



State of New Jersey

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MEMORANDUM

TO: Air Permit Evaluators

FROM: Kenneth Ratzman, Assistant Director
Air Quality Permitting Program 

SUBJECT: Monitoring of VOC Emissions Controlled by Oxidizers

DATE: November 21, 2016

I. Background

This memorandum explains methods of monitoring of volatile organic compounds (VOC) emissions controlled by oxidizers. It supersedes the memorandum from William O'Sullivan titled "Use of CEMs on Oxidizers" dated August 26, 1999. This memorandum is to be used during the review of air permit applications for new or modified source operations. The memorandum will also be used when facilities replace or reconstruct existing oxidizers.

II. Criteria for Installation of THC CEMS

The Department has determined that monitoring of total hydrocarbons (THC) concentration in the flue gas emitted to the atmosphere provides more meaningful information than monitoring carbon monoxide (CO) concentration. Accordingly, owners and operators of the source operations meeting any one of the following criteria shall install total hydrocarbon continuous emission monitoring systems (THC CEMS):

1. Thermal Oxidizers with maximum potential emissions of VOC before control of 200 tons/year or greater;
2. Catalytic Oxidizers with maximum potential emissions of VOC before control of 200 tons/year or greater;
3. Regenerative Thermal Oxidizers with maximum potential emissions of VOC before control of 100 tons/year or greater; and

4. Regenerative Catalytic Oxidizers with maximum potential emissions of VOC before control of 100 tons/year or greater.

III. Criteria for Consideration of Alternatives to CEMS

For sources that have lower emissions than specified above, the facility must monitor THC concentration consistent with the monitoring frequencies summarized below **in accordance with the THC Periodic Monitoring Requirements available at <http://www.state.nj.us/dep/aqpp/>**. The Department may require more frequent monitoring on a case by case basis.

VOC Emissions Before Control (TPY) Thermal and Catalytic Oxidizers	VOC Emissions Before Control (TPY) Regenerative Oxidizers	Minimum Frequency of Periodic Monitoring
> 40 to < 200	> 40 to < 100	Daily
> 10 to ≤ 40	> 10 to ≤ 40	Weekly
> 1 to ≤ 10	> 1 to ≤ 10	Monthly
≤ 1	≤ 1	Quarterly

IV. Special Cases

1. Owners and operators of VOC transfer operations, including gasoline transfer and marine tank vessel loading, controlled by thermal oxidizers or enclosed flares shall monitor either THC or CO concentration in the flue gas emitted to the outdoor atmosphere on a continuous basis or at a frequency approved by the Department.
2. Owners and operators of enclosed flares burning landfill gas and digester gas shall monitor either THC or CO concentration in the flue gas emitted to the outdoor atmosphere on a continuous basis or at a frequency approved by the Department.
3. Monitoring of VOC emissions from bakery ovens when controlled with catalytic oxidizers should be considered on a case-by-case basis.