

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY

FINAL APPROVAL OF March 20, 2003 REVISION

FIELD OPERATIONS MANUAL FOR AIR INSPECTORS
Air Standard Operating Procedures (ASOPs)

ASOP-3: VISIBLE EMISSIONS EVALUATIONS

Per Collaboration Process Development Memo Dated July 20, 2000

- Revision coordinated by Manager, Office of Air Compliance Coordination
- Reviewed by regional Air Compliance Managers and designees
- Presented to Senior Management Team for review and comment
- Finalized by Manager, Office of Air Compliance Coordination



Alice G. Nelson

4-2-03

Date

- Approved by Division Director of Air Programs



John M. Daniel, Jr.

4/4/03

Date

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DEPARTMENT OF ENVIRONMENTAL QUALITY
FIELD OPERATIONS MANUAL FOR AIR INSPECTORS
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ASOP - 3
VISIBLE EMISSIONS EVALUATIONS

I. POLICY STATEMENT

DEQ's policy with regard to visible emissions must be entirely compatible with EPA Reference Method 9 found in 40 CFR 60, Appendix A. In addition, it must not relax or tighten the standards as contained in the applicable regulations. Enforcement action should be taken in accordance with established policy and procedures, taking into consideration the margin of error inherent in the method. This guidance document does not go into details about EPA Reference Method 9 for Visible Emissions Evaluations. Rather, it serves to clarify some definitions in the method and how violations should be documented.

In general, when significant opacity is observed during a site visit (i.e. there may be a violation), the inspector should perform an official Visible Emissions Evaluation (VEE) for a minimum of 18 consecutive minutes, documenting the readings on a VEE form (Appendix A).

II. DOCUMENTING AN OPACITY VIOLATION

- A. Starting time: Opacity readings can begin at any time within a clock hour and can continue past the top of the next hour. "One hour" means any period of sixty (60) consecutive minutes. By comparison, "one-hour period" means any period of sixty (60) consecutive minutes commencing on the hour. VEE readings need not be confined within a "one-hour period". 9 VAC 5-40-80 of the Regulations for existing sources, and 9 VAC 5-50-80 for new sources, states the standard in terms of percent opacity per six-minute period in any "one hour".
- B. Averaging: As per EPA Method 9, any twenty-four (24) consecutive non-overlapping readings can be averaged and should be grouped so that the highest possible opacity is obtained and used as the first reading of subsequent 6-minute

averages thereafter. [Reference EPA Method 9, Section 2.4 and 2.5.]

- C. Determination of a Violation: A violation occurs whenever there is no exemption for the excess opacity incident provided in the Regulations and:
1. A single six-minute opacity average exceeds the "never to be exceeded limit". For existing sources (those in operation prior to March 17, 1972) the limit is sixty (60) percent opacity (9 VAC 5-40-80); for new and modified sources (those constructed, modified or relocated after March 17, 1972) the limit is thirty (30) percent opacity (9 VAC 5-50-80), provided their permit or a NSPS does not contain a stricter limit.
 2. Three six-minute opacity averages within any one hour exceed the twenty (20) percent standard or the appropriate opacity limit as specified in the permit or applicable regulations. The three six-minute periods do not have to be consecutive but must all fall within a 60-minute period.

III. ENFORCEMENT ACTION GUIDELINES

Enforcement action should be taken in accordance with agency policy and the procedures set forth in the DEQ Enforcement Manual and ASOP-10 for those facilities with COMs. For sources that are major for particulate matter, an opacity violation should be evaluated using EPA's High Priority Violator (HPV) Policy. Before initiating any enforcement action, consideration should be given to:

- A. Whether the opacity was exempt due to start-up or shutdown.

The source should be contacted after every VEE record that indicates a violation to determine if the readings were taken during a start-up or shutdown event. If so, then determine whether the regulations exempt excess opacity during these time periods:

- 1) If the unit is subject to the "new source" regulations (9 VAC 5-50-80), then the exemption for opacity excursions during start-up or shutdown periods under 9 VAC 5-50-20 A.4. applies.
- 2) If the unit is an "existing source" (9 VAC 5-40-80), then there is NO exemption for excess opacity during start-up or shutdown and the provisions of 9 VAC 5-40-20A.4. apply. For some existing sources, DEQ recognizes that it is not technologically and/or economically feasible to avoid some periods of excess opacity during a start-up or shutdown of the unit. In these cases, refer to the policy document signed by John

Daniel Jr., Director of Air Programs, regarding the use of "enforcement discretion" for opacity incidents during periods of startup and shutdown (Appendix B).

B. Whether the excess opacity was due to a facility upset or malfunction.

1) If the facility was having an upset that resulted in excess opacity for less than one hour, no further action may be warranted if the emissions were minor and the incident was unavoidable and/or corrected in a timely manner.

2) If the excess opacity lasted for an hour or more, the source must declare the event as a malfunction by notifying DEQ within four business hours, as specified in 9 VAC 5-20-180 (or 9 VAC 5-50-380 for new sources), and comply with the regulatory procedures stated below, if the facility wants protection from enforcement.

9 VAC 5-20-180.G. No violation of applicable emission standards or monitoring requirements shall be judged to have taken place if the excess emissions or cessation of monitoring activities is due to a malfunction, provided that:

- 1. The procedural requirements of this section were met or the owner has submitted an acceptable application for a variance, which is subsequently granted;*
- 2. The owner has taken expeditious and reasonable measures to minimize emissions during the breakdown period;*
- 3. The owner has taken expeditious and reasonable measures to correct the malfunction and return the facility to a normal operation; and*
- 4. The source is in compliance at least 90% of the operating time over the most recent 12-month period.*

C. Whether this is the first documented opacity violation at the facility.

1) First offenders can be considered candidates for informal enforcement, unless the violation is severe or HPV criteria are triggered.

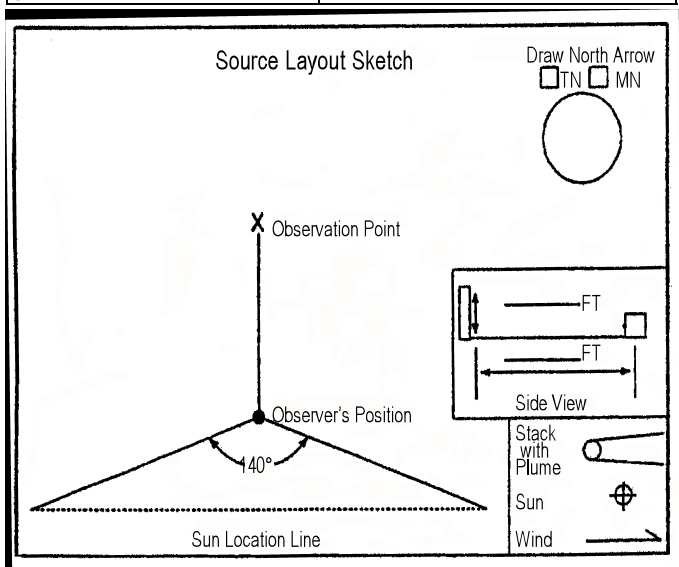
2) Repeat violators should be addressed more formally, as described in the DEQ Enforcement Manual, with the issuance of a Notice of Violation followed by a Consent Order with civil charges.

Appendix A

EPA METHOD 9 (40 CFR 60 - Appendix A) VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME		
LOCATION		
LOCATION		
CITY	STATE	ZIP
PROCESS EQUIPMENT		OPERATING MODE
CONTROL EQUIPMENT		OPERATING MODE
DESCRIBE EMISSION POINT		
HEIGHT OF EMISSION POINT		HEIGHT OF EMISSION POINT RELATIVE TO OBSERVER
		START END
DISTANCE TO EMISSION POINT		DIRECTION TO EMISSION PT. (DEGREES 0-360))
START END		START END
VERTICAL ANGLE TO OBSERVATION POINT		DIRECTION TO OBSERVATION POINT (DEGREES (0-360))
START END		START END
DISTANCE & DIRECTION TO OBSERVATION POINT FROM EMISSION POINT		
START END		
DESCRIBE EMISSIONS		
START END		WATER DROPLET PLUME
EMISSION COLOR		ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/> NONE <input type="checkbox"/>
START END		
DESCRIBE PLUME BACKGROUND		
START END		
BACKGROUND COLOR		SKY CONDITIONS
START END		START END
WIND SPEED		WIND DIRECTION
START END		START END
AMBIENT TEMP		WET BULB TEMP RH percent
START END		

OBSERVATION DATE		START TIME			END TIME
SEC MIN	0	15	30	45	COMMENTS
1					
2					
3					
4					
5					
6					
7					
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ADDITIONAL INFORMATION	

OBSERVER'S NAME (PRINT)	
OBSERVER'S SIGNATURE	DATE
ORGANIZATION	
CERTIFIED BY	DATE

Appendix B

Interoffice Memo

Date: 4/2/03
To: DEQ Air Compliance Managers
Cc: DEQ Air Compliance and Enforcement Staff
From: John Daniel Jr.
RE: Policy on Excess Opacity During Startup and Shutdown Events at Existing Units

DEQ recognizes that for some existing sources and source categories, given the types of control technologies available, there may exist short periods of excess opacity during startup and shutdown when, despite best efforts regarding planning, design, and operating procedures, the otherwise applicable opacity limitation cannot be met. DEQ, therefore, generally will refrain from taking enforcement action when the source demonstrates to DEQ's satisfaction that it is not technically or practically feasible for the source to comply with its opacity limitation during startup and shutdown.

In situations where an existing source has exceeded its opacity limitation during startup or shutdown, DEQ will ask the source to provide it with written information explaining:

- a) Why it is technologically and/or economically infeasible for the source to comply with the opacity limitation during start-up or shutdown;
- b) How the source minimizes the frequency and duration of start-up and shutdown to the maximum extent practicable;
- c) What measures the source has taken, or intends to implement, to minimize the magnitude and impact of emissions during start-up or shutdown.

DEQ will base its decision whether or not to take an enforcement action against the source on the basis of the information the source provides in response to that request.

Where an existing source has had excess opacity during a period of startup or shutdown, the inspection report prepared by DEQ will acknowledge the opacity events as periods of excess emissions, and, if appropriate, will provide a brief rationale for not taking enforcement action referencing appropriate source submittals. The overall compliance status for the report shall state IN COMPLIANCE.

The central office manager of the air compliance section will coordinate statewide consistency checks for regional compliance staff upon request.