



The Flow Conditioning Device: Installation Point, Mechanism, and Meter Accuracy

Water Flow Innovations LLC

Flow Conditioning Device (FCD)
waterflowinnovations.com

INSTALLATION POINT & MECHANISM

Installed Just After the Meter — Ahead of Every Validated Process System

The Flow Conditioning Device (FCD) installs between two pipe joints on the main water line immediately after your water meter — ahead of your facility's internal distribution to processing circuit water, flotation cell makeup, dust suppression headers, truck wash lines, and site facility demand. Each FCD is custom-built to the facility's exact specifications — pipe size, operating water pressure, and existing PRV configuration — and may include an integral check valve depending on the installation requirements. It requires no power and is installed by a licensed plumber or mechanical contractor with water off for approximately one hour.

Mechanically, the FCD creates a slight static back-pressure that extends back through the meter, reducing the air, gas, and turbulence that form during demand events and delivering a laminar-like flow profile through the measurement chamber. Municipal meters register volumetric displacement — entrained air and turbulent flow register as billable volume. Pressure loss through the device is under 0.8 psi across all flow conditions; downstream pressures, temperatures, and flow rates are effectively unchanged. Because the FCD sits just after the meter, it is outside circuit operating parameters, MSHA-regulated systems, and discharge permit conditions — no process change is required. Complete technical documentation is provided to support your internal change control review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

☐ **Cost per ton processed above targets**

Water cost per ton of ore processed persistently exceeds site engineering targets.

☐ **Intake doesn't close against water balance**

Site water balance shows metered intake exceeding identified consumption and discharge.

☐ **Discharge charge high vs. documented**

Sewer or discharge charges calculated from metered intake outpace documented process discharge.

☐ **Spikes during peak throughput**

Water costs climb during peak processing periods beyond proportional demand.

☐ **Pressure variation at circuit startup**

Observable supply header pressure swings during circuit startup — the demand events that entrain air at the meter.

☐ **Water treated as operational cost**

Water is accepted as an uncontrollable operational cost of processing.

WHERE OVER-READING HITS THE OPERATION

Cost per Ton & Site Economics

Inflated intake flows directly into cost per ton — billed on the municipal portion of a site's water supply on both water and sewer sides.

Site Water Balance Integrity

Mining water balances are closely managed — the unexplained municipal intake residual is frequently the over-read itself.

Sustainability & Disclosure Data

Corporate water stewardship disclosures reference metered intake — over-reading overstates municipal water intensity per ton.

Operations & Engineering

Circuit water accounting, reuse optimization, and efficiency projects start from a meter reading that includes volume that never arrived.

ENGINEERING Q&A

Q: Will the FCD affect circuit water pressure, flotation performance, or dust suppression?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs ahead of site distribution. Circuit supply pressure, flotation cell makeup, and suppression header flow are effectively unchanged.

Q: Most of our water is recycled or raw-sourced — does the FCD still apply?

A: The FCD corrects the municipal meter, so it applies to whatever portion of supply is municipally metered — potable, facility, and makeup connections. Recycled and raw water sources are outside municipal billing and unaffected.

Q: How does the FCD affect our discharge documentation?

A: Where charges and balances reference municipal intake, correction reduces the volume basis and closes unexplained intake gaps. Typically no permit modification is required — the FCD installs just after the meter; confirm with your compliance team.

Q: Can documented savings support water stewardship reporting?

A: Yes, as cost documentation. Before-and-after utility bills verify the corrected billing. Because the FCD corrects the meter reading rather than reducing water use, confirm with your sustainability team how to report it for corporate stewardship disclosures and CDP water reporting.

Q: How quickly do savings appear?

A: The meter reads accurately immediately after installation. Savings appear on the next full water and sewer billing cycle — no ramp-up period. 90% of installed customers reach full return on investment in under 12 months.

ENGAGEMENT PROCESS — FOUR STEPS

From Analysis to Verified Bill Reduction

1

Free Savings Analysis

We review your water and sewer bills and facility demand profile — no cost, no obligation.

2

Documented Projection

You receive a written savings projection specific to your facility before any commitment.

3

FCD Installation

Licensed plumber or mechanical contractor installs immediately after the meter — water off approximately one hour.

4

Verified Bill Reduction

Before-and-after bill comparison verifies the reduction on your next billing cycles.

GUARANTEE & WARRANTY TERMS

6-Month Money-Back Guarantee

If you're not satisfied within 6 months of installation, the FCD purchase is fully refunded — no questions asked. Installation labor is non-refundable.

Lifetime Transferable Warranty

The FCD carries a lifetime warranty, transferable to the new building owner if the facility changes hands (a transfer fee applies).

DEVICE SPECIFICATIONS

Construction, Certification & Installation

Custom-built to each facility's specifications — pipe size, operating pressure, PRV configuration · 316L stainless steel construction; titanium and specialty alloys available by special order for medical and other specialized applications · Configuration may include an integral check valve per installation requirements · No power required · Under 0.8 psi pressure loss · Certifications: IAPMO, NSF/ANSI/CAN 61, KIWA, GMP, SQF · Installed by licensed plumber or mechanical contractor

Regulatory & Standards References: EPA NPDES · MSHA · CDP Water Security · ICMM Water Stewardship

FREE SAVINGS ESTIMATE

Instant estimate — takes 30 seconds, no contact info required.
waterflowinnovations.com/water-bill-savings-calculator

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CERTIFICATIONS

IAPMO

NSF/ANSI/CAN 61

KIWA

GMP

SQF

316L Stainless Steel · Made in USA
Under 0.8 psi pressure loss
Lifetime Transferable Warranty