

## Pre-Inspection Checklist for Nonmetallic Mineral Processing Equipment

**1.0 Plant Background Information:** The following information should be obtained **before** the Inspector visits the plant. This information can be found in the construction or operating permit(s), any reporting, or any enforcement action information for the plant, or by contacting the plant contact. In addition, the Inspector should obtain a map, detailed flow diagram, or layout of the plant showing the locations of all potentially affected and affected facilities under Subpart 000.

Plant ID/permit number(s): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Plant Name and Address: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Name of plant contact: \_\_\_\_\_  
 Telephone number: \_\_\_\_\_  
 Plant contact address: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Indicate which of the following nonmetallic minerals are processed at the plant. If none are processed, this checklist does not apply.

- |  |   |
|--|---|
| <input type="checkbox"/> crushed and broken stone (limestone, dolomite, granite, traprock, sandstone, quartz, quartzite, marl, marble, slate, shale, oil shale, and shell)<br><input type="checkbox"/> sand and gravel<br><input type="checkbox"/> clay (kaolin, fireclay, bentonite, Fuller's earth, ball clay, and common clay)<br><input type="checkbox"/> rock salt<br><input type="checkbox"/> gypsum<br><input type="checkbox"/> sodium compounds (sodium carbonate, sodium chloride, and sodium sulfate)<br><input type="checkbox"/> pumice | <input type="checkbox"/> gilsonite<br><input type="checkbox"/> talc and pyrophyllite<br><input type="checkbox"/> boron (borax, ernite, and colemanite)<br><input type="checkbox"/> barite<br><input type="checkbox"/> fluorospar<br><input type="checkbox"/> feldspar<br><input type="checkbox"/> diatomite<br><input type="checkbox"/> perlite<br><input type="checkbox"/> vermiculite<br><input type="checkbox"/> mica<br><input type="checkbox"/> kyanite (andalusite, sillimanite, topaz, and dumortierite) |
|--|---|

Indicate whether the facility is or includes one of the following and obtain the applicable checklists:

Type of Plant/Facility	Nonmetallic Mineral Processing Facility (yes/no)	Applicable Checklists
<input type="checkbox"/> Portland cement plant If yes, go to next column If no, go to next row	<input type="checkbox"/> a nonmetallic mineral processing facility is located before the portland cement plant	1. nonmetallic mineral processing facility 2. portland cement plant
	<input type="checkbox"/> a nonmetallic mineral processing facility is not located before the portland cement plant	1. portland cement plant
<input type="checkbox"/> Hot asphalt facility If yes, go to next column If no, go to next section	<input type="checkbox"/> a nonmetallic mineral processing facility is located before the hot asphalt facility or there are crushers and grinding mills at the hot mix asphalt facility	1. nonmetallic mineral processing facility 2. hot asphalt facility
	<input type="checkbox"/> a nonmetallic mineral processing facility is or crushers and grinding mills are not located before the hot asphalt facility	1. hot asphalt facility

This source was in compliance on \_\_\_\_\_ (date)

\_\_\_\_\_ This source is fixed **or**

\_\_\_\_\_ This source is portable because it is:

\_\_\_\_\_ mounted on a movable chassis or skid **and**

\_\_\_\_\_ is not attached to any anchor slab or structure by any means other than electric cabling

The capacity (maximum permitted throughput) in mg/hr of this facility is: \_\_\_\_\_

This **entire plant** is \_\_\_\_\_ (exempt or nonexempt) from these requirements, because you answered yes to any one of the following questions.

Applies (yes/no)	Type of facility	Capacity
_____	Fixed sand and gravel plant	23 mg/hr (25 tph) or less
_____	Fixed crushed stone plant	23 mg/hr (25 tph) or less
_____	Portable sand and gravel plant	136 mg/hr (150 tph) or less
_____	Portable crushed stone plant	136 mg/hr (150 tph) or less
_____	Common clay plant	9 mg/hr (10 tph) or less
_____	Pumice plant	9 mg/hr (10 tph) or less

## 2.0 Obtain a List of the Potentially Affected or Affected Equipment

Indicate the potentially affected or affected equipment known to be at the plant using the map, detailed flow diagram, or layout of the plant. If more spaces are required, copy this page.

Type of Equipment	Description(s) or ID Number(s)	Date(s) of Manufacture	Rated Capacity
Crusher(s)	1.	1.	1.
	2.	2.	2.
	3.	3.	3.
Grinding mill(s)	1.	1.	1.
	2.	2.	2.
	3.	3.	3.
Bucket elevator(s)	1.	1.	1.
	2.	2.	2.
	3.	3.	3.

Screening operation(s)	1. 2. 3.	1. 2. 3.	1. 2. 3.
Conveyor belt(s)	1. 2. 3.	1. 2. 3.	1. 2. 3.
Bagging operation(s)	1. 2. 3.	1. 2. 3.	1. 2. 3.
Storage bin(s)	1. 2. 3.	1. 2. 3.	1. 2. 3.
Enclosed truck/railcar loading	1. 2. 3.	1. 2. 3.	1. 2. 3.
Other units			

Transfer point(s)	1.	1.	1.
	2.	2.	2.
	3.	3.	3.
	4.	4.	4.
	5.	5.	5.
	6.	6.	6.
	7.	7.	7.
	8.	8.	8.
	9.	9.	9.
	10.	10.	10.
	11.	11.	11.
	12.	12.	12.
	13.	13.	13.
	14.	14.	14.
	15.	15.	15.
	16.	16.	16.
	17.	17.	17.
	18.	18.	18.
	19.	19.	19.
	20.	20.	20.
	21.	21.	21.
	22.	22.	22.
	23.	23.	23.
	24.	24.	24.
	25.	25.	25.
	26.	26.	26.
	27.	27.	27.
	28.	28.	28.

The following facilities are exempt, because an existing facility was replaced by a like facility of equal or smaller size. If the entire production line was replaced the equipment is not exempt.

Type of Equipment	Existing Facility			Replacement Facility		
	Description(s) or ID Number(s)	Capacity	Date Manufactured	Description(s) or ID Number(s)	Capacity	Date Manufactured
Crusher(s)						
Grinding mill(s)						
Bucket elevator(s)						
Screening operation(s)						
Conveyor belt(s)						
Bagging operation(s)						
Storage bin(s)						
Transfer point(s)						
Enclosed truck/railcar loading						

Does the operator have any schedules for replacement of existing facilities with new facilities? If yes, explain. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Inspection Checklist for Nonmetallic Mineral Processing Equipment

- 1.0 Pre-Entry Observations:** These are the two observations made prior to entering the plant. In taking visible emission observations, extreme care should be taken to ensure that the emission point is correctly identified at the time of observation.

Check if any of the following **plant or property surroundings** are observed and explain:

\_\_\_ obvious vegetation damage near the plant: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_ deposits on cars parked on an off property: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_ conditions around product and waste piles: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_ heavy dusting of standing trees or buildings: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_ proximity of sources to potential receptors: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_ tracking of material onto public roads leading from the plant: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**3.0 Recordkeeping and Reporting:** Review the following notifications, reports, and records. All of these documents must be kept for two years.

Written notifications sent to the Division were reviewed (yes/no):

- date of construction or reconstruction of any affected facility no later than 30 days after begun
- date of actual startup of any affected facility within 15 days of startup date
- any physical or operational change to an existing facility which may increase the emissions rate of any air pollutant to which a standard applies, unless that change is specifically exempted no later than 60 days or as soon as practicable before change occurs
- date upon which demonstration of continuous monitoring system performance begins no later than 30 days prior to the date
- date that initial performance test opacity observations are anticipated no later than 30 days
- reschedules dates for initial performance test opacity observations if visibility or other conditions prevent opacity observations from being performed concurrently with the initial performance test
- proposed "reconstructions" of existing facilities no later than 30 days before date
- thirty (30) day advance notification of any performance test of an affected facility
- proposed replacements of existing facilities with facilities of equal or smaller size

Written reports sent to the Division were reviewed (yes/no):

- initial performance test results of all affected facilities
- initial performance test opacity results of all affected facilities
- the results of all performance tests of affected facilities to demonstrate compliance including opacity observations results (Method 9) and/or Method 22 observation results
- semiannual reports of occurrences when continuous monitoring system or monitoring device scrubber pressure drop and liquid flow rate differ from the average of the last performance test by  $\pm$  thirty percent (30%)
- fugitive particulate emission control plan

Records kept on file were reviewed (yes/no):

- startup, shutdown, and malfunction occurrences and their durations for all facilities
- malfunctions of air pollution control equipment serving affected facilities
- any periods during which continuous monitoring systems or monitoring devices (i.e., scrubber pressure drop and liquid flow rate measurement devices) are inoperative
- all measurements of monitoring devices, calibration checks, and all adjustments and maintenance performed on these devices including:
  - daily continuous measurements of scrubber pressure drop and liquid flow rate, and
  - scrubber monitoring device annual calibration checks

If wet scrubber is used the following must be reviewed (yes/no):

- initial performance test results
- submit semiannual reports submitted to the Division detailing any occurrences when the scrubber pressure loss (or gain) and liquid flow rate differ by more than  $\pm$  thirty percent (30%) from the averaged determined during the most recent performance test
- records from continuous recording equipment to identify on a continuous basis and report occurrences of six (6) minutes or greater

**Inspection Checklists for  
Individual Pieces  
of Equipment**

## Crushers

### 1.0 Compliance Date

Type of Source	Initial Notification Due	Date Source Must be in Compliance
New or modified or reconstructed on or after 8/31/83	30 to 60 days from initial startup	date of initial startup
Existing (before 8/31/83)	none required	need not comply

This source had an initial startup date of \_\_\_\_\_

This is a \_\_\_\_\_ source (new or existing)

This source must be in compliance as of \_\_\_\_\_ (date)

This source was in compliance on \_\_\_\_\_ (date)

The crusher is which of the following: (check)

- \_\_\_\_\_ jaw crusher
- \_\_\_\_\_ gyratory crusher (pivoted spindle, fixed spindle, or cone)
- \_\_\_\_\_ roll crusher (single roll or double roll)
- \_\_\_\_\_ impact crusher (hammermill or impactor)

### 2.0 Air Pollution Control Equipment: If a control device is used, go to the appropriate checklist for type of control equipment and complete.

Indicate if any of the following controls are used: (yes/no)

- \_\_\_\_\_ wet suppression system
- \_\_\_\_\_ hooded capture system and send to control device

### 3.0 Measuring Fugitive Emissions: Fugitive emissions at crushers are most apparent at crusher feed and discharge points. Make sure to separate fugitive emission opacity from water mist generated by wet suppression systems.

Requirement	Crusher inlet	Crusher outlet	Crusher discharge to belt conveyor
Method 9 observations taken (yes/no)			
Emissions were equal to or less than fifteen percent opacity (yes/no)			
Emissions were greater than fifteen percent opacity: <b>violation</b> (yes/no)			

If wet suppression was used at the time of inspection, Inspector either:

- \_\_\_\_\_ chose the point in the plume beyond which the water mist disappears **or**
- \_\_\_\_\_ chose the point in the plume of greatest opacity when the wet dust suppression system is not being operated

## Grinding Mills

### 1.0 Compliance Date

Type of Source	Initial Notification Due	Date Source Must be in Compliance
New or modified or reconstructed on or after 8/31/83		
Existing (before 8/31/83)		

This source had an initial startup date of \_\_\_\_\_

This is a \_\_\_\_\_ source (new or existing)

This source must be in compliance as of \_\_\_\_\_ (date)

This source was in compliance on \_\_\_\_\_ (date)

The crusher is which of the following: (check)

- hammermill
- roller mill
- rod mill
- pebble or ball mill
- fluid energy mill

### 2.0 Air Pollution Control Equipment: If a control device is used, go to the appropriate checklist for type of control equipment and complete.

Indicate if any of the following controls are used: (yes/no)

- wet suppression system
- hooded capture system and send to control device

### 3.0 Measuring Fugitive Emissions: Fugitive emissions at grinding mills are generated at the inlet, outlet, air conveying system, air separator, and air classifier. If grinding mill is vented to an air pollution control equipment at which nonaffected facilities are attached, the tests are conducted while the nonaffected facilities are not operating, unless the nonaffected facility is a dryer flue.

Requirement	Grinding mill inlet	Grinding mill outlet	Air conveying system	Air separator	Air classifier
Method 9 observations taken (yes/no)					
Emissions were equal to or less than fifteen percent opacity (yes/no)					
Emissions were greater than fifteen percent opacity: <b>violation</b> (yes/no)					

Dryer flue gases are vented to the affected grinding mill (yes/no). If yes, can prorate the emissions between the dryer flue and grinding mill

## Screening Operations

### 1.0 Compliance Date

Type of Source	Initial Notification Due	Date Source Must be in Compliance
New or modified or reconstructed on or after 8/31/83	30 to 60 days from initial startup	date of initial startup
Existing (before 8/31/83)	none required	need not comply

This source had an initial startup date of \_\_\_\_\_

This is a \_\_\_\_\_ source (new or existing)

This source must be in compliance as of \_\_\_\_\_ (date)

This source was in compliance on \_\_\_\_\_ (date)

This screening operation is which of the following: (yes/no)

- \_\_\_\_\_ grizzlies
- \_\_\_\_\_ shaking screen
- \_\_\_\_\_ vibrating screen
- \_\_\_\_\_ revolving screen

### 2.0 Air Pollution Control Equipment: If a control device is used, go to the appropriate checklist for type of control equipment and complete.

Indicate if any of the following controls are used: (yes/no)

- \_\_\_\_\_ wet suppression system
- \_\_\_\_\_ hooded capture systems and send to control device; if yes, inspect the following:
- \_\_\_\_\_ check screens for signs of ill-fitting seals or gaps in hood integrity

### 3.0 Measuring Fugitive Emissions: If the screen is not operating during inspection, observe immediate area of the screen for signs of excess emissions during operation; if excessive should reinspect when operating.

Requirement	Point of maximum opacity in the plume
Method 9 observations taken (yes/no)	
Emissions were equal to or less than fifteen percent opacity (yes/no)	
Emissions were greater than fifteen percent opacity: <b>violation</b> (yes/no)	

## Storage Bins

### 1.0 Compliance Date

Type of Source	Initial Notification Due	Date Source Must be in Compliance
New or modified or reconstructed on or after 8/31/83	30 to 60 days from initial startup	date of initial startup
Existing (before 8/31/83)	none required	need not comply

This source had an initial startup date of \_\_\_\_\_ (date)

This is a \_\_\_\_\_ source (new or existing)

This source must be in compliance as of \_\_\_\_\_ (date)

This source was in compliance on \_\_\_\_\_ (date)

### 2.0 Air Pollution Control Equipment: If a control device is used, go to the appropriate checklist for type of control equipment and complete.

Indicate if any of the following controls are used: (yes/no)

- \_\_\_\_\_ air pollution cyclone system positioned above bin charging (loading) point
- \_\_\_\_\_ baghouse system
- \_\_\_\_\_ wet suppression system

### 3.0 Measuring Fugitive Emissions:

Requirement	Vent discharge point for loading <b>OR</b>	Vent discharge point for unloading <b>AND</b>	Area around the vent
Method 9 observations taken (yes/no)			
Emissions were equal to or less than fifteen percent opacity (yes/no) (greater than is violation)			
Emissions were equal to or less than seven percent opacity from the baghouse attached to only an individual, enclosed storage bin: (yes/no)			

If dust has accumulated around the vent discharge points or the vent determine reason for excess emissions and explain: \_\_\_\_\_

\_\_\_\_\_

### 4.0 Measuring Stack Emissions

If there are multiple bins with combined stack emissions, the stack emissions from this stack:

- \_\_\_\_\_ contain particulate matter equal to or less than 0.05 g/dscm; and
- \_\_\_\_\_ exhibit equal to less than 7% opacity (unless emissions are from facility using a wet scrubbing control device)

## Bucket Elevators

### 1.0 Compliance Date

Type of Source	Initial Notification Due	Date Source Must be in Compliance
New or modified or reconstructed on or after 8/31/83	30 to 60 days from initial startup	date of initial startup
Existing (before 8/31/83)	none required	need not comply

This source had an initial startup date of \_\_\_\_\_

This is a \_\_\_\_\_ source (new or existing)

This source must be in compliance as of \_\_\_\_\_ (date)

This source was in compliance on \_\_\_\_\_ (date)

### 2.0 Air Pollution Control Equipment: If a control device is used, go to the appropriate checklist for type of control equipment and complete.

Indicate if any of the following controls are used: (yes/no)

\_\_\_\_\_ capture system at the top of the elevator where the bucket discharges

\_\_\_\_\_ baghouse system

### 3.0 Measuring Fugitive Emissions:

Requirement	Entire length of elevator enclosure	Capture system at top of elevator	Access door(s) to elevator interior
Method 9 observations taken (yes/no)			
Emissions were equal to or less than fifteen percent opacity (yes/no)			
Emissions were greater than fifteen percent opacity: <b>violation</b> (yes/no)			

## Belt Conveyors

### 1.0 Compliance Date

Type of Source	Initial Notification Due	Date Source Must be in Compliance
New or modified or reconstructed on or after 8/31/83	30 to 60 days from initial startup	date of initial startup
Existing (before 8/31/83)	none required	need not comply

This source had an initial startup date of \_\_\_\_\_

This is a \_\_\_\_\_ source (new or existing)

This source must be in compliance as of \_\_\_\_\_ (date)

This source was in compliance on \_\_\_\_\_ (date)

### 2.0 Air Pollution Control Equipment: If a control device is used, go to the appropriate checklist for type of control equipment and complete.

Indicate if any of the following controls are used: (yes/no)

\_\_\_\_\_ wet suppression system

\_\_\_\_\_ hooding, capturing, and conveying to control device

### 3.0 Measuring Fugitive Emissions:

Answer yes or no to the following questions

\_\_\_\_\_ Moisture content of material is sufficient to prevent material from becoming airborne

If yes, the following visible emission observation can be waived, and explain: \_\_\_\_\_

\_\_\_\_\_ Belt conveyor is in operation during the Method 9 observation

If no, schedule another time to take Method 9 observation at this belt conveyor, explain: \_\_\_\_\_

Requirement	Transfer point onto belt conveyor	Transfer point off belt conveyor	Transfer point to a storage pile
Method 9 observations taken (yes/no)			<b>exempt</b>
Emissions were equal to or less than fifteen percent opacity (yes/no)			<b>exempt</b>
Emissions were greater than fifteen percent opacity: <b>violation</b> (yes/no)			<b>exempt</b>

## Bagging Operations

### 1.0 Compliance Date

Type of Source	Initial Notification Due	Date Source Must be in Compliance
New or modified or reconstructed on or after 8/31/83	30 to 60 days from initial startup	date of initial startup
Existing (before 8/31/83)	none required	need not comply

This source had an initial startup date of \_\_\_\_\_

This is a \_\_\_\_\_ source (new or existing)

This source must be in compliance as of \_\_\_\_\_ (date)

This source was in compliance on \_\_\_\_\_ (date)

### 2.0 Air Pollution Control Equipment: If a control device is used, go to the appropriate checklist for type of control equipment and complete.

Indicate if any of the following controls are used: (yes/no)

\_\_\_\_ local exhaust system and vented to baghouse

\_\_\_\_ hood face velocities

### 3.0 Measuring Fugitive Emissions:

Requirements	Observations of Building if Bagging Operations are Enclosed	Observations of Bagging Operations	
		Bagging Operation	Powered Vents if used
Method 22 observations taken (yes/no)			
Emissions were equal to or less than ____ percent opacity (yes/no)			
Emissions were greater than ____ percent opacity: <b>violation</b> (yes/no)	do observations inside building		
Method 9 observations taken (yes/no)			
Emissions were equal to or less than fifteen percent opacity (yes/no)			
Emissions were greater than fifteen percent opacity: <b>violation</b> (yes/no)			

## Enclosed Truck or Railcar Loading Operations

### 1.0 Compliance Date

Type of Source	Initial Notification Due	Date Source Must be in Compliance
New or modified or reconstructed on or after 8/31/83	30 to 60 days from initial startup	date of initial startup
Existing (before 8/31/83)	none required	need not comply

This source had an initial startup date of \_\_\_\_\_

This is a \_\_\_\_\_ source (new or existing)

This source must be in compliance as of \_\_\_\_\_ (date)

This source was in compliance on \_\_\_\_\_ (date)

The truck or railcar loading operation \_\_\_\_\_ (is or is not) enclosed, if it is not enclosed, these requirements do not apply. Explain: \_\_\_\_\_

### 2.0 Air Pollution Control Equipment: If a control device is used, go to Checklist for type of control equipment and complete.

Indicate if any of the following controls are used: (yes/no)

\_\_\_\_ shrouds, telescoping feed tubes, or windbreaks

\_\_\_\_ exhaust system vented to baghouse

### 3.0 Measuring Fugitive Emissions:

Requirement	Immediately above Transfer Point	Air Vents	Feed Tube
Method 9 observations taken (yes/no)			
Emissions were equal to or less than fifteen percent opacity (yes/no)			
Emissions were greater than fifteen percent opacity: <b>violation</b> (yes/no)			

## Wet Screening Operations and Subsequent Screening Operations

### 1.0 Compliance Date

Type of Source	Initial Notification Due	Date Source Must be in Compliance
New or modified or reconstructed on or after 8/31/83	30 to 60 days from initial startup	date of initial startup
Existing (before 8/31/83)	none required	need not comply

This source had an initial startup date of \_\_\_\_\_

This is a \_\_\_\_\_ source (new or existing)

This source must be in compliance as of \_\_\_\_\_ (date)

This source was in compliance on \_\_\_\_\_ (date)

### 2.0 Emission Requirements

\_\_\_\_\_ Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to the next crusher, grinding mill, or storage bin has no visible emissions: (yes/no), if yes, **violation**.

\_\_\_\_\_ Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, where such operations process saturated materials up to the first crusher, grinding mill, or storage bin in the production line have no visible emissions: (yes/no), if yes, **violation**

### 3.0 Measuring Fugitive Emissions:

\_\_\_\_\_ Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to the next crusher, grinding mill, or storage bin have no visible emissions and no Method 9 observations are required

\_\_\_\_\_ Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, where such operations process saturated materials up to the first crusher, grinding mill, or storage bin in the production line have no visible emissions and no Method 9 observations are required

**Inspection Checklists for  
Air Pollution Control Devices**

### Operating Pulse Jet Baghouse

Complete one checklist for each baghouse. Complete the table and indicate that each inspection item was inspected and whether the requirements were met.

If baghouse that controls emissions only from an individual enclosed storage bin, the Method 9 observations shall be 1 hour.

yes/no	Inspection Items and Requirements	Results and Comments
_____	Method 9 observation of fabric filter discharge; check for bag problems (abrasion, chemical attack, high temperature damage, improper cleaning); visible emissions should be $\leq 7\%$ opacity	
_____	Method 9 observation of fugitive emissions from solids handling operation if reentrainment is occurring	
_____	Method 9 observation of fugitive emissions from process equipment	
_____	Counterflow check of audible air infiltration into fan, baghouse, and ductwork; and check physical condition of hoods	
_____	Check static pressure drop across baghouse using onsite gauges; compare with baseline data	
_____	Compare compressed air pressures at reservoir with baseline values; check for audible leaks of compressed air at fittings; check operation of diaphragm valves, record number of valves that do not appear to be working properly	
_____	Check inlet gas temperatures using onsite gauges	
_____	Observe and describe corrosion of fabric filter shell and hoppers	
_____	Evaluate bag failure records, gas inlet temperature records, pressure drop data, and other maintenance information	

### Operating Shaker and Reverse Air Baghouse

Complete one checklist for each baghouse. Complete the table and indicate that each inspection item was inspected and whether the requirements were met.

If baghouse that controls emissions only from an individual enclosed storage bin, the Method 9 observations shall be 1 hour.

yes/no	Inspection Items and Requirements	Results and Comments
_____	Method 9 observation of fabric filter stack or individual compartment discharge points; check for bag problems (abrasion, chemical attack, high temperature damage, improper cleaning); visible emissions should be $\leq$ 5% opacity	
_____	Method 9 observation of fugitive emissions from solids handling operation if reentrainment is occurring	
_____	Method 9 observation of fugitive emissions from process equipment	
_____	Counterflow check of audible air infiltration into fan, baghouse, and ductwork; and check physical condition of hoods	
_____	Check static pressure drop across collector using onsite gauges	
_____	Check static pressure drop across each compartment during cleaning; values should be zero for shaker collectors	
_____	Confirm that reverse air fan or shaker motor is operating	
_____	Check inlet gas temperatures using onsite gauges	
_____	Observe and describe corrosion of fabric filter shell and hoppers	
_____	Evaluate bag failure records, gas inlet temperature records, pressure drop data, and other records	

### Nonoperating Pulse Jet Baghouse

Complete one checklist for each baghouse. Complete the table and indicate that each inspection item was inspected and whether the requirements were met.

(Note: presence of abnormal conditions cannot alone be used as a basis for an NOV)

If baghouse that controls emissions only from an individual enclosed storage bin, the Method 9 observations shall be 1 hour.

yes/no	Inspection Items and Requirements	Results and Comments
_____	Confirm that unit is out of service and will not be brought on line during period of inspection	
_____	Request plant personnel to open one or more access hatches on the clean side of the unit; evaluate quantity and pattern of clean side deposits; if clean side deposits (enough to make a footprint) inspect for bag failure problems due to: abrasion, improper cleaning, improper blow tube alignment, chemical attack, high temperature damage, leakage around top of bag	
_____	Check for orientation of blow tubes and extension nipples, if present	
_____	Check for obvious poorly seated bags and gaps in tube sheet welds	
_____	Request that plant personnel open side access hatches if available to look for any bag-to-bag abrasion at bottom and for damage of fabric against side flanges and internal walkways	
_____	Check for bag abrasion against side flanges, internal walkways, and other bags; check for bowed and bent bag/cage assemblies; deflector serves to protect the bags from abrasive materials	
_____	Check the condition of any deflector plates on the gas inlet; erosion could contribute to premature failures	
_____	Check for obvious erosion of ductwork leading to baghouse; eroded ductwork could lead to reduced pollutant capture at the generation source and operating temperatures below the acid dewpoint	
_____	Check operation of bag cleaning equipment	

### Nonoperating Shaker and Reverse Baghouse

Complete one checklist for each baghouse. Complete the table and indicate that each inspection item was inspected and whether the requirements were met.

(Note: presence of abnormal conditions cannot alone be used as a basis for an NOV)

If baghouse that controls emissions only from an individual enclosed storage bin, the Method 9 observations shall be 1 hour.

yes/no	Inspection Items and Requirements	Results and Comments
_____	Confirm that unit is out of service and will not be brought on line during period of inspection	
_____	Request plant personnel to open access hatch of compartments; use the hatch just above the elevation of the tube sheet; evaluate quantity and pattern of clean side deposits; if clean side deposits (enough to make a footprint) inspect for bag failure problems due to: abrasion, improper cleaning, chemical attack, high temperature damage, leakage around top of bag	
_____	Observe bag tension throughout the portion of the compartment that is visible from access hatch; check tension of bags that can be reached without entering compartment	
_____	Check for leaks around thimble connections or snap ring connections	
_____	Check for obvious bag abrasion on internal flanges	
_____	Check for tube sheet weld failures; gap in tube sheet welds are usually visible because the high velocity gas stream passing through the gap moves the dust deposits away from that portion of the tube sheet	

### Spray Tower Scrubbers

Complete one checklist for each scrubber. Complete the table and indicate that each inspection item was inspected and whether the requirements were met. Performance of Spray Tower Scrubber is dependent upon liquor flow rate, any problems that reduce flow rate should be fully examined. (Note: observations and data do not provide conclusive evidence of noncompliance with mass emission standards (a stack test is required); these can be used as surrogate indicators of compliance.)

yes/no	Inspection Items and Requirements	Results and Comments
_____	Method 9 observation of stack for period of not less than 6 minutes; calculate average opacity and describe cycles in the average opacity	
_____	Method 9 observation of all bypass stacks and vents and any fugitive emissions from process equipment	
_____	Presence of rainout close to the stack or mud lips at the discharge point	
_____	Presence of fan vibration	
_____	Liquor flow rate and pressure drop indicated by onsite monitors; compare with average of last compliance test	
_____	Pump discharge pressure and motor current indicated by onsite gauges	
_____	Audible pump cavitation	
_____	Nozzle header pressure indicated by onsite gauge	
_____	Physical condition of shell and ductwork; corrosion often caused by operation at pH levels lower than desired; measure liquor pH using in-plant instruments	
_____	Recirculation pond layout and pump intake position	
_____	Physical condition of nozzles observed through access hatch; anything that affects the nozzles will reduce performance	
_____	Note the means used to dispose of purged liquor	

### Mechanically Aided Scrubbers

Complete one checklist for each scrubber. Complete the table and indicate that each inspection item was inspected and whether the requirements were met. (Note: observations and data do not provide conclusive evidence of noncompliance with mass emission standards (a stack test is required); these can be used as surrogate indicators of compliance.) Performance of a Mechanically Aided Scrubber depends on liquor flow rate; any problems reducing flow rate should be fully examined: pump discharge pressure, nozzle header pressure, pump motor currents, and audible pump cavitation.

yes/no	Inspection Items and Requirements	Results and Comments
_____	Method 9 observation of stack for period of not less than 6 minutes; calculate average opacity and describe cycles in the average opacity	
_____	Method 9 observation of all bypass stacks and vents and any fugitive emissions from process equipment	
_____	Presence of rainout close to the stack or mud lips at the discharge point	
_____	Presence of fan vibration	
_____	Pump discharge pressure and motor current indicated by onsite gauges	
_____	Audible pump cavitation	
_____	Nozzle header pressure indicated by onsite gauge	
_____	Physical condition of shell and ductwork; corrosion often caused by operation at pH levels lower than desired; measure liquor pH using in-plant instruments	
_____	Recirculation pond layout and pump intake position	
_____	Static pressure increase across scrubber and liquor flow rate monitored by onsite gauges; compare with average of last compliance test	
_____	Note the means used to dispose of purged liquor	

### Gas-Atomized Scrubbers

Complete one checklist for each tower scrubber. Complete the table and indicate that each inspection item was inspected and whether the requirements were met. (Note: observations and data do not provide conclusive evidence of noncompliance with mass emission standards (a stack test is required); these can be used as surrogate indicators of compliance.) Performance of a Gas Atomized Scrubber depends on liquor flow rate; any problems reducing flow rate should be fully examined: pump discharge pressure, nozzle header pressure, pump motor currents, and audible pump cavitation.

yes/no	Inspection Items and Requirements	Results and Comments
_____	Method 9 observation of stack for period of not less than 6 minutes; calculate average opacity and describe cycles in the average opacity	
_____	Method 9 observation of all bypass stacks and vents and any fugitive emissions from process equipment	
_____	Presence of rainout close to the stack or mud lips at the discharge point	
_____	Presence of fan vibration	
_____	Static pressure drop across scrubber and liquor flow rate monitored by onsite gauges; compare with average of last compliance test	
_____	Pump discharge pressure and motor current indicated by onsite gauges	
_____	Audible pump cavitation	
_____	Nozzle header pressure indicated by onsite gauge	
_____	Physical condition of shell and ductwork; corrosion often caused by operation at pH levels lower than desired; measure liquor pH using in-plant instruments	
_____	Recirculation pond layout and pump intake position	
_____	Physical condition of nozzles observed through access hatch; anything that affects the nozzles will reduce performance; liquor turbidity is related to likelihood that the nozzle will be plugged or erosion	
_____	Note the means used to dispose of purged liquor	

### Large Diameter Cyclones

Complete one checklist for each cyclone. Complete the table and indicate that each inspection item was inspected and whether the requirements were met. (Note: observations and data do not provide conclusive evidence of noncompliance with mass emission standards (a stack test is required); these can be used as surrogate indicators of compliance.)

yes/no	Inspection Items and Requirements	Results and Comments
_____	Method 9 observation of stack for a sufficient period to fully characterize conditions during normal process cycles; if visible emissions have increased > 5% since baseline period or if within 5% of regulatory limit, do a more detailed inspection	
_____	Method 9 observation of any fugitive emissions from process equipment and material handling operations; can be partially due to air infiltration into ductwork or collector -- check process area and ductwork	
_____	Presence of accumulated dust in the vicinity of the stack; accumulated solids near stack generally imply high mass emissions of large particles	
_____	Presence of obvious holes and dents in cyclone shell; can disrupt gas vortex and cause increases in the static pressure	
_____	Air filtration sites on cyclone shell, cyclone hopper, solids discharge valve, and inlet ductwork	
_____	Obvious corrosion of cyclone	
_____	Static pressure drop across the cyclone as indicated by onsite gauge; static pressure provides indication of flow rate and removal efficiency generally increases with static pressure	

### Multiple Cyclones Collectors

Complete one checklist for each cyclone. Complete the table and indicate that each inspection item was inspected and whether the requirements were met. (Note: observations and data do not provide conclusive evidence of noncompliance with mass emission standards (a stack test is required); these can be used as surrogate indicators of compliance.)

yes/no	Inspection Items and Requirements	Results and Comments
_____	Method 9 observation of stack for a sufficient period to fully characterize conditions during normal process cycles; if visible emissions have increased > 5% since baseline period or if within 5% of regulatory limit, do a more detailed inspection	
_____	Method 9 observation of any fugitive emissions from process equipment and material handling operations; can be partially due to air infiltration into ductwork or collector -- check process area and ductwork	
_____	Air filtration sites on collector shell, cyclone hopper, solids discharge valve, and inlet ductwork	
_____	Static pressure drop across the cyclone as indicated by onsite gauge; static pressure provides indication of flow rate and removal efficiency generally increases with static pressure	
_____	Inlet gas temperature as indicated by onsite gauge	

### Wet Suppression System

Complete one checklist for each wet suppression system. Complete the table and indicate that each inspection item was inspected and whether the requirements were met.

yes/no	Inspection Items and Requirements	Results and Comments
_____	Spray towers and nozzles located for maximum dust suppression	
_____	Check condition of spray nozzles and spray patterns; high water turbidity may cause increased nozzle pluggage if water is recycled	
_____	Check nozzle header pressure with baseline data or last compliance test	
_____	Check timing cycle and actuators for intermittent operation; water added to crusher inlets should be adequate to wet reduced ore size	
_____	Check for use of wetting agents / surfactants	
_____	Are wetting agents / surfactants used at manufacturer's specifications or at similar rates of last compliance test	
_____	Location of sprays versus file information	
_____	Check to see if antifreeze is used in winder if required	