CASE STUDY

How a Saskatchewan School Cut Boiler Treatment Chemicals by 56%—Without New Equipment

CHALLENGES

A school's low-pressure steam boiler, was returning less than 30% of available condensate. Significant volumes of condensate were routinely sent to drain, while softened water was added as makeup, leading to higher operating costs.

More cold makeup water meant higher energy input, higher sewer discharge, and increased boiler treatment demand.

SOLUTIONS

Guardian reviewed condensate handling practices with the facility team and recommended a straightforward operational change: use available condensate as the primary boiler feedwater source and add softened makeup water only when condensate volume was insufficient. Guardian supported the change, verified stable operation, and tracked treatment usage as the system normalized.

RESULTS

Condensate return restored to 90%: Condensate recovery increased by eliminating routine condensate dumping.

Boiler treatment chemical demand reduced 56%: Annual treatment chemical use dropped from 18 pails to 8 pails as makeup water volume declined.

Lower water and energy demand: Hot condensate reuse reduced fresh water intake, sewer discharge, and the need to reheat cold makeup water.

M**ore stable operation:** More consistent feedwater conditions reduced manual adjustments and day-to-day oversight.

AT A GLANCE

A low-pressure heating boiler at a Saskatchewan high school was losing most condensate to drain, driving high makeup water, energy use, and treatment costs. Guardian worked with facility staff to prioritize condensate reuse and limit soft-water makeup. Return stabilized at 90% and boiler treatment chemical demand fell 56%.

KEY METRICS

CHEMICAL DEMAND REDUCED BY 56%

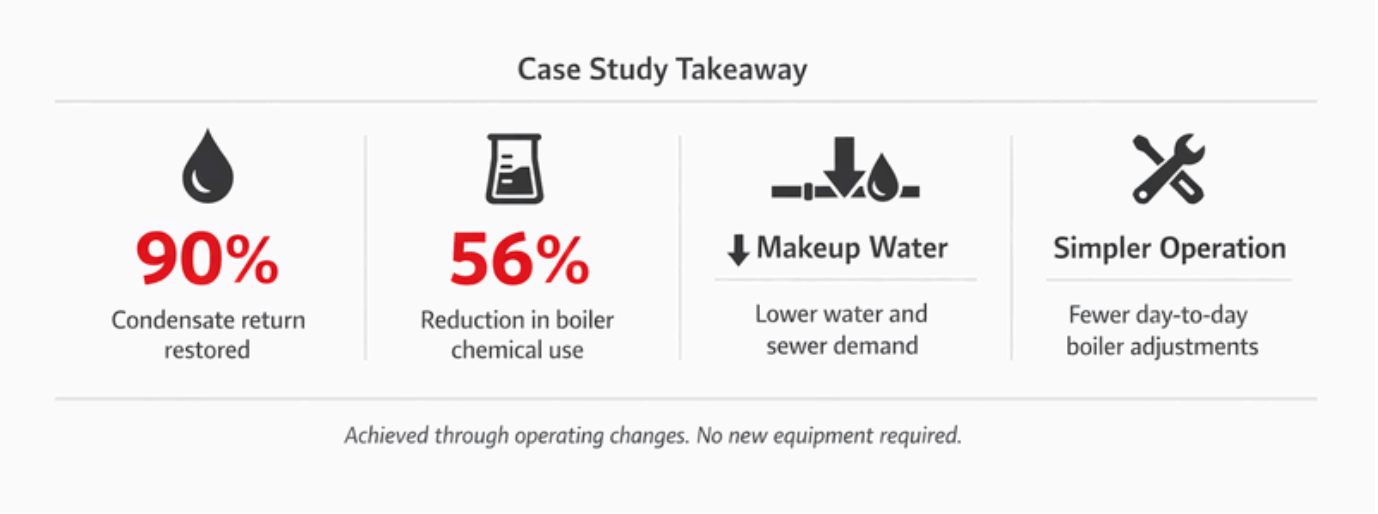
90% CONDENSATE RECOVERY

OPTIMIZED TO THE LOWEST OPERATING COST

CASE STUDY

How a Saskatchewan school cut boiler treatment chemicals by 56%—without new equipment

DATA

Operational improvements that lower operating costs and reduce day-to-day boiler attention.

Chemistry Done Better	Creating a Better Future Together
Condensate return stabilized at 90%	Less fresh water purchased and discharged, reduced energy loss from reheating cold makeup water, and more predictable boiler operation during the heating season.
Boiler treatment chemical use reduced 56%	Lower ongoing operating costs, reduced chemical handling, and a simpler, safer boiler room environment for facility staff.
Makeup water demand reduced	Decreased water and sewer costs while lowering oxygen and variability entering the boiler system, supporting long-term equipment reliability.
More stable feedwater conditions	Fewer manual adjustments, less day-to-day oversight, and greater confidence that the heating plant will perform when it's needed most.