



Project Heartland – Coal City, IL

Fill and Flush / Closed Loop Narrative

July 23, 2026

Re: Proposed Aligned Data Center Development

Dear Mr. Fritz:

On behalf of Aligned, this letter summarizes how the proposed data center development closed loop system operations. We are both in the initial startup fill and flush and the final closed loop condition.

As part of constructing and commissioning our data center facility, we perform thorough cleaning, flushing, and conditioning sequence on our closed-loop cooling system.

Before these systems become operational, the internal piping must be systematically cleaned and prepared. This process removes construction dust, fine metal particles, and manufacturing residues, ensuring the equipment operates at peak energy efficiency, maintains long-term structural integrity, and respects local environmental infrastructure.

Our preparation process uses a controlled, multi-stage water conditioning procedure:

1. Mechanical Rinsing & Fine Filtration

The closed-loop system is first filled with municipal tap water and pressurized to verify that every joint and valve is completely sealed.

Once the system has passed pressure testing, the tap water circulates through the closed loop for 24 hours. The purpose of this initial mechanical flush is to remove any loose debris and rust particles left over from pipe manufacturing and assembly. High-efficiency micron filters continuously collect dislodged particles throughout the flush.



After 24 hours of circulation, the clean tap water is discharged to the sanitary sewer. This mechanical rinsing process is typically repeated 2 to 3 times to ensure that no further debris or particles appear in the filtration system.

2. Deep Cleaning and Degreasing

Following mechanical rinsing and fine particle filtration, a targeted chemical cleaning process is initiated. The closed loop is refilled with city water and dosed with a specialized cleaner called **PCT6009**.

PCT6009 was selected specifically because it is a non-hazardous, biodegradable cleaner designed for safe discharge into municipal sanitary systems. All Safety Data Sheets (SDS) and sanitary discharge parameters are included in this submittal package. The dosing of PCT6009 strictly follows manufacturer guidelines and is monitored closely prior to any release.

Once loaded, the cleaning solution circulates continuously through the system for 3 to 7 days. This step dissolves fine oils, grease, and mill scale from inside the piping. After the deep cleaning cycle is completed, the system is flushed with city water.

3. Deionized Water Finish & Operational Fill

A final rinse and flush is performed using Deionized (DI) water—water processed to remove all dissolved mineral salts and impurities, leaving pure H₂O.

After this thorough conditioning, the closed loop receives its final operational fill of DI water. **No municipal water is used, and no further discharge to the municipal sanitary sewer occurs after this final operational fill.**



4. Closed-Loop System Operation

Closed-loop cooling systems are designed to minimize overall water consumption in data centers. By circulating water continuously within a sealed loop, the system operates indefinitely with little to no ongoing water recharge.

To maintain the water quality over extended periods, low-concentration operational additives are introduced to the DI water. This long-term preservation package includes:

- **Primary Corrosion Inhibitor:** Protects ferrous and non-ferrous piping surfaces.
- **Non-Oxidizing Biocide:** Prevents microbiologically influenced corrosion (MIC) and biological growth.
- **pH Balancing Solution:** Buffers operating chemistry for maximum pipe and equipment longevity.

These additives are like those used safely across municipal water treatment and food-and-beverage processing industries. Because the cooling loop is fully closed during standard operation, these solutions remain contained within the facility and are not discharged into the municipal sanitary system.

Sincerely,

Joseph Giannini

Manager, Land Enablement
Aligned Data Centers