

Why Your Refinery Pays More for Water Than It Should — and How to Fix It

Your cooling towers, steam boilers, and process water systems all draw from the same supply — but your meter counts more than arrives. **Cooling tower makeup, boiler feedwater demand, and process water surges create the conditions for air, gas, and turbulence to form in the line at your meter — and you're billed for it.** The FCD (Flow Conditioning Device) corrects the measurement. Every process parameter and refinery operation stays the same. Your water bill drops — and so does your sewer bill, because sewer charges are calculated from the same inflated meter reading. One device. Two bills fixed.

WHY OIL WATER METERS OVER-READ

The Core Problem: Refineries Run Three Simultaneous High-Volume Demand Sources All on One Municipal Meter

Cooling towers, steam boilers, and process water systems all draw from the same municipal supply meter simultaneously throughout every operating hour. Each generates its own air, gas, and turbulence events in the supply line. The compound over-reading from three concurrent high-volume sources is among the highest of any industrial facility. The FCD corrects all three at once without affecting any process parameter or permit requirement.

THE THREE OVER-READING SOURCES UNIQUE TO OIL & PETROLEUM REFINERIES



Cooling Tower Makeup Cycling

Refinery cooling tower arrays cycling with aggregate process heat load create the most sustained meter over-reading of any refinery source — running continuously at maximum demand throughout every operating day.



Steam Boiler Feedwater Makeup

Steam system boiler feedwater makeup cycling with process steam demand creates variable high-volume events — compounding cooling tower over-reading on every production run throughout every operating shift.



Process Water System Demand

Hydrotreater, desalter, and process water system demand cycling with throughput creates variable demand events — adding a third compounding over-reading source on top of cooling and boiler demand every billing cycle.

Your NPDES Water Balance & API RP 1173 Water Stewardship Data Are Better Than Your Meter Shows

Refineries reference metered municipal intake for NPDES permit water balance documentation, API RP 1173 pipeline safety management, and EPA Subpart CC NSPS reporting. When the meter over-reads, every filing overstates intake. After FCD installation, metered intake reflects true use — improving the accuracy of NPDES water balance, CDP water disclosure, and refinery ESG reporting for Marathon, Valero, and Phillips 66 operations.

BEFORE & AFTER THE FCD

WITHOUT FCD

- ✗ Air, gas & turbulence billed as water volume
- ✗ Cooling tower cycling inflates meter all day
- ✗ Boiler demand compounds over-reading
- ✗ NPDES water balance overstates intake
- ✗ Sewer charge tied to inflated meter

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WITH FCD INSTALLED

- ✓ Metered volume reflects water actually delivered
- ✓ Cooling tower makeup reads accurately
- ✓ Boiler feedwater measured correctly
- ✓ NPDES water balance closes accurately
- ✓ Sewer charge based on real usage

5–30%

Average water & sewer bill reduction

46%

Highest documented single-site reduction

~1 Hour

Install time — water off about 1 hour

6-Mo

Money-back, no questions asked · install non-refundable

How the FCD Works — Four Steps

1

Installs between two pipe joints right after your water meter — water off about one hour

2

Creates a slight back-pressure that extends back through the meter, reducing air, gas, and turbulence

3

Delivers a laminar-like flow profile through the meter — the condition it was calibrated to read

4

Meter reads accurately. Bill drops. Every process parameter, permit compliance requirement, and refinery operational setpoint is effectively unchanged.

FREE SAVINGS ESTIMATE

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

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