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

September 20, 2024

Mr. Kelly Sullivan
EVP Data Center Operations
21571 Beaumeade Circle LLC
21571 Beaumeade Circle
Ashburn, Virginia 20147

Location: Loudoun County
Registration No: 73240

Dear Mr. Sullivan:

Attached is a permit to construct and operate a data center in accordance with the provisions of the Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. This combined permit document combines the terms and conditions from and supersedes your permit document dated May 8, 2009.

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 September 19, 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 21571 Beaumeade Circle LLC of the responsibility to comply with all other local, state, and federal permit regulations.

The proposed diesel fired emergency engine generator sets (engine gen-sets) may be subject to 40 CFR 63, Maximum Achievable Control Technology, (MACT) Subpart ZZZZ and 40 CFR 60, New Source Performance Standard (NSPS), Subpart IIII. Virginia has not accepted delegation of these rules. In summary, the units may be required to comply with certain federal emission standards and operating limitations. The Department of Environmental Quality (DEQ) advises you to review the referenced MACT and NSPS to ensure compliance with applicable emission and operational limitations. As the owner/operator you may be also responsible for any monitoring, notification, reporting and recordkeeping requirements of the MACT 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 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.

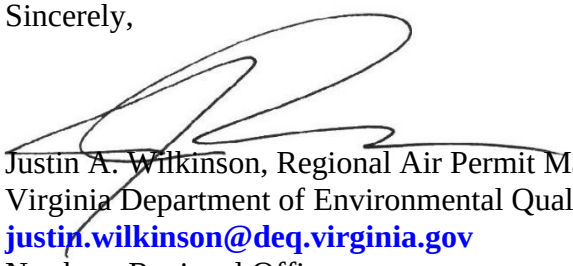
As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

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 thirty-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 **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/73240 mNSR (2024-09-20)

Attachment: Permit

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

STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This combined permit document supersedes your permit document dated May 8, 2009.

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

21571 Beaumeade Circle LLC
3100 Olympus Blvd, Suite 510
Coppell, Texas 75019
Registration No.: 73240

is authorized to construct and operate an

emergency engine gen-set

located at

21571 Beaumeade Circle
Ashburn, Virginia 20147
(Loudoun County)

in accordance with the Conditions of this permit.

Approved on: September 20, 2024.

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

Permit consists of 20 pages.
Permit Conditions 1 to 35.

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Travis A. Voyles
Secretary of Natural and Historic Resources

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

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:

- mNSR permit dated September 20, 2024 based on the permit application dated July 1, 2024 including supplemental information dated July 26, 2024 and September 3, 2024;
- mNSR permit amendment dated May 8, 2009 based on the permit application March 13, 2009;
- mNSR permit dated June 20, 2007 based on the permit application dated March 16, 2007;
- mNSR permit dated November 13, 2002 based on the permit application dated August 6, 2002.

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 (definitions) and 9VAC5-10-20 of the State Air Pollution Control Board's (Board) Regulations for the Control and Abatement of Air Pollution (Regulations). 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 State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

PROCESS REQUIREMENTS

Equipment List – Equipment at this facility consists of the following:

Equipment to be constructed:

Reference No.	Equipment Description	Rated Capacity	Delegated Federal Requirements	Original Permit Date
G13	One (1) Diesel Engine Driven Generator Set Caterpillar, Model 3516C	2,937 bhp, 2,000 kW	N/A	September 20, 2024

Equipment previously permitted:

Reference No.	Equipment Description	Rated Capacity	Delegated Federal Requirements	Original Permit Date
G1 – G6	Six (6) Diesel Engine Driven Generator Sets Caterpillar, Model 3516B	2,885 bhp, 2,000 kW (each)	N/A	November 13, 2002
G7 – G9, G11 – G12	Five (5) Diesel Engine Driven Generator Sets Caterpillar, Model 3516C	2,937 bhp, 2,000 kW (each)	N/A	June 20, 2007

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

PROCESS REQUIREMENTS

1. **Emission Controls –** Emissions from the engine gen-sets shall be controlled by the following:

   a. Nitrogen oxides (as NO_2) emissions from the engine gen-sets (Ref. Nos. G7 - G9 and G11 - G12) shall be controlled by direct diesel injection, engine control module, turbocharger, and charge air cooler.

   b. Sulfur Dioxide (SO_2) emissions from the engine gen-sets (Ref. Nos. G1 - G9 and G11 - G12) shall be controlled by the use of low sulfur diesel fuel oil with a sulfur content not to exceed 0.05% by weight.

   c. Carbon monoxide (CO) and volatile organic compounds (VOC) emissions from the engine gen-sets (Ref. Nos. G1 - G9 and G11 - G12) shall be controlled by proper combustion practices.

   d. Proper combustion of and visible emissions from the engine gen-sets (Ref. Nos. G1 - G9 and G11 - G12) 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 engines.

   (9VAC5-80-1180 and 9VAC5-50-260) [5/8/2009]

2. **Emission Controls –** Emissions from the emergency diesel engine-gen-set shall be controlled by the following:

   a. Nitrogen oxides (NO_X) emissions from the emergency diesel engine gen-set (Ref. No. G13) shall be controlled by engine design.

   b. Carbon monoxide (CO) emissions, particulate matter ($PM_{10}/PM_{2.5}$) emissions, volatile organic compounds (VOC) emissions, nitrogen oxide (NO_X) emissions (as NO_2), and visible emissions from the emergency diesel engine gen-set (Ref. No. G13) 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-set.

   (9VAC5-80-1180 and 9VAC5-50-260) [9/20/2024]

3. **Monitoring –**

   a. Each engine gen-set (Ref. Nos. G1 - G9 and G11 - G12) shall be equipped with a non-resettable hour meter which measures the duration of time that each engine is operated and a device to monitor and record the engine generator load at a minimum frequency of at least once every fifteen minutes. See Condition 25 for recordkeeping requirements associated with this Condition.

   b. The emergency diesel engine gen-set (Ref. No. G13) shall be equipped with a non-resettable hour meter which measures the duration of time the engine gen-set is operated. The monitoring device 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 and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. 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) [9/20/2024]

4. **Monitoring Device Observation –** To ensure good performance, the monitoring devices used to continuously measure operating hours and engine gen-set load shall be observed by the permittee during each test firing and at a minimum frequency of once per day during days in which the engine gen-set (Ref. Nos. G1 - G9 and G11 - G12) is called into service. See Condition 25 for recordkeeping requirements associated with this Condition. (9VAC5-80-1180) [5/8/2009]

OPERATING LIMITATIONS

5. **Operating Scenarios for Engine Gen-Sets –**

   a. Emergency / Critical Power Generation:

      i. Emergency: The engine gen-sets (Ref. Nos. G1 - G9 and G11 - G12) may be operated in situations where immediate action on the part of the facility is needed due to a failure or loss of electrical power service resulting from a failure of the primary power provider and the failure or loss of power service is beyond the reasonable control of the facility. Operation under these circumstances shall be allowed for the period of time the primary electrical power provider service is unavailable. Once primary electrical power provider service is available the engine gen-sets may be operated in accordance with Critical Power Generation as defined below.

ii. Critical Power Generation: The engine gen-sets (Ref. Nos. G1 - G9 and G11 - G12) may be operated in situations where immediate action on the part of the facility is needed due to a loss or anticipated loss of acceptable electrical power service from the primary provider and the loss or anticipated loss of power service is beyond the reasonable control of the facility. Operation under these circumstances shall be allowed until such time as acceptable power provider service is restored or the loss of acceptable power provider service is no longer reasonably anticipated.

b. Alternate Power Generation: Except as specified in subsection 5.c and 5.d below, an engine gen-set (Ref. Nos. G1 - G9 and G11 - G12) may be operated voluntarily for the purposes of peak-shaving, demand response, or as part of an interruptible power supply arrangement with a power provider, other market participant, or system operator if the engine is equipped with a selective catalytic reduction system (SCR) that achieves the manufacturer's guaranteed maximum emission reductions based on fuel type. Operations, as outlined in this subsection, shall be allowed when the engine gen-set is operating at a load level necessary to sustain urea injection. Prior to construction of the SCR unit, when changing from Emergency Power or Critical Power Generation to Alternate Power Generation, the permittee shall submit appropriate documentation to the Department of Environmental Quality (DEQ), and receive DEQ approval for the change in the method of operation of the engine gen-set to ensure that the facility remains in compliance with the appropriate permitting requirements.

c. The engine gen-sets (Ref. Nos. G1 - G9 and G11 - G12) may be operated for periodic maintenance, testing, and operational training.

d. The engine gen-sets (Ref. Nos. G1 - G9 and G11 - G12) may be operated for participation in PJM's Emergency Load Response Program (ELRP) during times of a PJM declared emergency, as defined in the PJM Manual 13 Emergency Operations. Operations under this scenario shall not exceed 60 hours per engine gen-set each calendar year.

Total emissions for any twelve-month period, calculated as the sum of all emissions from operations under scenarios 5.a. through 5.d above, shall not exceed the limits stated in Condition 16.
(9VAC5-80-1180 D and 9VAC5-50-260) [5/8/2009]

6. **Emergency Power Generation –** The emergency diesel engine gen-set (Ref. No. G13) shall only be operated in the following modes:

   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 scheduled maintenance checks and readiness testing (Scheduled MCRT).

   d. For unscheduled maintenance, testing, and operational training.

   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 source's electrical system.

   (9VAC5-80-1180) [9/20/2024]

7. **Hours of Operation –**

   a. The five Caterpillar 3516-C (Ref. Nos. G7 - G9 and G11 - G12) engine gen-sets shall not operate more than 1,000 hours; combined, for all five (5) units, in any twelve-month period.

   b. The six Caterpillar Model 3516-B (Ref. Nos. G1 - G6) engine gen-sets shall not operate more than 1,200 hours; combined, for all six (6) units, in any twelve-month period.

   c. The Caterpillar Model 3516C (Ref. No. G13) engine gen-set shall not operate more than 200 hours in any twelve-month period for all purposes (as provided in Condition 6) combined.

   d. The Caterpillar Model 3516C (Ref. No. G13) engine gen-set shall not operate more than 11 hours in any twelve-month period for scheduled maintenance checks and readiness testing (Scheduled MCRT, as provided in Condition 6.c).

   Compliance for the consecutive twelve-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding eleven months.
   (9VAC5-80-1180) [9/20/2024]

8. **Load Optimization –** When the permittee is required to operate the engine gen-sets (Ref. Nos. G1 - G9 and G11 - G12), the permittee shall be allowed to bring on line all engine gen-sets. Once the facility is meeting the power demand, the permittee shall begin shedding engine gen-sets (Ref. Nos. G1 - G9 and G11 - G12) to the level necessary to meet the facility's power demand. One additional engine gen-set shall be allowed to operate as an idling back-up.
   (9VAC5-170-160 and 9VAC5-80-1180) [5/8/2009]

9. **Operation of the Engine Gen-Sets –** The permittee shall operate and maintain each engine gen-set (Ref. Nos. G1 - G9 and G11 - G13) 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 degrade air emissions.
   (9VAC5-80-1180) [9/20/2024]

10. **Operating Limitations (Ozone Season) –** No emergency diesel engine gen-set (Ref. No. G13) shall be operated for scheduled maintenance checks and readiness testing (Scheduled MCRT), stack testing, or operational training (that involves fuel combustion) between the hours of 7 a.m. to 5 p.m. any day during May 1 through September 30. The permittee may petition the Regional Air Compliance Manager of DEQ's NRO, for exceptions to this requirement, with approvals made on a case-by-case basis.
    (9VAC5-80-1180) [9/20/2024]

11. **Operating Limitations (Ozone Season) – Integration Operational Period –** During the integration operational period of the emergency diesel engine gen-set (Ref. No. G13), 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 (**www.airnow.gov/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 Northern Virginia/DC area 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) [9/20/2024]

12. **Fuel Specification –** The approved fuel for the engine gen-sets (Ref. Nos. G1 - G9 and G11 - G12) shall be diesel fuel oil that meets the specifications below:

    DIESEL FUEL OIL:

    a. Does not exceed the American Society for Testing and Materials (ASTM) specification, D975, for grade low sulfur 2-D or grade 2-D S500, or

    b. Has a maximum sulfur content not to exceed 0.05% by weight (500 ppm), and either a minimum cetane number of forty or maximum aromatic content of thirty-five 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 and 9VAC5-50-260) [5/8/2009]

13. **Fuel Specification –** The approved fuel for the emergency diesel engine gen-sets (Ref. No. G13) 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 40 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) [9/20/2024]

14. **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; and

    d. A statement that the diesel fuel oil conforms to the requirements of Conditions 12 and 13 – Fuel Specification.

    Alternatively, the permittee shall obtain approval from the Regional Air Compliance Manager of the DEQ's Northern Regional Office (NRO), at the address in Condition 24, 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 Conditions 12 and 13. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits. (9VAC5-80-1180) [9/20/2024]

EMISSION LIMITS

15. **Emission Limits (Hourly) –** Hourly emissions from the operation of each engine gen-set shall not exceed the limits specified below:

    a. Engine gen-sets G1 - G6 (six units)

Nitrogen Oxides (as NO_2)	41.2 lbs/hr
Carbon Monoxide (CO)	4.0 lbs/hr
Volatile Organic Compounds (VOC)	1.1 lbs/hr
Sulfur Dioxide (SO_2)	1.0 lbs/hr
PM-10	0.9 lbs/hr

b. Engine gen-sets G7 - G9 and G11 - G12 (five units)

Nitrogen Oxides (as NO_2)	40.0 lbs/hr
Carbon Monoxide (CO)	3.43 lbs/hr
Volatile Organic Compounds (VOC)	0.91 lbs/hr
Sulfur Dioxide (SO_2)	1.0 lbs/hr
PM-10	0.23 lbs/hr

c. Engine gen-set G13

Nitrogen Oxides (as NO_2)	38.85 lbs/hr
Carbon Monoxide (CO)	3.95 lbs/hr
Volatile Organic Compounds (VOC)	1.14 lbs/hr
Particulate Matter (PM-10)	0.62 lbs/hr
Particulate Matter (PM-2.5)	0.62 lbs/hr

Compliance with these emission limits shall be based on the proper operation and maintenance of the emergency diesel engine gen-sets or by testing, if required. (9VAC5-80-1180 and 9VAC5-50-260) [9/20/2024]

16. **Emission Limits (Annual) –** Total emissions from all engine gen-sets (Ref. Nos. G1 - G9 and G11 - G13) shall not exceed the limits specified below:

a. G1 - G6 engine gen-sets (six units)

Nitrogen Oxides (as NO_2)	24.7 tons/yr
Volatile Organic Compounds (VOC)	0.7 tons/yr
Carbon Monoxide (CO)	2.4 tons/yr
Sulfur Dioxide (SO_2)	0.6 tons/yr
PM-10	0.5 tons/yr

b. G7 - G9 and G11 - G12 engine gen-sets (five units)

Nitrogen Oxides (as NO_2)	20.00 tons/yr
Volatile Organic Compounds (VOC)	0.46 tons/yr
Carbon Monoxide (CO)	1.72 tons/yr
Sulfur Dioxide (SO_2)	0.50 tons/yr
PM-10	0.12 tons/yr

c. G13 engine gen-set (one unit)

Nitrogen Oxides (as NO_2)	3.88 tons/yr
Volatile Organic Compounds (VOC)	0.11 tons/yr
Carbon Monoxide (CO)	0.40 tons/yr
Particulate Matter (PM-10)	0.06 tons/yr

d. Total Facility Wide Annual Emission Limits (Ref. Nos. G1 through G9 and G11 through G13)

Nitrogen Oxides (as NO_2)	48.60 tons/yr
Volatile Organic Compounds (VOC)	1.23 tons/yr
Carbon Monoxide (CO)	4.51 tons/yr
Sulfur Dioxide (SO_2)	1.10 tons/yr
PM-10	0.72 tons/yr

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 these emission limits shall be determined by calculation methods as stated in Conditions 1, 2, 12, 13, and 15, or other means acceptable to DEQ.
(9VAC5-80-1180) [9/20/2024]

17. **Visible Emission Limit (Ref. Nos. G1 - G6) –** Visible emissions from the Caterpillar Model 3516-B engine gen-sets shall not exceed twenty percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed thirty percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction. (9VAC5-80-1180 and 9VAC5-50-260) [5/8/2009]

18. **Visible Emission Limit (Ref. Nos. G7 - G9 and G11 - G13) –** Visible emissions from the Caterpillar Model 3516-C engine gen-sets shall not exceed five percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed ten percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.

    Visible emissions during startup and shutdown from the engine gen-sets shall not exceed ten percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed twenty percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A).
    (9VAC5-80-1180 and 9VAC5-50-260) [9/20/2024]

INITIAL COMPLIANCE DETERMINATION

19. **Stack Test –** Initial performance tests shall be conducted on the emergency diesel engine gen-set (Ref. No. G13) for NO_X (as NO_2) 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 15.

    a. Emissions testing of each pollutant for the 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 the 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 15. 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) [9/20/2024]

20. **Visible Emissions Evaluation –** Concurrent with the initial performance tests required in Condition 19, 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-set 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 19, 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) [9/20/2024]

CONTINUING COMPLIANCE DETERMINATION

21. **Emission Testing/Visible Emissions Evaluation –** Upon request by the DEQ, the permittee shall conduct stack tests and/or VEEs of the emergency diesel engine gen-sets (Ref. Nos. G1 - G9 and G11 - G13) 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) [9/20/2024]

22. **Annual Monitoring System Validation –** Annually, the permittee shall validate the performance of the engine load and hours of operation monitoring systems (Ref. Nos. G1 - G9 and G11 - G12). Details of the performance validation procedure shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO. Results of the performance validation and any corrective action taken shall be submitted to the Regional Air Compliance Manager of the DEQ's NRO (at the address referenced in Condition 24) within thirty days of the validation.
(9VAC5-80-1200 and 9VAC5-50-30 G) [5/8/2009]

23. **Testing/Monitoring Ports –** The facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, 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 and safe sampling platforms and access shall be provided when requested by the DEQ.
(9VAC5-50-30 F and 9VAC5-80-1180) [9/20/2024]

RECORDS AND NOTIFICATIONS

24. **Address –** All correspondence concerning this permit should be submitted to the following address.

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

(9VAC5-50-50) [9/20/2024]

25. **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 at the address listed in Condition 24.

    These records shall include, but are not limited to:

    a. A monthly log of the monitoring device observations required by Condition 3.

    b. A monthly log of the hours of operation, operating load, date, and reason operated (as defined in Condition 5) for each engine gen-set (Ref. Nos. G1 - G9 and G11 - G12), in accordance with Condition 5.

    c. Records of the reasons for operation for the emergency diesel engine gen-set (Ref. No. G13) in accordance with Condition 6, including, but not limited to, the date, cause of operation, cause of the emergency, the ISO-declared emergency notification, and the hours of operation.

    d. Monthly/annual hours of operation of engine gen-sets: G1 - G6. Compliance for the consecutive twelve-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding eleven months.

    e. Monthly/annual hours of operation of engine gen-sets: G7 - G9 and G11 - G12. Compliance for the consecutive twelve-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding eleven months.

    f. Records, as necessary, to demonstrate compliance with the operating limitations of Condition 10; which includes but is not limited to: times, dates and reasons for operation of each diesel engine gen-set that was operating between May 1 and September 30.

    g. To verify compliance with Condition 11, maintain records of:

        i. The forecasted AQI, as determined by the AirNow website for Northern Virginia, for ozone for the days 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 days that an 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.

h. Monthly and annual hours of operation of the emergency diesel engine gen-set (Ref. No. G13), with annual hours of operation calculated monthly as the sum of each consecutive twelve-month period.

i. Monthly and annual hours of operation of the emergency diesel engine gen-set (Ref. No. G13), for purposes of scheduled maintenance checks and readiness testing (Scheduled MCRT), calculated monthly as the sum of each consecutive twelve-month period.

j. Monthly and annual emissions calculations for NO_X (as NO_2), CO, VOC, PM_{10}, and $PM_{2.5}$ from the emergency diesel engine gen-set (Ref. No. G13), with annual emissions calculated monthly, as the sum of each consecutive twelve-month period, to verify compliance with the annual emission limits in Condition 16.c.

k. Monthly/annual emissions calculations for NO_X from the engine gen-sets (Ref. Nos. G1 - G9 and G11 - G13), to verify compliance with the annual emission limits in Condition 16.d. Compliance for the consecutive twelve-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding eleven months.

l. All fuel supplier certifications.

m. All VEE and emission testing reports.

n. Records of scheduled maintenance checks and readiness testing (Scheduled MCRT).

o. Records of unscheduled maintenance and operator training.

p. Records as required by Condition 30.

q. Records of changes in settings that are permitted by the manufacturer of the emergency diesel engine gen-set (Ref. No. G13).

r. Documentation from the manufacturer that the emergency diesel engine gen-set (Ref. No. G13) is certified to meet the EPA Tier 2 emission standards.

s. Engine information including make, model, serial number, model year, maximum engine power (bhp), and engine displacement for the emergency diesel engine gen-set (Ref. No. G13).

t. The manufacturer's written operating instructions or procedures developed by the owner/operator that are approved by the engine manufacturer for the emergency diesel engine gen-set (Ref. No. G13).

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

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9VAC5-80-1180 and 9VAC5-50-50) [9/20/2024]

NOTIFICATIONS

26. **Initial Notifications –** The permittee shall furnish written notification of the items below to the Regional 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 installation of the emergency diesel engine gen-set (Ref. No. G13) commenced, within thirty (30) days after such date. The notification must contain the following:

i. Name and address of the permittee;

ii. The building;

iii. Unit reference number of the unit installed; and

iv. The date installation commenced.

b. The start and end dates of the integration operational period for the emergency diesel engine gen-set (Ref. No. G13) within fifteen (15) days after the engine gen-set completes its integration operational period. The notification must contain the following:

i. Unit reference number;

ii. Engine information including make, model, engine family, serial number, model year, maximum engine power, engine displacement, fuel used;

iii. Installation date; and

iv. 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 source's electrical system. (9VAC5-50-50) [9/20/2024]

GENERAL CONDITIONS

27. **Permit Invalidation –** This permit to construct the emergency diesel engine gen-set (Ref. No. G13) shall become invalid, unless an extension is granted by the DEQ, if:

    a. A program of continuous construction 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)

28. **Permit Suspension/Revocation –** This permit may be suspended or revoked if the permittee:

    a. Knowingly makes material misstatements in the permit application or any amendments to it;

    b. Fails to comply with the 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

    e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emissions limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

    (9VAC5-80-1210 G)

29. **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)

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

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

    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 and training 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)

31. **Record of Malfunctions –** The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. 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)

32. **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 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 Regional Air Compliance Manager of the DEQ's NRO.
(9VAC5-20-180 C and 9VAC5-80-1180)

33. **Violation of Ambient Air Quality Standard –** The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9VAC5-20-180 I and 9VAC5-80-1180)

34. **Change of Ownership –** In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current minor NSR permit issued to the previous owner. The new owner shall notify the NRO of the change of ownership within 30 days of the transfer.
(9VAC5-80-1240)

35. **Permit Copy –** The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9VAC5-80-1180)

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