Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 FAX (804) 698-4178
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

Thomas A. Faha
Regional Director

June 28, 2021

Mr. Garrett Jansma
Authorized Representative
Amazon Data Services, Inc.
13200 Woodland Park Road
Herndon, VA 20171

Location: Prince William County
Registration No.: 74129

Dear Mr. Jansma:

Attached is administrative amendment to your minor new source review (mNSR) permit dated January 28, 2021, to construct and operated 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 permit document supersedes your permit document dated January 28, 2021.

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 May 26, 2021.

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 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 (MACT) 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 MACT 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 MACT and NSPS. Notifications shall 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:

David K. Paylor, 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. Sevgi Rudd at (703) 583-3806, or via email at Sevgi.Rudd@deq.virginia.gov.

Sincerely,

Justin A. Wilkinson
Air Permit Manager

TAF/JAW/SCR/ (2021-6-28) 74129 mNSR Permit

Attachment: Permit

cc: Regional Air Compliance Manager (electronic file submission)

Commonwealth of Virginia

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Regional Director

STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This amended permit document supersedes the permit document dated January 28, 2021.

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, Virginia 20171
Registration No.: 74129

is authorized to construct and operate

emergency diesel engine generator sets (gen-sets)

located at

IAD-100, IAD-101, IAD-102 and IAD-103 Data Centers
10321, 10301, 10281, and 10261 Tanner Way
Manassas, Virginia 20110
(Prince William County)

in accordance with the Conditions of this permit.

Approved on: February 21, 2018
Last Amended June 28, 2021

Thomas A. Faha
Regional Director

Permit consists of 22 pages (w/o the attachment).
Permit Conditions 1 to 37.
Attachment A – Source Testing Report Format (1 page)

INTRODUCTION

This permit approval is based on the permit application dated August 16, 2017 and supplemental information received on August 22, 2017, August 30, 2017, October 31, 2017 and November 3, 2017; the permit application dated October 8, 2020 and supplemental information received on November 6, 2020, and the amended permit application dated December 14, 2020 and supplemental information received on December 22, 2020, and January 21, 2021, and the permit application dated May 26, 2021.

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 9 VAC 5-80-1110 and 9 VAC 5-10-10 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.

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 9 VAC 5-170-60 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 at this facility consists of the following:

Equipment to be Constructed at IAD-100

Reference No.	Equipment Description	Rated Capacity	Delegated Federal Requirements	Original Permit Date
1 through 23	Twenty three (23) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	February 15, 2018

Equipment to be Constructed at IAD-101

Reference No.	Equipment Description	Rated Capacity	Delegated Federal Requirements	Original Permit Date
24 through 46	Twenty three (23) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	February 15, 2018
88 through 90	Three (3) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	February 15, 2018
S1	Caterpillar model C18 emergency diesel engine gen-set	909 bhp 600 ekW	None	January 28, 2021

Equipment to be Constructed at IAD-102

Reference No.	Equipment Description	Rated Capacity	Delegated Federal Requirements	Original Permit Date
47 through 69	Twenty three (23) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	February 15, 2018
91 and 92	Two (2) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	February 15, 2018
93	Caterpillar model 3516C-HD emergency diesel engine gen-set	3,634 bhp 2,500 ekW	None	January 28, 2021
S2	Caterpillar model C18 emergency diesel engine gen-set	909 bhp 600 ekW	None	January 28, 2021

Equipment to be Constructed at IAD-103

Reference No.	Equipment Description	Rated Capacity	Delegated Federal Requirements	Original Permit Date
70 through 87	Eighteen (18) Caterpillar model 3516C-HD emergency diesel engine gen-sets	3,634 bhp 2,500 ekW (each unit)	None	February 15, 2018
S3	Caterpillar model C18 emergency diesel engine gen-set	909 bhp 600 ekW	None	January 28, 2021

Transitory Equipment to be Constructed at IAD-100, IAD-101, IAD-102, and IAD-103:

Reference No.	Equipment Description	Rated Capacity	Delegated Federal Requirements	Original Permit Date
T1	Caterpillar model 3516C emergency diesel engine gen-set	2,937 bhp 2,000 ekW	None	February 15, 2018

Equipment Exempt from Permitting:

Reference No.	Equipment Description	Rated Capacity	Exemption Citation	Exemption Date
AST 1 through AST 23	Twenty-three (23) diesel fuel oil storage tanks	2,500 gallon (each tank)	9 VAC 5-80-1105 B.8	February 15, 2018
AST 24 through 92	Sixty-nine (69) diesel fuel oil storage tanks	5,000 gallon (each tank)	9 VAC 5-80-1105 B.8	February 15, 2018
AST 93	Diesel fuel oil storage tank	5,000 gallon	9 VAC 5-80-1105 B.8	January 28, 2021
AST T1	diesel fuel oil storage tank	1,250 gallon	9 VAC 5-80-1105 B.8	February 15, 2018
AST S1 through AST S3	Three (3) diesel fuel oil storage tanks	2,200 gallon (each tank)	9 VAC 5-80-1105 B.8	January 28, 2021

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 emergency diesel engine gen-sets shall be controlled by the following:

   a. Nitrogen oxides (NO_x) emissions from the emergency diesel engine gen-sets (Ref. Nos. 1 through 93, S1 through S3, and T1) shall be controlled by electronic fuel injection and turbocharged engines. The permittee shall maintain documentation that demonstrates the control devices have been installed on each emergency diesel engine gen-set.

   b. Carbon monoxide (CO) emissions, particulate matter (PM_{10}/$PM_{2.5}$) emissions, volatile organic compounds (VOC) emissions, nitrogen oxides (NO_x) emissions and visible emissions from the emergency diesel engine gen-sets (Ref. Nos. 1 through 93, S1 through S3, and T1) 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.

   (9 VAC 5-80-1180 and 9 VAC 5-50-260)

2. **Monitoring**

   a. Fuel Flow: Each emergency diesel engine gen-set (Ref. Nos. 1 through 93, S1 through S3, and T1) 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 93, S1 through S3, and T1) 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 Air Compliance Manager of the DEQ Northern Regional Office (NRO).

   Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the engine-sets are operating.
   (9 VAC 5-80-1180 D, 9 VAC 5-50-20 C, and 9 VAC 5-50-260)

OPERATING LIMITATIONS

3. **Operation of the Engine Gen-Sets –** The permittee shall operate and maintain each engine gen-set (Ref. Nos. 1 through 93, S1 through S3, and T1) and control device 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 does not increase air emissions.
   (9 VAC 5-80-1180)

4. **Operating Limitations (Ozone Season) –** No emergency diesel engine gen-sets (Ref. Nos. 93, S1 through S3) shall be operated for scheduled maintenance, readiness testing, or operation 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 Air Compliance Manager of the DEQ NRO for exceptions to this requirement, with approvals made on a case-by-case basis.
   (9 VAC 5-80-1180)

5. **Operating Limitations (Ozone Season) – Integration Operational Period –** During the integration operational period of each emergency diesel engine gen-sets (Ref. Nos. 93, S1 through S3) 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 (http://airnow.gov) for Northern Virginia for that day is ≤100. In the event that AirNow-EnviroFlash (www.enviroflash.info) issues an Air Alert for Ozone for the Metropolitan Washington, D.C. for a day, which the forecasted AQI for ozone was, ≤100, operation of each unit (which involves fuel combustion) shall be minimized to the maximum extent practical.
   (9 VAC 5-80-1180)

6. **Emergency Power Generation –** The emergency diesel engine gen-sets (Ref. Nos. 1 through 93, S1 through S3, and T1) shall only be operated for the following purposes:

   a. In situations that arises 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. An Independent System Operator (ISO) declared emergency, where an ISO emergency is any of the following:

      i. 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 maintenance (scheduled and non-scheduled), testing, and operational training.

   d. 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.

   Total emissions for any annual period calculated as the sum of all emissions from operation under the scenarios above, shall not exceed the limits stated in Condition 15.
   (9 VAC 5-80-1180)

7. **Operating Hours –** Each individual emergency diesel engine gen-set (Ref. Nos. 1 through 92 and T1) shall not operate more than 100 hours per year for maintenance checks and readiness testing (MC/RT) and no 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 12-month period. Compliance for each consecutive 12-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 11 months.
   (9 VAC 5-80-1180)

8. **Operating Hours –** Each individual emergency diesel engine gen-set (Ref. Nos. 93, S1 through S3) shall not operate more than 26 hours per year for scheduled maintenance[1] (maintenance check and readiness testing (MC/RT)), and no more than 500 hours per year for all purposes (as provided in Condition 6).

   The annual limits for hours of operation shall be calculated daily as the sum of each consecutive 12-month period. Compliance for each consecutive 12-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 11 months.
   (9 VAC 5-80-1180)

9. **Diesel Fuel Throughput Limit –**

   a. The emergency diesel engine gen-sets (Ref. Nos: 1 through 93) combined, shall consume no more than 641,268 gallons of diesel fuel per year, calculated daily as the sum of each consecutive 365 day period.

   b. The emergency diesel engine gen-sets (Ref. Nos. S1 through S3) combined, shall consume no more than 67,500 gallons of diesel fuel per year, calculated daily as the sum of each consecutive 365-day period.

   c. The emergency diesel engine gen-set (Ref. No. T1) shall consume no more than 2,070 gallons of diesel fuel 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 totals for the preceding 364 days.
   (9 VAC 5-80-1180)

[1] This limit does not include initial (one-time) commissioning, unplanned maintenance, manufacturer recall updates and repairs.

10. **Fuel Specification –** The approved fuel for the emergency diesel engine gen-sets (Ref. Nos. 1 through 93, S1 through S3, and T1) 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.
    (9 VAC 5-80-1180 and 9 VAC 5-50-260)

11. **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 was received;

    c. The quantity of diesel fuel delivered in the shipment;

    d. A statement that the diesel fuel complies with the requirements of Condition 10 (Fuel Specification).

    Alternatively, the permittee must obtain approval from the Air Compliance Manager of the DEQ 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 10.
    (9 VAC 5-80-1180)

EMISSION LIMITS

12. **Emission Limits (Hourly) –** Emissions from the operation of each Caterpillar model 3516C-HD emergency diesel engine gen-set (Ref. Nos. 1 through 93) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	48.06 lbs/hr
Carbon Monoxide (CO)	6.09 lbs/hr
Volatile Organic Compounds (VOC)	1.21 lbs/hr
Particulate Matter (PM_{10})	0.40 lbs/hr
Particulate Matter ($PM_{2.5}$)	0.40 lbs/hr

(9 VAC 5-80-1180)

13. **Emission Limits (Hourly) –** Emissions from the operation of Caterpillar model 3516C emergency diesel engine gen-set (Ref. No: T1) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	38.85 lbs/hr
Carbon Monoxide (CO)	4.04 lbs/hr
Volatile Organic Compounds (VOC)	1.13 lbs/hr
Particulate Matter (PM_{10})	0.57 lbs/hr
Particulate Matter ($PM_{2.5}$)	0.57 lbs/hr

(9 VAC 5-80-1180)

14. **Emission Limits (Hourly) –** Emissions from the operation of each Caterpillar model C18 emergency diesel engine gen-set (Ref. Nos: S1 through S3) shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	9.58 lbs/hr
Carbon Monoxide (CO)	1.59 lbs/hr
Volatile Organic Compounds (VOC)	0.32 lbs/hr
Particulate Matter (PM_{10})	0.11 lbs/hr
Particulate Matter ($PM_{2.5}$)	0.11 lbs/hr

(9 VAC 5-80-1180)

15. **Emission Limits (Annual) –** Emissions from the combined operation of the emergency diesel engine gen-set (Ref. Nos: 1 through 93, S1 through S3 and T1) included for all purposes shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	96.30 tpy
Carbon Monoxide (CO)	51.30 tpy
Volatile Organic Compounds (VOC)	10.50 tpy
Particulate Matter (PM_{10})	3.40 tpy
Particulate Matter ($PM_{2.5}$)	3.40 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 these emission limits may be determined as stated in Conditions 9.
(9 VAC 5-80-1180)

16. **Emission Limits (MC/RT[2]) –** Emissions from the combined operation of the emergency diesel engine gen-sets (Ref. Nos. 93, S1 through S3) for MC/RT shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	0.998 tpy
Carbon Monoxide (CO)	0.141 tpy
Volatile Organic Compounds (VOC)	0.028 tpy
Particulate Matter (PM_{10})	0.009 tpy
Particulate Matter ($PM_{2.5}$)	0.009 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 these emission limits may be determined as stated in Condition 8.
(9 VAC 5-80-1180)

[2] These limits do not include initial (one-time) commissioning, unplanned maintenance, manufacturer recall updates and repairs.

17. **Visible Emission Limit –** Visible emissions from each emergency diesel engine gen-set (Ref. Nos. 1 through 93, S1 through S3, and T1) shall not exceed 5% opacity except during one 6-minute period in any one hour in which visible emissions shall not exceed 10% opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown and malfunction.

    During startup and shutdown, visible emissions from each emergency diesel engine gen-set shall not exceed 10% opacity except during one 6-minute period in any one hour in which visible emissions shall not exceed 20% opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).
    (9 VAC 5-80-1180 and 9 VAC 5-50-260)

INITIAL COMPLIANCE DETERMINATION

18. **Stack Test –** Initial performance tests shall be conducted for nitrogen oxides (as NO_2) and carbon monoxide (CO) form the exhaust of eight of the ninety-two emergency diesel engine gen-sets (Ref. Nos. 1 through 93) to determine compliance with the emission limits contained in Condition 12. The testing on a selected engine gen-set shall be performed, reported and demonstrate compliance within 60 days after achieving the maximum power demand rate at which the unit will be operated but in no event later than 180 days after startup of that unit. The tests shall be conducted, reported, and data reduced as set forth in 9 VAC 5-50-30, and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410.

    Two units from each of the four “groups” of engines shall be tested (i.e., two from group Ref. Nos. 1 through 23; two from group Ref. Nos. 24 through 46 and 88 through 90; two from group Ref. Nos. 47 through 69, 91, 92 and 93; and two from group Ref. Nos. 70 through 87).

    The details of the tests are to be arranged with the Air Compliance Manager of the DEQ NRO. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the Air Compliance Manager of the DEQ NRO within 60 days after test completion and shall conform to the test report format enclosed with this permit.
    (9 VAC 5-80-1200, 9 VAC 5-50-30 G)

19. **Visible Emissions Evaluation –** Concurrent with the initial performance tests, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the eight emergency diesel engine gen-sets selected for the stack tests of Condition 18. The details of the tests are to be arranged with the Air Compliance Manager of the DEQ NRO. The permittee shall submit a test protocol at least 30 days prior to testing. The VEE shall be performed, reported, and demonstrate compliance within 60 days after achieving the maximum power demand rate at which the unit will be operated but in no event later than 180 days after start-up of that unit. Should conditions prevent concurrent opacity observations, the Air Compliance Manager of the DEQ NRO shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions as possible as the initial performance tests. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test result shall be submitted to the NRO within 60 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-1200)

CONTINUING COMPIANCE DETERMINATION

20. **Facility Construction –** The emergency diesel engine gen-sets (Ref. Nos. 1 through 93, S1 through S3, and T1) 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 and safe sampling platforms and access shall be provided.
(9 VAC 5-50-30 F and 9 VAC 5-80-1180)

21. **Emissions 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. 1 through 93, S1 through S3, and T1) to demonstrate compliance with the emission limits contained in this permit. The details of the tests shall be arranged with the Air Compliance Manager of the DEQ NRO.
(9 VAC 5-50-30 G and 9 VAC 5-80-1200)

RECORDS

22. **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 Air Compliance Manager of the DEQ NRO. These records shall include, but are not limited to:

    a. A daily and monthly log of the monitoring device observations as required by Condition 2.

    b. Monthly summary table for each emergency diesel engine gen-set (Ref. Nos. 1 through 93, S1 through S3, and T1) to include:

        i. Engine hours
        ii. Fuel consumption
        iii. Reasons for operating as defined in Condition 6.

    c. Annual hours of operation of each emergency diesel engine gen-set (Ref. Nos. 1 through 93, S1 through S3, and T1), for purposes of MC/RT, calculated monthly as the sum of each consecutive 12-month period.

    d. Annual hours of operation (all purposes) of each emergency diesel engine gen-set (Ref. Nos. 1 through 93, S1 through S3, and T1), calculated monthly as the sum of each consecutive 12-month period.

    e. Records for emergency diesel engine gen-set operations, 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.

    f. 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.

    g. Daily and annual diesel fuel consumption of the emergency diesel engine gen-sets (Ref. Nos. 1 through 93) combined, calculated daily as the sum of each consecutive 365-day period to verify compliance with the throughput limitation specified in Condition 9.a.

h. Daily and annual diesel fuel consumption of the emergency diesel engine gen-sets (Ref. Nos. S1 through S3) combined, calculated daily as the sum of each consecutive 365-day period to verify compliance with the throughput limitation specified in Condition 9.b.

i. Daily and annual fuel consumption of the emergency diesel engine gen-set (Ref. No. T1), calculated daily as the sum of each consecutive 365-day period to verify compliance with the throughput limitation specified in Condition 9.c.

j. Daily and annual emissions calculations for NO_x (as NO_2), CO, VOCs, PM_{10}, and $PM_{2.5}$ from the emergency diesel engine gen-sets (Ref. Nos. 1 through 93, S1 through S3, and T1) to verify compliance with the ton/year emissions limitations in Condition 15, with annual emissions calculated daily as the sum of each consecutive 365-day period.

k. All fuel supplier certifications.

l. Results of all stack tests and visible emission evaluations.

m. Records of scheduled maintenance, unscheduled maintenance and operator training in accordance with Condition 31.

n. Records of the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer.

o. Records of changes in setting that are permitted by the manufacturer of the emergency diesel engine gen-sets.

p. For emergency diesel engine gen-sets (Ref. Nos. 1 through 93, S1 through S3, and T1), 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 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.
(9 VAC 5-80-1180 and 9 VAC 5-50-50)

NOTIFICATIONS

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

    Regional Air Compliance Manager
    Department of Environmental Quality
    13901 Crown Court
    Woodbridge, VA22193

    a. The actual date on which construction of the emergency diesel engine gen-sets (Ref. Nos. 1 through 92 and T1) 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.
        iv. Fuel used.

    b. The anticipated date of the manufacturer's trials of the emergency diesel engine gen-sets (Ref. Nos. 1 through 92) 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. 1 through 92) occurs within 15 days after such date.

    d. The anticipated start-up date of the emergency diesel engine gen-sets (Ref. Nos. 1 through 92) 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 gen-sets (Ref. Nos. 1 through 92) 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.

    (9 VAC 5-50-50 and 9 VAC 5-80-1180)

24. **Initial Notifications –** The permittee shall furnish written notification to the Air Compliance Manager of the DEQ 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. 93, S1 through S3) 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,
        iii. The date construction commenced.

    b. The date that the integration operational period started for each emergency diesel engine generator (Ref. Nos. 93, S1 through S3) 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 generator 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. In no case shall this period exceed 30 days.
    (9 VAC 5-540-20)

SPECIAL CONDITIONS – TRANSITORY ENGINE GEN-SETS

25. **Operation of the Transitory Engine Gen-Sets –** The facility shall only operate the transitory emergency diesel engine gen-set (Ref. No. T1) in support of the facility such as serving as back up during construction, commissioning, and maintenance of engine gen-sets (Ref. Nos. 1 through 92).
(9 VAC 5-80-1180)

26. **Notifications –** The permittee shall furnish the following written notifications to the Air Compliance Manager of the DEQ NRO:

    a. The actual date and reason for each occurrence that the transitory emergency diesel engine gen-set (Ref. No. T1) 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 of the transitory emergency diesel engine gen-set (Ref. No. T1) within 15 days after such date.

    (9 VAC 5-80-1180)

GENERAL CONDITIONS

27. **Permit Invalidation –** This permit to construct the emergency diesel engine gen-sets (Ref. Nos. 1 through 92) 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 February 21, 2018, 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.

    (9 VAC 5-80-1210)

28. **Permit Invalidation –** This permit to construct the emergency diesel engine gen-sets (Ref. Nos. 93, S1 through S3) 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.

    b. A program of construction is discontinued for a period of 18 months or more, or is not completed within a reasonable time.

    (9 VAC 5-80-1210)

29. **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 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 9 VAC 5-80-1100 *et seq.*

    (9 VAC 5-80-1210 F and 9 VAC 5-80-1210 G)

30. **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.
    (9 VAC 5-170-130 and 9 VAC 5-80-1180)

31. **Maintenance/Operating Procedures –** At all times, including periods of start-up, shutdown, soot blowing, 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 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.
    (9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

32. **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), corrective action, preventive measures taken and name of person generating the record.
(9 VAC 5-20-180 J and 9 VAC 5-80-1180 D)

33. **Notification for Facility or Control Equipment Malfunction –** The permittee shall furnish notification to the Air Compliance Manager of the DEQ 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 Air Compliance Manager of the DEQ NRO.
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

34. **Notification of Control Equipment Maintenance –** The permittee shall furnish notification to the Air Compliance Manager of the DEQ NRO in case of shutdown or bypassing, or both, of air pollution control equipment for necessary scheduled maintenance, which results in excess emission for more than one hour. The intent to shut down or bypass such equipment shall be reported to the Air Compliance Manager of DEQ NRO and local air pollution control agency, if any, at least twenty-four hours prior to the planned shutdown. Such prior notice shall include, but is not limited to the following information:

    a. Identification of air pollution control equipment to be taken out of service, as well as its location and registration number;

    b. The expected length of time that the air pollution control equipment will be out of service;

    c. The nature and quantity of emissions of air pollution likely to occur during the shutdown period; and

    d. Measures that will be taken to minimize the length of the shutdown or to negate the effect of the outage.

    (9 VAC 5-20-180 B)

35. **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 shutdown 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.
(9 VAC 5-20-180 I and 9 VAC 5-80-1180)

36. **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 Air Compliance Manager of the DEQ NRO of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-1240)

37. **Permit Copy –** The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)

Attachment A

Source Testing Report Format

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