utilize an additional 11,000 acre-feet (3.6 billion gallons) of recycled water to replenish the groundwater basins.

When completed in 2018, GRIP will:

- Eliminate the need for expensive imported water for groundwater
- Provide a locally sustainable and reliable replenishment source for the groundwater basins
- Protect the quality and quantity of groundwater
- Reduce the carbon footprint from imported water by lowering energy demands
- Comply with all related regulatory requirements
- Keep the cost of groundwater affordable for ratepayers for the long term

The GRIP facility is being built in the City of Pico Rivera, adjacent to the San Gabriel River, allowing for direct delivery of purified recycled water to an existing pipeline leading into the spreading grounds. Funding for GRIP is provided through Proposition 1 Water Bond funds in the amount of $95 million and administered by the State Water Resources Control Board.

Upon the completion of GRIP in 2018, the groundwater basins, which provide half of the water supply for the 4 million residents of the 43 cities within the WRD service area, will be completely locally sustainable.

GRIP
GROUNDWATER RELIABILITY IMPROVEMENT PROJECT

## HOW GRIP WORKS