

3D TRASAR™ Technology for Steel Water

WASTEWATER

Digital Insights for Smarter Wastewater Treatment in Steel Mills

Wastewater treatment plants at integrated steel mills often handle influent and residual streams from multiple on-site operations, including:

- Blast furnace
- Sinter plant
- Continuous casting
- Hot and cold rolling mills
- Pickling lines

These diverse sources create highly variable water qualities, making treatment and clarification a complex challenge.

The Clarification Challenge: Why Consistency is Hard to Achieve




Identifying the root cause of upsets in the final clarification step is challenging due to:

- Multiple streams with fluctuating water qualities
- Large number of influent sources from different site operations
- Manual adjustments of coagulant and flocculant dosing based on -
 1. Direct observation
 2. Jar tests

The result? Inconsistent effluent quality, slower decisions, and increased operational risk.

3D TRASAR™ for Steel Water: Digital Control for Reliable Performance

Our digitally enabled solution helps steel mills take control of wastewater treatment by providing:

-  Continuous insights into treatment efficacy and outfall quality
-  Tools and automation to help reduce downtime and lower total cost of operation
-  Support for environmental compliance through improved monitoring and control

Key capabilities that drive results

- **Real-time monitoring** of influent and effluent quality for continuous visibility
- **Improved visibility** into overall plant performance, enabling faster, data-driven decisions
- **Automated chemical dosing control** for coagulants and flocculants to maximize water clarity across variable streams and support environmental compliance and/or effluent recovery.

Case Study: How 3D TRASAR™ for Steel Water Delivered Results in North America

At an integrated mill in North America, wastewater treatment relied on manual dosing and limited visibility, making it difficult to maintain consistent effluent quality. The plant received three main inflows from various site operations, all requiring clarification as a key treatment step (Fig. 1).

Approach

- **Instrumentation:** Five turbidity probes were installed to monitor both inflow and outflow. Each probe featured an automatic cleaning device, minimizing maintenance
- **Control Strategy:** Feedforward control was applied to two of the three incoming streams, enabling proactive chemical dosing adjustments

Results

Within one month, the results were clear: chemical usage increased slightly (+2.9%) but suspended solids in the outfall dropped significantly from 10.6 mg/L to 6.2 mg/L.

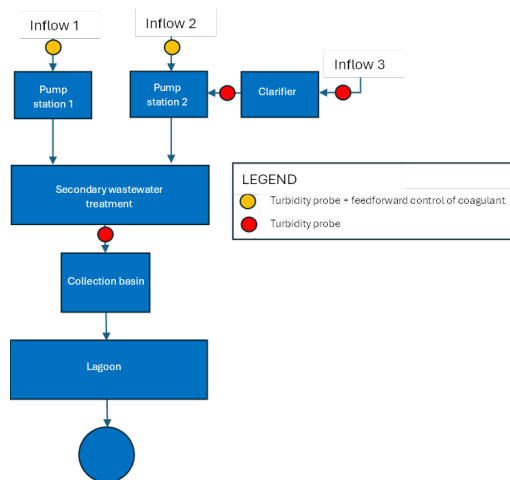


Figure 1: Schematic of the wastewater treatment plant

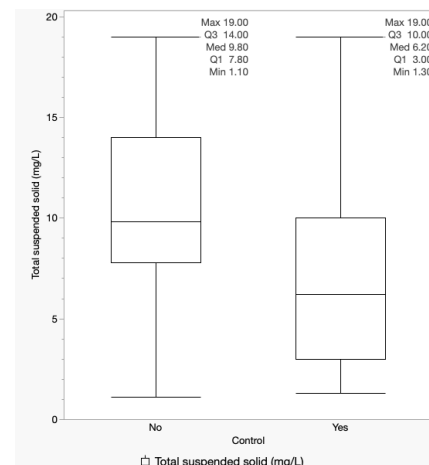


Figure 2: Statistical analysis of TSS in the outflow of the plant

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