



June 26, 2018  
 Project No. 180320

Mr. Zack Durham  
 Environmental Quality Analyst  
 Air Quality Division  
 Michigan Department of Environmental Quality – Jackson District Office  
 301 East Louis Glick Highway  
 Jackson, MI 49201-1556

Re: Response to Violation Notice dated June 8, 2018  
 Stateline Crushing (SRN: P0622)  
 Grass Lake, Michigan

Dear Mr. Durham:

On behalf of Stateline Crushing (SLC), Fishbeck, Thompson, Carr & Huber, Inc. (FTCH) has prepared this letter in response to the MDEQ Violation Notice (VN) dated June 8, 2018. The VN alleges that, on June 5, 2018, SLC violated Rule 201 for operating a portable crusher located at 13650 Bohne Road, Grass Lake, Michigan *while the water spray was not operational as required by Rule 290(2)(a)(iii)(A)*. SLC believes this statement to be inaccurate and that no Rule 201 violation occurred.

The specific allegation associated with SLC’s compliance is summarized below:

Process Description	Rule/Permit Condition Violated	Comments
<i>Unpermitted portable crusher (KPI 4250)</i>	<i>Rule 201</i>	<i>The facility failed to adhere to Rule 290(2)(a)(iii)(A) for controlling particulate emissions.</i>

As requested, this letter provides information regarding the above citation including: the date the alleged violation occurred; an explanation of the causes and duration of the alleged violation; whether the violation is ongoing; a summary of the actions that have been taken and are proposed to be taken to correct the violation, if any; the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence.

Based on anecdotal information from the plant personnel, more dust than is normally associated with crusher plant operations may have been observed during the June 5, 2018 MDEQ site visit. During the site visit, the plant operator escorted MDEQ personnel to the location where the crusher was operating, which was approximately 100 yards away from the facility check in area. During the short period when the plant operator was away from the crushing equipment to accompany the DEQ, the trash pump, which was pumping water from the pond to the crusher spray bars, ran out of fuel. At that point, no water was being used to reduce dust in that area; consequently, the area became dusty. While the plant operator and MDEQ personnel were walking back the crusher, the front-end loader (FEL) operator left his vehicle to add fuel to the trash pump. Prior to exiting his vehicle, the FEL operator did not load crusher feed; therefore, the only material in the crusher was from the return feed line and the hopper was empty. At most, dust was generated for three to five minutes while the trash pump was being refueled and restarted. After the trash pump was restarted, the plant operator indicated the MDEQ personnel briefly walked around, noted the water had a good flow, and that the plant looked good. During that period, excess emissions were not generated in a quantity that would exceed the limits included in Rule 290 that apply to the source.



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Stateline KPI 4250 crushing equipment operates under Rule 290, with a monthly emission limit of 500 pounds. A Rule 290 exemption analysis and documentation were previously provided to the MDEQ; this analysis is included as Attachment 1. Under Rule 290, a source may comply with any of the criteria outlined in Rule 290(a)(i), (ii) or (iii).<sup>1</sup>

As previously described, while the FEL operator was refueling the trash pump, the hopper to the crusher was empty. The dust generated during this short period of time was due to materials on the return belt. SLC-provided information regarding production on June 5, 2018, indicates the following:

1. Total tons processed for the day: 1,607 tons
2. Average ton per hour processed: 230 tons

Assuming a 5-minute duration without the spray bars, and assuming up to 15% return, total material processed is

$$230 \text{ tph} \times 5 \text{ min}/60 \text{ min/hr} \times 15\% = 2.9 \text{ tons}$$

Uncontrolled AP-42 factors are as follows:

1. Crusher 0.0054 lb/ton
2. Drop point 0.0030 lb/ton
3. Screen 0.025 lb/ton

Emissions from this short duration are as follows:

$$2.9 \text{ tons} \times (0.0054 \text{ lb/ton} + 0.025 \text{ lb/ton} \times 10 \text{ drops} + 0.003 \text{ lb/ton}) = 2.9 \text{ tons} \times 0.05821 \text{ lb/ton} = 0.2 \text{ pounds}$$

Even assuming the entire day was uncontrolled, at *most* emissions are still only:

$$1,607 \text{ ton/day} \times 0.05801 \text{ lb/ton} = 93.5 \text{ pounds}$$

In recent presentations, the MDEQ-AQD has made it very clear that the *controlled vs. uncontrolled determination* in Rule 290 is at the discretion of the source and that it applies to emission **units** not emissions. For example, a source with a baghouse controlling particulate matter (PM) emissions which *also* has emissions of volatile organic compounds (VOCs) cannot use a controlled limit for PM and an uncontrolled limit for VOC. The source must make a determination whether they consider the source uncontrolled or controlled, and apply the same limit to all air contaminants. For SLC, even though dust was generated for three to five minutes while the trash pump was being refueled and restarted, we still consider the source to be *controlled*, and subject to 500 pounds of emissions per month. As stated herein, the short duration of time in which the water sprays were not operating does not result in actual emissions greater than 500 pounds per month (lb/mo).

Projected emission calculations for the month of June, which demonstrate emissions are less than 500 lb/mo and in compliance with Rule 290, are included as Attachment 2.

The language in the VN infers that a controlled source using Rule 290 which has a malfunction, or whose control efficiency is reduced for a short period of time is in violation of Rule 201, regardless of whether the actual emissions from the source exceed the Rule 290 emission limits. This is not the intent of Rule 290. Rule 290 is based on a source's actual monthly emissions not exceeding a specific limit, based on its status as *controlled* (500 lb/mo) or *uncontrolled* (1,000 lb/mo). Even if SLC was using Rule 290(2)(a)(iii), which does not require monthly emission calculations, they would have the option of switching to Rule 290(2)(a)(ii) to demonstrate emissions less than the Rule 290 limits.

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<sup>1</sup> Rule number at the time of commencement of operation

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SLC is committed to reducing fugitive emissions from their crushing operations. This is evidenced by the purchase of a snow machine, which is used while crushing very dry materials or during dry conditions, as well as the purchase of a 9,000-gallon water tank. To avoid the trash pump running out of fuel in the future, SLC is plans to purchase an electric driven pump to be used with the 9,000-gallon water tank. In the meantime, the operators are checking and filling the trash pump fuel tank every 1.5 to 3 hours.

Based on the information provided, SLC has not exceeded Rule 290 limits and is not in violation of Rule 201. We respectfully request that the MDEQ rescind the June 8 VN.

If you have any questions or require additional information, please contact me at 248.324.2146 (office), 248.417.9425 (cell), or [sajarrett@ftch.com](mailto:sajarrett@ftch.com).

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

A handwritten signature in black ink, reading "Stephanie A. Jarrett". The signature is written in a cursive, flowing style.

Stephanie A. Jarrett, PE

dmg.

Attachments

By email and USPS

cc/att: Jenine Camilleri – MDEQ

Scott Miller – MDEQ

John Thompson – SLC

# Attachment 1



# MEMO

TO: Mr. John Thompson – Stateline Crushing

FROM: Stephanie A. Jarrett, PE

DATE: May 22, 2015 PROJECT NO.: G150319

RE: Permit to Install Exemption Request – Stateline Crushing  
Recycled Asphalt Pavement and Concrete Crusher Particulate Emissions, Pursuant to Rule 290

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Fishbeck, Thompson, Carr & Huber, Inc. (FTCH) has been asked to review the technical information supplied by Stateline Crushing (SLC) to determine air quality permitting requirements for their new concrete and asphalt production facility. As part of our technical review, FTCH completed particulate matter (PM) emission calculations as well as an air use permit to install (PTI) exemption analysis.

The concrete and recycled asphalt paving (RAP) crushing process was reviewed to determine if the operation is eligible for exemption from the air use permitting requirements in R336.1201, pursuant to R336.1278 and R336.1290. In accordance with R 336.1278a, the following method demonstrates that the crushing process is eligible for exemption.

**R 336.1278a – Scope of Permit Exemptions.**

- (1) *To be eligible for a specific exemption listed in R 336.1280 through R 336.1290, any person owning or operating an exempt process or exempt process equipment shall be able to provide information demonstrating the applicability of the exemption. The demonstration shall be provided within 30 days of a written request from the department. The demonstration may include the following information:*
- (a) *A description of the exempt process or process equipment, including the date of installation.*

As previously mentioned, SLC will be crushing RAP and concrete. This process consists of a front end loader, crusher, screen, and several conveyors for material transfer. The RAP, or concrete, is loaded into the crusher to break down the larger materials. They are then conveyed to the screen to sort out the oversized materials. From the screen, the materials are either conveyed back to the crusher or will eventually end up in the material specific storage pile.

**R 336.1278a(1)(b)** *The specific exemption being used by the process or process equipment.*

The identified exemption Rule is R336.1290(a), which states:

**R 336.1290 Permit to Install Exemptions; Emission Units with Limited Emissions.**

**Rule 290.** *The requirement of R 336.1201(1) to obtain a permit to install does not apply to any of the emission units listed in (a) if the conditions listed in (b), (c), and (d) are met. Notwithstanding the definition in R 336.1121(a), for the purpose of this rule, uncontrolled emissions are the emissions from an emission unit based on actual operation, not taking into account any emission control equipment. Controlled emissions are the emissions from an emission unit based on actual operation, taking into account the control equipment.*

- (a) *An emission unit which meets any of the following criteria:*
- (i) *Any emission unit that emits only noncarcinogenic volatile organic compounds or noncarcinogenic materials which are listed in R 336.1122(f) as not contributing appreciably to the formation of ozone, if the uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively.*



- (ii) Any emission unit that the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively, and all of the following criteria are met:
  - (A) For noncarcinogenic air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in R 336.1122(f) as not contributing appreciably to the formation of ozone, with initial threshold screening levels greater than or equal to 2.0 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 1,000 or 500 pounds per month, respectively.
  - (B) For noncarcinogenic air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in R 336.1122(f) as not contributing appreciably to the formation of ozone, with initial threshold screening levels greater than or equal to 0.04 micrograms per cubic meter and less than 2.0 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 20 or 10 pounds per month, respectively.
  - (C) For carcinogenic air contaminants with initial risk screening levels greater than or equal to 0.04 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 20 or 10 pounds per month, respectively.
  - (D) The emission unit shall not emit any air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in R 336.1122(f) as not contributing appreciably to the formation of ozone, with an initial threshold screening level or initial risk screening level less than 0.04 micrograms per cubic meter.

(iii) ...

**R 336.1278a(1)(c)** An analysis demonstrating that R 336.1278 does not apply to the process or process equipment.

The PM emissions for the RAP and concrete crushing operations have been calculated using emission factors obtained from AP-42 Section 11.19, Table 11.19.2.2. The potential to emit (PTE) from the operations is based on applicable Rule 290 limits, which indicate that controlled emissions from the process shall not exceed 500 pounds per month. The crushing operation and yard emissions are considered two separate emission units. This was confirmed by the Michigan Department of Environmental Quality (MDEQ) for similar crushing operations using the Rule 290 exemption. The PTE PM from the crusher and yard emissions is equal to the following:

$$PM \left( \frac{\text{tons}}{\text{yr}} \right) = \left( 500 \frac{\text{lb } PM_{\text{Crusher}}}{\text{month}} + 500 \frac{\text{lb } PM_{\text{Yard}}}{\text{month}} \right) \times 12 \frac{\text{months}}{\text{year}} \times \frac{\text{tons}}{2,000 \text{ lb}} = 6 \frac{\text{tons } PM}{\text{year}}$$

As the emissions are less than the significant emission rates for PM (25 tons per year [tpy]), PM<sub>10</sub> (15 tpy) and PM<sub>2.5</sub> (10 tpy) the process is not excluded from using an exemption pursuant to Rule 278.

- R 336.1278(2)** The exemptions specified in R 336.1280 to R 336.1290 do not apply to the construction of a new major source of hazardous air pollutants or reconstruction of a major source of hazardous air pollutants, as defined in and subject to 40 C.F.R. §63.2 and §63.5(b)(3), national emission standards for hazardous air pollutants, adopted by reference in R 336.1299.
- (3)** The exemptions specified in R 336.1280 to R 336.1290 do not apply to a construction or modification as defined in and subject to 40 C.F.R. part 61, national emission standards for hazardous air pollutants, adopted by reference in R 336.1299.



SLC will not be major source of hazardous air pollutant (HAP) emissions and, therefore, subject to the major source requirements contained in 40 CFR 63 including Sections 112(g) and 112(j) of the federal Clean Air Act. Furthermore, none of the process equipment will be subject to any applicable requirements contained in 40 CFR 61. Therefore, the Rule 278 exclusion from exemption does not apply to the SLC operations because none of the current National Emissions Standard for Hazardous Air Pollutants (NESHAP) requirements are applicable to the proposed SLC operations.

**R 336.1278a(2)** *The records required by this rule shall be provided in addition to any other records required within a specific exemption.*

In addition to the records required by Rule 278a, described in paragraphs R336.1278a(1)(a), (b) and (c) above, Rule 290 requires the following specific records:

**Rule 290(b)** *A description of the emission unit is maintained throughout the life of the unit*

A description of the emission unit is described in paragraph R336.1278a(1)(a) above.

**Rule 290(c)** *Records of material use and calculations identifying the quality, nature, and quantity of the air contaminant emissions are maintained in sufficient detail to demonstrate that the emissions meet the emission limits outlined in this rule.*

SLC will maintain records of material use and emission calculations for each month of operation. The Rule 290 exemption calculations and planned record keeping format are included as attachments. These records will be maintained for the most recent 2-year period based on the requirements in Rule 290(d).

**Rule 290(d)** *The records are maintained on file for the most recent 2-year period and are made available to the air quality division upon request.*

The MDEQ has exempted RAP and concrete crushing operations in the past based on the Rule 290 exemption. SLC will be subject to New Source Performance Standards (NSPS) Subpart OOO – *Standards for Performance for Nonmetallic Mineral Processing Plants*. Notification and testing will be performed in accordance with the NSPS.

If you have any questions or require additional information, please contact me at 248.324.2146 or [sajarrett@ftch.com](mailto:sajarrett@ftch.com).

# Attachment 1



**POTENTIAL EMISSIONS FOR EUCrusher  
Stateline Crushing**

MDEQ Emission Unit Number:	EUCrusher	SCC Code:	3-05-020-01
Emission Unit Description:	CONCRETE Crushing, Screening and Conveying Operations		
Emission Unit Stack ID Number(s):	NA		

**TYPE OF EMISSION**  
Fugitive Particulate Emissions

**Emission Calculations**

Total Throughput (tons/mo)	Activity	Control	PM Emission Factor (lb/ton)	Throughput Fraction	Activity Throughput (tons/mo)	Activity PM Emission Rates (lb/mo)
99,780	Front End Loader to weigh hopper (material loading)	None	1.60E-05	100%	99,780	1.6
	Crusher	Water Spray	0.0012	115%	114,748	137.7
	Drop from Crusher to Conveyor	Water Spray	1.40E-04	115%	114,748	16.1
	Drop from Conveyor to Screen	Water Spray	1.40E-04	115%	114,748	16.1
	Screen	Water Spray	0.0022	115%	114,748	252.4
	Drop from Screen to Screen Cross Conveyor (SCC)	Wet Material	1.40E-04	15%	14,967	2.1
	Transfer from SCC to Return Conveyor (RC)	Wet Material	1.40E-04	15%	14,967	2.1
	Drop from RC to Crusher Hopper	Wet Material	1.40E-04	15%	14,967	2.1
	Drop from Screen to Screen Fines Conveyor (SFC)	Wet Material	1.40E-04	100%	99,780	14.0
	Transfer from SFC to Field Conveyor 1 (FC1)	Wet Material	1.40E-04	100%	99,780	14.0
	Transfer from FC1 to Field Conveyor 2 (FC2)	Wet Material	1.40E-04	100%	99,780	14.0
	Transfer from FC2 to Radial Stacker	Wet Material	1.40E-04	100%	99,780	14.0
	Stacker to Concrete Storage Pile	Wet Material	1.40E-04	100%	99,780	14.0

Crusher and Screen PM Emissions                      500.0 lb/mo  
 Combined Operations Emission Factor                      0.00501 lb/ton

137.70

**EMISSION ESTIMATION FACTORS & EQUATIONS**

Emission Factors for crushing, screening and conveying obtained from AP-42 Section 11.19 Table 11.19.2.2 (08/04)  
 Emission Factor for front end loader drops is for PM10. No total PM Factor available for this activity.

**DATA SOURCES**

**NOTES**

**APPLICABLE RULES**



**POTENTIAL EMISSIONS FOR EUCrusher  
Stateline Crushing**

MDEQ Emission Unit Number: **EUCrusher** SCC Code: **3-05-020-01**  
 Emission Unit Description: **RAP Crushing, Screening and Conveying Operations**  
 Emission Unit Stack ID Number(s): **NA**

**TYPE OF EMISSION**

Fugitive Particulate Emissions

**Emission Calculations**

Total Throughput (tons/mo)	Activity	Control	PM Emission Factor (lb/ton)	Throughput Fraction	Activity Throughput (tons/mo)	Control Efficiency	Activity PM Emission Rates (lb/mo)
249,451	Front end loader to weigh hopper (material loading)	None	1.60E-05	100%	249,451	60%	1.6
	Crusher	Water Spray	0.0012	115%	286,869	60%	137.7
	Drop from Crusher to Conveyor	Water Spray	1.40E-04	115%	286,869	60%	16.1
	Drop from Conveyor to Screen	Water Spray	1.40E-04	115%	286,869	60%	16.1
	Screen	Water Spray	0.0022	115%	286,869	60%	252.4
	Drop from Screen to Screen Cross Conveyor (SCC)	Wet Material	1.40E-04	15%	37,418	60%	2.1
	Transfer from SCC to Return Conveyor (RC)	Wet Material	1.40E-04	15%	37,418	60%	2.1
	Drop from RC to Crusher Hopper	Wet Material	1.40E-04	15%	37,418	60%	2.1
	Drop from Screen to Screen Fines Conveyor (SFC)	Wet Material	1.40E-04	100%	249,451	60%	14.0
	Transfer from SFC to Field Conveyor 1 (FC1)	Wet Material	1.40E-04	100%	249,451	60%	14.0
	Transfer from FC1 to Field Conveyor 2 (FC2)	Wet Material	1.40E-04	100%	249,451	60%	14.0
	Transfer from FC2 to Radial Stacker	Wet Material	1.40E-04	100%	249,451	60%	14.0
	Stacker to RAP Storage Pile	Wet Material	1.40E-04	100%	249,451	60%	14.0

Crusher and Screen PM Emissions **500.0 lb/mo**  
 Combined Operations Emission Factor **0.00200 lb/ton**

**EMISSION ESTIMATION FACTORS & EQUATIONS**

Emission Factors for crushing, screening and conveying obtained from AP-42 Section 11.19 Table 11.19.2.2 (08/04)  
 Emission Factor for front end loader drops is for PM10. No total PM Factor available for this activity.

**DATA SOURCES**

**NOTES**

Crusher and screen control efficiency based on processing RAP coated with asphalt cement and inherently less dusty than virgin stone upon which the AP-42 factor is based.

**APPLICABLE RULES**



## POTENTIAL EMISSIONS FOR EUYard Stateline Crushing

MDEQ Emission Unit Number:	EUYard	SCC Code:	3-05-020-01
Emission Unit Description:	Front End Loader for Concrete Crushing		
Emission Unit Stack ID Number(s):	NA		

**TYPE OF EMISSION**  
Fugitive Particulate Emissions

**Emission Calculations**

Total Throughput (tons/mo)	Activity	Control	PM Emission Factor (lb/ton)	Throughput Fraction	Activity Throughput (tons/mo)	Control Efficiency	Activity PM Emission Rates (lb/mo)
99,780	Front end loader fugitives from vehicle miles (see calculation below)		0.0137	100%	99,780	70%	409.0
Crusher and Screen PM Emissions Combined Operations Emission Factor					409.0 lb/mo 0.00410 lb/ton		

**HAUL ROAD Calculations**

**Front End Loader Fugitive Emissions**

$E = k * (s/12)^a * (W/3)^b$  (Equation 1a AP-42 13.2.2 (11/06))

- k = PM-10 (lb/VMT) 4.9
- a = 0.7
- b = 0.45
- s = surface material silt content = 5.4
- W = Mean vehicle weight (ton) = 65
- Front End Loader Operating Weight 55
- Front End Loader Loaded Weight (max payload) 75

(Based on AP-42 Table 13.2.2-1, sample wgt'ed avg for S&G roads & yard)

Uncontrolled Front End Loader Fugitive Emission Factor (not including natural mitigation) (lb/VMT) = 11.17

**Natural Mitigation**

$E_{ext} = E [(365 - P) / 365]$  (Equation 2 AP-42 13.2.2 (11/06))

- E = Emission Factor from above = 11.17
- P = Number of days with at least 0.01 inch of precipitations (AP-42 Figure 13.2.2-1) = 130

Uncontrolled Front End Loader Fugitive Emission Factor (including natural mitigation) (lb/VMT) = 7.19

**Vehicle Miles Traveled**

- Load of Front End Loader (tons/load) = 20
  - Total Concrete transferred (tons) = 99,780
  - Loads of Concrete transferred = 4,989
  - Average Distance Traveled (miles/load) = 0.038
  - Total Distance traveled (miles) = 190
- 100 feet to pile, 100 feet back from pile

Fugitive Front End Loader Emissions from travel (lb) = 1,363

Uncontrolled Front End Loader Emission Rate per ton (lb/ton) = 0.0137

**EMISSION ESTIMATION FACTORS & EQUATIONS**

Emission Factors for front end loader travel obtained from AP-42 Section 13.2.2 (11/06)

**DATA SOURCES**

**NOTES**

Front End Loader control efficiency based on continuous watering during process operation.

**APPLICABLE RULES**



**POTENTIAL EMISSIONS FOR EUYard  
Stateline Crushing**

MDEQ Emission Unit Number:	EUYard	SCC Code:	3-05-020-01
Emission Unit Description:	Front End Loader for RAP Crushing		
Emission Unit Stack ID Number(s):	NA		

**TYPE OF EMISSION**  
Fugitive Particulate Emissions

**Emission Calculations**

Total Throughput (tons/mo)	Activity	Control	PM Emission Factor (lb/ton)	Throughput Fraction	Activity Throughput (tons/mo)	Control Efficiency	Activity PM Emission Rates (lb/mo)
249,451	Front end loader fugitives from vehicle miles (see calculation below)		0.0137	100%	249,451	90%	340.8

Crusher and Screen PM Emissions                      340.8 **lb/mo**  
 Combined Operations Emission Factor                      0.00137 **lb/ton**

**HAUL ROAD Calculations**

Front End Loader Fugitive Emissions

$E = k * (s/12)^a * (W/3)^b$       (Equation 1a AP-42 13.2.2 (11/06))

- k = PM-10 (lb/VMT)    4.9
- a = 0.7
- b = 0.45
- s = surface material silt content =    5.4      (Based on AP-42 Table 13.2.2-1, sample wgt'ed avg for S&G roads & yard)
- W = Mean vehicle weight (ton) =    65
- Front End Loader Operating Weight    55
- Front End Loader Loaded Weight (max payload)    75

Uncontrolled Front End Loader Fugitive Emission Factor (not including natural mitigation) (lb/VMT) =                      11.17

Natural Mitigation

$E_{ext} = E [(365 - P) / 365]$       (Equation 2 AP-42 13.2.2 (11/06))

- E = Emission Factor from above =    11.17
- P = Number of days with at least 0.01 inch of precipitations (AP-42 Figure 13.2.2-1) =                      130

Uncontrolled Front End Loader Fugitive Emission Factor (including natural mitigation) (lb/VMT) =                      7.19

Vehicle Miles Traveled

- Load of Front End Loader (tons/load) =    20
- Total RAP transferred (tons) =    249,451
- Loads of RAP transferred =    12,473
- Average Distance Traveled (miles/load) =    0.038
- Total Distance traveled (miles) =    474

Fugitive Front End Loader Emissions from travel (lb) =                      3,408

Uncontrolled Front End Loader Emission Rate per ton (lb/ton) =                      0.0137

**EMISSION ESTIMATION FACTORS & EQUATIONS**

Emission Factors for front end loader travel obtained from AP-42 Section 13.2.2 (11/06)

**DATA SOURCES**

**NOTES**

Front End Loader control efficiency based on continuous watering during process operation.

**APPLICABLE RULES**



# Attachment 2



**Tons of Material Processed - Monthly  
Stateline Crushing**

YEAR 2015

Month/Year	Tons of RAP Processed	Tons of Concrete Processed	Emissions (lb/mo)	In compliance (<500 lb/mo)	RAP emission Factor (lb/ton)	Concrete emission Factor (lb/ton)
Jan-15	-	-	-	YES	0.00187	0.00467
Feb-15	-	-	-	YES	0.00187	0.00467
Mar-15	-	-	-	YES	0.00187	0.00467
Apr-15	-	-	-	YES	0.00187	0.00467
May-15	-	-	-	YES	0.00187	0.00467
Jun-15	-	-	-	YES	0.00187	0.00467
Jul-15	-	-	-	YES	0.00187	0.00467
Aug-15	-	-	-	YES	0.00187	0.00467
Sep-15	-	-	-	YES	0.00187	0.00467
Oct-15	-	-	-	YES	0.00187	0.00467
Nov-15	-	-	-	YES	0.00187	0.00467
Dec-15	-	-	-	YES	0.00187	0.00467



**Concrete and RAP Material Processing**  
**Monthly Processing Worksheet**  
 Stateline Crushing

ENTER TONS Processed since beginning of month or expected tonnage in month

CONCRETE		tons
RAP		tons

Emissions from Concrete processing	-	pounds PM	
Emissions from RAP processing	-	pounds PM	
<b>TOTAL</b>	-	pounds PM	Limit = 500 pounds per month

Emissions left before exceeding Rule 290 limit      500.00 pounds PM

SELECT Material to be processed to determine tons of material that can be processed in the remainder of the month without exceeding Rule 290 limit.

SELECT	Concrete
Emission Factor	0.00501 lb/ton

Projected	Concrete	99,780.48 tons
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	Projected Emissions (lb/mo)	
Total Projected RAP to maintain Rule 290 limit	-	- pounds PM
Total Projected CONCRETE to maintain Rule 290 limit	99,780.48	500.00 pounds PM
	<b>TOTAL</b>	<b>500.00 pounds PM</b>





# **Attachment 2**

**PROJECTED EMISSIONS FOR FGCrusher FOR JUNE 5, 2018**  
**Stateline Crushing**

MDEQ Emission Unit Number:	FGCrusher	SCC Code:	3-05-020-01
Emission Unit Description:	CONCRETE Crushing, Screening and Conveying Operations		
Emission Unit Stack ID Number(s):	NA		

**TYPE OF EMISSION**  
 Fugitive Particulate Emissions

**Emission Calculations - Uncontrolled June 5, 2018**

June 5, 2018 Throughput (tons)	Activity	Control	PM Emission Factor (lb/ton)	Throughput Fraction	Activity Throughput (tons/mo)	Activity PM Emission Rates (lb/mo)
1,607	Crusher	Water Spray	0.0054	115%	1,848	10.0
	Drop from Crusher to Conveyor	Water Spray	3.00E-03	115%	1,848	5.5
	Drop from Conveyor to Screen	Water Spray	3.00E-03	115%	1,848	5.5
	Screen	Water Spray	0.025	115%	1,848	46.2
	Drop from Screen to Screen Cross Conveyor (SCC)	Wet Material	3.00E-03	15%	241	0.7
	Transfer from SCC to Return Conveyor (RC)	Wet Material	3.00E-03	15%	241	0.7
	Drop from RC to Crusher Hopper	Wet Material	3.00E-03	15%	241	0.7
	Drop from Screen to Screen Fines Conveyor (SFC)	Wet Material	3.00E-03	100%	1,607	4.8
	Transfer from SFC to Field Conveyor 1 (FC1)	Wet Material	3.00E-03	100%	1,607	4.8
	Transfer from FC1 to Field Conveyor 2 (FC2)	Wet Material	3.00E-03	100%	1,607	4.8
	Transfer from FC2 to Radial Stack	Wet Material	3.00E-03	100%	1,607	4.8
	Stacker to Concrete Storage Pile	Wet Material	3.00E-03	100%	1,607	4.8

\*\*\* ASSUMED ALL OF JUNE 5 is UNCONTROLLED; THIS IS CONSERVATIVE AS WATER SPRAYS WERE ONLY OFF FOR SEVERAL MINUTES  
 Crusher and Screen PM Emissions 93.5 lb/mo  
 Combined Operations Emission Factor 0.05821 lb/ton

**Projected Emission Calculations - Controlled June 2018**

Projected Jun-18 Throughput (tons/mo)	Activity	Control	PM Emission Factor (lb/ton)	Throughput Fraction	Activity Throughput (tons/mo)	Activity PM Emission Rates (lb/mo)
42,716	Front End Loader to weigh hopper (material loading)	None	1.60E-05	100%	42,716	0.7
	Crusher	Water Spray	0.0012	115%	49,123	58.9
	Drop from Crusher to Conveyor	Water Spray	1.40E-04	115%	49,123	6.9
	Drop from Conveyor to Screen	Water Spray	1.40E-04	115%	49,123	6.9
	Screen	Water Spray	0.0022	115%	49,123	108.1
	Drop from Screen to Screen Cross Conveyor (SCC)	Wet Material	1.40E-04	15%	6,407	0.9
	Transfer from SCC to Return Conveyor (RC)	Wet Material	1.40E-04	15%	6,407	0.9
	Drop from RC to Crusher Hopper	Wet Material	1.40E-04	15%	6,407	0.9
	Drop from Screen to Screen Fines Conveyor (SFC)	Wet Material	1.40E-04	100%	42,716	6.0
	Transfer from SFC to Field Conveyor 1 (FC1)	Wet Material	1.40E-04	100%	42,716	6.0
	Transfer from FC1 to Field Conveyor 2 (FC2)	Wet Material	1.40E-04	100%	42,716	6.0
	Transfer from FC2 to Radial Stack	Wet Material	1.40E-04	100%	42,716	6.0
	Stacker to Concrete Storage Pile	Wet Material	1.40E-04	100%	42,716	6.0

17,716 TONS THROUGHPUT Through June 16, 2018 Crusher and Screen PM Emissions 214.0 lb/mo  
 25,000 Projected throughput for remainder of June Combined Operations Emission Factor 0.00501 lb/ton

**Projected Emission Calculations - June 2018**

6/5/2018	93.54 lb/mo
6/1/2018	214.05 lb/mo
<b>TOTAL</b>	<b>307.59 lb/mo</b>
RULE 290 LIMIT	500.00 lb/mo

**EMISSION ESTIMATION FACTORS & EQUATIONS**

Emission Factors for crushing, screening and conveying obtained from AP-42 Section 11.19 Table 11.19.2.2 (08/04)  
 Emission Factor for front end loader drops is for PM10. No total PM Factor available for this activity.

**DATA SOURCES**

**NOTES**

**APPLICABLE RULES**

Rule 290

