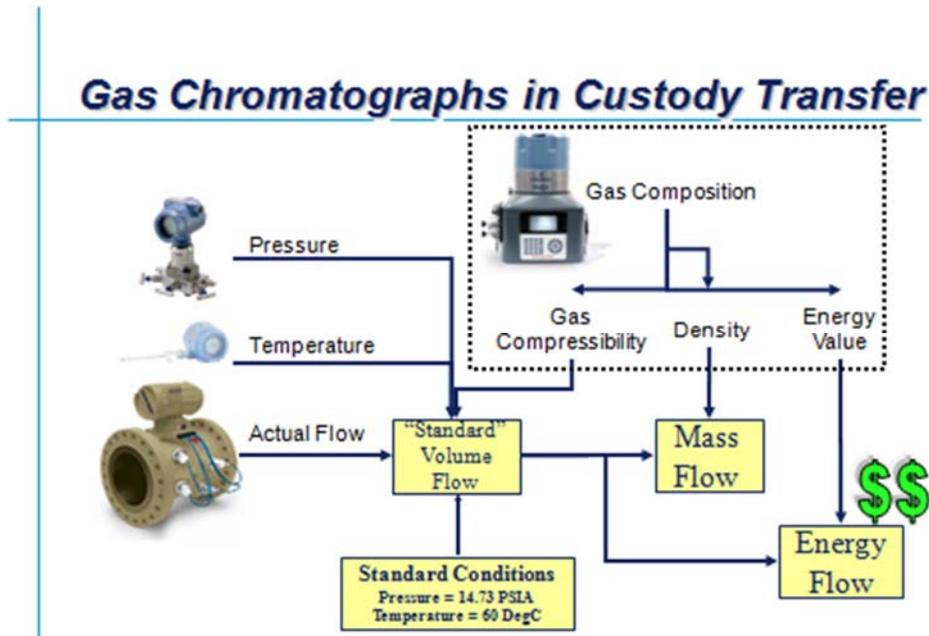


## OPERATION OF ON-LINE GAS CHROMATOGRAPHS

Bill Frazier

Emerson Process Management

Gas Chromatographs serve as a basis for measurement of individual Natural Gas Components to determine the BTU or Energy Value of the Natural Gas. The use of “On-Line” Gas Chromatographs enables the end user to know 100% of the time the energy value of the gas flowing through their system. It is much like using a “cash register” to keep count of the dollars flowing through your pipelines. Here is an example of just how Gas Chromatographs interconnect with the entire setup to determine the value of the natural gas in question:



**Figure 1. Gas Chromatograph as Component of Measurement**

Gas Chromatography is used widely in the Oil & Gas Industry. It uses several different industry guidelines that are typical “custody transfer” applications.

Considerations of the following are used to determine the quality of the product and compare against the required tariff specifications:

Calculate physical properties of the product

- Heating Value (BTU) – using GPA 2172 – 96 or ISO 6976 (metric)
- Specific Gravity – using AGA 8
- Compressibility – using AGA 8
- Wobbe Index (Heating value/Square Root (Specific Gravity))