



Improved efficiency for propane condensing

Niagara Wet Surface Air Coolers (WSAC®) case study



Gas processors

Location: North Dakota

Application: Propane condensing

The challenge

Engineer an efficient, cost effective propane condenser.

The solution

Build a modular Niagara Wet Surface Air Cooler (WSAC®) capable of operating in the harsh conditions of North Dakota.

Specifications

- Process capability: 506,000 lbs./hr. of propane refrigerant
- Heat load: 82 MM BTU/hr.
- Inlet Pressure: 230 psig

Advantages

- Significantly lowers compressor HP requirements by lowering operating/condensing pressure
- Condensing based on single approach to ambient wet bulb
- Smaller footprint than conventional cooling systems
- Closed-loop, ASME U stamped code tube bundles

What is a WSAC?

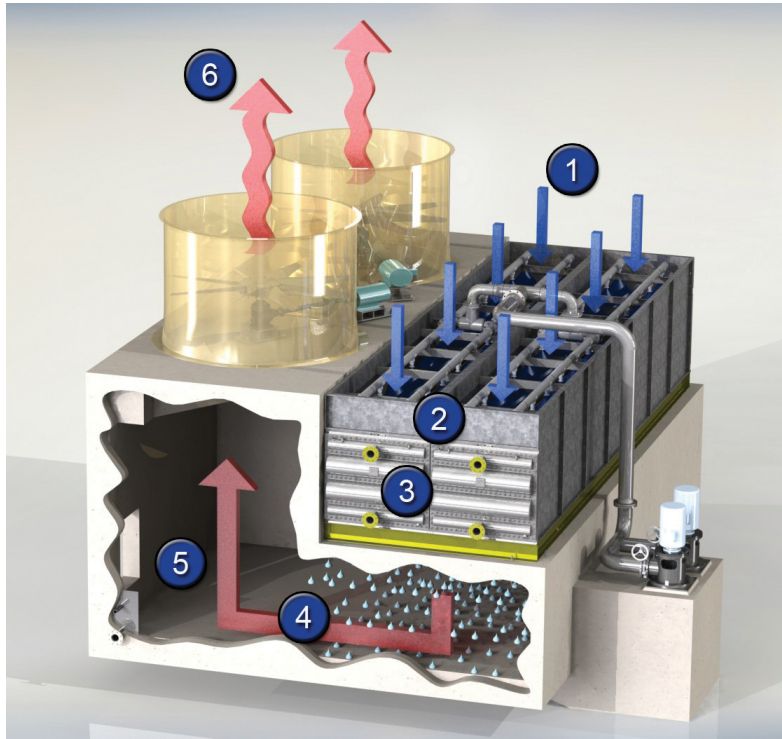
Alfa Laval Niagara Wet Surface Air Coolers (WSAC®) are efficient closed-loop, evaporative cooling systems designed for the power, process, wastewater, natural gas and petrochemical industries.

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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Contact details for all countries are continually updated on our website.

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