



PROJECT SUMMARY

Scrubber Exhaust VOC CEMS / January 2024

AMP-Cherokee Environmental Solutions has been chosen to design, build and install a VOC Continuous Emissions Monitoring System at a petrochemical facility to measure the volatile organic compounds (VOC) and stack flow to allow VOC emission rate calculation of the facility's venturi scrubber exhaust vent.

The analyzer complement consists of a ABB Advanced Optima non-methane hydrocarbon (NMHC) analyzer to measure VOC and a Kurz Instruments Thermal Insertion Flow Meter to measure flue gas flow rate in the scrubber exhaust vent. The flue gas will be sampled using a wet dilution extractive technique with a sample probe manufactured by M&C that meets Class I, Division 2 electrical area classification.

Monitoring emissions from a single source, an M&C dilution probe will dilute the sample at a 20:1 dilution ratio and push the sample to a NMHC analyzer with internal heated aspirator. Solenoid valves allow calibration and Cylinder Gas Audit (CGA) gas flow for zero, span/mid CGA and low CGA to the system through an inlet port located in the stack mounted dilution probe. The sample gas temperature is controlled to 191°C (375°F) from the dilution sample probe heated filter assembly to the analyzer inlet port.

The stack flow is measured by a Kurz Series 454FTB-WGF constant temperature thermal mass flow meter engineered specifically for industrial gas flow measurements up to 932°F (500°C). This device mounts directly to the process stream and meets a Class I, Division II electrical classification.

ABB's Advanced Optima NMHC analyzer includes controls through the analyzer equipped relay output module to initiate the blowback/purge solenoid valve to purge the sample probe tube of contaminants as well as control the 3-valve manifold solenoid valves to allow daily calibrations and quarterly CGAs. The analyzer also has an analog input module to accept 4-20mA signals from the Kurz flow meter for mass flow rate and process temperature along with the sample tube bundle's Watlow temperature controller.

AMP-Cherokee will supply a new sample probe, heated sample tube bundle, air clean-up assembly, analyzers, flow/temperature control panel and NEMA 4X instrument enclosure.

AMP-Cherokee provides startup services for the CEMS, daily data review, RATA support for a third party test team, and CGA/RAA audits.

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