

**GOVERNMENT OF THE DISTRICT OF COLUMBIA**  
Department of Energy and Environment

**TECHNICAL SUPPORT MEMORANDUM**

TO: File

THROUGH: Stephen S. Ours, P.E.  
Chief, Permitting Branch

FROM: Wyatt Bohmann  
Environmental Engineer

**SUBJECT: Schuster Concrete Ready Mix LLC  
Chapter 2 Permit Nos. 7356, 7357, and 7358 to Construct and Operate a  
Ready-Mix Concrete Batch Plant with Onboard Engine and Associated  
Emergency Generator Set at 2662 Woodley Road NW, Washington DC**

DATE: September 14, 2023

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This Technical Support Memorandum has been prepared to document the basis for multiple Chapter 2 permits needed for equipment to be operated at a temporary concrete production facility to support construction of buildings for the following:

**Applicant and Permittee:**

Schuster Concrete Ready Mix LLC  
3713 Crondall Lane  
Owings Mills MD 21117

**Facility Location:**

2662 Woodley Road NW  
Washington DC 20008

**Application Signatory per 20 DCMR 200.13:**

Mr. Jay Harmon, Manager

**FACILITY DESCRIPTION AND BACKGROUND INFORMATION:**

On July 12, 2023, the Air Quality Division (AQD) of the Department of Energy and Environment (the Department) received an application for three separate Chapter 2 permits to construct and operate a concrete batch plant at 2662 Woodley Road NW, Washington DC 20008. Schuster Concrete Ready Mix LLC is the applicant who has proposed to construct and operate the temporary concrete batch plant. The application proposed installation and operation of

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primary emission units consisting of one (1) Model 150 CEMCO Concrete Batch Plant (a truck mix plant), one (1) factory mounted 84 hp (63 kWm) John Deere model 4045D diesel-fired engine attached to and powering the CEMCO Batch Plant, and one (1) 40 kWe Multiquip WhisperWatt™ emergency generator set powered by a John Deere model 4045TF diesel engine with an advertised power output of 99 hp.

The dust control plan for the site was not submitted with the three Chapter 2 permit applications, but was subsequently received by DOEE on July 19, 2023. Comments for the dust control plan were sent to Schuster and a revised plan was received by DOEE on August 28, 2023 (dated August 2023).

The following are the three Chapter 2 applications submitted by Schuster Concrete Ready Mix LLC:

<b>Emission Unit ID</b>	<b>Unit Description</b>	<b>Location</b>	<b>Assigned Chapter 2 Permit Number</b>
Plant #1	CEMCO 150 Truck Mix Concrete Plant	2662 Woodley Road NW	7356
Plant Engine	One factory mounted (CEMCO) 84 hp John Deere model 4045D diesel engine	2662 Woodley Road NW	7357
Emergency Generator #1	One MQ Power WhisperWatt™, Model DCA70SSJU, 40 kWe standby generator set powered by a John Deere 4045TF 99 hp Diesel Engine (Model year 2004)	2662 Woodley Road NW	7358

The equipment at the site will also include a small P10-15W No. 2 fuel oil-fired hot water boiler with a rated heat input of 2.1 MMBTU/hr. This unit is being permitted as a part of the concrete plant, and as such, is being incorporated into permit 7356. Additional information on this unit was received by email on July 11, 2023.

### **TECHNICAL INFORMATION**

While the permits being requested are not synthetic minor, the applicant is requesting that the CEMCO 150 plant be limited to operating no more than one 10-hour shift per day, six days per calendar week (3,120 hours of operation per 12-consecutive-month rolling period) and a production limit of 100,000 cubic yards in any consecutive 12-month period. A similar limit applies to the onboard engine that powers the concrete plant as the operation of the two are connected. Also, the applicant has requested that the 2.1 MMBTU/hr boiler be limited to operating no more than 1,000 hours in any 12-consecutive-month rolling period.

As demonstrated in the emissions summary below, although these limitations are not necessary to ensure that emissions are maintained below the District's major source threshold of 25 tons per year of NO<sub>x</sub> or any other pollutant's major source threshold, they will provide additional assurance of lower emissions from this site. The 3,120 hour per 12-consecutive-month rolling

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limit on the onboard engine, taken pursuant to 20 DCMR 200.7, is necessary to avoid applicability of 20 DCMR 209 (Minor New Source Review), as discussed below.

These operational limits have been established in Conditions III(a) and III(b) in permit 7356 and Condition III(b) in permit 7357.

**EMISSIONS SUMMARY:**

The following is an estimate of overall potential emissions from the facility:

<b>FACILITY-WIDE EMISSIONS SUMMARY [TONS PER YEAR]</b>		
<b>Pollutants</b>	<b>Potential Emissions Without Limits<sup>†</sup></b>	<b>Potential Emissions With Limits<sup>‡</sup></b>
Sulfur Dioxide (SO <sub>2</sub> )	0.81	0.32
Oxides of Nitrogen (NO <sub>x</sub> )	13.28	4.96
Total Particulate Matter (Total)	7.87	1.78
Volatile Organic Compounds (VOCs)	1.20	0.42
Carbon Monoxide (CO)	2.96	1.08

<sup>†</sup> Assumes 8,760 hours per year of operation for plant operation and 500 hours per year for emergency generator operation.

<sup>‡</sup> Assumes 3,120 hours per year of operation for plant operation and 500 hours per year for emergency generator operation.

**REGULATORY REVIEW:**

20 DCMR Chapter 2, Section 200 – General Permit Requirements:

All stationary engines regardless of size, as well as concrete mixing equipment, are subject to the Chapter 2 permitting requirements of this section. As such, all the significant units at the facility are subject to Chapter 2 permitting requirements. The 2.1 MMBTU/hr boiler would not separately be considered a significant unit requiring a permit; however, it is equipment used as part of the concrete plant operation and has applicable requirements. As such, it has been included in the concrete plant permit as part of the equipment covered by that permit.

As discussed above, the applicant has requested an operating hour limit of ten hours per day, six days per week or 3,120 hours per 12-consecutive-month rolling period for all operations at the site (except the emergency generator set, which is subject to a 500 hours per 12-consecutive-month rolling period limit, and the 2.1 MMBTU/hr boiler which is subject to a 1,000 hour per 12-consecutive-month rolling period). A limit on the CEMCO 150 concrete production rate of 100,000 cubic yards in any consecutive 12-month has also been requested. As shown above, these limits are not required to achieve minor source status, but are being established pursuant to authority under 20 DCMR 201. This limit does however prevent the factory mounted (CEMCO) 84 hp John Deere model 4045D diesel engine from being subject to Minor New Source Review as, unrestricted, it would breach the 5 tons per year limit for NO<sub>x</sub>.

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20 DCMR Chapter 2, Section 204 – Permit Requirements for Sources Affecting Non-Attainment Areas:

This section does not apply to the facility because the potential emissions of NO<sub>x</sub> and all other pollutants from the equipment do not exceed the definition of “significant”.

20 DCMR Chapter 2, Section 209 – Permit Requirements for Non-Major Stationary Sources (Minor New Source Review):

The proposed MQ Power WhisperWatt™ emergency generator set does not have the potential to emit greater than 5 tons per year of NO<sub>x</sub> and the plant does not have the ability to emit greater than 5 tons per year of PM<sub>10</sub> or PM<sub>2.5</sub>. As such, they do not trigger applicability to 20 DCMR 209.

The John Deere engine onboard the CEMCO 150 however, does have the potential to emit above 5 tons per year of NO<sub>x</sub>, if operated in an unrestricted manner. The operational limit of 3,120 hours for any 12-consecutive-month period brings the yearly potential to emit for NO<sub>x</sub> below the 5-ton threshold, thus making the onboard engine not applicable to 20 DCMR 209.

It should be noted that this limitation to avoid Minor New Source Review will not trigger the need for a synthetic minor permit as 20 DCMR 200.7 allows the Department to establish permit conditions within Chapter 2 permits to avoid District and Federal regulations excluding requirements of 20 DCMR 300.1. 20 DCMR 209 is a District-enforceable only regulation, however, pursuant to 20 DCMR 200.7, the permit condition establishing this limit needs to be Federally-enforceable. As such, the permit limit is not listed as District-enforceable only.

20 DCMR Chapter 5 – Source Monitoring and Testing:

Throughout the permit, appropriate monitoring, testing, and record keeping requirements have been established to ensure that all emission and operational limits in the permit are enforceable as a practical matter. These requirements are established under the authority of Chapter 5.

20 DCMR Chapter 6, Section 603 and Appendix 6-1: Particulate Process Emissions:

The discharge of particulate matter<sup>1</sup> into the atmosphere from any process shall not exceed three hundredths (0.03) grains per dry standard cubic foot of the exhaust. Additionally, pursuant to 20 DCMR 603.1 and Appendix 6-1, based on the high process weight throughput of the equipment, the equipment is limited to emitting 40 pounds per hour of particulate matter. These limits are contained in Conditions II(c) and II(d) of draft permit 7356.

To meet the particulate matter emissions standards, the applicant has proposed the use of dust collectors controlling emissions from the mixer and truck loading operations and elevated storage silo loading. All dust collector filters are required to maintain a control efficiency of 99.9%. Proper operation of the dust collectors will be monitored regularly through the use of

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<sup>1</sup> 20 DCMR 603 refers to “particulate matter”, however, at the time that this regulation was promulgated, that term referred to what is now termed “total suspended particulate matter” (TSP), or total filterable particulate matter. As such, in order to avoid confusion with other classifications of particulate matter, the permit refers to TSP in lieu of the regulatory language.

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differential pressure monitoring (to monitor filter element status) and regular (at least weekly) visible emissions monitoring. To ensure continuous proper operation, the permit requires the Permittee to keep replacement filter elements for the dust collectors on site.

Additionally, to ensure the equipment is maintained, records of maintenance are required in the permit.

### **20 DCMR Chapter 6, Section 605: Control of Fugitive Dust**

The visible emissions limitations of 20 DCMR 605 are applicable to this concrete mix equipment. Reasonable precautions shall be taken to minimize the emissions of any fugitive dust into the outdoor atmosphere. The reasonable precautions shall include, but not be limited to, in the case of demolition of building or structures, use, to the extent possible, of water; in the case of removal of demolition debris, which is dusty or likely to become dusty, use of water to thoroughly wet the material before moving or removing the material and keeping it wet or otherwise in a dust-free condition until eventual disposal. These requirements are found in Condition III(g) of permit 7356. Additional reasonable precautions not identified in the regulation, but identified as appropriate for this facility have been included in Condition III(h) of the permit. The facility must monitor the site for compliance per Condition IV(e) and maintain records of deviations per Condition V(i) of permit 7356.

### **20 DCMR Chapter 6 – Section 606: Visible Emissions:**

The visible emissions limitations of 20 DCMR 606 apply to the concrete mix plant operations (including the 2.1 MMBTU/hr boiler) and the stationary engines at the site. This regulation was recently updated (final rule promulgated August 11, 2023) The emissions and operational requirements of this regulation are contained in Condition II(f) and III(m) of permit 7356 as well as Conditions II(a) and III(h) and (i) of permit 7357 and Conditions II(a) and III(f) and (j) of permit 7358. Monitoring for compliance is required pursuant to Condition IV(c) of permit 7356, Condition IV(d) of permit 7357, and Condition IV(e) 7358. Related records must be kept pursuant to Conditions V(a)(4) and (5) and V(f) and (g) of permit 7356, Conditions V(a)(2) through (5) and (9) of permit 7357, and Conditions V(a)(3), (4), (8), (9), and (11) of permit 7358.

### **20 DCMR 801: Sulfur Content of Fuel Oils:**

This regulation limits fuel oil sulfur content to 1% by weight in all circumstances. There are more stringent requirements for commercial fuel oil, but the only portion of 20 DCMR 801 applicable to the engines is the 1% sulfur content limit. This requirement is streamlined with the more stringent requirements found in 40 CFR 63.6604(b) for the facility's non-NSPS engines. Additionally, it applies to the commercial fuel oil used in the small boiler where the sulfur content of the distillate fuel oil used in the unit must not exceed 15 parts per million by weight (ppmw) pursuant to 20 DCMR 801.3. These requirements are specified in Condition III(j) of permit 7356, Condition III(a) of permit 7357, and Condition III(d) of Permit 7358.

### **20 DCMR 903: Odorous or Other Nuisance Air Pollutants:**

The requirement of 903.1 applies to all sources. Significant odors are not expected from this facility. However, it should be noted that this regulation was recently updated (final rule

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promulgated August 4, 2023). As such, in addition to the requirements of section 903.1, the new affirmative defense provisions of section 903.13(b) have also been included in the permits.

### **40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines:**

This regulation applies to neither the CEMCO 150 onboard John Deere engine nor the engine onboard the WhisperWatt™ emergency generator. It applies to stationary compression ignition internal combustion engines (CI-ICE) that: 1) are model year of 2007 or later, 2) commenced construction after July 11, 2005 and were manufactured after April 1, 2006, or 3) were modified or reconstructed after July 11, 2005. The engines were manufactured in 1998 and 2004 making this subpart applicable to neither unit.

### **40 CFR 63, Subpart JJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources:**

As part of the equipment at the site, the permit applicant has proposed to install a Pearson P10-15W hot water boiler, rated at 2.1 MMBTU/hr heat input and fueled by No. 2 fuel oil. This equipment is covered by this regulation. The tune-up requirements are contained in Condition III(k) of permit 7356. Record keeping requirements are contained in Condition V(m) of permit 7356. Reporting requirements related to this regulation are specified in Condition V(n) of permit 7356.

### **40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (NESHAP for RICE):**

Subpart ZZZZ of 40 CFR 63 regulates HAPs such as acetaldehyde, acrolein, benzene, toluene, xylene, cadmium, chromium, lead, etc., through surrogate compounds such as formaldehyde, CO and/or VOC.

A facility that emits or has the PTE 10 tons/year of any single HAP or 25 tons/year of any combination of HAPs is considered a major source of HAPs. Any source that is not a major source is an area source of HAPs. Because this facility does not have a PTE of more than 10 tons/year of a single HAP or an aggregate of more than 25 tons of total HAPs, it is not a major source; it is an area source.

Subpart ZZZZ is applicable to existing compression ignition (CI) engines at this facility, where “existing” is defined as those engines that are manufactured before June 12, 2006. The John Deere diesel-fired engine onboard the CEMCO 150 plant is an engine model year 1998 and the engine in the WhisperWatt™ is model year 2004, therefore both are considered “existing” rather than “new” with respect to this regulation. All relevant requirements are found in permit 7357 and 7358. Among these are the allowances for limited non-emergency operation found in Condition III(c) and the maintenance requirements specified in Conditions III(f) and (g) of permit 7358 and the operation and maintenance requirements found in Conditions III(d) through (h) of permit 7357.

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**PROCEDURE FOR SUBMITTING COMMENTS OR REQUESTING PUBLIC HEARING:**

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The District shall grant such a request if it is deemed appropriate. The venue, date, and time for any public hearing will be announced in the D.C. Register and on the Department's website.

**COMMENT PERIOD:**

Beginning Date: September 22, 2023

Ending Date: October 23, 2023

All written comments should be addressed to the following individual and office:

Stephen S. Ours, P.E.  
Chief, Permitting Branch  
Department of Energy and Environment  
Air Quality Division  
1200 First Street, NE, 5<sup>th</sup> Floor  
Washington DC 20002  
[stephen.ours@dc.gov](mailto:stephen.ours@dc.gov)

**POINT OF CONTACT FOR INQUIRIES:**

Wyatt Bohmann  
Environmental Engineer  
Department of Energy and Environment  
Air Quality Division  
1200 First Street, NE, 5<sup>th</sup> Floor  
Washington DC 20002  
[wyatt.bohmann@dc.gov](mailto:wyatt.bohmann@dc.gov)

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