

EPA Method 9, 203A and 203C Overview

Kale Walch

September 1, 2015

Outline

- Overview of how and when to conduct an EPA Method 9 reading
 - Observers still must complete “smoke school” classes in order to be certified
- Overview of how and when to conduct an EPA Method 203A reading
 - a.k.a Modified Method 9 for continuous plumes
- Overview of how and when to conduct an EPA Method 203C reading
 - a.k.a. Modified Method 9 for intermittent plumes

Overview of EPA Method 9

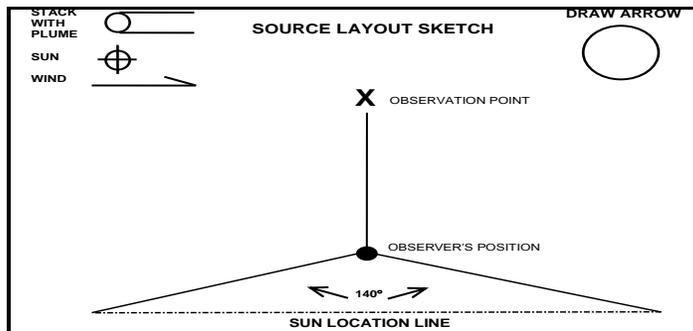
- Must be certified, i.e. pass smoke school every six months
- Must have the sun at your back, 140 degree sector to your back
- Need a contrasting background
- Should be 3 times the height of the release point away, keep the slant angle 18 degrees or less
- Make observations perpendicular to the plume, i.e. keep the plume blowing sideways to your position and not at your or away from you
- 15 second observations for at least 6 minutes (average of 24 readings)

When to use EPA Method 9

- Generally used for smoke stacks or point sources (industrial sources)
- Can be used for area or non-point sources in some cases (construction sites)
- Industrial permits may require periodic performance testing via Method 9, which requires 1 to 3 hours of observation
- Industrial permits may require self compliance checks via Method 9, which requires at least 6 minutes of observation
- All sources must have an opacity below 40%, most sources must have an opacity below 20%, some sources are even lower

EPA Method 9 Form

Acme Manufacturing			
LOCATION 123 Dust Cloud Dr			
LOCATION			
CITY Dustville	STATE AZ	ZIP 85963	
PROCESS EQUIPMENT Grinder		OPERATING MODE	
CONTROL EQUIPMENT Baghouse		OPERATING MODE	
DESCRIBE EMISSION POINT Baghouse Exit			
HEIGHT ABOVE GROUND LEVEL START 50 ft END 50 ft		HEIGHT RELATIVE TO OBSERVER START 44 ft END 44 ft	
DISTANCE FROM OBSERVER START 150 ft END 150 ft		DIRECTION FROM OBSERVER START West⁰ END West⁰	
VERTICAL ANGLE TO OBS. POINT START 18⁰ END 18⁰		DIRECTION TO OBS. POINT START 270⁰ END 270⁰	
DESCRIBE EMISSIONS START Lofting END Fanning			
EMISSION COLOR START White END White		IF WATER DROPLET PLUME ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/> NA <input checked="" type="checkbox"/>	
DISTANCE OF OBSERVATION POINT FROM EMISSION OUTLET START 2 ft above stack END 2 ft above stack			
DESCRIBE PLUME BACKGROUND			
START Blue sky		END Partly cloudy sky	
BACKGROUND COLOR		SKY CONDITIONS	
START blue	END blue	START Clear	END grey
WIND SPEED		WIND DIRECTION	
START 5 mph	END 5	START 0⁰	END 360⁰
AMBIENT TEMP		WET BULB TEMP RH PERCENT	
START 95⁰F	END 105⁰F	0⁰F	10%



ADDITIONAL INFORMATION

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OBSERVERS NAME (PRINT)

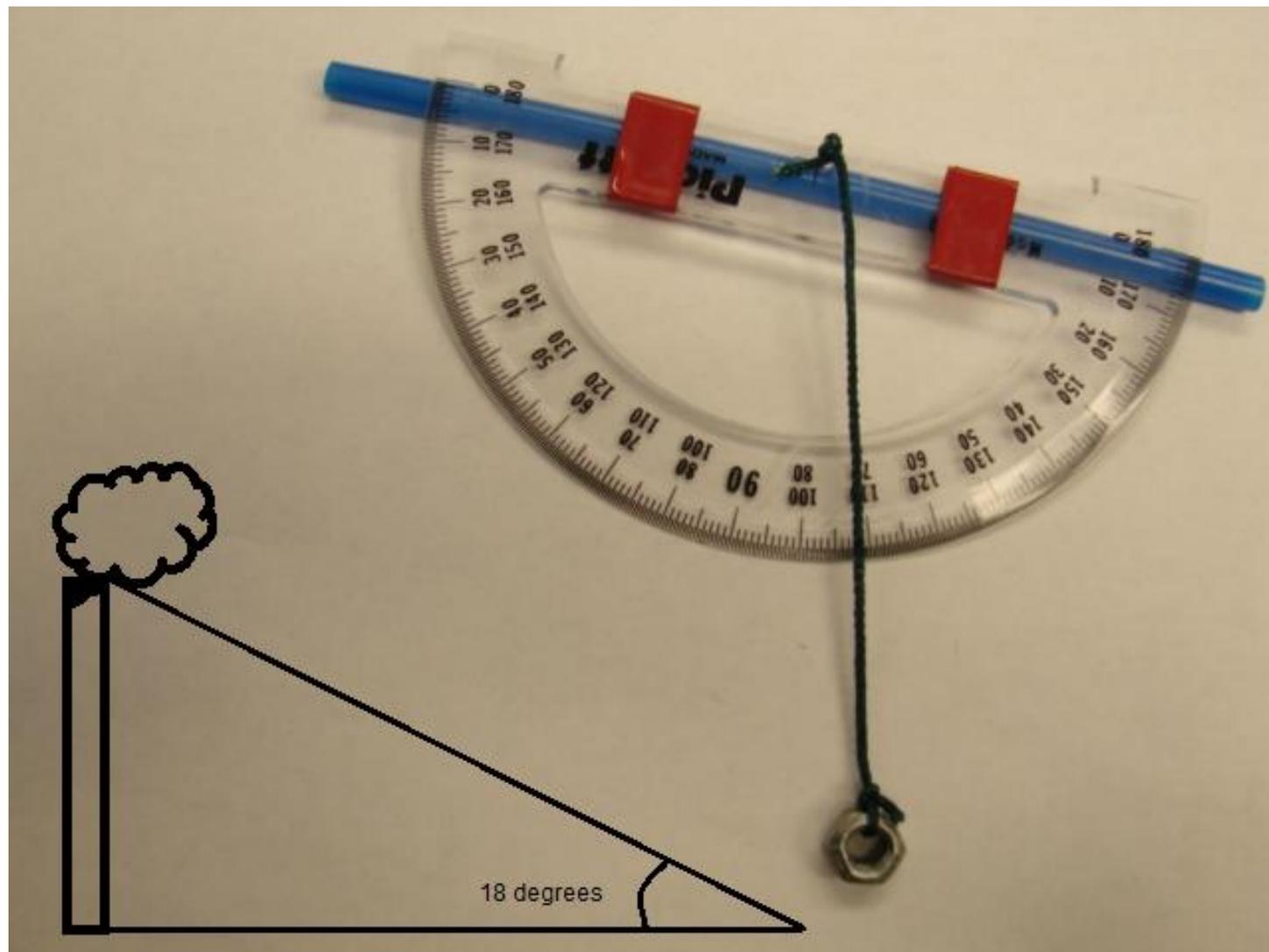
OBSERVERS SIGNATURE DATE:

ORGANIZATION

CERTIFIED BY: DATE:

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Slant Angle device



Temperature and RH devices



Ranger Finder and Compass

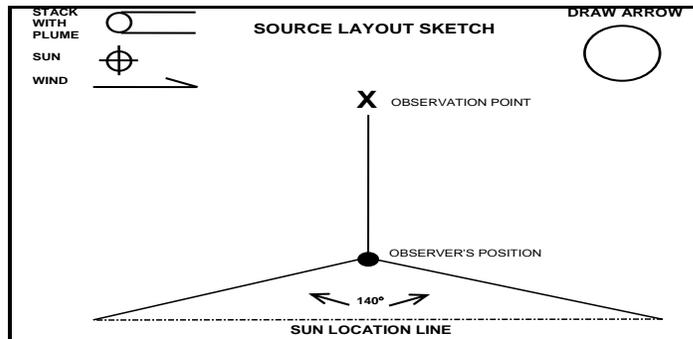


Overview of EPA Method 203a (as adopted by Pinal County)

- Used for observing continuous plumes
- 10 second observations
- Collect at least 12 consecutive observations (at least 2 minutes) and average accordingly
- Readings can be taken for more than one piece of equipment if multiple pieces of equipment are within the 140° sector that has the sun oriented at the back of the observer
- Typically used to look at fugitive dust sources at earthwork sites
- Typically requires 20% opacity or less

EPA Method 203a form

COMPANY NAME			
LOCATION			
LOCATION			
CITY		STATE	ZIP
PROCESS EQUIPMENT		OPERATING MODE	
CONTROL EQUIPMENT		OPERATING MODE	
DESCRIBE EMISSION POINT			
HEIGHT ABOVE GROUND LEVEL		HEIGHT RELATIVE TO OBSERVER	
START	END	START	END
DISTANCE FROM OBSERVER		DIRECTION FROM OBSERVER	
START	END	START	END
VERTICAL ANGLE TO OBS. POINT		DIRECTION TO OBS. POINT	
START	END	START	END
DESCRIBE EMISSIONS			
START		END	
EMISSION COLOR		IF WATER DROPLET PLUME	
START	END	ATTACHED <input type="checkbox"/>	DETACHED <input type="checkbox"/>
DISTANCE OF OBSERVATION POINT FROM EMISSION OUTLET			
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	
START	END	START	END
RH PERCENT			
START	END	START	END



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CERTIFIED BY:	DATE:

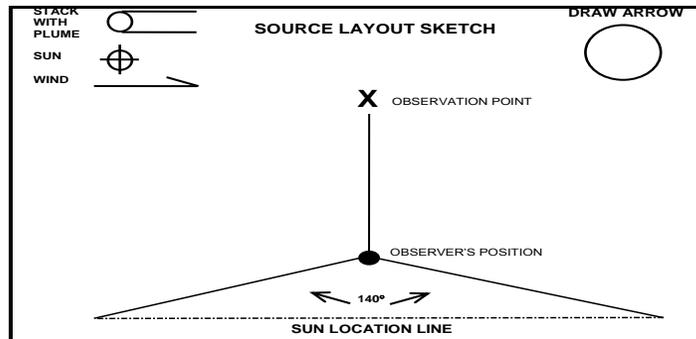
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Overview of EPA Method 203c (as adopted by Pinal County)

- Used for observing intermittent plumes
- 5 second observations, a 0 second observation and a 5 second observation for each intermittent plume
 - i.e. Two observations per vehicle at the point upon which the plume is generated
- Collect 12 consecutive observations, which will occur once six intermittent plumes have been observed
- Average the 12 readings
- The 12 consecutive observations must occur within one hour
- Typically used to look at fugitive dust sources at earthwork sites
- Typically requires 20% opacity or less

EPA Method 203a form

COMPANY NAME			
LOCATION			
LOCATION			
CITY	STATE	ZIP	
PROCESS EQUIPMENT		OPERATING MODE	
CONTROL EQUIPMENT		OPERATING MODE	
DESCRIBE EMISSION POINT			
HEIGHT ABOVE GROUND LEVEL		HEIGHT RELATIVE TO OBSERVER	
START	END	START	END
DISTANCE FROM OBSERVER		DIRECTION FROM OBSERVER	
START	END	START	END
VERTICAL ANGLE TO OBS. POINT		DIRECTION TO OBS. POINT	
START	END	START	END
DESCRIBE EMISSIONS			
START		END	
EMISSION COLOR		IF WATER DROPLET PLUME	
		ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/> NA <input type="checkbox"/>	
START	END		
DISTANCE OF OBSERVATION POINT FROM EMISSION OUTLET			
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	
START	END	START	END
START	END	START	END



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OBSERVERS NAME (PRINT)	
OBSERVERS SIGNATURE	DATE:
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CERTIFIED BY:	DATE:

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Contact information

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