

**DRAFT PERMIT**

Wes Moore

Serena McIlwain

**Air and Radiation Administration**  
1800 Washington Boulevard, Suite 720  
Baltimore, MD 21230

☒ Construction Permit

☐ Operating Permit

PERMIT NO.  
As listed on Page 2

DATE ISSUED:

PERMIT FEE:  
\$41,600.00 (PAID)

EXPIRATION DATE:  
In accordance with  
COMAR 26.11.02.04B

**LEGAL OWNER & ADDRESS**

Amazon Data Services, Inc.  
13820 Sunrise Valley Drive  
Herndon, MD 20171  
Attention: Ms. Anna Franciosa

**SITE**

Amazon Data Services, Inc.  
BWI-150 through BWI-153  
3250 Digital Drive  
Frederick, MD 21703  
AI # 185075

**SOURCE DESCRIPTION**

Data Center Facility including the installation of ninety-two (92) emergency generators, each equipped with a diesel fired engine, rated at 2,750-kilowatts, and each controlled by a selective catalytic reduction (SCR) system and a catalyzed diesel particulate filter; six (6) emergency generators, each equipped with a diesel fired engine, rated at 750-kilowatts; and one (1) emergency generator, equipped with a diesel fired engine, rated at 250-kilowatts.

This Permit to Construct includes limitations on premises wide emissions of oxides of nitrogen to preclude applicability of major non-attainment New Source Review and Title V – Part 70 Operating Permit requirements.

The Permit to Construct also serves as a Temporary Permit to Operate for a period of up to 180 days after initiating operation of the first emergency generator authorized by this Permit.

This source is subject to the conditions described on the attached pages.

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

**INDEX**

Part A – General Provisions  
Part B – Applicable Regulations  
Part C – Construction Conditions  
Part D1 thru D4 – Operating Conditions  
Part E – Monitoring Conditions  
Part F – Notifications and Initial Performance Test Requirements  
Part G – Compliance Demonstration Requirements  
Part H – Record Keeping Requirements  
Part I – Reporting Requirements

This premises wide, permit to construct covers the following registered installations:

<b>ARA Registration No.</b>	<b>Description</b>	<b>Installation Start Date to Expected Operation Date</b>
<b>Building 150</b>		
021-0809-9-2263	<u>EG Nos. 1 through 26</u> Twenty-six (26) Caterpillar 3516E emergency generators, each equipped with a diesel fired engine, rated at 2,750 kilowatts and controlled by a Selective Catalytic Reduction (SCR) control device and catalyzed Diesel Particulate Filter (cDPF) system.	2025 - 2026
021-0809-9-2264	<u>HS No. 1</u> One (1) Caterpillar C18 emergency generator equipped with a diesel fired engine, rated at 750 kilowatts.	2025 - 2026
<b>Building 151</b>		
021-0809-9-2270	<u>EG Nos. 27 through 40</u> Fourteen (14) Caterpillar 3516E emergency generators, each equipped with a diesel fired engine, rated at 2,750 kilowatts and controlled by a SCR control device and a cDPF system.	2025 - 2026
021-0809-9-2271	<u>HS No. 2</u> One (1) Caterpillar C18 emergency generator equipped with a diesel engine, rated at 750 kilowatts.	2025 - 2026
<b>Building 152</b>		
021-0809-9-2266	<u>EG Nos. 41 through 66</u> Twenty-six (26) Caterpillar 3516E emergency generators, each equipped with a diesel fired engine, rated at 2,750 kilowatts and controlled by a SCR control device and a cDPF system.	2025 - 2026
021-0809-9-2267	<u>HS No. 3</u> One (1) Caterpillar C18 emergency generator equipped with a diesel fired engine, rated at 750 kilowatts.	2025 - 2026
<b>Building 153</b>		
021-0809-9-2268	<u>EG Nos. 67 through 92</u> Twenty-six (26) Caterpillar 3516E emergency generators, each equipped with a diesel fired engine, rated at 2,750 kilowatts and controlled by a SCR control device and a cDPF system.	2025-2026

**AMAZON DATA SERVICES, INC.  
 BWI150 - BWI153  
 FREDERICK, MD DATA CENTER CAMPUS  
 PERMIT-TO-CONSTRUCT CONDITIONS  
 PREMISES NO. 021-0809**

<b>ARA Registration No.</b>	<b>Description</b>	<b>Installation Start Date to Expected Operation Date</b>
021-0809-9-2269	<u>HS No.4</u> One (1) Caterpillar C18 emergency generator equipped with a diesel fired engine, rated at 750 kilowatts.	2025-2026
<b>Security Building</b>		
021-0809-9-2265	<u>SB No. 1</u> One (1) Caterpillar C9 emergency generator equipped with a diesel fired engine, rated at 250 kilowatts.	2025-2026
<b>Water Building</b>		
021-0809-9-2272	<u>WB Nos. 1 and 2</u> Two (2) Caterpillar C18 emergency generators, each equipped with a diesel fired engine, rated at 750 kilowatts.	2025-2026

**Part A – General Provisions**

- (1) The following Air and Radiation Administration (ARA) permit-to-construct applications and supplemental information are incorporated into this permit by reference:
- (a) Three (3) Air Quality Permit to Construct & Registration Applications for Emergency Generators received on October 29, 2024 for the installation of the following: ninety-two (92) emergency generators, each equipped with a diesel fired engine, rated at 2,750-kilowatts and controlled by a catalyzed diesel particulate filter (cDPF) and a selective catalytic reduction system (SCR) control device; six (6) emergency generators each equipped with a diesel fired engine, rated at 750-kilowatts; and one (1) emergency generator equipped with a diesel fired engine, rated at 250-kilowatts.
  - (b) Application for Gas Cleaning or Emission Control Equipment (Form 6) received on October 29, 2024, for the installation of ninety-two (92) cDPFs and ninety-two (92) SCR control devices.
  - (c) The following supplemental information:
    - (i) Manufacturer emissions data and supporting emissions calculations received on October 29, 2024.
    - (ii) Noise study received on October 29, 2024.

**AMAZON DATA SERVICES, INC.  
BW1150 - BW1153  
FREDERICK, MD DATA CENTER CAMPUS  
PERMIT-TO-CONSTRUCT CONDITIONS  
PREMISES NO. 021-0809**

- (iii) MDE Environmental Justice screening report received on October 29, 2024.
- (iv) Zoning approval documentation from Frederick County Government's Division of Planning & Permitting received on October 29, 2024.
- (v) Facility map received on October 29, 2024.
- (vi) Renewable diesel fuel information received on October 29, 2024.
- (vii) Fuel accuracy information received on October 29, 2024.
- (viii) New source performance standards emissions certifications received on October 29, 2024.
- (ix) Letter from Blake Carruthers, Amazon, to Janay Mendez, Maryland Department of the Environment (MDE), received May 5, 2025, RE: Minor New Source Review Permit BW1150 Information Request-Amazon Data Services, Inc., responding to the information request and enclosing the request (Appendix A) and Caterpillar Operation and Maintenance Manual-3500 Generator Sets (Appendix B).
- (x) Email dated May 5, 2025, from Susan Barnes, Trinity Consultants, to Janay Mendez, MDE, RE: Amazon Data Center Meeting, responding to additional technical questions, including a typical testing schedule per generator, and attaching a spreadsheet of emission calculations dated October 2024 and a table showing 100-hour per year emissions.
- (xi) Email dated June 6, 2025, from Anna Franciosa, Amazon, to Janay Mendez, MDE, RE: MDE Air Quality Permits, responding to additional questions on the emissions calculations and attaching a spreadsheet of revised emissions calculations entitled, 'BW1150 Emission Calculations\_2025\_0606.'

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (xii) Email dated June 17, 2025, from Anna Franciosa, Amazon, to Janay Mendez, MDE, RE: MDE Air Quality Permits, responding to additional questions on the testing and maintenance schedule and on power losses.

If there are any conflicts between representations in this permit and representations in the applications, the representations in the permit shall govern. Estimates of dimensions, volumes, emissions rates, operating rates, feed rates and hours of operation included in the applications do not constitute enforceable numeric limits beyond the extent necessary for compliance with applicable requirements.

- (2) Upon presentation of credentials, representatives of the Maryland Department of the Environment ("MDE" or the "Department") and Frederick County shall at any reasonable time be granted, without delay and without prior notification, access to the Permittee's property and permitted to:
- (a) inspect any construction authorized by this permit;
  - (b) sample, as necessary to determine compliance with requirements of this permit, any materials stored or processed on-site, any waste materials, and any discharge into the environment;
  - (c) inspect any monitoring equipment required by this permit;
  - (d) review and copy any records, including all documents required to be maintained by this permit, relevant to a determination of compliance with requirements of this permit;
  - (e) obtain any photographic documentation or evidence necessary to determine compliance with the requirements of this permit; and
  - (f) exercise its right of entry through use of an unmanned aircraft system to conduct inspections, collect samples, or make visual observations through photographic or video recordings to determine compliance with the requirements of this permit.

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (3) The Permittee shall notify the Department prior to increasing quantities and/or changing the types of any materials referenced in the application or limited by this permit. If the Department determines that such increases or changes constitute a modification, the Permittee shall obtain a permit-to-construct prior to implementing the modification.
- (4) For the purposes of this permit, the term "diesel fuel" includes diesel fuel or renewable diesel fuel that meets American Society for Testing and Materials (ASTM) specification (ASTM D975) for petroleum diesel.
- (5) Nothing in this permit authorizes the violation of any rule or regulation or the creation of a nuisance or air pollution.
- (6) If any provision of this permit is declared by proper authority to be invalid, the remaining provisions of the permit shall remain in effect.
- (7) Subsequent to issuance of this permit, the Department may impose additional and modified requirements that are incorporated into a State permit-to-operate issued pursuant to COMAR 26.11.02.13.

**Part B – Applicable Regulations**

- (1) This source is subject to all applicable federal air pollution control requirements including, but not limited to, the following:
  - (a) All applicable terms, provisions, emissions standards, testing, monitoring, record keeping, and reporting requirements included in federal New Source Performance Standards (NSPS) promulgated under 40 CFR 60, Subparts A and IIII for Stationary Compression Ignition Internal Combustion Engines.
  - (b) All notifications required under 40 CFR 60, Subparts A and IIII shall be submitted to both of the following:

The Administrator  
Compliance Program  
Maryland Department of the Environment  
Air and Radiation Administration  
1800 Washington Boulevard, STE 715  
Baltimore MD 21230

**AMAZON DATA SERVICES, INC.  
BWI150 - BWI153  
FREDERICK, MD DATA CENTER CAMPUS  
PERMIT-TO-CONSTRUCT CONDITIONS  
PREMISES NO. 021-0809**

And

United States Environmental Protection Agency  
Region III, Enforcement & Compliance Assurance Division  
Air, RCRA and Toxics Branch (3ED21)  
Four Penn Center  
1600 John F. Kennedy Boulevard  
Philadelphia, PA 19103-2852

- (2) This source is subject to all applicable federally enforceable State air pollution control requirements including, but not limited to, the following regulations:
- (a) COMAR 26.11.01.07C, which requires that the Permittee report to the Department occurrences of excess emissions.
  - (b) COMAR 26.11.02.04B, which states that a permit to construct or an approval expires if, as determined by the Department:
    - (i) Substantial construction or modification is not commenced within 18 months after the date of issuance of the permit or approval, unless the Department specifies a longer period in the permit or approval;
    - (ii) Construction or modification is substantially discontinued for a period of 18 months after the construction or modification has commenced; or
    - (iii) The source for which the permit or approval was issued is not completed within a reasonable period after the date of issuance of the permit or approval.
  - (c) COMAR 26.11.02.09A, which requires that the Permittee obtain a permit-to-construct if an installation is to be modified in a manner that would cause changes in the quantity, nature, or characteristics of emissions referenced in the permit-to-construct issued for that installation.

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (d) COMAR 26.11.06.12 which states that a person may not construct, modify, or operate, or cause to be constructed, modified, or operated, a New Source Performance Standard (NSPS) source in a manner which results or will result in violation of the provisions of 40 CFR, Part 60.
- (e) COMAR 26.11.09.05E, which limits visible emissions from the diesel engines to 10% and 40% opacity during idle and operating modes, respectively. Exceptions to these opacity limits are as follows:
  - (i) The 10% opacity limit during idle mode does not apply for a period of 2 consecutive minutes after a period of idling of 15 minutes for the purpose of clearing the exhaust system;
  - (ii) The 10% opacity limit during idle mode does not apply to emissions resulting directly from a cold engine start-up and warm-up for the following maximum periods:
    - (A) Engines that are idling continuously when not in service: 30 minutes;
    - (B) All other engines: 15 minutes.
  - (iii) The 10% and 40% opacity limits do not apply while maintenance, repair, or testing is being performed by qualified mechanics.
- (f) COMAR 26.11.09.07A(2), which limits the sulfur content of distillate fuel oils to not more than 0.3 percent by weight.

Note: Compliance with the more stringent sulfur content requirements under 40 CFR 60, Subpart IIII demonstrates compliance with this requirement.

- (3) This source is subject to all applicable State-only enforceable air pollution control requirements including, but not limited to, the following regulations:
  - (a) COMAR 26.11.02.13A(61), which requires that the Permittee obtain from the Department, and maintain and renew as required, a valid State permit-to-operate.



**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (b) COMAR 26.11.02.19C & D, which require that the Permittee submit to the Department annual certifications of emissions, and that the Permittee maintain sufficient records to support the emissions information presented in such submittals.
- (c) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.

**Part C – Construction Conditions**

- (1) Except as otherwise provided in this permit, all registered equipment covered by this permit shall be constructed in accordance with specifications included in the incorporated applications.
- (2) Each emergency generator shall be equipped with the following:
  - (a) A non-resettable hour meter to continuously measure the duration of time that each unit is operated. **[Reference: 40 CFR §60.4209(a)]**
  - (b) A fuel flow meter to continuously measure and record individual fuel consumption (in gallons) for each unit.
  - (c) A device to measure and record the engine kilowatt output at a minimum frequency of once every fifteen minutes.
- (3) Each of the emergency generators rated at 2,750 kilowatts (ARA Registration Nos. 021-0809-9-2263, 9-2266, 9-2268, and 9-2270 also referred to as EG Nos. 1 through 92) shall be constructed such that the exhaust gases from each engine vent through an SCR and cDPF emissions control system designed to reduce NO<sub>x</sub> emissions to no more than 0.5 g/bhp-hr prior to discharge to the atmosphere.
- (4) Each SCR control device shall be equipped with monitoring and recording devices to continuously measure and record the following operational data and corresponding date, time, and run duration:
  - (a) the differential pressure across the SCR and cDPF emissions control system;

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (b) SCR catalyst bed temperature;
  - (c) the NO<sub>x</sub> concentration at the outlet of the SCR and cDPF emissions control system; and
  - (d) the urea dosing rate of the diesel exhaust fluid (DEF) containing urea.
- (5) Each monitoring device shall be installed, maintained, calibrated and operated in accordance with manufacturer's specifications.
  - (6) Each monitoring device shall be equipped with a mechanism to detect parameters that are outside of the manufacturer's recommended operating conditions for proper operation and trigger an alarm to notify the operator when the emergency generator or control device is not operating within manufacturer's recommended operating conditions.
  - (7) Each SCR and cDPF emissions control system shall be installed with a differential pressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.
  - (8) Each cDPF shall be installed, maintained, and operated in accordance with manufacturer's specifications.

**Part D1 – Operating Conditions**  
**General Requirements**

- (1) Except as otherwise provided in this permit, all registered equipment covered by this permit shall be operated in accordance with specifications included in the application and any operating procedures recommended by equipment vendors unless the Permittee obtains from the Department written authorization for alternative operating procedures.
- (2) This permit-to-construct shall also serve as a temporary permit-to-operate that confers upon the Permittee authorization to operate the data center facility for a period of up to 180 days after initiating operation of the first emergency generator authorized by this permit.

**AMAZON DATA SERVICES, INC.  
BWI150 - BWI153  
FREDERICK, MD DATA CENTER CAMPUS  
PERMIT-TO-CONSTRUCT CONDITIONS  
PREMISES NO. 021-0809**

- (3) The Permittee shall submit to the Department an application for a State permit-to-operate no later than 60 days prior to expiration of the effective period of the temporary permit-to-operate.

**Part D2 – Operating Conditions**  
**Emergency Generator NSPS Requirements**

- (1) For each emergency generator, the Permittee shall comply with the requirements of 40 CFR 60, Subpart IIII by purchasing an emergency generator with an engine certified to the emission standards in 40 CFR §60.4202, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications. **[Reference: 40 CFR §60.4205(b) and §60.4211(c)]**
- (2) The Permittee must operate and maintain each emergency generator that achieves the emissions standards as required by 40 CFR §60.4205(b) according to the manufacturer's emission-related written instructions over the entire life of the engine. In addition, the Permittee may only change those settings that are permitted by the manufacturer. The Permittee must also meet the requirements of 40 CFR Part 1068 as applicable. **[Reference: 40 CFR §60.4206 and 40 CFR §60.4211(a)]**
- (3) The Permittee must use diesel fuel in each emergency generator that meets the requirements of 40 CFR §1090.305 for nonroad diesel fuel, i.e., diesel fuel that has a per-gallon sulfur content that does not exceed 15 ppm, and that either has a minimum per-gallon cetane index of 40 or a maximum per-gallon aromatic content of 35 volume percent. **[Reference: 40 CFR §60.4207(b)]**
- (4) The following operating conditions apply to each emergency generator unless the Permittee applies for and obtains an approval from the Department to operate at other conditions:
- (a) Any operation other than emergency operation, maintenance checks and readiness testing, and operation in non-emergency situations as described in paragraph (d), is prohibited.
  - (b) There is no time limit on the use of an emergency generator in emergency situations.

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (c) The Permittee may operate the emergency generator for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, State or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The Permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that federal, State, or local standards require maintenance and testing of the emergency generator beyond 100 hours per calendar year.
- (d) The Permittee may operate the emergency generator for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

**[Reference: 40 CFR §60.4211(f), (f)(1), (f)(2)(i) and (f)(3)]**

Note: The Permittee is subject to more stringent limits on maintenance checks and readiness testing as specified in Part D3(3) of this permit.

- (5) The Permittee meets the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for each emergency generator. No further requirements apply to each emergency generator under 40 CFR, Part 63, Subpart ZZZZ. **[Reference: 40 CFR §63.6590(c)(1)]**

**Part D3 – Operating Conditions**  
**Premises Wide Limits**

- (1) Premises wide emissions of oxides of nitrogen (NO<sub>x</sub>) shall be less than 25 tons in any rolling 12-month period to preclude applicability of federal, major non-attainment New Source Review and Title V – Part 70 operating permit requirements.

**AMAZON DATA SERVICES, INC.  
BWI150 - BWI153  
FREDERICK, MD DATA CENTER CAMPUS  
PERMIT-TO-CONSTRUCT CONDITIONS  
PREMISES NO. 021-0809**

Operating in compliance with the premises wide emissions limit for NO<sub>x</sub> reduces the potential emissions of carbon monoxide (CO), sulfur oxides (SO<sub>x</sub>), volatile organic compounds (VOC), particulate matter (total, PM-10, and PM-2.5), greenhouse gases, and single and total hazardous air pollutants (HAP) to less than each pollutant's respective major source threshold.

- (2) The Permittee shall comply with the following fuel usage limits in any rolling 12-month period unless the Permittee can demonstrate, to the satisfaction of the Department, that premises wide emissions of NO<sub>x</sub> are less than 25 tons in any rolling 12-month period at higher fuel usage rates:
  - (a) less than 421,483 gallons of diesel fuel combined, for operation of the 2,750-kilowatt emergency generators when using the SCR control devices; and
  - (b) less than 130,672 gallons of diesel fuel combined, for operation of the 2,750-kilowatt emergency generators when not using SCR control devices, and operation of the 250-kilowatt and 750-kilowatt emergency generators.
- (3) The Permittee shall limit maintenance checks and readiness testing, which occur at varied loads, to no more than 10 hours per emergency generator in any rolling 12-month period unless the Permittee can demonstrate, to the satisfaction of the Department, that premises wide emissions of NO<sub>x</sub> are less than 25 tons in any rolling 12-month period at other limits.
- (4) The requirements in Part D3(2) and (3) of this permit may be modified in a State Permit to Operate issued pursuant to COMAR 26.11.02.13.

**Part D4 – Operating Conditions**  
**Control Device Requirements**

- (1) Each of the emergency generators rated at 2,750 kilowatts (EG Nos. 1 through 92, ARA Registration Nos. 021-0809-9-2263, 9-2266, 9-2268, and 9-2270) shall be operated such that the exhaust gases from each engine vent through an SCR control device and a cDPF prior to discharging to the atmosphere.

**AMAZON DATA SERVICES, INC.  
BWI150 - BWI153  
FREDERICK, MD DATA CENTER CAMPUS  
PERMIT-TO-CONSTRUCT CONDITIONS  
PREMISES NO. 021-0809**

- (2) The engine exhaust gases from each of the emergency generators rated at 2,750 kilowatts (EG Nos. 1 through 92, ARA Registration Nos. 021-0809-9-2263, 9-2266, 9-2268, and 9-2270) shall be treated with diesel exhaust fluid (DEF) containing urea when the catalyst bed temperature of the SCR control device reaches 572 °F.

**Part E – Monitoring Requirements**

- (1) The Permittee shall keep the following records for each shipment of diesel fuel:
- (a) the name of the fuel supplier;
  - (b) the date on which the fuel was received; and
  - (c) the quantity of fuel delivered in each shipment.

Upon request by the Department the Permittee shall provide the fuel supplier's certification that the fuel complies with the ASTM specifications for ultra-low sulfur diesel (ULSD); or has a sulfur content not to exceed 15 ppm (or 0.0015 %) by weight and either has a minimum per-gallon cetane index of 40 or a maximum per-gallon aromatic content of 35 volume percent.

- (2) The Permittee shall continuously monitor and record the following operating parameters for each emergency generator:
- (a) hours of operation as recorded by the non-resettable hour meter;
  - (b) individual fuel consumption in gallons; and
  - (c) engine kilowatt output at least once every 15 minutes.
- (3) The Permittee shall continuously monitor and record the following operating parameters and the corresponding date, time, and run duration for each SCR control device associated with the emergency generators rated at 2,750 kilowatts (EG Nos. 1 through 92, ARA Registration Nos. 021-0809-9-2263, 9-2266, 9-2268, and 9-2270):

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (a) the differential pressure across the SCR and cDPF emissions control system;
- (b) outlet temperature at the exhaust of the SCR and cDPF emissions control system;
- (c) SCR catalyst bed temperature; and
- (d) the urea dosing rate of the DEF containing urea.

Note: Continuous monitoring is defined as at least one reading every 15 minutes.

- (4) The Permittee shall maintain the urea concentration in the DEF storage tank for each SCR control device within the range recommended by the SCR control device manufacturer for proper operation. The Permittee shall measure the urea concentration in the DEF storage tank for each SCR control system at least once per calendar quarter beginning with the 12th month following delivery of the DEF and dilute or replenish the DEF as needed to maintain the urea concentration within the manufacturer's recommended range. In lieu of conducting quarterly urea concentration measurements, the Permittee may completely replace the DEF for each SCR control system at least once every 12 months.

**Part F – Notifications and Initial Performance Test Requirements**

- (1) The Permittee shall notify the Department of the construction start date of the first emergency generator and construction end date of the final emergency generator for each building associated with the data center facility within 30 days following each date.
- (2) The Permittee shall notify the Department of the initial startup date after the commissioning period of each emergency generator within 30 days following each date. The commissioning period is the final phase of construction and includes checking all mechanical, electrical, and control systems and confirming the performance measures specified by the vendor.
- (3) Within 180 days of the initial startup date of each emergency generator rated at 2,750 kilowatts, the Permittee shall conduct initial performance tests as follows:

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

The initial tests shall be performed on at least nine (9) emergency generators in Buildings 150, 152 and 153 and at least five (5) emergency generators in Building 151.

Subsequent performance testing may be required for additional emergency generators through the facility's State Permit to Operate.

- (4) The performance tests shall be conducted in accordance with the testing specifications in the Department's Technical Memorandum 91-01, "Test Methods and Equipment Specifications for Stationary Sources" (January 1991), appropriate EPA reference methods, or other test methods approved by the Department.
- (5) Each performance test shall consist of three (3) one-hour test runs under load.
- (6) Testing shall be performed on the outlet of the catalyst bed to determine the outlet NO<sub>x</sub> concentrations for each SCR control device.
- (7) During testing, each emergency generator shall be operated at greater than or equal to 90 percent of its rated capacity unless a different method is approved by the Department.
- (8) At least 30 days prior to the performance tests, the Permittee shall submit to the Department a test protocol for review and approval.
- (9) Within 60 days following the performance tests, the Permittee shall submit to the Department the performance test results including the following information measured during the tests:
  - (a) a description of the emergency generator including the EG emissions unit number, building location, and associated ARA Registration Number;
  - (b) the kilowatt output and corresponding generator load percentage;
  - (c) fuel consumption;
  - (d) NO<sub>x</sub> concentration after the catalyst bed of the SCR in ppm and the corresponding NO<sub>x</sub> mass emissions rate is g/kW-hr; and



**AMAZON DATA SERVICES, INC.  
BWI150 - BWI153  
FREDERICK, MD DATA CENTER CAMPUS  
PERMIT-TO-CONSTRUCT CONDITIONS  
PREMISES NO. 021-0809**

- (e) the SCR catalyst bed temperature.

**Part G – Compliance Demonstration Requirements**

- (1) The Permittee shall use the methods specified in this part to demonstrate compliance with applicable premises wide emissions limits unless the Permittee obtains approval from the Department to use an alternate method.
- (2) For each emergency generator, the Permittee shall calculate monthly emissions of NO<sub>x</sub>, CO, SO<sub>x</sub>, VOC, particulate matter (total, PM-10, and PM-2.5), greenhouse gases reported as CO<sub>2e</sub>, maximum individual HAP and premises wide total HAP using the following method:
  - (a) Use the total monthly fuel usage rate measured by the fuel flow meter in gallons per month; multiply the fuel usage rate by each pollutant's installed model's worst-case emissions factor (in pounds of pollutant per gallon of fuel consumed); divide the product by 2000 to convert the calculated amount to tons of pollutant per month.
  - (b) Monthly NO<sub>x</sub> emissions for each emergency generator rated at 2,750 kilowatts (EG Nos. 1 through 92, ARA Registration Nos. 021-0809-9-2263, 9-2266, 9-2268, and 9-2270) may be adjusted using results established during the most recent performance test, for emissions that are controlled by the SCR control system.
- (3) Premises wide rolling 12-month total emissions shall be calculated each month by summing the monthly emissions for all emergency generators established in Part G(2) of this permit for the previous 12 months.

**Part H – Record Keeping Requirements**

- (1) All records required by this permit shall be kept on-site or in a readily accessible location and made available to the Department upon request.
- (2) The Permittee shall maintain the following records for each emergency generator:

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (a) EPA Certificates of Conformity demonstrating that the emergency generator is certified to meet the applicable emergency engine tier standards in 40 CFR 60, Subpart IIII for the model year and size.
  - (b) All vendor literature, manufacturer recommended operating and maintenance procedures, and records of all maintenance performed, including the dates and actions taken.
  - (c) Monthly and rolling 12-month total operating hours used for readiness testing, maintenance checks, performance testing, and any other nonemergency operation. The records must include the type of operation, the duration, and SCR use.
  - (d) Monthly operating hours used for emergency operation. The records must include the duration of the emergency and SCR use.
  - (e) Monthly fuel consumption in gallons when using SCR control.
  - (f) Monthly fuel consumption in gallons when SCR control is not used.
  - (g) Any corrective action taken after the differential pressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.
  - (h) Sulfur content certification from the fuel supplier for each shipment of diesel or renewable diesel fuel.
- (3) The Permittee shall maintain records of the following operating data associated with each SCR control device, including the corresponding date, time, and run duration:
- (a) the differential pressure across the SCR and cDPF emissions control system;
  - (b) SCR catalyst bed temperature;
  - (c) the NO<sub>x</sub> concentrations at the outlet of the SCR and cDPF emissions control system; and

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (d) the urea dosing rate of the DEF containing urea.
- (4) The Permittee shall maintain the following additional records for each SCR control device:
- (a) All maintenance performed, including monitoring device calibration checks, and the date, time, and actions taken.
  - (b) Quarterly DEF urea concentration measurement records including date of the measurement, the results, actions taken to address when the concentration is outside of the manufacturer's recommended range, and the date that the DEF is replaced.
  - (c) All performance test protocols and performance test results.
- (5) The Permittee shall keep records of monthly and rolling 12-month total premises wide emissions of NO<sub>x</sub>, CO, VOC, SO<sub>x</sub>, PM, PM-10, PM-2.5, greenhouse gases as CO<sub>2e</sub>, maximum individual HAP, premises wide total HAP, and all supporting information to support the emissions calculations.
- (6) The Permittee shall keep records of the rolling 12-month total premises wide fuel consumption in gallons for the emergency generators when using SCR control and the rolling 12-month total premises wide fuel consumption in gallons for the emergency generators when SCR control is not used.
- (7) The Permittee shall maintain at the facility for at least five (5) years, and shall make available to the Department upon request, records necessary to support annual certifications of emissions. Such records shall include, if applicable, the following:
- (a) mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each registered source of emissions;
  - (b) accounts of the methods and assumptions used to quantify emissions;
  - (c) all operating data, including operating schedules and production data, that were used in determinations of emissions;

**AMAZON DATA SERVICES, INC.  
BWI150 - BWI153  
FREDERICK, MD DATA CENTER CAMPUS  
PERMIT-TO-CONSTRUCT CONDITIONS  
PREMISES NO. 021-0809**

- (d) amounts, types, and analyses of all fuels used;
- (e) any records, the maintenance of which is required by this permit or by State or federal regulations, that pertain to the operation and maintenance of continuous emissions monitors, including:
  - (i) all emissions data generated by such monitors;
  - (ii) all monitor calibration data;
  - (iii) information regarding the percentage of time each monitor was available for service; and
  - (iv) information concerning any equipment malfunctions.
- (f) information concerning operation, maintenance, and performance of air pollution control equipment and compliance monitoring equipment, including:
  - (i) identifications and descriptions of all such equipment;
  - (ii) operating schedules for each item of such equipment;
  - (iii) accounts of any significant maintenance performed;
  - (iv) accounts of all malfunctions and outages; and
  - (v) accounts of any episodes of reduced efficiency.
- (g) limitations on source operation or any work practice standards that significantly affect emissions; and
- (h) other relevant information as required by the Department.

**Part I – Reporting Requirements**

- (1) The Permittee shall submit a report semi-annually that includes the following information:

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (a) Monthly and rolling 12-month total premises wide emissions of NO<sub>x</sub>, CO, VOC, SO<sub>x</sub>, PM, PM-10, PM-2.5, greenhouse gases as CO<sub>2e</sub>, maximum individual HAP and total premises wide HAP.
- (b) Rolling 12-month total premises wide fuel consumption in gallons for the emergency generators when using SCR control and the rolling 12-month total premises wide fuel consumption in gallons for the emergency generators when SCR control is not used.
- (c) For each emergency generator, rolling 12-month total operating hours used for readiness testing, maintenance checks, performance testing, and any other operation. The records must include the type of operation, the duration, and SCR use.

Each semi-annual report shall be submitted within 30 days following June 30 and December 31 for the previous six months. The reporting frequency may be reduced upon approval by the Department in the facility's State Permit to Operate.

- (2) The Permittee shall report the following information to the Department within 15 days following the month of the occurrence:
  - (a) The rolling 12-month total premises wide NO<sub>x</sub> emissions are 25 tons or greater, determined using the methods in Part G of this permit.
  - (b) The rolling 12-month total premises wide fuel consumption for the emergency generators when using SCR control is 421,483 gallons or greater.
  - (c) The rolling 12-month total premises wide fuel consumption for the emergency generators not using SCR control is 130,672 gallons or greater.

For occurrences specified under Part I(2)(a), the report shall include the 12-month total premises wide NO<sub>x</sub> emissions determined using actual operating data and load-specific emissions factors. For occurrences specified under Parts I(2)(b) and (c), the report shall include the 12-month total premises wide NO<sub>x</sub> emissions determined using the methodology specified in Part G of this permit or determined using actual operating data and load-specific emissions factors.

**AMAZON DATA SERVICES, INC.**  
**BWI150 - BWI153**  
**FREDERICK, MD DATA CENTER CAMPUS**  
**PERMIT-TO-CONSTRUCT CONDITIONS**  
**PREMISES NO. 021-0809**

- (3) The Permittee shall submit to the Department by April 1 of each year a certification of emissions for the previous calendar year. The certifications shall be prepared in accordance with requirements, as applicable, adopted under COMAR 26.11.01.05 – 1 and COMAR 26.11.02.19D.
- (a) Certifications of emissions shall be submitted on forms obtained from the Department.
  - (b) A certification of emissions shall include mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each of the facility's registered sources of emissions.
  - (c) The person responsible for a certification of emissions shall certify the submittal to the Department in the following manner:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure 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 the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”
- (4) The Permittee shall report, in accordance with requirements under COMAR 26.11.01.07, occurrences of excess emissions to the Compliance Program of the Air and Radiation Administration.