Developments in Gas Separation

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Guild Associates is pleased to announce the results from its comprehensive field study to upgrade biogas to pipeline quality in its PSA system. Upgrading biogas generated from livestock manure and supplemental feedstocks is growing in popularity as operators realize the potential revenues from the sale of their gas to the pipeline. Guild's system has been proven to remove contaminants, water, H2S and CO2 in a single, self-contained unit, making it simple and inexpensive for the operator to achieve high purity pipeline-quality natural gas.

Guild Associates has a long history of supplying adsorption-based systems for removing contaminants from natural gas. Over two dozen systems of various sizes have been installed to treat coal-mine methane, landfill gas, natural gas fields and other contaminated methane-rich feed streams. More recently we have placed in operation biogas upgrading systems, which are similar in principal, but target gases specific to anaerobic digesters.

While the removal of water and CO2 from contaminated, methane-rich streams is well proven in Guild equipment, limited data has been available for the co-removal of H2S. In the biogas industry, hydrogen sulfide has historically been the most troublesome to remove, requiring expensive additional treatment systems to enable the gas to meet pipeline quality standards. Guild Associates has now demonstrated, on digester gas generated at a large dairy, the reduction of H2S, from over 3,000 ppm, to pipeline specifications of less than 4 ppm in a single step. Guild's process involves compressing the biogas to approximately 100 psig, then passing it through its PSA system where the water, H2S and CO2 are removed to deliver a dry, H2S-free product stream as sales gas to the pipeline. The process requires no expensive consumables or reagents, or ancillary H2S removal equipment. This feature helps insure low operating costs.

Guild systems are designed to satisfy a range of digester plant sizes with feed rates from 500,000 scfd, and less, to over 20 million scfd. A major feature of the process is the ability to meet pipeline specifications regardless of the feed composition, its high turndown capability, and adaptability to fluctuations in feed flow.

About Guild Associates:

Guild provides adsorption and catalyst systems to a variety of markets as well as shop fabricated engineered systems including Molecular Gate™ systems.

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