MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT
14306 Park Avenue Victorville, CA 92392-2310
760.245.1661 -- 800.635.4617 -- FAX 760.245.2022

AUTHORITY TO CONSTRUCT

E015593

If construction is not completed by the expiration date of this permit, it may be renewed for one additional year upon payment of applicable fees. Any additional extension will require the written approval of the Air Pollution Control Officer. This Authority to Construct may serve as a temporary Permit to Operate provided the APCO is given prior notice of intent to operate and the Permit to Operate is not specifically denied.

EXPIRES LAST DAY OF: FEBRUARY 2027

OWNER OF OPERATOR (Co.#2768)

Amazon.com Services LLC
PO Box 80842
Seattle, WA 98108

EQUIPMENT LOCATION (Fac.#4656)

Amazon.com Services LLC - CAZ5
11500 Phelan Road
Hesperia, CA 92345

Description:
DIESEL IC ENGINE, EMERGENCY GENERATOR consisting of: A Certified Tier 2 diesel engine, USEPA family SMVXL65.4BBA, manufactured in 2025 and equipped with factory-installed emission control devices. Exhaust flow is approximately 19209 acfm, at 932 degrees Fahrenheit through a 15.5 foot high by 1.5 foot diameter exhaust stack. This engine is required to be retrofit as Tier 4 Final equivalent to meet Tier 4 Final emission standards, accomplished through installation and operation Miratech Diesel Oxidation Catalyst (DOC), Diesel Particulate Filter (DPF), and Selective Catalytic Reduction (SCR) emission control devices. Control device installation and completion of initial compliance testing must be completed by the final compliance deadline of July 31st, 2027. NOTE: The equipment description for this evaluation (below) is representative of the Tier 2 certified engine without add-on controls. The emission factors included in this evaluation are representative of the retrofitted Tier 4 Final equivalent engine after the installation of SCR, DOC, and DPF.

One Mitsubishi, Diesel fired internal combustion engine Model No. S16R-T2PTAW2-1 and Serial No. TBD, After Cooled, Air-To-Fuel Ratio Controller, Compression-Ignited, Electronic Control Module, Turbo Charged, producing 2923 bhp with 16 cylinders at 1800 rpm while consuming a maximum of 163.4 gal/hr. This equipment powers a Generac Generator Model No. SD/MD 2000 and Serial No. TBD, rated at 2000kW.

EMISSIONS RATES

Emission Type	Est. Max Load	Unit
CO	0.5	gm/bhp-hr
NOx	0.5	gm/bhp-hr
NOx+NMHC	0.64	gm/bhp-hr

Fee Schedule: 7 (g) Rating: 2923 device SIC: 4225 SCC: 20100102 Location/UTM(Km): 462E/3809N

This permit does not authorize the emission of air contaminants in excess of those allowed by law, including Division 26 of the Health and Safety Code of the State of California and the Rules and Regulations of the District. This permit cannot be construed as permission to violate existing laws, ordinances, statutes or regulations of this or other governmental agencies. This permit must be renewed by the expiration date above. If billing for renewal fee required by Rule 301(c) is not received by expiration date above, please contact the District.

Amazon.com Services LLC
PO Box 80842

Seattle, WA 98108

By: **COPY**
Brad Poiriez
Executive Director

UNOFFICIAL

Emission Type	Est. Max Load	Unit
PM10	0.02	gm/bhp-hr
PM2.5	0.0198	gm/bhp-hr
SOx	0.00415	gm/bhp-hr
VOC	0.14	gm/bhp-hr

CONDITIONS:

1. This certified Tier 2 stationary compression-ignited internal combustion engine, and all associated air pollution control equipment retrofitted or otherwise, shall be installed, operated, and maintained in strict accordance with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of pollutants. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit.
[District Rule 204; District Rule 1303(A)(2) - BACT: Continuous Compliance; 40 CFR 60.4211(a)]

2. All Generac SD/MD 2000 generators under District Permits E015587, E015589, E015591, and E015593 must achieve compliance with Tier 4 Final emission standards by July 31st, 2027. To be deemed compliant, the following three control devices must be installed and operational on each Mitsubishi engine (S16R-T2PTAW2-1) and the initial compliance test must be completed by the date above: Miratech DPF (LTR DPF, CARB Certified), Miratech DOC (M3-64-56-24PF-J), and Miratech SCR (M3-64-56-24PF-J). The control devices are permitted under District Permits C015588, C015590, C015592, and C015594. Tier 4 Final emission standards for diesel generators greater than 1207bhp are:
a. NOx: 0.5 g/bhp-hr;
b. VOC: 0.14 g/bhp-hr;
c. PM: 0.02 g/bhp-hr; and,
d. CO: 2.6 g/bhp-hr.
OPERATION PRIOR TO COMPLIANCE DATE: The District is allowing operation of the certified Tier 2 engines, prior to installation of the retrofit control devices, under District Permits E015587, E015589, E015591, and E015593 until the compliance deadline of July 31st, 2027 to accommodate scheduling, delivery, and installation of control devices. After this date, if compliance is not satisfactorily demonstrated, the engines under the District Permits listed above are prohibited from operating for any purpose until compliance is achieved.
[District Rule 204; District Rule 1303(A)]

3. Compliance testing is required for engines under District Permits E015587, E015589, E015591, and E015593 to demonstrate compliance with Tier 4 Final emission standards for NOx and VOC through installation of aftermarket retrofit control devices. Initial compliance testing must abide by the requirements below to demonstrate compliance with Tier 4 Final emission standards for NOx and VOC emissions:
a. Installation of retrofit control devices and initial compliance testing of the engine and associated control devices, including passing compliance test results, shall be completed by July 31st, 2027 to demonstrate compliance with the NOx and VOC emission limits; and,
b. Prior to any compliance testing, a pre-test meeting may be held if requested by the Facility, the testing firm, or the District (attended by the District, the Facility, and the testing firm). Not later than 30 days prior to proposed test date (and not later than 30 days after the pre-test meeting if any) a written Compliance Test Plan or Protocol must be submitted for District review by email. Not later than 10 days prior to proposed test date the District must be notified of proposed test date by email. Not later than 45 days after the last day of the Compliance Test the written Compliance Test Report must be submitted to the District by email. The District email address is: Reporting@mdaqmd.ca.gov.
c. Compliance testing shall be conducted with the engine operating at a single full-load point (80% load or greater). An appropriately-sized resistance load bank (or equivalent) shall be used during the emissions compliance testing to ensure the engine is operating at the load conditions required;
d. The percent load, engine output, and stack gas volumetric flow rate shall be used to convert engine emissions to a brake-specific emission factor (g/bhp-hr);
e. For compliance testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit;
f. The following test methods shall be used:
I. NOx (g/bhp-hr) - EPA Method 7E or ARB Method 100;
II. VOC (g/bhp-hr) - EPA Method 18, 25A or 25B, or ARB Method 100;
g. Engines will be evaluated for compliance with USEPA Tier 4 Final emission standards for NOx and VOC, the standards are:
I. NOx: 0.5 g/bhp-hr;
II. VOC: 0.14 g/bhp-hr;
NOTE: All manufacturer specifications and documentation for the control devices shall be submitted with the written Compliance Test

Report.
[District Rule 204; District Rule 1303(A) - BACT: Initial Compliance Demonstration]

4. No later than forty-five (45) days prior to installation of this equipment, the owner or operator must submit a Continuous Parametric Monitoring System (CPMS) Monitoring and Quality Assurance Plan for District review and approval. The owner or operator must install, calibrate, maintain, and operate the CPMS according to a District-approved CPMS Monitoring and Quality Assurance Plan as an indicator of NOx and VOC emissions compliance when this equipment is in operation. Continuous compliance monitoring is a requirement of Best Available Control Technology (BACT). Engines under District Permits E015587, E015589, E015591, and E015593 trigger Best Available Control Technology (BACT) for NOx and VOC emissions. The facility shall continuously monitor SCR and DOC parameters that maintain emissions within the specified limits, including but not limited to the preliminary parameters and limits listed below, as part of the District-approved CPMS Monitoring and Quality Assurance Plan. Final SCR operating parameters and ranges must be submitted in a revised CPMS Monitoring and Quality Assurance Plan no later than six (6) months after the initial compliance test. The District-approved CPMS Monitoring and Quality Assurance Plan must be maintained with the recordkeeping for this equipment and made available to District, state, or federal personnel upon request. All measurement devices shall be accurate to 5% of span and calibrated no less than once per 12 consecutive months:
a. Urea injection rate (in gal/hr at 32.5% urea concentration): 6.7 gal/hr +/- 0.2 gal/hr;
b. Pressure drop (dP) across the SCR (in inches of water): 18 inH2O <= dP <= 22 inH2O;
c. Steady-state operating temperature (T) of the SCR (in Fahrenheit): 572 F <= T <= 977 F;
d. Pressure drop (dP) across the DOC (in inches of water): 18 inH2O <= dP <= 22 inH2O; and,
e. Steady-state operating temperature (T) of the DOC (in Fahrenheit): 572 F <= T <= 977 F.
NOTE: Acceptable ranges for the parameters listed in this condition are defined by the control device manufacturer, Miratech, or compliance test results. All parameters shall be maintained within the range determined by the equipment manufacturer or compliance testing results except for periods of start-up, shut-down, or equipment malfunction. The owner or operator must maintain records in accordance with Condition 15.
[District Rule 204; District Rule 1302(C) - PTE; District Rule 1303(A) - BACT: Continuous Compliance; 17 CCR 93115.10(d)(2); 40 CFR 60.4209(b)]

5. The owner or operator of this equipment shall demonstrate continuous compliance by performing routine EPA Method 22 Visible Emissions tests during every startup for testing and maintenance. Method 22 tests shall be performed once the engine and control devices have achieved steady-state operation, this shall be no more than 10 minutes after startup. The duration of all Method 22 tests shall be 15 consecutive minutes.
[District Rule 204; District Rule 401; District Rule 1303(A) - BACT: Continuous Compliance]

6. The owner or operator of this equipment shall demonstrate continuous compliance by committing to a maintenance schedule inclusive of the management practice requirements listed below, at a minimum, or more frequent if required by the manufacturer:
a. Change oil and oil filter every 500 hours of operation or annually, whichever comes first (source has the option to utilize an oil analysis program in order to extend the specified oil change requirement);
b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and,
c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
NOTE: If this emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements required by this Condition, or shutting down the engine would pose an unacceptable risk, the management practice can be delayed until the emergency is over, or the risk has been abated. The management practice should be performed as soon as practicable after the emergency/risk has ended. Sources must report any failure to perform the management practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.
[District Rule 204; District Rule 1303(A) - BACT: Continuous Compliance]

7. This equipment does not require a regularly scheduled compliance test beyond what is required by Condition 3. However, compliance testing may be required at the discretion of the District.
[District Rule 204; District Rule 1303(A) - BACT: Continuous Compliance]

8. This engine shall be equipped with a DPF backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.
[District Rule 204; District Rule 1302(C) - PTE]

9. This SCR installed on this engine shall be equipped with temperature and pressure drop sensors that notify the owner or operator when the SCR operating parameters are out of range. The operational range is defined by the control device manufacturer, Miratech, all documentation and operating manuals for the SCR must be accessible to operators and District inspectors.
[District Rule 204; District Rule 1302(C) - PTE; District Rule 1303(A) - BACT: Continuous Compliance]

10. Operation outside of ranges specified in the District-approved CPMS Monitoring and Quality Assurance Plan required by Condition 4 is considered non-compliant operation and must be addressed as follows:
a. If, during non-emergency operation, the parameters drift out of the manufacturer suggested ranges the owner or operator is required to immediately shut-down the equipment, identify the cause of out of range operation, and perform the necessary repairs to restore the equipment to normal operations as expeditiously as possible; or,
b. If, during emergency operation, the parameters drift out of the manufacturer ranges the owner or operator may continue operation until the emergency has passed. The owner or operator must then shut-down the equipment, identify the cause of out of range operation, and perform the necessary repairs to restore the equipment to normal operations as expeditiously as possible.
Recordkeeping for Non-Compliant Operation: Any operation outside of ranges specified in the District-approved CPMS Monitoring and Quality Assurance Plan must be logged according to Condition 16(k-m).
NOTE: The District may perform a site inspection to ensure operation is being conducted within the acceptable parametric ranges, at the discretion of the District.
[District Rule 204; District Rule 1303(A) - BACT: Continuous Compliance]

11. This engine shall not be operated for testing and maintenance purposes unless all Tier 2 certified emission control systems are properly functioning, including but not limited to:
a. Turbocharger; and,
b. Engine Control Module (ECM).
Furthermore, this engine shall not be operated for testing and maintenance purposes unless all of the following Tier 4 Final equivalent retrofit emission control systems are properly functioning:
a. Diesel Oxidation Catalyst;
b. Selective Catalytic Reduction; and,
c. Diesel Particulate Filter.
[District Rule 204; District Rule 1302(C) - PTE; District Rule 1303(A) - BACT; 40 CFR 60.4211(a)]

12. In the event that any of the stock Tier 2 certified OR Tier 4 Final equivalent aftermarket retrofit emission control equipment is replaced, the new (replacement) emission control device must be of the same manufacturer and model designation and it must be installed by manufacturer-certified personnel. All emission control device replacements will require the engine and control devices to undergo initial compliance testing pursuant to Condition 3 within 180 days after the equipment replacement. The compliance test results must confirm that the engine meets the standards outlined in Condition 3.
[District Rule 204; District Rule 1302(C) - PTE; District Rule 1303(A) - BACT]

13. A non-resettable four-digit (9,999) hour timer shall be installed and maintained on this equipment to indicate elapsed engine operating time.
[District Rule 1160(E)(1)(a)(ii); 17 CCR 93115.10(d)(1)]

14. This equipment shall only be fired on diesel fuel that meets the following requirements, or an alternative fuel approved by the ATCM for Stationary CI Engines:
a. Ultra-low sulfur concentration of 0.0015% (15 ppm) or less, on a weight per weight basis; and,
b. A cetane index or aromatic content, as follows:
(i) A minimum cetane index of 40; or,
(ii) A maximum aromatic content of 35 volume percent.
[District Rule 431; 17 CCR 93115.5(a); 40 CFR 60.4207(b); 40 CFR 1090.305]
Note: CARB certified ULSD fuel satisfies these requirements per 17 CCR 93115.5(a).

15. The owner or operator shall maintain an operations log for this unit current and on-site (or at a central location) for a minimum of five (5) calendar years, and this log shall be provided to District, State and Federal personnel upon request. The operations log shall include, at a minimum, the information specified below:
a. Date and duration of each use (in hours);
b. Reason for each use (testing and maintenance, emergency, required compliance testing, NFPA testing);

c. Monthly and rolling 12 month (defined as 12 consecutive months prior to the current day) operating hour log readings as determined by the installed hour meter;
d. Calendar year operating hours as determined by the installed hour meter or fuel consumption (in standard cubic feet or gallons) to assist in CEI calculations;
e. Records of fuel sulfur content (the owner/operator may use the supplier's certification of sulfur content if it is maintained as part of this log);
[District Rule 204; District Rule 1160(D)(2); 17 CCR 93115.10(f)]

16. The owner or operator shall maintain a compliance log for this unit current and on-site (or at a central location) for a minimum of five (5) calendar years, and this log shall be provided to District, State and Federal personnel upon request. The compliance log shall include, at a minimum, the information specified below:
a. District-approved CPMS Monitoring Plan and associated records, as required by Condition 4;
b. Compliance test results from testing required by Condition 3;
c. Records of all maintenance and repair actions performed on the engine and any emissions control equipment, inclusive of the management practices required by Condition 6;
d. The date and time of all DPF inspections and maintenance, including regeneration or cleaning;
e. Records of all maintenance and repair actions performed on the SCR and DOC;
f. Continuous compliance records for items required by Conditions 4, 5, and 6;
g. Monthly differential pressure readings across the SCR and DOC;
h. Daily temperature readings at the inlet or matrix of the SCR and DOC, for every day that the equipment was operated;
i. Monthly total of ammonia injected into the SCR;
j. Calibration reports as required by Condition 4.
k. Non-compliant operation, including operation outside of operating ranges for parameters required to be monitored by the District-approved CPMS Monitoring Plan;
l. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment;
m. Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation in accordance with Condition 10.
[District Rule 204; District Rule 1160(D)(2); District Rule 1303(A) - BACT: Continuous Compliance]

17. This unit shall be limited to use for emergency power, defined as in response to a fire, flood, or when commercially available power has been interrupted. This unit shall be operated no more than 50 hours in any rolling 12 month period (defined as 12 consecutive months prior to the current day) for testing and maintenance, excluding compliance testing. There is no limit on emergency use and emergency hours do not count toward the 50 hour limit.
[District Rule 204; District Rule 1160(D)(1)(d); 17 CCR 93115.6(a)(3)(A)(1)(c): Annual Operation Limit]

18. This equipment may operate in response to an impending rotating outage if the area utility has ordered rotating outages in the area where the engine is located or expects to order such outages at a particular time. The engine may be operated no more than 30 minutes prior to the forecasted outage and must be shut down immediately after the utility provider advises that the outage is no longer imminent or in effect.
[17 CCR 93115.6(a)(2)]

19. This equipment shall not be used to provide power during a voluntary agreed to power outage and/or power reduction initiated under an Interruptible Service Contract (ISC); Demand Response Program (DRP); Load Reduction Program (LRP) and/or similar arrangement(s) with the electrical power supplier.
[17 CCR 93115.6(c)(1)(C)]

20. This engine is subject to the requirements of Title 17 CCR 93115, the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines and 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS). In the event of a conflict between these conditions and the ATCM or NSPS, the more stringent requirements shall govern.
[District Rule 1302; 17 CCR 93115; 40 CFR 60, Subpart IIII]

21. A facility wide Comprehensive Emission Inventory (CEI) for all emitted criteria and toxic air pollutants must be submitted to the District, in a format approved by the District, upon District request.
[District Rule 107(b); H&S Code 39607 & 44341-44342; 17 CCR 93400 et seq.; 40 CFR 51, Subpart A]