King County
Department of Natural Resources and Parks
**Wastewater Treatment Division**
Brightwater Treatment Plant
22505 State Route 9 Southeast
Renton, WA 98072

July 19, 2023

Sean Wilson, P.E.
Washington Department of Ecology
Northwest Regional Office
PO Box 330316
Shoreline, WA 98133-9716

Jun Naotsuka
Public Health – Seattle and King County
401 5th Avenue
Seattle, WA 98104

Re: Release of Reclaimed Water, York Pump Station, June 21, 2023

Dear Mr. Wilson and Mr. Naotsuka:

On June 21, 2023, there was a release of approximately 10,000 gallons of disinfected reclaimed water at the York Pump Station located at 14120 N.E. 124th Street, Redmond, WA. The release was reported to the Washington State Department of Ecology and assigned ERTS #723614.

***Situation and Response***

The leak occurred as the Brightwater staff were working to initiate reclaimed water service for the season. Prior to the incident, the 30-inch pipeline was filled and pressurized from the North Creek Pump Station and was valved for continuous flushing into the York Pump Station wet well. At approximately 7:30 a.m., flushing to the York Pump Station was stopped to provide water to support testing of the newly installed Willows Run Golf Course backflow preventor. Around 12:30 p.m. a subsurface leak was discovered at the York Pump Station.

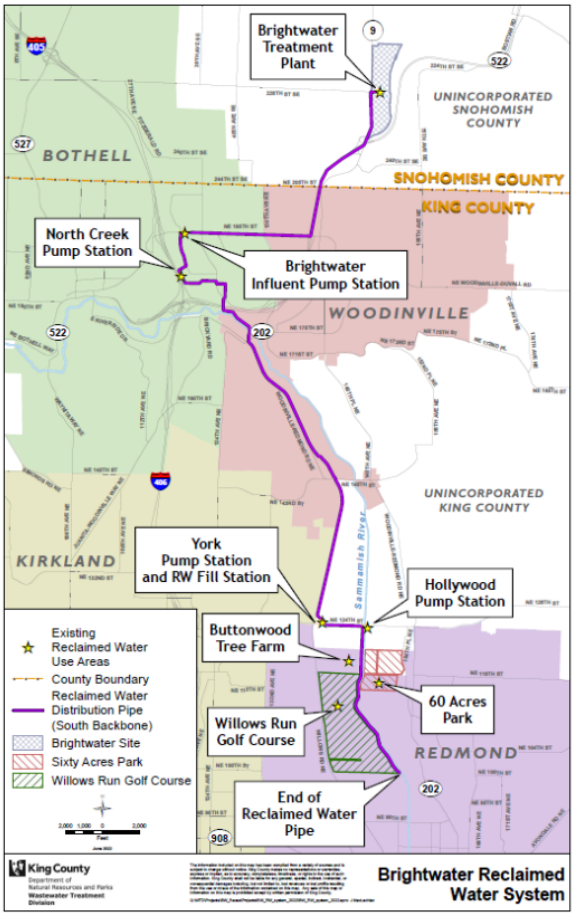


***Figure 1: Brightwater Reclaimed Water System Map***

The 30-inch reclaimed water pipeline is approximately 11 feet below surface at the York Pump Station. The leak was identified as water was bubbling up through the asphalt and flowing into an adjacent stormwater catch basin on the property. The catch basin drains to a mitigation area on King County property, due east of the pump station.

In response to the leak, Brightwater staff immediately began closing reclaimed water valves throughout the distribution system to isolate flow and began depressurization of the distribution pipe. Staff closed valves at the upstream North Creek Pump Station (17A and 17B) as a means to isolate the leak. Staff also isolated the system at York Pump Station by closing the customer distribution valve (507), the double block valves (503 and 504), and the divert to drain valve (501). As staff began to drain the 30-inch pipe, surface evidence of the leak stopped at approximately 2:30 p.m. A contractor was mobilized to the site on June 22, 2023, to begin the subsurface investigation and repair.

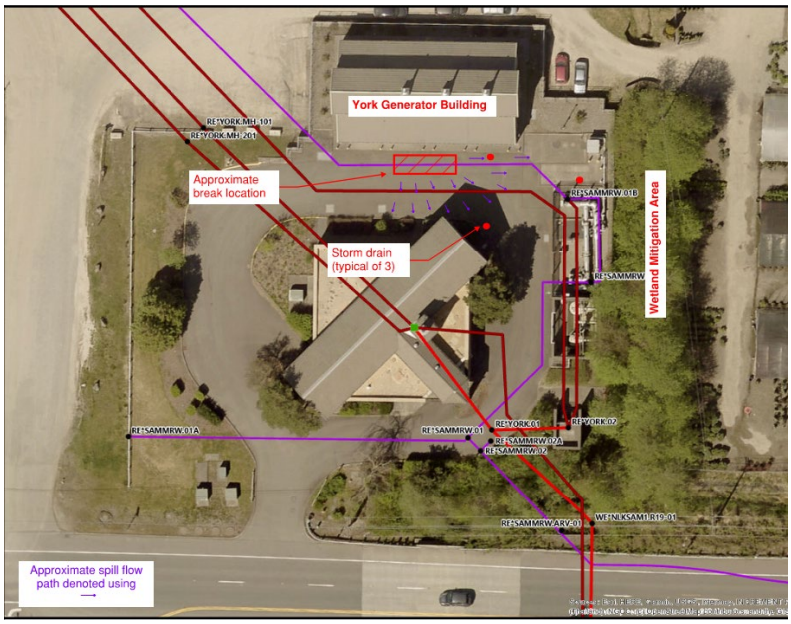


***Figure 2: York Pump Station Reclaimed Water Release Map***

***Purple line denotes East NCFM used for RW Distribution; Red line denotes West NCFM used for intermittent sewer service from North Creek Pump Station to York Pump Station***

## ***Information on East and West North Creek Force Mains***

The East and West North Creek Force Mains (NCFM) were originally constructed in 1998 to convey wastewater from the North Creek Pump Station (NCPS) to York Pump Station during wet weather seasons. Wastewater from NCPS is further conveyed via York Pump Station to South Treatment Plant by way of the East Side Interceptor (ESI). The commissioning of Brightwater treatment plant in 2010 allowed for treatment of wastewater from the Bothell, Woodinville, Kenmore and Redmond service areas, reducing the need to convey flows from north to south, via the North Creek-York Pump Station system. The West NCFM remains in service for sewage conveyance, but is used intermittently, primarily when Brighwater needs to divert flows to South Treatment Plant. The East NCFM was converted to reclaimed water use in 2011 to support Brightwater RW distribution to the Sammamish Valley.

The East and West NCFM consist of approximately 25,000 linear feet of 30-inch parallel, mortar-coated, epoxy-lined steel pipe. The bulk of the pipeline was installed using 20 and 40 ft long pipe sections with bell and spigot joints. The construction also included welded joints and couplings for special circumstances; in those cases, both the cement mortar lining and the inner epoxy coating were field applied.

## ***Investigation, Repair, and Next Steps***

Upon mobilizing onto the site on June 22nd, the contractor began excavation and dewatering operations at the approximate location where water was found to be bubbling up through the asphalt. The leak was discovered adjacent to a direct buried, 30-inch coupling between two sections of the force main (Figure 3). The cause of the leak was a small hole (approx. 1/4 inches in diameter) at the invert of the

force main, adjacent to the coupling (Figure 4). Additional observations at the point of the leak: the coupling did not have any cement mortar lining and appeared to have a corroded interior expoy lining at this location.


***Figure 3: Exposed East and West NCFMs***

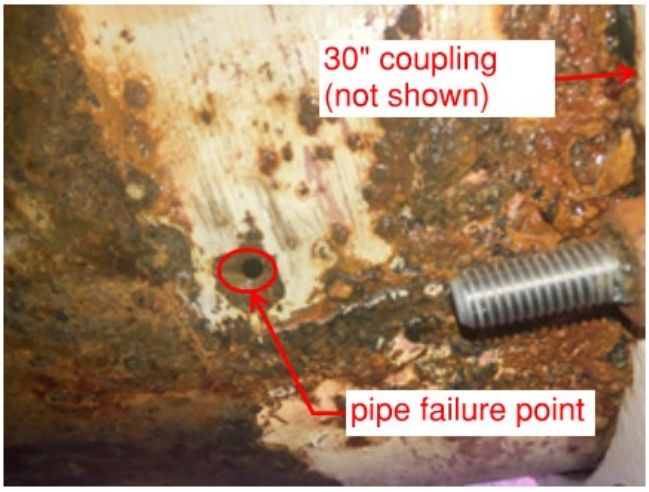


***Figure 4: 30-inch RW piping failure point***

The existing 30-inch coupling was damaged during the course of the investigation thus requiring a more engineered repair of this entire section of this line. King County has ordered parts to support this repair: a new engineered repair coupling (TC400 Romac coupling) and a rolled 30-inch epoxy lined steel spool piece; the new coupling is scheduled to arrive on site during the week of August 7th, 2023

While awaiting arrival of repair parts, King County staff coordinated with the contractor to facilitate a temporary repair that utilizes multiple, small diameter SS1 Romac repair couplings to wrap around the pipe (Figure 5). This prevents ground water from intruding into the hole as well as prevents any remaining reclaimed water from leaking out into the surrounding soil. The temporary repair coupling solution will not be used for distribution of reclaimed water.

Once materials arrive onsite, King County's contractor will remove the damaged section of piping and complete the repair using the solution described above. Staff also plan to conduct a partial CCTV investigation in the vicinity of this location of the force main to evaluate the condition of the interior epoxy coating and neighboring joints. Following repair work, the East NCFM will then be pressure tested and flushed to prepare for reclaimed water customer distribution by the end of August.


***Figure 5: 30-inch RW piping temporary repair coupling***

If you have any questions about this overflow event, actions taken, or next steps, please feel free to contact me at 206-477-5600.

Sincerely,

DocuSigned by:
Rebecca Singer
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Rebecca Singer
Operations Manager

cc: Kamuron Gurol, Director, Wastewater Treatment Division (WTD), Department of Natural Resources and Parks (DNRP)
Bruce Kessler, Deputy Director, WTD, DNRP
Jeff Lafer, Project/Program Manager IV, WTD, DNRP
Mike Wohlfert, South Treatment Plan Manager, WTD, DNRP
Chapin Brackett, O&M Process and Environmental Compliance Manager, WTD, DNRP