

# NIAGARA BLOWER SOLUTIONS

## What is WSAC®?

*The Wet Surface Air Cooler is a closed-loop, evaporative cooling system.*

*Wet Surface Air Coolers are optimized for industrial applications where rugged design/fabrication and cost effective efficient closed-loop cooling/condensing are required.*

### Applications:

Liquid Cooling  
Gas Cooling  
Vapor Condensing

### Industries:

Refining  
Power  
Wastewater  
Pulp & Paper  
Metals  
Mining  
Food/Beverage

## CASE STUDY

# IMPROVED EFFICIENCY FOR GAS PROCESSING FRACTIONATION

Customer: **GAS PROCESSOR**  
Installation Location: **TEXAS**  
Application: **FRACTIONATION COOLING**

**THE CHALLENGE** Develop a method to improve efficiency of the NGL fractionator process while reducing operating costs and increasing NGL production.

**THE SOLUTION** The WSAC was used for the De-propanizer, De-butanizer, and De-isobutanizer reflux cooling streams. The WSAC produces a colder temperature than conventional cooling could offer. In addition the WSAC was used for the De-ethanizer refrigeration system condenser to reduce compressor horsepower by lowering the condensing temperature of the propylene refrigerant used to cool the distillate column(s).



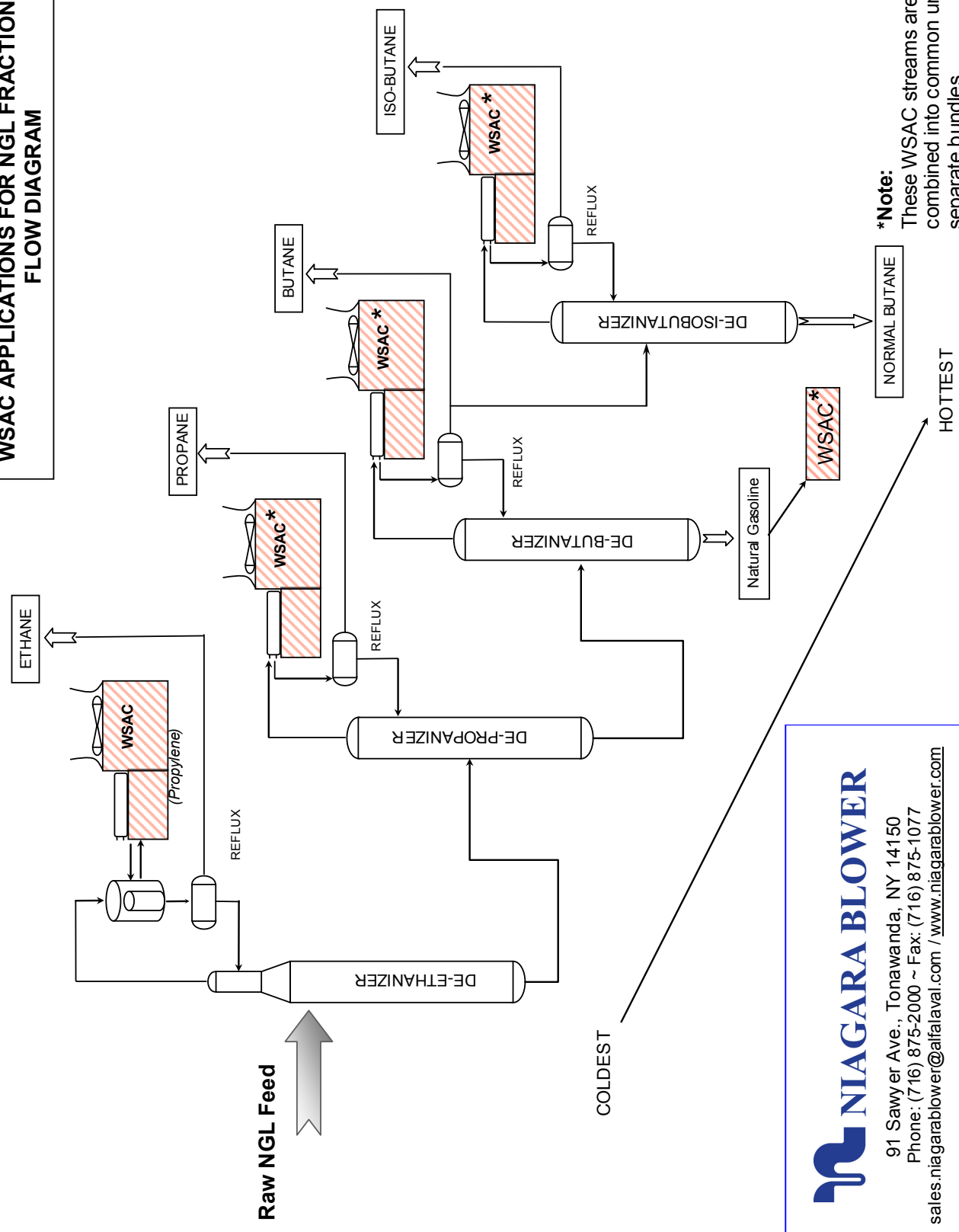
## WSAC® ADVANTAGES

- Improved NGL production—ability to fractionate more gas on more days of the year.
- Significant reduction in compressor horsepower, typically one full compression train.
- Improved refrigeration efficiency by lower condensing temperature and operating pressure. (DeEthanizer multistage refrigeration)
- Colder condensate outlet temperature for reflux streams than fin fan air coolers
- Colder outlet temperature than surface exchanger/cooling tower combination
- Smaller footprint than conventional cooling systems
- Cools process stream directly inside an ASME code tube bundle.



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**WSAC APPLICATIONS FOR NGL FRACTIONATION  
FLOW DIAGRAM**



**\*Note:**  
These WSAC streams are  
combined into common unit with  
separate bundles.

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