

recycledwater

the right water for the right use

Reclaimed Water Update

June 3, 2021

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DNRP, Wastewater Treatment Division

Reclaimed water = Recycled water = Reuse



Filtration and disinfection is used at WTD's reclaimed water facilities to produce Class A reclaimed water.



Reclaimed Water Work Priorities for 2021

- Coordination with drinking water utilities
- Brightwater reclaimed water storage project
- Sammamish Valley irrigation research project



Reclaimed water work group



Purpose: develop a shared-decision process to coordinate distribution of reclaimed water between drinking water systems and WTD.



Participating agencies:

- Cascade Water Alliance (representing member agencies)
- Seattle Public Utilities (representing wholesale customers)
- City of Renton
- Soos Creek Water and Sewer District
- WTD



Reclaimed water agreement



Master Agreement: template agreement defining principles to guide the development of individual agreements with water utilities, including

- Current and future reclaimed water uses
- Collaboration on long-term planning
- Guidelines to assess financial and water quality impacts
- Dispute resolution



Service Agreement: agreement with individual water system, includes:

- Reclaimed water use in service area
- Coordination on new requests for reclaimed water
- Financial impact
- Wholesale/retail arrangements
- Water quality protection
- Dispute resolution



Brightwater Reclaimed Water Storage Project



Objectives:

- Improve reclaimed water delivery to current and future customers
- Increase operations and maintenance flexibility



Scope:

- Siting analysis, alternatives evaluation, design, and construction of a storage facility
- Project could include changes to the existing disinfection method and may require pumping to deliver Class A reclaimed water



Timeline:

- Project Initiation– June 2019
- Feasibility Study/Management Review– March 2022
- Final Design Completion- August 2024
- Construction Complete – September 2026





Sammamish Valley Agricultural Irrigation Study

Washington Water Trust, WSU, and WTD are partnering to evaluate the presence of Contaminants of Emerging Concern (CECs) in water and if CECs affect plant, soil and human health.

The project will evaluate water typically used for irrigation of food crops in the Sammamish Valley: reclaimed, groundwater and Sammamish River water.

- **2019:** Groundwater, river water and Brightwater reclaimed water was sampled for CECs.
- **2020-2021:** river and reclaimed water, soil and plant tissue will be tested for CECs.



2019 CEC Sampling



Sammamish River



Groundwater near 60 Acres Park



Brightwater reclaimed water

Sampling

4 samples were taken in August 2019

Parameters

- Pharmaceuticals and personal care products (PPCPs) (118)
- Polybrominated diphenyl ethers (PBDEs) (40)
- Bisphenol A (BPA) and 5 additional bisphenol compounds (6)
- Glyphosate (herbicide) and its main metabolite (2)
- Perfluorinated compounds (PFAS) (40)



Water Sampling Results (2019)

Parameter	Sammamish River 14 detections	Sammamish Groundwater 49 detections	Brightwater Recycled Water 53 detections
PPCPs (n=118)	4	9	20
PBDE (n=40)	2	28	20
Bisphenol (n=6)		3	2
Glyphosate (herbicide) and main metabolite (n=2)	2	2	1
PFAS/perfluorinated compounds N=40	6	7	10

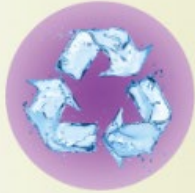
Detected concentrations were very low in parts per trillion (ppt) range, highest concentrations were:

- Glyphosate 469 ng/L (groundwater)
- Carbamazepine 68-120 ng/L (recycled water)



RESULTS

18 CECs
detected in recycled
water irrigated kale



9 CECs detected in
recycled water
irrigated carrots

16 CECs detected
in river water
irrigated kale



15 CECs detected
in river water
irrigated carrots



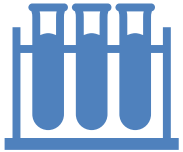
Food crop sampling show Brightwater recycled water is safe for food crop irrigation

The number of detections of CECs were similar in produce irrigated with river water and recycled water.

Sammamish Research Project CEC Conclusions



CECs are everywhere



CEC detections align with other reclaimed water research

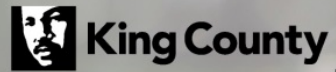


CECs in natural waters correlate with land use



Irrigating with reclaimed water is a low exposure pathway for CECs





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Find out more: www.kingcounty.gov/recycledwater

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