RAMBOLL

ENVIRONMENT
& HEALTH

JS-2

February 3, 2026

Indiana Department of Environmental Management
Office of Air Quality – Permits Branch
100 N. Senate Avenue, Room 13W
Indianapolis, IN 46204-2251

RE: INITIAL APPLICATION FOR CONSTRUCTION & TITLE V OPERATING PERMIT LEBANON, BOONE COUNTY, INDIANA – ORLA, LLC

To Whom It May Concern:

Orla, LLC (Orla) is submitting an initial application for a Construction and Title V Operating Permit to the Indiana Department of Environmental Management (IDEM) to construct and operate a data center in Lebanon, Boone County, Indiana. Specifically, Orla is proposing to construct and operate twelve (12) diesel-fueled emergency generator engines that will provide backup power to safety equipment and administrative office spaces during utility outages and two (2) diesel-fueled fire pumps that will provide power to pump water for fire suppression in the event of a fire.

Orla will own and operate the proposed emergency generators and fire pumps. On the land owned by Orla and potentially leased to third parties, other pieces of equipment that will be owned and operated by other entities may be present. These pieces of equipment may include natural gas-fired generator engines, natural gas-fired turbines, and natural gas and/or diesel-fired boilers. Orla will have no power or authority to dictate how to operate these pieces of equipment. After discussions with IDEM[1] and in accordance with IDEM's nonrule policy Air-006,[2] Orla and the third-party entities will be a single source for air permitting but will submit administratively separate Title V air permit applications to align with the ownership structure of the equipment onsite. Specifically, Orla is submitting this application as the primary source. Separate applications for the third-party owned and operated equipment will be submitted by the owners and operators of that equipment as on-site contractor applications.

Orla is proposing a nitrogen oxides (NO_X) limit of 26 tons per year (tpy) for the equipment owned and operated by Orla. As NO_X is the highest-emitted pollutant for these units, limiting NO_X will inherently limit all other criteria air pollutants. Combined potential emissions for the equipment owned and operated by Orla as well as the third-party contractors are expected to be greater than Title V thresholds but less than PSD major source thresholds. As such, Orla is submitting an application for a Construction and Title V Operating Permit while requesting a 26 tpy NO_X limit specific to Orla's equipment. Potential emissions for third-party owned/operated equipment will be included in the forthcoming applications to be submitted by the third parties.

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[1] Meeting between Orla, Ramboll, and IDEM on November 13, 2026.

[2] https://www.in.gov/idem/resources/nonrule-policies/effective-nonrule-policies/

Should you have any questions on this air permit application, please do not hesitate to reach out to me at (678) 388-1669 or at jbates@ramboll.com.

Yours sincerely,

Josie Bates

Josie Bates
Senior Managing Consultant, Ramboll

Intended for
Indiana Department of Environmental Management

Date
February 2026

APPLICATION FOR CONSTRUCTION AND PART 70 (TITLE V) OPERATING PERMIT

ORLA, LLC

LEBANON, IN

RAMBOLL

CONTENTS

APPENDICES

1. INTRODUCTION

Orla, LLC (the applicant) is proposing to construct and operate a data center in Lebanon, Boone County, Indiana. Pursuant to Title 326 of the Indiana Administrative Code (IAC) Section 2, the applicant is submitting this application for a Construction and Part 70 (Title V) Operating Permit to construct and operate twelve (12) diesel-fueled emergency generator engines and associated diesel fuel belly tanks that will provide backup power to safety equipment and administrative office spaces during utility outages (i.e., when power from the electric grid is interrupted), as well as two (2) diesel-fueled fire pump engines to provide power to pump water for fire suppression in the event of a fire (herein referred to as "facility-wide" equipment). The applicant has not made a final determination on emergency engine manufacturer, and as such, is requesting to permit the worst-case generator engine under consideration so that any engine with emissions equal to or less than the permitted emissions may be installed.[1] Additionally, the applicant is requesting to use both ultra-low sulfur diesel fuel (ULSD) and renewable diesel, conforming to ASTM D975 specifications for petroleum, including hydrotreated vegetable oil (HVO), in all proposed emergency generator and fire pump engines.

The proposed source will be classified as a major source of air emissions with respect to the Title V Operating Program.[2] Accordingly, the applicant is submitting this Part 70 Operating Permit Application under 326 IAC 2-7 to address all applicable federal and state requirements applicable to the emissions equipment discussed herein. As detailed in the accompanying cover letter to this application, the applicant will only own and operate the aforementioned diesel-fueled emergency generator engines and diesel-fueled fire pumps, and as such, only these pieces of equipment are included in this application. The applicant is requesting a limit on nitrogen oxides (NO_X) across the proposed emergency generator engines and fire pumps of 26 tons per year (tpy). The applicant proposes to show compliance with this limit by maintaining 12-month rolling emission calculations for NO_X utilizing engine runtime, output kilowatts, and NSPS emission factors.

A site location map and site layout are provided in **Appendix 1**. **Appendix 2** contains the completed Indiana Department of Environmental Management (IDEM) Construction Permit and Part 70 Application Forms. Fire pump engine performance specifications are included in **Appendix 3**. Potential emissions estimates for the proposed generators and fire pump engines are provided in **Appendix 4**. Renewable diesel specifications are provided in **Appendix 5**.

[1] Tier 2 emission rates were used to calculate emissions as any proposed generator engine would be Tier 2 certified. For air pollutants without Tier 2 emissions standards, AP-42 emission factors were used. The applicant plans to install each of the new generators with a Diesel Particulate Filter (DPF) and a Diesel Oxidation Catalyst (DOC) to reduce particulate matter (PM), volatile organic compounds (VOCs), and carbon monoxide (CO) emissions. However, the applicant is not taking credit for these emissions reductions in this application.

[2] See cover letter for details.

2. FACILITY DESCRIPTION

The applicant is proposing to construct and operate diesel-fueled emergency generator engines that will provide backup power to safety equipment and administrative office spaces during utility outages, as well as diesel-fueled fire pumps that will supply power for fire-suppression water pumping. A list of proposed emission point identification (ID) numbers is provided in **Table 1**. The final make and model of the emergency generators engines have not been determined, so the applicant is requesting approval to install and operate emergency generator engines with maximum brake horsepower ratings up to 4,500 bhp each.

Table 1. Generator IDs

Engine Type	Number of Engines	Emission Point ID Numbers
Engine	12	EG-1 through EG-12
Diesel Fire Pump	2	DFP-1 & DFP-2

Other sources of emissions at the proposed facility will consist of diesel belly storage tanks for each generator and exempt equipment used exclusively for construction.[3] No wet cooling towers will be installed at the facility. Instead, the facility will utilize closed-loop adiabatic cooling systems.

[3] Concrete batch plants will be used for construction only.

3. EMISSIONS CALCULATIONS

Pollutants emitted from the proposed facility will include NO_X; carbon monoxide (CO); volatile organic compounds (VOCs); sulfur dioxide (SO_2); particulate matter (PM); PM less than 10 microns in aerodynamic diameter (PM_{10}); PM less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$); hazardous air pollutants (HAPs); and greenhouse gases (GHGs), represented in terms of carbon dioxide equivalents (CO_2e).

For emissions calculation purposes, the applicant conservatively assumed standard diesel (ULSD) with the highest applicable emission factors; no emission credit was taken for the use of renewable diesel. For simplicity, the applicant will conservatively default to the ULSD emission factors for emissions tracking.

The methodology used to estimate the potential emissions from each source is discussed in the following sections, and detailed calculations are provided in **Appendix 4**.

3.1 Diesel-fueled Emergency Standby Generators

Operation of the diesel-fueled emergency generator engines will result in emissions of products of combustion.

3.1.1 Derivation of Potential Hourly Emissions

The following emission factors were used to estimate the potential hourly emissions from the emergency generator engines:

- Tier 2 engine emission factors from 40 Code of Federal Regulations (CFR) 1039, Appendix I for engines greater than 560 kW were used to estimate emissions of NO_X, VOC (as hydrocarbons), CO, and filterable PM. The applicant has not yet selected the engine make and model to be installed. As such, the applicant is requesting the flexibility to install any engine with a horsepower rating less than or equal to 4,500 bhp.
- Diesel fuel emission factors in the USEPA's AP-42, Section 3.4, *Large Stationary Diesel and All Stationary Dual-fuel Engines* (April 2025) were used for emissions of condensable PM, SO_2, and HAPs.
- GHG emission factors and global warming potentials provided in 40 CFR 98 were used to estimate emissions of CO_2e from diesel fuel combustion.

3.1.2 Derivation of Potential Annual Engine Emissions

Both unlimited and limited potential annual emissions from the emergency generator engines were calculated. Unlimited potential annual emissions assumed maximum hourly emission rate, per pollutant, operated 500 hours per year per generator. The limited potential annual emissions from the emergency generators were based on the requested facility-wide NO_X limitation of **26 tons per year** on an aggregate, 12-month rolling basis, minus the potential emissions from the fire pumps.

NO_X is the criteria pollutant with the highest hourly emissions. As such, limiting total NO_X emissions from all generators also inherently limits the potential emissions of all other criteria pollutants. To reflect the limiting nature of NO_X in the limited potential emissions calculations, the applicant estimated the ratio of specific pollutant emissions to NO_X emissions (pounds per hour of

pollutant emitted/pounds per hour of NO_X emitted) using the emission factors described above. Then, potential annual emissions from the generators for all pollutants other than NO_X were calculated as the ratio of pollutant emissions to NO_X emissions multiplied by the potential limited NO_X emissions.

3.2 Diesel-fueled Fire Water Pump

Operation of the diesel-fueled fire pump engines will result in emissions of combustion products.

3.2.1 Derivation of Potential Hourly and Annual Emissions

The following emission factors were used to estimate the potential hourly emissions from the diesel-fueled fire pump engines:

- Emission factors for NO_X, CO, VOC, and filterable PM were based on the Tier 3 engine standards for non-road compression-ignition engines, as provided in Table 4 of 40 CFR 60, Subpart IIII.
- Diesel fuel emission factors for PM_{10}, SO_2, and HAPs were obtained from the USEPA's AP-42, Section 3.3, *Gasoline and Diesel Industrial Engines* (April 2025).
- GHG emission factors and global warming potentials provided in 40 CFR 98 were used to estimate emissions of CO_2e from diesel fuel combustion.

Potential annual emissions from the diesel-fueled fire water pumps were estimated conservatively assuming 500 hours per year of operation.[4]

3.3 Diesel Belly Storage Tanks

Emissions of VOC from the diesel belly tanks will result from standing and working losses.[5] These emissions were calculated following the methodologies presented in AP-42, Chapter 7.1 (Organic Liquid Storage Tanks) and are provided in **Appendix 4**. The maximum annual fuel throughput for each belly tank was based on:

- The maximum hourly diesel fuel consumption rate of the proposed generator engines; and,
- A maximum of 500 hours of operation per engine annually.

3.4 Paved Roads

Emissions of PM from vehicle traffic related to the emergency generators and fire pumps may result from travel on the paved roads. Specifically, vehicle traffic pertaining to fuel delivery trucks for fueling the diesel belly tanks and generator contractor vehicles for the generators and fire pumps may cause emissions of PM during travel on the facility's paved roads. These potential emissions were calculated following the methodologies presented in AP-42, Chapter 13.2.1.

3.5 Summary of the Applicant's Potential Emissions

A summary of the facility's potential emissions is provided in **Table 2** below.

[4] Default assumption for calculating potential to emit from emergency generators, consistent with September 6, 1995 memo from USEPA, https://www.epa.gov/sites/production/files/2015-08/documents/emgen.pdf

[5] Any potential HAP emissions from the operation of the diesel belly tanks are expected to be insignificant.

Table 2. Facility-Wide Potential Emissions

Pollutant	Potential Annual Emissions (tpy)				Facility-Wide Potential Emissions (tpy)[1]
	Emergency Generators	Diesel Storage Tank	Fire Pump	Paved Roads	
NO_X	25.67	--	0.33	--	26.00
CO	7.38	--	0.49	--	17.87
VOC	6.42	0.02	0.08	--	6.52
Filterable PM	1.00	--	0.03	0.16	1.03
PM_{10}	1.16	--	0.19	0.16	1.35
$PM_{2.5}$	1.16	--	0.19	6.48E-03	1.35
SO_2	0.03	--	0.18	--	0.21
Max. Individual HAP (Benzene)	0.02	--	5.69E-04	--	0.02
Total HAP	0.03	--	3.08E-03	--	0.03
CO_2e	3,323	--	99.75	--	3,423

[1]Excludes fugitive sources.

The applicant proposes to show compliance with the limited potential emissions by tracking 12-month rolling NO_X emissions from the facility's emergency generator engines monthly, calculating emissions based on NSPS Tier 2 emission factors, engine runtime, and engine kilowatt output.

4. FEDERAL AND STATE REGULATORY APPLICABILITY

The following section outlines the federal and state air regulations that are potentially applicable to the proposed facility. Specifically, the requirements under the federal New Source Performance Standards (NSPS), National Emissions Standards for Hazardous Air Pollutants (NESHAP), Compliance Assurance Monitoring, Chemical Accident Prevention Provisions, Protection of Stratospheric Ozone, and Indiana Administrative Code (IAC) are discussed herein.

4.1 New Source Performance Standards

NSPS, promulgated in 40 CFR 60, provides emissions standards for criteria pollutant emissions from new, modified, and reconstructed sources. The following sections discuss the NSPS that are potentially applicable to the proposed facility.

4.1.1 40 CFR 60 Subpart A – General Provisions

NSPS Subpart A provides generally applicable requirements for testing, monitoring, notifications, and recordkeeping. Any source that is subject to another subpart under 40 CFR 60 is also subject to Subpart A, unless otherwise stated in the specific subpart.

4.1.2 40 CFR 60 Subpart IIII – Stationary Compression Ignition Internal Combustion Engines

NSPS Subpart IIII applies to new, modified, and reconstructed compression ignition (CI) internal combustion engines (ICE). New engines are subject to this regulation if construction of the CI ICE commenced after July 11, 2005, and if the engine was manufactured after April 1, 2006, for CI ICE that are not fire pump engines, or July 1, 2006, for CI ICE that are fire pump engines.[6] This rule applies to the proposed CI ICE that will be operated at the facility.

The emergency generator engines and fire pump engines will meet the definition of emergency stationary ICE in 40 CFR 60.4219.

4.1.2.1 Emission Standards for Emergency Generators

The proposed generator engines will be classified as emergency generator engines under this regulation and will each have a displacement of less than 10 liters per cylinder. Per 40 CFR 60.4205(b), each generator engine will be subject to the applicable emission standards in 40 CFR 1039 Appendix I as summarized in **Table 3**.[7] The USEPA Tier 2 standards are based on a weighted cycle and cannot be used for comparison to the actual emissions from the engine at a specific load.

Table 3. Tier 2 Emission Standards

Pollutant	Emission Standard (g/kW-hr)
NO_X + Non-Methane Hydrocarbons (NMHC)	6.4
CO	3.5
PM	0.20

[6] 40 CFR 60.4200(a)(2)

[7] 40 CFR 1039 Appendix I

Additionally, the facility is required to only combust in its generators fuel that complies with the following requirements in 40 CFR 1090.305 for nonroad diesel fuel:[8]

- Maximum sulfur content of 15 ppm; and
- Either a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

The applicant will comply with the emission standards in 40 CFR 1039 Appendix I by purchasing engines certified by the manufacturer to comply with the Tier 2 emission standards.[9] Further, the site will operate and maintain each engine according to the manufacturer's emission-related written instructions and only change those emission-related settings that are permitted by the manufacturer.[10]

4.1.2.2 *Emission Standards for Fire Pumps*

The proposed fire pump engines will each have displacements of less than 30 liters per cylinder. Per 40 CFR 60.4205(c), the fire pump engines are subject to the applicable emission standards in Table 4 of this subpart. These emissions standards are summarized in **Table 4**.[11]

Table 4. Fire Pump Emission Standards

Pollutant	Emission Standard (g/kW-hr)
NO_X + Non-Methane Hydrocarbons (NMHC)	4.0
PM	0.30
CO	5.0

The applicant will comply with the emission standards in 40 CFR 60 Subpart IIII by purchasing engines certified by the manufacturer to comply with these emission standards. [12] Further, the site will operate and maintain the fire pumps according to the manufacturer's emission-related written instructions and only change those emission-related settings that are permitted by the manufacturer.[13]

4.1.2.3 *Run Time Restrictions for Emergency ICE*

For a stationary engine to be considered an emergency ICE under NSPS Subpart IIII, it must meet the run time restrictions in 40 CFR 60.4211(f).

There is no restriction on the usage of an emergency ICE in emergencies.[14] Each engine is restricted to a maximum of 100 hours per calendar year of operation for maintenance checks and

[8] 40 CFR 60.4207(b)

[9] 40 CFR 60.4211(c)

[10] 40 CFR 60.4211(a)

[11] Table 4 to Subpart IIII of Part 60

[12] 40 CFR §60.4211(c)

[13] 40 CFR §60.4211(a)

[14] 40 CFR 60.4211(f)(1)

readiness testing.[15] Each engine is allowed up to 50 hours per calendar year of non-emergency operation other than maintenance and testing; however, any non-emergency run time must be counted as part of the 100 hours per calendar year for maintenance and testing.[16]

The facility will equip each emergency ICE with a non-resettable hour meter before startup of the unit in order to verify compliance with the run time restrictions for emergency and non-emergency runs.[17]

4.1.2.4 Notifications, Reporting, and Recordkeeping

An Initial Notification under NSPS Subpart A is not required for emergency stationary ICE. The facility will retain records of the emergency and non-emergency runs for each engine, as recorded through the engine's non-resettable hour meter. The records will indicate the time of operation of the engine and the reason the engine was in operation during that time.[18]

4.1.2.5 Modifications and the Use of an Alternative Fuel Source

The use of an alternative fuel source shall not be considered a modification, as defined by 40 CFR 60.14, if the facility is designed to accommodate that alternative use. The proposed facility will construct engines that are designed to combust ULSD fuel and/or renewable diesel fuels conforming to EN15940 and ASTM D975 specifications including HVO. Therefore, the use of HVO fuel will not be considered a modification under the NSPS rules.[19]

4.1.3 40 CFR 60, Subpart K – Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978

NSPS Subpart K is applicable to petroleum storage tanks which were constructed, reconstructed, or modified between June 1973 and May 1978, and which have a storage capacity greater than 40,000 gallons.[20] The facility will maintain diesel belly tanks for its proposed generators; however, each of these tanks will be new units constructed after 1978. Furthermore, none of the belly tanks will have a storage capacity greater than 40,000 gallons. Therefore, NSPS Subpart K does not apply.

4.1.4 40 CFR 60, Subpart Ka – Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984

Similar to NSPS Subpart K, NSPS Subpart Ka is applicable to petroleum storage tanks which were constructed, reconstructed, or modified between May 1978 and July 1984, and which have a storage capacity greater than 40,000 gallons.[21] The proposed diesel belly tanks will be new units constructed after 1984. Furthermore, none of the belly tanks will have a storage capacity greater than 40,000 gallons. Therefore, NSPS Subpart Ka is also not applicable.

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[15] 40 CFR 60.4211(f)(2)

[16] 40 CFR 60.4211(f)(3)

[17] 40 CFR 60.4209(a)

[18] 40 CFR 60.4214(b)

[19] 40 CFR 60.14(e)(4)

[20] 40 CFR 60.110

[21] 40 CFR 60.110a

4.1.5 40 CFR 60, Subpart Kb – Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

NSPS Subpart Kb applies to volatile organic liquid (VOL) storage vessels which were constructed, reconstructed, or modified after July 1984. VOL storage tanks are only subject to this rule if they meet one of the following criteria:[22]

- The storage vessel has a maximum storage capacity greater than or equal to 151 m^3 (39,890 gallons) and which stores a VOL with a maximum true vapor pressure exceeding 3.5 kPa (0.51 psia); or
- The storage vessel has a maximum storage capacity greater than or equal to 75 m^3 (19,812.9 gallons) but less than 151 m^3 and which stores a VOL with a maximum true vapor pressure exceeding 15.0 kPa (2.2 psia).

The new diesel belly tanks for the proposed generators will each have a storage capacity less than 19,812.9 gallons. In addition, diesel fuel has a maximum true vapor pressure less than 2.2 psia. Therefore, NSPS Subpart Kb does not apply.

4.1.6 40 CFR 60, Subpart Kc – Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) For Which Construction, Reconstruction, or Modification commenced after October 4, 2023

NSPS Subpart Kc applies to VOL storage vessels which were constructed, reconstructed, or modified after October 4, 2023, and which have a storage capacity greater than 20,000 gallons with maximum true vapor pressure greater than or equal to 1.5 pounds per square inch absolute (psia), or greater than 40,000 gallons with maximum true vapor pressure greater than 0.5 psia. The diesel belly tanks for the proposed generators will each have a storage capacity less than 20,000 gallons. The maximum true vapor pressure of diesel is less than 0.5 psia. Therefore, NSPS Subpart Kc does not apply to the belly tanks. [23]

4.1.7 40 CFR 60 Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engines

NSPS Subpart JJJJ is applicable to new, modified, and reconstructed stationary spark ignition (SI) ICE. All of the proposed generators and fire pumps will be categorized as CI ICE. As such, NSPS Subpart JJJJ does not apply.

4.2 National Emission Standards for Hazardous Air Pollutants

NESHAP, promulgated in 40 CFR 63, regulates emissions of HAP from specific source categories. A facility that has potential emissions exceeding 10 tpy for any individual HAP and/or emissions exceeding 25 tpy for the sum of all HAP is classified as a major source of HAP emissions. A facility that is not a major source of HAP is classified as an area source.

The following sections discuss the potentially applicable NESHAP standards to the proposed facility.

[22] 40 CFR 60.110b(b)

[23] 40 CFR 60.110c

4.2.1 40 CFR 63 Subpart A – General Provisions

NESHAP Subpart A provides generally applicable requirements for testing, monitoring, notifications, and recordkeeping. Any source that is subject to another subpart under 40 CFR 63 is also subject to Subpart A, unless otherwise stated in the specific subpart.

4.2.2 40 CFR 63 Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines

NESHAP Subpart ZZZZ applies to new and existing stationary reciprocating internal combustion engines (RICE) located at both major and area sources of HAP emissions. Per 40 CFR 63.6590(c), for new or reconstructed stationary RICE located at an area source of HAP emissions, the only requirement under NESHAP Subpart ZZZZ is to meet the requirements of NSPS Subpart IIII for CI ICE and of NSPS Subpart JJJJ for SI ICE. Since the proposed CI ICE at the facility will comply with NSPS Subpart IV, the units will also comply with NESHAP Subpart ZZZZ. No further requirements apply for these engines under this regulation.

4.3 Compliance Assurance Monitoring

Compliance Assurance Monitoring (CAM) under 40 CFR 64 is applicable to emission units located at a Title V major source that use a control device to achieve compliance with an emission limit and whose pre-controlled emissions exceed the major source thresholds. A CAM plan is required to be submitted with the initial Title V operating permit application for emission units whose post-controlled emissions exceed the major source thresholds (i.e., large pollutant-specific emission units [PSEU]).[24] Though the diesel-fueled emergency generators will be equipped with emission controls (i.e., DOC and DPF), the applicant is not taking credit for the use of these emission controls and pre-control emissions do not exceed major source thresholds for any individual unit. As such, the emission units are not subject to CAM.

4.4 Chemical Accident Prevention Provisions

The Chemical Accident Prevention Provisions, promulgated in 40 CFR 68, provide requirements for the development of risk management prevention (RMP) plans for regulated substances. Applicability to RMP plan requirements is based on the types and amounts of chemicals stored at a facility. Diesel fuel is not on the list of regulated substances in Subpart F of this rule; therefore, the facility is not required to develop an RMP plan under 40 CFR 68.

4.5 Protection of Stratospheric Ozone

The requirements in 40 CFR 82, Protection of Stratospheric Ozone, regulate the use of ozone depleting substances (ODS) and certain ODS substitutes. The only subpart under this rule that is potentially applicable to the facility's operations is Subpart F – Recycling and Emissions Reduction. The applicant will comply with the applicable requirements under this regulation by servicing, maintaining, or repairing appliances that contain refrigerants which are Class I or Class II ODS or their nonexempt substitutes.

4.6 Indiana Regulatory Review

In addition to federal regulations, the IDEM rules establish regulations applicable at the emission unit level and at the facility level. The regulations also include general requirements for facilities, such as the requirement to obtain permits.

[24] 40 CFR 64.5(a)

4.6.1 326 IAC 2-6 – Emission Reporting

Rule 326 IAC 2-6 applies to sources that either are required to have a Part 70 operating permit or are located in Lake or Porter County and emit VOC or NOx above specified thresholds or emit greater than five tons per year of lead into the ambient air. The facility is requesting a Part 70 permit, and as such, will comply with 326 IAC 2-6 by submitting emissions inventories as required.

4.6.2 326 IAC 4-1 – Open Burning

Rule 326 IAC 4-1 prohibits the open burning of any material except as identified in 326 IAC 4-1-3, 326 IAC 4-1-4, or 326 IAC 4-1-6 unless provided an open burning approval by the Commissioner. The applicant will comply with the requirements of this rule by not openly burning any material except for those allowed.

4.6.3 326 IAC 4-2 – Incineration

Rule 326 IAC 4-2 prohibits the operation of an incinerator except as provided in 326 IAC 4-2. The applicant will not operate an incinerator at its facility.

4.6.4 326 IAC 5-1-1 – Opacity Limits

Rule 326 IAC 5-1-1 limits opacity emitted by or from a facility or source, depending on where the facility or source is located. The proposed facility will be located in Boone County. Therefore, the facility will need to meet the opacity limitations stated in Rule 326 IAC 5-1-2(1), as listed below:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

The facility will comply with this limitation through the exclusive use of ultra-low sulfur diesel and renewable diesel fuel in its generators and fire pump engines, which will result in negligible visible emissions.

4.6.5 326 IAC 6-2-1 – Particulate Emissions

Rule 326 IAC 6-2-1(d) limits particulate emissions from the combustion of fuel for indirect heating from all facilities receiving permits to construct on or after September 21, 1983. The proposed facility will not produce heat or power by indirect heat transfer; therefore, the particulate rules in Article 6 Section 2 are not applicable.

4.6.6 326 IAC 6-4 – Fugitive Dust Emissions

Rule 326 IAC 6-4-1 applies to all sources of fugitive dust, which is the generation of particulate matter to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located. The facility will take every reasonable precaution to minimize fugitive dust from construction.

4.6.7 326 IAC 6-5 – Fugitive Particulate Matter Emissions

Rule 326 IAC 6-5 applies to facilities with potential fugitive particulate emissions greater than 25 tpy. The facility does not have potential fugitive particulate emissions greater than 25 tpy, and as such, is not subject to this rule.

4.6.8 326 IAC 7-1.1 – Sulfur Dioxide Emission Limitations

Rule 326 IAC 7-1.1 limits SO_2 emissions from all emission units with the potential to emit 25 tpy or 10 pounds per hour of SO_2. As shown in **Appendix 4**, the proposed emission units will not have potential emissions of SO_2 greater than 25 tpy or 10 pounds per hour. Therefore, the emission units are exempt from this rule.

4.6.9 326 IAC 8-1 – General Reduction Requirements for VOC from New Facilities

Rule 326 IAC 8-1 limits VOC emissions from all new facilities that have potential emissions of 25 tons or more per year. As shown in **Appendix 4**, unlimited potential VOC emissions of each engine is less than 25 tpy. Therefore, the VOC reduction requirements under this rule do not apply.

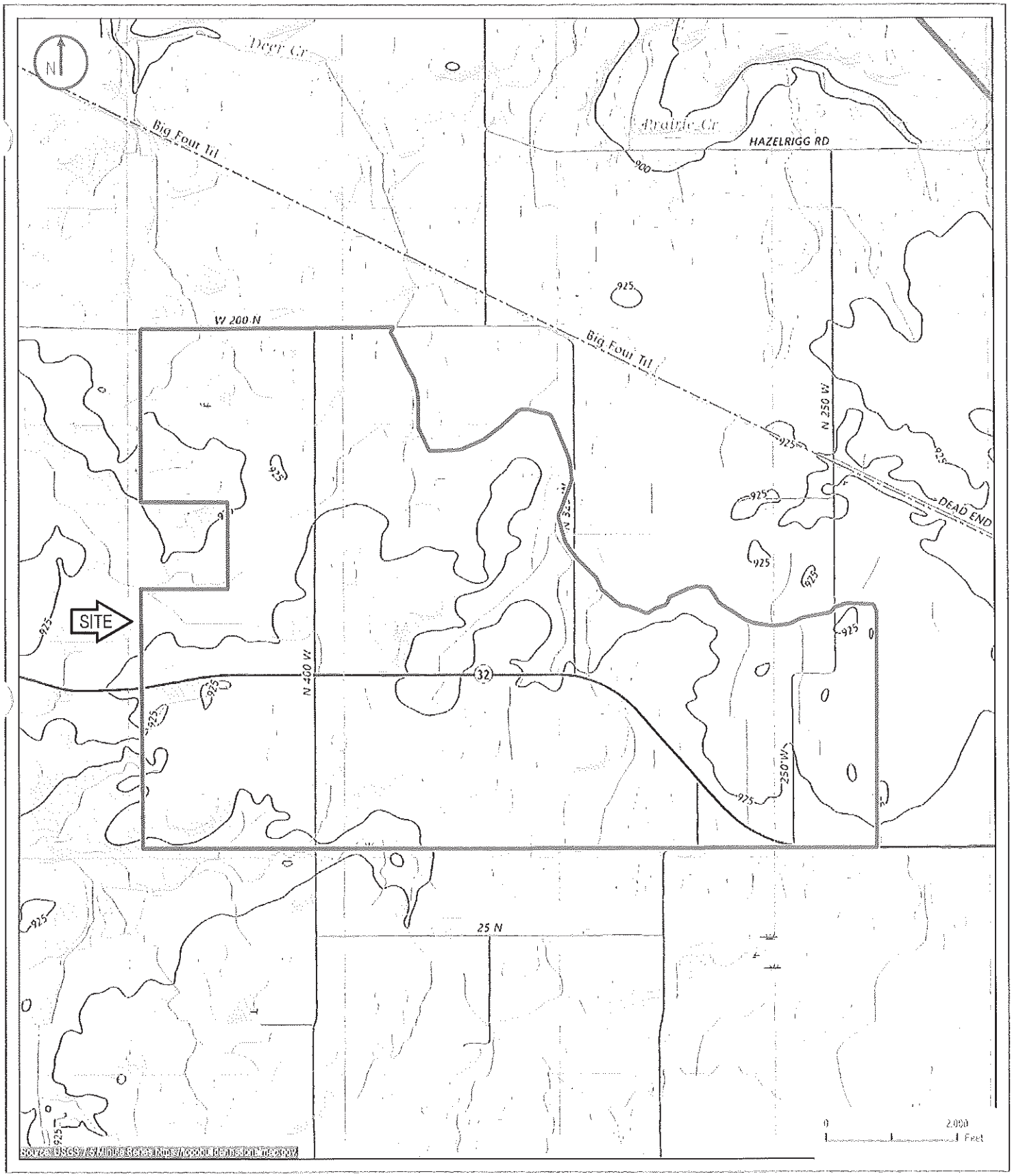
4.6.10 326 IAC 9-1 – Carbon Monoxide Emission Rules

Rule 326 IAC 9-1-1 applies to all stationary sources of CO emissions commencing operation after March 21, 1972, unless the source is subject to a carbon monoxide emission limit in the NSPS or NESHAP. As the emergency generators and fire pumps will be subject to a CO emission standard under 40 CFR 60 Subpart IIII, they are exempt from this rule.

4.6.11 326 IAC 10-1 – Nitrogen Oxides Rules

Rule 326 IAC 10-1-1 requires emissions of NO_X from facilities located in Clark or Floyd County to be controlled. As the proposed facility will be in Boone County, the proposed emission units will not be subject to this rule. Further, the emergency engines and fire pumps do not fall under the definition of any other unit regulated under 326 IAC 10. As such, the nitrogen oxide rules do not apply to the facility.

APPENDIX 1
FACILITY MAPS AND DIAGRAMS



Map Scale: 1:24,000 | Map Center: 40°3'27.0228", -86°32'1.7850"

SITE LOCATION MAP

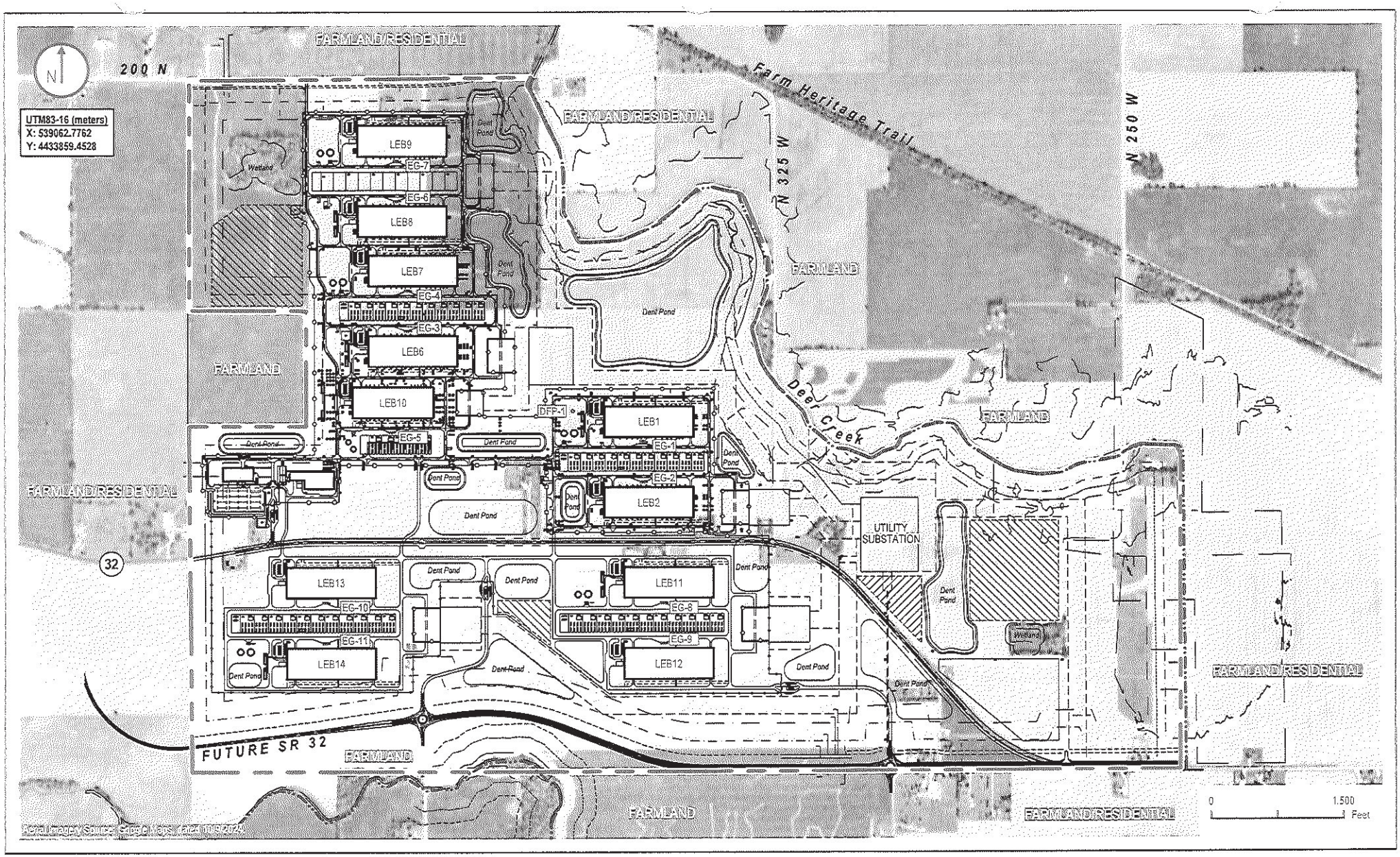
FIGURE 01

KEY MAP

ORLA, LLC
LEBANON, INDIANA

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

RAMBOLL



PROPERTY BOUNDARY (APPROXIMATE)

BUILDING

EG-# GENERATOR / GENERATOR ID*

*Location of EG-12 and DFP-2 TBD

SITE LAYOUT

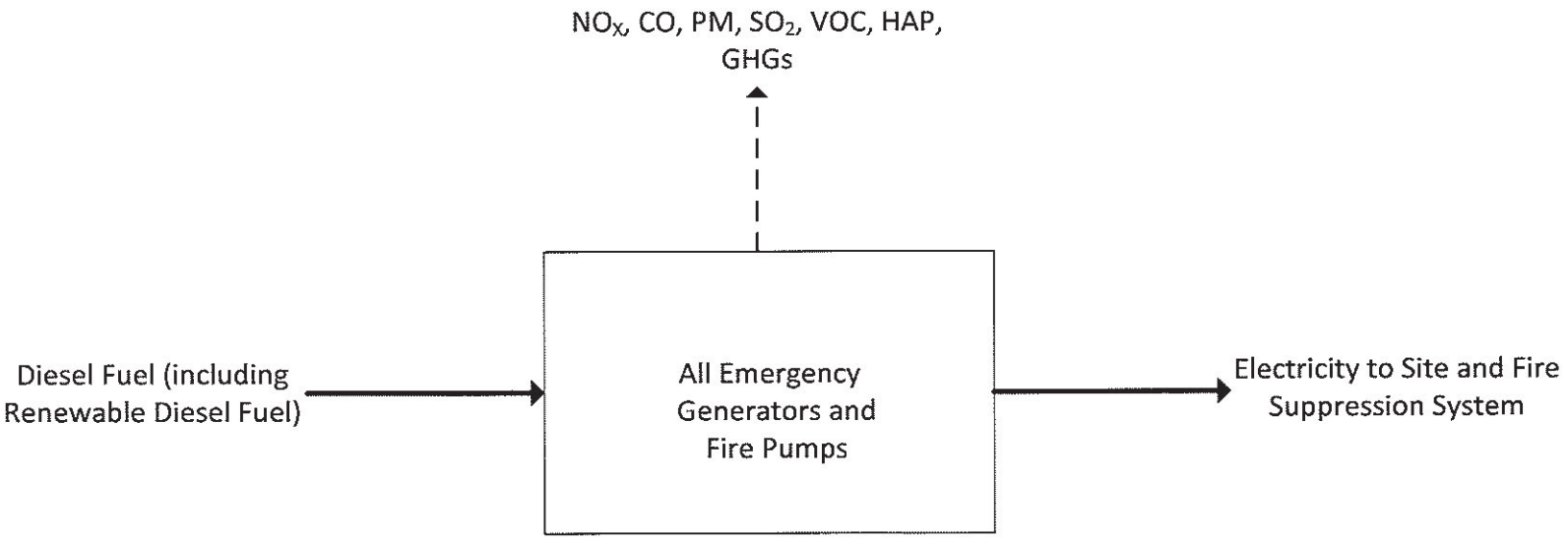
ORLA, LLC
LEBANON, INDIANA

FIGURE 02

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

RAMBOLL

Figure 03
Process Flow Diagram – Orla, LLC



APPENDIX 2
IDEM FORMS

AIR PERMIT APPLICATION COVER SHEET

State Form 50639 (R4 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this cover sheet is to obtain the core information needed to process the air permit application. This cover sheet is required for all air permit applications submitted to IDEM, OAQ. Place this cover sheet on top of all subsequent forms and attachments that encompass your air permit application packet.
- Submit the completed air permit application packet, including all forms and attachments, to **IDEM Air Permits Administration** using the address in the upper right hand corner of this page.
- IDEM will send a bill to collect the filing fee and any other applicable fees.
- Detailed instructions for this form are available on the Air Permit Application Forms website.

FOR OFFICE USE ONLY

PERMIT NUMBER: 011-50034-00093

DATE APPLICATION WAS RECEIVED:
Received
State of Indiana
FEB 04 2026
Dept of Environmental Mgmt
Office of Air Quality

1. Tax ID Number:

PART A: Purpose of Application

Part A identifies the purpose of this air permit application. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

2. Source / Company Name: Orla, LLC **3. Plant ID:** –

4. Billing Address: 1800 Broadway, Suite 300

City: Boulder **State:** CO **ZIP Code:** 80302 –

5. Permit Level: ☐ Exemption ☐ Registration ☐ SSOA ☐ MSOP ☐ FESOP ☒ TVOP ☐ PBR

Application Summary: *Check all that apply. Multiple permit numbers may be assigned as needed based on the choices selected below.*

☒ Initial Permit
☐ Renewal of Operating Permit
☐ Asphalt General Permit
☐ Review Request
☐ Revocation of Operating Permit
☐ Alternate Emission Factor Request
☐ Interim Approval
☐ Relocation of Portable Source
☐ Acid Deposition (Phase II)
☐ Site Closure
☐ Emission Reduction Credit Registry

☐ Transition (between permit levels) *From:* *To:*

☐ Administrative Amendment:
☐ *Company Name Change*
☐ *Change of Responsible Official*
☐ *Correction to Non-Technical Information*
☐ *Notice Only Change*
☐ *Other (specify):*

☐ Modification:
☐ *New Emission Unit or Control Device*
☐ *Modified Emission Unit or Control Device*
☐ *New Applicable Permit Requirement*
☐ *Change to Applicability of a Permit Requirement*
☐ *Prevention of Significant Deterioration*
☐ *Emission Offset*
☐ *MACT Preconstruction Review*
☐ *Minor Source Modification*
☐ *Significant Source Modification*
☐ *Minor Permit Modification*
☐ *Significant Permit Modification*
☐ *Other (specify):*

7. Is this an application for an initial construction and/or operating permit for a **"Greenfield" Source**? ☒ Yes ☐ No

8. Is this an application for construction of a new emissions unit at an **Existing Source**? ☐ Yes ☒ No

Continued on Next Page

PART B: Pre-Application Meeting

Part B specifies whether a meeting was held or is being requested to discuss the permit application.

9. Was a meeting held between the company and IDEM prior to submitting this application to discuss the details of the project?

☐ No ☒ Yes: *Date:* August 4, 2025

10. Would you like to schedule a meeting with IDEM management and your permit writer to discuss the details of this project?

☒ No ☐ Yes: *Proposed Date for Meeting:*

PART C: Confidential Business Information

Part C identifies permit applications that require special care to ensure that confidential business information is kept separate from the public file.

Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in the Indiana Administrative Code (IAC). To ensure that your information remains confidential, refer to the IDEM, OAQ information regarding submittal of confidential business information. For more information on confidentiality for certain types of business information, please review IDEM's Nonrule Policy Document Air-031-NPD regarding Emission Data.

11. Is any of the information contained within this application being claimed as **Confidential Business Information?**

☒ No ☐ Yes

PART D: Certification Of Truth, Accuracy, and Completeness

Part D is the official certification that the information contained within the air permit application packet is truthful, accurate, and complete. Any air permit application packet that we receive without a signed certification will be deemed incomplete and may result in denial of the permit.

For a Part 70 Operating Permit (TVOP) or a Source Specific Operating Agreement (SSOA), a "responsible official" as defined in 326 IAC 2-7-1(34) must certify the air permit application. For all other applicants, this person is an "authorized Individual" as defined in 326 IAC 2-1.1-1(1).

☒ *I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete.*

Pamela Gregorski	President
Name *(typed)*	Title
Pamela A Gregorski	1/29/2026
Signature	Date

OAQ AIR PERMIT APPLICATION – FORMS CHECKLIST

State Form 51607 (R5 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – P[illegible] Branch
100 N. Senate Avenue, MC 61-5[illegible]m 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this checklist is to help the applicant and IDEM, OAQ ensure that the air permit application packet is administratively complete. This checklist is a required form.
- Check the appropriate box indicating whether each application form is applicable for the current permit application. The source must submit only those forms pertinent to the current permit application.
- Place this checklist between the cover sheet and all subsequent forms and attachments that encompass your air permit application packet.

Part A: General Source Data

Applicable?	Form ID	Title of Form	State Form Number	When should this form be included in my application packet?
☒ Y ☐ N	COVER	Application Cover Sheet	50639	Include for every application, modification, and renewal, including source specific operating agreements (SSOA).
☒ Y ☐ N	CHECKLIST	Forms Checklist	51607	Include for every application, modification, and renewal, including SSOA.
☒ Y ☐ N	GSD-01	Basic Source Level Information	50640	Include for every application, modification, and renewal, including SSOA.
☒ Y ☐ N	GSD-02	Plant Layout Diagram	51605	Include for every new source application, and modification.
☒ Y ☐ N	GSD-03	Process Flow Diagram	51599	Include one for every process covered by the application.
☒ Y ☐ N	GSD-04	Stack / Vent Information	51606	Include for every new source application, and modification.
☒ Y ☐ N	GSD-05	Emissions Unit Information	51610	Include for every process covered by the application.
☒ Y ☐ N	GSD-06	Particulate Emissions Summary	51612	Include if the process has particulate emissions (PM).
☒ Y ☐ N	GSD-07	Criteria Pollutant Emissions Summary	51602	Include if the process has criteria pollutant emissions.
☒ Y ☐ N	GSD-08	HAP Emissions Summary	51604	Include if the process has hazardous air pollutant emissions (HAP).
☐ Y ☒ N	GSD-09	Summary of Additional Information	51611	Include if the additional information is included.
☒ Y ☐ N	GSD-10	Insignificant Activities	51596	Include if there are unpermitted insignificant activities.
☐ Y ☒ N	GSD-11	Alternative Operating Scenario	51601	Include if an AOS is requested.
☐ Y ☒ N	GSD-12	Affidavit of Nonapplicability	51600	Include if the standard notification requirements do not apply.
☐ Y ☒ N	GSD-13	Affidavit of Applicability	51603	Include if the standard notification requirements apply.
☒ Y ☐ N	GSD-14	Owners and Occupants Notified	51609	Include if the standard notification requirements apply.
☒ Y ☐ N	GSD-15	Government Officials Notified	51608	Include if the standard notification requirements apply.
☐ Y ☒ N	RENEWAL	Renewal Checklist	51755	Include with every operating permit renewal packet.

Continued on Next Page

Part B: Process Information				
Applicable?	**Form ID**	**Title of Form**	**State Form Number**	**When should this form be included in my application packet?**
☒ Y ☐ N	AEF-01	Alternate Emission Factor Request	51860	Submit if you are requesting to use an emission factor other than AP-42.
☐ Y ☒ N	PI-01	Miscellaneous Processes	52534	Include one form for each process for which there is not a specific PI form.
☒ Y ☐ N	PI-02A	Combustion Unit Summary	52535	Include one form to summarize all combustion units *(unless SSOA)*.
☐ Y ☒ N	PI-02B	*Combustion:* Boilers, Process Heaters, & Furnaces	52536	Include one form for each boiler, process heater, or furnace *(unless SSOA)*.
☒ Y ☐ N	PI-02C	*Combustion:* Turbines & Internal Combustion Engines	52537	Include one form for each turbine or internal combustion engine *(unless SSOA)*.
☐ Y ☒ N	PI-02D	*Combustion:* Incinerators & Combustors	52538	Include one form for each incinerator or combustor *(unless SSOA)*.
☐ Y ☒ N	PI-02E	*Combustion:* Kilns	52539	Include one form for each kiln *(unless SSOA)*.
☒ Y ☐ N	PI-02F	*Combustion:* Fuel Use	52540	Include one form for each combustion unit *(unless SSOA)*.
☒ Y ☐ N	PI-02G	*Combustion:* Emission Factors	52541	Include one form for each combustion unit *(unless SSOA)*.
☒ Y ☐ N	PI-02H	*Combustion:* Federal Rule Applicability	52542	Include one form for each combustion unit *(unless SSOA)*.
☐ Y ☒ N	PI-03	Storage and Handling of Bulk Material	52543	Include if the process involves the storage and handling of bulk materials.
☐ Y ☒ N	PI-04	Asphalt Plants	52544	Include for each asphalt plant process (*unless general permit*).
☐ Y ☒ N	PI-05	Brick / Clay Products	52545	Include for each brick and/or clay products process.
☐ Y ☒ N	PI-06	Electroplating Operations	52546	Include for each electroplating process.
☐ Y ☒ N	PI-07	Welding Operations	52547	Include for each welding process.
☐ Y ☒ N	PI-08	Concrete Batchers	52548	Include for each concrete batcher *(unless SSOA)*.
☐ Y ☒ N	PI-09	Degreasing	52549	Include for each degreasing process *(unless SSOA)*.
☐ Y ☒ N	PI-10	Dry Cleaners	52550	Include for each dry cleaning process
☐ Y ☒ N	PI-11	Foundry Operations	52551	Include for each foundry process
☐ Y ☒ N	PI-12	Grain Elevators	52552	Include for each grain elevator *(unless SSOA)*.
☐ Y ☒ N	PI-13	Lime Manufacturing	52553	Include for each lime manufacturing process.
☒ Y ☐ N	PI-14	Liquid Organic Compound Storage	52554 (doc)	Include if the process involves the storage of liquid organic compounds.
☐ Y ☒ N	PI-14ALT	Alternate version of Liquid Organic Compound Storage	52555 (xls)	Include if the process involves the storage of liquid organic compounds and there are several storage vessels.
☐ Y ☒ N	PI-15	Portland Cement Manufacturing	52556	Include for each Portland cement manufacturing process.
☐ Y ☒ N	PI-16	Reinforced Plastics & Composites	52557	Include for each reinforced plastics and composites process.

Continued on Next Page

Part B: Process Information				
Applicable?	**Form ID**	**Title of Form**	**State Form Number**	**When should this form be included in my application packet?**
☐ Y ☒ N	PI-17	Blasting Operations	52558	Include for each blasting process *(unless SSOA)*.
☐ Y ☒ N	PI-18	Mineral Processing	52559	Include if the process involves mineral processing *(unless SSOA)*.
☐ Y ☒ N	PI-19	Surface Coating & Printing Operations	52560	Include for each surface coating or printing process *(unless SSOA)*.
☐ Y ☒ N	PI-20	Woodworking / Plastic Machining	52561	Include for each woodworking or plastic machining process *(unless SSOA)*.
☐ Y ☒ N	PI-21	Site Remediation	52570	Include for each soil remediation process.
☐ Y ☒ N	PI-22	Ethanol Plants *(Under Development)*	None	Include for each ethanol plant.

Part C: Control Equipment				
Applicable?	**Form ID**	**Title of Form**	**State Form Number**	**When should this form be included in my application packet?**
☐ Y ☒ N	CE-01	Control Equipment Summary	51904	Include if add-on control equipment will be used for the process.
☐ Y ☒ N	CE-02	Particulates – Baghouse / Fabric Filter	51953	Include for each baghouse or fabric filter.
☐ Y ☒ N	CE-03	Particulates – Cyclone	52620	Include for each cyclone.
☐ Y ☒ N	CE-04	Particulates – Electrostatic Precipitator	52621	Include for each electrostatic precipitator.
☐ Y ☒ N	CE-05	Particulates – Wet Collector / Scrubber / Absorber	52622	Include for each wet collector, scrubber, or absorber.
☐ Y ☒ N	CE-06	Organics – Flare / Oxidizer / Incinerator	52623	Include for each flare, oxidizer, or incinerator.
☐ Y ☒ N	CE-07	Organics – Adsorbers	52624	Include for each adsorber.
☐ Y ☒ N	CE-08	Organics – Condenser	52625	Include for each condenser.
☐ Y ☒ N	CE-09	Reduction Technology	52626	Include for each control device using reduction technology (e.g., SCR, SNCR).
☐ Y ☒ N	CE-10	Miscellaneous Control Equipment	52436	Include one form for equipment for which there is not a specific CE form.

Continued on Next Page

Part D: Compliance Determination for Part 70 Sources				
Applicable?	**Form ID**	**Title of Form**	**State Form Number**	**When should this form be included in my application packet?**
☒ Y ☐ N	CD-01	Emissions Unit Compliance Status	51861	Include for every Title V application, including modifications.
☒ Y ☐ N	CD-02	Compliance Plan by Applicable Requirement	51862	Include for every Title V application, including modifications.
☒ Y ☐ N	CD-03	Compliance Plan by Emissions Unit	51863	Include for every Title V application, including modifications.
☒ Y ☐ N	CD-04	Compliance Schedule and Certification	51864	Include for every Title V application, including modifications and renewal.
☐ Y ☒ N	FED-03	Compliance Assurance Monitoring	53377	Include for every Title V application, including modifications.

Part E: Best Available Control Technology				
Applicable?	**Form ID**	**Title of Form**	**State Form Number**	**When should this form be included in my application packet?**
☐ Y ☒ N	BACT-01	Analysis of Best Available Control Technology	None	Include for every BACT application.
☐ Y ☒ N	BACT-01a	Background Search: Existing BACT Determinations	None	Include for every BACT application.
☐ Y ☒ N	BACT-01b	Cost/Economic Impact Analysis	None	Include for every BACT application.
☐ Y ☒ N	BACT-02	Summary of Best Available Control Technology	None	Include for every BACT application.
☐ Y ☒ N	PSD / EO-01	PSD / Emission Offset Checklist	None	Include for every PSD application and every NSR application that requires emission offsets.

Part F: Emission Credit Registry				
Applicable?	**Form ID**	**Title of Form**	**State Form Number**	**When should this form be included in my application packet?**
☐ Y ☒ N	EC-01	Generation of Emission Credits	51783	Include if the modification results in emission reductions.
☐ Y ☒ N	EC-02	Transfer of Emission Credits	51784	Submit whenever registered emission credits are transferred.
☐ Y ☒ N	EC-03	Use of Emission Credits	51785	Include if the modification requires the use of emission credits for offsets.
☐ Y ☒ N	EC-04	Emission Credit Request	51906	Submit if you are looking for emission credits for offsets.

Continued on Next Page

Part G: Plantwide Applicability Limits				
Applicable?	**Form ID**	**Title of Form**	**State Form Number**	**When should this form be included in my application packet?**
☐ Y ☒ N	PAL-01	Actuals Plantwide Applicability Limit	52451	Include if the modification results in emission reductions.
☐ Y ☒ N	PAL-02	Revised Plantwide Applicability Limit	52452	Submit whenever registered emission credits are transferred.
☐ Y ☒ N	PAL-03	Plantwide Applicability Limit Renewal	52453	Include if the modification requires the use of emission credits for offsets.
☐ Y ☒ N	PAL-04	Request for Termination of Plantwide Applicability Limit	52454	Submit if you are looking for emission credits for offsets.

Part H: Air Toxics				
Applicable?	**Form ID**	**Title of Form**	**State Form Number**	**When should this form be included in my application packet?**
☒ Y ☐ N	FED-01	Summary of Federal Requirements – NSPS & NESHAP	53512	Include for each 40 CFR Part 60 NSPS, 40 CFR Part 61 NESHAP, and 40 CFR Part 63 NESHAP applicable to the process.
☐ Y ☒ N	FED-02	MACT Pre-Construction Review	51905	Include if constructing or modifying a process subject to a Part 63 NESHAP.
☐ Y ☒ N	No Form ID	MACT Initial Notification	None	This form is available on the U.S. EPA website. Completed notifications should be submitted to the IDEM Compliance Branch.

Part I: Special Permits				
Applicable?	**Form ID**	**Title of Form**	**State Form Number**	**When should this form be included in my application packet?**
☐ Y ☒ N	INTERIM	Interim Approval	None	Submit if you are applying for interim operating approval.
☐ Y ☒ N	ASPHALT	Asphalt General Permit	None	Submit if you are applying for or modifying an asphalt plant general permit.
☐ Y ☒ N	NOXBTP	NO_x Budget Permit	None	Submit if you are a power plant or if you have opted in to the NO_x budget trading program.
☐ Y ☒ N	ACIDRAIN	Phase 2 Acid Rain Permit	None	Submit if you are applying for, modifying, or renewing a Phase 2 Acid Rain permit.

Continued on Next Page

Part J: Source Specific Operating Agreements (SSOA)				
Applicable?	**Form ID**	**Title of Form**	**State Form Number**	**When should this form be included in my application packet?**
☐ Y ☒ N	OA-01	Summary of Application and Existing Agreements	53438	Submit if you are applying for or modifying a Source Specific Operating Agreement.
☐ Y ☒ N	OA-02	Industrial / Commercial Surface Coating Operations -OR- Graphic Arts Operations (326 IAC 2-9-2.5)	53439	Submit if you are applying for or modifying a SSOA for industrial or commercial surface coating operations not subject to 326 IAC 8-2; or graphic arts operations not subject to 326 IAC 8-5-5.
☐ Y ☒ N	OA-03	Surface Coating or Graphic Arts Operations (326 IAC 2-9-3)	53440	Submit if you are applying for or modifying a SSOA for surface coating or graphic arts operations.
☐ Y ☒ N	OA-04	Woodworking Operations (326 IAC 2-9-4)	53441	Submit if you are applying for or modifying a SSOA for woodworking operations.
☐ Y ☒ N	OA-05	Abrasive Cleaning Operations (326 IAC 2-9-5)	53442	Submit if you are applying for or modifying a SSOA for abrasive cleaning operations.
☐ Y ☒ N	OA-06	Grain Elevators (326 IAC 2-9-6)	53443	Submit if you are applying for or modifying a SSOA for grain elevators.
☐ Y ☒ N	OA-07	Sand And Gravel Plants (326 IAC 2-9-7)	53444	Submit if you are applying for or modifying a SSOA for sand and gravel plants.
☐ Y ☒ N	OA-08	Crushed Stone Processing Plants (326 IAC 2-9-8)	53445	Submit if you are applying for or modifying a SSOA for crushed stone processing plants.
☐ Y ☒ N	OA-09	Ready-Mix Concrete Batch Plants (326 IAC 2-9-9)	53446	Submit if you are applying for or modifying a SSOA for ready-mix concrete batch plants.
☐ Y ☒ N	OA-10	Coal Mines And Coal Preparation Plants (326 IAC 2-9-10)	53447	Submit if you are applying for or modifying a SSOA for coal mines and coal preparation plants.
☐ Y ☒ N	OA-11	Automobile Refinishing Operations (326 IAC 2-9-11)	53448	Submit if you are applying for or modifying a SSOA for automobile refinishing operations.
☐ Y ☒ N	OA-12	Degreasing Operations (326 IAC 2-9-12)	53449	Submit if you are applying for or modifying a SSOA for degreasing operations.
☐ Y ☒ N	OA-13	External Combustion Sources (326 IAC 2-9-13)	53450	Submit if you are applying for or modifying a SSOA for external combustion sources.
☐ Y ☒ N	OA-14	Internal Combustion Sources (326 IAC 2-9-14)	53451	Submit if you are applying for or modifying a SSOA for internal combustion sources.

OAQ GENERAL SOURCE DATA APPLICATION
GSD-01: Basic Source Level Information

State Form 50640 (R5 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

Received
State of Indiana
FEB 04 2026
Dept of Environmental Mgmt
Office of Air Quality

JS-2

NOTES:

- The purpose of GSD-01 is to provide essential information about the entire source of air pollutant emissions. GSD-01 is a required form.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

011-50034-00093

PART A: Source / Company Location Information

1. **Source / Company Name**: Orla, LLC
2. **Plant ID**: –
3. **Location Address**: 3062 West SR32
   City: Lebanon **State**: IN **ZIP Code**: 46052 –
4. **County Name**: Boone
5. **Township Name**: Center
6. **Geographic Coordinates**:
   Latitude: 40.052274 **Longitude**: -86.525925
7. **Universal Transferal Mercadum Coordinates** *(if known)*:
   Zone: **Horizontal**: **Vertical**:
8. **Adjacent States**: Is the source located within 50 miles of an adjacent state?
   ☒ No ☐ Yes – *Indicate Adjacent State(s):* ☐ Illinois (IL) ☐ Michigan (MI) ☐ Ohio (OH) ☐ Kentucky (KY)
9. **Attainment Area Designation**: Is the source located within a non-attainment area for any of the criteria air pollutants?
   ☒ No ☐ Yes – *Indicate Nonattainment Pollutant(s):* ☐ CO ☐ Pb ☐ NO_x ☐ O_3 ☐ PM ☐ PM_{10} ☐ $PM_{2.5}$ ☐ SO_2
10. **Portable / Stationary**: Is this a portable or stationary source? ☐ Portable ☒ Stationary

PART B: Source Summary

11. **Company Internet Address** *(optional)*:
12. **Company Name History**: Has this source operated under any other name(s)?
    ☒ No ☐ Yes – *Provide information regarding past company names in Part I, Company Name History.*
13. **Portable Source Location History**: Will the location of the portable source be changing in the near future?
    ☒ Not Applicable ☐ No ☐ Yes – *Complete Part J, Portable Source Location History, and Part K, Request to Change Location of Portable Source.*
14. **Existing Approvals**: Have any exemptions, registrations, or permits been issued to this source?
    ☒ No ☐ Yes – *List these permits and their corresponding emissions units in Part M, Existing Approvals.*
15. **Unpermitted Emissions Units**: Does this source have any unpermitted emissions units?
    ☒ No ☐ Yes – *List all unpermitted emissions units in Part N, Unpermitted Emissions Units.*
16. **New Source Review**: Is this source proposing to construct or modify any emissions units?
    ☐ No ☒ Yes – *List all proposed new construction in Part O, New or Modified Emissions Units.*
17. **Risk Management Plan**: Has this source submitted a Risk Management Plan?
    ☒ Not Required ☐ No ☐ Yes → Date submitted: EPA Facility Identifier: – –

Continued on Next Page

PART C: Source Contact Information

IDEM will send the original, signed permit decision to the person identified in this section. This person MUST be an employee of the permitted source.

18. Name of Source Contact Person: Pamela Gregorski

19. Title *(optional)*: President

20. Mailing Address: 1800 Broadway, Suite 300

City: Boulder	**State**: CO	**ZIP Code**: 80302–

21. Electronic Mail Address *(optional)*:

22. Telephone Number: (302) 421 – 6523	**23. Facsimile Number** *(optional)*: ( ) –

PART D: Authorized Individual/Responsible Official Information

IDEM will send a copy of the permit decision to the person indicated in this section, if the Authorized Individual or Responsible Official is different from the Source Contact specified in Part C.

24. Name of Authorized Individual or Responsible Official: Pamela Gregorski

25. Title: President

26. Mailing Address: 1800 Broadway, Suite 300

City: Boulder	**State**: CO	**ZIP Code**: 80302 –

27. Telephone Number: (302) 421 – 6523	**28. Facsimile Number** *(optional)*: ( ) –

29. Request to Change the Authorized Individual or Responsible Official: Is the source officially requesting to change the person designated as the Authorized Individual or Responsible Official in the official documents issued by IDEM, OAQ? *The permit may list the title of the Authorized Individual or Responsible Official in lieu of a specific name.*

☒ No ☐ Yes – ***Change Responsible Official to:***

PART E: Owner Information

30. Company Name of Owner: Orla, LLC

31. Name of Owner Contact Person: Pamela Gregorski

32. Mailing Address: 1800 Broadway, Suite 300

City: Boulder	**State**: C0	**ZIP Code**: 80302 –

33. Telephone Number: (302) 421 – 6523	**34. Facsimile Number** *(optional)*: ( ) –

34. Operator: Does the "Owner" company also operate the source to which this application applies?

☐ No – *Proceed to Part F below.*	☒ Yes – *Enter "SAME AS OWNER" on line 35 and proceed to Part G below.*

PART F: Operator Information

35. Company Name of Operator: SAME AS OWNER

36. Name of Operator Contact Person:

37. Mailing Address:

City:	**State**:	**ZIP Code**: –

38. Telephone Number: ( ) –	**39. Facsimile Number** *(optional)*: ( ) –

Continued on Next Page

PART G: Agent Information

40. **Company Name of Agent**: Ramboll Americas Engineering Solutions, Inc.

41. **Type of Agent**: ☒ Environmental Consultant ☐ Attorney ☐ Other (specify):

42. **Name of Agent Contact Person**: Josie Bates

43. **Mailing Address**: 2300 Windy Ridge Parkway Suite 1155

City: Atlanta	**State**: GA	**ZIP Code**: 30339 –

44. **Electronic Mail Address** *(optional)*: jbates@ramboll.com

45. **Telephone Number**: (678) 388 – 1699	46. **Facsimile Number** *(optional)*: ( ) –

47. **Request for Follow-up**: Does the "Agent" wish to receive a copy of the preliminary findings during the public notice period (if applicable) and a copy of the final determination? ☐ No ☒ Yes

PART H: Local Library Information

48. **Date application packet was filed with the local library**: within 10 days of application submittal

49. **Name of Library**: Lebanon Public Library

50. **Name of Librarian** *(optional)*:

51. **Mailing Address**: 104 E. Washington St.

City: Lebanon	**State**: IN	**ZIP Code**: 46052 –

52. **Internet Address** *(optional)*:

53. **Electronic Mail Address** *(optional)*:

54. **Telephone Number**: (765) 482 – 3460	55. **Facsimile Number** *(optional)*: ( ) –

PART I: Company Name History *(if applicable)*

Complete this section only if the source has previously operated under a legal name that is different from the name listed above in Section A.

56. Legal Name of Company	57. Dates of Use
	to
	to
	to
	to
	to
	to
	to
	to
	to
	to

58. **Company Name Change Request**: Is the source officially requesting to change the legal name that will be printed on all official documents issued by IDEM, OAQ?

☒ No ☐ Yes – ***Change Company Name to***:

Continued on Next Page

PART J: Portable Source Location History *(if applicable)*

Complete this section only if the source is portable and the location has changed since the previous permit was issued. The current location of the source should be listed in Section A.

59. Plant ID	60. Location of the Portable Source	61. Dates at this Location
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to
–		to

PART K: Request to Change Location of Portable Source *(if applicable)*

Complete this section to request a change of location for a portable source.

62. Current Location:

Address:

City:	**State**:	**ZIP Code**: –

County Name:

63. New Location:

Address:

City:	**State**:	**ZIP Code**: –

County Name:

Continued on Next Page

PART L: Source Process Description

Complete this section to summarize the main processes at the source.

64. Process Description	65. Products	66. SIC Code	67. NAICS Code
Data Center	Data Services	7374	518210

PART M: Existing Approvals *(if applicable)*

Complete this section to summarize the approvals issued to the source since issuance of the main operating permit.

68. Permit ID	69. Emissions Unit IDs	70. Expiration Date

PART N: Unpermitted Emissions Units *(if applicable)*

Complete this section only if the source has emission units that are not listed in any permit issued by IDEM, OAQ.

71. Emissions Unit ID	72. Type of Emissions Unit	73. Actual Dates		
		Began Construction	Completed Construction	Began Operation

PART O: New or Modified Emissions Units *(if applicable)*

Complete this section only if the source is proposing to add new emission units or modify existing emission units.

74. Emissions Unit ID	75. NEW	76. MOD	77. Type of Emissions Unit	78. Estimated Dates		
				Begin Construction	Complete Construction	Begin Operation
EG1-EG12	X		Emergency Generators	2026	2026	2026
DFP-1 & DFP-2	X		Diesel Fire Pumps	2026	2026	2026

OAQ GENERAL SOURCE DATA APPLICATION
GSD-02: Plant Layout Diagram

State Form 51605 (R3 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of GSD-02 is to provide a diagram of the entire plant site. This form and a Plant Layout diagram are required for all air permit applications. If you do not provide the necessary information, applicable to your source, the application process may be stopped.
- IDEM, OAQ has provided detailed instructions for this form and an example of a basic plant layout diagram on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A: Basic Plant Layout

Part A provides IDEM, OAQ with the appropriate information about all buildings and access-limiting features in and around the plant site. **Please use this table as a checklist.** You must provide scaled drawings, with the actual scale shown. All dimensions and units must be clearly indicated with a brief explanation of what is being shown. Include the following (*All measurements should be given in feet.*):

1.	☒ Building Location and Dimensions				
2.	☒ Property Lines and Access-Limiting Features				
3.	☒ Surrounding Building Location and Dimensions				
4.	☒ Distances to Property Lines and Access-Limiting Features				
5.	☒ UTM Location Coordinates	6.	☒ Compass (pointing North)	7.	☒ Scale

Part B: Stack Information

Part B provides IDEM, OAQ with the appropriate information about all stacks, roof monitors, control devices, and process vents at the plant site. **Please use this table as a checklist.** You must show the location of all applicable emission points and include all relevant stack and emissions unit identification numbers for each. In addition, you will need to identify each of these emission points under "Stack Identification" on form GSD-04, Stack/Vent Information. Include the following (*All measurements should be in feet.*):

8.	☒ Exhaust Stacks		
9.	☒ Process Vents		
10.	☐ Roof Monitors	☒ *No Roof Monitors*	
11.	☐ Control Devices	☒ *No Control Devices*	
12.	☐ Interior Vents	☒ *No Interior Vents*	☐ Doors and Windows *(for processes vented inside a building)*

Part C: Roadway Information

Part C provides IDEM, OAQ with the appropriate information about the roadways in and around the plant site. **Please use this table as a checklist.** Include the following (*All measurements should be in feet.*):

13.	☒ Adjacent Roadways	☒ Interior Roadways
14.	☒ Roadway Surface Description (gravel, dirt, paved, etc.)	
15.	☒ Number of Lanes	

Continued on Next Page

Part D: Source Building Information

This table provides detailed information about each building at the plant site that is part of the source. If additional space is needed, you may make a copy of this table. (*All measurements should be given in feet.*)

16. Building ID	17. Building Description	18. Building Dimensions			19. Distance & direction to the nearest property line or access limiting feature (feet & compass coordinate)	20. Distance & direction to the nearest residence (feet & compass coordinate)
		Length (feet)	Width (feet)	Height (feet)		
See Figure 2						

Continued on Next Page

Part E: Surrounding Building / Residence Information

This table provides detailed information about each building or residence surrounding the plant site. If additional space is needed, you may make a copy of this table. (*All measurements should be given in feet.*)

21. Surrounding Building / Residence Description	22. Surrounding Building / Residence Property Dimensions			23. Distance & direction to the nearest property line or access limiting feature (feet & compass coordinate)	24. Building ID of nearest building on the plant site	25. Distance & direction to the nearest building on the plant site (feet & compass coordinate)
	Length (feet)	Width (feet)	Height (feet)			
See Figure 2						

Continued on Next Page

Part F: Plant Layout Diagram

This space provides a place for a hand drawn plant layout diagram. It is **optional** to use this space to create your plant layout, but you must include the diagram with your application. If you choose to submit the plant layout in a different format, state "plant layout attached" in the space provided, and submit the information with your completed application. IDEM, OAQ has provided an example of a basic plant layout diagram on the Air Permit Applications Forms website.

See Figure 2

OAQ GENERAL SOURCE DATA APPLICATION
GSD-03: Process Flow Diagram

State Form 51599 (R3 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of GSD-03 is to provide a checklist for identifying the information to be included on each Process Flow diagram.
- Complete this form and submit a process flow diagram for each process included in your air permit application.
- IDEM, OAQ has provided detailed instructions for this form and an example of a basic process flow diagram on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A: Process Flow Diagram

Part A provides basic information to understanding the nature of the process. Please use this table as a checklist to indicate that you have included the following items on your process flow diagram (*All throughputs should be given in pounds per hour.*):

1. ☒ **Process Description:** Operation of twelve diesel-fired emergency generator engines and two fire pumps.

2. ☒ Process Equipment	3. ☒ Raw Material Input	4. ☐ Process Throughput

5. ☒ Additions ☐ Deletions ☐ Modifications

Use the space below to briefly explain the impacts of the additional equipment, the reason for removing any equipment, and/or the reason for the proposed modification. (*If additional space is needed, please attach a separate sheet with the information and indicate in the space below that additional information is attached.*)

Emergency generators to provide power to safety equipment and administrative office spaces in the event of an emergency and fire pumps to provide power for a fire suppression system, as needed in the event of a fire.

Part B: Process Operation Schedule

Part B indicates the actual (or estimated actual) hours of operation for the process.

6. ☒ Process Operation Schedule ~1 Hours per Day ~1 Days per Week ~12 Weeks Per Year

7. **Scheduled Downtime:** Use the space below to include as much information as is known about scheduled periods of downtime for this process. (*If additional space is needed, please attach a separate sheet with the information and indicate in the space below that additional information is attached.*)

Refer to application narrative for allowable runtime. Generators will operate as emergency generators and fire pumps as allowed by NSPS IIII.

Part C: Emissions Point Information

Part C provides information about each potential outlet of air pollutant emissions to the atmosphere. Please use this table as a checklist to indicate that you have included the following items on your process flow diagram (*All throughputs should be given in pounds per hour.*):

8. ☒ Stack / Vent Information
9. ☒ Pollutants Emitted
10. ☒ Air Pollution Control

Continued on Next Page

Part D: Process Flow Diagram

This space provides a place for a hand drawn process flow diagram. It is **optional** to use this space to create your process flow diagram, but you must include the diagram with your application. If you choose to submit the process flow diagram in a different format, state "process flow diagram attached" in the space provided, and submit the information with your completed application. IDEM, OAQ has provided an example of a basic process flow diagram on the Air Permit Applications Forms website.

Process flow diagram attached - see Figure 3

OAQ GENERAL SOURCE DATA APPLICATION
GSD-04: Stack / Vent Information
State Form 51606 (R3 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Pe Branch
100 N. Senate Avenue, MC 61-53 n 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to provide basic information about each stack or vent that has the potential to emit air pollutants. If you do not provide enough information to adequately describe each process vent and/or stack, the application process may be stopped. This form is required for all air permit applications.
- Detailed instructions for this form are available online on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Stack / Vent Information

This table provides detailed information about each stack or vent through which air pollutants could be released into the atmosphere. If an air stream is vented inside a building, the vent does not need to be listed on this form. If additional space is needed, you may make a copy of this form.

1. Stack / Vent ID	2. Type (V H W O)	3. Shape (C R O)	4. Outlet Dimensions (feet)	5. Height (feet)	6. Maximum Outlet Flow Rate (acfm)	7. Outlet Gas Temperature (Degrees F)	8. Related Stacks / Vents (B P O)
SV-1	V	C	2.33	30.00	25577.00	892.7	P
SV-2	V	C	2.33	30.00	25577.00	892.7	P
SV-3	V	C	2.33	30.00	25577.00	892.7	P
SV-4	V	C	2.33	30.00	25577.00	892.7	P
SV-5	V	C	2.33	30.00	25577.00	892.7	P
SV-6	V	C	2.33	30.00	25577.00	892.7	P
SV-7	V	C	2.33	30.00	25577.00	892.7	P
SV-8	V	C	2.33	30.00	25577.00	892.7	P
SV-9	V	C	2.33	30.00	25577.00	892.7	P
SV-10	V	C	2.33	30.00	25577.00	892.7	P
SV-11	V	C	2.33	30.00	25577.00	892.7	P
SV-12	V	C	2.33	30.00	25577.00	892.7	P
SV-13	TBD	TBD	TBD	TBD	1540.00	873.0	P
SV-14	TBD	TBD	TBD	TBD	1540.00	873.0	P

Note: These values are approximate values to be determined after final engine selection.

OAQ GENERAL SOURCE DATA APPLICATION
GSD-05: Emissions Unit Information

State Form 51610 (R3 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – P ts Branch
100 N. Senate Avenue, MC 61- om 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to provide basic information about each emissions unit that has the potential to emit air pollutants. This form is required for all air permit applications.
- Detailed instructions for this form are available online on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Emissions Unit Information

This table provides detailed information about each emissions unit that has the potential to emit air pollutants to the atmosphere. Accurate information is needed to determine the total potential to emit. If you do not provide enough information to adequately describe each emissions unit, the application process may be stopped. If additional space is needed, you may make a copy of this form.

1. Unit ID	2. Model Number	3. Serial Number	4. Description	5. Manufacturer	6. Installation Date	7. Maximum Capacity	8. Stack / Vent ID
EG-1	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-1
EG-2	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-2
EG-3	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-3
EG-4	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-4
EG-5	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-5
EG-6	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-6
EG-7	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-7
EG-8	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-8
EG-9	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-9
EG-10	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-10
EG-11	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-11
EG-12	TBD	TBD	Emergency Diesel Engine	TBD	2026 or later	4500 bhp	SV-12

DFP-1	J6H-UFADQ0		Diesel-Fired Fire Pump	Clarke	2026 or later	121 bhp	SV-13
DFP-2	TBD		Diesel-Fired Fire Pump	TBD	2026 or later	121 bhp	SV-14

OAQ GENERAL SOURCE DATA APPLICATION
GSD-06: Particulate Emissions Summary

State Form 51612 (R3 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – P s Branch
100 N. Senate Avenue, MC 61-5 om 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to provide basic information about each source of particulate emissions. This form is required for all air permit applications.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A: Particulate Matter Emissions

Part A provides a summary of the type and amount of particulate emissions at the source. The state rules on particulate emissions are found in Title 326 of the Indiana Administrative Code, Article 6, Particulate Rules. If you do not provide enough information to adequately describe each source of particulate emissions, the application process may be stopped. If additional space is needed, you may make a copy of this table.

Emissions Point		Potential To Emit (tons per year)						
1. ID	2. Description	3. PM	4. PM-10	5. PM-2.5	6. TSP	7. Fugitive Dust	8. Fugitive PM	9. HAP PM
	See Appendix 4							

Continued on Next Page

Part B: Control of Particulate Emissions

Part C gathers information about how each source of particulate emissions is controlled. If you do not provide enough information to adequately describe how each source of particulate emissions is controlled, the application process may be stopped. If additional space is needed, you may make a copy of this table.

10. Emissions Point ID	11. Control Measure	12. Control Measure Description	13. Control Plan
SV-1 through SV-12	☒ No Control ☐ Dust Suppression ☐ Other: ______		☐ Yes ☐ No Date Submitted: ______
SV-13 and SV-14	☒ No Control ☐ Dust Suppression ☐ Other: ______		☐ Yes ☐ No Date Submitted: ______
	☐ No Control ☐ Dust Suppression ☐ Other: ______		☐ Yes ☐ No Date Submitted: ______
	☐ No Control ☐ Dust Suppression ☐ Other: ______		☐ Yes ☐ No Date Submitted: ______
	☐ No Control ☐ Dust Suppression ☐ Other: ______		☐ Yes ☐ No Date Submitted: ______
	☐ No Control ☐ Dust Suppression ☐ Other: ______		☐ Yes ☐ No Date Submitted: ______
	☐ No Control ☐ Dust Suppression ☐ Other: ______		☐ Yes ☐ No Date Submitted: ______
	☐ No Control ☐ Dust Suppression ☐ Other: ______		☐ Yes ☐ No Date Submitted: ______

Air Permitting Rules 326 IAC 6-4 and 326 IAC 6-5 require fugitive dust to be controlled as needed to prevent dust from visibly crossing property lines. Parts C and D summarize sources of fugitive particulate emissions from process operations and unpaved roads.

PART C: Fugitive Dust *(if applicable)*

Part C identifies measures implemented for controlling fugitive particulate emissions from process operations and unpaved roads.

14. Dust Control Plans: *Check all that apply.*	**15. Control Measures:**	
☐ Conveying:	☐ Wet	☐ Dry
☐ Stock Piles:	☐ Open	☐ Covered
☐ Unpaved Roads: *Watered?*	☐ Yes	☐ No
☐ Other *(specify)*:		
☐ Other *(specify)*:		
☒ Other *(specify)*: Not Applicable		

PART D: Vehicular Traffic on Unpaved Roads *(if applicable)*

Part D gathers information on vehicular traffic patterns when the site contains unpaved roads. All data should be provided assuming peak hours of vehicular traffic. Two one-way trips equal one round trip. For external traffic (vehicles entering and leaving the property lines), the distance from the plant to the property line is the one-way trip distance.

16. Average Silt Content of Unpaved Roads:

17. Vehicle Description	**18. Max. No. round trips at peak hours** (trips/hr)	**19. Distance of one-way trip** (miles/trip)	**20. Max. vehicle speed** (mph)	**21. Max. gross vehicle weight** *(fully loaded)* (tons)	**22. Tare weight** (tons)	**23. No. of wheels on vehicle** (wheels)
Not Applicable						

OAQ GENERAL SOURCE DATA APPLICATION
GSD-07: Criteria Pollutant Emissions Summary

State Form 51602 (R3 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – P s Branch
100 N. Senate Avenue, MC 61-5 om 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to provide the actual and potential emissions of each criteria pollutant emitted from the source. This form is required for all air permit applications.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A: Unit Emissions Summary

Part A provides the actual and potential emissions of each criteria pollutant emitted from each emissions unit. If you do not provide enough information to adequately describe the emissions from each emissions unit, the application process may be stopped.

1. Unit ID	2. Stack / Vent ID	3. Criteria Pollutant	4. Actual Emissions		5. Potential To Emit	
			Standard Units	Tons Per Year	Standard Units	Tons Per Year
	See Appendix 4					

Continued on Next Page

Part B: Pollutant Emissions Summary

Part B provides the total actual and potential emissions of each criteria pollutant emitted from the source (including all emissions units and fugitive emissions at the source). If you do not provide enough information to adequately describe the total source emissions, the application process may be stopped.

6. Criteria Pollutant	7. Actual Emissions		8. Potential To Emit	
	Standard Units	Tons Per Year	Standard Units	Tons Per Year
Carbon Monoxide (CO)	See Appendix4			
Lead (Pb)				
Nitrogen Oxides (NO_x)				
Particulate Matter (PM)				
Particulate Matter less than 10µm (PM_{10})				
Particulate Matter less than 2.5µm ($PM_{2.5}$)				
Sulfur Dioxide (SO_2)				
Volatile Organic Compounds (VOC)				
Other *(specify)*:				

Part C: Fugitive VOC Emissions *(if applicable)*

Part C summarizes the sources of fugitive VOC emissions at the source and estimates VOC emissions from these emission points. Complete this table if you are required to provide fugitive emissions data pursuant to 326 IAC 2-2 or 326 IAC 2-3.

9. Fugitive Emissions Source	10. Emission Factor (lb/hr)	11. Number Leaking	12. Uncontrolled Potential To Emit	
			Pounds Per Hour	Tons Per Year
Compressor Seals				
Flanges				
Open-Ended Lines				
Pressure Relief Seals				
Pump Seals				
Sampling Connections				
Valves				
Other *(specify)*: Not Applicable				

OAQ GENERAL SOURCE DATA APPLICATION
GSD-08: Hazardous Air Pollutant Emissions Summary
State Form 51604 (R3 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Pe Branch
100 N. Senate Avenue, MC 61-5 m 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to provide the actual and potential emissions of each hazardous air pollutant emitted from the source. This form is required for all air permit applications.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A: Unit Emissions Summary

Part A provides the actual and potential emissions of each hazardous air pollutant emitted from each emissions unit. If you do not provide enough information to adequately describe the emissions from each emissions unit, the application process may be stopped.

1. Unit ID	2. Stack / Vent ID	3. Hazardous Air Pollutant	4. CAS Number	5. Actual Emissions		6. Potential To Emit	
				Standard Units	Tons Per Year	Standard Units	Tons Per Year
		See Appendix 4					

Continued on Next Page

Part B: Pollutant Emissions Summary

Part B provides the total actual and potential emissions of each hazardous air pollutant emitted from the source (including all emissions units and fugitive emissions at the source). If you do not provide enough information to adequately describe the total source emissions, the application process may be stopped.

7. Hazardous Air Pollutant	8. CAS Number	9. Actual Emissions		10. Potential To Emit	
		Standard Units	Tons Per Year	Standard Units	Tons Per Year
See Appendix 4					

Part C: Fugitive HAP Emissions *(if applicable)*

Part C summarizes the sources of fugitive HAP emissions at the source and estimates HAP emissions from these emission points. Complete this table if you are required to provide fugitive emissions data pursuant to 326 IAC 2-2 or 326 IAC 2-3.

11. Fugitive Emissions Source	12. Hazardous Air Pollutant	13. Emission Factor (lb/hr)	14. Number Leaking	15. Uncontrolled Potential To Emit	
				Pounds Per Hour	Tons Per Year
Compressor Seals					
Flanges					
Open-Ended Lines					
Pressure Relief Seals					
Pump Seals					
Sampling Connections					
Valves					
Other *(specify)*: Not Applicable					

OAQ GENERAL SOURCE DATA APPLICATION
GSD-10: Insignificant Activities

State Form 51596 (R4 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to identify all trivial and insignificant activities in operation at the source. This form is required for all air permit applications.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Part A: Trivial Activities (Optional)

Part A identifies all trivial activities in operation at the source as defined in 326 IAC 2-7-1(40). **Please use this table as a checklist.** Check each item and sub-item that applies. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Trivial Activity	Citation (326 IAC)
	1. Any activity or emission unit:	2-7-1(40)(A)
Diesel belly tanks	☒ not regulated by a NESHAP, with potential uncontrolled emissions are equal to or less than one (1) pound per day on an emission unit basis for any single HAP or combination of HAPs; and	
	☒ for which the potential uncontrolled emissions meet the exemption levels specified in the following:	
	☒ For lead and lead compounds measured as elemental lead (Pb), potential uncontrolled emissions that are equal to or less than one (1) pound per day	
	☒ For carbon monoxide (CO), potential uncontrolled emissions that are equal to or less than one (1) pound per day	
	☒ For sulfur dioxide (SO_2), potential uncontrolled emissions that are equal to or less than one (1) pound per day	
	☒ For volatile organic compounds (VOC), potential uncontrolled emissions that are equal to or less than one (1) pound per day	
	☒ For nitrogen oxides (NO_X), potential uncontrolled emissions that are equal to or less than one (1) pound per day	
	☒ For particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM_{10}), potential uncontrolled emissions that are equal to or less than one (1) pound per day	
	2. Water related activities including:	2-7-1(40)(B)
	☒ Production of hot water for on-site personal use not related to any industrial or production process	
	☐ Water treatment activities used to provide potable and process water for the plant, excluding any activities associated with wastewater treatment	
	☐ Steam traps, vents, leaks and safety relief valves	
	☐ Cooling ponds	
	☐ Laundry operations using only water solutions of bleach or detergents	
	☐ Demineralized water tanks and demineralizer vents	
	☐ Boiler water treatment operations, not including cooling towers	
	☐ Oxygen scavenging (de-aeration) of water	
	☐ Steam cleaning operations and steam sterilizers	
	☒ Pressure washing of equipment	
	☐ Water jet cutting operations	

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Part A: Trivial Activities (continued)

Part A identifies all trivial activities in operation at the source as defined in 326 IAC 2-7-1(40). **Please use this table as a checklist.** Check each item and sub-item that applies. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Trivial Activity	Citation (326 IAC)
	3. Combustion activities including the following:	2-7-1(40)(C)
	☐ Portable electrical generators that can be moved by hand from one location to another. "Moved by hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device	
	☒ Combustion emissions from propulsion of mobile sources	
	☒ Fuel use related to food preparation for on-site consumption	
	☐ Tobacco smoking rooms and areas	
	☐ Blacksmith forges	
	☐ Indoor and outdoor kerosene heaters	
	4. Activities related to ventilation, venting equipment and refrigeration, including the following:	2-7-1(40)(D)
	☒ Ventilation exhaust, central chiller water systems, refrigeration and air conditioning equipment, not related to any industrial or production process, including natural draft hoods or ventilating systems that do not remove air pollutants	
	☐ Stack and vents from plumbing traps used to prevent the discharge of sewer gases, handling domestic sewage only, excluding those at wastewater treatment plants or those handling any industrial waste	
	☐ Vents from continuous emissions monitors and other analyzers	
	☐ Natural gas pressure regulator vents, excluding venting at oil and gas production facilities	
	☒ Air vents from air compressors	
	☒ Vents for air cooling of electric motors provided the air does not commingle with regulated air pollutants	
	☐ Vents from equipment used to air blow water from cooled plastics strands or sheets	
	5. Activities related to routine fabrication, maintenance and repair of buildings, structures, equipment or vehicles at the source where air emissions from those activities would not be associated with any commercial production process including the following:	2-7-1(40)(E)
	☒ Activities associated with the repair and maintenance of paved and unpaved roads, including paving or sealing, or both, of parking lots and roadways	
	☒ Painting, including interior and exterior painting of buildings, and solvent use, excluding degreasing operations utilizing halogenated organic solvents	
	☒ Brazing, soldering, or welding operations and associated equipment	
	☐ Portable blast-cleaning equipment with enclosures	
	☐ Blast-cleaning equipment using water as the suspension agent and associated equipment	
	☒ Batteries and battery charging stations, except at battery manufacturing plants	
	☒ Lubrication, including hand-held spray can lubrication, dipping metal parts into lubricating oil, and manual or automated addition of cutting oil in machining operations	
	☒ Non-asbestos insulation installation or removal	
	☒ Tarring, retarring and repair of building roofs	
	☐ Bead blasting of heater tubes	
	☐ Instrument air dryer and filter maintenance	
	☐ Manual tank gauging	
	☐ Open tumblers associated with deburring operations in maintenance shops	

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Part A: Trivial Activities (continued)

Part A is intended to identify all trivial activities in operation at the source as defined in 326 IAC 2-7-1(40). **Please use this table as a checklist.** Check each item and sub-item that applies. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Trivial Activity	Citation (326 IAC)
	6. Activities performed using hand-held equipment including the following:	2-7-1(40)(F)
	☐ Application of hot melt adhesives with no VOC in the adhesive formulation ☐ Cutting, excluding cutting torches ☐ Buffing ☐ Grinding ☐ Sanding ☐ Machining wood, metal, or plastic ☐ Carving ☐ Polishing ☐ Sawing ☐ Turning wood, metal, or plastic ☐ Drilling ☐ Routing ☐ Surface grinding	
	7. Housekeeping and janitorial activities and supplies including the following:	2-7-1(40)(G)
	☒ Vacuum cleaning systems used exclusively for housekeeping or custodial activities, or both	
	☐ Steam cleaning activities	
	☐ Rest rooms and associated cleanup operations and supplies	
	☐ Alkaline or phosphate cleaners and associated equipment	
	☒ Mobile floor sweepers and floor scrubbers	
	☒ Pest control fumigation	
	8. Office related activities including the following:	2-7-1(40)(H)
	☒ Office supplies and equipment	
	☒ Photocopying equipment and associated supplies	
	☒ Paper shredding	
	☒ Blueprint machines, photographic equipment, and associated supplies	
	9. Lawn care and landscape maintenance activities and equipment, including the storage, spraying or application of insecticides, pesticides and herbicides	2-7-1(40)(I)
	10. Storage equipment and activities including:	2-7-1(40)(J)
	☐ Pressurized storage tanks and associated piping for the following: ☐ Acetylene ☐ Inorganic compounds ☐ Natural gas ☐ Anhydrous ammonia ☐ Liquid petroleum gas (LPG) ☐ Nitrogen dioxide ☐ Carbon Monoxide ☐ Liquid natural gas (LNG) (propane) ☐ Sulfur dioxide ☐ Chlorine	
	☐ Storage tanks, vessels, and containers holding or storing liquid substances that do not contain any VOC or HAP	
	☐ Storage tanks, reservoirs, and pumping and handling equipment of any size containing soap, wax, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized	
	☐ Storage of drums containing maintenance raw materials	
	☐ Storage of the following:	
	☐ Castings	
	☐ Lance rods	
	☐ Any non-HAP containing material in solid form stored in a sealed or covered container	
	☐ Portable containers used for the collection, storage, or disposal of materials provided the container capacity is equal to or less than forty-six hundredths (0.46) cubic meters and the container is closed except when the material is added or removed	

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Part A: Trivial Activities (continued)

Part A identifies to identify all trivial activities in operation at the source as defined in 326 IAC 2-7-1(40). **Please use this table as a checklist.** Check each item and sub-item that applies. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Trivial Activity	Citation (326 IAC)
	11. Emergency and standby equipment including:	2-7-1(40)(K)
	☐ Emergency (backup) electrical generators at residential locations, such as dormitories, prisons and hospitals.	
	☒ Safety and emergency equipment, except engine driven fire pumps, including fire suppression systems and emergency road flares.	
	☐ Process safety relief devices installed solely for the purpose of minimizing injury to persons or damage to equipment which could result from abnormal process operating conditions, including the following:	
	☐ Explosion relief vents, diaphragms or panels ☐ Rupture discs ☐ Safety relief valves	
	☐ Activities and equipment associated with on-site medical care not otherwise specifically regulated	
	☐ Vacuum producing devices for the purpose of removing potential accidental releases	
	12. Sampling and testing equipment and activities including the following:	2-7-1(40)(L)
	☐ Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis	
	☐ Hydraulic and hydrostatic testing equipment	
	☐ Ground water monitoring wells and associated sample collection equipment	
	☐ Environmental chambers not using hazardous air pollutant (HAP) gases	
	☐ Shock chambers	
	☐ Humidity chambers	
	☐ Solar simulators	
	☐ Sampling activities including	
	☐ Sampling of waste ☐ Glove box sampling, charging, and packaging	
	☐ Instrument air dryers and distribution	
	13. Use of consumer products and equipment where the product or equipment is used at a source in the same manner as normal consumer use and is not associated with any production process	2-7-1(40)(M)
	14. Equipment and activities related to the handling, treating, and processing of animals including:	2-7-1(40)(N)
	☐ Equipment used exclusively to slaughter animals, but not including the following: Rendering cookers, Boilers, Heating plants, Incinerators, and/or Electrical power generating equipment	
	☐ Veterinary operating rooms	
	15. Activities generating limited amounts of fugitive dust including:	2-7-1(40)(O)
	☐ Fugitive emissions related to movement of passenger vehicles, provided the emissions are not counted for applicability purposes under 326 IAC 2-7-1(22)(B), and any required fugitive dust control plan or its equivalent is submitted	
	☐ Soil boring	
	☒ Road salting and sanding	

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Part A: Trivial Activities (continued)

Part A identifies all trivial activities in operation at the source as defined in 326 IAC 2-7-1(40). **Please use this table as a checklist.** Check each item and sub-item that applies. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Trivial Activity	Citation (326 IAC)
	16. Activities associated with production including the following:	2-7-1(40)(P)
	☐ Closed, non-vented, tumblers used for cleaning or deburring metal products without abrasive blasting	
	☐ Electrical resistance welding	
	☐ CO_2 lasers, used only on metals and other materials which do not emit HAPs in the process	
	☐ Laser trimmers which do not produce fugitive emissions and are equipped with dust collection devices such as bag filter, cyclone, or equivalent device	
	☐ Application equipment for hot melt adhesives with no VOC in the adhesive formulation	
	☐ Drop hammers or hydraulic presses for forging or metalworking	
	☒ Air compressors and pneumatically operated equipment, including hand tools	
	☐ Compressor or pump lubrication and seal oil systems	
	☐ Equipment used to mix and package soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized	
	☐ Equipment for washing or drying fabricated glass or metal products, if no VOCs or HAPs are used in the process, and no gas, oil or solid fuel is burned	
	☐ Handling of solid steel, including coils and slabs, excluding scrap burning, scarfing, and charging into steel making furnaces and vessels	
	17. Miscellaneous equipment, but not emissions associated with the process for which the equipment is used, and activities including the following:	2-7-1(40)(Q)
	☐ Equipment used for surface coating, painting, dipping or spraying operation, except those that will emit VOCs or HAPs	
	☐ Condensate drains for natural gas and landfill gas	
	☐ Electric or steam heated drying ovens and autoclaves, including only the heating emissions and not any associated process emissions	
	☐ Salt baths using nonvolatile salts including caustic solutions that do not result in emissions of any regulated air pollutants	
	☐ Ozone generators	
	☐ Portable dust collectors	
	☐ Scrubber systems circulating water based solutions of inorganic salts or bases which are installed to be available for response to emergency situations	
	☐ Soil borrow pits	
	☐ Manual loading and unloading operations	
	☐ Purging of refrigeration devices using a combination of nitrogen and CFC-22 (R-22) as pressure test media	
	☐ Construction and demolition operations	
	☐ Mechanical equipment gear boxes and vents which are isolated from process materials	
	☐ Non-volatile mold release waxes and agents	

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Part B: Insignificant Activities

Part B identifies all insignificant activities in operation at the source as defined in 326 IAC 2-7-1(21)(G). **Please use this table as a checklist.** Indicate which activities are present by checking the appropriate box. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Insignificant Activity	Citation (326 IAC)
	18. Combustion related activities, including the following:	2-7-1(21)(G)(i)
	☐ Space heaters, process heaters, or boilers using the following fuels	
	☐ Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour	
	☐ Propane or liquified petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu per hour	
	☐ Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) Btu per hour and firing fuel containing less than five-tenths percent (0.5%) sulfur by weight	
	☐ Wood-fired combustion sources with heat input equal to or less than one million (1,000,000) Btu per hour and not burning wood refuse, treated wood or chemically contaminated wood	
	☐ Equipment powered by diesel fuel fired or natural gas fired internal combustion engines of capacity equal to or less than five hundred thousand (500,000) Btu/hour, except where total capacity of equipment operated by one stationary source exceeds two million (2,000,000) Btu/hour	
	☐ Combustion source flame safety purging on startup	
	19. Fuel dispensing activities, including the following:	2-7-1(21)(G)(ii)
	☐ A gasoline fuel transfer dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day and filling storage tanks having a capacity equal to or less than ten thousand five hundred (10,500) gallons. Such storage tanks may be in a fixed location or on mobile equipment	
	☐ A petroleum fuel, other than gasoline, dispensing facility, having a storage tank capacity less than or equal to ten thousand five hundred (10,500) gallons, and dispensing three thousand five hundred (3,500) gallons per day or less	
	20. The following VOC and HAP storage containers:	2-7-1(21)(G)(iii)
	☐ Storage tanks with capacity less than or equal to one thousand (1,000) gallons and annual throughputs less than twelve thousand (12,000) gallons	
	☐ Vessels storing the following:	
	☐ Hydraulic oils ☐ Lubricating oils ☐ Machining oils ☐ Machining fluids	
	21. Refractory storage not requiring air pollution control equipment	2-7-1(21)(G)(iv)
	22. Equipment used exclusively for the following	2-7-1(21)(G)(v)
	☐ Packaging the following: ☐ Greases ☐ Lubricants	
	☐ Filling drums, pails or other packaging containers with the following:	
	☐ Greases ☐ Lubricating oils ☐ Waxes	

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Part B: Insignificant Activities (continued)

Part B identifies all insignificant activities in operation at the source as defined in 326 IAC 2-7-1(21)(G). **Please use this table as a checklist.** Indicate which activities are present by checking the appropriate box. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Insignificant Activity	Citation (326 IAC)
	23. Production related activities, including the following:	2-7-1(21)(G)(vi)
	☐ Application of the following as temporary protective coatings:	
	☐ Greases ☐ Lubricants ☐ Nonvolatile materials ☐ Oils	
	☐ Machining where an aqueous cutting coolant continuously floods the machining interface	
	☐ Degreasing operations that do not exceed one hundred forty-five (145) gallons per twelve (12) months, except if subject to 326 IAC 20-6	
	☐ Cleaners and solvents characterized as follows where the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months	
	☐ Having a vapor pressure equal to or less than two kilo Pascals (2.0 kPa) (fifteen millimeters of mercury (15 mm Hg) or three-tenths pound per square inch (0.3 psi)) measured at thirty-eight degrees Centigrade (38°C) (one hundred degrees Fahrenheit (100°F))	
	☐ Having a vapor pressure equal to or less than seven-tenths kilo Pascals (0.7 kPa) (five millimeters of mercury (5 mm Hg) or one-tenth pound per square inch (0.1 psi)) measured at twenty degrees Centigrade (20°C) (sixty-eight degrees Fahrenheit (68°F))	
	☐ The following equipment related to manufacturing activities not resulting in the emission of HAPs:	
	☐ Brazing equipment ☐ Cutting torches ☐ Soldering equipment ☐ Welding equipment	
	☐ Closed loop heating and cooling systems	
	☐ Infared cure equipment	
	☐ Exposure chambers (towers or columns) for curing of ultraviolet inks and ultra-violet coatings where heat is the intended discharge	
	☐ Any of the following structural steel and bridge fabrication activities:	
	☐ Cutting two hundred thousand (200,000) linear feet or less of one (1) inch plate or equivalent	
	☐ Using eighty (80) tons or less of welding consumables	
	24. Activities associated with the following recovery systems:	2-7-1(21)(G)(vii)
	☐ Rolling oil recovery systems	
	☐ Groundwater oil recovery wells	
	25. Solvent recycling systems with batch capacity less than or equal to one hundred (100) gallons	2-7-1(21)(G)(viii)

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Part B: Insignificant Activities (continued)

Part B is intended to identify all insignificant activities in operation at the source as defined in 326 IAC 2-7-1(21)(G). **Please this table as a checklist.** Indicate which activities are present by checking the appropriate box. If applicable, provide Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Insignificant Activity	Citation (326 IAC)
	26. Water-based activities, including the following:	2-7-1(21)(G)(ix)
	☐ Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to one percent (1%) by volume	
	☐ Water runoff ponds for petroleum coke-cutting and coke storage piles	
	☐ Activities associated with the transportation and treatment of sanitary sewage, provided discharge to the treatment plant is under the control of the owner/operator, that is, an on-site sewage treatment facility	
	☐ Any operation using aqueous solutions containing less than one percent (1%) by weight of VOCs excluding HAPs	
	☐ Water based adhesives that are less than or equal to five percent (5%) by volume of VOCs excluding HAPs	
	☐ Noncontact cooling tower systems with either of the following:	
	☐ Natural draft cooling towers not regulated under a NESHAP	
	☐ Forced and induced draft cooling tower systems not regulated under a NESHAP	
	☐ Quenching operations used with heat treating processes	
	27. Repair activities, including the following:	2-7-1(21)(G)(x)
	☐ Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment	
	☐ Heat exchanger cleaning and repair	
	☐ Process vessel degassing and cleaning to prepare for internal repairs	
	28. Trimmers that do not produce fugitive emissions and that are equipped with a dust collection or trim material recovery device, such as a bag filter or cyclone	2-7-1(21)(G)(xi)
	29. Stockpiled soils from soil remediation activities that are covered and waiting transport for disposal	2-7-1(21)(G)(xii)
	30. Paved and unpaved roads and parking lots with public access	2-7-1(21)(G)(xiii)
	31. Conveyors as follows:	2-7-1(21)(G)(xiv)
	☐ Covered conveyors for solid raw material, including the following:	
	☐ Coal or coke conveying of less than or equal to three hundred sixty (360) tons per day	
	☐ Limestone conveying of less than or equal to seven thousand two hundred (7,200) tons per day for sources other than mineral processing plants constructed after August 31, 1983	
	☐ Uncovered coal or coke conveying of less than or equal to one hundred twenty (120) tons per day	
	☐ Underground conveyors	
	☐ Enclosed systems for conveying plastic raw materials and plastic finished goods	
	32. Coal bunker and coal scale exhausts and associated dust collector vents	2-7-1(21)(G)(xv)
	33. Asbestos abatement projects regulated by 326 IAC 14-10	2-7-1(21)(G)(xvi)

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Part B: Insignificant Activities (continued)

Part B is intended to identify all insignificant activities in operation at the source as defined in 326 IAC 2-7-1(21)(G). **Please use this table as a checklist.** Indicate which activities are present by checking the appropriate box. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Insignificant Activity	Citation (326 IAC)
	34. Routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process, including the following:	2-7-1(21)(G)(xvii)
	☐ Purging of gas lines ☐ Purging of vessels	
	35. Flue gas conditioning systems and associated chemicals such as the following:	2-7-1(21)(G)(xviii)
	☐ Sodium sulfate ☐ Ammonia ☐ Sulfur trioxide.	
	36. Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including the following:	2-7-1(21)(G)(xix)
	☐ Catch tanks ☐ Temporary liquid separators ☐ Tanks ☐ Fluid handling equipment	
	37. Blowdown for the following:	2-7-1(21)(G)(xx)
	☐ Sight glass ☐ Boiler ☐ Compressors ☐ Pumps ☐ Cooling tower	
	38. Furnaces used for melting metals other than beryllium with a brim full capacity of less than or equal to four hundred fifty (450) cubic inches by volume	2-7-1(21)(G)(xxi)
	39. Activities associated with emergencies, including the following:	2-7-1(21)(G)(xxii)
	☐ On-site fire training approved by the IDEM	
	☐ Emergency generators as follows:	
	☐ Gasoline generators not exceeding one hundred ten (110) horsepower	
	☐ Diesel generators not exceeding one thousand six hundred (1,600) horsepower	
	☐ Natural gas turbines or reciprocating engines not exceeding sixteen thousand (16,000) horsepower	
DFP-1, DFP-2	☒ Stationary fire pump engines	
	40. Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to three one-hundredths grains per actual cubic foot (0.03 gr/acf) and a gas flow rate less than or equal to four thousand actual cubic feet per minute (4,000 acf/min), including the following:	2-7-1(21)(G)(xxiii)
	☐ Deburring ☐ Polishing ☐ Pneumatic conveying ☐ Buffing ☐ Abrasive blasting ☐ Woodworking operations	
	41. Purge double block and bleed valves	2-7-1(21)(G)(xxiv)
	42. Filter or coalescer media changeout	2-7-1(21)(G)(xxv)
	43. Vents from ash transport systems not operated at positive pressure	2-7-1(21)(G)(xxvi)
	44. Mold release agents using low volatile products (vapor pressure less than or equal to two kilo Pascals (2kPa) measured at thirty-eight degrees Centigrade (38°C)	2-7-1(21)(G)(xxvii)
	45. Farm operations	2-7-1(21)(G)(xviii)

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Part B: Insignificant Activities (continued)

Part B identifies all insignificant activities in operation at the source as defined in 326 IAC 2-7-1(21)(G). **Please use this form as a checklist.** Indicate which activities are present by checking the appropriate box. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Insignificant Activity	Citation (326 IAC)
	46. Woodworking equipment controlled by a baghouse provided that the following criteria are met:	2-7-1(21)(G)(xxix)
	☐ The baghouse does not exhaust to the atmosphere greater than one hundred twenty-five thousand (125,000) cubic feet per minute	
	☐ The baghouse does not emit particulate matter with a diameter less than ten (10) microns in excess of three-thousandths grains per dry standard cubic feet (0.003 gr/dscf) of outlet air	
	☐ Opacity from the baghouse does not exceed ten percent (10%)	
	☐ The baghouse is in operation at all times the woodworking equipment is in use	
	☐ Visible emissions from the baghouse are observed daily using procedures in accordance with 40 CFR 60, Appendix A, Method 22 and normal or abnormal emissions are recorded. In the event abnormal emissions are observed for greater than six (6) minutes in duration, the following shall occur:	
	☐ The baghouse shall be inspected	
	☐ Corrective actions, such as replacing or reseating bags, are initiated, when necessary	
	☐ The baghouse is inspected quarterly when vented to the atmosphere	
	☐ The owner or operator keeps the following records:	
	☐ Records documenting the date when the baghouse redirected indoors or to the atmosphere	
	☐ Quarterly inspection reports, when vented to the atmosphere	
	☐ Visible observation reports	
	☐ Records of corrective actions	
	47. Woodworking equipment controlled by a baghouse provided that the following criteria are met:	2-7-1(21)(G)(xxx)
	☐ The baghouse does not exhaust to the atmosphere greater than forty thousand (40,000) cubic feet per minute	
	☐ The baghouse does not emit particulate matter with a diameter less than ten (10) microns in excess of one-hundredth grains per dry standard cubic feet (0.01 gr/dscf) of outlet air	
	☐ Opacity from the baghouse does not exceed ten percent (10%)	
	☐ The baghouse is in operation at all times the woodworking equipment is in use	
	☐ Visible emissions from the baghouse are observed daily using procedures in accordance with 40 CFR 60, Appendix A, Method 22 and normal or abnormal emissions are recorded. In the event abnormal emissions are observed for greater than six (6) minutes in duration, the following shall occur:	
	☐ The baghouse shall be inspected	
	☐ Corrective actions, such as replacing or reseating bags, are initiated, when necessary	
	☐ The baghouse is inspected quarterly when vented to the atmosphere	
	☐ The owner or operator keeps the following records:	
	☐ Records documenting the date when the baghouse redirected indoors or to the atmosphere	
	☐ Quarterly inspection reports, when vented to the atmosphere	
	☐ Visible observation reports	
	☐ Records of corrective actions	

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Part C: Insignificant Laboratory, Research, and Educational Activities

Part C identifies insignificant activities in operation at the source as defined in 326 IAC 2-7-1(21), paragraph (D), (E), or (F). **Please use this table as a checklist.** Indicate which activities are present by checking the appropriate box. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Unit ID	Description of Insignificant Activity
	48. ☐ Emissions from a laboratory as defined in 2-7-1(21)(D).
	49. ☐ Emissions from research and development activities as defined in 2-7-1(21)(E).
	50. ☐ Emissions from educational and teaching activities as defined in 2-7-1(21)(F).

Part D: Other Insignificant Activities

Part D identifies all other insignificant activities in operation at the source (as defined in 326 IAC 2-7-1(21), paragraphs (A) and (B) as those activities with potential uncontrolled emissions equal to or less than the thresholds listed below) that are not identified above in Parts A, B, or C. If applicable, provide the Emissions Unit Identification number that corresponds to the Plant Layout and Process Flow diagrams.

Carbon Monoxide (CO) ≤ 25 lb/day	Particulate Matter with aerodynamic diameter ≤ 10μm (PM_{10}) ≤ 5 lbs/hr or 25 lb/day
Lead (Pb) ≤ 0.6 ton/yr or 3.29 lb/day	Sulfur Dioxide (SO_2) ≤ 5 lbs/hr or 25 lb/day
Nitrogen Oxides (NO_x) ≤ 5 lbs/hr or 25 lb/day	Volatile Organic Compounds (VOC) ≤ 3 lbs/hr or 15 lb/day

51. **Other Insignificant Activities**: Identify any "other activities", and provide a brief description.

Unit ID	Description of Other Activity

Continued on Next Page

Part E: Insignificant Activities with HAP Emissions

Part D identifies all insignificant activities in operation at the source (as defined in 326 IAC 2-7-1(21)(C)) that have the potential to emit hazardous air pollutants (HAP). These activities may or may not be identified above in Parts A, B, or D. **Activities listed in Part C above, need not be listed in this section.** Indicate which type of "Insignificant HAP Activities" are present by checking the appropriate box, and provide a brief description.

52. **Individual HAP Emissions**:
Identify any emissions unit, not regulated by a NESHAP, emitting greater than 1 pound per day but less than 5 pounds per day or 1 ton per year of a single HAP.

Emissions Unit	HAP	Brief Description	Applicable Requirements

53. **Combination HAP Emissions**:
Identify any emissions unit, not regulated by a NESHAP, emitting greater than 1 pound per day but less than 12.5 pounds per day or 2.5 ton per year of a combination of HAPs.

Emissions Unit	HAPs	Brief Description	Applicable Requirements

Continued on Next Page

Part E: Specifically Regulated Insignificant Activities

Part E identifies all specifically regulated insignificant activities. Examples of specifically regulated activities that may have insignificant emissions include boilers, process heaters, any activity regulated under a federal rule such as MACT or BACT, etc. If you are not sure if an emissions unit would be considered a specifically regulated insignificant activity, contact the Air Permit Reviewer of the Day for additional guidance.

54. Unit ID	55. Stack / Vent ID	56. Pollutant	57. Actual Emissions		58. Potential to Emit		59. Citation
			Standard Units	Tons Per Year	Standard Units	Tons Per Year	

OAQ GENERAL SOURCE DATA APPLICATION
GSD-14: Owners and Occupants Notified

State Form 51609 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of GSD-14 is to identify adjacent landowners and occupants that are to be notified that an air permit application has been submitted.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Owners And Occupants Notified

Use this table to identify adjacent landowners and occupants that you have notified of your intent to construct pursuant to Indiana Code (IC) 13-15-8. If you need additional space, you may make copies of this form.

1. Owner / Occupant Name: INDIANA ECONOMIC DEVELOPMENT CORPORATION		**2. Date Notified**: within 10 days of application submittal
3. Address: 1 N CAPITAL AVE SUITE 700		
City: INDIANAPOLIS	**State**: IN	**ZIP Code**: 46204 –
4. Electronic Mail:	**5. Telephone Number**: ( ) -	
6. Method of Notification: ☐ Telephone ☐ Electronic Mail ☒ Standard Mail ☐ Other *(specify)*:		
Owner / Occupant Name: ROBERT STEPHEN & DEB WILHOITE		**Date Notified**: within 10 days of application submittal
Address: 2975 W 50 N		
City: LEBANON	**State**: IN	**ZIP Code**: 46052 –
Electronic Mail:	**Telephone Number**: ( ) -	
Method of Notification: ☐ Telephone ☐ Electronic Mail ☒ Standard Mail ☐ Other *(specify)*:		
Owner / Occupant Name: ANGELA HUMPHRESS		**Date Notified**: within 10 days of application submittal
Address: 3675 W 200 N		
City: LEBANON	**State**: IN	**ZIP Code**: 46052 –
Electronic Mail:	**Telephone Number**: ( ) -	
Method of Notification: ☐ Telephone ☐ Electronic Mail ☒ Standard Mail ☐ Other *(specify)*:		
Owner / Occupant Name: PAUL & PHYLLIS NICELY		**Date Notified**: within 10 days of application submittal
Address: 4590 W 200 N		
City: LEBANON	**State**: IN	**ZIP Code**: 46052 –
Electronic Mail:	**Telephone Number**: ( ) -	
Method of Notification: ☐ Telephone ☐ Electronic Mail ☒ Standard Mail ☐ Other *(specify)*:		
Owner / Occupant Name: JOSHUA R & BROOKE POTTER		**Date Notified**: within 10 days of application submittal
Address: 4430 W 200 N		
City: LEBANON	**State**: IN	**ZIP Code**: 46052 –
Electronic Mail:	**Telephone Number**: ( ) -	

Method of Notification:	☐ **Telephone**	☐ **Electronic Mail**	☒ **Standard Mail**	☐ **Other** *(specify)*:

OAQ GENERAL SOURCE DATA APPLICATION
GSD-14: Owners and Occupants Notified

State Form 51609 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of GSD-14 is to identify adjacent landowners and occupants that are to be notified that an air permit application has been submitted.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Owners And Occupants Notified

Use this table to identify adjacent landowners and occupants that you have notified of your intent to construct pursuant to Indiana Code (IC) 13-15-8. If you need additional space, you may make copies of this form.

1. Owner / Occupant Name: HINE K A FARMS INC		**2. Date Notified**: within 10 days of application submittal
3. Address: 4570 W SR 32		
City: LEBANON	**State**: IN	**ZIP Code**: 46052 –
4. Electronic Mail:	**5. Telephone Number**: ( ) -	
6. Method of Notification: ☐ Telephone ☐ Electronic Mail ☒ Standard Mail ☐ Other *(specify)*:		

Owner / Occupant Name: CHRISTINA BLESIC		**Date Notified**: within 10 days of application submittal
Address: 2955 W 50 N		
City: LEBANON	**State**: IN	**ZIP Code**: 46052 –
Electronic Mail:	**Telephone Number**: ( ) -	
Method of Notification: ☐ Telephone ☐ Electronic Mail ☒ Standard Mail ☐ Other *(specify)*:		

Owner / Occupant Name: DAVID & TERRY LYNN BENGE		**Date Notified**: within 10 days of application submittal
Address: 2963 W 50 N		
City: LEBANON	**State**: IN	**ZIP Code**: 46052 –
Electronic Mail:	**Telephone Number**: ( ) -	
Method of Notification: ☐ Telephone ☐ Electronic Mail ☒ Standard Mail ☐ Other *(specify)*:		

Owner / Occupant Name: CAPGROW HOLDINGS JV SUB V LLC		**Date Notified**: within 10 days of application submittal
Address: 4150 INTERNATIONAL PLAZA		
City: FORT WORTH	**State**: TX	**ZIP Code**: 76109 –
Electronic Mail:	**Telephone Number**: ( ) -	
Method of Notification: ☐ Telephone ☐ Electronic Mail ☒ Standard Mail ☐ Other *(specify)*:		

Owner / Occupant Name: ELI LILLY AND COMPANY		**Date Notified**: within 10 days of application submittal
Address: 893 S DELEWARE STREET		
City: INDIANAPOLIS	**State**: IN	**ZIP Code**: 46285 –
Electronic Mail:	**Telephone Number**: ( ) -	

Method of Notification: ☐ **Telephone** ☐ **Electronic Mail** ☒ **Standard Mail** ☐ **Other** *(specify)*:

OAQ GENERAL SOURCE DATA APPLICATION
GSD-15: Government Officials Notified

State Form 51608 (R3 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of GSD-15 is to identify local government officials that are to be notified that an air permit application has been submitted.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for public inspection.

Government Officials Notified

Use this table to identify local government officials that should be notified pursuant to Indiana Code (IC) 13-15-3-1 that an air permit application has been submitted. If you need additional space, you may make copies of this form.

1. Name: Boone County Council		**2. Date Notified**: within 10 days of submittal
3. Title: County Council		
4. Address: 209 Courthouse Square		
City: Lebanon	**State**: IN	**ZIP Code**: 46052 –
5. Electronic Mail:	**6. Telephone Number**: (765) 482 - 2940	
7. Method of Notification: ☐ Telephone ☐ Electronic Mail ☒ Standard Mail ☐ Other *(specify)*:		
Name: Center Township		**Date Notified**:
Title: Township Trustee		
Address: 320 N East St, Lebanon, IN 46052.		
City: Lebanon	**State**: IN	**ZIP Code**: 46052 –
Electronic Mail:	**Telephone Number**: (765) 482 - 0024	
Method of Notification: ☐ Telephone ☐ Electronic Mail ☒ Standard Mail ☐ Other *(specify)*:		
Name:		**Date Notified**:
Title:		
Address:		
City:	**State**:	**ZIP Code**: –
Electronic Mail:	**Telephone Number**: ( ) -	
Method of Notification: ☐ Telephone ☐ Electronic Mail ☐ Standard Mail ☐ Other *(specify)*:		
Name:		**Date Notified**:
Title:		
Address:		
City:	**State**:	**ZIP Code**: –
Electronic Mail:	**Telephone Number**: ( ) -	
Method of Notification: ☐ Telephone ☐ Electronic Mail ☐ Standard Mail ☐ Other *(specify)*:		

AEF-01 – ALTERNATE EMISSION FACTOR REQUEST

State Form 51860 (R / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this application is to request to use an alternate emission factor for permitting determinations, estimating source emissions for billing, or for development of emission inventories for use in air quality planning. This is required form.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

FOR OFFICE USE ONLY

PERMIT NUMBER:

___ _____ – _____ – _____

PART A: Process Identification

Part A is intended to identify the process at the source for which the alternate emission factor is requested.

1. Process Description: 12 Emergency Generators and 2 Diesel Fire pumps

2. Affected Emissions Units:	**3.** Affected Control Devices:	**4.** Raw Materials Impacting Emissions:
EG-1 to EG-12	N/A	ULSD or Renewable Diesel < 0.0015% sulfur
DFP-1 and DFP-2	N/A	ULSD or Renewable Diesel < 0.0015% sulfur

PART B: Standard Calculation Method

Part B is intended to identify the standard emission calculation method and to identify why the method is not adequate.

5. Standard Emission Calculation Method: AP-42

6. Rationale: Briefly explain why the published emission factor does not appropriately represent the process, operation, or pollution control equipment efficiently.

Engines will be certified to meet the Tier 2 or Tier 3 emissions standards in NSPS IIII

PART C: Proposed Alternate Emission Factor

Part C is intended to identify the proposed alternate emission factor (AEF) and to sufficiently describe the AEF such that IDEM staff can understand the process used to develop the AEF.

7. **Proposed AEF:** Briefly describe the proposed alternate emission factor.

Tier 2 or Tier 3 Emission Factors based on NSPS IIII

8. **AEF Development Method:** What approach was, or will be used to develop the alternate emission factor?

- ☐ Continuous Emissions Monitoring System (CEMS)
  - **A.** Is the CEM certified by IDEM? ☐ Yes ☐ No
  - **B.** Is the CEM operated and maintained in accordance with the applicable regulations? ☐ Yes ☐ No
- ☐ Source Testing
  - **A.** Was testing conducted by a trade association or industry group? ☐ Yes ☐ No
    - Identify the trade association or industry group:
  - **B.** Was testing published and validated through peer review? ☐ Yes ☐ No
  - **C.** Was testing approved by IDEM? ☐ Yes ☐ No
- ☐ Development of Material Balance Equations
- ☐ Emission Modeling
- ☐ Engineering Estimates
- ☐ Other – Please Specify: NSPS IIII

9. **Supporting Data:** Have you attached the data supporting the development of your alternate emission factor? ☒ Yes ☐ No

10. **RM/TP Submittal:** Have you submitted the appropriate reference method or test protocol to IDEM? ☐ Yes ☐ No ☒ NA

11. **Modeling Analysis:** Was any modeling conducted? ☐ Yes ☐ No ☒ NA

12. **Modeling Summary:** Briefly describe any modeling that was conducted. *Attach additional information using form GSD-05, Summary of Additional Information, as needed.*

OAQ PROCESS INFORMATION APPLICATION
PI-02A: Combustion Unit Summary

State Form 52535 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to summarize all of the combustion process units.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for anyone to inspect and photocopy.

Form ID	Form Title	Guidance on when to submit the form
PI-02A	Combustion Unit Summary	Complete once for each application.
PI-02B	Boilers & Process Heaters	Complete once for each boiler or process heater.
PI-02C	Turbines & Internal Combustion Engines	Complete once for each turbine or internal combustion engine.
PI-02D	Incinerators & Combustors	Complete once for each incinerator or combustor.
PI-02E	Kilns	Complete once for each kiln.
PI-02F	Fuel Use	Complete once for each emissions unit that burns fuel **other than natural gas**.
PI-02G	Emission Factors	Complete once for each emissions unit.
PI-02H	Federal Rule Applicability	Complete once for each emissions unit.

Summary of Combustion Units

This table summarizes all the combustion units at the source. If there are multiple combustion units that are identical in nature, capacity, and use, you may use one row to summarize the identical units.

1. Combustion Unit Type	2. Number of Identical Units	3. Unit ID(s)	4. Date of Installation or Modification *(actual or anticipated)*	5. Heat Input Rate of each unit *(MMBtu/hr)*	6. Emergency / Back-Up Unit?
Internal Combustion Engine	12	EG-1 through EG-12	2026 or later	See Appendix 4.	☒ Yes ☐ No
Diesel Fire Pump	2	DFP-1 & DFP-2	2026 or later	See Appendix 4.	☒ Yes ☐ No
					☐ Yes ☐ No
					☐ Yes ☐ No
					☐ Yes ☐ No
					☐ Yes ☐ No
					☐ Yes ☐ No
					☐ Yes ☐ No
					☐ Yes ☐ No
					☐ Yes ☐ No
					☐ Yes ☐ No

OAQ PROCESS INFORMATION APPLICATION
PI-02C: Combustion – Turbines & Reciprocating Internal Combustion Engines

State Form 52537 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to specify details that pertain only to turbines and internal combustion engines.
- Complete one PI-02C form for each emissions unit. If there are multiple emission units that are identical in nature, capacity, and use, you may use one PI-02C form to summarize the units.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for anyone to inspect and photocopy.

PART A: Process Unit Details

Part A specifies operating information that is unique to turbines and reciprocating internal combustion engines. Definitions and additional explanation of terminology are included in the instructions for this form.

1. Unit ID: DFP-1 & DFP-2

2. Type of Combustion Unit

☐ Turbine:	☐ Simple Cycle ☐ Regenerative Cycle ☐ Cogeneration ☐ Combined Cycle
☒ Reciprocating Internal Combustion Engine:	☐ 2-stroke lean-burn ☐ 4-stroke lean-burn ☐ 4-stroke rich-burn

3. Combustion Process: ☐ Diffusion Flame Combustion ☐ Lean-Premix Staged Combustion

4. Ignition Type: ☐ Spark ☒ Compression

5. Power Output: 121 horsepower (hp) / megawatts (MW)

6. Duty Cycle: 500 hours per year (hr/yr)

7. Fuel Used: ☐ Natural Gas Only ☒ Other – *Attach completed PI-02F.*

8. Does this combustion unit supply power to an emergency generator? ☐ Yes ☒ No

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PART B: Emission Controls and Limitations

Part B identifies control technology, control techniques or other process limitations that impact air emissions.

9. Add-On Control Technology: *Identify all control technologies used for this process. Attach completed CE-01 (unless "none").*

- ☒ None
- ☐ Catalytic Oxidation – *Attach CE-06*
- ☐ NO_x Reduction – *Attach CE-09*
- ☐ Other *(specify)*: – *Attach CE-10.*

10. Control Techniques: *Identify all control techniques used for this process.*

- ☐ None *(explain)*:
- ☐ Air-To-Fuel Ratio Adjustments
- ☐ Aromatic Content Increase
- ☐ Boiling Point adjusted to 10% and 90%
- ☐ Cetane Number
- ☐ Charge Cooling
- ☐ Combustion Chamber Modifications
- ☐ Derating
- ☐ Electronic Timing & Metering
- ☐ Exhaust Gas Recirculation
- ☐ Fuel Additives
- ☐ Fuel Injection Pressure
- ☐ Injection Rate Control
- ☐ Injection Timing Retard
- ☐ Injector Nozzle Geometry
- ☐ Lean Combustion
- ☒ Low Sulfur Content Fuel
- ☐ Oil Consumption Control
- ☐ Pre-ignition Chamber Combustion
- ☐ Rapid Spill Nozzles
- ☐ Turbocharging
- ☐ Two Stage Lean / Lean Combustion
- ☐ Two Stage Rich / Lean Combustion
- ☐ Water/Fuel Emulsions
- ☐ Water / Steam Injection
- ☐ Other *(specify)*: – *Attach completed GSD-09.*

11. Process Limitations / Additional Information: *Identify any acceptable process limitations. Attach additional information if necessary.*

OAQ PROCESS INFORMATION APPLICATION
PI-02C: Combustion – Turbines & Reciprocating Internal Combustion Engines

State Form 52537 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to specify details that pertain only to turbines and internal combustion engines.
- Complete one PI-02C form for each emissions unit. If there are multiple emission units that are identical in nature, capacity, and use, you may use one PI-02C form to summarize the units.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for anyone to inspect and photocopy.

PART A: Process Unit Details

Part A specifies operating information that is unique to turbines and reciprocating internal combustion engines. Definitions and additional explanation of terminology are included in the instructions for this form.

1. Unit ID: EG-1 through EG-12

2. Type of Combustion Unit

☐ Turbine:	☐ Simple Cycle ☐ Regenerative Cycle ☐ Cogeneration ☐ Combined Cycle
☒ Reciprocating Internal Combustion Engine:	☐ 2-stroke lean-burn ☐ 4-stroke lean-burn ☐ 4-stroke rich-burn

3. Combustion Process:
☐ Diffusion Flame Combustion
☐ Lean-Premix Staged Combustion

4. Ignition Type:
☐ Spark
☒ Compression

5. Power Output: 4500 horsepower (hp)
megawatts (MW)

6. Duty Cycle: hours per year (hr/yr)

7. Fuel Used:
☐ Natural Gas Only
☒ Other – *Attach completed PI-02F.*

8. Does this combustion unit supply power to an emergency generator? ☒ Yes ☐ No

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Continued on Next Page

PART B: Emission Controls and Limitations

Part B identifies control technology, control techniques or other process limitations that impact air emissions.

9. Add-On Control Technology: *Identify all control technologies used for this process. Attach completed CE-01 (unless "none").*

- ☒ None
- ☐ Catalytic Oxidation – *Attach CE-06*
- ☐ NO_X Reduction – *Attach CE-09*
- ☐ Other *(specify)*: – *Attach CE-10.*

10. Control Techniques: *Identify all control techniques used for this process.*

- ☐ None *(explain)*:
- ☐ Air-To-Fuel Ratio Adjustments
- ☐ Aromatic Content Increase
- ☐ Boiling Point adjusted to 10% and 90%
- ☐ Cetane Number
- ☐ Charge Cooling
- ☐ Combustion Chamber Modifications
- ☐ Derating
- ☐ Electronic Timing & Metering
- ☐ Exhaust Gas Recirculation
- ☐ Fuel Additives
- ☐ Fuel Injection Pressure
- ☐ Injection Rate Control
- ☐ Injection Timing Retard
- ☐ Injector Nozzle Geometry
- ☐ Lean Combustion
- ☒ Low Sulfur Content Fuel
- ☐ Oil Consumption Control
- ☐ Pre-ignition Chamber Combustion
- ☐ Rapid Spill Nozzles
- ☐ Turbocharging
- ☐ Two Stage Lean / Lean Combustion
- ☐ Two Stage Rich / Lean Combustion
- ☐ Water/Fuel Emulsions
- ☐ Water / Steam Injection
- ☐ Other *(specify)*: – *Attach completed GSD-09.*

11. Process Limitations / Additional Information: *Identify any acceptable process limitations. Attach additional information if necessary.*

OAQ PROCESS INFORMATION APPLICATION
PI-02F: Combustion – Fuel Use

State Form 52540 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – P[illegible] Branch
100 N. Senate Avenue, MC 61-5[illegible]om 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to identify each fuel that will be used in the combustion unit. Definitions and additional explanation of terminology are included in the instructions for this form.
- Complete one form PI-02F for each combustion unit. If the unit has any capability of using a fuel, even if on a backup or intermittent basis, complete the applicable section. Using a fuel that is not specified in the permit is a violation of the permit.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for anyone to inspect and photocopy.

PART A: Process Unit Identification

1. Unit ID: EG-1 through EG-12, DFP-1 and DFP-2

PART B: Gaseous Fuels

Part B identifies the gaseous fuels that will be used in the combustion unit.

2. Fuel Type:	3. Percent of Fuel Use *(by volume)*	4. Primary or Secondary Fuel?	5. Component Percentages:	6. Heating Value:
☐ Natural Gas		☐ Primary ☐ Secondary	Sulfur:	*(Btu/ft³)*
☐ Liquefied Petroleum Gas ☐ *Commercial- Propane* ☐ *Engine Fuel Propane (HD-5)* ☐ *Commercial- Butane*		☐ Primary ☐ Secondary	Sulfur: Butane: Propane:	*(Btu/ft³)*
☐ Process Gas *		☐ Primary ☐ Secondary	Sulfur:	*(Btu/ft³)*
☐ Landfill Gas *		☐ Primary ☐ Secondary	Sulfur:	*(Btu/ft³)*
☐ Other *(specify)*:		☐ Primary ☐ Secondary	:	*(Btu/ft³)*

* Indicate the source of the process or landfill gas:

Continued on Next Page

PART C: Liquid Fuels

Part C identifies the liquid fuels that will be used in the combustion unit.

7. Fuel Type:	8. Percent of Fuel Use *(by volume)*	9. Primary or Secondary Fuel?	10. Component Percentages:	11. Heating Value:	12. Percent Heat:
☐ Residual Fuel Oil ☐ *No. 5 – Heavy* ☐ *No. 5 – Light* ☐ *No. 6 (Bunker C)*		☐ Primary ☐ Secondary	Sulfur:	*(Btu/gal)*	
☒ Distillate Fuel Oil ☐ *No. 1* ☒ *No. 2 (Diesel)* ☐ *No. 4*	100.00%	☒ Primary ☐ Secondary	Sulfur: <0.0015%	137000 *(Btu/gal)*	
☐ Gasoline		☐ Primary ☐ Secondary	Sulfur:	*(Btu/gal)*	
☐ Waste Oil		☐ Primary ☐ Secondary	Sulfur: Ash: Lead Chlorine:	*(Btu/gal)*	
☐ Liquid Waste *		☐ Primary ☐ Secondary	Sulfur: Fluorine: Chlorine:	*(Btu/gal)*	
☒ Other *(specify)*: Renewable Diesel Fuel	TBD	☐ Primary ☒ Secondary	Sulfur: <0.0015% :	137000 *(Btu/gal)*	

* RCRA alpha-numeric codes for Special or Hazardous Waste to be Burned:

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Continued on Next Page

PART D1: Solid Fuels – Coal

Part D1 identifies all variations of coal that will be used in the combustion unit.

13. Fuel Type:	14. Percent of Fuel Use *(by volume)*	15. Primary or Secondary Fuel?	16. Component Percentages:	17. Heating Value:	18. Basis:
☐ Anthracite Coal ☐ *Anthracite* ☐ *Culm*		☐ Primary ☐ Secondary	Sulfur: Ash: Moisture:	*(Btu/lb)*	☐ Dry ☐ Moist
☐ Bituminous Coal		☐ Primary ☐ Secondary	Sulfur: Ash: Moisture:	*(Btu/lb)*	☐ Dry ☐ Moist
☐ Sub-bituminous Coal		☐ Primary ☐ Secondary	Sulfur: Ash: Moisture:	*(Btu/lb)*	☐ Dry ☐ Moist
☐ Lignite Coal		☐ Primary ☐ Secondary	Sulfur: Ash: Moisture:	*(Btu/lb)*	☐ Dry ☐ Moist
☐ Coke		☐ Primary ☐ Secondary	Sulfur: Ash: Moisture:	*(Btu/lb)*	☐ Dry ☐ Moist
☐ Other Coal *(specify)*:		☐ Primary ☐ Secondary	Sulfur: Ash: Moisture:	*(Btu/gal)*	☐ Dry ☐ Moist

This space was intentionally left blank.

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PART D2: Other Solid Fuels

Part D2 identifies the solid fuels, other than coal, that will be used in the combustion unit.

19. Fuel Type:	20. Percent of Fuel Use *(by volume)*	21. Primary or Secondary Fuel?	22. Component Percentages:	23. Heating Value:	24. Percent Heat:
☐ Wood or Wood Waste ☐ *Wood Only* ☐ *Wood Residue Only* ☐ *Wood and Wood Residue*		☐ Primary ☐ Secondary	Moisture:	*(Btu/ton)*	
☐ Tires or Tire Derived Fuel ☐ *Whole Tires* ☐ *Tire Derived Fuel*		☐ Primary ☐ Secondary	Sulfur: Chromium: Chlorine:	*(Btu/lb)*	
☐ Bagasse		☐ Primary ☐ Secondary	Ash: Moisture:	*(Btu/lb)*	
☐ Solid Waste *		☐ Primary ☐ Secondary	: :	*(Btu/lb)*	
☐ Other *(specify)*:		☐ Primary ☐ Secondary	: :	*(Btu/lb)*	

*RCRA alpha-numeric codes for Special or Hazardous Waste to be Burned:

PART E: Fuel Consumption Limitations

Use the space provided to specify any fuel consumption limitations that are acceptable for the combustion unit.

Ultra Low Sulfur Diesel (ULSD) or renewable diesel fuel, including hydrotreated vegetable oil (HVO), to be used in all proposed engines (EG-1 to EG-12, DFP-1 & DFP-2), with sulfur content <0.0015% and either a minimum cetane index of 40 or maximum aromatic content of 35% by volume.

OAQ PROCESS INFORMATION APPLICATION
PI-02G: Combustion – Emission Factors

State Form 52541 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to specify the emission factors used to calculate potential to emit from the combustion unit.
- Complete one PI-02G form for each emissions unit. If there are multiple emission units that are identical in nature, capacity, and use, you may use one PI-02G form to summarize the units.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for anyone to inspect and photocopy.

Emission Factors

This table identifies all emission factors used to calculate air emissions from the combustion unit.

1. Unit ID: EG-1 through EG-12, DFP-1 and DFP-2

2. Air Pollutant:	**3. Emission Factor**		**4. Source of Emission Factor** *(if not using AP-42, include calculations)*		
	value	*units*			
Carbon Monoxide (CO)			☐ AP-42	☒ Other	☐ N/A
Lead (Pb)			☐ AP-42	☐ Other	☒ N/A
Hazardous Air Pollutant (HAP) *(specify)*:			☒ AP-42	☐ Other	☐ N/A
Nitrogen Oxides (NO_x)			☐ AP-42	☒ Other	☐ N/A
Mercury (Hg)			☐ AP-42	☐ Other	☒ N/A
Particulate Matter (PM)			☒ AP-42	☒ Other	☐ N/A
Particulate Matter less than 10μm (PM_{10})			☒ AP-42	☒ Other	☐ N/A
Particulate Matter less than 2.5μm ($PM_{2.5}$)			☒ AP-42	☒ Other	☐ N/A
Sulfur Dioxide (SO_2)			☒ AP-42	☐ Other	☐ N/A
Volatile Organic Compounds (VOC)			☐ AP-42	☒ Other	☐ N/A
Other *(specify)*:			☐ AP-42	☐ Other	☐ N/A
Other *(specify)*:			☐ AP-42	☐ Other	☐ N/A
Other *(specify)*:			☐ AP-42	☐ Other	☐ N/A

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OAQ PROCESS INFORMATION APPLICATION
PI-02H: Combustion – Federal Rule Applicability

State Form 52542 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to identify any federal rules that apply to the emission unit.
- Complete one PI-02H form for each emissions unit. If there are multiple emission units that are identical in nature, capacity, and use, you may use one PI-02H form to summarize the units.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for anyone to inspect and photocopy.

Federal Rule Applicability

This table identifies any federal rules that apply to the process.

1. Is a **New Source Performance Standard (NSPS)** applicable to this source? *If yes, attach a completed FED-01 for each rule that applies.* ☒ Yes ☐ No		2. **Unit IDs**
☐ 40 CFR Part 60, Subpart Cb	Large Municipal Waste Combustors *(constructed before 9/20/1994)*	
☐ 40 CFR Part 60, Subpart Ce	Hospital/Medical/Infectious Waste Incinerators	
☐ 40 CFR Part 60, Subpart D	Fossil-Fuel-Fired Steam Generators *(constructed after 8/17/1971)*	
☐ 40 CFR Part 60, Subpart Da	Electric Utility Steam Generating Units *(constructed after 9/18/1978)*	
☐ 40 CFR Part 60, Subpart Db	Industrial-Commercial-Institutional Generating Units	
☐ 40 CFR Part 60, Subpart Dc	Small Industrial-Commercial-Institutional Generating Units	
☐ 40 CFR Part 60, Subpart E	Incinerators	
☐ 40 CFR Part 60, Subpart Ea	Municipal Waste Combustors *(constructed after 12/20/1989 and before 9/20/1994)*	
☐ 40 CFR Part 60, Subpart Eb	Large Municipal Waste Combustors *(constructed after 9/20/1994 or modified / reconstructed after 6/19/1996)*	
☐ 40 CFR Part 60, Subpart Ec	Hospital/Medical/Infectious Waste Incinerators *(constructed after 6/20/1996)*	
☐ 40 CFR Part 60, Subpart O	Sewage Treatment Plants *(sludge burners)*	
☐ 40 CFR Part 60, Subpart Y	Coal Preparation Plants	
☐ 40 CFR Part 60, Subpart GG	Stationary Gas Turbines	
☐ 40 CFR Part 60, Subpart AAA	New Residential Wood Heaters	
☐ 40 CFR Part 60, Subpart AAAA	Small Municipal Waste Combustion Units *(constructed after 8/30/1999 or modified / reconstructed after 6/6/2001)*	
☐ 40 CFR Part 60, Subpart BBBB	Small Municipal Waste Combustion Units *(constructed on or before 8/30/1999)*	
☐ 40 CFR Part 60, Subpart CCCC	Commercial and Industrial Solid Waste Incineration Units *(constructed after 11/30/1999 or modified / reconstructed after 6/1/2001)*	
☐ 40 CFR Part 60, Subpart DDDD	Commercial and Industrial Solid Waste Incineration Units *(constructed on or before 11/30/1999)*	
☐ 40 CFR Part 60, Subpart KKKK	Stationary Combustion Turbines	

Continued on Next Page

Federal Rule Applicability *(continued)*

This table identifies any federal rules that apply to the process.

3. Is a **National Emission Standard for Hazardous Air Pollutants (NESHAP)** applicable to this source? ☒ Yes ☐ No *If yes, attach a completed FED-01 for each rule that applies.*		4. **Unit IDs**
☐ 40 CFR Part 63, Subpart MM	Combustion Sources at Kraft, Soda, and Sulfite Pulp & Paper Mills	
☐ 40 CFR Part 63, Subpart EEE	Hazardous Waste Combustion	
☐ 40 CFR Part 63, Subpart YYYY	Stationary Combustion Turbines	
☒ 40 CFR Part 63, Subpart ZZZZ	Reciprocating Internal Combustion Engines (RICE)	EG-1 to EG-12, DFP-1 & 2
☐ 40 CFR Part 63, Subpart DDDDD	Industrial, Commercial, and Institutional Boilers and Process Heaters	

5. Non-Applicability Determination: *Provide an explanation if the process unit appears subject to a rule (based on the rule title or the source category), but the rule will not apply.*

Note: 40 CFR Part 60, Subpart JJJJ, NSPS for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE) will not apply to EG-1 through EG-12 nor DFP-1& DFP-2 because they are not SI ICE. The generators are diesel-fired (i.e., compression ignition [CI]) and are therefore subject to 40 CFR Part 60, Subpart IIII, NSPS for CI ICE

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OAQ PROCESS INFORMATION APPLICATION
PI-14: Volatile Organic Liquid Compound Storage

State Form 52554 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of this form is to obtain detailed information about all tanks larger than 250 gallons that are used to store volatile organic liquid compounds. Duplicate this form as necessary.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for anyone to inspect and photocopy.

PART A: Tank Identification

Part A identifies and describes the tank. Duplicate this form as necessary to include all applicable tanks.

1. **Tank/Unit ID**: Tanks assocaited with EG-1 thorugh EG-12
2. **Installation Date**: *(actual or anticipated)* 2026 or later
3. **Tank Location**: Belly Tanks Attached to Emergency Generators
4. **Tank Type**

☐ Fixed Roof, Cone ☐ External Floating Roof, Domed ☐ Internal Floating Roof
☐ Fixed Roof, Dome ☐ External Floating Roof, Not Domed ☐ Variable Vapor Space
☒ Other *(specify)*: Belly Tanks Fixed Under Generator ☐ Pressure Tank

Is the tank **Above Ground**? ☒ Yes ☐ No

5. **Tank Orientation**: ☒ Horizontal ☐ Vertical
6. **Tank Color**: grey
7. **Materials Stored**: *(include MSDS)* ULSD and Renewable Diesel
8. **True Vapor Pressure** (PVA): ~0.01 pounds per square inch (*psi at 20°C*)
9. **Vapor Molecular Weight** (Mv): 130.00 gallons (*lb/lbmole*)
10. **Annual Throughput**: 110000.00 gallons per year (*gal/yr*)
11. **Venting Method**:
12. **Filling Method**: ☒ Submerged ☐ Not Submerged ☐ Other *(specify)*:

PART B: Emission Controls and Limitations

Part B identifies control technology, control techniques or other process limitations that impact air emissions.

13. **Add-On Control Technology**: *Identify all control technologies used for this unit, and attach completed CE-01 (unless "none").*

☒ None ☐ Other *(specify)*: – *Attach CE-10.*

14. **Control Techniques**: *Identify all control techniques used for this process.*

☒ None ☐ Flare ☐ Vapor Recovery System
☐ Other *(specify)*: – *Attach GSD-09.*

15. **Process Limitations / Additional Information**: *Identify any acceptable process limitations. Attach additional information if necessary.*

Continued on Next Page

PART C: Information Specific to Tank Type

Part C identifies the physical properties of the tank.

17. Tank Diameter (D):	See Appendix 4.	feet (*ft*)	
18. Tank Height (Hs):	See Appendix 4.	feet (*ft*)	
19. Tank Volume / Capacity (V):	See Appendix 4.	gallons (*gal*)	cubic feet (ft^3)
20. Maximum Liquid Height (Hlx):	See Appendix 4.	feet (ft)	

21. External Floating Roof: *Complete only if applicable.*

a. Average Liquid Density (Wl):	pounds per gallon (*lb/gal*)			
b. Roof Type:	☐ Pontoon Floating Roof	☐ Double Deck Floating Roof		
c. Tank Construction:	☐ Welded	☐ Riveted		
d. Primary Rim Seal:	☐ Vapor Mounted	☐ Liquid Mounted	☐ Mechanical Shoe	
e. Secondary Rim Seal:	☐ Weather Shield	☐ Rim Mounted	☐ None	

22. Internal Floating Roof: *Complete only if applicable.*

a. Average Liquid Density (Wl):	pounds per gallon (*lb/gal*)		
b. Roof Type	☐ Double Deck Floating Roof	☐ Other: *(specify)*	
c. Self-supported fixed roof	☐ Yes	☐ No	
d. Number of columns supporting the fixed roof			
e. Deck Construction:	☐ Welded	☐ Riveted	☐ Bolted
f. Primary Rim Seal:	☐ Vapor Mounted	☐ Liquid Mounted	
g. Is there a Secondary Rim Seal?	☐ Yes	☐ No	

23. Variable Vapor Space: *Complete only if applicable.*

a. Volume of liquid pumped into the system (V1):	gallons per year (*gal/yr*)
b. Volume expansion capacity of system (V2):	gallons (*gal*)
c. Number of Transfers Into the System (N2)	per year (*/yr*)

PART D: Emission Factors

Part D identifies all emission factors used to calculate air emissions from the storage tank.

24. Air Pollutant:	**25. Emission Factor** *value*	*units*	**26. Source of Emission Factor** *(if not using AP-42, include calculations)*
Hazardous Air Pollutant (HAP): *(specify)*:			☐ AP-42 ☐ Other ☐ N/A
Volatile Organic Compounds (VOC)	See Appendix 4		☒ AP-42 ☐ Other ☐ N/A
Other *(specify)*:			☐ AP-42 ☐ Other
Other *(specify)*:			☐ AP-42 ☐ Other

Continued on Next Page

PART E: Federal Rule Applicability

art E identifies any federal rules that apply to the process.

27. Is a **New Source Performance Standard (NSPS)** applicable to this source? *If yes, attach a completed FED-01 for each rule that applies.* ☐ Yes ☒ No		**28. Unit ID:**
☐ 40 CFR Part 60, Subpart K	Petroleum Liquid Storage Vessels (constructed after 6/11/1973 and before 5/19/1978)	
☐ 40 CFR Part 60, Subpart Ka	Petroleum Liquid Storage Vessels (constructed after 5/18/1978 and before 7/23/1984)	
☐ 40 CFR Part 60, Subpart Kb	Volatile Organic Liquid Storage Vessels, Including Petroleum Liquid Storage (constructed after 7/23/1984)	
☐ 40 CFR Part 60, Subpart VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry	
☐ 40 CFR Part 60, Subpart GGG	Equipment Leaks of VOC in Petroleum Refineries	
☐ 40 CFR Part 60, Subpart KKK	Equipment Leaks of VOC from On-Shore Natural Gas Processing Plants	
29. Is a **National Emission Standard for Hazardous Air Pollutants (NESHAP)** applicable to this source? *If yes, attach a completed FED-01 for each rule that applies.* ☐ Yes ☒ No		**30. Unit ID:**
☐ 40 CFR Part 61, Subpart J	Equipment Leaks (Fugitive Emission Sources) of Benzene	
☐ 40 CFR Part 61, Subpart V	Equipment Leaks (Fugitive Emission Sources)	
☐ 40 CFR Part 61, Subpart Y	Benzene Emissions from Benzene Storage Vessels	
☐ 40 CFR Part 63, Subpart R	Gasoline Distribution (Bulk Gasoline Terminals and Pipeline Breakout Stations)	
☐ 40 CFR Part 63, Subpart CC	Petroleum Refineries	
☐ 40 CFR Part 63, Subpart HHH	Natural Gas Transmission and Storage	
☐ 40 CFR Part 63, Subpart EEEE	Organic Liquids Distribution (non-gasoline)	

31. Non-Applicability Determination: *Provide an explanation if the process unit appears subject to a rule (based on the rule title or the source category), but the rule will not apply.*

The diesel belly tanks will be constructed after October 4, 2023 and will each have a storage capacity less than 20,000 gallons. Additionally, the maximum true vapor pressure of diesel is less than 0.5 psia. Therefore, NSPS Subparts K, Ka, Kb, and Kc do not apply.

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OAQ FEDERAL RULE INCORPORATION APPLICATION
FED-01: Summary of Federal Requirements – NSPS & NESHAP

State Form 53512 (R / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53, Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.in.gov/idem

NOTES:

- The purpose of this form is to provide a standardized way for sources to identify the NSPS or NESHAP requirements that are applicable to the regulated source. Complete one (1) form for each federal rule that applies to the source. This is a required form.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record.

Part A: Identification of Applicable Standard

Part A identifies the applicable standard and affected source.

1. Type of Standard:	☒ Part 60 NSPS	☐ Part 61 NESHAP ☐ Part 63 NESHAP (MACT)
2. Subpart Letter:	IIII	
3. Source Category Name:	Stationary Compression Ignition Internal Combustion Engines, Stationary Reciprocating Internal Combustion Engines	
4. Affected Source *(Include all applicable emission unit IDs)*:	EG-1 through EG-12	

Part B: Applicable Requirements

Part B specifies the specific requirements of the federal rule that are applicable to the process or emission unit.

Applicable Requirements: *Identify the section of the federal standard that is applicable at the lowest subsection level. For example, if all of 40 CFR 63.342(c) is applicable, "40 CFR 63.342(c)" is the appropriate citation. If only paragraph 2 of 40 CFR 63.342(c) is applicable, then the appropriate citation is 40 CFR 63.342(c)(2).*

- 40 CFR 60.4200(a)(2)(i),(a)(4), and (c)
- 40 CFR 60.4205(b)
- 40 CFR 60.4206
- 40 CFR 60.4207(b)
- 40 CFR 60.4208
- 40 CFR 60.4209(a)
- 40 CFR 60.4211(a), (c), and (f)
- 40 CFR 60.4214(b)
- 40 CFR 60.4214(d)
- 40 CFR 60.4218/Table 8
- 40 CFR 60.4219

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Part C: Performance Testing Requirements

Part C identifies the performance testing requirements that are applicable to the process or emission unit.

6. Performance Testing:	Not Applicable	
7. Date of Initial Performance Test:		
8. Test Methods:		
9. Was the initial performance test approved by IDEM?	☐ Yes: *Date approved:* _____	☐ No
10. Did the initial performance test show compliance with the rule?	☐ Yes	☐ No: *Date of next performance test:* _____

Part D: Important Dates

Part D identifies specific dates associated with the federal standard that are applicable to the process or emission unit.

11. Date Initial Notification was Submitted:	Not Applicable	
12. Initial Compliance Date:	☐ Startup: _____	☐ Other: _____
13. Other Dates	Description: _____	Date: _____
	Description: _____	Date: _____
	Description: _____	Date: _____

Part E: Other Information

Part E identifies any additional information pertaining to the applicable federal rule. Attach additional information using Form GSD-09 as necessary.

OAQ FEDERAL RULE INCORPORATION APPLICATION
FED-01: Summary of Federal Requirements – NSPS & NESHAP

State Form 53512 (R / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53, Room 1003
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Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
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NOTES:

- The purpose of this form is to provide a standardized way for sources to identify the NSPS or NESHAP requirements that are applicable to the regulated source. Complete one (1) form for each federal rule that applies to the source. This is a required form.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record.

Part A: Identification of Applicable Standard

Part A identifies the applicable standard and affected source.

1. **Type of Standard:**	☒ Part 60 NSPS	☐ Part 61 NESHAP ☐ Part 63 NESHAP (MACT)
2. **Subpart Letter:**	IIII	
3. **Source Category Name:**	Stationary Compression Ignition Internal Combustion Engines, Stationary Reciprocating Internal Combustion Engines	
4. **Affected Source** *(Include all applicable emission unit IDs)*:	DFP-1 and DFP-2	

Part B: Applicable Requirements

Part B specifies the specific requirements of the federal rule that are applicable to the process or emission unit.

Applicable Requirements: *Identify the section of the federal standard that is applicable at the lowest subsection level. For example, if all of 40 CFR 63.342(c) is applicable, "40 CFR 63.342(c)" is the appropriate citation. If only paragraph 2 of 40 CFR 63.342(c) is applicable, then the appropriate citation is 40 CFR 63.342(c)(2).*

- 40 CFR 60.4200(a)(2)(ii), (a)(4), and (c)
- 40 CFR 60.4205(c)
- 40 CFR 60.4206
- 40 CFR 60.4207(b)
- 40 CFR 60.4208
- 40 CFR 60.4209(a)
- 40 CFR 60.4211(a), (c), and (f)
- 40 CFR 60.4214(b)
- 40 CFR 60.4214(d)
- 40 CFR 60.4218/Table 8
- 40 CFR 60.4219

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Part C: Performance Testing Requirements

Part C identifies the performance testing requirements that are applicable to the process or emission unit.

6. Performance Testing:	Not applicable
7. Date of Initial Performance Test:	
8. Test Methods:	
9. Was the initial performance test approved by IDEM?	☐ Yes: *Date approved:* _____ ☐ No
10. Did the initial performance test show compliance with the rule?	☐ Yes ☐ No: *Date of next performance test:* _____

Part D: Important Dates

Part D identifies specific dates associated with the federal standard that are applicable to the process or emission unit.

11. Date Initial Notification was Submitted:	Not applicable	
12. Initial Compliance Date:	☐ Startup: _____ ☐ Other: _____	
13. Other Dates	Description: _____	Date: _____
	Description: _____	Date: _____
	Description: _____	Date: _____

Part E: Other Information

Part E identifies any additional information pertaining to the applicable federal rule. Attach additional information using form GSD-09 as necessary.

OAQ FEDERAL RULE INCORPORATION APPLICATION
FED-01: Summary of Federal Requirements – NSPS & NESHAP

State Form 53512 (R / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53, Room 1003
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Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.in.gov/idem

NOTES:

- The purpose of this form is to provide a standardized way for sources to identify the NSPS or NESHAP requirements that are applicable to the regulated source. Complete one (1) form for each federal rule that applies to the source. This is a required form.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record.

Part A: Identification of Applicable Standard

Part A identifies the applicable standard and affected source.

1. Type of Standard:	☐ Part 60 NSPS ☐ Part 61 NESHAP	☒ Part 63 NESHAP (MACT)
2. Subpart Letter:	ZZZZ	
3. Source Category Name:	Stationary Reciprocating Internal Combustion Engines	
4. Affected Source *(Include all applicable emission unit IDs)*:	EG-1 through EG-12, DFP-1 and DFP-2	

Part B: Applicable Requirements

Part B specifies the specific requirements of the federal rule that are applicable to the process or emission unit.

Applicable Requirements: *Identify the section of the federal standard that is applicable at the lowest subsection level. For example, if all of 40 CFR 63.342(c) is applicable, "40 CFR 63.342(c)" is the appropriate citation. If only paragraph 2 of 40 CFR 63.342(c) is applicable, then the appropriate citation is 40 CFR 63.342(c)(2).*

- 40 CFR 63.6590(c)

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Part C: Performance Testing Requirements

Part C identifies the performance testing requirements that are applicable to the process or emission unit.

6. Performance Testing:	Not applicable	
7. Date of Initial Performance Test:		
8. Test Methods:		
9. Was the initial performance test approved by IDEM?	☐ Yes: *Date approved:* _____	☐ No
10. Did the initial performance test show compliance with the rule?	☐ Yes	☐ No: *Date of next performance test:* _____

Part D: Important Dates

Part D identifies specific dates associated with the federal standard that are applicable to the process or emission unit.

11. Date Initial Notification was Submitted:	Not applicable	
12. Initial Compliance Date:	☐ Startup: _____	☐ Other: _____
13. Other Dates	Description: _____	Date: _____
	Description: _____	Date: _____
	Description: _____	Date: _____

Part E: Other Information

Part E identifies any additional information pertaining to the applicable federal rule. Attach additional information using form GSD-09 as necessary.

OAQ COMPLIANCE DETERMINATION APPLICATION
CD-01: Emissions Unit Compliance Status

State Form 51861 (R / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of CD-01 is to identify the requirements that apply to each emissions unit at the permitted source and to determine the compliance status of these emissions units.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Emissions Unit

Part A identifies the source and the emissions unit. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1. Source Name: Orla, LLC	**2. Source ID:** –
3. Emissions Unit Description: All the proposed emergency generators and diesel fire pumps	**4. Unit ID:** EG-1 to EG-12 and DFP-1, DFP-2

PART B: Regulatory Compliance Status

Part B identifies the regulatory requirements that apply to the emissions unit and to determine the compliance status of the emissions unit. These "regulatory requirements" are those required by federal, state, or local law.

5. Rule Cite	6. Description	7. State / Local Only	8. Limitation	9. Test Method	10. In Compliance (y/n)
40 CFR 60 Subpart IIII	NSPS for Stationary Compression Ignition Internal Combustion Engines		Tier 2 or Tier 3 emission standards, depending on the engine power capacity and use case (i.e., fire pump, emergency engine, etc.)	Purchasing certified engines	y
40 CFR 63 Subpart ZZZZ	NESHAP for Stationary Reciprocating Internal Combustion Engines		Comply with this subpart by meeting the requirements of 40 CFR 60 Subpart IIII	N/A	y
326 IAC 5-1-1	Opacity Limits	X	See Application Narrative	Comply with NSPS opacity limits by purchasing certified engines	y

PART C: Compliance Status – Other Requirements

Part C identifies any other requirements that apply to the emissions unit and to determine the compliance status of the emissions unit. These "other requirements" would not be required by federal, state, or local law.

11. Other Requirements	12. State / Local Only	13. In Compliance (y/n)

OAQ COMPLIANCE DETERMINATION APPLICATION
CD-02: Compliance Plan Requirements Per Applicable Requirement

State Form 51862 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of CD-02 is to identify existing compliance monitoring activities (monitoring, testing, record keeping and/or reporting) required in an applicable requirement or to provide compliance monitoring activities for applicable requirements where there is no or inadequate compliance monitoring requirements.
- CD-02 focuses on generally applicable requirements that apply to many or all emission units at the source.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Applicable Requirement

Part A identifies the source and the applicable requirement. Use one form for each applicable requirement. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1.	**Source Name:** Orla, LLC	2. **Source ID:**	—
3.	**Applicable Requirement:**	40 CFR 60 Subpart IIII - NSPS for Stationary Compression Ignition Internal Combustion Engines	
4.	**Rule Cite:**	40 CFR 60.4205(b) and 60.4211(f)	

5. **Limitations:** List each operational and/or emission limit specified in the applicable requirement.

Emission limits: meet applicable Tier 2 and 3 emission standards based on the power capacity of each engine.

Operational limits: Runtime restrictions for emergency engines and fire pumps

(1) No time limit in emergency situations.

(2) Runtime for maintenance checks and rediness testing shall not exceed 100 hrs/yr.

(3) Runtime in non-emergency situations shall not exceed 50 hrs/yr, which are counted as part of the 100 hrs/yr for maintenance checks and readiness testing.

6. **Reporting Schedule:** Provide a description of the reporting schedule to be used. The schedule should include what will be reported and how often the reports will be submitted.

No initial notificaiton or routine reporting required for emergency engines under 40 CFR 60. The owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

Continued on Next Page

PART B: Compliance Plan Components

Part B identifies the main components of each required compliance plan.

7. Unit ID	8. Stack / Vent ID	9. Control Equipment	10. Parameters Monitored	11. Monitoring Frequency	12. Item Recorded	13. Record Keeping Frequency	14. Pollutants tested	15. Test Method	16. Testing Frequency
EG-1 through EG-12 and DFP-1 through DFP-2	SV-1 through SV-14	NA	Operation of each engine in emergency and non-emergency service: time of operation and the reason of run.	Each engine run event	Duration of operation and the reason of run.	Each engine run event	NA	NA	NA

OAQ COMPLIANCE DETERMINATION APPLICATION
CD-03: Compliance Plan Requirements Per Emissions Unit

State Form 51863 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of CD-03 is to identify existing compliance monitoring activities (monitoring, testing, record keeping and/or reporting) required in an applicable requirement or to provide compliance monitoring activities for applicable requirements where there is no or inadequate compliance monitoring requirements.
- CD-03 focuses on specific applicable requirements that may apply to a single emission unit or group of emission units.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Applicable Requirement

Part A identifies the source and the emissions unit. Use one form for each emissions unit. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1. Source Name: Orla, LLC	**2. Source ID:** —
3. Emissions Unit Description: Emergency Gens > 560 kW each	**4. Unit ID:** EG-1 through EG-12

5. Limitations: List each operational and/or emission limit for this emissions unit.

Meet EPA Tier 2 emission standards (will comply by purchasing certified engines).

Operational limits: Runtime restrictions for emergency engines:

(1) No time limit in emergency situations.

(2) Runtime for maintenance checks and readiness testing shall not exceed 100 hrs/yr.

(3) Runtime in non-emergency situations shall not exceed 50 hrs/yr, which are counted as part of the 100 hrs/yr for maintenance checks and readiness testing.

6. Reporting Schedule: Provide a description of the reporting schedule to be used. The schedule should include what will be reported and how often the reports will be submitted.

No initial notification or routine reporting required for emergency engines under 40 CFR 60. The owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

Continued on Next Page

PART B: Compliance Plan Components

Part B identifies the main components of each required compliance plan.

7. Rule Cite	8. Control Equipment	9. Parameters Monitored	10. Monitoring Frequency	11. Item Recorded	12. Record Keeping Frequency	13. Pollutants tested	14. Test Method	15. Testing Frequency
40 CFR 60.4211(f) & 4214(b)	NA	Operation of each engine in emergency and non-emergency service: time of operation and the reason of run.	Each engine run event	Duration of operation and the reason of run.	Each engine run event	NA	NA	NA
NA-voluntary NOx limit	NA	12-month rolling emissions	Monthly	kW, duration of operation, emission factor, and emissions	Monthly	NA	NA	NA

OAQ COMPLIANCE DETERMINATION APPLICATION
CD-03: Compliance Plan Requirements Per Emissions Unit

State Form 51863 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
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Facsimile Number: (317) 232-6749
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NOTES:

- The purpose of CD-03 is to identify existing compliance monitoring activities (monitoring, testing, record keeping and/or reporting) required in an applicable requirement or to provide compliance monitoring activities for applicable requirements where there is no or inadequate compliance monitoring requirements.
- CD-03 focuses on specific applicable requirements that may apply to a single emission unit or group of emission units.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Identification of Source and Applicable Requirement

Part A identifies the source and the emissions unit. Use one form for each emissions unit. For the purposes of this form, the term "source" refers to the plant site as a whole and NOT to individual emissions units.

1. Source Name: Orla, LLC	**2. Source ID:** –
3. Emissions Unit Description: Diesel Fire Pumps	**4. Unit ID:** DFP-1 and DFP-2

5. Limitations: List each operational and/or emission limit for this emissions unit.

Meet EPA Tier 3 emission standards (will comply by purchasing certified engines).

Operational limits: Runtime restrictions for emergency engines:

(1) No time limit in emergency situations.

(2) Runtime for maintenance checks and readiness testing shall not exceed 100 hrs/yr.

(3) Runtime in non-emergency situations shall not exceed 50 hrs/yr, which are counted as part of the 100 hrs/yr for maintenance checks and readiness testing.

6. Reporting Schedule: Provide a description of the reporting schedule to be used. The schedule should include what will be reported and how often the reports will be submitted.

No initial notification or routine reporting required for emergency engines under 40 CFR 60. The owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

Continued on Next Page

PART B: Compliance Plan Components

Part B identifies the main components of each required compliance plan.

7. Rule Cite	8. Control Equipment	9. Parameters Monitored	10. Monitoring Frequency	11. Item Recorded	12. Record Keeping Frequency	13. Pollutants tested	14. Test Method	15. Testing Frequency
40 CFR 60.4211(f) & 4214(b)	NA	Operation of each engine in emergency and non-emergency service: time of operation and the reason of run.	Each engine run event	Duration of operation and the reason of run.	Each engine run event	NA	NA	NA

OAQ COMPLIANCE DETERMINATION APPLICATION
CD-04: Compliance Schedule and Certification

State Form 51864 (R2 / 1-10)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

IDEM – Office of Air Quality – Permits Branch
100 N. Senate Avenue, MC 61-53 Room 1003
Indianapolis, IN 46204-2251
Telephone: (317) 233-0178 or
Toll Free: 1-800-451-6027 x30178 (within Indiana)
Facsimile Number: (317) 232-6749
www.IN.gov/idem

NOTES:

- The purpose of CD-04 is to provide a schedule of for compliance certification submittals, a certification of the source's compliance status with all applicable requirements, and a compliance schedule that details the measures a source will use to address non-compliance.
- Complete this form once per application (not once for each emissions unit) with respect to all applicable requirements at the source.
- This is required form for each initial Title V permit application as well as each modification and every renewal.
- Detailed instructions for this form are available on the Air Permit Application Forms website.
- All information submitted to IDEM will be made available to the public unless it is submitted under a claim of confidentiality. Claims of confidentiality must be made at the time the information is submitted to IDEM, and must follow the requirements set out in 326 IAC 17.1-4-1. Failure to follow these requirements exactly will result in your information becoming a public record, available for any one to inspect and photocopy.

PART A: Source Identification and Compliance Schedule

Part A identifies the permitted source and the permit term compliance certification schedule.

1. **Source Name:** Orla, LLC	2. **Source ID:** —
3. **Permit Term Compliance Certification Schedule**	
Date of first certification submittal:	**Frequency of future submittals:** Annual

PART B: Risk Management Plan

Part B indicates whether sources subject to section 112(r), Accidental Release Prevention, are complying with the requirement to submit a Risk Management Plan (RMP).

4. **Statement of Applicability / Non-Applicability:** Indicate whether the source is subject to Section 112(r) and the requirement to submit and RMP.

☐ Source is subject to Section 112(r) and a Risk Management Plan (RMP) is required.

☒ Source is not subject to Section 112(r) and a Risk Management Plan (RMP) is not required.

RMP Submittal Information: Indicate when the RMP was submitted to each of the following agencies. If the RMP has not yet been submitted to any of the listed agencies, indicate the date when the RMP will be mailed to that agency. If the RMP for IDEM is attached to this application, please write "attached" in the Date Submitted column.

5. Agency Name	6. Date Submitted	7. Expected Submittal Date
Chemical Safety and Hazard Investigation Board (CSHIB)		
United States Environmental Protection Agency (U.S. EPA)		
Indiana Department of Environmental Management (IDEM)		
Local Agency responsible for permitting:		

8. **EPA Facility Identifier:** — —

Continued on Next Page

PART C: Certification of Source Compliance Status

Part C states whether the source is or is not in full compliance with all applicable requirements and to identify corrective actions to be taken in cases of noncompliance.

9. Check the Most Accurate Statement.

- ☒ The source described in this air pollution control permit application is fully in compliance with all applicable requirements and will continue to comply with those requirements.
- ☐ FORM CD-01 includes new requirements that apply or will apply to the emissions unit during the term of the permit. The source will meet such requirements on a timely basis.
- ☐ The source described in this air pollution control permit application is fully in compliance with all applicable requirements, except for the emissions unit(s) listed below. Compliance will be achieved according to the schedule identified below.

10. Unit ID	11. Applicable Requirement	12. Corrective Action	13. Deadline	14. Progress Reports	
				Start Date	Frequency

15. Signature of Responsible Official

☒ I certify that, based on information and belief formed after reasonable inquiry, the statements and information presented are true, accurate and complete.

Pamela Gregorski
Name *(typed)*

President
Title

Pamela A Gregorski
Signature

1/28/2026
Date

APPENDIX 3
PROPOSED DIESEL FIRE PUMP SPECIFICATION SHEETS

CLARKE®

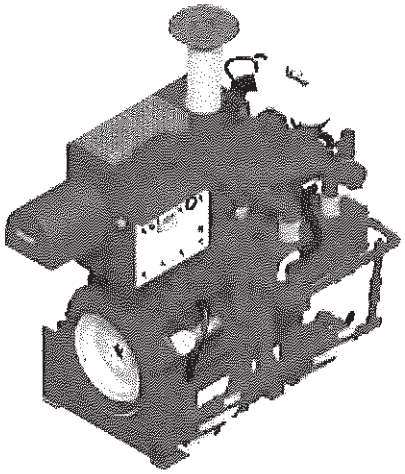
FIRE PUMP ENGINES

MODELS

JU6H-UFADMG JU6H-UFADP0 JU6H-UFADR0 JU6H-UFADT0
JU6H-UFAD58 JU6H-UFADP8 JU6H-UFADR8 JU6H-UFADW8
JU6H-UFADNG JU6H-UFADQ0 JU6H-UFADS8 JU6H-UFADX8
JU6H-UFADN0 JU6H-UFAD88 JU6H-UFADS0 JU6H-UFAD98

UL-cUL APPROVED RATINGS BHP/*KW*

JU6H MODEL ♦	RATED SPEED 1760		2100		2350		2400		US EPA (NSPS) Available Until ●
UFADMG			175	*131*	175	*131*			*No Expiration*
UFAD58	183	*137*							*No Expiration*
UFADNG	190	*142*	181	*135*	183	*137*	183	*137*	*No Expiration*
UFADN0	197	*147*	197	*147*	200	*149*	200	*149*	*No Expiration*
UFADP0			209	*156*	211	*157*	211	*157*	*No Expiration*
UFADP8	220	*164*							*No Expiration*
UFADQ0			224	*167*	226	*169*	226	*169*	*No Expiration*
UFAD88	237	*177*							*No Expiration*
UFADR0			238	*177.5*	240	*179*	240	*179*	*No Expiration*
UFADR8	250	*187*							*No Expiration*
UFADS8	260	*194*							*No Expiration*
UFADS0			260	*194*	268	*200*	268	*200*	*No Expiration*
UFADT0			274	*204*	275	*205*	275	*205*	*No Expiration*
UFADW8	282	*211*							*No Expiration*
UFADX8	305	*227.5*							*No Expiration*
UFAD98	315	*235*							*No Expiration*



Picture represents JU6H-TRWA Power Tech Plus Engine Series

● USA EPA (NSPS) Tier 3 Emissions Certified Off-Road (40 CFR Part 89) and NSPS Stationary (40 CFR Part 60 Sub Part IIII). Meet EU Stage IIIA emission levels.

♦ All Models available for Export

SPECIFICATIONS

	JU6H MODELS MG	58	NG	N0	P8	88	P0	Q0	R0	S0	T0	R8	S8	W8	X8	98
Number of Cylinders	6															
Aspiration	TRWA															
Rotation*	CW															
Overall Dimensions – in. (mm)	59.8 (1519) H x 56.7 (1414) L x 36.7 (933) W						60.9 (1547) H x 58.6 (1488) L x 40.0 (1015) W									
Crankshaft Centerline Height – in. (mm)	14 (356)															
Weight – lb (kg)	1747 (791)															
Compression Ratio	19.0:1						17.0:1									
Displacement – cu. in. (L)	415 (6.8)															
Engine Type	4 Stroke Cycle – Inline Construction															
Bore & Stroke – in. (mm)	4.19 x 5.00 (106 x 127)															
Installation Drawing	D628															
Wiring Diagram AC	C07651															
Wiring Diagram DC	C071367, C072146, C071361						C071368, C072146, C071761									
Engine Series	John Deere 6068 Series Power Tech E						John Deere 6068 Series Power Tech Plus									
Speed Interpolation	N/A															

Abbreviations: CW – Clockwise TRWA – Turbocharged with Raw Water Aftercooling N/A - Not Available L – Length W – Width H - Height

*Rotation viewed from Heat Exchanger / Front of engine

CERTIFIED POWER RATING

- Each engine is factory tested to verify power and performance.
- [illegible]UL power ratings are shown at specific speeds, Clarke engines can be [illegible]d at a single rated RPM setting ± 50 RPM.

c UL us

Meets NFPA 20 Requirements

FM APPROVED

ENGINE RATINGS BASELINES

- Engines are to be used for stationary emergency standby fire pump service only. Engines are to be tested in accordance with NFPA 25.
- Engines are rated at standard SAE conditions of 29.61 in. (752.1 mm) Hg barometer and 77°F (25°C) inlet air temperature [approximates 300 ft. (91.4 m) above sea level] by the testing laboratory (see SAE Standard J 1349).
- A deduction of 3 percent from engine horsepower rating at standard SAE conditions shall be made for diesel engines for each 1000 ft. (305 m) altitude above 300 ft. (91.4 m)
- A deduction of 1 percent from engine horsepower rating as corrected to standard SAE conditions shall be made for diesel engines for every 10°F (5.6°C) above 77°F (25°C) ambient temperature.

sic Engine Description

Engine Manufacturer	John Deere Co.
Ignition Type	Compression (Diesel)
Number of Cylinders	6
Bore and Stroke - in (mm)	4.19 (106) X 5 (127)
Displacement - in^3 (L)	415 (6.8)
Compression Ratio	17.0:1
Valves per cylinder	
Intake	1
Exhaust	1
Combustion System	Direct Injection
Engine Type	In-Line, 4 Stroke Cycle
Fuel Management Control	Electronic, High Pressure Common Rail
Firing Order (CW Rotation)	1-5-3-6-2-4
Aspiration	Turbocharged
Charge Air Cooling Type	Raw Water
Rotation, viewed from front of engine, Clockwise (CW)	Standard
Engine Crankcase Vent System	Open
Installation Drawing	D628
Weight - lb (kg)	1747 (792)

Power Rating	**2100**	**2350**	**2400**
Nameplate Power - HP (kW) [1]	224 (167)	226 (169)	226 (169)

Cooling System	**2100**	**2350**	**2400**
Engine Coolant Heat - Btu/sec (kW)	145 (153)	135 (142)	135 (142)
Engine Radiated Heat - Btu/sec (kW)	16.1 (17)	16.2 (17.1)	16.2 (17.1)
Heat Exchanger (Brazed Non-Removeable Bundle) Minimum Flow - [C051386]			
60°F (15°C) Raw H_2O - gal/min (L/min)	22 (83.3)	21 (79.5)	21 (79.5)
100°F (37°C) Raw H_2O - gal/min (L/min)	34 (129)	34 (129)	34 (129)

Heat Exchanger (Brazed Non-Removeable Bundle) Maximum Cooling Raw Water - [C051386]	
Inlet Pressure - psi (bar)	60 (4.1)
Flow - gal/min (L/min)	40 (151)
Typical Engine H_2O Operating Temp - °F (°C)	180 (82.2) - 195 (90.6)
Thermostat	
Start to Open - °F (°C)	180 (82.2)
Fully Opened - °F (°C)	203 (95)
Engine Coolant Capacity - qt (L)	21.6 (20.4)
Coolant Pressure Cap - lb/in^2 (kPa)	15 (103)
Maximum Engine Coolant Temperature - °F (°C)	230 (110)
Minimum Engine Coolant Temperature - °F (°C)	160 (71.1)
High Coolant Temp Alarm Switch - °F (°C)	235 (113) - 241 (116)

Electric System - DC	**Standard**		**Optional**	
System Voltage (Nominal)	12		24	
Battery Capacity for Ambients Above 32°F (0°C)				
Voltage (Nominal)	12	{C07633}	12	{C07633}
Qty. Per Battery Bank	1		2	
SAE size per J537	8D		8D	
CCA @ 0°F (-18°C) per J537	1200		1200	
Reserve Capacity - Minutes per J537	430		430	
Battery Cable Circuit, Max Resistance - ohm	0.0012		0.0012	
Battery Cable Minimum Size				
0-120 In. Circuit Length [2]	00		00	
121-160 In. Circuit Length [2]	000		000	
161-200 In. Circuit Length [2]	0000		0000	
Charging Alternator Maximum Output - Amp,	40	{C071363}	55	{C071365}
Starter Cranking Amps, Rolling - @60°F (15°C)	440	{RE69704/RE70404}	250	{C07819/C07820}

Exhaust System (Single Exhaust Outlet)	2100	2350	2400
Exhaust Flow - ft.³/min (m³/min)	1513 (42.8)	1540 (43.6)	1540 (43.6)
Exhaust Temperature - °F (°C) (corrected to 77°F)	848 (453)	873 (467)	873 (467)
Maximum Allowable Back Pressure - in H_2O (kPa)	30 (7.5)	30 (7.5)	30 (7.5)
Minimum Allowable Back Pressure - in H_2O (kPa)	16 (4)	16 (4)	16 (4)
Minimum Exhaust Pipe Dia. - in (mm) [3]	6 (152)	6 (152)	6 (152)

Fuel System	2100	2350	2400
Fuel Consumption - gal/hr (L/hr)	11.1 (42)	11.4 (43.1)	11.4 (43.1)
Fuel Return - gal/hr (L/hr)	25 (94.6)	25.1 (95)	25.1 (95)
Fuel Supply - gal/hr (L/hr)	36.1 (137)	36.5 (138)	36.5 (138)
Fuel Pressure - lb/in² (kPa)	3 (20.7) - 6 (41.4)		
Minimum Line Size - Supply - in.	.50 Schedule 40 Steel Pipe		
Pipe Outer Diameter - in (mm)	0.848 (21.5)		
Minimum Line Size - Return - in.	.375 Schedule 40 Steel Pipe		
Pipe Outer Diameter - in (mm)	0.675 (17.1)		
Maximum Allowable Fuel Pump Suction Lift with clean Filter - in H_2O (mH_2O)	80 (2)		
Maximum Allowable Fuel Head above Fuel pump, Supply or Return - ft (m)	6.6 (2)		
Fuel Filter Micron Size	2 (Secondary)		

Heater System	Standard	Optional
Engine Coolant Heater		
Wattage (Nominal)	1360	1360
Voltage - AC, 1 Phase	115 (+5% -10%)	230 (+5%, -10%)
Part Number	{C123640}	{C123644}

Air System	2100	2350	2400
Combustion Air Flow - ft.³/min (m³/min)	552 (15.6)	573 (16.2)	573 (16.2)
Air Cleaner	Standard		Optional
Part Number	{C03244}		{C03327}
Type	Indoor Service Only, with Shield		Canister, Single-Stage
Cleaning method	Washable		Disposable
Air Intake Restriction Maximum Limit			
Dirty Air Cleaner - in H_2O (kPa)	14 (3.5)		14 (3.5)
Clean Air Cleaner - in H_2O (kPa)	7 (1.7)		5 (1.2)
Maximum Allowable Temperature (Air To Engine Inlet) - °F (°C)	130 (54.4)		

Lubrication System	
Oil Pressure - normal - lb/in² (kPa)	40 (276) - 60 (414)
Low Oil Pressure Alarm Switch - lb/in² (kPa) to	30 (207) - 35 (241)
In Pan Oil Temperature - °F (°C)	220 (104) - 245 (118)
Total Oil Capacity with Filter - qt (L)	31.7 (30)

Lube Oil Heater	Optional	Optional
Wattage (Nominal)	150	150
Voltage	120V (+5%, -10%)	240V (+5%, -10%)
Part Number	{C04430}	{C04431}

Performance	2100	2350	2400
BMEP - lb/in² (kPa)	204 (1410)	184 (1270)	180 (1240)
Piston Speed - ft/min (m/min)	1750 (533)	1958 (597)	2000 (610)
Mechanical Noise - dB(A) @ 1m	C133372 - Reference Noise data on Engine Page at www.clarkefire.com		
Power Curve	C132963 - Reference Power Curve on Engine Page at www.clarkefire.com		

NOTE: This engine is intended for indoor installation or in a weatherproof enclosure. [1] Derate 3% per every 1000 ft. 304.8m above 300 ft. 91.4m and derate 1% for every 10°F 5.55 °C above 77°F 25°C. [2] Positive and Negative Cables Combined Length. [3] Minimum Exhaust Pipe Diameter is based on: 15 feet of pipe, one 90° elbow, and one Industrial silencer. A Back-pressure flow analysis must be performed on the actual field installed exhaust system to assure engine maximum allowable back pressure is not exceeded. See Exhaust Sizing Calculator on www.clarkefire.com. { } indicates component reference part number.

Rating Specific Emissions Data - John Deere Power Systems

JOHN DEERE

Rating Data

Rating	6068HFC48B	
Certified Power(kW)	236	
Rated Speed	2400	
Vehicle Model Number	OEM (Clarke Fire Pump-Emergency)	
Units	g/kW-hr	g/hp-hr
NOx	3.43	2.56
HC	0.09	0.07
NOx + HC	N/A	N/A
Pm	0.11	0.08
CO	0.8	0.6

Certificate Data

Engine Model Year	2023
EPA Family Name	PJDXL13.5103
EPA JD Name	650HAA
EPA Certificate Number	PJDXL13.5103-012
CARB Executive Order	
Parent of Family	6135HF485A
Units	g/kW-hr
NOx	3.31
HC	0.11
NOx + HC	N/A
Pm	0.10
CO	0.6

* The emission data listed is measured from a laboratory test engine according to the test procedures of 40 CFR 89 or 40 CFR 1039, as applicable. The test engine is intended to represent nominal production hardware, and we do not guarantee that every production engine will have identical test results. The family parent data represents multiple ratings and this data may have been collected at a different engine speed and load. Emission results may vary due to engine manufacturing tolerances, engine operating conditions, fuels used, or other conditions beyond our control.

Emissions Results by Rating run on Feb-14-2023

APPENDIX 4
POTENTIAL EMISSIONS CALCULATIONS

Facility-Wide Limited Potential Emissions

Pollutant	Potential Annual Emissions (tpy)				Facility-Wide Potential Emissions (excluding fugitive sources) (tpy)	Facility-Wide Potential Emissions (including fugitive sources) (tpy)
	Emergency Generators	Diesel Storage Tanks	Fire Pumps	Paved Roads		
NO_X[1]	25.67	--	0.33	--	26.00	26.00
CO	17.38	--	0.49	--	17.87	17.87
VOC	6.42	0.02	0.08	--	6.52	6.52
Filterable PM	1.00	--	0.03	0.16	1.03	1.19
PM_{10}[2]	1.16	--	0.19	0.16	1.35	1.51
$PM_{2.5}$	1.16	--	0.19	7.84E-03	1.35	1.36
SO_2	0.03	--	0.18	--	0.21	0.21
Max. Individual HAP (Benzene)	0.02	--	5.69E-04	--	0.02	0.02
Total HAP	0.03	--	3.08E-03	--	0.04	0.04
CO_2e	3,323	--	99.75	--	3,423	3,423

Notes:

1. The applicant is requesting a site-wide NO_X emissions limitation of 26 tpy.
2. PM_{10} emissions includes the maximum of either PM or PM_{10} emissions from Paved Roads.
3. Paved Roads are fugitive sources.

Facility-Wide Unlimited Potential Emissions

Pollutant	Potential Annual Emissions (tpy)				Facility-Wide Potential Emissions (excluding fugitive sources) (tpy)	Facility-Wide Potential Emissions (including fugitive sources) (tpy)
	Emergency Generators	Diesel Storage Tanks	Fire Pumps	Paved Roads		
NO_X[1]	114.29	--	0.33	--	114.62	114.62
CO	77.38	--	0.49	--	77.88	77.88
VOC	28.57	0.02	0.08	--	28.67	28.67
Filterable PM	4.46	--	0.03	0.16	4.49	4.65
PM_{10}[2]	5.16	--	0.19	0.16	5.35	5.51
$PM_{2.5}$	5.16	--	0.19	7.84E-03	5.35	5.36
SO_2	0.14	--	0.18	--	0.31	0.31
Max. Individual HAP (Benzene)	0.07	--	5.69E-04	--	0.07	0.07
Total HAP	0.14	--	3.08E-03	--	0.15	0.15
CO_2e	14,795	--	99.75	--	14,895	14,895

Notes:

1. Unlimited potential emissions of the generators and fire pumps are based on 500 hours of operation per engine. The applicant is requesting a site-wide NO_X emissions limitation of 26 tpy.
2. PM_{10} emissions includes the maximum of either PM or PM_{10} emissions from Paved Roads.
3. Paved Roads are fugitive sources.

Number of Generator Engines

Number of Engines	12

Output by Load

Source Type	Max Power Output (bhp/engine) [1]
	100% Load
Proposed Engine	4,500

Note:
1. The applicant has not yet selected the engine make and model to be installed. The applicant is requesting to retain the flexibility to install any engine with potential emissions less than or equal to those identified herein.

Fuel Usage by Load

Source Type	Diesel Fuel Consumption (gal/hr/engine) [1]	Heat Input (MMBtu/hr/engine) [2]
	100% Load	100% Load
Proposed Engine	220	30.15

Notes:

1. The applicant has not yet selected the engine make and model to be installed. The applicant is requesting to retain the flexibility to install any engine with potential emissions less than or equal to those identified herein. Worst-case fuel consumption rates between two manufacturers were obtained from the manufacturers' emissions data sheets.

2. Diesel fuel consumption was converted to heat input based on the diesel high heating value from the USEPA's AP-42, Section 3.4, *Large Stationary Diesel and All Stationary Dual-fuel Engines*, Table 3.4-1, footnote a (April 2025):

Diesel HHV = 0.137 MMBtu/gal

Tier 2 Compression-Ignition Engine Emission Factors

Pollutant	Emission Factor [1] (g/bhp-hr)
NO_x	3.84
CO	2.60
PM	0.15
VOC	0.96

Note:
1. The emission factors are based on the United States Environmental Protection Agency's (US EPA) Tier 2 Engine Standards for nonroad compression-ignition engines, as provided in 40 Code of Federal Regulations (CFR) 1039. For engines that have a combined NO_x + NMHC emission standard under New Source Performance Standard (NSPS) Subpart IIII, the VOC emission standard was estimated from the combined NO_x + NMHC emission standard assuming 80% NO_x and 20% VOC (NMHC) based on the equation provided in 40 CFR 1039.740(c).

AP-42 Emission Factors

Pollutant	Emission Factor [1] (lb/MMBtu)
...ensable PM	7.70E-03
SO_2 [2]	1.52E-03
Benzene	7.76E-04
Toluene	2.81E-04
Xylenes	1.93E-04
Formaldehyde	7.89E-05
Acetaldehyde	2.52E-05
Acrolein	7.88E-06
Naphthalene	1.30E-04
Other PAH [3]	8.20E-05
Total HAPs	1.57E-03

Notes:
1. Emission factors are based on the USEPA's AP-42, Section 3.4, *Large Stationary Diesel and All Stationary Dual-fuel Engines,* Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4 (April 2025).

2. The SO_2 emission factor was calculated based on the maximum allowable diesel fuel sulfur content under NSPS Subpart IIII:

Diesel %S Content = 0.0015 wt% sulfur

It is conservatively assumed that all SO_x is SO_2.

3. PAH = Polycyclic Aromatic Hydrocarbons

Greenhouse Gases (GHG) Emission Factors

Pollutant	Emission Factor [1] (lb/MMBtu)
CO_2	163.05
CH_4	6.61E-03
N_2O	1.32E-03
CO_2e [2]	163.59

Notes:
1. Per 40 CFR 98, Subpart C, Tables C-1 and C-2 for No. 2 fuel oil combustion. The emission factors were converted from kg/MMBtu to
2. The CO_2e emission factor is calculated as the sum of each GHG pollutant multiplied by its global warming potential, per 40 CFR 98, Subpart

CO_2: 1
CH_4: 28
N_2O: 265

Hourly Emissions per Engine

Pollutant	Hourly Emissions per Engine (lb/hr/engine) [1,2]
	100% Load
Criteria Pollutants	
NO_X	38.10
CO	25.79
VOC	9.52
Filterable PM [3]	1.49
$PM_{10}/PM_{2.5}$ [4]	1.72
SO_2	0.05
Hazardous Air Pollutants	
Benzene	0.02
Toluene	8.47E-03
Xylenes	5.82E-03
Formaldehyde	2.38E-03
Acetaldehyde	7.60E-04
Acrolein	2.38E-04
Naphthalene	3.92E-03
Other PAH	2.47E-03
Total HAPs	0.05
Greenhouse Gases	
CO_2	4,916
CH_4	0.20
N_2O	0.04
CO_2e	4,932

Notes:

1. For Tier 2 emission factors: Hourly Emissions at 100% Load (lb/hr/engine) = Emission Factor (g/hp-hr) × Engine Power Output at 100% Load (bhp/engine) / (453.6 g/lb)

2. For AP-42 & GHG emission factors: Hourly Emissions at 100% Load (lb/hr/engine) = Emission Factor (lb/MMBtu) × Heat Input at 100% Load (MMBtu/hr)

3. Filterable PM emissions are based on the US EPA's Tier 2 emission standard under 40 CFR 1039.

4. The PM_{10} and $PM_{2.5}$ emissions are the sum of filterable and condensable particulate emissions.

Ratio of Pollutant Emissions to NO_X Emissions by Load

Pollutant	Ratio of Pollutant Emissions to NO_X Emissions (Pounds of Pollutant Emissions) / (Pounds of NO_X Emissions) [1]
	100% Load
Criteria Pollutants	
NO_X	--
CO	0.68
VOC	0.25
Filterable PM	3.91E-02
PM_{10} / $PM_{2.5}$	4.52E-02
SO_2	1.20E-03
Hazardous Air Pollutants	
Benzene	6.14E-04
Toluene	2.22E-04
Xylenes	1.53E-04
Formaldehyde	6.24E-05
Acetaldehyde	1.99E-05
Acrolein	6.24E-06
Naphthalene	1.03E-04
Other PAH	6.49E-05
Total HAP	1.25E-03
Greenhouse Gases	
CO_2	129.03
CH_4	5.23E-03
N_2O	1.05E-03
CO_2e	129.45

Note:

1. Ratio = Hourly Emissions of Pollutant at Load *X* (lb/hr/gen) / Hourly Emissions of NO_X at Load *X* (lb/hr/gen)

RAMBOLL

Potential Annual Emissions from All Generators

Pollutant	Total Potential Annual Emissions for All Generators [1,2,3] (tpy)
Criteria Pollutants	
NO_x	25.67
CO	17.38
VOC	6.42
Filterable PM	1.00
PM_{10} / $PM_{2.5}$	1.16
SO_2	0.03
Hazardous Air Pollutants	
Benzene	0.02
Toluene	5.71E-03
Xylenes	3.92E-03
Formaldehyde	1.60E-03
Acetaldehyde	5.12E-04
Acrolein	1.60E-04
Naphthalene	2.64E-03
Other PAH	1.67E-03
Total HAPs	0.03
Greenhouse Gases	
CO_2	3,312
CH_4	0.13
N_2O	0.03
CO_2e	3,323

Notes:

1. The applicant is requesting a site-wide NO_x emissions limitation of 26 tpy.
2. For all pollutants other than NO_x, the total potential annual emissions from all generators were based on the emissions calculated from the following equation:

Total Potential Annual Pollutant Emissions from All Generators (tpy) =

[Site-Wide Limit of 26 tpy NO_x - 0.33 tpy NO_x from Fire Pumps] x [Maximum Ratio of Pollutant Emissions to NO_x Emissions (lb pollutant/lb NO_x) For All Generator Types]

3. All generators will be fueled by diesel fuel and/or renewable diesel fuel conforming to ASTM D975 specification for petroleum (including hydrotreated vegetable oil (HVO)); the ISO8178 D2 test cycle emission rates are the same for both diesel and renewable diesel fuels. For simplicity and conservative purposes, the applicant has calculated total potential emissions from all generators based on the diesel fuel load-specific emission factors.

Number of Generator Engines

Number of Engines	12

r Output by Load

Source Type	Max Power Output (bhp/engine) [1]
	100% Load
Proposed Engine	4,500

Note:
1. The applicant has not yet selected the engine make and model to be installed. The applicant is requesting to retain the flexibility to install any engine with potential emissions less than or equal to those identified herein.

Fuel Usage by Load

Source Type	Diesel Fuel Consumption (gal/hr/engine) [1]	Heat Input (MMBtu/hr/engine) [2]
	100% Load	100% Load
Proposed Engine	220	30.15

Notes:

1. The applicant has not yet selected the engine make and model to be installed. The applicant is requesting to retain the flexibility to install any engine with potential emissions less than or equal to those identified herein. Worst-case fuel consumption rates between two manufacturers were obtained from the manufacturers' emissions data sheets.

2. Diesel fuel consumption was converted to heat input based on the diesel high heating value from the USEPA's AP-42, Section 3.4, *Large Stationary Diesel and All Stationary Dual-fuel Engines*, Table 3.4-1, footnote a (April 2025):

Diesel HHV = 0.137 MMBtu/gal

Tier 2 Compression-Ignition Engine Emission Factors

Pollutant	Emission Factor [1] (g/bhp-hr)
NO_x	3.84
CO	2.60
PM	0.15
VOC	0.96

Note:
1. The emission factors are based on the United States Environmental Protection Agency's (US EPA) Tier 2 Engine Standards for nonroad compression-ignition engines, as provided in 40 Code of Federal Regulations (CFR) 1039. For engines that have a combined NO_x + NMHC emission standard under New Source Performance Standard (NSPS) Subpart IIII, the VOC emission standard was estimated from the combined NO_x + NMHC emission standard assuming 80% NO_x and 20% VOC (NMHC) based on the equation provided in 40 CFR 1039.740(c).

'2 Emission Factors

Pollutant	Emission Factor [1] (lb/MMBtu)
Condensable PM	7.70E-03
SO_2 [2]	1.52E-03
Benzene	7.76E-04
Toluene	2.81E-04
Xylenes	1.93E-04
Formaldehyde	7.89E-05
Acetaldehyde	2.52E-05
Acrolein	7.88E-06
Naphthalene	1.30E-04
Other PAH [3]	8.20E-05
Total HAPs	1.57E-03

Notes:
1. Emission factors are based on the USEPA's AP-42, Section 3.4, *Large Stationary Diesel and All Stationary Dual-fuel Engines*, Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4 (April 2025).

2. The SO_2 emission factor was calculated based on the maximum allowable diesel fuel sulfur content under NSPS Subpart IIII:

Diesel %S Content = 0.0015 wt% sulfur

It is conservatively assumed that all SO_x is SO_2.

3. PAH = Polycyclic Aromatic Hydrocarbons

Greenhouse Gases (GHG) Emission Factors

Pollutant	Emission Factor [1] (lb/MMBtu)
CO_2	163.05
CH_4	6.61E-03
N_2O	1.32E-03
CO_2e [2]	163.59

Notes:
1. Per 40 CFR 98, Subpart C, Tables C-1 and C-2 for No. 2 fuel oil combustion. The emission factors were converted from kg/MMBtu to
2. The CO_2e emission factor is calculated as the sum of each GHG pollutant multiplied by its global warming potential, per 40 CFR 98, Subpart

CO_2: 1
CH_4: 28
N_2O: 265

Hourly Emissions per Engine

Pollutant	Hourly Emissions per Engine for (lb/hr/engine) [1,2]
	100% Load
a Pollutants	
NO_X	38.10
CO	25.79
VOC	9.52
Filterable PM[3]	1.49
$PM_{10}/PM_{2.5}$[4]	1.72
SO_2	0.05
Hazardous Air Pollutants	
Benzene	0.02
Toluene	8.47E-03
Xylenes	5.82E-03
Formaldehyde	2.38E-03
Acetaldehyde	7.60E-04
Acrolein	2.38E-04
Naphthalene	3.92E-03
Other PAH	2.47E-03
Total HAPs	0.05
Greenhouse Gases	
CO_2	4,916
CH_4	0.20
N_2O	0.04
CO_2e	4,932

Notes:

1. For Tier 2 emission factors: Hourly Emissions at 100% Load (lb/hr/engine) = Emission Factor (g/hp-hr) x Engine Power Output at 100% Load (bhp/engine) / (453.6 g/lb)

2. For AP-42 & GHG emission factors: Hourly Emissions at 100% Load (lb/hr/engine) = Emission Factor (lb/MMBtu) x Heat Input at 100% Load (MMBtu/hr)

3. Filterable PM emissions are based on the US EPA's Tier 2 emission standard under 40 CFR 1039.

4. The PM_{10} and $PM_{2.5}$ emissions are the sum of filterable and condensable particulate emissions.

Unlimited Potential Annual Emissions from All Generators

Pollutant	Total Potential Annual Emissions for All Generators [1] (tpy)
Criteria Pollutants	
[illegible]	114.29
[illegible]	77.38
VOC	28.57
Filterable PM	4.46
PM_{10} / $PM_{2.5}$	5.16
SO_2	0.14
Hazardous Air Pollutants	
Benzene	0.07
Toluene	0.03
Xylenes	0.02
Formaldehyde	7.14E-03
Acetaldehyde	2.28E-03
Acrolein	7.13E-04
Naphthalene	0.01
Other PAH	7.42E-03
Total HAPs	0.14
Greenhouse Gases	
CO_2	14,747
CH_4	0.60
N_2O	0.12
CO_2e	14,795

Note:

1. Unlimited PTE based on hourly emission factors and 500 hours per year of operation, per September 6, 1995 memo from USEPA

Emergency Firewater Pump Characteristics

Number of Firewater Pumps	2	
Maximum Hours of Operation	500	hrs/yr
Power Rating	121	bhp
Max fuel consumption rate	8.9	gal/hr
Max heat input[1]	1.2	MMBtu/hr

Notes:
1. Diesel fuel consumption was converted to heat input based on the diesel high heating value from the USEPA's AP-42, Section 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines, Table 3.4-1, footnote a (April 2025):

Diesel HHV = 0.137 MMBtu/gal

2. The fire pumps will be fueled by diesel fuel and/or renewable diesel fuel conforming to ASTM D975 specification for petroleum [including hydrotreated vegetable oil (HVO)].

Tier 3 Nonroad Compression-Ignition Engine Emission Factors

Pollutant	Emission Factor[1]	Potential Emissions[2,3]	
Criteria Pollutants			
NO_X	2.40 g/bhp-hr	0.64 lb/hr/pump	0.33 tpy
CO	3.70 g/bhp-hr	0.99 lb/hr/pump	0.49 tpy
PM	0.22 g/bhp-hr	0.06 lb/hr/pump	0.03 tpy
VOC[3]	0.60 g/bhp-hr	0.16 lb/hr/pump	0.08 tpy

Notes:

1. The emission factors are based on the United States Environmental Protection Agency's (US EPA) Tier 3 Engine Standards for nonroad compression-ignition engines, as provided in Table 4 of 40 Code of Federal Regulations (CFR) 60, Subpart IIII. For engines that have a combined NO_X + NMHC emission standard under New Source Performance Standard (NSPS) Subpart IIII, the VOC emission standard was estimated from the combined NO_X + NMHC emission standard assuming 80% NO_X and 20% VOC (NMHC) based on the equation provided in 40 CFR 1039.740(c).

2. Short-term PTE (lb/hr) was calculated by multiplying the emission factor by the engine power rating (bhp).

3. Annual PTE (tpy) was calculated by multiplying the short-term PTE (lb/hr) by the maximum hours of operation per year and then converting from pounds to tons.

AP-42 Emission Factors

Pollutant	Emission Factor[1]	Potential Emissions[2]	
Criteria Pollutants			
PM_{10}[2]	0.31 lb/mMbtu	3.8E-01 lb/hr/pump	0.19 tpy
SO_2	0.29 lb/MMBtu	3.5E-01 lb/hr/pump	0.18 tpy
Hazardous Air Pollutants			
Benzene	9.3E-04 lb/MMBtu	1.1E-03 lb/hr/pump	5.69E-04 tpy
Toluene	4.1E-04 lb/MMBtu	5.0E-04 lb/hr/pump	2.49E-04 tpy
Xylenes	2.9E-04 lb/MMBtu	3.5E-04 lb/hr/pump	1.74E-04 tpy
1,3-Butadiene	3.9E-05 lb/MMBtu	4.8E-05 lb/hr/pump	2.38E-05 tpy
Formaldehyde	1.2E-03 lb/MMBtu	1.4E-03 lb/hr/pump	7.20E-04 tpy
Acetaldehyde	7.7E-04 lb/MMBtu	9.4E-04 lb/hr/pump	4.68E-04 tpy
Acrolein	9.3E-05 lb/MMBtu	1.1E-04 lb/hr/pump	5.64E-05 tpy
Total PAH[3]	1.7E-04 lb/MMBtu	2.0E-04 lb/hr/pump	1.02E-04 tpy
Max Individual HAP	-- --	1.4E-03 lb/hr/pump	7.20E-04 tpy
Total HAPS	-- --	6.2E-03 lb/hr/pump	3.08E-03 tpy
Greenhouse Gases			
CO_2	163.05 lb/MMBtu	198.86 lb/hr/pump	99.43 tpy
CH_4	6.61E-03 lb/MMBtu	8.1E-03 lb/hr/pump	4.03E-03 tpy
N_2O	1.32E-03 lb/MMBtu	1.6E-03 lb/hr/pump	8.07E-04 tpy
CO_2e[4]	163.59 lb/MMBtu	199.51 lb/hr/pump	99.75 tpy

Notes:

1. All pollutants except CH_4 and N_2O were obtained from AP-42, Section 3.3, Gasoline And Diesel Industrial Engines, Tables 3.3-1 and 3.3-2. If necessary, emission factors were converted from lb/MMBtu to lb/hp-hr assuming 7,000 Btu/hp-hr.

Emission factors for N_2O and CH_4 from 40 CFR 98, Subpart C, Tables C-1 and C-2 for No. 2 fuel oil combustion. The emission factors were converted from kg/MMBtu to lb/MMBtu.

2. $PM_{2.5}$ emissions conservatively assumed equal to PM_{10} emissions.
3. PAH = Polycyclic Aromatic Hydrocarbons
4. The CO_2e emission factor was calculated as the sum of the emission factor for GHG pollutant multiplied by its global warming potential, per 40 CFR 98, Subpart A, Table A-1:

CO_2: 1
CH_4: 28
N_2O: 265

5. Short-term PTE (lb/hr) was calculated by multiplying the emission factor (lb/hp-hr or lb/MMBtu) by the heat input rating of the engine (bhp or MMBtu/hr).

Annual PTE (tpy) was calculated by multiplying the short-term PTE (lb/hr) by the maximum hours of operation per year and then converting from pounds to tons.

Summary of Site-Wide Emissions from Diesel Belly Tanks

Source	Size of Each Tank (Gallons)[1]	Number of Tanks	Potential VOC Emissions		
			lb/yr/tank	lb/yr (all tanks)	tpy (all tanks)
Belly Tanks	7,185	12	3.35	40.23	2.0E-02
				Total	**2.01E-02**

Note:
1. Worst-case fuel tank size between two manufacturers were obtained from the manufacturer's specification sheets.

Diesel Belly Tank Emissions Calculations

Parameter Description[a]	Equation	Value
Tank Contents		Diesel Fuel
Tank Width (W) (ft)		12.50
Tank Length (L) (ft)		49.00
Tank Dome Roof Radius (R_R), ft	Dome Roofs: Assumed R_R = D Flat Roofs: N/A	N/A
Tank Shell Height (H_S), ft	[Use height of rectangular tank]	2.1
Effective Height (H_E), ft	[Use height of rectangular tank]	2.1
Nominal Capacity, ft^3		960.5
Nominal Capacity (gal)		7,185
Liquid Height (H_L), ft	Assumed = $0.9H_S$	1.9
Tank Cone Roof Slope (S_R), ft/ft	No roof on rectangular tank	0
Tank Roof Height (H_R), ft	No roof on rectangular tank	0
Roof Outage (H_{RO}), ft	Dome Roofs: $H_{RO} = H_R$ $[(1/2)+(1/6)(H_R/R_S)^2]$ Cone Roofs: $H_{RO} = 1/3H_R$ Flat Roofs: $H_{RO} = 0$	0
Vapor Space Outage (H_{VO}), ft	Vertical tanks (used for rectangular tank): $H_{VO} = H_S - H_L + H_{RO}$ Horizontal tanks: $H_{VO} = H_E$	0.2
Vapor Space Volume (V_V), ft^3	For rectangular tank: H_{VO} x W x L	127.6
Ideal Gas Constant (R), psia ft^3/lb-mole R	Constant	10.731
Daily Maximum Ambient Temperature (T_{AX}), R [b]	AP-42, Table 7.1-7	521.7
Daily Minimum Ambient Temperature (T_{AN}), R [b]	AP-42, Table 7.1-7	504.4
Daily Average Ambient Temperature (T_{AA}), R	$T_{AA} = (T_{AX} + T_{AN})/2$	513.0
Paint Solar Absorptance (α), dimensionless [c]	AP-42, Table 7.1-6	0.97
Liquid Bulk Temperature (T_B), R	$T_B = T_{AA} + 6a - 1$	517.8
Daily Total Solar Insolation Factor (I), Btu/ft^2 d [b]	AP-42, Table 7.1-7	1,245.0
Daily Average Liquid Surface Temperature (T_{LA}), R	$T_{LA} = 0.44T_{AA} + 0.56T_B + 0.0079\alpha I$	525.3
Vapor Molecular Weight (M_V), lb/lb-mole	Vapor Molecular weight of diesel fuel	130
Vapor Pressure at T_{LA} (P_{VA}), psia	Raoult's Law or Antoine Equation	0.0078
Vapor Density (W_V), lb/ft^3	$W_V = M_V P_{VA}/RT_{LA}$	0.00018
Daily Ambient Temperature Range (T_A), R	$T_A = T_{AX} - T_{AN}$	17.3
Daily Vapor Temperature Range (T_V), R	$T_V = 0.72T_A + 0.028\alpha I$	46.3
Vapor Pressure at T_{AN} (P_{VN}), psia	Raoult's Law or Antoine Equation	0.0039
Vapor Pressure at T_{AX} (P_{VX}), psia	Raoult's Law or Antoine Equation	0.0069
Daily Vapor Pressure Range (P_V), psia	$P_V = P_{VX} - P_{VN}$	0.0031
Breather Vent Pressure Setting Range (P_B), psig	$P_B = P_{BP} - P_{BV}$ (Assumed = 0.06)	0.06
Atmospheric Pressure (P_A), psia	Constant	14.7
Vapor Space Expansion Factor (K_E), dimensionless	$K_E = T_V/T_{LA} + (P_V - P_B)/(P_A - P_{VA})$	0.08
Vented Vapor Saturation Factor (K_S), dimensionless	$K_S = 1/(1 + 0.053P_{VA}H_{VO})$	1.0
Number of Days/Year in Operation	Constant	365
Standing Storage Losses (L_S), lb/year	$L_S = 365\ W_V V_V K_E K_S$	0.70
Liquid Density (lb/gal)	Density of diesel fuel	7.10
Potential Throughput (Q), gal	500 hours of operation at 100% load	110,000
Potential Throughput (Q), bbl	Throughput is in bbls (42 gal/bbl)	2,619.0
Maximum Liquid Height (H_{LX}), ft	Assumed = $0.9H_S$	1.9
Tank Maximum Liquid Volume (V_{LX}), ft^3	Assumed = 0.9*Nominal Capacity	864.4
Turnovers (N), dimensionless	$N = 5.614Q/V_{LX}$	17.0
Turnover Factor (K_N), dimensionless	For $N \leq 36$ $K_N = 1$,	1.0
	For $N > 36$ $K_N = (180 + N)/6N$	
Working Loss Factor (K_P), dimensionless	For Organic Liquids, $K_P = 1$	1.0
Working Losses (L_W), lb/year	$L_W = 0.001M_V P_{VA} Q K_N K_P$	2.65
Total Uncontrolled Losses (L_T), lb/year/tank	$T_L = L_S + L_W$	3.35
Total Uncontrolled Losses (L_T), ton/year/tank	2,000 lb/ton	0.0017
Total Uncontrolled Losses (L_T), lb/hr/tank	8,760 hr/yr	0.0004

Notes:

[a] Emissions calculated according to the methodology presented in AP-42, Section 7.1 with adjustments made to account for vapor space volume of the proposed rectangular diesel tank.

[b] Meteorological data from AP-42, Table 7.1-7 for Indianapolis, IN was used.

[c] Paint solar absorptance from AP-42, Table 7.1-6 for Black tanks in good condition.

[d] The applicant has not yet selected the engine make and model to be installed. Worst-case tank dimensions and potential throughput based on the worst-case between two manufacturers.

RAMBOLL

Paved Roads at Industrial Site

The following calculations assume 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011) emission factors.

Vehicle Information[1]

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight of Loaded Vehicle (tons/trip)	Total Weight driven per day (ton/day)[1]	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)[2]	Maximum one-way miles (miles/day)[3]	Maximum one-way miles (miles/yr)
Fuel delivery trucks (entering plant) (one-way trip)	0.04	1.0	0.04	40.0	1.53	13,545	2.57	0.1	35.91
Fuel delivery trucks (leaving plant) (one-way trip)	0.04	1.0	0.04	20.0	0.77	13,545	2.57	0.1	35.91
Generator contractor vehicle (entering plant) (one-way trip)	0.47	1.0	0.47	2.0	0.93	13,545	2.57	1.2	436.96
Generator contractor vehicle (leaving plant) (one-way trip)	0.47	1.0	0.47	2.0	0.93	13,545	2.57	1.2	436.96
Totals			**1.01**		**4.17**			**2.6**	**945.76**

Notes:

1. Total Weight driven per day (ton/day) = *[Maximum Weight of Loaded Vehicle (tons/trip)] x [Maximum Trips per Day (trip/day)]*
2. Maximum One-Way Distance (mi/trip) = *[Maximum One-Way Distance (feet/trip)] ÷ 5280 ft/mile*
3. Maximum One-Way Miles (miles/day) = *[Maximum Trips per Day (trip/day)] x [Maximum One-Way Distance (mi/trip)]*

Average Vehicle Weight per Trip (tons/trip)[1]	Average Miles per Trip (miles/trip)[2]
4.1	2.57

Notes:

1. Average Vehicle Weight per Trip (tons/trip) = *Σ[Total Weight driven per day (ton/day)] ÷ Σ[Maximum Trips per Day (trip/day)]*
2. Average Miles per Trip (miles/trip) = *Σ[Maximum One-Way Miles (miles/day)] ÷ Σ[Maximum Trips per Day (trip/day)]*

AP-42 Paved Road Particulate Emission Factor Calculation Inputs

Pollutant	k (particle size multiplier)[1]	W (average vehicle weight, tons)	sL (silt loading, g/m^2)[2]
PM	1.10E-02	4.1	9.7
PM_{10}	2.20E-03	4.1	9.7
$PM_{2.5}$	5.40E-04	4.1	9.7

Notes:

1. Particle size multiplier (AP-42 Table 13.2.1-1)
2. Silt loading value for paved roads at iron and steel production facilities (AP-42 Table 13.2.1-3)

Unmitigated Emission Factors

Pollutant	Ef (lb/mile)[1]
PM	0.37
PM_{10}	0.07
$PM_{2.5}$	0.02

Note:

1.Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

Mitigated Emission Factors

Pollutant	Eext (lb/mile)[1]
PM	0.34
PM_{10}	0.07
$PM_{2.5}$	0.02

Note:

1.Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]

where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)

N = 365 days per year

Annual Mitigated Potential to Emit (PTE) for Paved Roads

Unit	PM (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)
Fuel delivery trucks (entering plant) (one-way trip)	0.01	0.00	0.00
Fuel delivery trucks (leaving plant) (one-way trip)	0.01	0.00	0.00
Generator contractor vehicle (entering plant) (one-way trip)	0.07	0.01	0.00
Generator contractor vehicle (leaving plant) (one-way trip)	0.07	0.01	0.00
Totals	**0.16**	**0.03**	**0.01**

Note:

1. Mitigated Potential to Emit (PTE) (tons/yr) = *[Maximum One-Way Miles (miles/yr)] x [Mitigated Emission Factor (lb/mile)] x (1 ton / 2000 lbs)*

APPENDIX 5
RENEWABLE DIESEL FUEL SPECIFICATIONS

Renewable Liquid Fuels Cat® 3500 and C175 Series Generator Sets – Frequently Asked Questions

Scope

This document covers Cat® diesel generator sets burning renewable liquid fuels with emphasis on Hydrotreated Vegetable Oil (HVO) and biodiesel. Reference is made to experience gained with 3500 and C175 Series engines operating at 1500 RPM (50 Hz) or 1800 RPM (60 Hz).

General HVO Questions

COLLAPSE ALL

1. WHAT IS HVO?

- HVO stands for Hydrotreated Vegetable Oil.
- HVO is a drop-in replacement for diesel fuel.
- HVO is sometimes referred to as "renewable diesel."

2. IS HVO THE SAME AS BIODIESEL?

- No, HVO and biodiesel are chemically different. HVO is more like diesel in chemistry than biodiesel because HVO is made up primarily of paraffinic hydrocarbon (HC) chains, while biodiesel contains fatty acid methyl esters (FAME).
- ***Significant differences between HVO and biodiesel are highlighted in bold and italics in the following responses. Further guidance on biodiesel can be found in Cat publications SEBU6250/6251.***

3. HOW IS HVO MADE?

- HVO is sourced from vegetable oils, fats or used cooking oils, and processed by hydrotreating which removes oxygen from the HC chain. ***This differs from biodiesel in that biodiesel is created through a transesterification process and results in an oxygenated FAME.***

4. IS THERE A STANDARD FOR HVO?

- EN 15940 is the preferred standard for HVO.

5. DOES HVO MEET THE EXISTING DIESEL FUEL STANDARDS?

- ASTM D975? Yes.
- EN 590? Everything except density.

6. WILL SUBSTITUTING HVO FOR DIESEL LOWER MY GREENHOUSE GAS (GHG) EMISSIONS?

- While operating on HVO may not significantly reduce the amount of CO_2 exiting the tailpipe, it can reduce lifecycle CO_2 emissions. Lifecycle emissions are reduced because the source of the carbon is biogenic, meaning carbon emitted from burning the fuel today consists partly of carbon previously captured from the atmosphere by the fuel's plant source. There are many variables that go into quantifying lifecycle CO_2 reductions in HVO, but it is typically in the range of 45% to 85% lower CO_2 than diesel based on the GREET model developed by the U.S. Department of Energy.

7. WHAT IS THE SHELF LIFE OF HVO?

- Compared to diesel fuel, HVO has a similar or longer shelf life (>12 months).
- ***Biodiesel has a much shorter shelf life to either diesel or HVO and is not recommended for electric power (EP) standby applications.***

Using HVO in Cat EP Generator Sets

COLLAPSE ALL

1. CAN I USE HVO IN MY CAT GENERATOR SET?

- Yes, HVO can be used in all Cat generator sets if it meets either EN15940 or ASTM D975 specifications.
- The Cat publication "Renewable and Alternative Fuels For Use in Diesel Engines" (LEXE20433) provides guidelines on the use of fuels, such as HVO, that can help reduce a generator set operator's carbon footprint.

2. HAS CATERPILLAR TESTED HVO IN A GENERATOR SET?

- Yes, performance testing of 3516 and C175-20 generator sets have been completed. Cat publications "3,000 ekW, 60Hz Generator Set: Diesel & HVO Test" (LEXE20432) and "4,000 kVA, 50 Hz Generator Set: Diesel & HVO Test" (LEXE21232) document the testing and results for the 3516 and C175-20, respectively.

3. CAN HVO BE BLENDED WITH REGULAR DIESEL FUEL?

- Yes, the generator set can be used on 100% diesel, 100% HVO or any blend of diesel and HVO. However, the blended fuel must still meet either EN15940 or ASTM D975 specifications.

4. CAN HVO BE BLENDED WITH TRADITIONAL BIODIESEL?

- Biodiesel and HVO can be blended, however it is not recommended that standby generator sets use more than 5% biodiesel due to fuel oxidation stability. See Cat publication SEBU6250

for further guidance on using biodiesel blends.

5. HOW WILL THE PERFORMANCE OF MY GENERATOR SET BE AFFECTED BY USING HVO?

- Caterpillar expects that most 3500 Series generator sets in application will experience an approximate 2% power derate with HVO, but it could be as high as a 5% power derate depending on environmental and specific fuel properties. This reduction in power is due to HVO's lower energy content than traditional diesel fuel. Specifics relative to the 3516, 3000 ekW rating can be found in Cat publication "3,000 ekW, 60Hz Generator Set: Diesel & HVO Test" (LEXE20432). The frequency droop of the 3500 Series generator set on application of a block load may increase by up to 2% when using 100% HVO. Other 3500 Series engines/ratings are expected to have the same directional performance impact when switching from diesel to HVO. Any performance changes will vary linearly with the HVO% in the fuel blend. Note that adjustments made to an engine in service to compensate for such a power loss may cause a user to violate regulatory requirements (for example, U.S. EPA's anti-tampering provisions).
- Caterpillar expects that most C175 Series operators will not see any power derate with HVO, and no negative impacts to transient response. Specifics relative to the C175-20, 4000 kVA rating can be found in Cat publication "4,000 kVA, 50 Hz Generator Set: Diesel & HVO Test" (LEXE21232). Other C175 Series engines/ratings are expected to have the same directional performance impact when switching from diesel to HVO.
- Start time, as defined by the time taken from start of cranking until the generator set reaches rated speed, is not expected to be longer when using HVO than when using diesel.

6. CAN CATERPILLAR OR THE DEALER INCREASE THE POWER OF THE ENGINE, SO I GET THE SAME GENERATOR OUTPUT ON HVO?

- No, any adjustment to the engine in service to compensate for such power loss may cause a user to violate regulatory requirements (for example, U.S. EPA's anti-tampering provisions).

7. WILL USING HVO INSTEAD OF DIESEL AFFECT OTHER EXHAUST EMISSIONS FROM MY GENERATOR SET?

- NO_x emissions are not expected to be significantly different from that achieved with diesel fuel above loads of 50%. Filter Smoke Number is expected to be measurably lower with HVO at loads above 30%.
- For the specific case of the 3516 Mission Critical product, details can be found in Cat publication "3,000 ekW, 60Hz Generator Set: Diesel & HVO Test" (LEXE20432). Other 3500 Series engines/ratings are expected to have the same directional emissions change when switching from diesel to HVO. Key observations when considering 100% HVO on a 3500 Series generator set are as follows:
    - NO_x emissions are expected to be lower at load factors below 50% and equivalent to diesel above 50% load.

- Steady state (Filter Smoke Number) is expected to be approximately 60% lower when the load factor is above 30%. Particulate matter (PM) emissions are expected to have a similar reduction.

- For the specific case of C175-20, 50 Hz mission-critical product details can be found in Cat publication "4,000 kVA, 50 Hz Generator Set: Diesel & HVO Test" (LEXE21232). Other C175 Series engines/ratings are expected to have the same directional emissions change when switching from diesel to HVO. Key observations from the 100% HVO gen set test include:
  - NO_x emissions were measured to be equivalent to diesel at loads above 35% and below 15% percent of rated power. There were small increases in NO_x at loads between 15-35%. There was no significant difference in cycle NO_x emissions when considering an ISO 1878 D2 cycle.
  - Steady state (Filter Smoke Number) has measured approximately 40% lower when the load is above 30% of rated. PM emissions are expected to have a similar reduction.

8. CAN I USE HVO IN MY GENERATOR SET IF I HAVE EXISTING EXHAUST AFTERTREATMENT?

- Yes, using HVO (per EN 15940) in any blend with diesel (up to 100%) should not generally adversely affect emissions levels or the aftertreatment equipment itself. Aftertreatment equipment includes diesel oxidation catalysts, SCR systems, particulate traps, EGR systems or any combination of these technologies.

9. ARE THERE ANY CONCERNS ABOUT USING HVO IN COLD WEATHER?

- No, HVO has similar cold weather properties to #2 diesel. Contact your supplier of HVO if you typically use a winter blend of diesel.
- ***Special attention needs to be given to using traditional biodiesel in cold climates. The fuel thickens at cold temperature, which can plug filters, etc.***

10. WILL THE MAINTENANCE COSTS BE THE SAME AS FOR DIESEL?

- Operation on 100% HVO is expected to result in the same maintenance intervals as operating on 100% diesel.
- ***Operation on 100% Biodiesel may require more frequent oil change intervals.***

11. CAN HVO BE STORED IN NORMAL FUEL TANKS?

- Yes, HVO can be stored in the regular diesel fuel tank.
- ***Storage of Biodiesel needs careful consideration due to aging and water absorption concerns.***

- *Volumetric fuel consumption will increase by approximately 5% with HVO due to the lower energy density. Tank sizing may need to be considered.*

12. CAN I USE THE SAME FILTRATION/POLISHING SYSTEM WITH HVO THAT I CURRENTLY USE FOR DIESEL FUEL?

- Refer to guidance by the fuel source.
- Cat fuel filters can be used with HVO, and typically HVO can be treated the same as diesel regarding conditioning. HVO does shed water more easily than diesel, so you may need to empty your water separator more frequently depending on the fuel's exposure to moisture.

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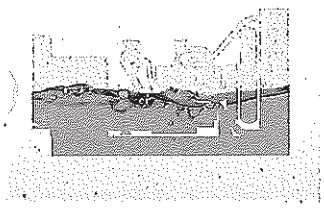

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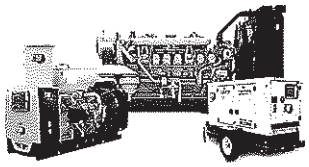

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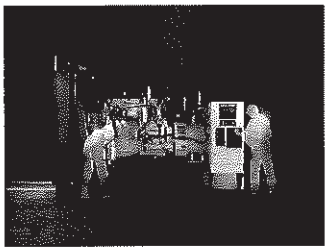

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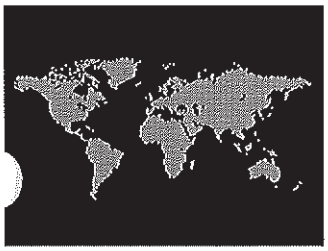

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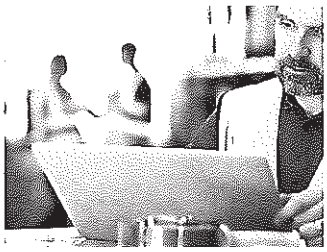

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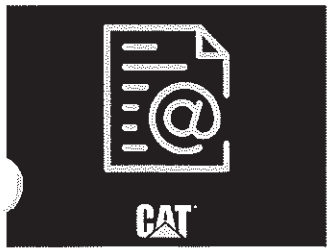

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GENERATOR SET PERFORMANCE ON HVO FUEL: QSK95 TEST REPORT SUMMARY

White paper by Nicholas Hawes

EXECUTIVE SUMMARY

This paper provides results of separate back-to-back tests on QSK95 diesel engines with Ultra Low Sulfur Diesel #2 (ULSD #2) fuel and Hydrotreated Vegetable Oil (HVO) fuel. Testing was performed with a production-built development engine in an engineering test cell (mechanical power for a 60Hz 3500 kWe Standby genset) and in the field with a QSK95 60Hz production genset (3000 kWe Standby genset). No changes or conversions were made to the engines (including ECM calibrations) between testing on the different fuels; the only difference between the two tests is the fuel used to conduct the testing.

The results of this testing can be summarized as follows:

- Exhaust Emissions:
  - Lower smoke and particulate matter emissions with HVO fuel
  - Comparable NOx emissions
- Power and Fuel Consumption:
  - Potential for 1-2% lower power with HVO fuel at the engine dataplate Standby mechanical power
  - 3-5% higher fuel consumption by volume with HVO fuel
- Transients and Emergency Start Times:
  - Comparable transient and emergency start time performance

Cummins has conducted similar testing on other High Horsepower generators and similar performance offsets are expected.

INTRODUCTION

Hydrotreated Vegetable Oil (HVO) is a bio-based paraffinic diesel fuel. It is one form of renewable fuel that is produced from vegetable oil and animal fats. The main difference between biodiesel and HVO fuel is the production process for each fuel. Biodiesel is produced through an esterification process and HVO fuel is produced through a hydrotreatment process. Cummins requires paraffinic fuels to meet EN15940 per Fluids for Cummins Products Service Manual (5411406), section 1.

To support customer adoption of HVO fuel, Cummins performed back-to-back testing on Ultra Low Sulfur Diesel #2 (ULSD #2) fuel and HVO fuel in a QSK95 generator set and a QSK95 engineering test cell. This testing aimed to evaluate engine performance and emissions when operating on these fuels.

Cummins has previously tested paraffinic fuels on multiple engines and configurations to support the use of renewable fuels in the field. Examples can be found in the following SAE documents:

- Calibration Optimization of a Heavy-Duty Diesel Engine with GTL Diesel Fuel
- Emissions and Fuel Economy Evaluation from Two Current Technology Heavy-Duty Trucks Operated on HVO and FAME Blends

FUELS TESTED

An evaluation of engine performance and emissions was conducted using ULSD #2 fuel and HVO fuel. Engineering tests were performed with R100 HVO fuel. Field tests were performed with R99 HVO fuel. Details on fuel analysis results can be found below:

	ENGINEERING TEST		FIELD TEST	
FUEL TYPE	ULSD #2	R100 HVO fuel	ULSD #2	R99 HVO fuel
Sulfur (ppm)	12.6	3.5	9.0	0.7
Viscosity (cst)	2.11	3.57	2.24	3.14
API Gravity	38.0	50.6	38.7	48.9

TEST PLAN

Steady state:

1. D2 5 mode test cycle (100%, 75%, 50%, 25%, and 10% load points)

Transient:

1. NFPA110 emergency starts
2. ISO 8528-5 load steps
3. Custom transient load steps (0%-50%, 50%-100%, 100%-50%, 50%-75%, 75%-100%, 100%-75%, 75%-50%, 50%-0%, 0%-100%, 100%-0%)

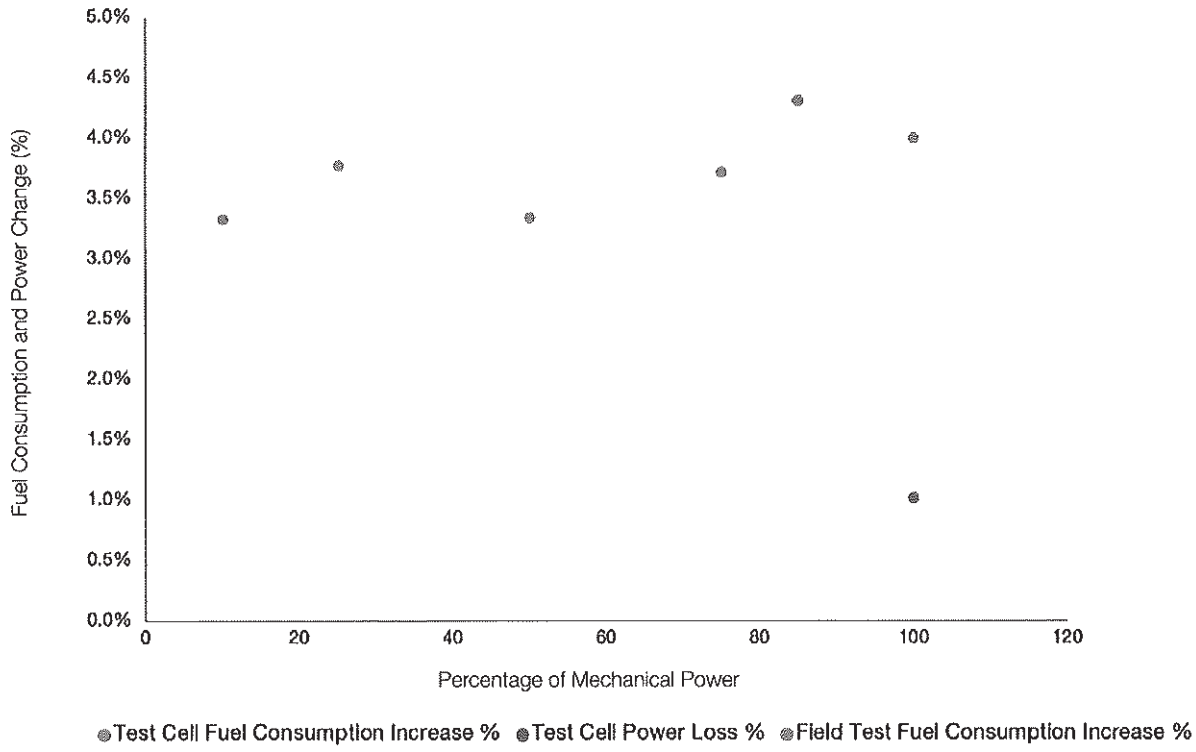
TEST RESULTS

The same mechanical powers (engineering test cell) and electrical powers (field test) were targeted for each of the back-to-back tests.

A 3-5% increase in fuel consumption with HVO fuel, as compared to ULSD #2 fuel, was observed during engineering (lab grade equipment fuel meter) and field (fuel tank measurements) tests (see Figure1).
Due to the lower energy by volume with HVO fuel, a mechanical power loss of 1-2% was observed during engineering testing (see Figure 1). Depending upon the performance variation of the production engine installed in the generator set, this loss might be observed when running at the engine dataplate Standby mechanical power.

- In the generator set application, engine speed/frequency will start to drop before the generator set is no longer able to produce the requested power.
- At power nodes where the available mechanical power (after auxiliary losses and derates) exceeds the generator set electrical power rating, the power loss with HVO fuel may be fully absorbed or reduced.

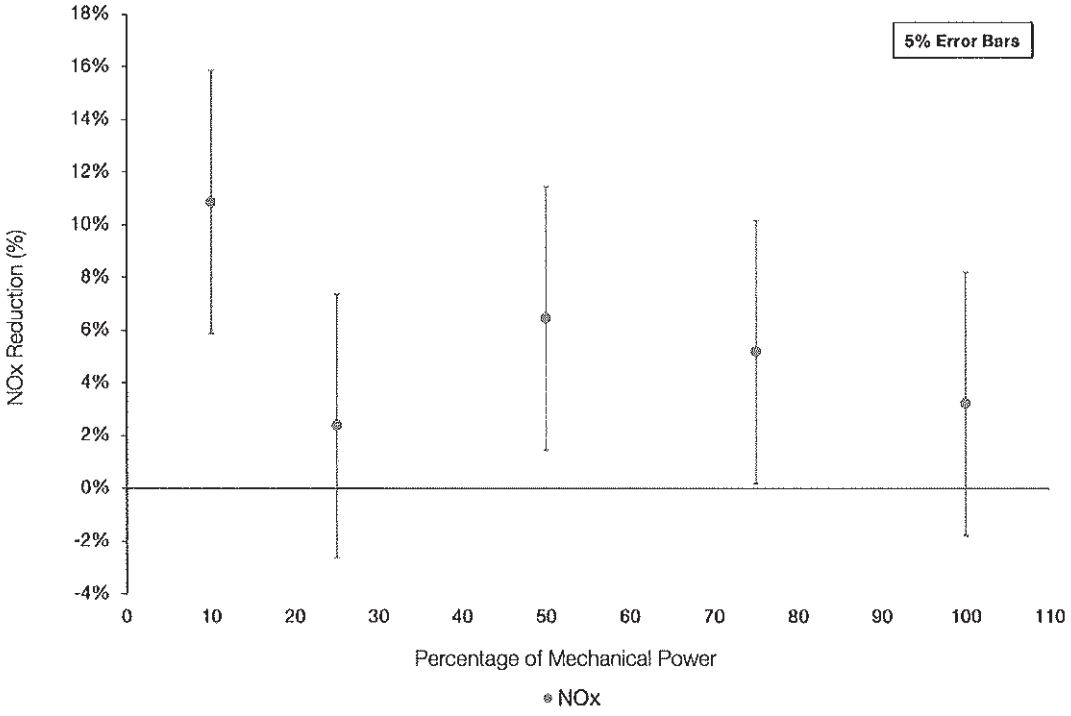
Figure 1: Fuel Consumption and Power Change with HVO Fuel. Observed fuel consumption and power change when operating with HVO fuel compared to ULSD #2 fuel



The engineering and field test data show comparable NOx emissions at the D2 5 mode points (see Figure 2). 5% error bars were added to the NOx measurements to account for measurement variation. The following methods were followed for the NOx measurements:

- Engineering test: ISO 8178-1:2006
- Field test: EPA method 7E

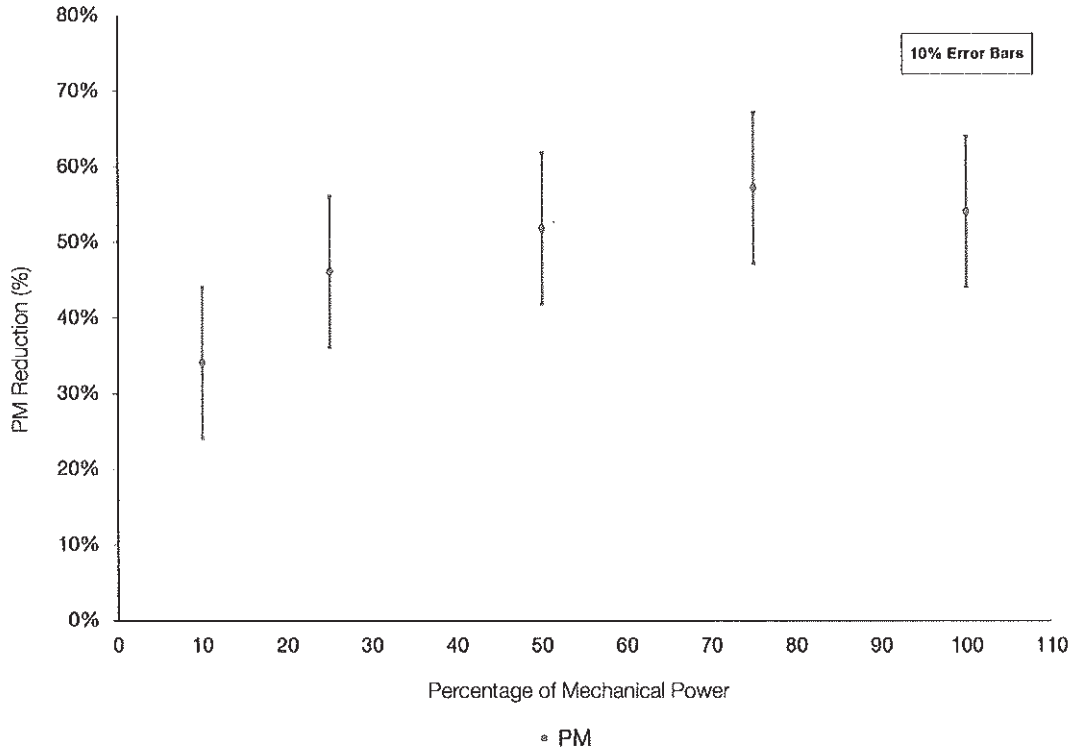
Figure 2: NOx Reduction with HVO Fuel (Engineering Test). Observed NOx when operating with HVO fuel compared to ULSD #2 fuel



Particulate matter emissions were reduced 30-60% with HVO fuel as compared to ULSD #2 at the D2 5 mode points during engineering tests (see Figure 3). 10% error bars were added to the PM measurements to account for measurement variation. A 20-30% reduction in PM using HVO fuel as compared to ULSD #2 was observed in the field at modes 1 and 2 (100% and 75% load). A reduction in PM aligns with the minimal aromatic content of HVO fuel. The sensitivity of particulate matter measurements along with differences in performance parts may result in field measurements outside of this range. The following methods were followed for the particulate matter measurements:

- Engineering testing: ISO 8178-1:2006
- Field test: EPA methods 5 and 202

Figure 3: PM Reduction with HVO Fuel (Engineering Test). Observed PM when operating with HVO fuel compared to ULSD #2 fuel

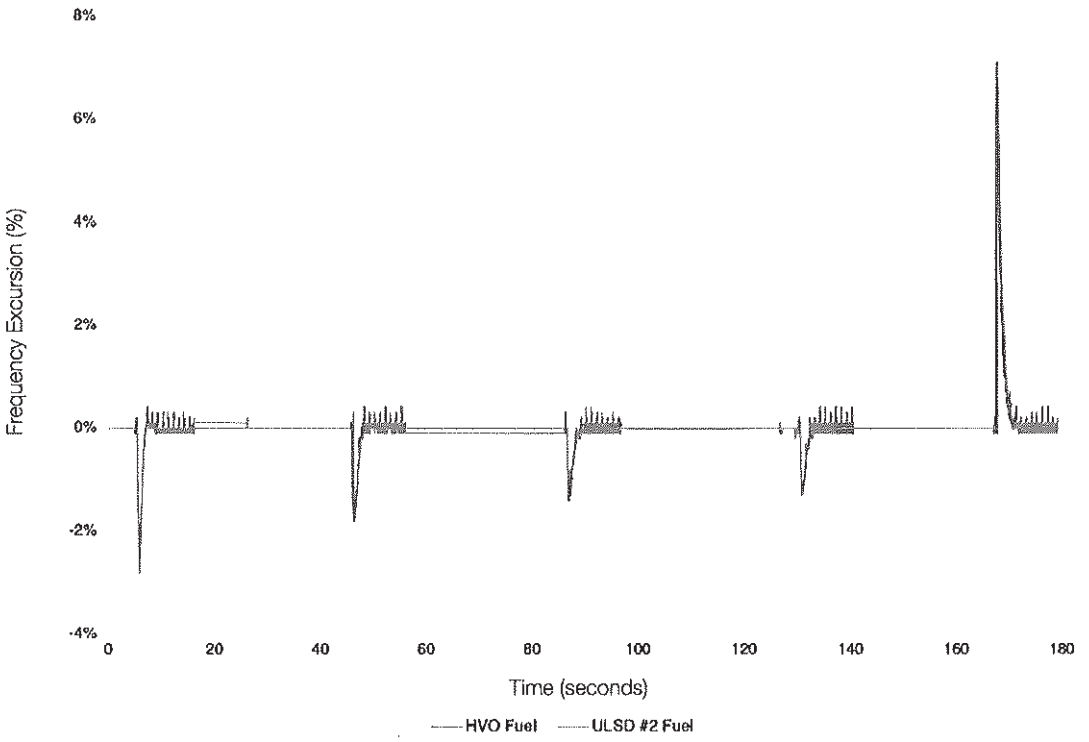


Smoke emissions were measured during engineering testing with an AVL 415 smoke meter. The reduction in smoke emissions with HVO fuel as compared to ULSD #2 followed the same trend as particulate matter emissions.

Transient and emergency testing was performed at 1.0 Power Factor and 480 Volts. Comparable transient performance between HVO and ULSD #2 fuel were observed when running the ISO 8528-5 and part load steps (see Figures 4 and 5). Emergency start time performance also showed comparable performance between the 2 fuels.

Notes for the test results above:
Test results are based on the use of R100 HVO fuel during the engineering test and R99 HVO fuel during the genset field test. Sensitivity to all HVO fuel blends is not known at this time on the QSK95. Steady state emissions were recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rates stabilized. This data is subject to instrumentation and engine-to-engine variability. Field emissions test data is not guaranteed to these levels. Actual field test results may vary due to several factors, including test ambient temperature, site conditions, installation, fuel specification, test procedures, instrumentation, and ambient correction factors. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

Figure 4: QSK95 60Hz 3000 kWe Field Test ISO Load Steps. Observed genset frequency under ISO load steps when operating with HVO fuel compared to ULSD #2 fuel



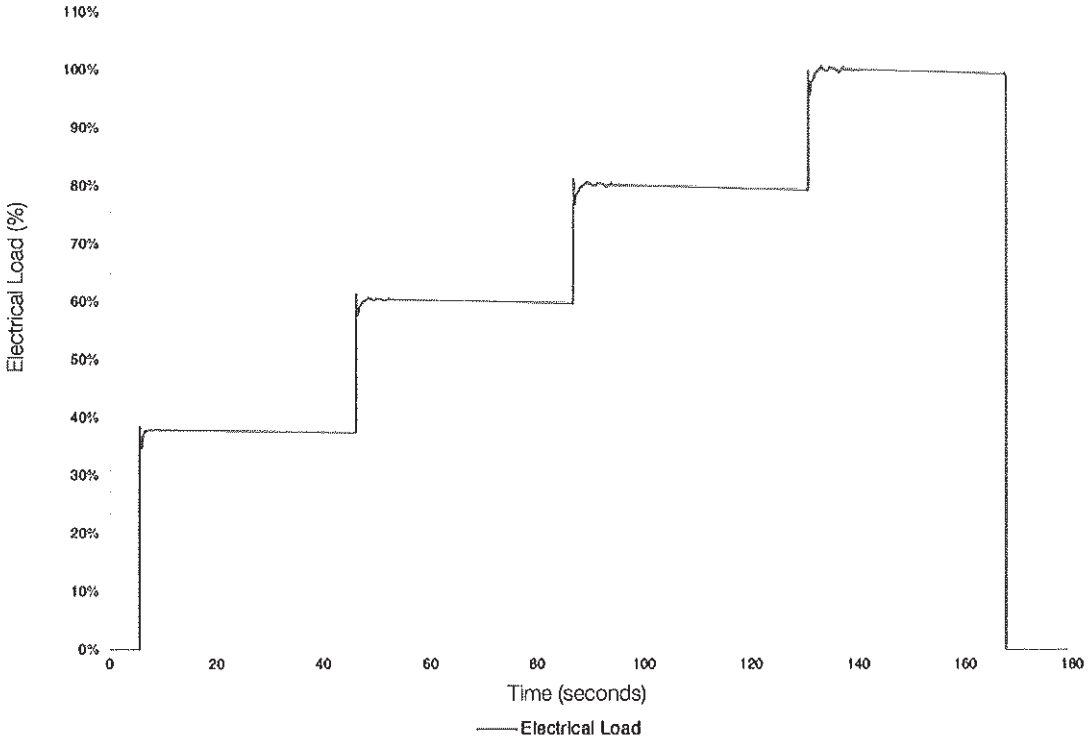
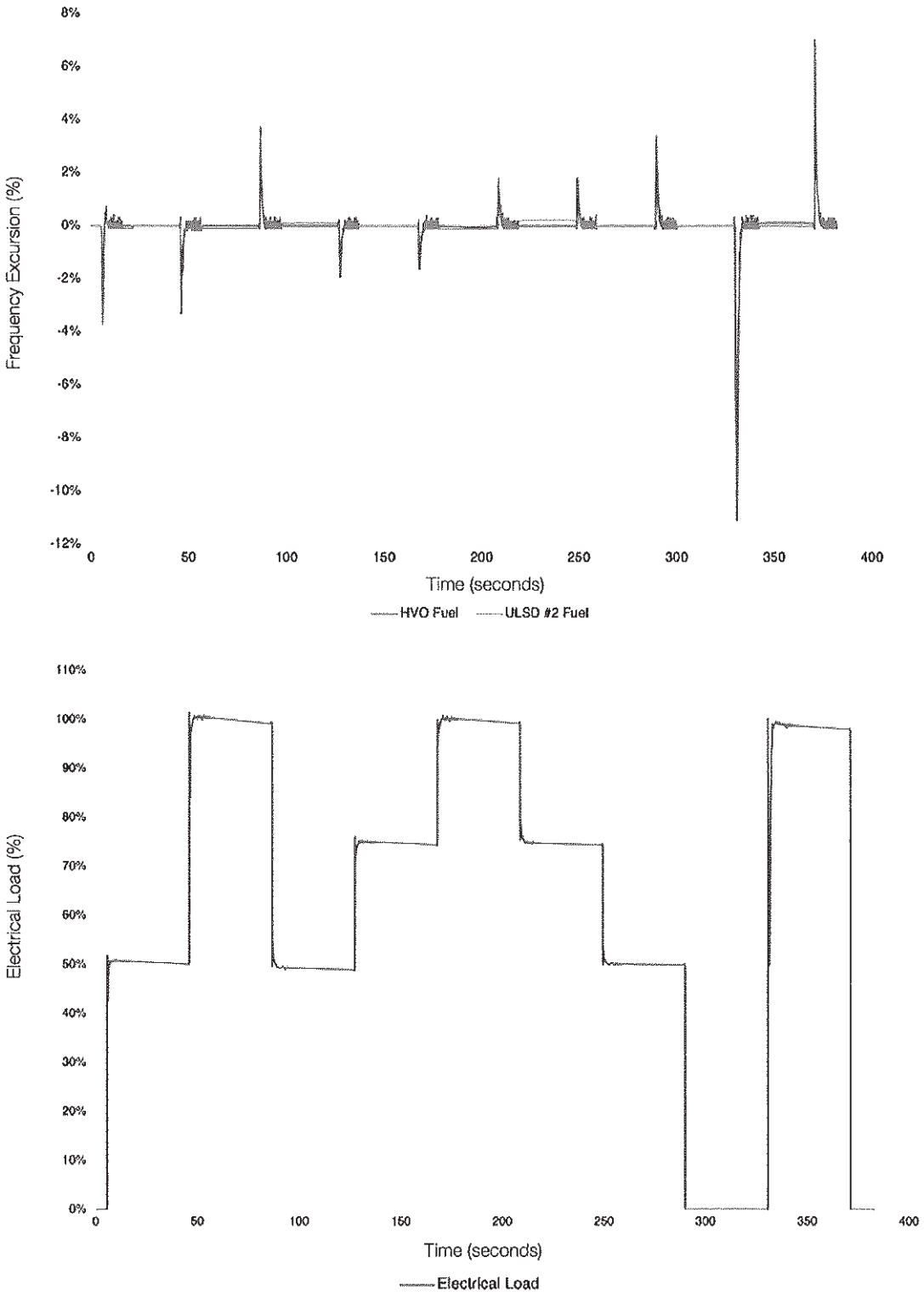


Figure 5: QSK95 60 Hz 3000 kW Frequency Excursion with Custom Load Steps. Observed genset frequency under custom load steps when operating with HVO fuel compared to ULSD #2 fuel



SUMMARY

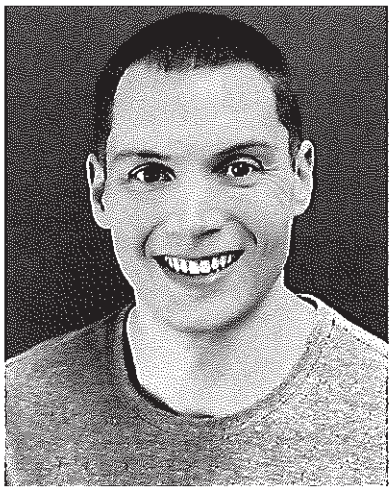
Testing on the QSK95 demonstrates the capability of this product to run on HVO fuel. Cummins requires paraffinic fuels to meet EN15940 per Fluids for Cummins Products Service Manual (5411406), section 1. The differences in emissions and performance should be noted before applying this alternate to diesel fuel in the field:

- Potential for 1-2% lower power with HVO fuel when running at the engine dataplate Standby mechanical power
  - Derated Standby power nodes should not see 1-2% electrical power loss with HVO fuel (ex. 3000 kWe 60 Hz QSK95 genset products with the base engine rating).
- Potential for 3-5% higher fuel consumption by volume with HVO fuel
- Expected comparable NOx emissions with HVO fuel
- Expected lower particulate matter and smoke emissions with HVO fuel
- Expected comparable transient and emergency start time performance with HVO fuel

Cummins has conducted similar testing on other High Horsepower generators and similar performance offsets are expected.

This paper and the data described herein is for informational purposes only to evaluate the potential engine and emissions performance of the QSK95 operating on HVO fuel. Owners/operators may need to conduct testing and obtain approval from state, local, or federal permitting authorities prior to use of HVO fuel in the field. Accordingly, High Horsepower generator set owners/operators should consult with regulatory authorities as appropriate.

ABOUT THE AUTHOR



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Nicholas Hawes has been supporting the development of global High Horsepower generator set engine ratings since 2013 with a focus on performance and emissions optimization. He provides on-site and remote support for generator set performance and emissions throughout the product lifecycle. Nick has worked on several global projects to enable site-specific performance capability and emissions compliance. Nick received a Bachelor of Science degree in Mechanical Engineering Technology from Indiana University-Purdue University Indianapolis.

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