



Source Test Manual (Draft)

Procedures for Compliance Testing

Olympia, Washington

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When water vapor in the plume condenses and becomes visible at a distinct distance from the emission outlet, the observer must evaluate opacity of emissions ~~should be evaluated~~ at the emission outlet prior to the condensation of water vapor and the formation of the steam plume. Or, as an alternative, if secondary plumes are present downstream of the steam column, the observer may evaluate the opacity of emissions wherever the opacity is greatest, before or after the steam column.

The observer must record ~~opacity of emissions observations must be recorded~~ to the nearest 5 percent at 15-second intervals on an observational record sheet. Each momentary observation recorded must be deemed to represent the average opacity of emissions for a 15-second period.

3. Analysis

The observer will determine the opacity of the plume ~~is determined~~ by individual visual observations. Opacity must be reported as the range of values observed during a specified time period, not to exceed 60 consecutive minutes. The opacity standard is exceeded if there are more than 12 observations, during any consecutive 60-minute period, for which an opacity greater than the standard is recorded.

Or, as an alternative to this approach, the observer may use (EPA LIDAR Test Method) if it satisfies the requirements in "Alternate Method 1-Determination of the Opacity of Emissions from Stationary Sources Remotely by Lidar" in Appendix A-4 to 40 C.F.R. Part 60 (in effect on the date in WAC 173-400-025). The exception to this requirement is that Section 2.6.4 of the EPA LIDAR Test Method must be applied as follows:

The observed plume opacity \bar{O}_{pa} shall be determined by the greatest individual actual opacity values, \bar{O}_{pa} in a 60-minute period such that the sum of the respective time pulse is greater than three minutes. For example, if the firing rate was six pulses per minute, the observed opacity would be determined by the 19 largest individual opacity values.

4. References

Alternate Method 1-Determination of the Opacity of Emissions from Stationary Sources Remotely by Lidar. 40 CFR Part 60, Appendix A-4 To Part 60—Test Methods 6 Through 10b.

"Criteria for Smoke and Opacity Training School 1970-1971" Oregon--Washington Air Quality Committee.

Department of Ecology Announcement, September 27, 1983: "The State of Washington Department of Ecology's Source Test Manual will include EPA's LIDAR Test Method, as alternatives to WDOE Methods 9A and 9B."

Federal Register, Vol. 36, No. 247, page 24895, Dec. 23, 1971.

"Guidelines for Evaluation of Visible Emissions" EPA 340/1-75-007.

