

A comprehensive amine service plan delivered over \$50,000 in OPEX

NALCO Water
An Ecolab Company

CASE STUDY - MIDSTREAM

CH-2024



BACKGROUND

A Southern US gas processing facility operates four amine trains. The plant was commissioned at a high solvent circulation rate due to the need to operate at maximum capacity. Later, when plant utilization decreased, the solvent circulation rate was maintained at an elevated rate. Under conditions of low feed gas throughput and high recirculation rates, it is possible that operating expenses will be unnecessarily high, and that hydrocarbon co-absorption can occur leading to foaming. In addition to increased operating expense.

Proprietary advanced process simulations were run on one amine train. Simulations revealed that the plant would benefit from several operational changes.

RECOMMENDATIONS

The Nalco Water team provided a turn-down procedure to plant management. The team worked side by side with plant operations and, upon reviewing current operating practices recommended reducing the solvent recirculation rate in measured increments. The optimal solvent circulation rate was identified through plant experience, equipment specifications, and proprietary simulations. This change would result in a lower mass flow in the Still, decreasing the reboiler duty required to regenerate the amine.

RESULTS

The plant applied the recommended operational changes. As a result, the plant -

- Reduced amine recirculation rate by 33%
- Lowered energy needs from 8.2 MBtu/hr to 6.2 MBtu/hr
- Plant saved \$53,609 in annual OPEX

Nalco Water provided a direct replacement for the existing amine solvent, a formulated MDEA chemistry, and even so could provide substantial and measurable return to this plant.

The plant awarded the Nalco Water team additional amine trains.

eROISM



COSTS

\$53,000 in
annual OPEX



ENERGY

Reduced amine
recirculation rate
by 33%

Reduced reboiler
duty by 24%

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