



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

www.deq.virginia.gov

Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director

August 27, 2024

Ms. Mishtee Chatterjee
Authorized Representative
c/o Mr. Jason Bowker
Amazon Data Services, Inc.
13200 Woodland Park Road
Herndon, VA 20171

Location: Loudoun County
Registration No.: 73853

Dear Ms. Chatterjee:

Attached is a permit to construct and operate emergency diesel engine generator sets (gen-sets) at Amazon Data Services' data centers (IAD-10, IAD-32, IAD-98, IAD-99, IAD-118, IAD-119, and IAD-129), in accordance with the provisions of the Commonwealth of Virginia State Air Pollution Control Board (Board's) Regulations for the Control and Abatement of Air Pollution (Regulations). This permit document supersedes your permit document dated February 3, 2023.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on August 26, 2024.

This permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and/or civil charges. Please read all permit conditions carefully.

This permit approval to construct and operate shall not relieve Amazon Data Services, Inc. of the responsibility to comply with all other local, state, and federal permit regulations.

The proposed emergency diesel engine gen-sets may be subject to the requirements of 40 CFR Part 60, New Source Performance Standards (NSPS) Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*. In summary, the units may be required to comply with certain federal emission standards and operating limitations. The DEQ advises you to review the referenced NESHAP and NSPS to ensure compliance with applicable emission and operational limitations. As the owner/operator you are also responsible for any monitoring, notification, reporting and

recordkeeping requirements of the NESHAP and NSPS. Notifications shall only be sent to EPA, Region III.

To review any federal rules referenced in the above paragraph or in the attached permit, the US Government Publishing Office maintains the text of these rules at www.ecfr.gov, Title 40, Part 60 and Part 63.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. Please consult the relevant regulations for additional requirements for such requests.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

Michael S. Rolband, Director
Department of Environmental Quality
P.O. Box 1105
Richmond, VA 23218

If this permit was delivered to you by mail, three days are added to the 30-day period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit, please contact Ms. Katie DeVoss at (571) 866-6090 or via email at katie.devoss@deq.virginia.gov.

Sincerely,



Justin A. Wilkinson, Regional Air Permit Manager
Virginia Department of Environmental Quality
justin.wilkinson@deq.virginia.gov
Northern Regional Office
13901 Crown Court, Woodbridge, VA 22193
(703) 583-3800

JAW/KD/73853 mNSR (2024-08-27)

Attachments: Permit



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Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director

STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE
This permit document supersedes the permit document dated February 3, 2023.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Amazon Data Services, Inc.
13200 Woodland Park Road
Herndon, VA 20171
Registration No.: 73853

is authorized to construct and operate

emergency diesel engine generator sets (gen-sets)

located at

IAD-10: 45630 W. Severn Way,
IAD-32: 1304 Squire Court;
IAD-98: 45295 W. Severn Way,
IAD-99: 45305 W. Severn Way,
IAD-118: 21641 Charles View Drive,
IAD-119: 21645 Charles View Drive,
IAD-129: 21710 Charles View Drive,
Sterling, VA 20166 (Loudoun County)

in accordance with the Conditions of this permit.

Approved on

August 27, 2024.

A handwritten signature in black ink, appearing to read "Justin A. Wilkinson".

Justin A. Wilkinson, Regional Air Permit Manager
Virginia Department of Environmental Quality

Permit consists of 21 pages (without the attachment).

Permit Conditions 1 to 31.

Attachment: Source Testing Report Format

INTRODUCTION

This permit approval is based on and combines permit terms and conditions in accordance with 9VAC5-80-1255 from the following permit approvals and the respective permit applications:

Permit Program: Approval/Amendment Date	Application/Letter Signature Date(s)	Application Supplemental Information Date(s)
Minor NSR: March 30, 2011	November 1, 2010 December 27, 2010	March 23, 2011
Minor amendment: August 9, 2011	June 1, 2011	July 7, 2011 July 11, 2011
Minor NSR: May 20, 2013	November 12, 2012 January 18, 2013	April 29, 2013 May 2, 2013 May 9, 2013
Minor NSR: October 5, 2017	May 3, 2017 September 6, 2017	June 22, 2017 August 3, 2017 September 22, 2017
Minor NSR: July 22, 2020	April 3, 2020 May 7, 2020	April 20, 2020 May 27, 2020 June 19, 2020 July 13, 2020
Minor NSR: March 4, 2021	December 17, 2020	January 27, 2021
Minor NSR: February 3, 2023	December 16, 2022	January 13, 2023 January 24, 2023 January 27, 2023
Minor NSR: August 27, 2024	March 22, 2024	May 9, 2024 August 26, 2024

Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.

Words or terms used in this permit shall have meanings as provided in 9VAC5-80-1110 and 9VAC5-10-10 of the Commonwealth of Virginia State Air Pollution Control Board’s (Board’s) Regulations (Regulations) for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition. The enabling permit program, or permit programs is provided below each permit condition in the regulatory authority parenthetical as follows: 9VAC5-80-850 for Article 5, 9VAC5-80-1180 for Article 6, 9VAC5-80-1985 for Article 8, and 9VAC5-80-2050 for Article 9. The most recent effective date for a term or condition is listed in brackets []. When identical conditions for one or more emission units are combined, the effective date listed in this permit does not alter the prior effective date(s) for any such conditions as issued in a previous permit action. In accordance with 9VAC5-80-1120F, any condition not marked as state-only enforceable (SOE) is state and federally enforceable.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the Department of Environmental Quality (DEQ) or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9VAC5-170-60 of the Board’s Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

Equipment List –

Equipment to be constructed:

Reference No.	Equipment Description	Rated Capacity	Delegated Federal Requirements	Original Permit Date
28, 33 through 36, and 46	Six (6) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	August 27, 2024

Equipment previously permitted at this facility consists of the following:

Reference No.	Equipment Description	Rated Capacity	Delegated Federal Requirements	Original Permit Date
1, 4, 6, 8, 9, 10	Six (6) Caterpillar model C175-16 emergency diesel engine gen-sets	4,423 bhp 3,000 ekW (each unit)	None	March 30, 2011
2, 3, 5	Three (3) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,604 bhp 2,500 ekW (each unit)	None	March 30, 2011
T1 through T4 and 7	Five (5) Caterpillar model 3516C emergency diesel engine gen-sets	2,937 bhp 2,000 ekW (each unit)	None	March 30, 2011
11	One (1) Caterpillar model 3516C emergency diesel engine gen-set	2,937 bhp 2,000 ekW	None	May 20, 2013
12	One (1) Caterpillar model 3512C emergency diesel engine gen-set	2,206 bhp 1,500 ekW	None	May 20, 2013

Reference No.	Equipment Description	Rated Capacity	Delegated Federal Requirements	Original Permit Date
13 through 16	Four (4) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	May 20, 2013
17 through 27, 29 through 32, 37 through 45, and 47 through 88	Sixty-six (66) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	October 5, 2017
89 through 106	Eighteen (18) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	July 22, 2020
S1	One (1) Caterpillar model C18 emergency diesel engine gen-set	1,006 bhp 750 ekW	None	July 22, 2020
107	One (1) Caterpillar model 3516C-HD emergency diesel engine gen-set	3,634 bhp 2,500 ekW	None	March 4, 2021
108 through 112	Five (5) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	February 3, 2023

Specifications provided in the above tables are for informational purposes only and do not form enforceable terms or conditions.

PROCESS REQUIREMENTS

1. **Emission Controls** – Emissions from the emergency diesel engine gen-sets shall be controlled by the following:
 - a. Nitrogen oxides (NO_x) emissions from each emergency diesel engine gen-set (Ref. Nos. 1 through 112, T1 through T4, and S1) shall be controlled by engine design.
 - b. Carbon monoxide (CO) emissions, particulate matter (PM₁₀/PM_{2.5}) emissions, volatile organic compounds (VOCs) emissions, and visible emissions from the emergency diesel engine gen-sets (Ref. Nos. 1 through 112, T1 through T4, and S1) shall be controlled by the use of good operating practices and performing maintenance in accordance with the manufacturer recommendations. In addition, the permittee may only change those settings that are permitted by the manufacturer and do not degrade the air emissions from the emergency diesel engine gen-sets.

(9VAC5-80-1180 and 9VAC5-50-260) [8/27/2024]

2. **Monitoring –**

- a. Fuel Flow: Each emergency diesel engine gen-set (Ref. Nos. 1 through 112, T1 through T4, and S1) shall be equipped with a device to continuously measure and record individual fuel consumption (in gallons) for each engine gen-set.
- b. Engine Operating Hours: Each emergency diesel engine gen-set (Ref. Nos. 1 through 112, T1 through T4, and S1) shall be equipped with a non-resettable hour meter which measures the duration of time that each engine gen-set is operated.

Each monitoring device (as required in a. and b. above) shall be observed by the permittee with a frequency of not less than once each day the emergency diesel engine gen-set is operated. The permittee shall keep a log of these observations.

Each monitoring device shall be installed, maintained, calibrated (as appropriate), and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. The details of the monitoring device calibrations are to be arranged with the Regional Air Compliance Manager of the DEQ's Northern Regional Office (NRO).

Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the engines are operating.
(9VAC5-80-1180 D and 9VAC5-50-20 C) [8/27/2024]

OPERATING LIMITATIONS

3. **Operation of the Emergency Diesel Engine Gen-Sets –** The permittee shall operate and maintain each emergency diesel engine gen-set (Ref. Nos. 28, 33 through 36, 46, 89 through 112, and S1) and control device according to the manufacturer's written instructions or procedures developed according to the manufacturer's written instructions or procedures developed by the permittee that are approved by the engine manufacturer. In addition, the permittee may only change those settings that are permitted by the manufacturer and do not increase air emissions.
(9VAC5-80-1180) [8/27/2024]
4. **Operating Limitations (Ozone Season) –** No diesel engine gen-set (Ref. Nos. 28, 33 through 36, 46, 89 through 112, and S1) shall be operated for scheduled maintenance and readiness testing, stack testing, or operational training (that involves fuel combustion) between the hours of 7 a.m. to 5 p.m. any day during the ozone season of May 1 through September 30. The permittee may petition the DEQ's NRO Air Compliance Manager for exceptions to this requirement, with approvals made on a case-by-case basis.
(9VAC5-80-1180) [8/27/2024]

5. **Operating Limitations (Ozone Season) – Integration Operational Period** – During the integration operational period of each diesel engine gen-set (Ref. Nos. 28, 33 through 36, 46, 89 through 112, and S1), any operation of the unit (that involves fuel combustion) between the hours of 7 a.m. to 5 p.m. any day during the ozone season of May 1 through September 30 shall only occur if the forecast Air Quality index (AQI) for ozone as published on the AirNow website (<https://airnow.gov>) for Northern Virginia for that day is less than or equal to 100. In the event that AirNow-EnviroFlash (www.enviroflash.info) issues an Air Alert for Metropolitan Washington, D.C. for a day which the forecasted AQI for ozone was less than or equal to 100, operation of each unit (which involves fuel combustion) shall be minimized to the maximum extent practical.
(9VAC5-80-1180) [8/27/2024]

6. **Emergency Power Generation** – The emergency diesel engine gen-sets (Ref. Nos. 1 through 112, T1 through T4, and S1) shall only be operated for the following purposes:
 - a. In situations that arise from sudden and reasonably unforeseeable events where the primary energy or power source is disrupted or disconnected due to conditions beyond the control of an owner or operator of a facility including:
 - i. A failure of the electrical grid;
 - ii. On-site disaster or equipment failure; or
 - iii. Public service emergencies such as flood, fire, natural disaster, or severe weather conditions.

 - b. For participation in an ISO-declared emergency, where an ISO emergency is:
 - i. An abnormal system condition requiring manual or automatic action to maintain system frequency, to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property;
 - ii. Capacity deficiency or capacity excess conditions;
 - iii. A fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel;
 - iv. Abnormal natural events or man-made threats that would require conservative operations to posture the system in a more reliable state; or
 - v. An abnormal event external to the ISO service territory that may require ISO action.

 - c. For unscheduled maintenance, testing, and operational training.

- d. For scheduled maintenance checks and readiness testing (Scheduled MCRT).
- e. For the integration operational period which is the period of time beginning with the first time the affected unit is started on-site and ending when the affected unit is fully integrated with the sources electrical system.

(9VAC5-80-1180) [8/27/2024]

7. Operating Hours –

- a. Each emergency diesel engine gen-set (Ref. Nos. 1 through 27, 29 through 32, 37 through 45, 47 through 88 and T1 through T4) shall not operate more than 100 hours per year for scheduled maintenance checks and readiness testing (Scheduled MCRT), unscheduled maintenance, testing, and operational training (as provided in Conditions 6.c and 6.d).
- b. Each emergency diesel engine gen-set (Ref. Nos. 28, 33 through 36, and 46) shall not operate more than 35 hours per year for scheduled maintenance checks and readiness testing (Scheduled MCRT, as provided in Condition 6.d).
- c. Each emergency diesel engine gen-set (Ref. Nos. 89 through 112 and S1) shall not operate more than 32 hours per year for scheduled maintenance checks and readiness testing (Scheduled MCRT, as provided in Condition 6.d).
- d. Each individual emergency diesel engine gen-set (Ref. Nos. 1 through 112, T1 through T4, and S1) shall not operate more than 500 hours per year for all purposes (as provided in Condition 6) combined.

The annual limits for hours of operation shall be calculated daily as the sum of each consecutive 365-day period. Compliance for the consecutive 365-day period shall be demonstrated daily by adding the total for the most recently completed calendar day to the individual daily totals for the preceding 364 days.

(9VAC5-80-1180) [8/27/2024]

- 8. Fuel Specification –** The approved fuel for the emergency diesel engine gen-sets (Ref. Nos. 1 through 112, T1 through T4, and S1) is ultra-low sulfur diesel fuel oil, and shall meet the specifications below:

ULTRA-LOW SULFUR DIESEL FUEL OIL:

- a. Does not exceed the American Society for Testing and Materials (ASTM) specification, D975, for grade ultra-low sulfur 2-D or grade 2-D S15, or

- b. Has a maximum sulfur content not to exceed 0.0015% by weight (15 ppm), and either a minimum cetane number of forty or maximum aromatic content of 35 volume percent.

Exceedance of these specifications may be considered credible evidence of an exceedance of emission limits. A change in the fuel type or the fuel sulfur content may require a permit to modify and operate.

(9VAC5-80-1180) [8/27/2024]

- 9. **Fuel Certification** – The permittee shall obtain a certification from the fuel supplier with each shipment of diesel fuel oil. Each fuel supplier certification shall include the following:
 - a. The name of the fuel supplier;
 - b. The date on which the diesel fuel oil was received;
 - c. The quantity of diesel fuel oil delivered in the shipment;
 - d. A statement that the distillate oil complies with the requirements of Condition 8 Fuel Specification.

Alternately, the permittee shall obtain approval from the Regional Air Compliance Manager of the DEQ's NRO if other documentation will be used to certify the diesel fuel oil type.

Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by the DEQ, may be used to determine compliance with the fuel specifications stipulated in Condition 8.

(9VAC5-80-1180) [8/27/2024]

10. **Diesel Fuel Throughput Limits** –

- a. The emergency diesel engine gen-sets (Ref. Nos. 1 through 12) combined shall consume no more than 97,300 gallons of diesel fuel oil per year, calculated daily as the sum of each consecutive 365-day period.
- b. The emergency diesel engine gen-sets (Ref. Nos. 13 through 27, 29 through 32, 37 through 45, 47 through 112, and S1) combined shall consume no more than 584,500 gallons of diesel fuel oil per year, calculated daily as the sum of each consecutive 365-day period.
- c. The emergency diesel engine gen-sets (Ref. Nos. T1 through T4) combined shall consume no more than 8,280 gallons of diesel fuel oil per year, calculated daily as the sum of each consecutive 365-day period.

- d. The emergency diesel engine gen-sets (Ref. Nos. 1 through 112, T1 through T4, and S1) combined shall consume no more than 679,967 gallons of diesel fuel oil per year, calculated daily as the sum of each consecutive 365-day period.

Compliance for the consecutive 365-day period shall be demonstrated daily by adding the total for the most recently completed calendar day to the individual daily total for the preceding 364 days.

(9VAC5-80-1180) [8/27/2024]

EMISSION LIMITS

11. **Hourly Emission Limits** – Emissions from the operation of each emergency diesel engine gen-set (Ref. Nos. 1 through 112, T1 through T4, and S1) shall not exceed the limits specified below:

Pollutant	Ref. Nos. 1, 4, 6, 8, 9 & 10 (each unit)	Ref. Nos. 2, 3 & 5 (each unit)	Ref. Nos. 7 & 11 (each unit)	Ref. Nos. T1 through T4 (each unit)
Particulate Matter (PM ₁₀)	0.60 lbs/hr	0.40 lbs/hr	0.57 lbs/hr	0.57 lbs/hr
Particulate Matter (PM _{2.5})	0.60 lbs/hr	0.40 lbs/hr	0.57 lbs/hr	0.57 lbs/hr
Nitrogen Oxides (as NO ₂)	58.51 lbs/hr	47.67 lbs/hr	38.85 lbs/hr	38.85 lbs/hr
Carbon Monoxide (CO)	13.00 lbs/hr	5.86 lbs/hr	3.96 lbs/hr	4.04 lbs/hr
Volatile Organic Compounds (VOCs)	2.56 lbs/hr	1.17 lbs/hr	1.13 lbs/hr	1.13 lbs/hr

Pollutant	Ref. No. 12	Ref. Nos. 13 through 112 (each unit)	Ref. No. S1
Particulate Matter (PM ₁₀)	0.37 lbs/hr	0.40 lbs/hr	0.32 lbs/hr
Particulate Matter (PM _{2.5})	0.37 lbs/hr	0.40 lbs/hr	0.32 lbs/hr
Nitrogen Oxides (as NO ₂)	29.18 lbs/hr	48.06 lbs/hr	14.35 lbs/hr
Carbon Monoxide (CO)	3.98 lbs/hr	6.09 lbs/hr	4.74 lbs/hr
Volatile Organic Compounds (VOCs)	0.78 lbs/hr	1.21 lbs/hr	1.91 lbs/hr

These emissions are derived from the manufacturer’s “not to exceed” data at maximum design capacity of the emergency diesel engine gen-sets and operating limits to determine the overall emission contribution. Compliance with these pollutant limits shall be based on the proper operation and maintenance of the emergency diesel engines or by testing, if required.

(9VAC5-50-260 and 9VAC5-80-1180) [8/27/2024]

12. **Annual Emission Limits** – Emissions from the operation of the emergency diesel engine gen-sets (Ref. Nos. 1 through 112, T1 through T4, and S1) shall not exceed the limits specified below:

Pollutant	Ref. Nos. 1 through 12	Ref. Nos. 13 through 27, 29 through 32, 37 through 45, 47 through 112, and S1	Ref. Nos. T1 through T4	Ref. Nos. 1 through 112, T1 through T4, and S1
Particulate Matter (PM ₁₀)	0.20 tpy	3.27 tpy	0.02 tpy	3.79 tpy
Particulate Matter (PM _{2.5})	0.20 tpy	3.27 tpy	0.02 tpy	3.79 tpy
Nitrogen Oxides (as NO ₂)	14.40 tpy	80.95 tpy	1.17 tpy	96.03 tpy
Carbon Monoxide (CO)	2.94 tpy	48.18 tpy	0.63 tpy	55.80 tpy
Volatile Organic Compounds (VOCs)	1.03 tpy	11.37 tpy	0.15 tpy	12.98 tpy

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits may be considered credible evidence of the exceedance of emission limits. Compliance with the annual emission limits may be determined as stated in Conditions 1, 10, and 11.

(9VAC5-80-1180) [8/27/2024]

13. **Visible Emission Limit** – Visible emissions from each emergency diesel engine gen-set (Ref. Nos. 1 through 112, T1 through T4, and S1) shall not exceed 5% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 10% opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).

During startup and shutdown, visible emissions from each engine gen-set (Ref. Nos. 1 through 112, T1 through T4, and S1) shall not exceed 10% opacity, except for one six-minute interval not to exceed twenty 20% opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).

(9VAC5-80-1180, 9VAC5-50-260, and 9VAC5-170-160) [8/27/2024]

INITIAL COMPLIANCE DETERMINATION

14. **Stack Test** – Initial performance tests shall be conducted on two (2) of the six (6) emergency diesel engine gen-sets (Ref. Nos. 28, 33 through 36, and 46) for NO_x (as NO₂) and CO using appropriate EPA reference methods as approved by the Regional Air Compliance Manager of the DEQ’s NRO to determine compliance with the emission limits contained in Condition 11.
- a. Emissions testing of each pollutant for each selected emergency diesel engine gen-set shall consist of three (3) one-hour test runs under load. The average of the three (3) runs shall be reported as the short-term emission rate for that emergency diesel engine gen-set;
 - b. Testing shall be performed on the exhaust stack of the emergency diesel engine gen-set to demonstrate compliance with the NO_x and CO emission limits specified in Condition 11. Testing shall be conducted with the emergency diesel engine gen-set operating at ≥ 90 percent of its rated capacity, unless multiple load band testing is approved by DEQ;
 - c. Recorded emergency diesel engine gen-set operational information shall include, but not be limited to:
 - i. Generator load/kilowatt output.
 - ii. Fuel consumption and fuel sulfur content of the diesel fuel oil.
 - d. Perform testing to demonstrate compliance within 120 days after the integration operational period has commenced. The integration operational period is defined as: the period of time beginning with the first time the affected unit is started on-site and ending when the affected unit is fully integrated with the source electrical system. If this deadline falls within the ozone season (May 1 through September 30), the facility shall perform testing to demonstrate compliance within 30 days after the end of the ozone season. Tests shall be conducted and reported and data reduced as set forth in 9VAC5-50-30;
 - e. The details of the tests are to be arranged with the Regional Air Compliance Manager of DEQ’s NRO. The permittee shall submit the test protocol to the Regional Air Compliance Manager of DEQ’s NRO, at least 30 days prior to testing to ensure adequate time for DEQ approval. If the test protocol is received by the DEQ with less than 30 days for review and acceptance, DEQ approval may not be issued in a timely manner to allow for testing to take place according to the permittee’s schedule;
 - f. Should conditions occur which would require rescheduling the testing, the permittee shall notify the Regional Air Compliance Manager of DEQ’s NRO, in writing, within

seven (7) days of the scheduled test date or as soon as the rescheduling is deemed necessary; and

- g. Two (2) copies (one (1) paper copy and one (1) electronic copy) of the test results shall be submitted to the Regional Air Compliance Manager, DEQ's NRO within 60 days after test completion and shall conform to the test report format enclosed with this permit.

(9VAC5-50-30 and 9VAC5-80-1200) [8/27/2024]

- 15. **Visible Emissions Evaluation** – Concurrent with the initial performance tests required in Condition 14, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the emergency diesel engine gen-sets selected for initial performance testing. The details of the tests are to be arranged with the Regional Air Compliance Manager of DEQ's NRO. The permittee shall submit a VEE protocol in conjunction with the initial stack test protocol required by Condition 14, at least 30 days prior to testing.

- a. Should conditions prevent concurrent opacity observations, the Regional Air Compliance Manager of the DEQ's NRO shall be notified in writing, within seven (7) days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same operating conditions as the initial performance tests.
- b. Two (2) copies of the test result (one (1) hard copy and one (1) electronic copy) shall be submitted to the Regional Air Compliance Manager of the DEQ's NRO within 60 days after test completion and shall conform to the test report format enclosed with this permit (Attachment A).

(9VAC5-50-30 and 9VAC5-80-1200) [8/27/2024]

CONTINUING COMPLIANCE DETERMINATION

- 16. **Facility Construction** – The emergency diesel engine gen-sets (Ref. Nos. 1 through 112, T1 through T4, and S1) shall be constructed so as to allow for emissions testing upon reasonable notice, using appropriate methods. This includes constructing the facility/equipment such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and providing a stack or duct that is free from cyclonic flow. Sampling ports shall be provided when requested at the appropriate locations in accordance with EPA Reference Method 1 (reference 40 CFR Part 60, Appendix A). In addition, safe sampling platforms and access shall be provided.

(9VAC5-50-30 F and 9VAC5-80-1180) [8/27/2024]

- 17. **Emission Testing/Visible Emissions Evaluation** – Upon request by the DEQ, the permittee shall conduct stack tests and/or visible emission evaluations of the emergency

diesel engine gen-sets (Ref. Nos. 1 through 112, T1 through T4, and S1) to demonstrate compliance with the emission limits contained in this permit. The details of the tests shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO. (9VAC5-80-1200 and 9VAC5-50-30 G) [8/27/2024]

RECORDS

18. **On Site Records** – The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO. These records shall include, but are not limited to:
 - a. A monthly log of the monitoring device observations as required by Condition 2.
 - b. Records of the reasons for operation for each emergency diesel engine gen-set (Ref. Nos. 1 through 112, T1 through T4, and S1), including, but not limited to, the date, cause of operation, cause of the emergency, the ISO-declared emergency notification, and the hours of operation.
 - c. Records for emergency diesel engine gen-set operations (Ref. Nos. 28, 33 through 36, 46, 89 through 112, and S1), as necessary, to demonstrate compliance with the operating limitations of Condition 4, which includes but is not limited to: times, dates, and reasons for operation of each emergency diesel engine gen-set that was operating between May 1 and September 30.
 - d. To verify compliance with Condition 5, maintain records of:
 - i. The forecasted AQI, as determined by the AirNow website for Northern Virginia, for ozone for the day(s) that an emergency diesel engine gen-set operated during the integration operational period;
 - ii. The measured AQI, as determined by the AirNow website for Northern Virginia, for ozone for the day(s) that the emergency diesel engine gen-set operated during the integration operational period;
 - iii. Documentation recording any Air Alerts issued for that operating day, as determined by AirNow-EnviroFlash; and
 - iv. Details of commissioning activities, to include, but not limited to, clock hours and duration.
 - e. Annual hours of operation of each emergency diesel engine gen-set (Ref. Nos. 1 through 27, 29 through 32, 37 through 45, 47 through 88, and T1 through T4), for purposes of maintenance checks and readiness testing, calculated daily as the sum of each consecutive 365-day period.

- f. Annual hours of operation of each emergency diesel engine gen-set (Ref. Nos. 28, 33 through 36, 46, 89 through 112, and S1), for purposes of scheduled maintenance checks and readiness testing (Scheduled MCRT), calculated daily as the sum of each consecutive 365-day period.
- g. Annual hours of operation (all purposes) of each emergency diesel engine gen-set (Ref. Nos. 1 through 112, T1 through T4, and S1), calculated daily as the sum of each consecutive 365-day period.
- h. Annual fuel consumption of each emergency diesel engine gen-set, (Ref. Nos. 1 through 112, T1 through T4, and S1) calculated daily as the sum of each consecutive 365-day period.
- i. Daily and annual fuel consumption for the combined operation of the emergency diesel engine gen-sets (Ref. Nos. 1 through 12), calculated daily as the sum of each consecutive 365-day period, to verify compliance with the fuel throughput limitations specified in Condition 10.
- j. Daily and annual fuel consumption for the combined operation of the emergency diesel engine gen-sets (Ref. Nos. 13 through 27, 29 through 32, 37 through 45, 47 through 112, and S1), calculated daily as the sum of each consecutive 365-day period, to verify compliance with the fuel throughput limitations specified in Condition 10.
- k. Daily and annual fuel consumption for the combined operation of the emergency diesel engine gen-sets (Ref. Nos. T1 through T4), calculated daily as the sum of each consecutive 365-day period, to verify compliance with the fuel throughput limitations specified in Condition 10.
- l. Daily and annual fuel consumption for the combined operation of the emergency diesel engine gen-sets (Ref. Nos. 1 through 112, T1 through T4, and S1), calculated daily as the sum of each consecutive 365-day period, to verify compliance with the fuel throughput limitations specified in Condition 10.
- m. Daily and annual emissions calculations for NO_x (as NO₂), CO, VOC, PM₁₀, and PM_{2.5} from the emergency diesel engine gen-sets (Ref. Nos. 1 through 12), with annual emissions, calculated daily, as the sum of each consecutive 365-day period, to verify compliance with the annual emission limits in Condition 12.
- n. Daily and annual emissions calculations for NO_x (as NO₂), CO, VOC, PM₁₀, and PM_{2.5} from the emergency diesel engine gen-sets (Ref. Nos. 13 through 27, 29 through 32, 37 through 45, 47 through 112 and S1), with annual emissions, calculated daily, as the sum of each consecutive 365-day period, to verify compliance with the annual emission limits in Condition 12.

- o. Daily and annual emissions calculations for NO_x (as NO₂), CO, VOC, PM₁₀, and PM_{2.5} from the emergency diesel engine gen-sets (Ref. Nos. T1 through T4), with annual emissions, calculated daily, as the sum of each consecutive 365-day period, to verify compliance with the annual emission limits in Condition 12.
- p. Daily and annual emissions calculations for NO_x (as NO₂), CO, VOC, PM₁₀, and PM_{2.5} from the emergency diesel engine gen-sets (Ref. Nos. 1 through 112, T1 through T4, and S1), with annual emissions, calculated daily, as the sum of each consecutive 365-day period, to verify compliance with the annual emission limits in Condition 12.
- q. All fuel supplier certifications.
- r. Results of all stack tests and visible emission evaluations.
- s. A copy of the maintenance schedule and records of scheduled and unscheduled maintenance in accordance with Condition 26.
- t. Operator training in accordance with Condition 26.
- u. Engine information including make, model, serial number, model year, maximum engine power (bhp), and engine displacement for each engine-gen-set (Ref. Nos. 28, 33 through 36, 46, 89 through 112, and S1).
- v. Records of the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer.
- w. Records of changes in settings that are permitted by the manufacturer of the emergency diesel engine gen-sets.
- x. For emergency diesel engine gen-sets (Ref. Nos. 1 through 112, T1 through T4, and S1), maintain documentation from the manufacturer that the emergency diesel engine gen-sets are certified to meet the EPA's Tier 2 emission standards.

Compliance for the consecutive 12-month period (as applicable for the items above) shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

Compliance for the consecutive 365-day period (as applicable for the items above) shall be demonstrated daily by adding the total for the most recently completed day to the individual daily totals for the preceding 364 days.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years, unless otherwise noted.

(9VAC5-80-1180 and 9VAC5-50-50) [8/27/2024]

NOTIFICATIONS

19. **Initial Notifications** – The permittee shall furnish written notification of items a through e below to the Air Compliance Manager of the DEQ’s NRO at the following address:

Regional Air Compliance Manager
Department of Environmental Quality
13901 Crown Court
Woodbridge, VA 22193

- a. The actual date on which construction of the emergency diesel engine gen-sets (Ref. Nos. 17 through 27, 29 through 32, 37 through 45, 47 through 88) commenced within 30 days after such date. The notification must contain the following:
 - i. Name and address of the permittee;
 - ii. The address of the affected source;
 - iii. Engine information including make, model, engine family, serial number, model year, maximum engine power and engine displacement; and
 - iv. Fuel used.
- b. The anticipated date of the manufacturer’s trials of the emergency diesel engine gen-sets (Ref. Nos. 17 through 27, 29 through 32, 37 through 45, 47 through 88) postmarked not more than 30 days nor less than 15 days prior to such date.
- c. The actual date on which the manufacturer’s trials of the emergency diesel engine gen-sets (Ref. Nos. 17 through 27, 29 through 32, 37 through 45, 47 through 88) occurs within 15 days after such date.
- d. The anticipated start-up date of the emergency diesel engine gen-sets (Ref. Nos. 17 through 88) postmarked not more than 60 days nor less than 30 days prior to such date.
- e. The actual start-up date of the emergency diesel engine gene-sets (Ref. Nos. 17 through 27, 29 through 32, 37 through 45, 47 through 88) within 15 days after such date. The actual start-up date shall be the date on which each engine completes manufacturer’s trials, but shall be no later than 30 days after start-up for manufacturer’s trials.

(9VAC5-50-20, 9VAC5-50-50, and 9VAC5-80-1180) [8/27/2024]

20. **Initial Notifications** – The permittee shall furnish written notification of items below to the Air Compliance Manager of the DEQ’s NRO at the following address:

Regional Air Compliance Manager
Department of Environmental Quality
13901 Crown Court
Woodbridge, VA 22193

The permittee shall submit one notification for each building or construction phase containing information on each emergency engine gen-set as described below:

- a. The actual date on which installation of the emergency diesel engine gen-sets (Ref. Nos. 28, 33 through 36, 46, 89 through 112, and S1) commenced in the building, or phase, within 30 days after such date. The notification must contain the following:
 - i. Name and address of the permittee,
 - ii. The address of the affected source, and
 - iii. The date construction commenced.

- b. The date that the integration operational period started for each emergency diesel engine gen-set (Ref. Nos. 28, 33 through 36, 46, 89 through 112, and S1) within 15 days after the last generator at each building or construction phase completes its integration operational period. If a period of construction is paused or halted for ≥ 45 days this notification shall be provided to the DEQ within 15 days after completion of the integration operational period for the most recently installed engine gen-set. The notification must contain the following:
 - i. Engine information including make, model, engine family, serial number, model year, maximum engine power, engine displacement, fuel used;
 - ii. Installation date; and
 - iii. Integration operational period start and end dates.

For the purpose of this notification the integration operational period is defined as: the period of time beginning with the first time the affected unit is started on-site and ending when the affected unit is fully integrated with the sources electrical system.
(9VAC5-540-20) [8/27/2024]

SPECIAL CONDITIONS - TRANSITORY ENGINE GEN-SETS

21. **Operation of the Transitory Engine Gen-Sets** – The facility shall only operate the transitory emergency diesel engine gen-sets (Ref. Nos. T1 through T4) in support of the facility such as serving as back up during construction, commissioning, and maintenance of engine gen-sets (Ref. Nos. 1 through 112 and S1).
(9VAC5-80-1180) [8/27/2024]
22. **Notifications** – The permittee shall furnish the following written notifications to DEQ’s NRO Air Compliance Manager of:
- a. The actual date and reason for each occurrence that each transitory emergency diesel engine gen-set (Ref. Nos. T1 through T4) was placed into service within 15 days after such date. The notification must include the following:
 - i. Name and address of the permittee;
 - ii. The address of the affected source;
 - iii. Engine information including make, model, engine family, serial number, model year, maximum engine power and engine displacement;
 - iv. Fuel used; and
 - v. Hours operated.
 - b. The actual date of the removal from service of each transitory emergency diesel engine gen-set (Ref. Nos. T1 through T4) within 15 days after such date.

(9VAC5-80-1180) [8/27/2024]

GENERAL CONDITIONS

23. **Permit Invalidation** – This permit to construct the emergency diesel engine gen-sets (Ref. Nos. 17 through 112 and S1) shall become invalid, unless an extension is granted by the DEQ, if:
- a. A program of continuous construction or modification is not commenced within 18 months from the ‘Original Permit Date’ specified in the equipment list in the Introduction section of this permit, or if
 - b. A program of construction is discontinued for a period of 18 months or more, or is not completed within a reasonable time.

(9VAC5-80-1210)

24. **Permit Suspension/Revocation** – The Board may suspend or revoke any permit if the permittee:
- a. Knowingly makes material misstatements in the permit application or any amendments to it;
 - b. Fails to comply with the terms or conditions of this permit;
 - c. Fails to comply with any emission standards applicable to a permitted emissions unit;
 - d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the implementation plan in effect at the time that an application is submitted; or
 - e. Fails to comply with the applicable provisions of 9VAC5-80-1100 *et seq.*

(9VAC5-80-1210 F and 9VAC5-80-1210 G)

25. **Right of Entry** – The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:
- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
 - b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
 - c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
 - d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.
(9VAC5-170-130 and 9VAC5-80-1180)

26. **Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated monitoring devices and air pollution

control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take measures in order to minimize the duration and frequency of excess emissions, including the following:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
(9VAC5-50-20 E and 9VAC5-80-1180 D)

27. **Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shut-down or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. The records shall be maintained in a form suitable for inspection and maintained for at least two years (unless a longer period is specified in the applicable emission standard) following the date of occurrence. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause of malfunction), corrective action, preventive measures taken and name of person generating the record.
(9VAC5-20-180 J and 9VAC5-80-1180 D)
28. **Notification for Facility or Control Equipment Malfunction** – The permittee shall furnish notification to the Regional Air Compliance Manager of the DEQ's NRO of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within 14 days of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Air Compliance Manager, Northern Regional Office.
(9VAC5-20-180 C and 9VAC5-80-1180)

29. **Violation of Ambient Air Quality Standard** – Regardless of any other provision of this permit, the permittee shall, upon request of the DEQ, reduce the level of operation of the facility if the DEQ determines that is necessary to prevent a violation of any primary ambient air quality standard. Under worst case conditions, the DEQ may order that the permittee shut down the facility, if there is no other method of operation to avoid a violation of the ambient air quality standard. The DEQ reserves the right to prescribe the method of determining if a facility will cause such a violation. In such cases, the facility shall not be returned to operation until it and the associated air pollution control equipment are able to operate without violation of any primary ambient air quality standard.
(9VAC5-20-180 I and 9VAC5-80-1180)
30. **Change of Ownership** – In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Regional Air Compliance Manager of the DEQ’s NRO of the change of ownership within 30 days of the transfer.
(9VAC5-80-1240)
31. **Permit Copy** – The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9VAC5-80-1180)

Attachment: Source Testing Report Format (1 page)

SOURCE TESTING REPORT FORMAT

Report Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Test dates
4. Tester; name, address and report date

Certification

1. Signed by team leader/certified observer (include certification date)
2. Signed by responsible company official
3. *Signed by reviewer

Copy of approved test protocol

Summary

1. Reason for testing
2. Test dates
3. Identification of unit tested & the maximum rated capacity
4. *For each emission unit, a table showing:
 - a. Operating rate
 - b. Test Methods
 - c. Pollutants tested
 - d. Test results for each run and the run average
 - e. Pollutant standard or limit
5. Summarized process and control equipment data for each run and the average, as required by the test protocol
6. A statement that test was conducted in accordance with the test protocol or identification & discussion of deviations, including the likely impact on results
7. Any other important information

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Sampling port location and dimensioned cross section. Attached protocol includes: sketch of stack (elevation view) showing sampling port locations, upstream and downstream flow disturbances and their distances from ports; and a sketch of stack (plan view) showing sampling ports, ducts entering the stack and stack diameter or dimensions

Test Results

1. Detailed test results for each run
2. *Sample calculations
3. *Description of collected samples, to include audits when applicable

Appendix

1. *Raw production data
2. *Raw field data
3. *Laboratory reports
4. *Chain of custody records for lab samples
5. *Calibration procedures and results
6. Project participants and titles
7. Observers' names (industry and agency)
8. Related correspondence
9. Standard procedures

* Not applicable to visible emission evaluations