



Brochure

Vertiv[™] PurgeRite[™] NearZero[™]

Closed-loop flush water recycling
for data center commissioning

A patent-pending fluid management service. Flush, recycle, and commission on schedule, with up to 95%¹ less water used during flushing compared to conventional methods.



Overview

High-velocity flushing clears construction debris and prepares new data center cooling systems for startup, and it takes water to do it. As facility water systems and technology cooling systems scale, flush volumes can reach hundreds of thousands of gallons per project and may exceed a million gallons on the largest sites. In a growing number of jurisdictions, water now arrives with tighter discharge limits, uncertain make-up supply, and rising haul-off costs.

Vertiv™ PurgeRite™ NearZero™ captures, treats, and recirculates rinse water onsite during the flushing process, instead of discharging and drawing additional makeup water. Traditional high-velocity flushing drains roughly six or more system volumes. Vertiv PurgeRite NearZero discharges about 1.2 times the system volume or less, reducing total water used during the flushing process by up to 95%.¹

Vertiv PurgeRite NearZero is engineered into the flush plan, allowing a single team to manage flushing and water management. For data center teams, that integration takes water off the critical path between mechanical completion and first load, allowing you to:

- **Stay on schedule.** Reducing makeup and discharge demands relieves water constraints that can cause construction delays and increase costs.
- **Stay compliant where discharge limits apply:** Closed-loop recycling reduces discharge volume where local limits or makeup supply are constrained.
- **Use less water on site:** Recycling flush water reduces dependence on municipal makeup supply.
- **Protect your cooling loops:** A well-performed flush removes debris, mill scale, oils, and contaminants. Vertiv PurgeRite NearZero can help keep that flush on schedule with less water.

As facilities scale toward gigawatts of compute, so does the water needed to flush their cooling systems. Vertiv PurgeRite NearZero can help keep water from being the factor that stalls your startup.

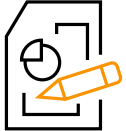
Applications

- **Hyperscale campuses**
- **Neo-cloud and AI compute providers**
- **Colocation and wholesale data centers**
- **Commercial and industrial mission-critical facilities**



How Vertiv™ PurgeRite™ NearZero™ works

The traditional flushing process typically discharges about six times the system volume per rinse. Vertiv™ PurgeRite™ NearZero™ discharges about 1.2 times the system volume or less.



1. Engineer the plan.

Every project starts with a flush plan built to the system design, flow requirements, and cleanliness targets. Vertiv™ PurgeRite™ NearZero™ is incorporated into that plan from the start, allowing water treatment and recycling to run alongside the flushing process. The commissioning timeline is visible before the first gallon moves.



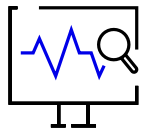
2. Flush at high velocity.

Vertiv™ PurgeRite™ flushes hydronic loops to specification, clearing construction debris, mill scale, and oils before cooling systems come online.



3. Treat and recycle on site.

Through the rinse phase of the flush, Vertiv™ PurgeRite™ NearZero™ captures, treats and recirculates the flush water and returns it to the loop for reuse. Only about 1.2x system volumes or less per rinse is discharged.



4. Monitor and hold spec.

Continuous pH monitoring and filtration maintain water quality throughout the cycle, with 24-hour coverage during operations. Because most of the water is reused instead of being discharged and replaced, the total makeup water used for flushing drops by up to 95%.¹

¹ Compared with conventional non-recycled flushing methods for closed-loop hydronic systems for facility water and technology cooling systems. Actual results vary by system design, water quality, cleanliness requirements, and site conditions.

Key features and benefits



Up to 95% less water required¹

- **Closed-loop recycling.** Flush water is captured, treated, and recirculated on-site instead of sourcing fresh supply for every rinse.
- **Operate where discharge limits apply.** Reduced discharge volume can overcome permitting bottlenecks in jurisdictions that limit or deny wastewater discharge.



Reduced contamination risk at startup

- **Clean loops, cleared to specifications.** Construction debris, mill scale, oils, and contaminants are removed from hydronic loops before cooling systems come online.
- **Ready for high-density cooling.** Direct-to-chip and high-density AI workloads start with fluid loops held to specifications from day one.



Simpler logistics, protected schedule

- **Simplified logistics.** Less makeup water in and less discharge can mean fewer tanker trips, lower diesel cost, and reduced traffic on site.
- **Fewer variables on the critical path.** Less dependence on makeup water deliveries and discharge scheduling can keep commissioning moving.
- **Reduce water storage requirements.** Recycling can reduce the storage tanks and laydown space that water storage normally demands.



One provider, one coordinated scope

- **Engineered flush plans.** Teams build every strategy around the system design, site conditions, flow requirements, and cleanliness targets, never from a template.
- **Integrated flush and water management.** A single Vertiv PurgeRite team manages flushing, filtration, treatment, and water recycling under one engineered plan.
- **24-hour operational coverage.** Continuous monitoring and process oversight keep the rinse on track from start to finish.



Built on proven fluid management expertise

Vertiv™ PurgeRite™ NearZero™ pairs high-velocity flushing with water recycling refined specifically for data center commissioning. What sets Vertiv PurgeRite NearZero apart is how we apply it. A dedicated team provides engineering support, operational leadership, experienced field technicians, and a fleet sized for the volumes, durations, and flow rates that a data center flush demands. That focus helps keep the equipment footprint modest and project risk low.

As part of Vertiv's fluid management portfolio, Vertiv PurgeRite NearZero prepares facility water and technology cooling systems for startup while cutting the water drawn to site, the volume discharged from it, and the trucks required to haul it off.

Scope Vertiv™ PurgeRite™ NearZero™ for your next commissioning. Bring us in early with drawings and mechanical-calculated system volumes. We will size the flush and water management to your project, priced and planned before you break ground.

To explore how Vertiv PurgeRite NearZero can reduce the water required during new data center commissioning, contact a Vertiv representative.



