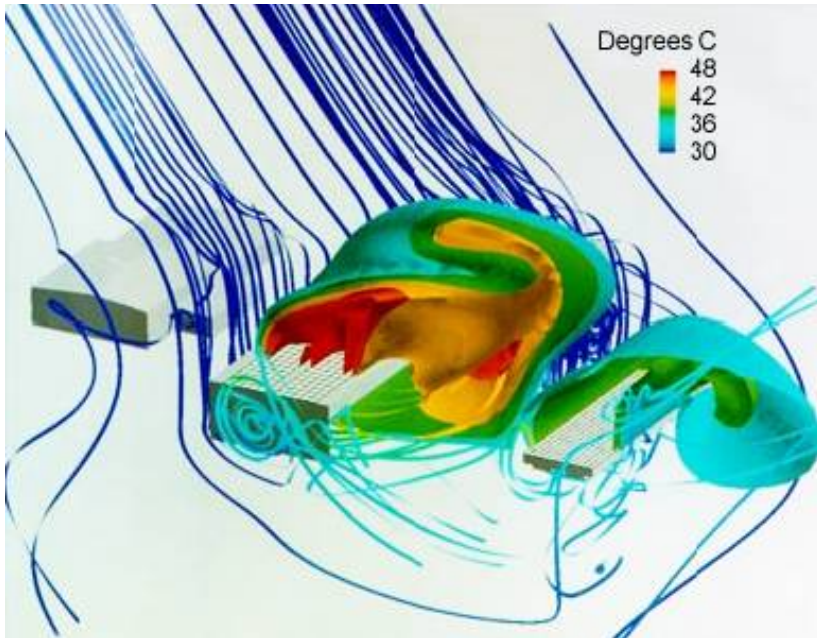


HAR (Hot Air Recirculation)-Issues-Solutions

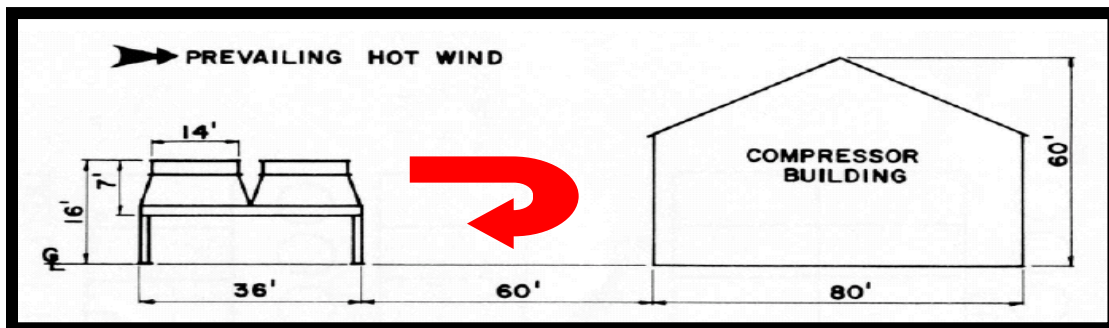


CFD modeling should be detailed before construction starts.

Positioning air coolers to account for prevailing winds will help prevent HAR. If this fertilizer plant had performed this same CFD model, before they built this plant, they would have placed the air coolers in a different position.

Now the only solution is on page two of this brochure.

Many facilities are simply built wrong from the start. SAGD sites in Western Canada are a prime example where the air coolers are positioned close to pipe racks or large buildings.



Rule of Thumb: A cooler cannot cool below ambient. HAR effects ambient (into fans) which effects cooling in a negative way



<https://www.youtube.com/watch?v=N5N849pTjr0>

Most HAR issues go undetected as facility staff do not typically know what they are looking for.

It's hard to see hot air moving back into the inlet unless you know how to test for this condition.

This YouTube video shows a very easy way to test for HAR

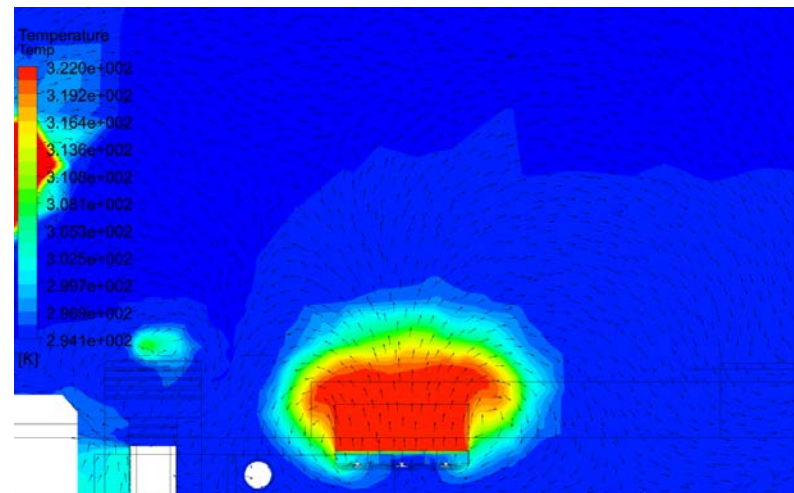
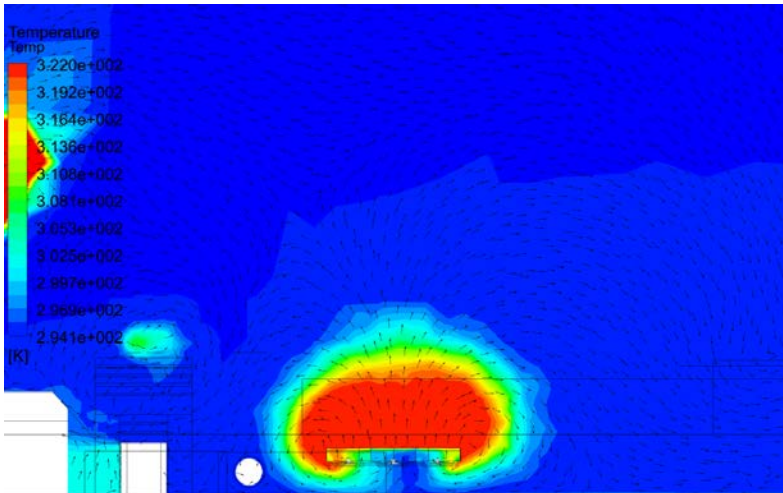
HAR (Hot Air Recirculation)-Issues-Solutions



To solve HAR issues, most end-users build metal walls (up) or roofs off to one side. Using temporary plastic and scaffold is also a quick fix but not a good long-term solution. Metal walls add weight and cost due to needing civil engineering sign-off (wind and snow loads). See a much simpler concept below using "Custom Screens".

Cooler without Custom Screens

Cooler with Custom Screens on top of system



This picture shows the screens mounted at the bottom on a large ID-fan cooler bay. We can also mount the screens on top. Each job can be accessed once we get engaged to solve your HAR issues