SAMSCO WATER EVAPORATOR II

(THE SENTRY SYSTEM)

Evaporating wastewater reduces disposal volume and recycles water.

Environmental experts agree… evaporation offers industry the simplest and most effective long-term approach to wastewater disposal cost reduction. Since the late 1980's, SAMSCO EVAPORATORS have been a proven solution to most wastewater disposal problems. Their design provides consistent operation, minimal clean-out, high efficiency, and low maintenance.

The SWE-II…

- Disposes of water as it separates wastes—in one simple step
- Eliminates sewer discharge accountability—forever
- Handles multiple wastes and varying chemistries— simultaneously. Allows fully automatic operation 24/7
- Low-cost operation as little as $0.05–0.10/gallon
- Reliable operation—little attention required
- Two year warranty—the best in the industry

The SWE-II SENTRY SYSTEM stands guard as industry processes its wastewater…

THE SENTRY SYSTEM: A PLC monitors the wastewater and controls process variables encountered as waste concentrates and changes. The SENTRY maximizes reduction-in-volume while minimizing residue disposal, and all the while provides accurate display of operating conditions.

Full-Function, NEMA 4, Evaporator Control Panel: Incorporating the SAMSCO SENTRY SYSTEM, this display provides instantaneous, easily understood, operator feedback on critical operating and shutdown conditions of the equipment. Help screens guide the operator's decisions.

Mist Elimination System: The SENTRY uses three-stages, eliminating reliance on mechanical mist pads alone and preventing fouling and plugging of the mist pad. This pad in no way impacts the burner's operation.

Immersion Heat-Exchanger: The elevated, tubular heat exchanger allows solids to fall past the heat-transfer surface—harmlessly—to the sloped tank floor for easy residue removal. This design minimizes the impact of sludge build-up and provides a consistent and predictable evaporation rate, while minimizing maintenance issues.

Patented Air-Handling System: Removing combustion gases and water vapors, this system keeps combustion products completely isolated and safely contained. Operators can not be exposed to flue gases.

Redundant Control Design: SWE-II control logic makes use of truly redundant devices incorporating different methodologies to sense—and reliably control—the evaporator's operating and shutdown conditions.

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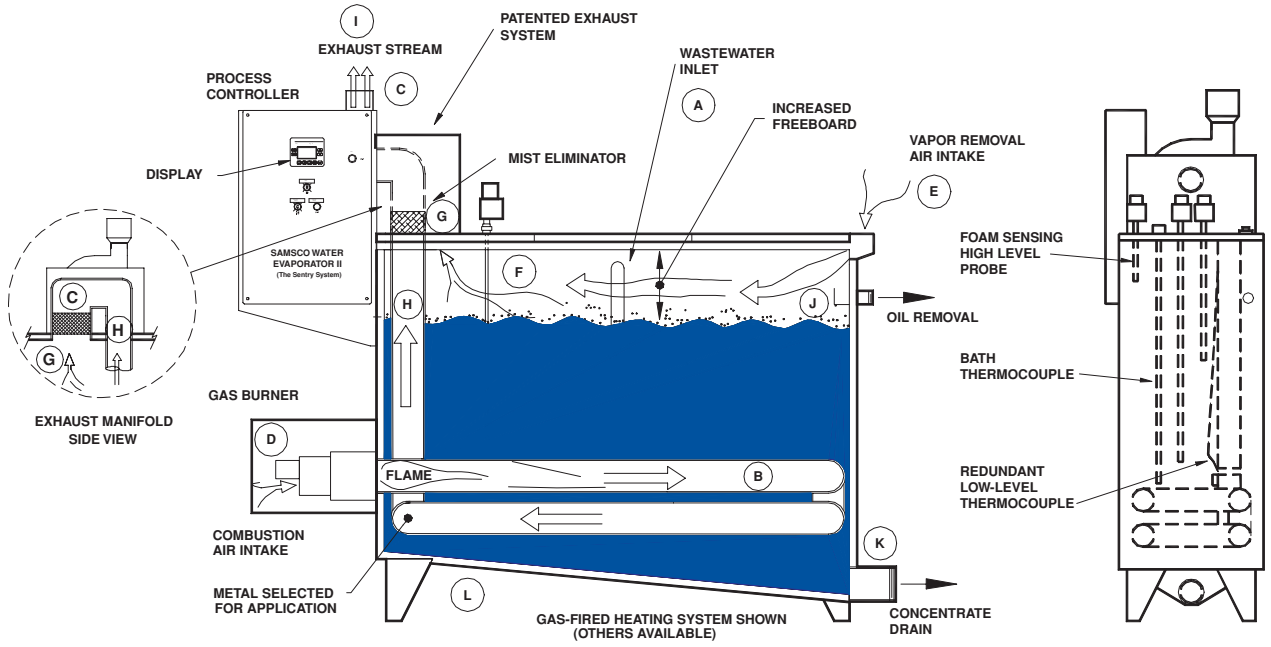
SAMSCO
Wastewater Evaporation Systems

SAMSCO WATER EVAPORATOR II *THE SENTRY SYSTEM*

SAMSCO's wastewater evaporation system: the **SAMSCO WATER EVAPORATOR II**, with a control panel approved by UL, is an automatic, wastewater minimization system that "stands guard" over your waste disposal process to provide control over the handling of problem wastes.

Features of THE SENTRY SYSTEM

- **System Display** (NEMA 4) eye-level English messages (remaining cycle time, bath/flue temperature, etc.)
- **Context-Sensitive Help** screens with scripts from the SAMSCO Operation Manual provide operators the information needed to keep evaporative process boiling at peak performance.
- **Dual-level Password Security—**separate operator and supervisor log-ins provide tamper-proof evaporative process control while displaying key system operating data to all.
- **Three-stage Mist Elimination—**large freeboard, the SAMSCO's foam-detecting (RF-Admittance-style) level sensors minimize/detect/control mist & foam in boiling waste, preventing mist eliminator flooding.
- **Stainless Exterior** for corrosion protection in harsh environments.
- **Improved Accuracy/Reliability—**new sensing package continuously displays Cycle Time & Temperatures.
- **Alarm History Memory** records last 100 system alarms—for review of interruption events.
- **Easily accessed tank interior—**large folding lid, new air intake, improved combustion port access.
- **Emergency Stop Button—**red "mushroom" switch for fast, safe, total-system shutdown.
- **Blower-off Delay—**reduces operating cost by automatically stopping blower after tank sufficiently cooled.
- **Fail-safe Control—**system alarms on loss of signal (broken wire, etc.).



Principles of Operation

Wastewater is fed to tank as required at **(A)**.

Blower **(C)** draws air stream into tank at **(E)** to remove vapors. Blower also draws combustion air into burner at **(D)**. Heat exchanger **(B)** contains combustion gas, preventing its release into tank.

Heat exchanger causes water to boil. Air moving over boiling surface **(F)** captures water vapor.

Moisture-saturated air leaves tank through coalescing mist eliminator where oil/water droplets are removed and clean steam passes into manifold at **(G)**. Flue gas **(H)** joins water vapor at blower manifold entrance—not exhausted into tank.

Air streams—environmentally approved—are mixed in blower and exhausted through stack to atmosphere **(I)**.

When boiling is interrupted, oils—freed from emulsion—float to surface and are decanted at trough **(J)** automatically, or manually.

Solids settle to tank's sloping trough floor **(L)** and are removed with concentrated liquid through large clean-out port **(K)**.