STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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BOARD ORDER

Nordic Aquafarms Inc. **Waldo County** **Belfast, Maine** **A-1146-71-A-N**	**BOARD ORDER** **Air Emission License**

BOARD ORDER

After review of the air emission license application of Nordic Aquafarms Inc. (Nordic or applicant), along with the supportive data, party comments, public comments, hearing materials, and other related materials on file in the Bureau of Air Quality (BAQ), pursuant to 38 Maine Revised Statutes (M.R.S.) §§ 344 and 590, the Maine Board of Environmental Protection (Board) finds the following facts:

I. REGISTRATION

A. Introduction

Nordic has applied for an air emission license for the operation of emission sources (equipment) associated with its land-based salmon aquaculture farm.

The equipment addressed in this license will be located at 285 Northport Avenue, Belfast, Maine.

B. Title, Right, or Interest

Pursuant to Department of Environmental Protection (Department) rules, Ch. 2 § 11(D), prior to acceptance of an application, the applicant must demonstrate to the Department's satisfaction sufficient title, right or interest (TRI) in all of the property that is proposed for development or use. An applicant must maintain sufficient TRI throughout the entire application processing period. Evidence of TRI may include deeds, easements, option agreements, and any other such evidence the Department deems acceptable to demonstrate sufficient TRI. When the project requires a submerged lands lease from the State, evidence must be supplied that the lease has been issued or that an application is pending.

Nordic submitted initial evidence of TRI in its October 19, 2018 MEPDES/WDL application, including purchase and sale agreements for easements and relevant parcels as well as evidence of a pending submerged lands lease application before the Bureau of Parks and Lands. The Department determined that this demonstrated sufficient TRI and accepted the application on November 9, 2018. Individuals and entities who later became intervenors to this proceeding submitted evidence challenging the sufficiency of TRI. In response to these filings, the Department requested additional information in a January 22, 2019, letter from Brian Kavanah. Specifically, the letter requested confirmation that an easement option providing waterfront access included intertidal rights,

specific locations of intake and outfall pipes, identification of any implicated property boundaries in the intertidal area, and evidence of sufficient rights to cross Route 1. The applicant proposed consolidating the existing application with Site Location of Development Act, Natural Resources Protection Act, and Air Emissions applications it planned to submit and petitioned for Board assumption of jurisdiction to review all of the applications. Intervenors again commented, submitting new challenges to the sufficiency of the evidence, including arguments concerning the ownership of the intertidal area and allegations that Nordic was withholding evidence that would undermine its claim of TRI.

On May 17, 2019, Nordic submitted consolidated applications that contained additional evidence supportive of a demonstration of sufficient TRI for all four applications, including responses to the Department's January 22, 2019 letter. In a May 29, 2019 letter from Deputy Commissioner Melanie Loyzim, the Department requested "all information illustrating NAF's TRI that is in NAF's possession or control" including information the applicant had referenced but did not provide in prior submittals. Nordic provided a response to the Department on June 10, 2019. Intervenors submitted additional information regarding TRI on June 12, 2019. After considering all information received, the Department accepted the consolidated applications as complete for processing on June 13, 2019.

Pursuant to Chapter 2, the Department may return an application after it has been accepted as complete for processing if the Department determines that the applicant did not have, or no longer has, sufficient TRI. Invoking this provision, intervenors have requested multiple times that the Department, and then the Board, return the application for lack of TRI. The Department initially addressed these requests in its June 13, 2019 letter accepting the applications, and the Board denied subsequent similar requests throughout the proceeding, including: in the 2nd Procedural Order (responding to July 12, 2019 motion), in the 5th Procedural Order (responding to a filing entitled "Notice of NAF's Lack of [TRI]" based on a remand in a Bureau of Public Lands proceeding), in the 9th Procedural Order (following a request to return the applications based on statements made in an oral argument in related quiet title proceedings), in the 20th Procedural Order (following a request that the applications be returned based on the Maine Supreme Court decision in *Tomasino v. Town of Casco,* 20 ME 96), in a vote following oral argument at an April 16th Board meeting (in response to February 14 & 18, 2020 motions to return the applications), and in a letter from the Presiding Officer dated August 27, 2020 (responding to the August 16, 2020 "Renewed Motion to Stay the Board's Proceedings or Dismiss Nordic's Applications"). An appeal of the Board's April 16, 2020 decision was filed in Waldo County Superior Court and subsequently dismissed by the Court on July 14, 2020.

In its June 13, 2019 acceptance letter, the Department addressed and interpreted its TRI requirements as follows:

> A determination that an applicant has demonstrated TRI sufficient for an application to be processed requires a showing of a legally cognizable expectation of having the power to use the site in the ways that would be authorized by the

permits being sought. The purpose of this requirement is to allow the Department to avoid wasting its finite resources reviewing applications for projects that can never be built. If the applicant is unable to show a sufficient property interest in the site proposed for the project, pursuant to the TRI threshold requirement in Chapter 2 §11(D), the Department can return the application at the outset without devoting time and resources to its processing. In any TRI analysis under Chapter 2, the Department may look beyond an applicant's initial submissions and may request additional information and consider submissions of interested persons as necessary to judge whether adequate credible evidence has been submitted by the applicant and a sufficient showing of TRI has been made to warrant expending Department resources to process the application. The TRI provision cannot, however, be interpreted as compelling the Department to perform an exacting legal analysis of competing ownership claims to determine the ultimate ownership of the property. That ultimate conclusion can only be made by a court. Moreover, the Department rejects any such interpretation as directly counter to the purpose of the TRI provision and cannot afford to allow its permitting proceedings to be transformed into the equivalent of an administrative agency quiet title action. So long as the applicant is able to make a showing of TRI in the subject property that is sufficient to justify the processing of the application, the Department will generally consider this threshold requirement to be satisfied and move to evaluate the merits of the application.

With respect to the intertidal portion of the property proposed for use, the Department finds that the deeds and other submissions, including NAF's option to purchase an easement over the Eckrote property and the succession of deeds in the Eckrote chain of title, when considered in the context of the common law presumption of conveyance of the intertidal area along with an upland conveyance, constitute a sufficient showing of TRI for the Department to process and take action on the pending applications.

The Intervenors raised the issue of whether the Purchase and Sale Agreement between Janet and Richard Eckrote and Nordic applied to the intertidal zone. The Board examined the evidence pertaining to the Purchase and Sale Agreement and finds that the initial Purchase and Sale Agreement, dated August 6, 2018, together with the March 3, 2019 letter from Ed Cotter of Nordic with an acknowledgement signed by Janet and Richard Eckrote extending the deadline for the closing and clarifying the intent of the parties to the easement as to its scope and location are a sufficient demonstration of the scope of the easement agreement between the Eckrotes and Nordic for the purposes of processing the permit applications. The Board finds that the evidence reflects no dispute between the parties to the easement as to its scope or location.

The Board continues to concur with the Department's interpretation of Chapter 2's TRI provisions and its analysis with respect to the intertidal portion of the property proposed for use as set forth in the June 13, 2019 acceptance letter. As explained in the Department's acceptance letter, this conclusion is not an adjudication of property rights and does not

grant legal ownership or right to use land. That determination can only be made by a court. The Board has reviewed the evidence in the record and has again considered the arguments raised regarding TRI pursuant to the Department's Chapter 2 and its TRI provisions. Pursuant to the Board's interpretation of these TRI provisions, the Board finds that the applicant has made a sufficient showing of TRI to develop the property as proposed for the applications to be processed and decided. As the Department found in its June 13, 2019 acceptance letter, the deeds and other submissions, including Nordic's options to purchase, and the analysis of the chain of title remain unchanged and remain a sufficient showing for the Board to act on the applications.

C. Emission Equipment

The following equipment is addressed in this Air Emission License:

Stationary Engines

Equipment	Max. Input Capacity (MMBtu/hr)	Rated Output Capacity (kW)	Fuel Type, % sulfur	Firing Rate (gal/hr)	Date of Manuf.	Date of Install.	Stack #
Generators #1 - 8	19.91	2050	Distillate Fuel, 0.0015%	142.2	2020, or later	TBD*	Individual

* To be determined

In addition to the stationary engines described above, Nordic may engage in "insignificant activities," as defined in the Department's *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100, which are categorically exempt from inclusion in a Chapter 115 license. A complete listing of insignificant activities can be found in Appendix B of *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115 (Appendix B). These insignificant activities include, but are not limited to:

- The operation of stationary engines smaller than 0.5 MMBtu/hr. Although these engines are considered insignificant activities pursuant to Chapter 115 and are not required to be included in this license, they are still subject to applicable State and Federal regulations. More information regarding requirements for small stationary engines is available on the Department's website at the following link: www.maine.gov/dep/air/publications/docs/SmallRICEGuidance.pdf.

- The operation of portable engines used for maintenance or emergency-only purposes. Although these portable engines are insignificant activities pursuant to Chapter 115 and are not required to be included in this license, they are still subject to applicable State and Federal regulations.

Fuel Storage Tanks

The application for an air emission license listed eight generators as the only licensable sources of air emissions, a maximum of seven of which are to run concurrently. The applicant plans to use underground storage tanks to store and supply fuel to the generators. These fuel storage tanks are not subject to the air emission licensing requirements of Chapter 115, Appendix B.

D. Definitions

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

Portable or Non-Road Engine means an internal combustion engine which is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. This definition does NOT include engines which remain or will remain at a location (excluding storage locations) for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A seasonal source is a source that remains in a single location for two years or more and which operates for fewer than 12 months in a calendar year. If an engine operates at a seasonal source for one entire season, the engine does not meet the criteria of a non-road (portable) engine and is subject to applicable stationary engine requirements. A location is any single site at a building, structure, facility, or installation. Any engine that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.

Particulate Matter (PM) is any airborne, finely divided solid or liquid material with an aerodynamic diameter smaller than 100 micrometers as measured by applicable reference methods or an equivalent or alternative method specified in 40 Code of Federal Regulations (C.F.R.) Part 51.

PM_{10} means particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers as measured by a reference method based on 40 C.F.R. Part 50, Appendix J and designated in accordance with 40 C.F.R. Part 53. PM_{10} emissions include gaseous emissions from a source or activity which condense to form particulate matter at ambient temperatures.

PM$_{2.5}$ means particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers as measured by the reference method based on 40 C.F.R. Part 50, Appendix L and designated in accordance with 40 C.F.R. Part 53. $PM_{2.5}$ emissions include gaseous emissions from a source or activity which condense to form particulate matter at ambient temperatures.

E. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date this license was issued.

A new source is considered a major or minor source based on whether total licensed annual emissions exceed the "Significant Emissions" levels as defined in 06-096 C.M.R. ch. 100.

Pollutant	Total Licensed Annual Emissions (TPY)	Significant Emission Levels
PM	0.6	100
PM_{10}	1.0	100
$PM_{2.5}$	1.0	100
SO_2	0.1	100
NO_x	13.3	100
CO	50.0	100
VOC	2.9	50

The Department has determined Nordic's facility is a minor source, and the application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115 (Chapter 115).

F. Timeline of Proceedings

Nordic applied for a new minor source air emission license pursuant to Chapter 115 for air emission sources associated with a proposed land-based, salmon aquaculture facility in Belfast. Nordic submitted an application in electronic format to the Department on May 17, 2019, and the Department received an original signed form, completing the application package, on June 4, 2019. The Department accepted the application as complete for processing on June 13, 2019.

On June 20, 2019, the Board assumed jurisdiction over the application pursuant to 38 M.R.S. § 341-D(2).

Notice of opportunity to petition to intervene in the Board's proceeding was published on June 27, 2019, and was also mailed to the applicant, government officials, and interested

persons in accordance with the Maine Administrative Procedure Act, 5 M.R.S. § 9051-A(l) and *Rules Governing the Conduct of Licensing Hearings*, 06-096 C.M.R. ch. 3, § 12(A). At its meeting on August 15, 2019, the Board granted certain parties intervenor status.[1] Intervenors subsequently submitted lists of topics that they requested be addressed at the Board hearing.

Topics to be addressed at a public hearing were identified in the Board's Third Procedural Order dated November 1, 2019. This original Board list of hearing topics did not include the air emission license application. The deadline for submitting written direct testimony prior to the public hearing was December 13, 2019, and the deadline for submission of rebuttal testimony was January 17, 2020.

During a pre-hearing conference on November 7, 2019, the Board heard oral arguments from the applicant and intervenors about adding the issue of air quality as a public hearing topic. Intervenors made this request due to concerns over potential impacts of air emissions from the proposed facility and associated construction activities that had been raised by an intervenor's claim that emissions from the project would cause ambient pollutant concentrations greater than the national ambient air quality standards (NAAQS). Department staff could not confirm the validity of the intervenor's claim, as the modeling was not provided for Department review. Because the proposed project emissions did not exceed thresholds for mandatory modeling under Chapter 115, the Department had not previously performed modeling for this project, nor had it required the applicant to perform modeling as part of the air emission license application. After hearing oral arguments and consulting with Department staff, the Board voted to add the air emission license application as a public hearing topic, limiting the scope of the air emissions hearing topic to licensing criteria set forth in Chapter 115.

On November 8, 2019, Department staff requested the applicant provide equipment specifications and site-specific inputs for the Department to conduct modeling. Upon receipt of the requested information, Department staff conducted ambient air dispersion modeling for the project in accordance with all applicable BAQ and the United States Environmental Protection Agency (EPA) requirements. The results from the Department's modeling were entered into the record on December 19, 2019.

The deadline for submittal of direct testimony relating to the air emission license application was January 17, 2020. Rebuttal testimony pertaining to pre-filed direct testimony on the air emission license application was set to be heard orally at the public hearing.

[1] These parties were: Maine Lobstering Union (IMLU), Wayne Canning, and David Black; Upstream Watch; Jeffrey R. Mabee and Judith B. Grace; Eleanor Daniels and Donna Broderick; Northport Village Corporation; The Fish Are Okay; Lawrence Reichard; Gulf of Maine Research Institute (GMRI); and University of New England (UNE).

For all non-hearing issues, written submissions from the applicant, intervenors, and the public were accepted for consideration by the Board until the close of the record on February 18, 2020.

The public hearing on all Nordic applications pending before the Board was held February 11-14, 2020, at the Hutchinson Center in Belfast. An evening session, held at the same venue on February 11, 2020, provided opportunity for members of the public to testify.

During the public hearing, specific information relating to building profiles and fence lines for the project was presented by the applicant that conflicted with information the Department had earlier received from the applicant and used as modeling inputs. Department staff therefore requested that the Board keep the hearing record open so that Department staff could perform additional modeling using updated information. After the public hearing, the Board closed the record on February 18, 2020, on all but four specific topics, one of which was ambient air dispersion modeling. Department staff performed a second modeling analysis using updated information and submitted results into the record on March 13, 2020. Parties were subsequently provided opportunity to submit comments on the updated modeling.

On May 20, 2020, the Board held a deliberative session with Department staff to review project applications and discuss evidence in the record.

On July 17, 2020, the Department posted its initial Staff Recommendation/Draft Board Order for public comment. The public comment period closed on August 17, 2020. A number of issues raised by parties throughout these licensing proceedings are addressed below. The Board's response to additional issues raised during the public comment period can be found in the attached Response to Comments document, Addendum A to this Order.

G. Analysis of Evidence and Issues Raised by Parties

The relevant statutory and regulatory criteria for review of the Nordic air emission license application are *Protection and Improvement of Air*, 38 M.R.S. §§ 581-610-D, and Department regulations adopted pursuant to the above laws, including Chapter 115.

In addition to information in the air emission license application submitted by Nordic, the Board considered the following issues, among others, raised by Intervenors and members of the public during the processing of the application. (See attached Response to Comments document.)

1. Ambient Air Dispersion Modeling

In pre-filed testimony, in person at the hearing, and in other submissions, Upstream Watch asserted that emissions from alternative operating scenarios for the generators

(e.g., startup/shutdown events), emissions from mobile sources (exhaust from construction equipment), and emissions from fugitive sources related to the construction, operations, and maintenance of the facility had not been adequately represented in the modeling conducted by Department staff. (See Section III below for a summary of the Department's modeling efforts and results.) The Board finds that the Department staff's model was correctly done, and the inclusion of these other sources was not required or warranted for the following reasons:

- The Department was conservative in its approach to evaluating potential ambient air quality impacts from the proposed facility by modeling all seven generators operating at maximum load for 24 hours per day and 365 days per year. This scenario overpredicts the likely short-term emission rates and long-term ambient air quality impacts from the generators, even after consideration of different operating loads and startup/shutdown events.[2]

- As engine emissions are a function of the amount of fuel fired, engines operating at lower loads would consume less fuel and result in lower emissions.

- Each generator will be installed as an independent unit with its own stack designed for its range of flow conditions. Therefore, the temperatures and flows of one generator's exhaust emissions would not be affected by the emissions, or lack thereof, from another unit.

- The engines will be subject to an annual fuel limit of 900,000 gallons per year, equivalent to combined operating time for all engines of approximately 900 hours per year running at 100% capacity. This equates to the units running for slightly over 10% of the time. In the Department's modeling analysis, however, seven of the eight engines were assumed to be operating at maximum capacity 100% of the time.

- The Department obtained information on exhaust flows and temperatures directly from the proposed engine manufacturer. This data was used in the second ambient air dispersion modeling run by Department staff and the Board finds that it is more accurate than values originally included.

- Mobile sources used during the construction phase are considered intermittent, temporary sources and have not historically been included by the Department in either ambient air quality demonstrations or air emission licenses for minor sources. Consistent with its longstanding practice for minor sources, the Department did not consider mobile sources in the modeling for this project due to their intermittent, temporary operation. These activities are addressed by the Board in its consideration of the application for a Site Location of Development Act (Site Law)

[2] Although eight generators are proposed to be installed at this facility, a maximum of seven units will be allowed to operate concurrently per license conditions.

permit pursuant to the Board's authority set forth in Chapter 375 of the Board's rules, *No Adverse Environmental Effect Standard of Site Location Law*, 06-096 C.M.R. ch. 375.

- The sources that produce fugitive dust (such as roads and stockpiles) are easily identified, but their emissions are not readily quantifiable. Every Chapter 115 air emission license issued addresses fugitive dust in a Standard Condition requiring the licensee to establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust.

2. Noise and Odor

Prior to the public hearing, the intervenors questioned whether noise and odor impacts would be considered during the evaluation of Nordic's Chapter 115 air emission license application. Chapter 115 has no provisions or requirements for regulating noise or odor. While this air emission license does not address either noise or odor, those issues may be considered by the Board in its analysis of the Site Law permit application.

3. Portable Concrete Batch Plant

Intervenors asserted that a portable concrete batch plant may be sited at the proposed project location during construction and its emissions should be addressed in Nordic's air emission license. Such a concrete batch plant would be required to be licensed by the batch plant owner/operator independently of the Nordic license, via either a Chapter 115 air emission license or a Chapter 164 general permit. The licensing of any portable concrete batch plant at Nordic's facility would generally be the responsibility of the batch plant owner/operator and is therefore not required to be a part of Nordic's air emission license application.

5. Wastewater Treatment Plant, Fish Processing, and HVAC System

In its post-hearing brief, Northport Village Corporation argued that in addition to mobile sources and the concrete batch plant, the license should address air emissions from the wastewater treatment plant, the fish processing facility, and the HVAC system for the facility. The Board finds that any potential emissions from those components of Nordic's facility are not required to be addressed in an air emission license.

H. Facility Classification

With the annual fuel use limit on the engines, the Board has reviewed and is licensing the facility as follows:

- As a synthetic minor source of air emissions, because Nordic is subject to license restrictions that keep facility emissions below major source thresholds for criteria pollutants set forth in *Definitions Regulation*, 06-096 C.M.R. ch. 100; and

- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP set forth in 06-096 C.M.R. ch. 100.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Board to represent Best Practical Treatment (BPT) as defined in 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT) as defined in 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Facility Overview

Nordic is requesting approval for a salmon aquaculture facility that is an end-to-end operation, from eggs to market-size salmon, using Recirculating Aquaculture System (RAS) tank technology for maintaining optimal water quality for fish production. When completed, the plant will be designed to produce up to 33,000 tons of salmon per year.

The RAS utilizes mechanically forced cleaning and degassing/aeration to replace carbon dioxide with oxygen that is vital for fish health and growth. The RAS modules' water circulation, cleaning, degassing, and aeration systems require electricity to operate. Plant electrical needs will be mainly supplied by the local utility; however, Nordic proposes to supplement this with up to 14 megawatts (MW) of electrical capacity provided by on-site generators driven by distillate fuel-fired reciprocating engines. Building and process heating for the facility will be provided by electrical heaters.

C. Non-Emergency Generators

Nordic proposes to install eight (8) 2 MW generators, each consisting of an electrical generator driven by an engine that fires distillate fuel. Only seven of the eight generators will run concurrently, with the eighth unit to be available as an installed backup. The generators will be used as emergency back-up during power outages and for peak shaving during times of high energy demand on the grid. Nordic has requested a combined annual fuel limit of 900,000 gallons of distillate fuel per year for the generators to keep their potential to emit regulated pollutants below major source thresholds.

All eight of the generator engines will be certified by the manufacturer as compliant with EPA Tier 4 emission standards for nonroad, compression ignition, internal combustion engines. The proposed engines each have the potential to emit the following criteria air pollutants: particulate matter ($PM/PM_{10}/PM_{2.5}$), sulfur dioxide (SO_2), nitrous oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC).

The air pollution control options available for generator engines of this size include the installation of add-on pollution control devices, the use of clean fuels, and good combustion practices. The technologies listed in the table below have been determined to be potentially available control technologies for emissions from distillate fuel-fired engines.

Pollutant	**Control Technology**
$PM / PM_{10} / PM_{2.5}$	- Add-On Controls (i.e., Particulate Filter) - Combustion Control Technologies
SO_2	- Low Sulfur Fuel
NO_x	- Add-On Controls (i.e., Selective Catalytic Reduction) - Combustion Control Technologies
CO	- Oxidation Catalyst - Combustion Control Technologies
VOC	- Oxidation Catalyst - Combustion Control Technologies

1. BACT Findings

a. Particulate Matter ($PM / PM_{10} / PM_{2.5}$)

PM, PM_{10}, and $PM_{2.5}$ from firing distillate fuel is formed from non-combustible material in the fuel as well as from incomplete combustion. Potential control technologies for $PM / PM_{10} / PM_{2.5}$ emissions from diesel engines include add-on controls and good combustion practices. Nordic has elected to control the particulate matter emissions from each of the engine sets by purchasing engines equipped with Diesel Particulate Filters (DPF). With these filters, particulate matter being carried in the engine's exhaust stream is trapped inside the DPF where it is later oxidized during regeneration, thus preventing its release into the atmosphere. The Board finds that the use of engines having DPF will ensure that particulate emissions will meet the proposed limits of 0.2 lb/hr for PM and 0.3 lb/hr (includes filterable plus condensable) for both PM_{10} and $PM_{2.5}$.

The proposed limits are more stringent than applicable limits found in *Fuel Burning Equipment Particulate Emission Standard*, 06-096 C.M.R. ch. 103. Therefore, the Board finds that BACT for PM, PM_{10}, and $PM_{2.5}$ emissions from the engines is the use of certified Tier 4 engines equipped with DPF, and limitation of emissions to 0.2 lb/hr for PM and 0.3 lb/hr each for PM_{10} and $PM_{2.5}$.

b. Sulfur Dioxide (SO_2)

The quantity of SO_2 generated from distillate fuel combustion is directly proportional to the sulfur content of the fuel being fired. These non-emergency engines will be licensed to only fire ultra-low sulfur distillate fuel having a maximum sulfur content of 0.0015% by weight. Additionally, Nordic has requested an annual fuel limit of 900,000 gallons per year for the engines, which further limits the potential to emit SO_2. Based on these factors, the Board finds that BACT for SO_2 emissions from the engines is the firing of only distillate fuel having a maximum sulfur content of 0.0015% by weight, the proposed annual fuel limit, and an emission limit of 0.03 lb/hr.

c. Nitrous Oxides (NO_x)

NO_x emissions from distillate fuel-fired engines are created through the conversion and release of nitrogen bound in the fuel (fuel NO_x) and/or by the thermal combustion process (thermal NO_x). Fuel NO_x is produced from the reaction of fuel-bound nitrogen compounds with oxygen and typically occurs in negligible quantities when distillate fuel is combusted. Thermal NO_x is the primary mechanism of NO_x formation from distillate fuel combustion and occurs when nitrogen and oxygen molecules in combustion air react together at elevated temperatures and pressures in the combustion chamber.

Technologies for controlling NO_x emissions from distillate fuel-fired engines may include add-on controls such as Selective Catalytic Reduction (SCR), combustion control technologies (such as injection timing retard, air-to-fuel ratio optimization, or cooled intake air), and the combustion of clean fuels. Nordic proposes to use engines equipped with add-on controls to control NO_x emissions and comply with Tier 4 emission standards for 40 C.F.R. Part 60, Subpart IIII engines.

Each of these engines will be fitted with an SCR catalyst, an Ammonia Oxidation Catalyst (AMOX), and a Pump Electronics Tank Unit (PETU). These systems work together by injecting a small amount of Diesel Exhaust Fluid (DEF) into the exhaust stream which chemically reacts with NO_x emissions to convert them into nitrogen and water. Any DEF not consumed in the chemical reaction would pass through the SCR catalyst as ammonia. To prevent this ammonia from being discharged to atmosphere, the exhaust stream from the SCR is directed into the AMOX, which reduces ammonia to nitrogen and water by reacting it with oxygen in the presence of a catalyst. Proper operation of the add-on controls is necessary to ensure that each engine will meet Nordic's proposed NO_x emission limit of 4.2 lb/hr.

The proposed limit of 4.2 lb/hr is more stringent than the limit required of Tier 4 engines of this size. Consequently, the Board finds that BACT for NO_x emissions from the engines is the use of certified Tier 4 engines equipped with SCR, AMOX, PETU, and DEF, the combustion of distillate fuel, and an emission limit of 4.2 lb/hr.

d. Carbon monoxide (CO) and Volatile Organic Compounds (VOC)

CO and VOC emissions from distillate fuel-fired engines are the result of the incomplete combustion of fuels, specifically when there is insufficient residence time or oxygen available to complete oxidation.

Potential control technologies for CO and VOC emissions from these engines include add-on controls such as catalytic oxidation and combustion control technologies (such as fuel injection timing, air-to-fuel ratios, or cooled intake air)

The engines selected by Nordic will be equipped with Diesel Oxidation Catalysts (DOC), which use a chemical process to reduce carbon monoxide and hydrocarbons in the exhaust stream. This technology will limit CO and VOC emissions from the engines to 15.8 and 0.9 lb/hr, respectively.

These limits are compliant with the limits required for emissions of CO and VOC from Tier 4 engines. Therefore, the Board finds that BACT for CO and VOC emissions from the generator engines is the utilization of certified Tier 4 engines equipped with DOC on their exhaust streams, and emission limits of 15.8 lb/hr for CO and 0.9 lb/hr for VOC.

2. Emission Limits

The BACT emission limits for the eight non-emergency generators are based on the following:

PM	- 0.2 lb/hr, based on engine manufacturer's performance data, BACT
PM_{10}	- 0.3 lb/hr, based on engine manufacturer's performance data, BACT
$PM_{2.5}$	- 0.3 lb/hr, based on engine manufacturer's performance data, BACT
SO_2	- 0.03 lb/hr, based on combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight), BACT
NO_x	- 4.2 lb/hr, based on engine manufacturer's performance data, BACT
CO	- 15.8 lb/hr, based on engine manufacturer's performance data, BACT
VOC	- 0.9 lb/hr, based on engine manufacturer's performance data, BACT
Visible Emissions	- 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for each of the engines are the following:

Units	Pollutant	lb/MMBtu
Generators #1 - 8	PM	0.01

Units	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generators #1 - 8	0.2	0.3	0.3	0.03	4.2	15.8	0.9

Visible emissions from each of the engines shall not exceed 20% opacity on a six-minute block average basis.

3. 40 C.F.R. Part 60, Subpart IIII

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII is applicable to the eight non-emergency engines listed above since the units were ordered after July 11, 2005, and manufactured after April 1, 2006. [40 C.F.R. § 60.4200] By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, the units also meet the requirements found in *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

A summary of currently applicable federal 40 C.F.R. Part 60, Subpart IIII requirements is listed below.

a. Manufacturer Certification Requirement
The engines must be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. § 60.4201(a). [40 C.F.R. § 60.4204(b) and § 60.4211(c)]

b. Ultra-Low Sulfur Fuel Requirement
The fuel fired in the engines shall not exceed 15 ppm sulfur (0.0015% sulfur). [40 C.F.R. § 60.4207(b)]

c. Operation and Maintenance Requirements
The engines shall be operated and maintained according to the manufacturer's emission-related written instructions. Nordic may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)(1) and (2)]

d. Owner and Operator Requirements
The eight engines shall achieve the emission standards established in § 60.4204 over the entire life of the engines. [40 C.F.R. § 60.4206]

e. DPF Backpressure Monitoring Requirement

The DPF that are installed on the engines to ensure compliance with the emissions standards in § 60.4204(b) shall be equipped with backpressure monitors to notify the owner or operator when the high backpressure limit of the engine is approached. [40 C.F.R. § 60.4209(b)]

f. Recordkeeping Requirements

(1) Whenever a backpressure monitor for a DPF on one of the engines has alerted the owner or operator that the high backpressure limit of an engine has been approached, the owner or operator shall document the event in a log, either written or electronic, detailing the engine it occurred on and the date and time the alert was activated. [06-096 C.M.R. ch. 115, BACT]

(2) Whenever a backpressure monitor for a DPF on one of the engines has alerted the owner or operator that the high backpressure limit of an engine has been approached, the owner or operator shall keep records documenting any corrective action(s) taken to resolve the backpressure event. [40 C.F.R. § 60.4214(c)]

g. Initial Notification Requirement

No initial notification is required under 40 C.F.R. Part 60, Subpart IIII for non-emergency, stationary, compression ignition, internal combustion engines that are rated at less than 2,237 kW. [40 C.F.R. § 60.4214(a)]

D. Fugitive Emissions

Visible emissions from any fugitive emission source (including stockpiles and roadways) shall not exceed 20% opacity on a five-minute block average basis.

E. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility's annual air license fee. Only licensed equipment is included; emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included. Maximum licensed annual emissions were calculated based on firing a combined total of 900,000 gal/year of distillate fuel in the engines.

This information provides the basis for fee calculation only and should not be construed to represent a comprehensive list of license restrictions or permissions. That information is set forth in the Order section of this license.

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

Units	PM	PM_{10}	SO_2	NO_x	CO	VOC
Generators #1 - 8	0.6	1.0	0.1	13.3	50.0	2.9
Total TPY	0.6	1.0	0.1	13.3	50.0	2.9

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

III. AMBIENT AIR QUALITY ANALYSIS

A. Overview

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with Chapter 115, an ambient air quality impact analysis (modeling) is not required for a proposed minor source if the total licensed annual emissions of any pollutant proposed to be released will not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
$PM_{2.5}$ (direct emissions)	15
PM_{10}	25
SO_2	50
NO_x	50
CO	250

This project does not exceed the pollutant threshold levels that automatically trigger modeling requirements. However, the Department opted to perform modeling in response to significant public concerns regarding the project's potential impact on air quality within local communities. The Department first completed a refined modeling analysis of the proposed project's air emissions in December of 2019, the results of which indicate that no ambient air quality standards would be exceeded as a result of the facility's operation.

During the proposed project's public hearing, Department staff members noted inconsistencies between some of the modeling inputs and parameters that were used in the December 2019 analysis and some of the specific testimony that was provided by the applicant's witnesses during examination. Once the inconsistencies in information were clarified through testimony, the Department requested that the Board allow a second round of dispersion modeling to be performed using the updated and corrected modeling inputs

and parameters, and that the hearing record be kept open until the second analysis could be completed and the parties had had the opportunity to respond. Parties were subsequently provided opportunity to submit comments on the updated modeling. Although these intervenor comments reiterated concerns that dispersion modeling did not include all emission sources or operating scenarios, the comments provided no new information to support changes to the underlying premises or conclusions of the Department's analysis.

The Board finds that the results of the second analysis conducted by Department staff showed that emissions from Nordic will not cause or contribute to violations of NAAQS for SO_2, PM_{10}, $PM_{2.5}$, or NO_2.

Since Nordic has been determined to be a new minor source, an assessment of Class I Air Quality Related Values (AQRVs) was not required.

B. Model Inputs

The AERMOD[3] dispersion model was used to address NAAQS and increment impacts in all areas. The modeling analysis accounted for the potential of building wake and cavity effects on emissions from all modeled stacks that are below their calculated formula good engineering practice (GEP) stack heights.

Modeling was performed in accordance with all applicable requirements of the BAQ and the EPA. The most recent regulatory version of the AERMOD model and its associated processors were used to conduct the analyses.

A valid five-year hourly meteorological database was used in the modeling analysis. The monitored parameters and their associated heights, as found in Table III-1, were collected at the Verso Bucksport meteorological multi-level monitoring site during the five-year period from January 1, 1988 to December 31, 1992.

TABLE III-1: Meteorological Parameters and Collection Heights

Parameter	Sensor Heights
Wind Speed	15 & 100 meters
Wind Direction	15 & 100 meters
Standard Deviation of Horizontal Wind Direction (Sigma Θ)	15 & 100 meters
Standard Deviation of Vertical Wind Direction (Sigma W)	15 & 100 meters
Temperature	15 & 100 meters

[3] In 1991, the American Meteorological Society (AMS) and the EPA collaborated to design improved regulatory dispersion models. A working group of AMS and EPA scientists (**A**MS/**E**PA **R**egulatory **M**odel **I**mprovement **C**ommittee, **AERMIC**) created the **AER**MIC **Mod**el, or AERMOD modeling system. This system consists of two pre-processors - a meteorological pre-processor (AERMET) and a terrain pre-processor (AERMAP), and the dispersion model (AERMOD).

Each year of Verso Bucksport meteorological data met the 90% data recovery requirement, both singularly and jointly.

Surface data collected at the Bangor National Weather Service (NWS) site were substituted for any missing data in the Verso Bucksport surface dataset. All other missing data were interpolated or coded as missing, per EPA guidance. In addition, hourly Bangor NWS data from the same time period were also used to supplement the primary surface dataset for the required variables that were not explicitly collected at the Verso Bucksport meteorological monitoring site.

The surface dataset was combined with concurrent hourly cloud cover and upper-air data obtained from the Portland NWS. Missing cloud cover and/or upper-air data values were interpolated or coded as missing, per EPA guidance.

Both the surface and upper-air meteorological data were concurrently processed using the AERMET meteorological pre-processor.

AERMET also requires that site-specific surface characteristics surrounding the meteorological and application sites be evaluated. Accordingly, the site surface characteristics values for albedo (r), surface roughness (z_o) and Bowen Ratio (B_o) were calculated using EPA's AERSURFACE program for each of the 12 30-degree sectors.

Point-source parameters, used in the modeling for Nordic, are listed in Table III-2.

TABLE III-2: Nordic Point Source Stack Parameters

Stack	Stack Base Elevation (m)	Stack Height (m)	GEP Stack Height (m)	Stack Diameter (m)	UTM Easting NAD83 (m)	UTM Northing NAD83 (m)
CURRENT/PROPOSED						
• Engine Stack #1	18.28	20.57	34.29	0.41	500542	4915990
• Engine Stack #2	18.28	20.57	34.29	0.41	500541	4915990
• Engine Stack #3	18.28	20.57	34.29	0.41	500545	4915990
• Engine Stack #4	18.28	20.57	34.29	0.41	500545	4915991
• Engine Stack #5	18.28	20.57	34.29	0.41	500548	4915992
• Engine Stack #6	18.28	20.57	34.29	0.41	500548	4915993
• Engine Stack #7	18.28	20.57	34.29	0.41	500551	4915993
• Engine Stack #8	18.28	20.57	34.29	0.41	500551	4915994
2012 BASELINE ($PM_{2.5}$ INCREMENT)						
• Nordic did not exist during the 2012 baseline year, no $PM_{2.5}$ credits to be taken.						
1987 BASELINE (NO_2 INCREMENT)						
• Nordic did not exist during the 1987 baseline year, no NO_2 credits to be taken.						
1977 BASELINE (SO_2/PM_{10} INCREMENT)						
• Nordic did not exist during the 1977 baseline year, no SO_2/PM_{10} credits to be taken.						

Nordic emission and stack data for NAAQS and increment modeling are listed in Table III-3. These parameters are based on the maximum (100%) operation of each engine.

For the purpose of determining maximum predicted impacts, the following assumptions were used:

- NO_x emissions were assumed to convert to NO_2 using EPA's Tier II Ambient Ratio Method (ARM2) minimum and maximum ratios of 0.5 and 0.9, respectively; and
- All particulate emissions were conservatively assumed to convert to PM_{10} and $PM_{2.5}$.

TABLE III-3: Nordic Stack Emission Parameters

Stack	Averaging Periods	SO_2 (g/s)	PM_{10}/ $PM_{2.5}$ (g/s)	NO_x (g/s)	CO (g/s)	Stack Temp (K)	Stack Velocity (m/s)
MAXIMUM LICENSE ALLOWED							
• Engine Stack #1	All	0.004	0.038	0.530	2.030	752.04	60.64
• Engine Stack #2	All	0.004	0.038	0.530	2.030	752.04	60.64
• Engine Stack #3	All	0.004	0.038	0.530	2.030	752.04	60.64
• Engine Stack #4	All	0.004	0.038	0.530	2.030	752.04	60.64
• Engine Stack #5	All	0.004	0.038	0.530	2.030	752.04	60.64
• Engine Stack #6	All	0.004	0.038	0.530	2.030	752.04	60.64
• Engine Stack #7	All	0.004	0.038	0.530	2.030	752.04	60.64
• Engine Stack #8	All	0.004	0.038	0.530	2.030	752.04	60.64
2012 BASELINE ($PM_{2.5}$ INCREMENT)							
• Nordic did not exist during the 2012 baseline year, no $PM_{2.5}$ credits to be taken.							
1987 BASELINE (NO_2 INCREMENT)							
• Nordic did not exist during the 1987 baseline year, no NO_2 credits to be taken.							
1977 BASELINE (SO_2/PM_{10} INCREMENT)							
• Nordic did not exist during the 1977 baseline year, no SO_2/PM_{10} credits to be taken.							

C. Single Source Modeling Impacts

The AERMOD modeling results for Nordic are shown in Table III-4. Maximum predicted impacts that exceed their respective significance level are indicated in boldface type. No additional NAAQS modeling was required for pollutants that did not exceed their respective significance levels.

TABLE III-4: Maximum AERMOD Significant Impact Results

Pollutant	Averaging Period	Max Impact ($\mu g/m^3$)	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Class II Significance Level ($\mu g/m^3$)
SO_2	1-hour	1.59	500550	4915830	15.55	7.9
	3-hour	1.33	500550	4915830	15.55	25
PM_{10}	24-hour	4.27	500550	4915850	14.24	5
	Annual	0.60	500630	4915850	15.61	1
$PM_{2.5}$	24-hour	**4.27**	500550	4915850	14.24	1.2
	Annual	**0.60**	500630	4915850	15.61	0.2
NO_2	1-hour	**120.62**	500550	4915830	15.55	7.5
	Annual	**7.36**	500630	4915870	15.61	1
CO	1-hour	963.42	500550	4915850	14.24	2,000
	8-hour	**512.53**	500550	4915850	14.24	500

D. Combined Source Modeling Impacts

For pollutants that exceeded their respective significance level, as indicated in boldface type in Table III-4, other sources not explicitly included in the modeling analysis must be accounted for by using representative background concentrations.

Background concentrations, listed in Table III-5, are derived from representative rural background data for use in the Midcoast Maine region.

TABLE III-5: Background Concentrations

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)	Monitoring Site, Year(s)
$PM_{2.5}$	24-hour	15	Kennebec County, 2016-2018
	Annual	6	
NO_2	1-hour	39	Presque Isle, 2016/2017
	Annual	4	
CO	8-hour	460	Hancock County, 2018

Department staff examined other nearby sources to determine if any impacts would be significant in or near the facility's significant impact area. Due to the location of the Nordic facility, the extent of its predicted significant impact area, and other nearby source's emissions, Department staff determined that no other sources would be included in combined-source AERMOD modeling analysis.

The maximum AERMOD modeled impacts were added with conservative representative background concentrations to demonstrate compliance with NAAQS, as shown in Table III-6. Because all significant pollutant/averaging period impacts using this method meet NAAQS, no further NAAQS modeling analyses need to be performed.

TABLE III-6: Maximum Combined Source Impacts (μg/m³)

Pollutant	Averaging Period	Max Impact (μg/m³)	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Back-Ground (μg/m³)	Total Impact (μg/m³)	NAAQS (μg/m³)
$PM_{2.5}$	24-hour	4.27	500550	4915850	14.24	15	19.27	35
	Annual	0.60	500630	4915850	15.61	6	6.60	12
NO_2	1-hour	120.62	500550	4915830	15.55	39	159.62	188
	Annual	7.36	500630	4915870	15.61	4	11.36	100
CO	8-hour	512.53	500550	4915850	14.24	460	972.53	10,000

E. Secondary Formation of $PM_{2.5}$

Since potential emissions of SO_2 and NO_2 for Nordic are each less than 40 tpy, per EPA guidance, evaluation of secondary impacts due to $PM_{2.5}$ precursor emissions is not required.

F. Class II Increment

AERMOD was also used to predict maximum Class II increment impacts. Results of the Class II increment analysis are shown in Tables III-7. All modeled maximum increment impacts were below increment standards. Because all predicted increment impacts met increment standards, no additional Class II SO_2, PM_{10}, $PM_{2.5}$, or NO_2 increment modeling needed to be performed.

TABLE III-7: Class II Increment Consumption

Pollutant	Averaging Period	Max Impact (μg/m³)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Class II Increment (μg/m³)
SO_2	3-hour	1.33	500550	4915830	15.55	512
	24-hour	1.20	500570	4915810	14.71	91
	Annual	0.06	500630	4915870	15.61	20
PM_{10}	24-hour	4.27	500550	4915850	14.24	30
	Annual	0.60	500630	4915870	15.61	17
$PM_{2.5}$	24-hour	8.46	500550	4915850	14.24	9
	Annual	0.60	500630	4915870	15.61	4
NO_2	Annual	7.36	500630	4915870	15.61	25

Federal regulations and 06-096 C.M.R. ch. 140 require that any new major source or major source undergoing a major modification provide additional analyses of impacts that would occur as a direct result of the general, commercial, residential, industrial, and mobile source growth associated with the construction and operation of that source. Since Nordic has been determined to be a new minor source, no growth analyses were required.

G. Summary

In summary, the Board finds that the Department staff's modeling demonstrates that the Nordic facility as licensed herein will not cause or contribute to a violation of any SO_2, PM_{10}, $PM_{2.5}$, NO_2, or CO ambient air quality standards or to Class II increments for SO_2, PM_{10}, $PM_{2.5}$, or NO_2.

ORDER

Based on the above Findings and subject to conditions listed below, the Board concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Board hereby approves the air emission application of Nordic Aquafarms, Inc. and grants Air Emission License A-1146-71-A-N subject to the following conditions.

Severability. The invalidity or unenforceability of any provision of this License or part thereof shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S. § 347-C).

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 C.M.R. ch. 115]

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 C.M.R. ch. 115]

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 C.M.R. ch. 115]

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115]

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 115]

(7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 C.M.R. ch. 115]

(8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 C.M.R. ch. 115]

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license.
[06-096 C.M.R. ch. 115]

(10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license.
[06-096 C.M.R. ch. 115]

(11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department, the licensee shall:

A. Perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:

1. Within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or

2. Pursuant to any other requirement of this license to perform stack testing.

B. Install or make provisions to install test ports that meet the criteria of 40 C.F.R. Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

C. Submit a written report to the Department within thirty (30) days from date of test completion. [06-096 C.M.R. ch. 115]

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

A. Within thirty (30) days following receipt of the written test report by the Department, or another alternative timeframe approved by the Department, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 C.F.R. Part 60 or other method approved or required by the Department; and

B. The days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. The licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 C.M.R. ch. 115]

(13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or license requirement. [06-096 C.M.R. ch. 115]

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 C.M.R. ch. 115]

(15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 C.M.R. ch. 115]

(16) The licensee shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S. § 605). [06-096 C.M.R. ch. 115]

SPECIFIC CONDITIONS

(17) **Generators #1 - 8**

A. Fuel

1. Total combined fuel use for Generators #1 - 8 shall not exceed 900,000 gal/yr of distillate fuel, on a 12-month rolling total basis. [06-096 C.M.R. ch. 115, BACT]

2. The facility shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm). [40 C.F.R. § 60.4207(b) and 06-096 C.M.R. ch. 115, BACT]

3. Compliance shall be demonstrated by fuel records showing the quantity, type, and percent sulfur of the fuel delivered. Records demonstrating compliance with the annual fuel use limit shall be kept on both a monthly and 12-month rolling total basis. Fuel sulfur content compliance shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the tank containing the fuel to be fired. [06-096 C.M.R. ch. 115, BACT]

B. Nordic shall not operate more than seven of the eight generator engines simultaneously. [06-096 C.M.R. ch. 115, BACT]

C. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Generators #1 - 8	PM	0.01	06-096 C.M.R. ch. 115, BACT

D. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Units	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generators #1 - 8	0.2	0.3	0.3	0.03	4.2	15.8	0.9

E. Visible Emissions

Visible emissions from each of the generators shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

F. To demonstrate compliance with the licensed emission limits, Nordic shall conduct an initial performance test on the first generator commissioned for service. The testing shall include PM, PM_{10}, $PM_{2.5}$, NO_x, and CO, and shall take place within 90 days of the first commissioned startup or 200 hours of runtime after commissioning, whichever comes later. Results of the testing shall be submitted to the Department within 60 days of the test completion date.

G. The engines shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following: [incorporated under 06-096 C.M.R. ch. 115, BACT]

1. Manufacturer Certification
   The engines shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. § 60.4201(a). [40 C.F.R. § 60.4204(b) and § 60.4211(c)]

2. Ultra-Low Sulfur Fuel
   The fuel fired in the engines shall not exceed 15 ppm sulfur (0.0015% sulfur). Compliance with the fuel sulfur content limit shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the tank containing the fuel to be fired. [40 C.F.R. § 60.4207(b) and 06-096 C.M.R. ch. 115, BACT]

3. Operation and Maintenance Requirements
   The engines shall be operated and maintained according to the manufacturer's emission-related written instructions. Nordic may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)(1) and (2)]

4. Owner and Operator Requirements
   The eight engines shall achieve the emission standards established in § 60.4204 over the entire life of the engines. [40 C.F.R. § 60.4206]

5. DPF Backpressure Monitoring Requirement
   The diesel particulate filters installed on the engines to ensure compliance with the emissions standards in § 60.4204(b) shall be equipped with backpressure monitors to notify the owner or operator when the high backpressure limit of the engine is approached. [40 C.F.R. § 60.4209(b)]

6. Recordkeeping Requirements
   a. Whenever a backpressure monitor for a DPF on one of the engines has alerted the owner or operator that the high backpressure limit of an engine has been approached, the owner or operator shall document the event in a log, either written or electronic, detailing the engine it occurred on and the date and time the alert was activated. [06-096 C.M.R. ch. 115, BACT]
   b. Whenever a backpressure monitor for a DPF on one of the engines has alerted the owner or operator that the high backpressure limit of an engine has been approached, the owner or operator shall keep records documenting any corrective action(s) taken to resolve the backpressure event. [40 C.F.R. § 60.4214(c)]

(18) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed 20% opacity on a five-minute block average basis.
[06-096 C.M.R. ch. 115, BACT]

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF , 2020.

BOARD OF ENVIRONMENTAL PROTECTION

BY:_____
ROBERT DUCHESNE, PRESIDING OFFICER

The term of this license shall be ten (10) years from the signature date above.

[Note: If a renewal application, determined as complete by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 M.R.S. § 10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of full application: June 4, 2019
Date of application acceptance: June 13, 2019

This Draft Board Order prepared by Patric J. Sherman, Bureau of Air Quality.

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