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Natural Gas Processing

Recovery enhancement of liquid hydrocarbons in dew point control unit of natural gas processing plant

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ABSTRACT

The low temperature absorption method is currently used in a gas-processing unit to control the natural gas dew point. The major problem of this unit is the simultaneous absorption of high amount of methane within heavier hydrocarbons, which leads to low purity of ethane and propane streams. Considering the operational conditions, the mention int at −23° c at the ows very high am as been introd 85° c by self- cess, the problem ercome. In this proc refrigera to 2896 kPa pressure. Expander outlet with reflux and condensate produced from a cold separator

are fed to an absorption tower with a reboiler and the separation will occur. The advantage of this method is controlling the concentration of methane in the product streams. Simulation results show that the process can daily produce 22,280 barrels of gas liquids with a concentration of 0.5 mole% of methane. In addition, the recovery efficiencies of propane and butane in the newly proposed method are 97.3% and 99.99%, respectively, which show a remarkable advantage over the current trend.

KEYWORDS: Self-refrigeration turbo expander absorption gas liquids dew point