

NGC8203 C3+ chromatograph and gas blending

Analytical applications



The NGC8203 gas chromatograph has a special column set to analyze the components found in low Btu “Landfill” gas.

Measurement made easy

01 NGC8203 C3+ chromatograph and gas blending application

Overview

The NGC8203 Gas chromatograph has a special column set to analyze the components found in low Btu “Landfill” gas. In addition, Totalflow has constructed a sample system that provides a pressurized sample to the NGC from the low pressures typically found in landfill operations.

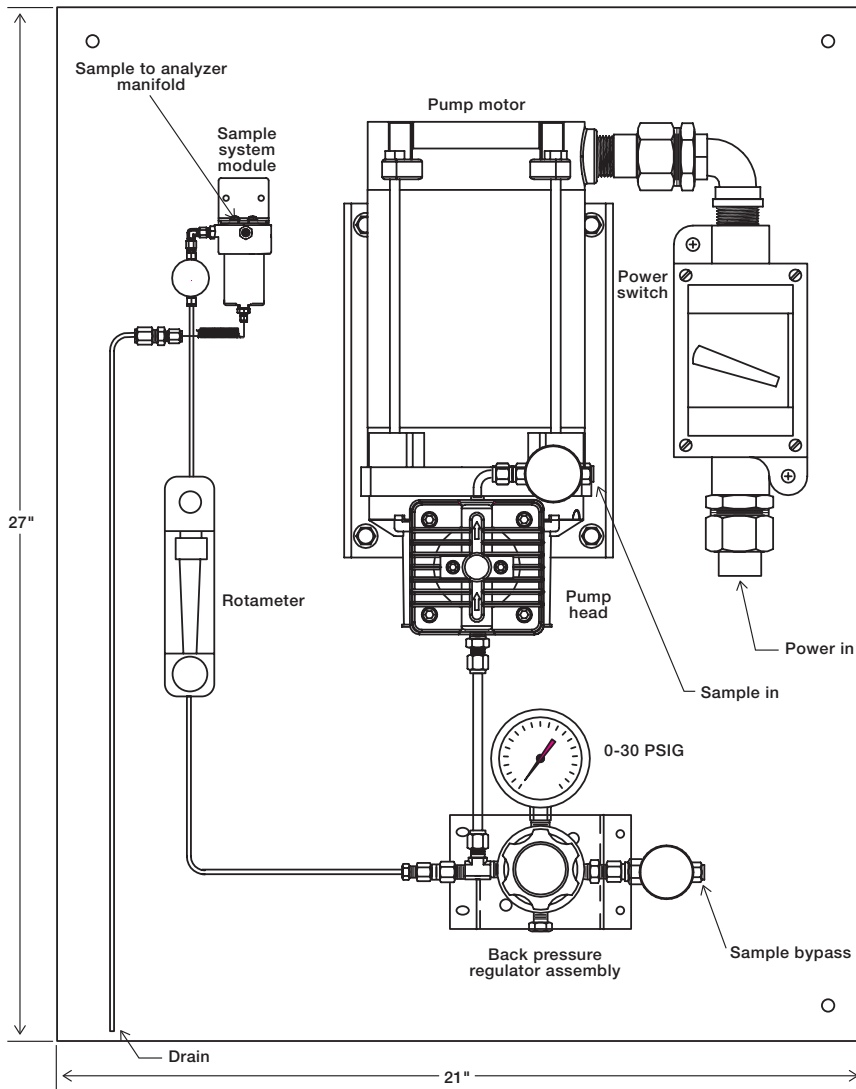
The low Btu gas is used primarily as fuel for turbines to produce electricity in a “cogen” operation. In some cases the landfill gas is blended with higher Btu components such as propane to raise the quality of the gas and allow it to be fed into a transmission pipeline.

The components typically found in landfill gas are:

- Methane 54%
- Carbon Dioxide 42%
- Nitrogen 3.1%
- Oxygen 0.8%
- Hydrogen Sulfide less than 1200 ppm
- Carbon Monoxide (indicating under ground combustion)

Stream Composition and ranges for a valid application for the NGC C3+ Analysis:

- | • Component | Mol% |
|--------------------|-----------|
| • Nitrogen | 0.1-100 |
| • Carbon Dioxide | 0.1-100 |
| • Methane | 0.05-100 |
| • Ethane | 0.1-100 |
| • Propane | 0.05-100 |
| • Hydrogen Sulfide | 0.01-0.12 |
| • Oxygen | 0.2-20 |
| • Carbon Monoxide | 0.2 -100 |
| • Hydrogen | 0.1-20 |
| • Ethylene | 0.1-100 |



Recommended sample conditioning system for landfill application

This sample system is designed to bring the low pressure landfill gas to the NGC at an increased pressure (10-20 psig) for injection into the analyzer.

The pressure is increased by a Di-Vac pump. The operator can adjust the inlet stream to an appropriate level of around 15 psig. Most of the sample stream will be vented through the back pressure regulator.

It can be vented to atmosphere or returned to the process stream since it is at a higher pressure. The sample stream is also passed through a sample conditioning module which insures that the NGC will be provided with dry, uncontaminated gas for the analysis.