

THE HERON

Las Gallinas Valley Sanitary District

Spring 2016

Advanced Purified Recycled Water — The New Drought-Proof Water Supply

The potential residential use of recycled water may sound unpleasant to a lot of people. However, in reality it's likely that at some point many have already used treated wastewater.

For many years, communities have discharged their wastewater into major waterways, such as the Sacramento River and the Mississippi River. Both of these are major sources of water for "downstream" communities, like cities in Southern California (via the California Aqueduct), and cities along the Mississippi River. Treated wastewater is used over and over as communities pump water out of rivers, apply traditional water treatment, use it as drinking water, and then discharge it back into the river after being treated by a wastewater treatment plant. This is referred to as de facto reuse; it is unintended reuse yet it has occurred for decades. In

another example of de facto reuse, some residential septic tanks may leach into ground water aquifers. This water filters through the ground where it can sometimes be reused by private well owners or communities — often without any further treatment.

Additionally, a lot of food crops have been irrigated with treated wastewater, and have been for many years. Much of the water used to irrigate crops comes from the California Aqueduct which, as mentioned above, contains highly-treated wastewater. The Monterey County Water Recycling Project has delivered billions of gallons of recycled water directly to growers in the Salinas Valley, known as "the Salad Bowl of the World," where a large majority of the nation's salad greens and vegetables are grown.

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Las Gallinas' reverse osmosis filtering equipment is just one step in the advanced treatment of wastewater.

We Can All Do Our Part to Achieve Zero Waste!

In addition to its wastewater collection and treatment, the Las Gallinas Valley Sanitary District provides for garbage, organics, and recycling pickup within the unincorporated County areas of the District. To do this, we contract with Marin Sanitary Service (MSS), which provides curbside service for garbage, organics (anything that comes from plants or animals that is biodegradable), and recycling.

Zero waste means not sending any resource to the landfill.

The closer we can get to zero waste, the better we are at complying with new laws concerning organics and diverting refuse away from the landfill.

Did you know that 29% of all materials placed in garbage carts by residential customers is food, and 35% of landfilled material from commercial customers is food? When food waste is sent to the landfill, it breaks down anaerobically and releases methane gas, a potent greenhouse gas – and that's not good. In fact, landfills are the third largest source of methane emissions in the United States, which makes it important that your food waste is not tossed in your garbage (gray) cart. When your food scraps are placed in your organics (green)

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cart, they are taken to a compost facility that converts your leftovers into nutritious soil. Composting produces far less greenhouse gasses than putting food waste in the landfill, and reduces the need for water, pesticides, and fertilizers when applied to farms or your home garden.

Together, the District and Marin Sanitary Service have implemented a variety of services and programs to help you manage your waste stream, reduce refuse in the landfill, and conserve resources:

Single Family Residential Curbside Services

- Customers can have one garbage cart, one organics cart, and one split recycling cart (extra yard waste and split recycling carts can be rented for a nominal fee).
- **New this year!** Scheduled curbside clean-up of extra yard waste, recycling, and garbage in the spring and the fall. Plus, two on-call curbside clean-ups of bulky items. Check with Marin Sanitary Service at MarinSanitaryService.com or call 415-456-2601 for details.

Multifamily Dwelling Curbside Services

- Multifamily residents receive services for garbage, recycling, and organics.
- With our MSS partner, we can work with property managers to help provide the tools to develop



Composting food waste for your own use in the garden or by putting it into your organics (green) cart is a huge step toward achieving zero waste.

a successful recycling program, including tenant workshops and trainings by MSS Recycling Outreach staff.

- Property managers can rent temporary debris boxes for tenant clean-ups.

Commercial Customer Curbside Services

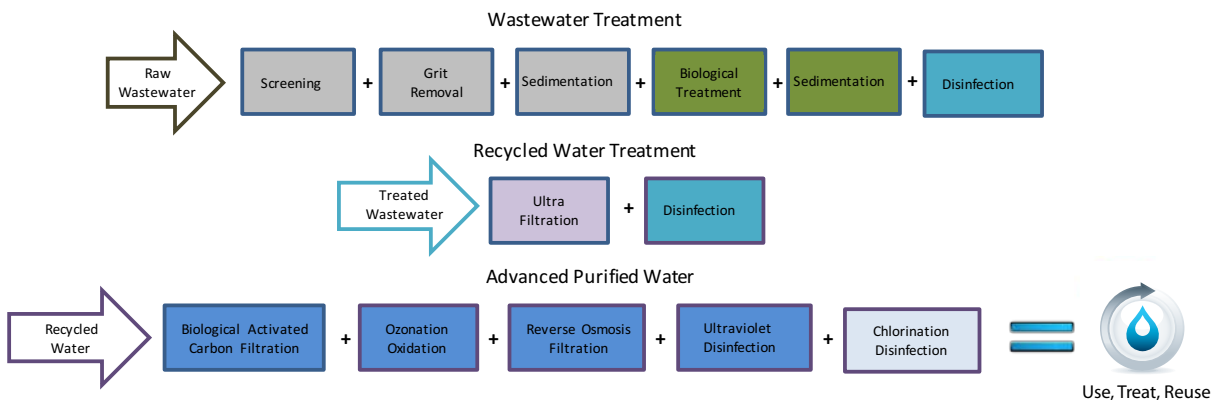
- Commercial customers receive garbage pickup services, as well as services for recycling paper, glass, plastics, metal, and cardboard.
- These customers can choose from either food-to-energy organics services (where the food is turned into a renewable energy), or commercial composting, for their post-consumer food scraps, yard waste, and food-soiled paper.
- Commercial customers can also rent temporary debris boxes for clean-ups.

The number and size of your bins/carts determines the cost of your service. When you recycle more, you're producing less waste and you can downsize your cart and save money. MSS has a variety of cart and bin sizes to fit your needs.

We're all shooting for zero waste, and the more you divert from the landfill, the closer we get to that goal! Visit lgvsd.org or marinsanitaryservice.com to learn more!



Potable Reuse Treatment Process



“Advanced Purified Recycled Water” continued...

Why are we mentioning these existing, but little-known, uses of treated wastewater? Because California is continually seeking a drought-proof water supply, and all viable options are part of the conversation.

In fact, the future of California's water supply continues to be one of the most critical issues facing all who live and work here. Right now, there are discussions at the highest levels of California government and among water agencies on how to achieve a sustainable water supply — and one of the key topics is the reuse of advanced purified recycled water, also known as potable reuse.

Here at the District, we're tracking those discussions, and participating in similar conversations at the local and regional level, while improving and upgrading our technology and equipment to prepare for the future.

As these dialogues continue throughout the state, it's important for our customers to be aware of the concept of potable reuse of recycled water. This article may serve as an introduction to that concept, and provide some clarity about what it is and what it may mean for the future of our water supply here, and throughout California.

The treatment technologies used to provide advanced purified

water have proven to be very reliable in producing water that meets or exceeds current drinking water standards. These technologies involve multiple treatment methods to separate pollutants. After traditional wastewater treatment, microfiltration, reverse osmosis, ultraviolet light disinfection, and advanced oxidation, the advanced purified water produced is actually cleaner than most bottled water.

Potable reuse is quickly gaining momentum in California. In Orange County, the blending of advanced purified water with groundwater (Indirect Potable Reuse, or IPR) has been taking place since 2008. Similar to Orange County, other areas in California such as San Diego, Monterey, and Santa Clara County have developed large-scale pilot projects to demonstrate the technology and safety of producing advanced purified water which could be used for drinking water purposes by their customers.

In 2014, having earlier faced serious drought conditions, two cities in Texas (Wichita Falls and Big Spring) launched the nation's first programs for intentionally introducing advanced purified water directly into their water distribution systems (Direct Potable Reuse, or DPR).

Advanced purified water is poised

to play a key role in providing a safe, reliable, and sustainable water supply for many Californians. According to the Water Reuse Association, recycled water could provide more than eight million California residents with an adequate supply of drinking water. This equates to nearly 20% of the state population projected for the year 2020.

This advanced use of recycled water is also good for the environment — it allows us to leave more water in rivers, lakes, and streams for fish, plants, and wildlife, while reducing discharges to these water bodies and the ocean.



photo: Maggie Hallahan

When compared to desalination (where dissolved salts and other contaminants are removed from seawater, converting it into potable water), the production of advanced purified water can involve less costs and less energy consumption, and doesn't have the environmental impacts associated with desalination.

It's understandable that the introduction of potable reuse may prompt safety concerns. The concept of implementing purified water as a drinking water source has already generated rigorous, exacting guidelines and new regulations. Additional regulations are being developed to ensure that:

- appropriate technology is safely used,
- there are redundant treatment steps,
- appropriate monitoring systems are used to ensure water quality, and
- treatment system operators are fully trained.



At locations like Orange County Water District (above) indirect potable reuse plants are operating and visitors can taste the highly purified water.

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Taste Test Video

As for any concerns with taste, you may be interested in a video (by BuzzFeed Blue) of an informal “taste test” comparing purified recycled water to bottled and tap water — go to lgvsd.org, scroll down to “What’s New” and click on “Taste Test Video.”

Reuse Websites

A great deal of information on potable reuse and other water issues is available on a variety of websites, including:

- WaterReuse.org
- AThirstyPlanet.com
- Beachapedia.com
- WaterOnline.com
- SustainableWater.com
- RecycledWater.com

These websites were sources for some of the content in this article.

“Advanced Purified Recycled Water” continued...

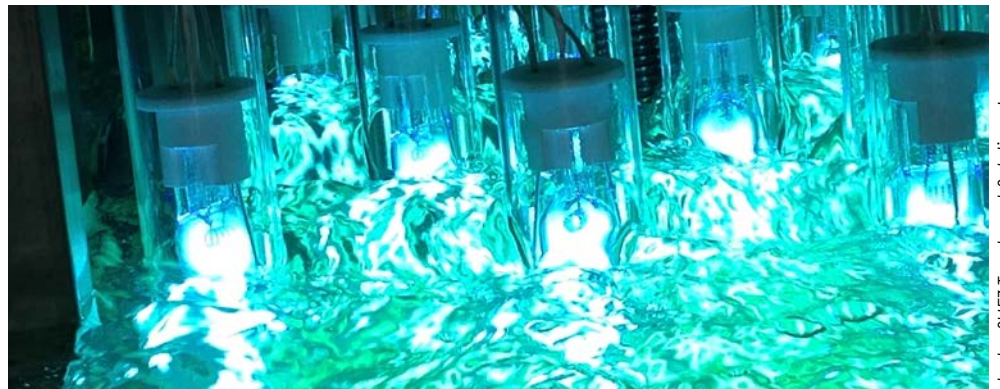
What does this mean for Las Gallinas Valley Sanitary District, and the local water supply?

In the interest of providing our customers with a state-of-the-art wastewater treatment process, and helping to maintain a sustainable, reliable water supply in the future, the District is carefully monitoring the progress of regulatory actions around the potential uses of purified water. The District is already supplying millions of gallons of treated recycled water for landscape irrigation — thus preserving an equal amount of our drinking water.

The consensus of stakeholders, water utilities and agencies, and state government water officials is that potable reuse will, at some point in the not-too-distant future, be a

viable and perhaps an indispensable option.

If and when the widespread potable reuse of advanced purified recycled water comes to pass, it's the District's responsibility and obligation to be in a position to produce recycled water that meets or exceeds the strict standards that will govern its use. With that in mind, the District's new recycled water plant was specifically designed to be the first treatment level toward eventual potable reuse, by including microfiltration, ultraviolet light oxidation, and chlorination after wastewater treatment. This could eventually be part of a system that delivers the advanced purified water that will contribute to our local water supply.



Ultraviolet disinfection is one of Las Gallinas' advanced treatment methods.

photo: SUEZ Treatment Solutions Inc.