

## Aemilia Hamel

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**From:** Air.Pollution Control  
**Sent:** Tuesday, 1 February, 2022 16:18  
**To:** APC Permitting  
**Subject:** FW: Wacker Memo Regarding Uncontrolled Emissions Calcs, Silicon Grinding Plant  
**Attachments:** Uncontrolled\_Emissions\_Memo\_Wacker\_Si\_Grinding.pdf

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**From:** Copeland, Jeremy <Jeremy.Copeland@wacker.com>  
**Sent:** Tuesday, February 1, 2022 4:00 PM  
**To:** Derek Briggs <Derek.Briggs@tn.gov>  
**Cc:** Air.Pollution Control <Air.Pollution.Control@tn.gov>  
**Subject:** [EXTERNAL] Wacker Memo Regarding Uncontrolled Emissions Calcs, Silicon Grinding Plant

**\*\*\* This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. \*\*\***

Hello Derek,

Per our conversation earlier today, please see the attached memo.

Thanks for your time today and please don't hesitate to contact me with any questions or further clarification.

**JEREMY COPELAND, CHMM**  
Environmental Manager  
Wacker Polysilicon North America LLC  
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Thank you for your cooperation.



**JEREMY COPELAND**  
WT-EHSS-E/CHA

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Derek Briggs  
Division of Air Pollution Control  
TN Department of Environment and Conservation  
William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 15th Floor  
Nashville, TN 37243  
Transmitted via email

- ☒ As discussed
- ☐ Thank you
- ☒ To be kept on file

**Requested action:**

- ☐ For your information
- ☐ For review and comment
- ☐ Take appropriate action
- ☐ Contact me
- ☐ Please return

02/01/2022

**Re: Silicon Grinding Uncontrolled Emission Calcs**

Dear Mr. Briggs,

Per our telephone conversation earlier today, Wacker is providing some additional information to supplement our air emissions construction permit application for our silicon grinding plant. Included in the table on the following page are emission factors used and the resulting emissions estimates to reflect uncontrolled emissions of the silicon grinding plant. These emission factors are found in the EPA published AP-42 reference document. Particulate controls will be used at the silicon grinding plant, as described in the air emissions permitting forms. Attached to this letter is the particulate control manufacturer information for your reference.

Material Processing Emission Factors			
Process	Emission Factor <sup>1</sup> (lb/ton)		
	PM	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>2</sup>
Conveyor Transfer Point	0.0030	0.0011	0.0011
Impact Crusher	0.0054	0.0024	0.0024
Screener	0.3000	0.0720	0.0720

<sup>1</sup> Emission factors per AP-42, Chapter 11.19.2, Table 11.19.2-2. All factors represent uncontrolled emissions.

<sup>2</sup> PM<sub>2.5</sub> emissions are conservatively assumed to equal PM<sub>10</sub> emissions.

Material Handling and Processing Emissions, Silicon Grinding Plant								
Transfer Point	Material Throughput <sup>1</sup>	Emissions <sup>2</sup>						Emission Pt.
		PM		PM <sub>10</sub>		PM <sub>2.5</sub>		
	(tpy)	(lb/hr) <sup>3</sup>	(tpy)	(lb/hr) <sup>3</sup>	(tpy)	(lb/hr) <sup>3</sup>	(tpy)	
Truck to Material Handling Area	38,581	0.02	0.07	0.02	0.07	0.01	0.04	C218E35
Front End Loaders to Hopper	38,581	0.02	0.07	0.02	0.07	0.01	0.04	
Raw Feed Hopper	38,581	0.02	0.07	0.02	0.07	0.01	0.04	
Hopper to Conveyor 1	38,581	0.02	0.06	0.37	1.39	0.37	1.39	
Conveyor 1 to Impact Crusher	38,581	0.02	0.06	0.01	0.02	0.01	0.02	
Impact Crusher and Downstream Conveyor	38,581	0.03	0.10	0.01	0.05	0.01	0.05	C218E36
Impact Crusher to Conveyor	38,581	0.02	0.06	0.01	0.02	0.01	0.02	
Screening	38,581	1.55	5.79	0.37	1.39	0.37	1.39	
Screening to Conveyor	38,581	0.02	0.06	0.01	0.02	0.01	0.02	
Total		1.69	6.33	0.83	3.09	0.80	3.01	

<sup>1</sup> Material throughput based on the impact crusher capacity of 35,000 metric tons/year.

<sup>2</sup> Emissions from the material handling area were estimated using material handling emission factors per AP-42, Chapter 13.2.4. All other emissions estimated using material processing emission factors per AP-42, Chapter 11.19.2. These estimates are uncontrolled for demonstrating permit applicability. Particulate controls will be used.

<sup>3</sup> lb/hr emissions were calculated assuming 7,488 hours of operation per year (2 shifts at 12 hours each, 6 days per week, 52 weeks per year).

If you have any questions or need further information, please do not hesitate to contact me at (423) 780-7953 or via email at [Jeremy.Copeland@wacker.com](mailto:Jeremy.Copeland@wacker.com)

Cordially,



Jeremy Copeland, CHMM  
Attachment: Donaldson Emissions Statement



Donaldson Company, Inc.  
Industrial Air Filtration  
1400 West 94th Street  
Bloomington, MN  
55431-2370

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www.donaldsonorit.com

## **Donaldson Company, Inc. Emissions Statement for Industrial Dust Collectors with Dura-Life™ Filter Media**

Donaldson Company, Inc. offers an extensive variety of dust collectors and filter media designs to the market to address the wide variety of dust control applications and project needs.

Because dust control projects sometimes demand unique collector selection or location strategies or may involve complex filter media performance considerations it is difficult to make general statements of emission performance. **However, Donaldson generally expects total (filterable) particulate emissions from Continuous-Duty Baghouse Collectors using Donaldson Dura-Life filter media to be capable of achieving average emission levels of no more than 0.004 grains per dry standard cubic foot.** This level of performance expectation excludes any contributions to emissions from condensable materials (*which will pass through filter media in a vapor state*), and it assumes filters are installed properly and are operated and maintained in accordance with industry best practice and in accordance with the manufacturer's Installation, Operation, and Maintenance manuals for the collector.

Factors which may contribute to unexpected collector emissions include: misuse, accident, abuse, modification, improper installation or operation, inadequate maintenance, and operation beyond recommended selection/sizing guidance or useful life. Emissions may also occur as a result of damage to collectors or filters due to accidents, fires, corrosion, abrasion, or other physical abuse.

Emission performance is also influenced by the style or size of collector selected, by the selection of filter media, and by choices in accessories or features for collectors.

**Important Notice:** Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the Donaldson products to determine whether the product is fit for the particular purpose and suitable for the user's application. This Emissions Statement shall not be construed as or relied upon as a health and safety statement. Donaldson does not require or recommend exhausting emissions into the indoor environment without consultation with a qualified professional to evaluate and address all attendant health and safety risks. It shall be the end user's continued and sole responsibility to provide a safe and healthful environment for its employees.

Donaldson's terms and conditions of sale, as stated in our current quotation, contain the sole obligation and exclusive remedy for any issues that arise regarding information that Donaldson provides in this statement.