

# Nonmetallic Mineral Crushing



April Lazzaro

Michigan Department of Environmental Quality

Air Quality Division

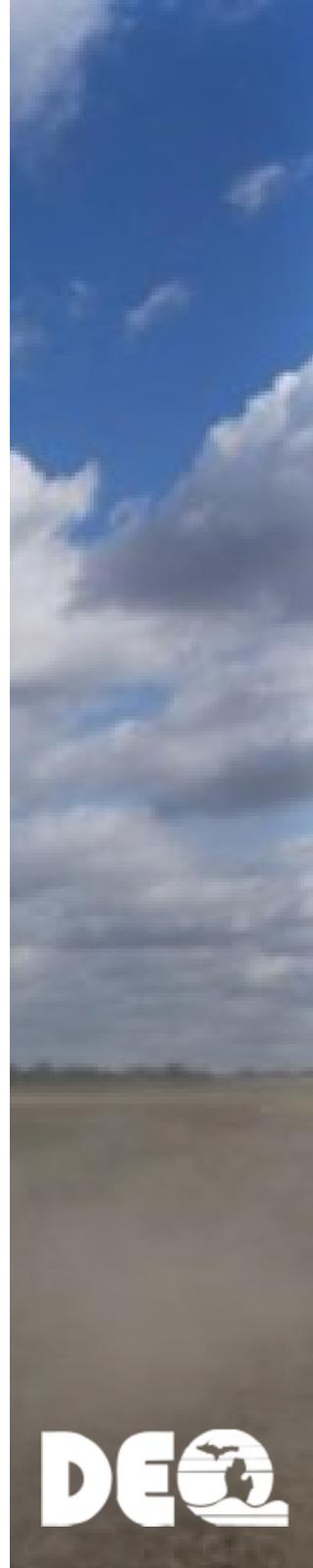
616-356-0248

[lazzaroa@michigan.gov](mailto:lazzaroa@michigan.gov)

# Crushers

- New Source Performance Standard  
40 CFR Part 60, Subpart OOO
- General Permit to Install for  
Nonmetallic Mineral Crushing  
Facilities





# **Air Quality Division Permit**

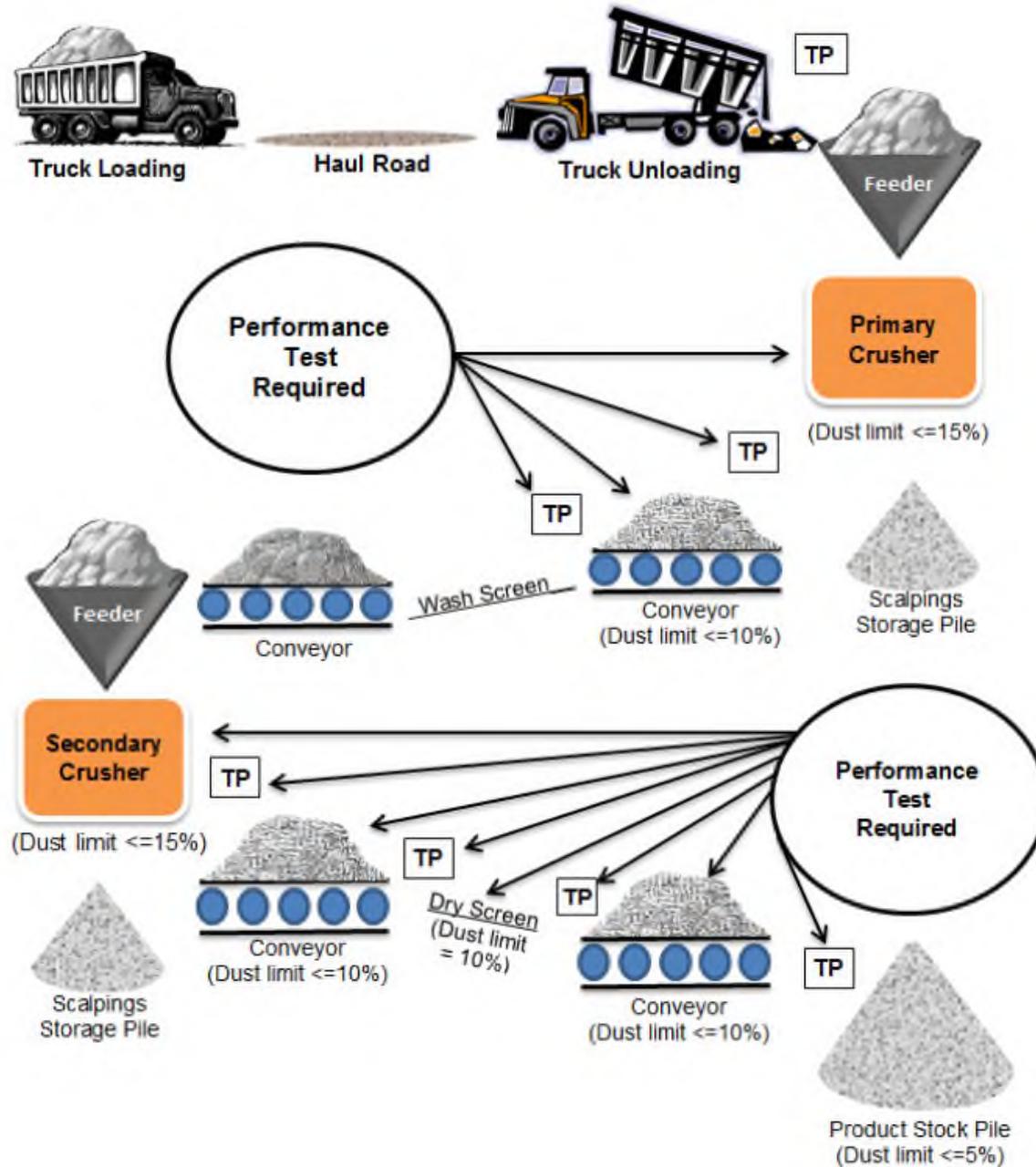
# Visible Emission (VE) Limits

Equipment	Opacity Limit (%)
Any equipment enclosed within a building	No visible emissions
All crushers	15
Screens	10
Rock drills	5
Conveyors/Transfer points	10
Wash screens and all subsequent equipment downstream up to the next crusher or storage bin	No visible emissions
All equipment controlled by a baghouse dust collector	7
Wheel loaders and truck traffic	5
Material storage piles	5
Any other process equipment which is part of the nonmetallic mineral crushing facility or related processes	10

# 15% Opacity



# Where is VE testing needed?



# Compare/Contrast



# Air Quality Division Permit

- General PTI for Crushers
  - Must comply with most recent revision  
= 2003
  - EACH crusher and screen must be equipped with water spray (or baghouse)



- Even crushers with capacity of less than 150 tons per hour need a permit!

# Leased Equipment

A Permit to Install is required for all crushing facilities, whether the equipment is leased from a second party on a temporary basis or owned outright.



# Throughput Limit

- Each facility utilizing the general permit is limited to 2 million tons per year, per site.
- Tons determined through scale records.
- Daily log of tonnage, tonnage per job, tonnage per year!



# Asbestos

- NO ASBESTOS
- NEVER ASBESTOS
- DO NOT PROCESS ASBESTOS
- TRAIN EMPLOYEES HOW TO ID ASBESTOS
- DO NOT PROCESS ASBESTOS!!!



# Water Spray

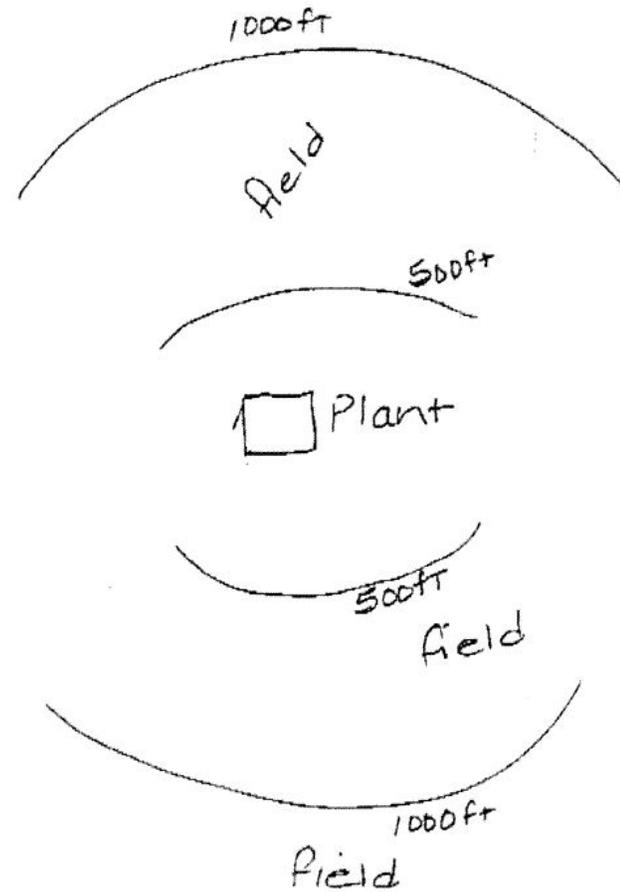
- Each crusher and screen shall be equipped with water spray.
- The water spray shall be operated as necessary to comply with emission limits.



# 500' Setback Requirement



# 500' Setback Requirement



# Relocation Notice Forms





# EQP5729



Michigan Department Of Environmental Quality - Air Quality Division  
**GENERAL PERMIT TO INSTALL APPLICATION  
ADDITIONAL INFORMATION**

FOR DEQ USE ONLY
PERMIT NUMBER

Authorized under 1994 PA 451, as amended. Completion of form is required if additional information is needed to make an application complete. Applicant may be subject to civil and/or criminal penalties for providing false information.

**Instructions:** Use this form to include additional information or attachments. Prepare and submit this form with General Information form (EQP5727).

1. FACILITY CODE  STATE REGISTRATION NUMBER (SRN) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	2. ID (Provide the identification number of the device, emission unit or stack/vent for which additional information is being submitted.) <input type="text"/> <input type="text"/>
---	--

3. WHAT TYPE OF ADDITIONAL INFORMATION ARE YOU SUBMITTING WITH THIS APPLICATION? (check all that apply)

ATTACHMENT (if checked, describe and list what is attached. May include drawings, charts, calculations, assumptions, etc.)

TECHNICAL (Specialized information regarding the installation, construction, or use of a process or stack/vent)

GENERAL (Any supplemental information that is not technical information)

4. ADDITIONAL INFORMATION NARRATIVE (A brief description of the information or attachment. May include calculations, design parameters, small diagrams, etc.)



# EQP5756



Michigan Department Of Environmental Quality - Air Quality Division

## GENERAL PERMIT TO INSTALL APPLICATION PROCESS INFORMATION - NONMETALLIC MINERAL CRUSHING (PAGE 1 OF 2)

Authorized under 1994 PA 451, as amended. Completion of form is required. Applicant may be subject to civil and/or criminal penalties for providing false information.

**Instructions:** Use this form to request authority to install and operate a nonmetallic mineral crushing facility, under the terms and conditions of a general permit to install pursuant to Rule 201a. If two or more primary crushers operate in parallel, each constitutes a separate facility. Complete a separate copy of this form for each facility. Prepare and submit this form with the General Information form (EQP5727). **For a Modification:** Complete Items 1 - 9. Identify all existing and new or additional process equipment. Certify and submit pages 1 and 2 of this form to the Permit Section and the appropriate district office. See map for district office locations.

1. FACILITY CODE STATE REGISTRATION NUMBER (SRN)		2. MINE/QUARRY NAME	
SECTION	TOWNSHIP	RANGE	3. AMOUNT PROCESSED AT THIS SITE (tons per year)
4. DESCRIPTION (Brief description of this facility or proposed modification. Attach a detailed site map showing all site characteristics including the location of any residential and/or commercial establishments and places of public assembly located within 1,000 feet of the proposed site)			
5. DOES THIS FACILITY HAVE ANY OUTSTANDING UNRESOLVED AIR VIOLATIONS?			<input type="checkbox"/> YES <input type="checkbox"/> NO
6. ARE THE CRUSHER(S) LOCATED A MINIMUM OF 500 FEET FROM ALL RESIDENTIAL OR COMMERCIAL ESTABLISHMENTS OR PLACES OF PUBLIC ASSEMBLY?			<input type="checkbox"/> YES <input type="checkbox"/> NO
7. WAS THIS FACILITY PREVIOUSLY PERMITTED PURSUANT TO RULE 201? IF YES, PERMIT NO. _____			<input type="checkbox"/> YES <input type="checkbox"/> NO
8. APPLICATION IS FOR      NEW GENERAL PERMIT      MODIFICATION TO EXISTING GENERAL PERMIT - PERMIT NO. _____			
9. <b>FOR A MODIFICATION:</b> IS THE FACILITY CURRENTLY IN COMPLIANCE WITH ALL CONDITIONS OF THE EXISTING GENERAL PERMIT, INCLUDING BUT NOT LIMITED TO THE TESTING OF ALL NSPS SUBJECT EQUIPMENT?			<input type="checkbox"/> YES <input type="checkbox"/> NO

**Instructions for completing the following items:** Each piece of equipment must have a unique identification number (ID). The ID may be any combination of up to 10 letters, numbers or keyboard characters with no spaces between characters. Provide an ID and complete all items for each piece of process equipment at the facility. A manufactured date is required. If a device is shop built, the manufactured date may be estimated. If a device is not subject to NSPS Subpart OOO, an explanation is required. Use Additional Information form EQP5729 if more space is needed. Use as many copies of page 2 as needed to list all process equipment.

DEVICE DESCRIPTION (crusher-type, screen, conveyor, drill, etc.)		DEVICE ID (Assign an identification number for this device)	
MAKE AND MODEL		SERIAL NUMBER	MANUFACTURED DATE (MM/DD/YY)
MAXIMUM RATED CAPACITY per hour)	CONTROL? <input type="checkbox"/> YES <input type="checkbox"/> NO	CONTROL TYPE	



# Do Not Send This!

## ATTACHMENT A SPECIAL CONDITIONS

### Flexible Group Identification

Flexible Group ID	Flexible Group Description
FGCRUSHING	A nonmetallic mineral crushing facility consisting of crusher(s) and associated process equipment including grinding mills, drills, screening operations, bucket elevators, belt conveyors, loading and bagging operations, storage bins, enclosed truck or railcar loading stations and any other material handling equipment operated at the site. Each crusher and screen shall be equipped with a water spray. A baghouse dust collector may alternatively be installed in lieu of water spray for any particular piece of equipment. Operation of the control equipment is required only when necessary to meet applicable emission limits. [R 336.1201a(1), R336.1205, R336.1301, R336.1303, R336.1331, R336.1901, and R336.1910]
Changes to the equipment listed in this table are subject to the requirements of R336.1201, except as allowed by R336.1205 and R336.1290.	

### The following conditions apply to: FGCRUSHING

#### Emission Limits

- 1.1 The particulate matter (PM) emissions from each baghouse dust collector portion of FGCRUSHING shall not exceed 0.04 pounds per 1000 pounds of exhaust gases, calculated on a dry gas basis. [R336.1331]

#### Visible Emission Limits

- 1.2 Visible emissions from FGCRUSHING shall not exceed the limits in the following table: [R336.1205, R336.1301, R336.1901, 40 CFR 60.670]

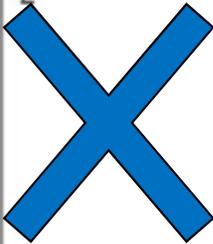
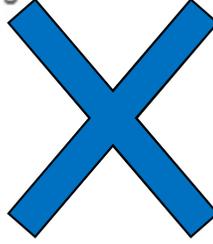
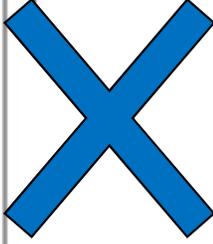
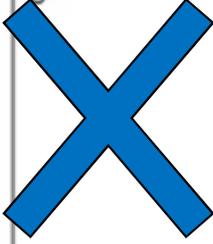
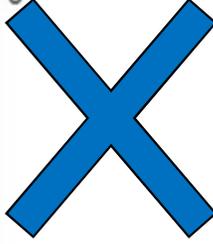
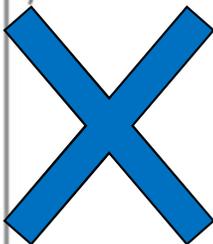
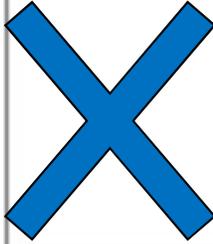
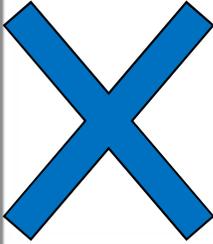
	Equipment	Opacity Limit (%)
1.2a	Any equipment enclosed within a building	Visible emissions
1.2b	All crushers	15
1.2c	Screens	10
1.2d	Rock drills	
1.2e	Conveyors/Transfer points	
1.2f	Wash screens and all subsequent equipment downstream up to the next crusher or storage bin	No visible emissions
1.2g	All equipment controlled by a baghouse dust collector	7
1.2h	Wheel loaders and truck traffic	5
1.2i	Material storage piles	5
1.2j	Any other process equipment which is part of the nonmetallic mineral crushing facility or related processes	10

#### Material Usage Limits

- The permittee shall not process more than 2,000,000 tons of any non-metallic mineral through FGCRUSHING per year per site. [R336.1205]

# 10 Day Notification

- Submit Relocation Notification 10-days in advance

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 SUBMIT NOTIFICATION! 	2 	3 	4 	5 	6 	7 
8 	9 	10 	11	12	13	14
15	16	17	18	19	20	21

# Relocation Notice Check List



## RELOCATION NOTICE SUBMITTAL CHECKLIST

### **Include:**

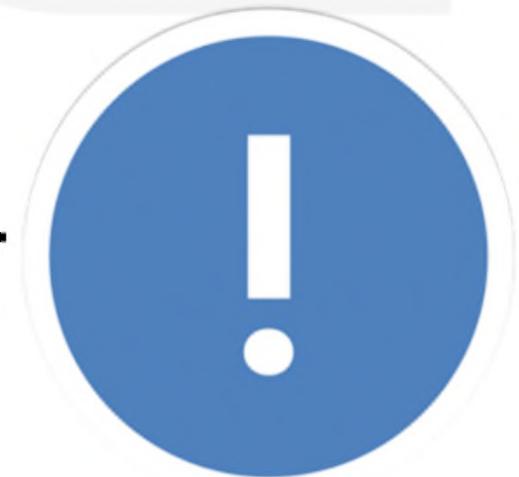
- A completed, original copy of the **Relocation Notice** form (EQP5757).
- A copy of the original General Permit application forms. Include copies of the General Information form (EQP5727), a copy of the original Process Information form (EQP 5756), and a copy of the original Additional Information form(s) (EQP 5759). If the plant has been modified since the original submittal, attach copies of all Process Information forms (EQP5756) submitted for each modification.
- A site plan for the proposed new location, clearly identifying all residential or commercial establishments and places of public assembly within 1,000 feet of the proposed plant site. Establishments and places of public assembly cannot be within 500 feet of the crusher.

### **Attach a copy of any new information for:**

- Plant/building layouts or changes to process flow (i.e. plat maps, diagrams, etc.)
- Documentation from the equipment operator's manual or specification that states maximum rated capacity.
- Design parameters or descriptions of equipment.
- Mail original copies of the paperwork with the AQD district office that covers the area of your next job site **and** the AQD Permit Section in Lansing, Michigan. See Appendix E for the district office mailing addresses.

# Additional Notifications

- Notify AQD of start-up date within 15 days.
- Submit test plan for approval at least 14 days prior to test.
- Notify AQD 7 days prior to test confirming test date.
- Notify AQD of start-up or replacement of equipment.



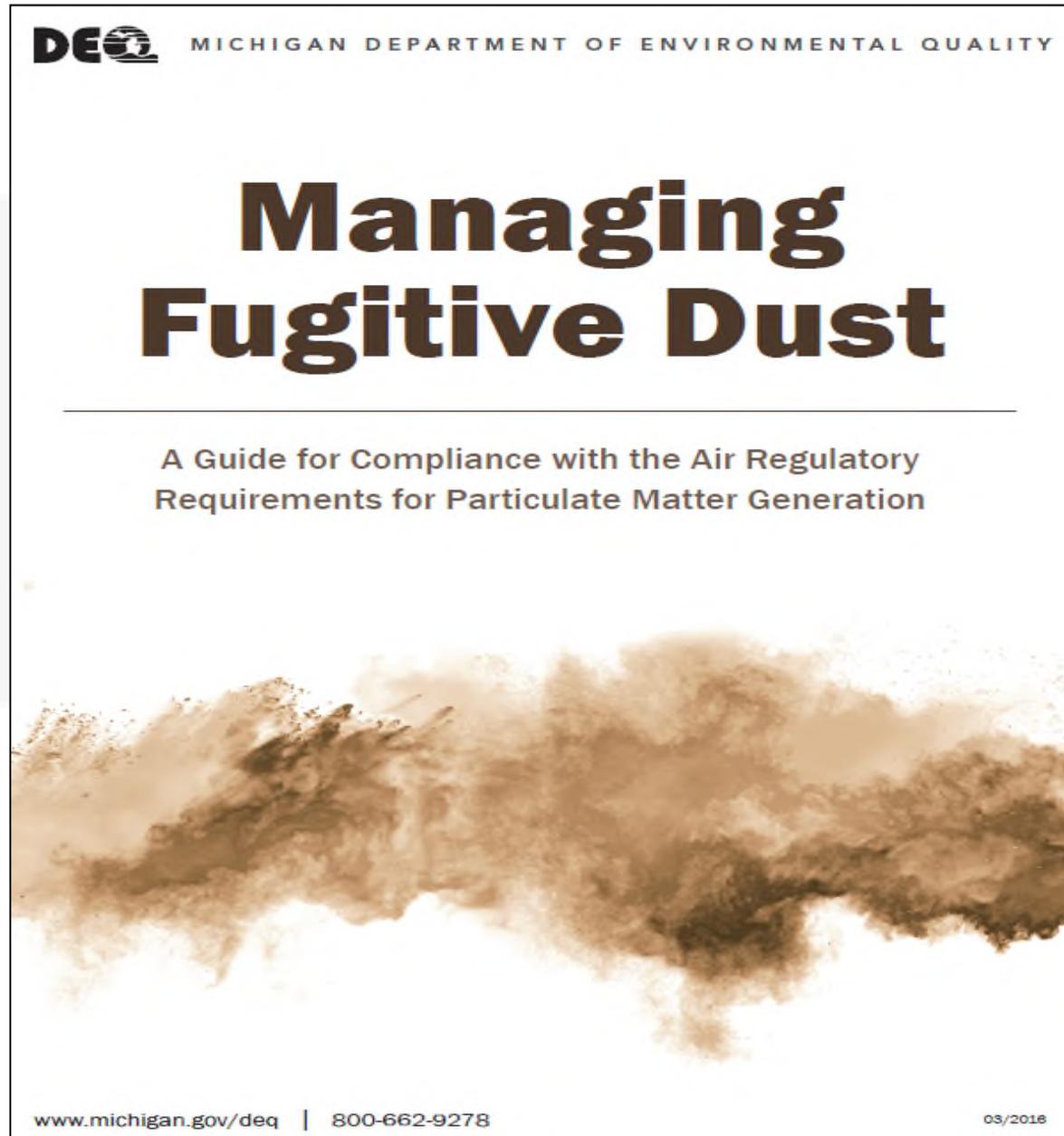
# Site Specific Permit to Install

- Don't meet the 500' setback requirement?
  - Apply for a site specific Permit to Install
  - As easy (and quick) as getting a General Permit!

**OH NO!**



# Fugitive Dust Program



# Fugitive Dust Program



# Fugitive Dust Program

## APPENDIX A Fugitive Dust Control Plan

### I. Plant

The drop distance at each transfer point throughout the plant shall be reduced to the minimum the equipment can achieve.

### II. Truck Traffic

On-site vehicles shall be loaded to prevent their contents from dropping, leaking, blowing or otherwise escaping. This shall be accomplished by loading so that no part of the load shall come in contact within six inches of the top of any sideboard, side panel or tailgate, otherwise, the truck shall be tarped.

### III. Site Roadways and the Plant Yard

(a) The dust on the site roadways and the plant yard shall be controlled by applications of water, calcium chloride or other acceptable and approved fugitive dust control compounds. Applications of dust suppressants shall be done as often as necessary to meet an opacity limit of five percent.

(b) All paved roadways and the plant yards shall be swept as needed between applications of dust suppressants.

(c) Any material spillage on roads shall be cleaned up immediately.

(d) A record of all applications of dust suppressants and roadway and the plant yard sweepings shall be kept on file for the most recent five-year period and be made available to the AQD upon request.

### IV. Storage Piles

(a) Stockpiling of all nonmetallic minerals shall be performed to minimize drop distance and control potential dust problems.

(b) Stockpiles shall be watered on an as needed basis in order to meet an opacity limit of five percent. Equipment to apply water or dust suppressant shall be available at the site, or on call for use at the site, within a given operating day.

(c) A record of all watering shall be kept on file for the most recent five-year period and be made available to the AQD upon request.

### V. AQD/MDEQ Inspection

The provisions and procedures of this plan are subject to adjustment by written notification from the AQD, if following an inspection, the AQD finds the fugitive dust requirements and/or the permitted opacity limits are not being met.



# **Air Quality Division Inspection**

# What to Expect at an Inspection

- Copy of Permit
- Copy of Relocation Notice
- Copy of Equipment form EQP5756



***DEQ Inspector is Here!***

# Key Points of Inspection

- Copy of Permit

## ATTACHMENT A SPECIAL CONDITIONS

### Flexible Group Identification

Flexible Group ID	Flexible Group Description
FGCRUSHING	A nonmetallic mineral crushing facility consisting of crusher(s) and associated process equipment including grinding mills, drills, screening operations, bucket elevators, belt conveyors, loading and bagging operations, storage bins, enclosed truck or railcar loading stations and any other material handling equipment operated at the site. Each crusher and screen shall be equipped with a water spray. A baghouse dust collector may alternatively be installed in lieu of water spray for any particular piece of equipment. Operation of the control equipment is required only when necessary to meet applicable emission limits. [R 336.1201a(1), R336.1205, R336.1301, R336.1303, R336.1331, R336.1901, and R336.1910]
Changes to the equipment described in this table are subject to the requirements of R336.1201, except as allowed by R336.1278 to R336.1290.	

### The following conditions apply to: FGCRUSHING

#### **Emission Limits**

- 1.1 The particulate matter (PM) emissions from each baghouse dust collector portion of FGCRUSHING shall not exceed 0.04 pound per 1,000 pounds of exhaust gases, calculated on a dry gas basis. [R336.1331]

#### **Visible Emission Limits**

- 1.2 Visible emissions from FGCRUSHING shall not exceed the limits in the following table: [R336.1205, R336.1301, R336.1901, 40 CFR 60.670]

	Equipment	Opacity Limit (%)
1.2a	Any equipment enclosed within a building	No visible emissions
1.2b	All crushers	15
1.2c	Screens	10
1.2d	Rock drills	5
1.2e	Conveyors/Transfer points	10
1.2f	Wash screens and all subsequent equipment downstream up to the next crusher or storage bin	No visible emissions
1.2g	All equipment controlled by a baghouse dust collector	7
1.2h	Wheel loaders and truck traffic	5
1.2i	Material storage piles	5
1.2j	Any other process equipment which is part of the nonmetallic mineral crushing facility or related processes	10

#### **Material Usage Limits**

- 1.3 The permittee shall not process more than 2,000,000 tons of any non-metallic mineral through FGCRUSHING per year per site. [R336.1205]

# Key Points of Inspection

- Copy of *Relocation* Notice



# Key Points of Inspection

- Equipment Labels
- Daily Scale Tonnage
- Checking for Water Source



# Key Points of Inspection

Michigan Department Of Environmental Quality - Air Quality Division  
**GENERAL PERMIT TO INSTALL APPLICATION**  
**PROCESS INFORMATION - NONMETALLIC MINERAL CRUSHING (PAGE 1 OF 2)**

FOR DEQ USE ONLY  
 PERMIT NUMBER

Authorized under 1594 P.A. 451, as amended. Completion of form is required. Applicant may be subject to civil and/or criminal penalties.

**Instructions:** Use this form to request authority to install and operate a nonmetallic mineral crushing conditions of a general permit (to install pursuant to Rule 201a. If two or more primary crushers operate separate facility. Complete a separate copy of this form for each facility. Prepare and submit this form (EQP5727). **For a Modification:** Complete Items 1 - 9. Identify all existing and new or additional equipment. Submit pages 1 and 2 of this form to the Permit Section and the appropriate district office. See map for location of district offices.

1. FACILITY CODE

2. MINE/QUARRY NAME  
*Construction Company*

STATE REGISTRATION NUMBER (SRN) [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

SECTION *36* TOWNSHIP *7N* RANGE *11W*

3. AMOUNT PROCESSED AT THIS SITE (tons per year) *15,000*

4. DESCRIPTION (Brief description of this facility or proposed modification. Attach a detailed site map showing all site characteristics including the location of any residential and/or commercial establishments and places of public assembly located within 1,000 feet of the proposed site)  
*Concrete Recycle*

5. DOES THIS FACILITY HAVE ANY OUTSTANDING UNRESOLVED AIR VIOLATIONS?  YES  NO

6. ARE THE CRUSHER(S) LOCATED A MINIMUM OF 500 FEET FROM ALL RESIDENTIAL, COMMERCIAL, OR PUBLIC ASSEMBLY PLACES? *Yes 500 ft from*  YES  NO

7. WAS THIS FACILITY PREVIOUSLY PERMITTED PURSUANT TO RULE 201? *Yes. 173-10*  YES  NO

8. APPLICATION IS FOR  NEW GENERAL PERMIT  MODIFICATION TO EXISTING GENERAL PERMIT - PERMIT NO. *173-10*

9. FOR A MODIFICATION: IS THE FACILITY CURRENTLY IN COMPLIANCE WITH ALL CONDITIONS OF THE EXISTING GENERAL PERMIT, INCLUDING BUT NOT LIMITED TO THE TESTING OF ALL NSPS SUBJECT EQUIPMENT?  YES  NO

**Instructions for completing the following items:** Each piece of equipment must have a unique identification number (ID). The ID may be any combination of up to 10 letters, numbers or keyboard characters with no spaces between characters. Provide an ID and complete all items for each piece of process equipment at the facility. If equipment is shop built, the manufactured date may be estimated. This data is mandatory. Use as many copies of page 2 as needed to list all process equipment. Use Additional Information form EQP5729 if needed to describe why a device is not subject to NSPS.

DEVICE DESCRIPTION (crusher-type, screen, conveyor, drill, etc.) <i>Horizontal Mill</i>	DEVICE ID (Assign an identification number for this device) <i>MP 221</i>	
MAKE AND MODEL <i>I Rock RDS-20</i>	SERIAL NUMBER <i>100 27000 11318</i>	MANUFACTURED DATE (year) <i>2008 approx</i>
MAXIMUM RATED CAPACITY (tons per hour) <i>300 tons per hr</i>	CONTROL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	CONTROL TYPE <i>water spray</i>
IS DEVICE SUBJECT TO NSPS? <input checked="" type="checkbox"/> YES, HAS DEVICE BEEN TESTED? <input type="checkbox"/> YES, DATE TEST PASSED	<input checked="" type="checkbox"/> NO, DATE TEST SCHEDULED <i>will schedule within limit.</i>	

DEVICE DESCRIPTION (crusher-type, screen, conveyor, drill, etc.) <i>Conveyor</i>	DEVICE ID (Assign an identification number for this device) <i>TM CV 18</i>	
MAKE AND MODEL <i>McCloskey</i>	SERIAL NUMBER <i>mcB 4260</i>	MANUFACTURED DATE (year) <i>2001</i>
MAXIMUM RATED CAPACITY (tons per hour) <i>300 tons per hr</i>	CONTROL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	CONTROL TYPE <i>water spray</i>
IS DEVICE SUBJECT TO NSPS? <input checked="" type="checkbox"/> YES, HAS DEVICE BEEN TESTED? <input type="checkbox"/> YES, DATE TEST PASSED	<input checked="" type="checkbox"/> NO, DATE TEST SCHEDULED <i>will schedule within limit.</i>	

**This page must be certified by an authorized employee**

**Applicant Certification:** I certify, under penalty of law, that this permit application and any attachments were prepared by me, or under my direction or supervision in accordance with a system to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. In addition, the equipment described in this application meets the necessary criteria for applicability for a General Permit to Install. Furthermore, I certify that I can and will comply with all conditions outlined in the General Permit to Install. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

SIGNATURE OF AUTHORIZED EMPLOYEE \_\_\_\_\_ DATE *7/1/14*

*7 # 21 not onsite  
 modification  
 217 - no send  
 17 shop built  
 no send*



# Compliance

- At the end of the day, we both want the same thing.

– ***COMPLIANCE!***



# QUESTIONS?



## Thank You!

