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DEPT. OF WATER, ENERGY, AND ENVIRONMENT

Jim Pillen, Governor

AIR QUALITY GENERAL CONSTRUCTION PERMIT

PERMIT NUMBER: GCP-EMENG1-2 **Permit Name: Emergency Engine** 1

Project Description: Construction of emergency engine(s).

Typical Standard Industrial Classification (SIC) Code: Various

Pursuant to Chapter 10 of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of the proposed construction of air contaminant sources meeting the specific criteria of this general construction permit and the thirty (30) day period allowed for comments has elapsed. This general construction permit approves the construction of specific types of Emergency Engines. This permit document and the associated application make up the complete permit for the specific source identified in the application.

Compliance with this permit shall not be a defense to any enforcement action for violation of an ambient air quality standard. The permit holder, owner, and operator of the facility shall assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

The undersigned issues this permit on behalf of the Director under the authority of Nebraska Administrative Code Title 129 – Nebraska Air Quality Regulations as amended September 28, 2022.

November 3, 2025

Date

Reuel S. Anderson, Administrator
Permitting & Engineering Division

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ABBREVIATIONS, SYMBOLS, and UNITS OF MEASURE

AP-42	Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources
BACT	Best Available Control Technology
bhp	Brake Horsepower
BMP	Best Management Practice
Btu	British Thermal Unit
bu	Bushel
CAA	Clean Air Act
CE	Control Equipment
CEM	Continuous Emissions Monitor
CEMS	Continuous Emissions Monitoring System
cf	Cubic feet
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	CO_2 equivalent
CP	Construction Permit
DGS	Distiller's Grains with Solubles
DDGS	Dry Distillers Grains with Solubles
dscf	Dry Standard Cubic Feet
dscfm	Dry Standard Cubic Feet per Minute
EMIS	Emergency Management Information System
EPA	Environmental Protection Agency
EQC	Environmental Quality Council
EP	Emission Point
ESP	Electrostatic Precipitator
EU	Emission Unit
FID	Facility Identification Number
FDCP	Fugitive Dust Control Plan
FGR	Flue Gas Recirculation
FIP	Federal Implementation Plan
FR	Federal Register
ft	Feet
FTIR	Fourier Transform Infrared
GHGs	Greenhouse Gases
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutant
hp	Horsepower
hr	Hour
lb	Pound
LDAR	Leak Detection and Repair
LNB	Low-NO_x Burner
LPG	Liquified Petroleum Gas
MACT	Maximum Achievable Control Technology
Mgal	One Thousand gallons
MMBtu	One Million British Thermal Units
MMscf	One Million Standard Cubic Feet
MSDS	Material Safety Data Sheet
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NDWEE	Nebraska Department of Water, Energy, and Environment
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
PAL	Plant-wide Applicability Limit
Pb	Lead (chemical abbreviation)
PbR	Permit-by-Rule
PEMS	Parametric Emissions Monitoring System
PM	Particulate Matter
PM_{10}	Particulate Matter with and aerodynamic diameter equal to or less than 10 microns
$PM_{2.5}$	Particulate Matter with and aerodynamic diameter equal to or less than 2.5 microns
ppb	Parts per Billion
ppm	Parts per Million
ppmv	Parts per Million by volume
ppmvd	Parts per Million by volume, dry basis
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RVP	Reid Vapor Pressure
RATA	Relative Accuracy Test Audit
RMP	Risk Management Plan
RTO	Regenerative Thermal Oxidizer
scf	Standard Cubic Feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
TDS	Total Dissolved Solids
TO	Thermal Oxidizer
TO/HRSG	Thermal Oxidizer with Heat Recovery Steam Generator
tpy	Tons per year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulate Matter
ULNB	Ultra Low-NO_x Burner
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
VHAP	Volatile Hazardous Air Pollutant
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WDGS	Wet Distiller's Grains with Solubles

I. STANDARD CONDITIONS

The following Standard Conditions apply to this permit unless otherwise provided for in the Specific Conditions of this permit.

(A) Regulatory authority:

(1) Title 40 Protection of Environment, Code of Federal Regulations that apply to the source including those not currently delegated to Nebraska or not yet included in Title 129; and

(2) Title 129 as approved by EPA under 40 CFR Part 52, Subpart CC or 40 CFR Part 70, Appendix A as of the date of issuance of this permit (federally enforceable requirements); and Title 129 as amended September 28, 2022 (state only enforceable requirements).

(B) The source shall allow the NDWEE, USEPA or an authorized representative, upon presentation of credentials (Neb. Rev. Statute §81-1504; Title 129, Chapter 6, Section 003.11) to:

(1) Enter upon the source's premises during reasonable hours where a source subject to this permit is located, emissions-related activity is conducted, or where records must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(2) Have access to and copy, during reasonable hours, any records that must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(3) Inspect during reasonable hours any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations regulated or required under this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(4) Sample or monitor, during reasonable hours, substances or parameters for the purpose of ensuring compliance with the permit or applicable requirements.

(C) All requested permit amendments and revisions must adhere to the requirements of Title 129, Chapter 9.

(D) The following methods may be used to determine compliance with the terms and conditions in this permit (Title 129, Chapter 15, Section 005.08):

(1) Any compliance test method specified in the State Implementation Plan;

(2) Any test or monitoring method approved for the source in a permit issued pursuant to Title 129, Chapters 3, 4, or 13, Section 004;

(3) Any test or monitoring method provided for in Title 129; or

(4) Any other test, monitoring, or information-gathering method that produces information comparable to that produced by any method described in Condition I.(D)(1) through (3).

(E) Application for review of plans or advice furnished by the Director will not relieve the source of legal compliance with any provision of these regulations, or prevent the Director from enforcing or implementing any provision of these regulations (Title 129, Chapter 1, Section 001.06).

(F) If and when the Director declares an air pollution episode as defined in Title 129, Chapter 2, Section 006.01, the source shall immediately take all required actions listed in Title 129, Appendix II, Paragraph 1.1, 1.2, and 1.3, respectively, until the Director declares the air pollution episode terminated (Title 129, Chapter 2, Section 006.03).

(G) Recordkeeping: To ensure compliance with this permit, records shall be maintained as outlined below. Records include: electronic and/or paper copies of all application materials, notifications, reports, test protocols, test results, and plans; and, electronic and/or original paper copies of all required monitoring results, measurements, inspections, and observations (Title 129, Chapter 15, Section 005.06; Neb. Rev. Stat. §81-1504):

(1) All records required by this permit shall be kept for a minimum of five (5) years and shall be clear and readily accessible to NDWEE representatives during an inspection, unless otherwise specified in this permit.

(2) Monthly calculations and records required throughout this permit shall be compiled no later than the fifteenth (15^{th}) day of each calendar month and shall include all records and calculations generated through the previous calendar month, unless otherwise specified in this permit.

(3) The source shall keep the following records for each malfunction, start-up and shutdown where emissions were, or may have been, in excess of an emission limitation or standard (Title 129, Chapter 11, Sections 002 and 005; Chapter 15, Sections 006.02, 006.04 and 006.05):

(a) The identity of the equipment.

(b) Reason for, or cause of, the malfunction, shutdown, or start-up.

(c) Duration of period of excess emissions.

(d) Date and time of the malfunction, shutdown, or start-up.

(e) Physical and chemical composition of pollutants whose emissions are affected by the action.

(f) Methods, operating data, and/or calculations used to determine these emissions.

(g) Quantification of emissions in the units of the applicable emission control regulation.

(h) All measures utilized to minimize the extent and duration of excess emissions during the malfunction, shutdown, and start-up.

(4) The source shall keep records of maintenance performed on components of permitted emission units that would affect or potentially affect the emission rate of that unit and on control and monitoring equipment associated with the permitted emission unit (Title 129, Chapter 15, Sections 005.06, 006.06B, and 006.06E).

(5) All records of opacity readings, instrument readings, visual equipment inspections, log book/sheet entries, and any other record of equipment performance shall identify the individual who entered the record, except for continuously generated electronic records.

(6) Operation and maintenance manuals, or equivalent documentation, detailing proper operation and maintenance of all permitted emission units, required control equipment and required monitoring equipment shall be kept for the life of the equipment

(H) All permitted emission units, associated emissions conveyances, required control equipment, and required monitoring equipment shall be properly installed, operated, and maintained (Title 129, Chapter 6, Sections 003.01 and 003.13; Chapter 15, Section 005.06; Neb. Rev. Stat. §81-1504 and §81-1506).

(1) All emissions from emission units using required controls shall be captured and routed through associated emission conveyances to the required control equipment, except for uncaptured emissions described in the permit application and any additional information submitted prior to permit issuance.

(2) All equipment must be maintained to minimize the amount of uncontrolled pollutants that are-released to the atmosphere. Proper equipment maintenance activities may include repair or replacement, and include, but are not limited to activities in response to the following:

(a) cracks, holes or gaps,

(b) broken, cracked, or otherwise damaged seals or gaskets, and

(c) broken, missing or open hatches, access covers, caps, or other closure devices.

(I) When the source makes physical or operational changes to an emissions unit or associated control equipment that may cause an increase in emissions that makes the original testing not representative of current operating conditions or emissions, the source shall submit a notification of the change. Such notification shall be received by NDWEE within fifteen (15) days after such change. The NDWEE may require performance testing based on review of the specific changes identified in the notification and the resulting potential impact on emissions from the unit(s) and/or performance of the control equipment (Title 129, Chapter 15, Section 005.01).

(1) This notification requirement applies to emissions units and/or control equipment that meet the following requirements, except as provided in Condition I.(I)(5):

(a) Emissions from the emissions unit and/or control equipment is subject to an emissions limit;

(b) A valid performance test has been conducted for the pollutant to which the emissions limit applies;

(c) Changes that may cause emissions to increase or invalidate prior testing include, but are not limited to, increasing the capacity of an emissions unit, changing the operational parameters of any control equipment outside of the range allowed for under this permit that makes the control equipment less efficient, changing the type of scrubber packing, or increasing the inlet pollutant loading of any control equipment.

(2) For emission units that have had a performance test conducted after January 1, 2012, the source shall make a one-time notification to the NDWEE within fifteen (15) days of when there is a 10% increase in daily production/throughput rate, over the tested rate recorded during the most recent valid performance test unless otherwise specified in this permit. If there are subsequent 10% increases over the rate most recently notified to the NDWEE, the source shall make a one-time notification to the NDWEE of each such subsequent increase. This will not apply to emissions that already have emission rates that are normalized to production and/or throughput rates.

(3) The notification shall include the date of the changes, a description of the changes made, and an evaluation of the expected impact on emissions from the emissions units and/or control equipment.

(4) The following definitions apply for purposes of Condition I.(I)(2) above:

(a) "rate" shall mean the production or throughput of an emissions unit in the same units of production or throughput as the "tested rate" as defined below; and,

(b) "tested rate" shall mean the production or throughput rate of an emissions unit as recorded in the most recent valid performance test and reported to the NDWEE in the source's written copy of the test results, or test report, documenting the maximum capacity of the unit(s). The tested rate shall be extrapolated to daily. Examples include, but are not limited to, tons per hour to tons per day or gallons per hour to gallons per day.

(5) The above notification requirements do not apply when compliance with the emission limitation is demonstrated through the use of a CEMS, PEMS or COMS.

(J) No person shall cause or allow emissions, from any source, which are of an opacity equal to or greater than twenty percent (20%), as evaluated by an EPA approved method, or recorded by a continuous opacity monitoring system operated and maintained pursuant to 40 CFR Part 60 Appendix B except as provided for in Chapter 15, Sections 001.05 or 001.06 (Title 129, Chapter 15, Section 001.04).

(K) Open fires are prohibited except as allowed by Title 129, Chapter 15, Section 002.

(L) Particulate Matter – General Requirements (Title 129, Chapter 15, Section 003):

(1) The source shall not cause or permit the handling, transporting or storage of any material in a manner which allows particulate matter to become airborne in such quantities and concentrations that it remains visible in the ambient air beyond the property line.

(2) The source shall not cause or permit the construction, use, repair or demolition of a building, its appurtenances, a road, a driveway, or an open area without applying all reasonable measures to prevent particulate matter from becoming airborne and remaining visible beyond the property line. Such measures include, but are not limited to, paving or frequent cleaning of roads, driveways and parking lots; application of dust-free surfaces; application of water; and planting and maintenance of vegetative ground cover.

(M) Testing:

(1) Performance testing if required by this permit or required by the NDWEE shall be completed as follows:

(a) The source shall provide the NDWEE a written notice at least thirty (30) days prior to testing to afford the NDWEE an opportunity to have an observer present. The NDWEE may, in writing, approve a notice of less than 30 days. If the testing is pursuant to an underlying requirement contained in a federal rule, the notice provisions of the underlying requirement apply (Title 129, Chapter 15, Section 005.03).

(b) The notification required by Condition I.(M)(1)(a) shall include the following (Title 129, Chapter 15, Section 005.03):

(i) Facility Name, Address and FID number.

(ii) Company Name, Address and Contact Person's name.

(iii) Test schedule including date and estimated start time of testing.

(iv) List all applicable regulatory requirements that testing is being conducted for (permit condition, MACT, NSPS, etc.).

(v) Types of pollutants to be sampled including applicable emission limits and demonstration requirements.

(vi) Test methods and documentation of any proposed variations from the specified procedures and reason for variance.

(c) Testing shall be conducted according to the methodologies found in Title 129, Chapter 15, Section 005.02, or other NDWEE approved methodologies (Title 129, Chapter 15, Section 005.02).

(d) Performance tests shall be performed under those representative (normal) conditions that: represent the range of combined process and control measure conditions under which the facility expects to operate (regardless of the frequency of the conditions); and are likely to most challenge the emissions control measures of the facility with regard to meeting the applicable emission standards, but without creating an unsafe condition. (Title 129, Chapter 15, Section 005).

(e) Performance tests shall be conducted for a minimum of three (3) one-hour runs unless another run-time is specified by the applicable Subpart or as deemed appropriate by the NDWEE.

(f) The source shall monitor and record the operating parameters for process and control equipment during the performance testing required in the permit.

(g) A certified written copy of the test results, signed by the person conducting the test, shall be provided to the NDWEE within sixty (60) days of completion of the test, unless a different time period is specified in the underlying requirements of an applicable federal rule, and will, at a minimum, contain the following items (Title 129, Chapter 15, Section 005.02G):

(i) A description of:

1. The operating parameters for the emissions unit during testing. Examples include, but are not limited to, production rates, process throughputs, firing rates of combustion equipment, or fuel usage; and,

2. The operating parameters for the control equipment during testing. Examples include, but are not limited to, baghouse fan speeds, scrubber liquid flow rates, or pressure drop across the control device.

(ii) Copies of all data sheets from the test run(s).

(iii) A description and explanation of any erroneous data or unusual circumstance(s) and the cause for such situation.

(iv) A final conclusion section describing the outcome of the testing.

II. GENERAL CONSTRUCTION PERMIT CONDITIONS

The following General Conditions apply to this permit unless otherwise provided for in the Specific Conditions of this permit.

(A) The source shall provide the following notifications to the NDWEE:

(1) The date construction, reconstruction, or modification commenced as defined in Chapter 1. Notification shall be received by NDWEE no later than thirty (30) days after such date and include a summary description of the event associated with the commencement of construction. The source may use either of the following to determine that construction commenced (Title 129, Chapter 3, Section 003.02):

(a) Initiating physical on-site construction activities of a permanent nature that meet the definition of "begin actual construction" or

(b) Entering into binding agreements or contractual obligations. If this option is used, the notice shall also include a brief summary of each binding agreement or contractual obligation entered into, the date of the agreement or contract, and why the agreement or contract cannot be cancelled or modified without substantial loss to the source.

(2) Notification of the date on which the source or modification first becomes operational, shall be received by the NDWEE within fifteen (15) days after such date (Title 129, Chapter 6, Section 002.01A).

(3) Any emissions due to malfunctions, unplanned shutdowns, and ensuing start-ups that are, or may be, in excess of applicable emission limits shall be reported to the NDWEE in accordance with Title 129, Chapter 15, Section 006.05.

(B) Approval to construct, reconstruct, and/or modify the source will become invalid if a continuous program of construction is not commenced within 18 months after the date of issuance of the construction permit except upon a showing by the source that the complexity of the construction, reconstruction and/or modification requires additional time, or if construction, reconstruction or modification is discontinued for a period of 18 months or more, or if construction, reconstruction and/or modification is not completed within a reasonable period of time (Title 129, Chapter 3, Section 003.02).

(C) This permit is not transferable to another location, unless otherwise specified in this permit (Title 129, Chapter 3).

(D) Holding of this permit does not relieve the source from the responsibility to comply with all applicable portions of the Nebraska Air Quality Regulations and any other requirements under local, State, or Federal law. Any permit noncompliance shall constitute a violation of the Nebraska Environmental Protection Act and the Federal Clean Air Act, and is grounds for enforcement action or permit revocation (Title 129, Chapter 3, Section 001).

(E) Any source who failed to submit any relevant facts or who submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. If the permittee wishes to make changes at the source that will result in change(s) to values, specifications, and/or locations of emission points that were indicated in the permit application (or other supplemental information provided by the permittee and reviewed by the NDWEE in issuance of this permit), the source must notify the NDWEE before the change(s) can be made. In addition, the source must notify the NDWEE if any modification which may result in an adverse change to the air quality impacts predicted by atmospheric dispersion modeling (such

as changes in stack parameters or increases in emission rates, potential emissions, or actual emissions). The permittee shall provide all necessary information to verify that there are no substantive changes affecting the basis upon which this permit was issued. Information may include, but not be limited to, additional engineering, modeling, and ambient air quality studies (Title 129, Chapter 3, Sections 002.02B, 002.03B, and 002.03C).

(F) When requested by the NDWEE, the permittee shall submit completed emission inventory forms for the preceding year to the NDWEE by March 31 of each year (Title 129, Chapter 11).

(G) If required, performance tests shall be conducted in accordance with Standard Condition I.(M) within sixty (60) days after first reaching the maximum capacity, but not more than 180 days after the start-up of operations of each unit, unless otherwise specified by the NDWEE (Title 129, Chapter 15, Section 005.07).

(H) If applicable, the following conditions apply to the verification of NAAQS modeling analysis (Title 129, Chapter 2):

(1) The stack dimensions of the emission points identified in the air dispersion modeling analysis shall be constructed such that the reliability of the air dispersion modeling analysis associated with the permit application is maintained. A site survey or similar documentation containing the as-built stack dimensions, shall be maintained on-site and kept for the life of the source. If the as-built stack dimensions do not meet the criteria used in air dispersion modeling analysis, the permittee shall notify the NDWEE prior to start-up of any emission unit associated with a stack not meeting the above criteria and, if requested by NDWEE, submit a revised air dispersion modeling analysis to NDWEE to ensure that the source will not interfere with the attainment or maintenance of the ambient air quality standards in Title 129 Chapter 2.

(2) The source shall sufficiently restrict public access to the source at the ambient air boundary relied upon in the air dispersion modeling analysis for the NAAQS compliance demonstration. A site survey, or similar documentation containing the locations of the boundary vertices, shall be maintained on-site and kept for the life of the source. If the boundary dimensions do not comply with the boundary information in the air dispersion model (plus or minus 25 meters), the permittee shall notify the NDWEE prior to start-up of any emission unit and, if requested, submit a revised air dispersion modeling analysis to the NDWEE to ensure that the source will not interfere with the attainment or maintenance of the ambient air quality standards in Title 129 Chapter 2.

III.(A) Specific Conditions for Emergency Engine(s)

(1) Permitted Emission Points:

(a) The source is permitted to construct the emission points and associated emission units identified in the following table at the maximum capacity and combusting the fuel type listed:

Emission Point ID#	Emission Unit Description	Total Capacity (hp)	Permitted Fuel Type
EP-ENGINES	EU Emergency Engines	10,000	Diesel

(b) All emergency engines covered under this permit shall be model year 2014 or later. (Chapter 3)

(c) All emergency engines covered under this permit shall have a displacement of less than thirty (30) liters per cylinder. (Chapter 3)

(2) Emission Limitations and Testing Requirements:

(a) The emergency engines covered under this permit shall comply with the emission limitations of Title 129, Chapter 15, Section 001.04. (Chapter 15)

(b) Each emergency engine covered under this permit shall be certified by the manufacturer in accordance with the requirements listed in 40 CFR Part 60 Subpart IIII for the same model year and maximum engine power. (Chapter 3)

(c) The source shall comply with the applicable emission limitations and testing requirements as specified in 40 CFR Part 60 Subpart IIII, and 40 CFR Part 63 Subpart ZZZZ. (Chapters 12 and 13)

(3) Operational and Monitoring Requirements and Limitations:

(a) The combined maximum engine output of all emergency engines at the source covered under this permit shall not exceed 10,000 horsepower. (Chapter 3)

(b) Each emergency engine covered under this permit shall be limited to 500 operating hours per any period of twelve (12) consecutive calendar months. At no time during the first eleven (11) months after startup shall the operation of any engine exceed 500 hours. (Chapter 3)

(i) Each emergency engine shall be equipped with a non-resettable hour meter to record the operating hours.

(ii) Each emergency generator shall be operated for no more than 100 hours per calendar year for non-emergency situations as prescribed in 40 CFR Part 60 Subpart IIII.

(iii) Non-emergency operation of the emergency generators identified in Condition III.(A)(1) shall be limited to between the hours of 11:00 AM to 4:00 PM CDT/CST.

(c) The source shall comply with the applicable operational and monitoring requirements and limitations as specified in 40 CFR Part 60 Subparts A, IIII. Additionally, the source shall comply with 40 CFR Part 63 Subparts A and ZZZZ. (Chapters 12 and 13)

(4) Applicable NSPS, NESHAP, and MACT Requirements:

The following standards apply to all emergency engines covered by this permit:

Applicable Standard	Title	Rule Citation
NSPS, Subpart A	General Provisions	Title 129, Chapter 12, Sec. 001.01 40 CFR 60.1
NSPS, Subpart IIII	Stationary Compression Ignition Internal Combustion Engines	Title 129, Chapter 12, Sec. 001.80 40 CFR 60.4200
NESHAP, Subpart A	General Provisions	Title 129, Chapter 13, Sec. 001.01 40 CFR 63.1
NESHAP, Subpart ZZZZ	Stationary Reciprocating Internal Combustion Engines	Title 129, Chapter 13, Sec 002.80 40 CFR 63.6580

(5) Reporting and Recordkeeping Requirements:

(a) The source shall maintain records documenting the model year of each emergency engine covered under this permit.

(b) Records shall be kept demonstrating compliance with the emission standards of 40 CFR Part 60 Subpart IIII, if applicable.

(c) The source shall maintain records documenting the maximum engine output capacity of each engine covered under this permit for the lifetime of the equipment.

(d) The source shall record and maintain records documenting the hours of operation for each emergency engine covered under this permit for each calendar month and for each period of twelve (12) consecutive calendar months.

(e) The source shall comply with the applicable reporting and recordkeeping requirements as specified in 40 CFR Part 60 Subparts A and IIII and 40 CFR Part 63 Subparts A and ZZZZ.

III.(B) Specific Conditions for External Combustion Units

(1) Permitted Emission Points:

(a) The source is permitted to construct the emission points and associated emission units identified in the following table at the maximum capacity and combusting the fuel types listed:

Emission Point ID#	Emission Unit Description	Total Capacity	Permitted Fuel Types
EP-EXTCOMB	EU-EXTCOMB	20 MMBtu/hr	Diesel, LPG, Natural Gas

(b) The total aggregate combustion capacity of the external combustion units covered under this permit shall not exceed 20 MMBtu/hr. (Chapter 3)

(2) Emission Limitations and Testing Requirements:

(a) The emissions limitations of Chapter 15, Sections 001.02 and 001.04 applies to the emission points identified in Condition III.(B)(1). (Chapter 15)

(b) The source shall comply with the applicable emission limitations and testing requirements as specified in 40 CFR Part 63, Subparts DDDDD or JJJJJJ. (Chapter 13)

(c) The source shall comply with the applicable emission limitations and testing requirements of 40 CFR 60, Subpart Dc. (Chapter 12)

(3) Operational and Monitoring Requirements and Limitations:

(a) The source shall comply with the applicable operational and monitoring requirements and limitations as specified in 40 CFR Part 63 Subparts A and JJJJJJ or DDDDD. (Chapter 13)

(b) The source shall comply with all the applicable operational and monitoring requirements and limitations as specified in 40 CFR Part 60, Subparts A and DC. (Chapter 12)

(4) Applicable NSPS, NESHAP, and MACT Requirements:

The emission units identified in Condition III.(B)(1) may be subject to the NSPS and NESHAP requirements listed below:

Applicable Standard	Title	Rule Citation
NSPS, Subpart A	General Provisions	Title 129, Chapter 12, Sec. 001.01 40 CFR 60.1
NSPS, Subpart Dc	Small Industrial-Commercial-Institutional Steam Generating Units	Title 129, Chapter 12, Sec. 001.05 40 CFR 60.40c
NESHAP, Subpart A	General Provisions	Title 129, Chapter 13, Sec. 001.01 40 CFR 63.1
NESHAP, Subpart JJJJJJ	Industrial, Commercial, and Institutional Boilers Area Sources	Title 129, Chapter 13, Sec. 002.101 40 CFR 63.11193
NESHAP, Subpart DDDDD	Industrial, Commercial, and Institutional Boilers and Process Heaters Major Sources	Title 129, Chapter 13, Sec. 002.80 40 CFR 63.7480

(5) Reporting and Recordkeeping Requirements:

(a) Records shall be kept documenting the total aggregate heat input capacity of all external combustion units covered under this permit.

(b) Records shall be kept documenting the fuel types combusted by all external combustion units covered under this permit.

(c) The source shall comply with the applicable reporting and recordkeeping requirements as specified in 40 CFR Part 63 Subparts A and JJJJJJ or DDDDD.

(d) The source shall comply with the applicable reporting and recordkeeping requirements as specified in 40 CFR Part 60 Subparts A and Dc.

Fact Sheet for General Permit Number: GCP-EMENG1-2
Date: November 3, 2025

Typical Standard Industrial Classification Code: Various

Typical North American Industry Classification System Code: Various

DESCRIPTION OF GENERAL CONSTRUCTION PERMIT:

The Nebraska Department of Water, Energy, and Environment (NDWEE) has determined there are numerous similar sources in Nebraska that are subject to the same Federal and State regulatory requirements. Chapter 7 of Nebraska Administrative Code Title 129 – Air Quality Regulations allows the NDWEE to issue a general construction permit (GCP) for these sources. This GCP follows the applicable procedures of Chapters 3, 7, and 10 of Title 129. The owner of a source that qualifies for this GCP must apply to the NDWEE for coverage under the applicable terms of the GCP. Each application must include all information necessary to determine qualification for, and to ensure compliance with, the GCP.

The NDWEE will notify the applicant of the determination of coverage under this GCP for the source identified in the application. If the Director of the NDWEE denies coverage of the source under the GCP, the applicant may request an adjudicative hearing in accordance with the procedures established in Title 115 – Rules of Practice and Procedure. The NDWEE may issue coverage under a GCP to an individual source without repeating the notice and comment procedures required in Chapter 10 of Title 129. The NDWEE shall maintain a list of all sources covered by general permits, which shall be available for public review.

DESCRIPTION OF THE SOURCE GROUP:

This GCP allows the installation of a New Source Performance Standard (NSPS) Subpart IIII manufacturer-certified compression ignition (CI) reciprocating internal combustion engine(s) (RICE) fired exclusively by diesel fuel (No. 1 or No. 2 fuel oil) and limited to 500 annual hours of operation per engine. Engines installed under this GCP must be model year 2014 or later and each engine must have a displacement of less than 30 liters per cylinder (L/cyl). In addition, this GCP allows for the source to construct less than or equal to 20 MMBtu/hr of external combustion heat input capacity (e.g., space heaters or boilers) fired by any combination of diesel fuel, liquefied petroleum gas (LPG), and natural gas.

Coverage under this GCP may be granted to new facilities which consist only of the operations discussed above or to existing facilities that plan to add emergency equipment. Operations at existing facilities may be covered by one or more additional permits.

TYPE AND QUANTITY OF AIR CONTAMINANT EMISSIONS ANTICIPATED:

Emissions result from the operation of the engine(s) and external combustion units. Potential emissions were calculated using a combination of emission factors from the USEPA's Compilation of Air Pollutant Emission Factors, 5th Edition, Volume 1 (AP-42), 40 CFR Part 60, Subpart IIII, and 40 CFR Part 98. Potential emission calculations are shown in the fact sheet attachment. Within the restrictions listed above, an engine or group of engines for a source may be as small as 575 horsepower (hp) or may be as large as 10,000 hp.

The maximum allowable potential to emit (PTE) for a source that can be covered by this GCP is displayed in the table below:

Regulated Pollutant	Project PTE (tons/year)
Particulate Matter (PM)	2.10
PM smaller than or equal to 10 microns (PM_{10})	2.10
PM smaller than or equal to 2.5 microns ($PM_{2.5}$)	2.10
Sulfur Dioxide (SO_2)	9.73

Regulated Pollutant	Project PTE (tons/year)
Oxides of Nitrogen (NO_x)	39.91
Carbon Monoxide (CO)	24.54
Volatile Organic Compounds (VOC)	7.23
Hazardous Air Pollutants (HAPs)	0.23
Greenhouse Gases (GHG):	
Mass Basis	17,138
CO_2e Basis	17,195

APPLICABLE REQUIREMENTS AND VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS:

Chapter 2 – Ambient Air Quality Standards:

Based on the limits in this GCP, the potential emissions of all regulated air pollutants from this permitting action are below the air dispersion modeling thresholds for which modeling is typically required, as established in the NDWEE modeling guidance document entitled *Atmospheric Dispersion Modeling Guidance for Permits* (September 2005). Based on the March 1, 2011 memo from Tyler Fox of the EPA to the Regional Air Division Directors, intermittent sources such as emergency engines are not required to model for 1-hour NO_2. As a result, the NDWEE does not expect this source to cause or contribute to any violations of any ambient air quality standards.

Chapter 3 – Construction Permit Requirements:

The source is required to obtain a construction permit for the emergency engine(s) and external combustion unit because the potential emissions, prior to general construction permit coverage, exceed the thresholds of Chapter 3, Section 001.03A. The source must submit an application fee in order to apply for coverage under this GCP, in accordance with Chapter 3, Section 002.01 and Chapter 7. The NDWEE does not consider PM a regulated pollutant when determining the fee for a construction permit.

Chapter 6 – Operating Permit Requirements:

For the operating permit program, a major or Class I source is one that emits, or has the potential to emit, greater than 100 tons per year (tpy) of any criteria pollutant, 10 tpy of any individual HAP, 25 tpy of total HAPs, or 5 tpy of lead. A minor or Class II source is any facility which does not exceed the major source thresholds, but has actual emissions greater than one half of these thresholds.

Before issuance of coverage under this permit, the potential emissions from facilities may or may not exceed the major source thresholds. Most facilities will not have other significant sources of air pollutants, and will therefore be a "No Permit Required – Synthetic Minor" or "No Permit Required – Natural Minor" source for the operating permit program because potential and actual emissions will be below the minor source thresholds after coverage is issued.

However, a facility with other sources of emissions, such as equipment covered by another construction permit, may exceed Class II or Class I thresholds for the operating permit program. Each facility covered by this GCP must determine if they are obligated to apply for an operating permit, or revise an existing operating permit, due to coverage under this general construction permit. Fugitive emissions may or may not need to be included when determining operating permit program applicability depending on if the source is or isn't one of the listed categories in 40 CFR 52.21.

Chapter 12 – New Source Performance Standards (NSPS):

The emergency engines this GCP covers will all be compression ignition (CI) internal combustion engines (ICE). The GCP is requiring all emergency engines to be subject to and comply with the emission standards in NSPS, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion

Engines. Therefore, the emergency engines are subject to NSPS Subpart IIII and Subpart A - General Provisions. In addition, the external combustion units at the source may be subject to Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Other requirements might become applicable based on source classification. A brief description of Subparts A, Dc, and IIII is provided below.

Subpart A – General Provisions:
NSPS Subpart A, adopted by reference in Title 129, Chapter 12, Section 001.01, applies to all units subject to an NSPS unless specifically stated otherwise in the rule. The engine(s) covered under this GCP are subject to the requirements of NSPS Subpart IIII and are therefore subject to the requirements of this subpart. The external combustion units covered under this GCP may be subject to Subpart Dc, and may also therefore be subject to the requirements of this subpart. Subparts Dc and IIII lists the sections of Subpart A that are applicable to the source.

Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units:
This subpart, adopted by reference in Title 129, Chapter 12, Section 001.05, applies to each steam generating unit with a maximum design heat input capacity between 10 and 100 MMBtu/hr that commenced construction, modification, or reconstruction after June 9, 1989. If the source has boilers with a heat input rate of over 10 MMBtu/hr, the source will be subject to this subpart. Requirements under this subpart include: SO_2 emissions controls, PM emissions controls, and reporting and recordkeeping requirements.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines:
This subpart, adopted by reference in Title 129, Chapter 12, Section 001.80, applies to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) of specific sizes manufactured after specific dates as detailed within the subpart. The subpart limits emissions of CI ICE based on engine size (hp, cylinder displacement), type of use (emergency or non-emergency), and model year. Requirements under this subpart include: emission standards; fuel requirements; monitoring requirements; installation, operation, and maintenance requirements; testing requirements; and, notification, reporting, and recordkeeping requirements.

Engines installed under this GCP are required to be certified to NSPS Subpart IIII standards by manufacturer's guarantee.

It is the source's obligation to comply with all applicable NSPS subparts and requirements regardless of their inclusion in this permitting action or Title 129. These rules are subject to change. Additional and updated information on all NSPS is on the NDWEE NSPS Notebook, which can be located by visiting the NDWEE website at http://dee.ne.gov, and first selecting the "Air" tab, then the "Air Grants, Planning and Outreach Program" dropdown menu tab, then the "New Source Performance Standards (NSPS) Program" dropdown menu tab, and then select "New Source Performance Standards (NSPS) Program". Or alternately use the "Search NDWEE Web" search box on the upper right of the webpage and enter "New Source Performance Standards".

Chapter 13 – Hazardous Air Pollutant Emission Standards (NESHAPs):

The source is an area source of HAPs if the PTE for any single HAP is below 10 tons per year and the PTE for total HAPs is below 25 tons per year; otherwise, if the PTE exceeds those thresholds, the source is a major source of HAPs. Other requirements might become applicable based on source classification. The following NESHAPs apply to the source.

Subpart A – General Provisions: This subpart, adopted by reference in Title 129, Chapter 13, Section 001.01, applies to all sources subject to a NESHAP standard unless otherwise stated in the rule. The engine(s) covered under this GCP are subject to the requirements of NESHAP Subpart ZZZZ and may also therefore be subject to the requirements of this subpart. The external combustion units covered under this GCP may be subject to Subparts DDDDD or JJJJJJ, and may also therefore be subject to the requirements of

this subpart. Subparts ZZZZ, DDDDD, and JJJJJJ lists the sections of Subpart A that are applicable to the source.

Subpart ZZZZ - Stationary Reciprocating Internal Combustion Engines: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.78, applies to existing, new, or reconstructed stationary reciprocating internal combustion engines (RICE) located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand. This subpart contains requirements based on engine size (hp), type of use (emergency or non-emergency), installation date (new or existing, as defined in the subpart), designation of facility (area or major source), and type of engine (spark-ignition or compression-ignition).

The engines covered under this GCP will comply with this subpart by complying with NSPS Subpart IIII.

Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.80, applies to each new, reconstructed, and existing industrial, commercial, and institutional boiler and process heater located at a major source of HAPs. The external combustion units at the source will be subject to this subpart if the source is considered a major source of HAPs.

Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.101, applies to each new, reconstructed, and existing industrial, commercial, and institutional boiler located at an area source of HAPs. The external combustion units at the source that combust diesel fuel will be subject to this subpart if the source is considered an area source of HAPs.

It is the source's obligation to comply with all applicable NESHAP subparts and requirements regardless of their inclusion in this permitting action or Title 129. These rules are subject to change. Additional and updated information on all NESHAP is on the NDWEE Air Toxics Notebook, which can be located by visiting the NDWEE website at http://dee.ne.gov, and first selecting the "Air" tab, then the "Air Grants, Planning and Outreach Program" dropdown menu tab, then the "Air Toxics Program" dropdown menu tab, and then select "Air Toxics Program". Or alternately use the "Search NDWEE Web" search box on the upper right of the webpage and enter "Air Toxics".

Chapter 15 – Particulate Matter Emissions:

Section 001.02 – Particulate Emissions from Combustion Sources: In accordance with Section 001.06, because the engine(s) at the source is/are subject to 40 CFR Part 60 Subpart IIII, which includes a PM emission limitation that is more stringent than the limitation provided in this chapter, the engine(s) is/are not subject to Section 001.02. The source will comply with this regulation by purchasing engine(s) certified by a manufacturer to comply with Subpart IIII, combusting only diesel fuel in each engine, and by properly operating and maintaining all emission units.

If the source constructs external combustion units, they will comply with Section 001.02 by exclusively combusting the fuels permitted in this GCP, and by properly operating and maintaining all equipment.

Section 001.04 – Opacity: No person may cause or allow emissions which are of an opacity equal to or greater than twenty percent (20%) as evaluated by an EPA-approved method, or recorded by a continuous opacity monitoring system operated and maintained pursuant to 40 CFR Part 60 Appendix B. The source will comply with this requirement by properly operating and maintaining equipment.

SPECIFIC PERMIT CONDITIONS DISCUSSION:

Condition III includes conditions that are specific to the emissions units and emission points listed in each respective condition. Permit conditions that require no additional discussion are not included in this section.

III.(A) Specific Conditions for Emergency Engine(s)

III.(A)(1) This condition permits the source to construct the applicable emergency engine(s) and specifies the maximum capacity, fuel type, and displacement. It also specifies the model year restriction for the engine(s).

III.(A)(2) The source is subject to, and must comply with, the requirements of Chapter 15, Section 001.04; NSPS Subpart IIII; and NESHAP Subpart ZZZZ. In accordance with Chapter 15, Section 001.06, the emission points are not subject to the requirements of Chapter 15, Section 001.02 if a more stringent NSPS limitation applies to the emission point. The engines covered by this permit must be certified by the manufacturer in accordance with NSPS, Subpart IIII.

III.(A)(3) The source is limited to a maximum engine output, aggregated over all engines covered under this GCP, of 10,000 hp. The emergency engines are subject to an annual restriction of 500 hours of operation for each engine for each period of 12 consecutive months. Hours of operation must be tracked with a non-resettable hour meter. All emergency engines are permitted to combust either Number 1 (No. 1) fuel oil or Number 2 (No. 2) Fuel Oil. Each engine is subject to the operational and monitoring requirements and limitations of NSPS Subparts A and IIII, and NESHAP Subparts A and ZZZZ.

In addition, the NDWEE is restricting non-emergency operating hours to 100 hours per calendar year prescribed in NSPS Subpart IIII and further limiting the operating hours between the hours of 11:00 AM to 4:00 PM CDT/CST. These hours were selected to minimize potential impacts NO_X due to the photochemical reactions and lower residence time of this pollutant.

III.(A)(4) This condition identifies the applicable federal regulations that apply to the source.

III.(A)(5) The source is required to maintain records on the maximum engine output and model year for each engine for the lifetime of the engine. Hours of operation for each engine shall be logged on a monthly basis. The consecutive 12-month totals for the hours of operation must be calculated, updated monthly, and kept on file. The source is subject to the reporting and recordkeeping requirements of NSPS Subparts A and IIII, and NESHAP Subparts A and ZZZZ.

III.(B) Specific Conditions for External Combustion Units

III.(B)(1) This condition permits the source to construct the applicable external combustion units and specifies the maximum capacity and permitted fuel types.

III.(B)(2) The source is subject to, and must comply with the requirements of Chapter 15, Section 001.02 and 001.04.

III.(B)(3) The source is limited to combusting only diesel fuel, LPG, and/or natural gas. The source may be subject to the operational and monitoring requirements and limitations of NSPS Subpart A and Dc, and/or NESHAP Subparts A and JJJJJJ or DDDDD.

III.(B)(4) This condition identifies the federal regulations that may apply to the external combustion units covered under this permit.

III.(B)(5) The source is required to maintain records on the maximum heat capacity of the external combustion units and fuel types combusted for the lifetime of the units. The source may be subject to the reporting and recordkeeping requirements of NSPS Subparts A and Dc, and/or NESHAP Subparts A and JJJJJJ or DDDDD.

Fact Sheet Attachment

Facility Emissions Summary

Maximum Facility-Wide Emissions (tons/year)													
Pollutant:	PM	PM_{10}	$PM_{2.5}$	SO_x	NO_x	CO	VOC	CO_2	CH_4	N_2O	GHGs (Mass Basis)	GHGs (CO_2e Basis)	Total HAPs
Emergency Engine(s)	0.82	0.82	0.82	5.13	27.13	17.40	6.29	2,853	0.12	2.31E-02	2,854	2,863	0.07
External Combustion Unit(s)	1.28	1.28	1.28	4.60	12.79	7.14	0.95	14,284	0.58	0.85	14,284	14,332	0.16
Sum:	2.10	2.10	2.10	9.73	39.91	24.54	7.23	17,137	0.70	0.88	17,138	17,195	0.23

Emission Unit Summary

Process Description	Emission Unit ID	Maximum Capacity	Fuel Type
Emergency Engine(s)	EU-ENGINES	10,000 hp	Diesel
External Combustion Unit(s)	EU-EXTCOMB	20 MMBtu/hr	Natural Gas, LPG, and/or Diesel

Operation Parameters and Limitations

Maximum combined design capacity for emergency generator engines (hp) =	10,000
Maximum annual engine usage (hours) =	500
Model year for emergency generator engines:	2014 or later
Maximum displacement for emergency generator engines (L/cyl) =	< 30
Maximum combined design capacity for external combustion units (MMBtu/hr) =	20

Fact Sheet Attachment

Diesel-Fired Emergency Generator Engine(s): EP-ENGINES

[A] Engine Output (hp)	10,000
[B] Engine Heat Input (MMBtu/hr) = [A] x 7,000[1] / 1,000,000	70.00
[D] = [B] x [C] when [C] is lb/MMBtu	
[D] = [A] x [C] when [C] is lb/hp-hr	
[D] = [A] x [C] x 0.00220462 when [C] is g/hp-hr	
[E] Operating Hours (hrs/yr)[3]	500
[F] = [D] x [E]/2000	

Pollutant	[C] Emission Factor	Emission Factor Source[2]	[D] PTE (lbs/hr)	[F] PTE (tons/yr)
Particulate Matter	0.15 g/hp-hr	Reference 6	3.29	0.82
Particulate Matter ≤ 10 µm	0.15 g/hp-hr	Reference 6	3.29	0.82
Particulate Matter ≤ 2.5 µm	0.15 g/hp-hr	Reference 6	3.29	0.82
Sulfur Oxides	2.05E-03 lb/hp-hr	Reference 1	20.50	5.13
Nitrogen Oxides	4.92 g/hp-hr	Reference 6	108.50	27.13
Carbon Monoxide	6.96E-03 lb/hp-hr	Reference 1	69.60	17.40
Volatile Organic Compounds	2.51E-03 lb/hp-hr	Reference 1	25.14	6.29
Greenhouse Gases (GHGs)				
CO_2	73.96 kg/MMBtu	Reference 2	11,414	2,853
CH_4	3.00E-03 kg/MMBtu	Reference 3	4.63E-01	1.16E-01
N_2O	6.00E-04 kg/MMBtu	Reference 3	9.26E-02	2.31E-02
GHGs (mass basis)			11,414	2,854
CO_2e basis[3]			11,452	2,863
Hazardous Air Pollutants				
Acetaldehyde	7.67E-04 lb/MMBtu	Reference 5	5.37E-02	1.34E-02
Acrolein	9.25E-05 lb/MMBtu	Reference 5	6.48E-03	1.62E-03
Benzene	9.33E-04 lb/MMBtu	Reference 5	6.53E-02	1.63E-02
Formaldehyde	1.18E-03 lb/MMBtu	Reference 5	8.26E-02	2.07E-02
Naphthalene	1.30E-04 lb/MMBtu	Reference 4	9.10E-03	2.28E-03
Toluene	4.09E-04 lb/MMBtu	Reference 5	2.86E-02	7.16E-03
Xylene	2.85E-04 lb/MMBtu	Reference 5	2.00E-02	4.99E-03
Total PAH[4]	2.12E-04 lb/MMBtu	Reference 4	1.48E-02	3.71E-03
Total Hazardous Air Pollutants			2.81E-01	7.01E-02

Reference 1: AP-42 Table 3.3-1 as published October, 1996

Reference 2: 40 CFR 98 Table C-1 as published November 29, 2013

Reference 3: 40 CFR 98 Table C-2 as published November 29, 2013

Reference 4: AP-42 Table 3.4-4 as published October, 1996

Reference 5: AP-42 Table 3.3-2 as published October, 1996

Reference 6: 40 CFR 60, Subpart IIII Table 1

[1] 7,000 BTU/hp-hr taken from Reference 1

[2] Based on worst-case operating scenario for both small and large diesel engines

[3] 40 CFR 98 Table A-1 as published October 30, 2009

[4] Polycyclic Aromatic Hydrocarbons

Fact Sheet Attachment

External Combustion Unit(s)[1]: EP-EXTCOMB

[A] Aggregate Heat Input Capacity (MMBtu/hr)	20.00
[B] Diesel Fuel Heat Content (MMBtu/gal)[1]	0.137
[C] Maximum Fuel Capacity (10^3 gal/hr) = [A]/[B]/1000	0.15
[D] Maximum Sulfur Content of Fuel (%)	0.05
[E] for Sulfur Oxides = {142 x [D]} + {2 x [D]}	
[F] = [C] x [E] when [E] is lb/10^3 gal	
[F] = [A] x [E] x 2.20462 when [E] is kg/MMBtu	
[G] Operating Hours (hrs/yr)	8,760
[H] = [F] x [G]/2000	

Pollutant	[E] Emission Factor	Units	Emission Factor Source	[F] PTE (lbs/hr)	[H] PTE (ton/yr)
Particulate Matter	2.00	lb/10^3 gal	Reference 1	0.29	1.28
Particulate Matter ≤ 10 µm	2.00	lb/10^3 gal	Reference 2,3	0.29	1.28
Particulate Matter ≤ 2.5 µm	2.00	lb/10^3 gal	Reference 2,3	0.29	1.28
Sulfur Oxides	7.20	lb/10^3 gal	Reference 1	1.05	4.60
Nitrogen Oxides	20.00	lb/10^3 gal	Reference 1	2.92	12.79
Carbon Monoxide	5.00	lb/10^3 gal	Reference 1	0.73	3.20
Volatile Organic Compounds	0.34	lb/10^3 gal	Reference 4	0.05	0.22
Greenhouse Gases (GHGs)					
CO_2	73.96	kg CO_2/MMBtu	Reference 5	3,261	14,284
CH_4	3.00E-03	kg CH_4/MMBtu	Reference 6	0.13	0.58
N_2O	6.00E-04	kg N_2O/MMBtu	Reference 6	0.03	0.12
GHGs (mass basis)				3,261	14,284
CO_2e basis[2]				3,272	14,332
Hazardous Air Pollutants					
1,1,1-Trichloroethane	2.36E-04	lb/10^3 gal	Reference 7	3.45E-05	1.51E-04
Benzene	2.14E-04	lb/10^3 gal	Reference 7	3.12E-05	1.37E-04
Ethylbenzene	6.36E-05	lb/10^3 gal	Reference 7	9.28E-06	4.07E-05
Formaldehyde	6.10E-02	lb/10^3 gal	Reference 8	8.91E-03	3.90E-02
Naphthalene	1.13E-03	lb/10^3 gal	Reference 7	1.65E-04	7.23E-04
Polycyclic Organic Matter	3.30E-03	lb/10^3 gal	Reference 8	4.82E-04	2.11E-03
Toluene	6.20E-03	lb/10^3 gal	Reference 7	9.05E-04	3.96E-03
o-Xylene	1.09E-04	lb/10^3 gal	Reference 7	1.59E-05	6.97E-05
Arsenic Compounds	5.48E-04	lb/10^3 gal	Reference 9	8.00E-05	3.50E-04
Beryllium Compounds	4.11E-04	lb/10^3 gal	Reference 9	6.00E-05	2.63E-04
Cadmium Compounds	4.11E-04	lb/10^3 gal	Reference 9	6.00E-05	2.63E-04
Chromium Compounds	4.11E-04	lb/10^3 gal	Reference 9	6.00E-05	2.63E-04
Lead Compounds	1.23E-03	lb/10^3 gal	Reference 9	1.80E-04	7.88E-04
Manganese Compounds	8.22E-04	lb/10^3 gal	Reference 9	1.20E-04	5.26E-04
Mercury Compounds	4.11E-04	lb/10^3 gal	Reference 9	6.00E-05	2.63E-04
Nickel Compounds	4.11E-04	lb/10^3 gal	Reference 9	6.00E-05	2.63E-04
Selenium Compounds	2.06E-03	lb/10^3 gal	Reference 9	3.00E-04	1.31E-03
Total Hazardous Air Pollutants				1.15E-02	5.05E-02

Reference 1: AP-42 Table 1.3-1 (05/10)

Reference 2: AP-42 Table 1.3-2 (05/10)

Reference 3: AP-42 Table 1.3-7 (05/10)

Reference 4: AP-42 Table 1.3-3 (05/10)

Reference 5: 40 CFR 98 Table C-1, as published November 29, 2013

Reference 6: 40 CFR 98 Table C-2, as published November 29, 2013

Reference 7: AP-42 Table 1.3-9 (05/10)

Reference 8: AP-42 Table 1.3-8 (05/10)

Reference 9: AP-42 Table 1.3-10. Converted from lb/10^{12} Btu to lb/10^3 gal (05/10)

[1] Worst-case scenario between diesel, natural gas, and liquefied petroleum gas was used

[2] 40 CFR 98 Table A-1 as published October 30, 2009

Fact Sheet Attachment

NG External Combustion Unit(s)[1]: EP-EXTCOMB

[A] Aggregate Heat Input Capacity (MMBtu/hr)	20.00
[B] Diesel Fuel Heat Content (Btu/scf)[1]	1,030
[C] Maximum Fuel Capacity (MMscf/hr)	1.94E-02
[D] Maximum Sulfur Content of Fuel (%)	0.0085
[E] for Sulfur Oxides = {142 x [D]} + {2 x [D]}	
[F] = [C] x [E] when [E] is lb/103 gal	
[F] = [A] x [E] x 2.20462 when [E] is kg/MMBtu	
[G] Operating Hours (hrs/yr)	8,760
[H] = [F] x [G]/2000	

Pollutant	[E] Emission Factor	Units	Emission Factor Source	[F] PTE (lbs/hr)	[H] PTE (ton/yr)
Particulate Matter	1.90	lb/MMscf	Reference 1	0.04	0.16
Particulate Matter ≤ 10 µm	7.60	lb/MMscf	Reference 1	0.15	0.65
Particulate Matter ≤ 2.5 µm	7.60	lb/MMscf	Reference 1	0.15	0.65
Sulfur Oxides	0.60	lb/MMscf	Reference 1	0.01	0.05
Nitrogen Oxides	100.00	lb/MMscf	Reference 2	1.94	8.50
Carbon Monoxide	84.00	lb/MMscf	Reference 2	1.63	7.14
Volatile Organic Compounds	5.50	lb/MMscf	Reference 1	0.11	0.47
Greenhouse Gases (GHGs)					
CO2	53.06	lb/MMscf	Reference 1	2,340	10,247
CH4	1.00E-03	lb/MMscf	Reference 1	4.41E-02	0.19
N2O	1.00E-04	lb/MMscf	Reference 1	4.41E-03	1.93E-02
GHGs (mass basis)				2,340	10,247
CO2e basis[2]				2,342	10,257
Hazardous Air Pollutants					
Formaldehyde	0.08	lb/MMscf	Reference 3	1.46E-03	6.38E-03
Hexane	1.80	lb/MMscf	Reference 3	3.50E-02	0.15
Other Hazardous Air Pollutants	7.40E-03	lb/MMscf		1.44E-04	6.29E-04
Total Hazardous Air Pollutants				3.67E-02	0.16

Reference 1: AP-42 Table 1.4-2 (07/98)

Reference 2: AP-42 Table 1.4-1 (07/98)

Reference 3: AP-42 Table 1.4-3 (07/98)

[1] Worst-case scenario between diesel, natural gas, and liquefied petroleum gas was used

Fact Sheet Attachment

LPG/Propane External Combustion Unit(s)[1]: EP-EXTCOMB

[A] Aggregate Heat Input Capacity (MMBtu/hr)	20.00
[B] Propane Heat Content (MMBtu/gal)	0.09
[C] Maximum Fuel Capacity (10^3 gal/hr) = [A]/[B]/1000	0.22
[D] Maximum Sulfur Content of Fuel (gr/100 scf)	5.00
[E] for Sulfur Oxides = {0.10 x [D]}	
[F] = [C] x [E] when [E] is lb/10^3 gal	
[F] = [A] x [E] x 2.20462 when [E] is kg/MMBtu	
[G] Operating Hours (hrs/yr)	8,760
[H] = [F] x [G]/2000	

Pollutant	[E] Emission Factor	Units	Emission Factor Source	[F] PTE (lbs/hr)	[H] PTE (ton/yr)
Particulate Matter	0.20	lb/10^3 gal	Reference 1	0.04	0.19
Particulate Matter ≤ 10 µm	0.20	lb/10^3 gal	Reference 1	0.04	0.19
Particulate Matter ≤ 2.5 µm	0.20	lb/10^3 gal	Reference 1	0.04	0.19
Sulfur Oxides	0.50	lb/10^3 gal	Reference 1	0.11	0.47
Nitrogen Oxides	0.90	lb/10^3 gal	Reference 1	0.19	0.85
Carbon Monoxide	7.50	lb/10^3 gal	Reference 1	1.62	7.10
Volatile Organic Compounds	1.00	lb/10^3 gal	Reference 1	0.22	0.95
Greenhouse Gases (GHGs)					
CO_2	12,500	lb CO_2/10^3 gal	Reference 1	2,703	11,838
CH_4	0.20	lb CH_4/10^3 gal	Reference 1	0.04	0.19
N_2O	0.90	lb N_2O/10^3 gal	Reference 1	0.19	0.85
GHGs (mass basis)				2,703	11,839
CO2e basis[2]				2,764	12,106
Hazardous Air Pollutants					
Total Hazardous Air Pollutants[2]				3.67E-02	0.16

Reference 1: AP-42 Table 1.5-1 (07/08)

[1] Worst-case scenario between diesel, natural gas, and liquefied petroleum gas was used

[2] Because AP-42 does not include HAP emission factors for LPG, emission factors from Natural Gas were used as a most similar scenario

Fact Sheet Attachment

External Combustion Unit(s): EP-EXTCOMB

Worst Case Scenario for External Combustion Unit Emissions

Pollutant	Diesel PTE	NG PTE	LPG PTE	Max PTE (ton/yr)	Corresponding Fuel
Particulate Matter	1.28	0.16	0.19	1.28	Diesel
Particulate Matter ≤ 10 µm	1.28	0.65	0.19	1.28	Diesel
Particulate Matter ≤ 2.5 µm	1.28	0.65	0.19	1.28	Diesel
Sulfur Oxides	4.60	0.05	0.47	4.60	Diesel
Nitrogen Oxides	12.79	8.50	0.85	12.79	Diesel
Carbon Monoxide	3.20	7.14	7.10	7.14	Natural Gas
Volatile Organic Compounds	0.22	0.47	0.95	0.95	LPG
Greenhouse Gases (GHGs)					
CO_2	14,284	10,247	11,838	-	
CH_4	0.58	0.19	0.19	-	
N_2O	0.12	0.02	0.85	-	
GHGs (mass basis)	14,284	10,247	11,839	14,284	Diesel
CO_2e basis[2]	14,332	10,257	12,106	14,332	Diesel
Hazardous Air Pollutants					
Total Hazardous Air Pollutants	0.05	0.16	0.16	0.16	Natural Gas/LPG

Fact Sheet Attachment

Particulate Matter (PM) Emissions for Emergency Backup Generator Engines:

Total Heat Input (MMBtu/hr)	Maximum Allowable Emissions of PM (lbs/MMBtu) [B]
10 or less	0.6
Between 10 and 10,000	$1.026/I^{0.233}$ Where I = Total Heat Input in MMBUT/hr
10,000 or more	0.12

[D] NSPS Subpart IIII PM Allowable (grams/kW-hr)[2]: 0.20

[F] NSPS Subpart IIII PM Allowable (grams/hp-hr): 0.15

[F] = [D] / 1.341

[G] NSPS Subpart IIII PM Allowable (lbs/MMBtu)

[G] = [F] x 2.20462E-03 x 1,000,000 / 7,000

Combustion Unit(s)	[E] Engine Output (hp)	[A] Heat Input (MMBtu/hr)	[B] Chapter 20 PM Allowable (lbs/MMBtu)	[G] NSPS Subpart IIII PM Allowable (lbs/MMBtu)	Unit PM Emission Rate (lbs/MMBtu)
EP-ENGINES	10,000	70.00	0.38	4.70E-02	4.70E-02

[1] Title 129, Chapter 15, Section 001.02, Table 15-2

[2] 40 CFR 89 Subpart B §89.112 Table 1 as published July 13, 2005

Combustion Unit(s)	[A] Heat Input	[B] Chapter 20 PM Allowable	Unit PM emission rate
	(MMBtu/hr)	(lbs/MMBtu)	(lbs/MMBtu)
EP-EXTCOMB (Diesel)	20.00	0.51	1.46E-02
EP-EXTCOMB (Natural Gas)	20.00	0.51	1.84E-06
EP-EXTCOMB (LPG)	20.00	0.51	2.16E-03