Analysis of Pipeline-Quality Gas using a C6+ with Trace H2S Application

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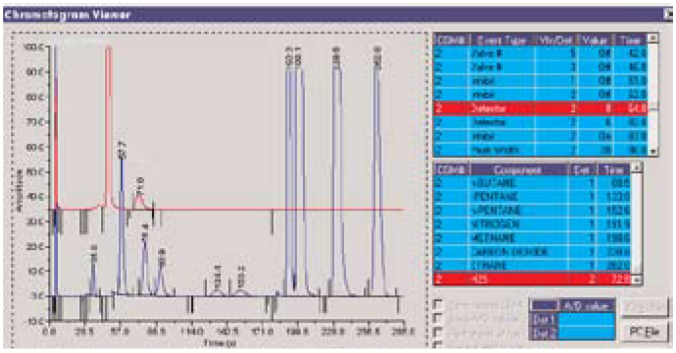

C6+ with H2S Dual Chromatogram

Background

Hydrogen sulfide (H2S) is a component that is often present in natural gas. There are many reasons for wanting to measure it. One of the most important reasons is that H2S is a highly toxic gas that can be deadly if breathed into the lungs. This gas is also corrosive to the pipeline.

H2S mixed with H2O forms hydrosulfuric acid, which can cause pipeline metals to become brittle. Contractual obligation may require scrubbing or limiting of the H2S in natural gas before it is sold. Each pipeline company has its own acceptable limits of how much H2S can be present.

Natural gas transmission and distribution

As in the standard C6+ application, the gas chromatograph supplies the heating value, gas composition, and relative density to flow computers for use in volumetric and energy calculations. However, this application also measures the trace amount of H2S which can be a critical measurement in regards to personal safety, corrosion control, and contractual agreements.

C6+ with Trace Analysis Information:

Every five minutes the Danalyzer injects a small sample of the flowing gas stream. The gas is then separated into the following components:

Component		Range
C6+	Hexanes and heavier	(0-0.5%)*
C3	Propane	(0-5%)*
IC4	Isobutane	(0-1%)*
NC4	Normal Butane	(0-1%)*
NeoC5	Neopentane	(0-1%)*
IC5	Isopentane	(0-1%)*
NC5	Normal Pentane	(0-1%)*
N2	Nitrogen	(0-15%)
C1	Methane	(0-100%)
CO2	Carbon Dioxide	(0-15%)
C2	Ethane	(0-15%)
H2S	Hydrogen Sulfide	(0-30 ppm)

* Heavier concentrations can be measured but may require a heated sampling system to prevent drop-out.

Exceptional performance with Emerson's gas chromatograph products

- Maximum custody transfer accuracy and assurance.
- +/- .05% (+/-.5 BTU/1000 BTU) repeatability (+/- .25 BTU/1000 BTU when in a temperature-controlled building)
- H2S +/- 3 PPM (+/- 2 PPM when in a temperaturecontrolled building)
- All units temperature chambered (-18° C to 55° C) to ensure repeatability over the complete temperature range.
- Reduced installation and maintenance costs
- No shelter required
- Chromatograph valves warranted for 5 years.

Key Features

- MON 2000 Intuitive Man Machine Interface software (Windows-based)
- Four separately configurable serial ports (RS232, RS422, and RS485 Modbus protocol)
- Rack mount or integral explosion-proof controller (with optional keypad and display)
- Optional integral modem (no additional enclosures required)
- Dedicated printer port (parallel or serial interface)
- Class 1, Div. 1 Groups B, C, and D, (No air purge required)

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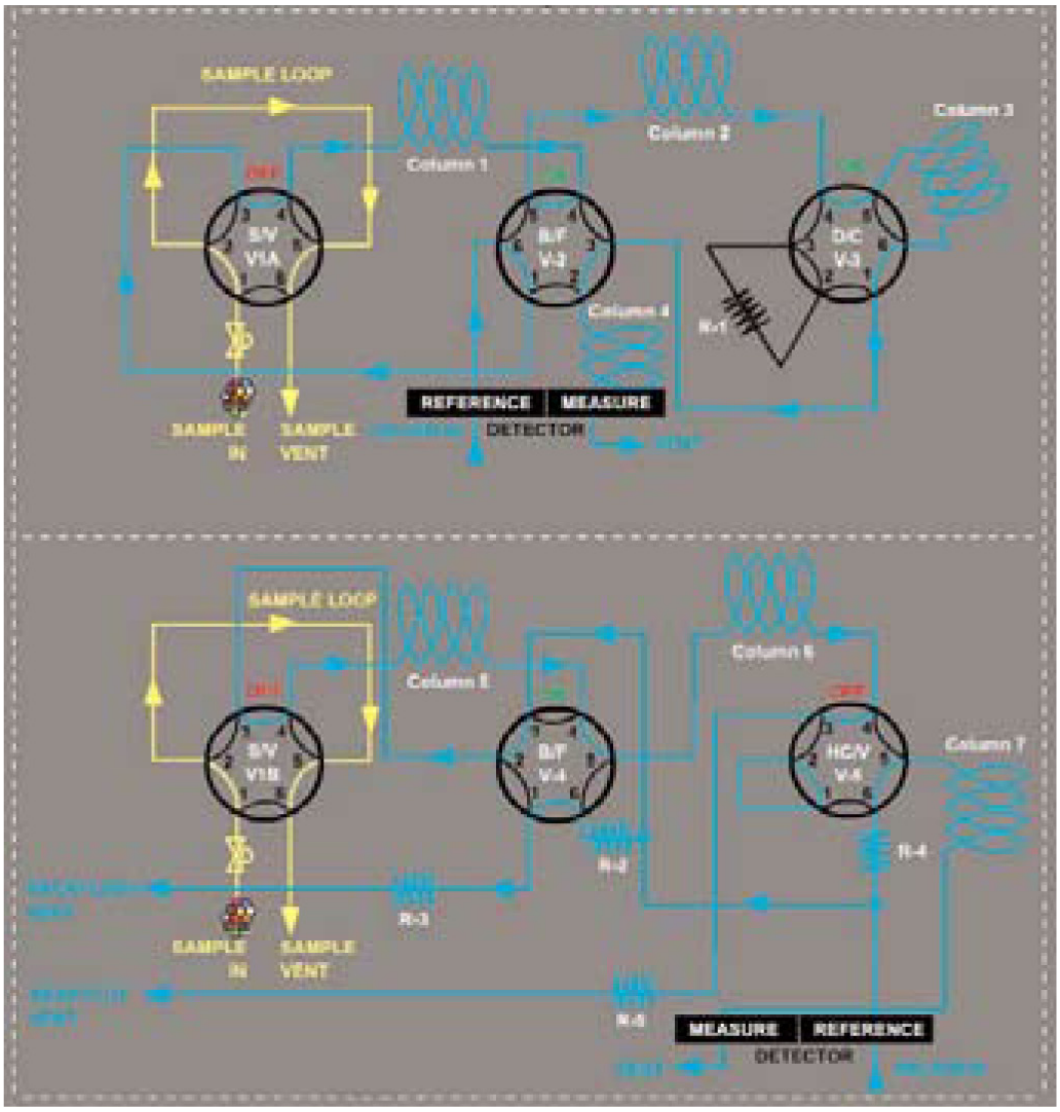

Oven 1:

Used for measurement of C1-C6+, N2, and CO2

Oven 2:

Used for measurement of H2S

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