



AutoGC

Preliminary Field Qualification

demonstration of continuous performance and quality objectives

Orsat will qualify each system for detection limits, separation efficiency, method optimization as well as response factors and humidified blank criteria. Guidelines used for this qualification are accepted by US EPA standards and are provided in our Quality Assurance Plan. A written certification is provided with each system for future reference that outlines all standards used, operational parameters, and retention time road maps.

Orsat can provide daily standards to be used with the blending system, which are certified and will last the duration of the operating season. Daily standards contain certified concentrations of propane and benzene for recovery calculations and up to 12 additional constituents used as reference peaks in the processing methods for the system. Additional standards and audit samples should be supplied by the customer at the time of installation to be incorporated into the certification document.

System Qualification offers a comprehensive evaluation of the monitoring system from the outset of its deployment in a field setting. This data provides operators with detailed data by which they can evaluate the system's subsequent performance. It also provides a standard, which can be used in the event of a failure to assist operators and maintenance personnel in their efforts to return the system to operation.

- Establish acceptable multipoint (3-point) calibration using the Merlin Dilution System and a 14-component standard at 1 ppmv for each component
- Calibration for components eluting on the PLOT column (C_2-C_6) will use the average response factor for propane as ppb carbon and the calibration may not exceed 20% relative standard deviation
- Calibration for components eluting on the boiling point (BP) column will use the average response factor for benzene as ppb carbon and the calibration may not exceed 10% relative standard deviation
- Initial collection of data for 7-day demonstration period
- Analyze daily 14-component calibration verification samples (CVS) and daily field blanks during the demonstration period
- Analyze one duplicate CVS immediately following at least one daily CVS (precision check)
- Analyze a second source laboratory control sample (LCS) containing the same 14 target compounds as the CVS and diluted to nominally 5 ppbV in a summa canister which is also used to verify the blended calibration check, calibration curve and calibration standard
- Verify that all components are being correctly identified using the US EPA 56-component retention time standard

Field Certification Report:

With each field qualification, a certification report is issued that contains the following information for future reference:

- Multipoint calibration data sheet
- CVS Recovery report for sampling period
- Precision report for duplicate runs and for daily check standards
- Field blank report for sampling period
- LCS recovery report
- Data completeness calculation
- Chromatograms of retention time standard, ambient air and blanks

Data Quality Specifications:

Multipoint Calibration RSD < 10% for average response factor over calibration range

CVS Recovery Benzene and propane within 75–125%;
all other CVS compounds within 55–145%

Precision Relative percent difference (RPD) for benzene and propane < 20%

LCS Recovery Recovery of benzene and propane within 70–130%;
all other CVS compounds detected

Daily Field Blank Total non-methane hydrocarbons < 20 ppbC, and individual target compounds
< 2.0 ppbC

Completeness (Data Capture) For the 7-day demonstration period must be greater than or equal to 90% valid hours
of operation

(Completeness is calculated as the number of hours of valid data, expressed as a percentage of the total number of hours of operation, excluding hours during which a calibration or quality control test is being conducted. Down time for maintenance is not excluded.)



Orsat field technicians are on hand 24/7 to respond to site needs and perform regular maintenance.

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