



Gasoline cooler for major Gulf Coast refinery

Niagara Wet Surface Air Coolers (WSAC®) case study



International oil company

Location: Texas, Gulf Coast

Application: Cooling gasoline streams in a refinery process

The challenge

Aggressively treated, corrosive spray water used for cooling gasoline streams to critical outlet temperature.

The solution

A Niagara Wet Surface Air Cooler (WSAC®) was custom designed using FRP and other materials to achieve desired results.

Advantages

- FRP lined galvanized steel basin and casing for protection from aggressively treated spray water

- Admiralty tubes and brass tube sheets used to fabricate ASME tube bundles
- Bolted removable headers for access and cleanability of inside of tubes
- Ability to achieve critical outlet temperature during the hottest summer months

What is a WSAC?

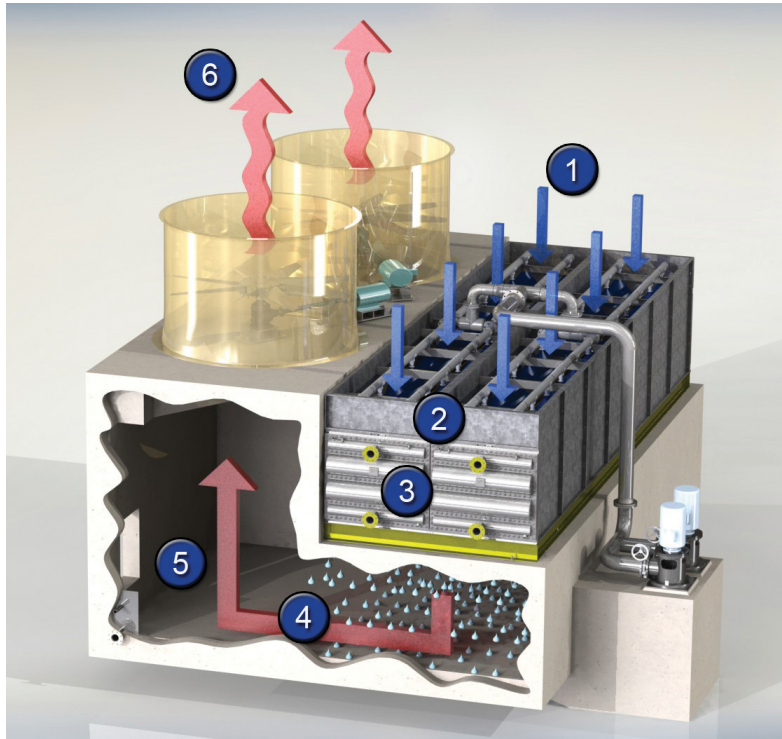
Alfa Laval Niagara Wet Surface Air Coolers (WSAC®) are efficient closed-loop, evaporative cooling systems designed for the power, process, wastewater, natural gas and petrochemical industries.

These fluid cooling and vapor condensing systems are optimized for industrial applications where rugged designs, and cost-effective, efficient closed-loop cooling and condensing duties are required.

Niagara WSAC® - How it works

The closed-loop design ensures that the process liquid, vapor or gas flows through the inside of the heat exchanger tubes, with the cooling air and the spray water flow in the same direction on the outside of the tubes.

1. Air is induced downward over tube bundles
2. Water flows downward along with the air
3. Heat from the process stream is released to the cascading water
4. Vaporization transfers heat from cascading water to the air stream
5. The air stream is forced to turn 180° providing maximum free water removal
6. Fans discharge air vertically at a high velocity to minimize recirculation



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Alfa Laval reserves the right to change specifications without prior notification.

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