

Aemilia Hamel

From: Air.Pollution Control
Sent: Wednesday, 6 April, 2022 18:37
To: APC Permitting
Subject: FW: Wacker Polysilicon North America LLC (06-0282 / 979841)
Attachments: Site_Emissions_Limitation_Agreement_VerII_Signed.pdf

From: Derek Briggs <Derek.Briggs@tn.gov>
Sent: Wednesday, April 6, 2022 3:26 PM
To: Air.Pollution Control <Air.Pollution.Control@tn.gov>
Subject: FW: Wacker Polysilicon North America LLC (06-0282 / 979841)

From: Copeland, Jeremy <Jeremy.Copeland@wacker.com>
Sent: Monday, April 4, 2022 7:13 AM
To: Derek Briggs <Derek.Briggs@tn.gov>
Cc: John Trimmer <John.Trimmer@tn.gov>
Subject: [EXTERNAL] RE: Wacker Polysilicon North America LLC (06-0282 / 979841)

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

Hi Derek,

Per your request, see attached. Let me know if you have any questions.

Thanks,
Jeremy

From: Derek Briggs <Derek.Briggs@tn.gov>
Sent: Friday, March 18, 2022 11:00 AM
To: Copeland, Jeremy <Jeremy.Copeland@wacker.com>
Subject: Wacker Polysilicon North America LLC (06-0282 / 979841)

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Good morning Jeremy,

I am still working on your Construction Permit and need an updated agreement letter to include Source 25 for the facility. I see one was submitted for the CM Operating Permit back in December, but we have been given guidance recently to get an updated agreement letter for all CM permits.

Thanks,



Derek Briggs, E.I. | Environmental Protection Specialist 1

Air Pollution Control

Tennessee Tower, 15th Floor

312 Rosa L Parks Ave., Nashville, TN 37243

p. 615-532-0550

Derek.Briggs@tn.gov

<https://www.tn.gov/environment/program-areas/apc-air-pollution-control-home.html>

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Thank you for your cooperation.



Jeremy Copeland, CHMM
Environmental Manager

Wacker Polysilicon North America LLC
P.O. Box 446
553 Wacker Blvd. NW
Charleston, TN 37310-0446
Tel. 423-780-7953

March 25, 2022

To: Tennessee Department of Environment & Conservation
Attn: Mr. Derek Briggs
Division of Air Pollution Control
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243
Delivered via email

Re: Wacker Chemical Corporation and Wacker Polysilicon North America LLC, Charleston, TN Site Emissions Limitation Agreement

Dear Mr. Briggs,

Wacker Chemical Corporation and Wacker Polysilicon North America LLC (Wacker) are agreeing to limit site emissions at the Charleston, TN location to remain below major source status regarding air emissions permit classification and emissions permit limits. Wacker commits to the following limitations and related monitoring:

1. Emission source reference number 06-0282-15 (Boilers, construction permit number 967203F):
 - a. Natural gas usage shall not exceed 1,493 MMscf per any period of 12 consecutive months at source -15. The gas consumption quantity is tracked and logged per construction permit number 967203F conditions.
 - b. The NO_x emission factor value of 0.0204 tons NO_x/MMscf was developed in the boiler emissions testing that occurred on January 31st and February 1st, 2017 and will not be exceeded. The permit limit of 30.46 tons NO_x per any period of twelve consecutive months divided by the emission factor of 0.0204 tons NO_x/MMscf results in the natural gas consumption limitation of 1,493 MMscf/yr for the boilers. The NO_x permit limit of 30.46 tons per any period of twelve consecutive months will not be exceeded.
 - c. The CO emissions factor of 0.037 lb CO/MMBtu heat input and the boiler permit limit of CO emissions of 31.31 tons per 12 consecutive months shall not be exceeded. 1,493 MMscf of natural gas consumed per twelve consecutive months at the boilers multiplied by the CO emissions factor and the natural gas heat input factor of 1,059 btu/scf ensures the boiler emissions are less than the permit limit of 31.31 tons per consecutive 12 months.
 - d. The SO₂ emissions factor of 0.6 lbs/MMscf and SO₂ emissions of 0.5 tons per 12 consecutive months shall not be exceeded. 1,493 MMscf of natural gas consumed per twelve consecutive months at the boilers multiplied by the SO₂ emissions factor ensures the boiler emissions are less than the permit limit of 0.5 tons per consecutive 12 months.
 - e. The PM emissions factor of 0.005 lb/MMBtu of heat input and 4.23 tons per 12 consecutive months shall not be exceeded. 1,493 MMscf of natural gas

consumed per year at the boilers multiplied by the PM emissions factor and the natural gas heat input factor of 1,059 btu/scf ensures the boiler emissions are less than the permit limit of 4.23 tons per 12 consecutive months.


2. Emission source reference numbers 06-0282-02 and -16 (Emergency Generators, construction permit numbers 967118P and 969455P) both include permit conditions 2, 3 and 11 – 14 that impose running hour limitations and include tracking requirements to ensure operating times are minimized. SO₂ emitted from each source shall not exceed 14.69 pounds per hour on a daily average basis.
3. Emission source reference numbers 06-0282-23 and -24 (Amorphous Fumed Silica construction permits 978602 and 972476) limits CO and NO_x emissions where compliance is assured by meeting conditions S1-2, S1-4E, and S1-7 of the construction permit number 06-0282-23. Construction permit 972476 limits PM emissions where compliance is assured by meeting conditions 4 – 7 of the permit. SO₂ emitted from this source shall not exceed 0.0023 lb/hr (0.01 ton/consecutive 12 months) on a daily average basis.
4. Emission source reference number 06-0282-25 (Silicon Grinding Operation) is limited to particulate matter emissions of no more than 0.47 lb/hr and 2.04 tons/yr. Assurance of meeting these emissions limitations will be accomplished through proper operation and maintenance of the silicon grinding operation particulate matter control systems.
5. The single hazardous air pollutant HCl emissions shall not exceed 9.9 tons per consecutive 12 months. The HCl emission quantities are controlled by tracking and complying with the existing construction permit conditions, as follows:
 - A. The hydrochloric acid generation operation input rates of chlorine and hydrogen are limited, as identified in permit number 976605 (source 06-0282-04, Hydrochloric Acid Generation) condition S1-2.A. The operation includes two scrubbers, as identified in condition S1-4.A.b of the permit where the condition requires daily scrubber flow rate and pH recording.
 - B. The silicon and HCl input rates at the trichlorosilane plant are limited, per permit number 974939 (source 06-0282-06, Trichlorosilane and Polysilicon Operations), condition 2.b. Condition 21 of the permit also requires daily scrubber flow rates and pH recordings.
 - C. The silicon tetrachloride input is restricted into the amorphous fumed silica plant, per permit number 978602, condition S1-1 along with the plant production quantity, per condition S1-2. Condition S1-7 of the permit requires daily scrubber flow rate and pH recordings.
 - D. Maintenance activity at the chlorosilane reaction plant includes scrubber control, as identified in permit number 970005P (source 06-0282-01, Maintenance Activities at Chlorosilane Reaction Building). Condition 21 of the permit requires daily scrubber flow rate recordings.
 - E. Floor suction and cleaning box (Equipment Cleaning) operation includes scrubber control, as identified in permit number 970065P (source 06-0282-03). Condition 6 of the permit requires daily conductivity and flow rate recordings.
 - F. Hydrolysis treatment of chlorosilane reaction residue, as identified in permit number 969674P (source number 06-0282-17) includes two scrubbers for control. Condition 4 of the permit limits the process input and condition 6 limits annual process time. Condition 8 of the permit requires daily scrubber flow rate recordings.

G. Periodic cleaning of process tanks and distillation columns, as identified in permit number 972846 (source number 06-0282-20), includes processing restrictions and scrubber control. Condition 2 of the permit requires recordings of scrubber flow.

6. The combined hazardous air pollutant emissions shall not exceed 24.9 tons per consecutive 12 months and any single hazardous air pollutant shall not exceed 9.9 tons per consecutive 12 months. Insignificant and categorically exempt source emissions are included in the site emissions inventory and accounted for when declaring HAP emissions below major source status. The HAP emissions quantities are controlled by the commitments identified in item 4 and by monitoring and recording the natural gas consumption and resulting combined hazardous air pollutants of the Wacker site.

7. Proposed facility-wide emission limits which include insignificant and categorically exempt from permitting emission estimates are included in the table below.

Particulate Matter (PM)	99.9 tons per any period of 12-consecutive months Emissions from categorically exempt and insignificant activity emission units are estimated to be 2.31 tons per 12-consecutive months
Nitrogen Oxides (NO _x)	99.9 tons per any period of 12-consecutive months Emissions from categorically exempt and insignificant activity and emission units are estimated to be 2.57 tons per 12-consecutive months
Carbon Monoxide (CO)	99.9 tons per any period of 12-consecutive months Emissions from categorically exempt and insignificant activity emission units are estimated to be 0.12 tons per 12-consecutive months
Individual Hazardous Air Pollutants (listed pursuant to Section 112(b) of the Federal Clean Air Act	9.9 tons per any period of 12-consecutive months Emissions from categorically exempt and insignificant activity emission units are estimated to be 0.63 tons per 12-consecutive months for HCl and 0.024 tons per 12-consecutive months for HF
Combined Hazardous Air Pollutants	24.9 tons per any period of 12-consecutive months Emissions from categorically exempt and insignificant activity emission units are estimated to be 0.65 tons per 12-consecutive months

Signature: 

Name: Ken Collins

Title: Senior Director, Site Leader

Date: 3/28/22

Please contact me directly at (423) 780-7953 if you have any questions regarding this topic.

Cordially,



Jeremy Copeland, CHMM
Environmental Manager