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August 25, 2021

VIA COURIER
Brooke Otis, Clerk
Waldo County Superior Court
11 Market Street
Belfast, ME 04915

Re: *Upstream Watch, et al. v. Board of Environmental Protection, et al.*
Docket No. AP-2020-005 (Consolidated with KENSC-AP-2020-49)

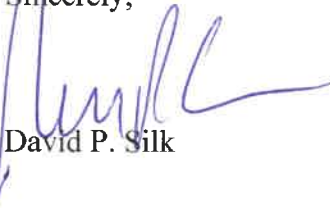
Dear Ms. Otis:

Enclosed for filing in the above-referenced consolidated action, please find Upstream Watch's Rule 80C Brief.

A copy of the enclosed is being served via electronic service pursuant to Rule 5(b) of the Maine Rules of Civil Procedure upon counsel noted below.

Thank you for your assistance.

Sincerely,



David P. Silk

DPS/jvw
Enclosure

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STATE OF MAINE
WALDO, ss.

SUPERIOR COURT
CIVIL ACTION
WALDO DOCKET NO. AP-2020-05
KENNEBEC DOCKET NO. AP-2020-49

JEFFREY MABEE, JUDITH GRACE,)
THE MAINE LOBSTERING UNION,)
WAYNE CANNING, DAVID BLACK,)
AND THE FRIENDS OF THE HARRIET)
L. HARTLEY CONSERVATION AREA,)

Petitioners)

v.)

BOARD OF ENVIRONMENTAL)
PROTECTION,)

Respondent)

**UPSTREAM WATCH'S
RULE 80C BRIEF**

UPSTREAM WATCH,)

Petitioner)

v.)

BOARD OF ENVIRONMENTAL)
PROTECTION,)

Respondent)

INTRODUCTION

Petitioner Upstream Watch (“Upstream”)¹ is appealing three environmental permits issued by the Board of Environmental Protection (the Board or “BEP”) to Nordic Aquafarms, Inc. (“Nordic”), all on November 19, 2020. Upstream is a successful intervenor in Nordic’s permit application processes and has standing to seek review by this Court. Upstream is

¹ Upstream Watch is a Maine not-for-profit corporation with a place of business at 67 Perkins Road in Belfast. Upstream is appealing pursuant to the Maine Administrative Procedure Act (APA), 5 M.R.S. §§ 11001–11007; 38 M.R.S. § 346(1); 06–096 C.M.R. ch. 2; and M.R. Civ. P. 80(C).

appealing the permits because the Board erred when it (1) misapplied the “best practicable treatment” standard in approving Nordic’s water discharge permit and ignored the antidegradation requirement of the Clean Water Act, and (2) mischaracterized Nordic’s proposed emissions as from a “minor source” in issuing an air emissions permit.

The permits issued to Nordic include a permit for its wastewater discharges (the “Water Permit”), Air Emissions License for its generators (the “Air Permit”), and a permit under Maine’s Site Location of Development Act (the “SLODA” permit).² In issuing these permits, the Board failed to comply with the authorizing statutes, Maine Department of Environmental Protection (“DEP”) regulations, and its own procedural regulations. The Board also made numerous findings that are not supported by evidence, and purported, erroneously, to cure the lack of evidence by requiring post-permit studies. Maine statutes only allow the Board to issue a license only if it affirmatively finds the applicant has met each standard. 38 M.R.S. § 414-A (“The department shall issue a license for the discharge of any pollutants only if it finds that...”): Allowing post license studies to show compliance with the standards is not permitted by the licensing statutes.

The court should invalidate these permits under the standards of the Maine Administrative Procedure Act (“APA”), 5 M.R.S. § 11007(4)(C)(1-6), as contrary to law, unsupported by substantial evidence in the record, arbitrary and capricious, and abuses of

² The Board issued the Water Permit, under 38 M.R.S. § 414-A(1)(D)(permit conditions) and 38 M.R.S. §§ 414-A(1)(C) and 464(4)(F) (prevention of water quality degradation); and regulations of Maine’s Department of Environmental Protection (“DEP”), 06-096 C.M.R. chs. 520-525, 579, 581 and 587. DEP’s permits for water discharges are part of the “Maine Pollutant Discharge Elimination System” (“MEPDES”) established to comply with the federal Clean Water Act, 33 U.S.A § 1251, et seq. DEP issued the Air License pursuant to 38 M.R.S. § 590, and DEP’s regulations in 06-096 C.M.R. ch. 115. “SLODA” is 38 M.R.S. §§ 481–489-E. Together with the SLODA permit, the Board also issued a permit under the Natural Resources Protection Act (“NRPA”) 38 M.R.S. §§ 411–424-B. Upstream is not appealing the NRPA permit.

discretion.³

SUMMARY OF THE ARGUMENT

I. The Board’s decisions were fatally flawed.

The Board’s repeated failure to respond to comments and address critical issues resulted in permits based on insufficient evidence, not in compliance with the relevant standards, and with terms and conditions that do not meet Maine’s standards.

The Board’s failures to respond to comments violated DEP’s public participation requirements, including 06-096 C.M.R. ch. 522, § 12, entitled “Response to Comments [see 40 C.F.R. § 124.17]”, which provides:

(a) At the time that any final permit decision is issued, the Department shall issue a response to comments. ... This response shall:

...

(2) Briefly describe and respond to all significant comments on the draft permit raised during the public comment period, or during any hearing.⁴

Chapter 522, Section 6 also specifically requires DEP to issue a fact sheet when the final permit is issued. Public participation is also required in state programs by Section 402(b)(3) of the Clean Water Act and by EPA’s regulation, 40 C.F.R. Part 124.17 (cited in 06-096 C.M.R. ch. 522, § 12), also require states to provide for public participation.

II. The Water Permit should be denied because Nordic’s proposed wastewater treatment system is not the best practicable treatment.

In setting technology-based discharge limits for the Water Permit, the Board abused its

³ The Board’s Decisions and accompanying “Findings and Final Fact Sheets” for each of the permits are documents in the Administrative Record’s Document Index (“DI”), at [DI #0001](#), [#0002](#), and [#0003](#). (The Record’s Document Index shall be cited and referred to herein as “DI”). Copies of the Board’s Decisions on November 19, 2020, and accompanying documents are also available online at DEP’s website <https://www.maine.gov/dep/ftp/projects/nordic/final-signed-orders/> and hyperlinked in this document where available on DEP’s website.

⁴ See also 06-096 C.M.R. ch. 2 and ch. 522. This brief discusses below further failures to respond to comments by the Board and other violations of its own procedural rules.

discretion and violated 38 M.R.S. § 414–A(1)(D), by not considering the zero-discharge treatment technology recommended in Upstream’s expert witnesses’ testimony and comments, and failing to establish that the permit is based on the Best Practicable Treatment.

Section 414-A(1)(D) includes the following:

If no applicable standards exist for a specific activity or discharge, the department must establish limits on a case-by-case basis using best professional judgment, after consultation with the applicant and other interested parties of record. In determining best practicable treatment for each category or class, *the department shall consider the existing state of technology, the effectiveness of the available alternatives for control of the type of discharge, and the economic feasibility of such alternatives.*⁵ (Emphasis added).

Here, the Board did not do what the statute calls for. It did not consult with Upstream , which was an interested party of record and an intervenor, nor does the record show that the Board considered in any way the zero-discharge treatment technology identified by Upstream.⁶ Upstream identified several profitable companies using zero-discharge treatment in existing aquaculture facilities, but the Board said nothing in its Final Order issuing the permits showing that either the Board, or DEP staff, had considered these companies at all.

III. The Board’s water permit decisions were not supported by the record and fail to protect the waters of Belfast and Penobscot Bay.

In addition to technology-based limits, the requirements for the Water Permit also call for: A) stricter limits if required by Maine’s anti-degradation statutes;⁷ and B) compliance with Maine’s Thermal Discharge Standard.⁸ The Board’s Final Order does not meet these

⁵ The Board’s Fact Sheet states that the permit is based on § 414–A(1)(D). [DI #0001](#), pp. 10 & 43. See the full discussion of § 414–A(1)(D) below.

⁶ See [DI #0478](#) 03, Pre-filed Testimony of Upstream Witnesses John A. Krueger and Gary V. Gulezian, p. 13-14, 13 December 2019, 03, and [DI # 0655](#), Hearing Transcript, 14 February 2020, p. 124-136.

⁷ 38 M.R.S. §§ 414–A(1)(C) and 464(4)(F)(4).

⁸ 06-096 C.M.R. ch. 582, § 5.

requirements. The Court should therefore order the Board to deny the permit, and order to Nordic to re-apply if it wishes to obtain the Permit.

IV. The Air Emissions License and the SLODA permits are not supported by the record.

Part IV of the Argument addresses: 1) the Air Emissions License, and 2) the permits under SLODA, as follows:

A. The Air Emissions License

1. The Board misinterpreted 38 M.R.S. § 590, and DEP’s regulations in 06-096 C.M.R. ch. 115, by allowing a voluntary limit on air emissions to qualify Nordic for “minor source” controls; and
2. The Air Emissions License presents the same issue as the Water Permit: the Board did not respond to Upstream’s comments concerning cumulative emissions and violations of air quality standards.

In disregard of Upstream’s comments, the Board failed to apply the requirements in 38 M.R.S. § 590(2)(C), and 06-096 C.M.R. ch. 115, § 4(C)(6), for limits as necessary to prevent excessive air pollution that would be caused by the proposed source “alone or in combination with” other sources. As a result, the Board issued the License based on a record that does not contain sufficient evidence, and does not comply with 38 M.R.S. § 590(2)(C).

B. SLODA: The Board failed to enforce the provision in SLODA, 38 M.R.S. § 484(3), which prohibits permits which would allow “adverse effects” on “air quality” and “water quality.” The record does not support the Board’s findings of no adverse effects on air or water quality.

For the reasons stated in the discussions of the water and air permits, the Board’s findings in issuing the SLODA permit that Nordic’s project would have no adverse effects on air or water quality, were not supported by sufficient evidence in the record of emissions from all sources, were contrary to the statute, and were abuses of discretion.

- V. The court should defer ruling on issues which may be rendered moot or require revised information if the court invalidates the Water Discharge Permit and orders consideration of zero-discharge technology.**

These issues include:

- discharge limits to protect water quality in Belfast Bay;
- modelling of pollutant dispersion in Belfast Bay;
- air emissions from the generators, if power is no longer needed for pumping waste water out into the Bay; and
- the total air pollution from the entire operation.

PROCEDURAL BACKGROUND

I. Nordic's Proposal

In the spring of 2018, Nordic publicly announced its desire to construct a \$500,000,000 land-based salmon farm and processing factory in Belfast. The proposed facility would be primarily on land owned by the Belfast Water District on the west side of U.S. Route 1, in the south part of the City of Belfast, almost on the Northport Town Line. Adjacent land would be leased and/or acquired by Nordic from neighboring property owners.

The proposed development was to be constructed in two phases. Phase 1 would consist of eight buildings, plus the Water/Wastewater Treatment Plant. Phase 2 would consist of five additional buildings. The salmon farm and fish slaughterhouse would require access to the ocean, in particular to Belfast Bay, on the east side of U.S. Route 1, over upland and intertidal land in order to install into the Bay two 30" saltwater intake pipes and one 36" wastewater discharge pipe. Whether Nordic's grantor of an easement over the intertidal has any right title or interest in those land to grant Nordic any easement rights is the is the subject of a quiet title lawsuit pending in the Waldo County Superior Court, *Jeffrey R. Mabee and Judith R. Grace, et al. v. Nordic*

Aquafarms Inc. et al, Maine Superior Court, Waldo County, Docket No. RE-2019-18. The water permit from the award of which this appeal arises requires “sufficient title, right, or interest” (TRI) in all of the property necessary to construct the project. Should the court rule that Mr. and Mrs. Eckrote do not own and never did own the intertidal land between their house lot and the Bay, on that additional ground Upstream Watch will ask this Court to declare the water permit *void ab initio*.

On or about October 19, 2018, Nordic filed with DEP applications for the Water Permit (the combined Maine Discharge Elimination Permit (“MEPDES”)/Maine Waste Discharge License),⁹ On May 17, 2019, Nordic filed applications for a SLODA permit and an NRPA permit. for the proposed land-based salmon aquaculture facility.¹⁰

II. The Board’s administrative proceedings

On June 20, 2019, the Board voted to assume jurisdiction over Nordic’s permit applications. The Board also admitted Upstream Watch, along with other Intervenors, as parties-in-interest to the permitting processes.¹¹

In December, 2019, Upstream submitted pre-filed testimony by its experts, including information on zero-discharge wastewater treatment technology in existing aquaculture facilities and testimony on the pollutant dispersion model results submitted by Nordic. This pre-filed testimony was in advance of a public hearing, which the Board conducted from February 11, 2020 through February 14, 2020, under the Maine APA and DEP’s Procedural Rules. The hearing was followed by briefs of Nordic and Intervenors, including Upstream.

The Board issued a series of Procedural Orders governing the hearing; among these, the

⁹ See footnote 2, *supra*.

¹⁰ See footnote 3, *supra*.

¹¹ Therefore, under 06-096 C.M.R. ch. 3, § 2(J) of the DEP’s rules, Upstream is a successful intervenor in Nordic’s license application process and has standing to seek review by this Court.

Second Procedural Order¹² specified that Intervenors could present witnesses, who would be subject to cross-examination, and would be allowed to cross-examine witnesses presented by Nordic and DEP staff. On November 19, 2020, the Board issued its Final Orders for all four permits. The Final Orders are the final agency action from which this appeal is taken.¹³

STANDARD OF REVIEW

5 M.R.S. § 11007(4) provides as follows for the court's scope of review in this administrative appeal:

The court may:

- A. Affirm the decision of the agency;
- B. Remand the case for further proceedings, findings of fact or conclusions of law or direct the agency to hold such proceedings or take such action as the court deems necessary;
- C. Reverse or modify the decision if the administrative findings, inferences, conclusions or decisions are:
 - (1) In violation of constitutional or statutory provisions;
 - (2) In excess of the statutory authority of the agency;
 - (3) Made upon unlawful procedure;
 - (4) Affected by bias or error of law;
 - (5) Unsupported by substantial evidence on the whole record; or
 - (6) Arbitrary or capricious or characterized by abuse of discretion.

ARGUMENT

I. The Board's decisions were fatally flawed by unlawful procedures, made in excess of its statutory authority, and by a lack of substantial evidence in the record that the Board attempted to remedy by requiring post-permit studies.

- 1. The permits subject to this appeal were based on legally insufficient information, improperly and illegally cutting the public out of the process.**

All of the permits in this appeal were issued without competent evidence in the record to

¹² [DI #0316](#), Second Procedural Order, Board of Environmental Protection, 23 August 2019, p. 6-13.

¹³ The Final Orders, Permits, Revised Final Fact Sheets and Response to Comments are in the Administrative Record at [DI #0001](#), [#0002](#), and [#0003](#).

support them, and without response to numerous significant comments. By acting as it did, the Board abused its discretion by not allowing the public to review and comment on all the information on which the permit would ultimately be based. This procedure violated DEP's public participation requirements, and particularly the requirement in 06-096 C.M.R ch. 522, § 12 that DEP (here, the Board), issue a response to comments when the final permit is issued. Moreover, the Board's failures to respond and its creation of post-permit studies, in lieu of permit conditions, were an unconstitutional denial of due process to the Upstream and the other Intervenors because Upstream and others were denied the opportunity to see and comment on all of the information the Board considers in issuing the permits. *See* the Board's First and Third Procedural Orders;¹⁴ *Duffy v. Town of Berwick*, 2013 ME 105, ¶ 18, 82 A.3d 148 (holding due process applies in an administrative proceeding); *Lane Constr. Corp. v. Town of Washington*, 2008 ME 45, ¶ 32, 942 A.2d 1202.

The Final Order issuing the SLODA permit lists 15 post-permit studies and information submissions required by the Board.¹⁵ The Final Order issuing the MEPDES permit lists 4 post-permit studies and information submissions required by the Board.¹⁶ In so doing, the Board effectively acknowledged that the applicant had failed to meet its burden to satisfy the legal standards and that compliance could only be shown post permit studies. In other words, the

¹⁴ *See* [DI #0303](#), First Procedural Order: documents Board's decisions on petitions to intervene, 15 August 2019. *See* [DI # 0389](#), Third Procedural Order, 1 November 2019.

¹⁵ *See* [DI #0002](#), BEP Order #L-28319-26-A-N/ L-28319-TG-B-N /L-28319-4E-C-N/ L- 28319-L6-D-N/ L-28319-TW-E-N approving Natural Resources Protection (NRPA), Water Quality Certification, and Site Location of Development Law (Site Law) applications submitted by Nordic, 19 November 2020, pp. 91-97 (Conditions 4, 5, 8, 9, 10, 12, 15, 17, 29, 30, 32, 33, 34, 35, and 36).

¹⁶ *See* [DI # 0001](#), Maine Board of Environmental Protection (BEP or Board) Order #ME0002771/W009200-6F-A-N, approving Maine Pollutant Discharge Elimination System (MEPDES) Permit and Waste Discharge License application for Nordic Aquafarms, Inc. (Nordic), 19 November 2020, pp. 8-21 (Special Conditions F).

permits were not supported by the then record.¹⁷ The Board should have denied the application or at least postponed issuance of the permits until Nordic submitted all the necessary information, and the public would have the opportunity to review and comment.

2. The Board’s post-permit requirements are not consistent with the Law Court’s decision in *Atlantic Salmon Federation v. BEP*, 662 A.2d 206, 210 (Me. 1995).

In *Atlantic Salmon Federation*, the Law Court ruled that BEP may issue a permit contingent on studies to be conducted and future actions to be taken. However, in *Atlantic Salmon Federation*, the permit required the study to be completed before the permittee could begin work, and reserved the right to amend the permit if warranted by the results of the study.

Here, Nordic’s permit calls for a dye study (“Special Condition F”) that cannot be commenced until the facility is fully constructed and capable of discharging the total proposed volume of 7.7 million gallons per day (Final Order, p. 2 ¶ 4).¹⁸ The *Atlantic Salmon Federation* decision does not support the Board’s issuance of the Permit with this condition. The lack of data on the conditions in Penobscot Bay vitiates the value of the computer modelling on which Nordic and the Board have relied to estimate where the discharged pollution will go.

In addition to the long-term dye study, a second condition, “Special Condition G” requires Nordic to submit a plan by March 1, 2021, for annual seasonal Ambient Water Quality Monitoring, to be begun in June, 2021.¹⁹ The dye study is necessary to see where the effluent discharge will go for without knowing how the effluent will circulate in the Bay, it is impossible

¹⁷ See [DI #0001](#), [#0002](#), and [#0003](#). The Water Permit called for 2 post permit studies, and the SLODA/NRPA permit for 15 more.

¹⁸ See [DI # 0001](#), Maine Board of Environmental Protection (BEP or Board) Order #ME0002771/W009200-6F-A-N, approving Maine Pollutant Discharge Elimination System (MEPDES) Permit and Waste Discharge License application for Nordic Aquafarms, Inc. (Nordic), 19 November 2020, p. 9.

¹⁹ DI #1015, Board Meeting: packet materials, PowerPoint, minutes (19 November 2020), p. 308, p. 230. See also [DI #0001](#), Final Board Order, 19 November 2020, pp. 10 & 34-35.

to know the base lines against which the increase contaminates are measured. Upstream agrees that if Nordic is to be allowed to discharge, this study should be carried out, but Upstream does not agree that it will be an adequate substitute for the data gathering called for by Dr. Pettigrew in his pre-filed testimony²⁰ and also in his live testimony.²¹ The court should deny the permit as without the long-term dye study and the seasonal monitoring, and Board lacked substantial evidence to find that the standard was met.

Denial of the permit prior to completion of these studies is compelled not only by the Maine APA and the Board's statutory public participation requirements, but by constitutional requirements of due process to affected parties and the public.

II. The Board violated the Clean Water Act and Maine's statutes when it failed to base the Water Permit on zero-discharge technology.

1. The Board did not comply with 38 M.R.S. §§ 414–A(1)(D), and 414–A(1)(C) and 464(4)(F).

The Clean Water Act and Maine's clean water statutes²² require DEP to set discharge limits for water permits in a two-stage process. They require the Department to set limits based on the best technology in use in an applicant's category of industry, and then to determine whether stricter limits are required to protect the water quality in the body of water receiving the discharge.²³

Here, Upstream's expert witnesses submitted sworn testimony identifying companies that are using affordable technology to treat wastewater from Recycling Aquaculture Systems with

²⁰ [DI #0480](#), NVC/Upstream 5: Testimony of Dr. Neal R. Pettigrew admitted, 14 December 2019.

²¹ [DI #0652](#), Hearing transcript 02-12, 12 February 2020. p. 37 L 16- p. 44, L 17.

²² *The Pollution Control Act*, 38 M.R.S. §§ 411–424-B, and *the Water Classification Program*, 38 M.R.S. §§ 464–470.

²³ 38 M.R.S. §§ 414–A(1)(D), 414–A(1)(C) and 464(4)(F).

zero discharge to their receiving waters.²⁴ The Board did not issue any response to this technology. Nothing in the record shows that the Board considered the zero-discharge technologies identified by Upstream. The Board thus legally erred when it failed to fulfill the requirements of 38 M.R.S. § 414–A(1)(D), and missed an opportunity to bring truly cutting-edge technology to Maine. It also failed to set water quality limits to protect the waters of Belfast Bay, as required by Maine’s Anti-degradation statutes, 38 M.R.S. §§ 414–A(1)(C) and 464(4)(F).

2. Zero-Discharge Treatment fulfills the goals of the Clean Water Act and Maine’s water pollution program.

Maine’s statutes, and DEP’s regulations at 06-096 C.M.R. chs. 263-596,²⁵ implement the federal Water Pollution Control Act of 1972 (known as the Clean Water Act, or “CWA”), 33 U.S.C. § 1251, et seq.²⁶ The CWA’s state-federal statutory scheme is intended to achieve its goals to “*restore and maintain the chemical, physical, and biological integrity of the Nation’s waters,*” (CWA § 101(a)), to “eliminate the discharge of pollutants into the navigable waters,” (CWA § 101(a)(1)) and to restore “water quality which provides for the protection and propagation of fish, shellfish, and wildlife” (CWA § 101(a)(2)).²⁷ The CWA provides, in § 402(c), for implementation of the federal program by the states, creating a co-operative state-

²⁴ See [DI #0478](#) 03, Pre-filed Testimony of John A. Krueger and Gary V. Gulezian, 13 December 2019; See [DI # 0481 08](#), Pre-filed Testimony of Bill Bryden, 13 December 2019, p. 2-3.

²⁵ Maine Department of Environmental Protection, Water Rules 06-096 C.M.R. chs. 263-596, Available online < <https://www.maine.gov/dep/water/rules/index.html> >.

²⁶ The sections of 1972 CWA had three-digit numbers, which were incorporated into the U.S. Code with 4-digit numbers. 33 U.S.C. § 1251 is thus § 101 of the CWA. The relevant sections are hereafter cited as CWA §§ 101 and 301– 402, in lieu of §§ 33 U.S.C. 1251–1342.

²⁷ To achieve these goals, the CWA provides for effluent limits to be established by EPA, and enforced by federal and state permits. Section 301(1)(A) calls for effluent limits, based on the “best practicable control technology” (“BPT”), originally to be achieved by July, 1977,” and § 301(1)(B), for standards based on the “best available technology economically achievable” (“BATEA”) “... which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants,” originally to be achieved no later than March 31, 1989.

federal scheme which “establishes distinct roles for the Federal and State Governments.”²⁸

Maine has adopted comparable goals in 38 M.R.S. § 464(1):

1. Findings; objectives; purpose. The Legislature finds that the proper management of the State's water resources is of great public interest and concern to the State in promoting the general welfare; in preventing disease; in promoting health; in providing habitat for fish, shellfish and wildlife; as a source of recreational opportunity; and as a resource for commerce and industry. The Legislature declares that it is the State's objective *to restore and maintain the chemical, physical and biological integrity of the State's waters and to preserve certain pristine state waters*. The Legislature further declares that in order to achieve this objective the State's goals are:

A. *That the discharge of pollutants into the waters of the State be eliminated where appropriate; . . .* [Emphasis added].

The goal of eliminating discharges of pollutants altogether was not immediately achievable when the federal CWA was passed in 1972, nor when the state's program was subsequently created to incorporate federal standards. Zero discharge was not necessary for the achievement of the federal deadlines for the CWA's water quality goals, which would be achieved by technology - and water quality-based effluent limits established by EPA and the states under CWA §§ 301 – 402.²⁹ But the statutory goal of zero discharge of pollutants has never been abandoned.

On the contrary, the elimination of pollutant discharges of remains one of, if not the

²⁸ DEP's regulations, 06-096 C.M.R. chs. 514–596, issued in November, 1999, cite parallel EPA regulations in 40 CFR Part 120, Subpart A. EPA approved Maine's program on February 28, 2001. Both the Maine and federal programs require DEP to comply with EPA requirements.

²⁹ CWA § 303 provides for water-quality-based effluent limits and anti-degradation policies; and § 304 provides for the development by EPA of technology-based BPT and BATEA standards, for categories of industry, to be incorporated into individual permits. Section 306(a)(1) further calls for New Source Performance Standards (“NSPS”), “which reflect the greatest degree of effluent reduction which the Administrator determines to be achievable through application of the best available demonstrated control technology . . . including, where practicable, a standard permitting no discharge of pollutants.” [Emphasis added]. The CWA also required compliance with federal requirements by state programs authorized to operate in lieu of EPA: CWA §§ 402(b)(1)(A) (compliance with all applicable federal requirements), 402(b)(3)(public participation), 402(d)(1) (notification to EPA) and 402(d)(4)(EPA's authority to object to and overrule state permits).

single most fundamental goal of both the Maine statutes and the federal CWA. The Maine Water Classification Act, as quoted above, modifies the goal by adding the words “where appropriate.” But the goal has endured, and it *is* appropriate when technological development has made zero discharge a real and affordable possibility. That is now the case with land-based aquaculture, as Upstream’s experts have testified. When the zero discharge goal can be achieved, as here, it must be considered.

The zero-discharge goal has been cited with approval in federal Circuit Court decisions. A 2006 decision by the Sixth Circuit refers to the goal of restoring the nation’s waters as the “guiding star” of the Clean Water Act. *Citizens Coal Council v. U.S. E.P.A.*, 447 F.3d 879, 907 (6th Cir., 2006).³⁰ See also *Kennecott v. EPA*, 720 F.2d 445, 448 (5th Cir., 1985) (The Act’s Best Available Technology standards “are intended to push industries *toward the goal of zero discharge as quickly as possible.*” (emphasis added)); *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1061 (D.C. Cir., 1978)(\$50,000 a year is not an unreasonable expense to eliminate 600,000 gallons of wastewater discharge a year). See also the late Justice Ginsburg’s dissent in *Coeur Alaska, Inc. v. Southeast Alaska Conservation*, 557 U.S. 261, 297, 301-2 (2009), citing EPA regulations under CWA § 306 (EPA had found that zero discharge technology was being profitably used by the class of industries at issue, and EPA had therefore adopted zero discharge as a New Source Performance Standard under § 306 of the Act. Justice Ginsburg wrote that “adhering to § 306 ... honors the overriding statutory goal of eliminating water pollution, and Congress’ particular rejection of the use of navigable waters as waste disposal sites....”).

3. The Board did not consider zero discharge treatment, as required by 38 M.R.S. § 414–A(1)(D).

38 M.R.S. § 414–A(1)(D) requires that, when identifying the “[b]est practicable

³⁰ See also *Chemical Mfrs. Ass’n v. E.P.A.*, 870 F.2d 177 (5th Cir., 1989).

treatment,” the Board “shall consider the existing state of technology, the effectiveness of the available alternatives for control of the type of discharge and the economic feasibility of such alternatives.”³¹ The statute sets forth criteria for the Board’s consideration: the “effectiveness of available alternatives” and the “economic feasibility of alternatives.” Under these terms, “consideration” of alternatives is not to be a casual exercise. The “effectiveness” of technologies must be measured in light of the fundamental, long-standing goal of both the state and federal Acts: to eliminate as much as possible the discharge of pollutants into navigable waters to: “eliminate the discharge of pollutants into the navigable waters,” (CWA § 101(a)(1) & 38 M.R.S. § 464(1)).³²

In light of these statutory requirements, and the potential of current zero-discharge technology, the Board acted unlawfully when it approved the applicant’s proposed treatment system without any consideration of the treatment technologies recommended by Upstream’s experts. Section 414–A(1)(D) calls for the *best* treatment technology, based on consideration of *existing* technology. Technology does not stand still, and what may have been “state of the art” at one time can be surpassed by newer, better technology – and this is what has happened for land-based aquaculture. Although Section 414–A(1)(D) calls for “best professional judgment” in establishing permit limits, “best practicable treatment” necessarily implies that the judgment be based on *current* technology, which the Board must identify by considering “existing technology.” This the Board has manifestly failed to do.

The Board stated in its Final Fact Sheet that the permits’ effluent limits for Biological Oxygen Demand and Total Suspended Solids were based on limits proposed by EPA for land-

³¹ 1 M.R.S. § 71(9-A) (“**Shall; must; may.** ‘Shall’ and ‘must’ are terms of equal weight that indicate a mandatory duty, action or requirement.”).

³² See the discussion of the Clean Water Act provisions, *supra*.

based aquaculture in 2002, but never adopted.³³ Upstream’s expert testimony identified companies that today more than a decade later who are actively developing new treatment technology that achieves zero discharge.³⁴ The Board was required to respond to Upstream’s comments by considering these current technologies, rather than relying on an EPA proposal that is almost 20 years out of date. To comply with the law the Board should have evaluated current treatment technologies by applying the criteria in Section 414–A(1)(D) to determine whether the technologies are “effective” and “economically feasible.” If Upstream’s witnesses were correct in describing zero-discharge treatment technology that is successful and profitable, the Board should have found that such technology supersedes EPA’s 2002 technology as “Best Practicable Treatment.”

The record shows that the Board and DEP staff did not follow the statute when it failed to consider zero-discharge treatment technology. The transcripts of the adjudicatory hearing contain just 2 references to “zero discharge.” *See* the testimony by Dr. Carrie Byron³⁵ and Simon Dunn.³⁶ Nordic’s witnesses both discussed “zero discharge” in opaque terms. Their discussions were apparently based on the assumption that the concept of “zero discharge” refers only to zero discharge *from the circulating RAS production tanks*. Dr. Byron, when asked specifically about zero discharge technology, stated that:

At the scale that Nordic is proposing you absolutely need to be able to utilize

³³ *See* [DI #0001](#), Final Fact Sheet, Maine Board of Environmental Protection (BEP or Board) Order #ME0002771/W009200-6F-A-N, approving Maine Pollutant Discharge Elimination System (MEPDES) Permit and Waste Discharge License application for Nordic Aquafarms, Inc. (Nordic), 19 November 2020, p. 85. *See* USEPA, [Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category \(Revised August 2004\)](#), August 2004, Table 2.2-2 on p. 2-13.

³⁴ *See* [DI #0478 03](#), Pre-filed Testimony of John A. Krueger and Gary V. Gulezian, 13 December 2019; *See* [DI # 0481 08](#), Pre-filed Testimony of Bill Bryden, 13 December 2019, p. 2-3; *See* [DI #0655](#), Hearing Transcript, 14 February 2020, pp. 173 – 143, L. 17 – L10.

³⁵ [DI #0652](#), Hearing transcript 02-12, 12 February 2020, p. 24, L 8-20.

³⁶ [DI #0653](#), Hearing transcript 02-13, 13 February 2020, p. 400, L8 – p. 401.

some fresh, new water in your system, again, to maintain healthy, clean production of the fish.³⁷

Dr. Byron's contention that "zero discharge" cannot be used is misleading because it is based on the false assumption that the terms "zero discharge" refer only to discharge from the recirculating system, whereas in Clean Water Act usage, they refer to discharge to the receiving water after treatment. This testimony is not responsive to Upstream's prefiled testimony, quoted below, which described systems for *treatment* of water discharged from the circulating system *before* its discharge to any receiving water. Upstream's examples demonstrated that wastewater discharged from circulating system can in fact be treated by a system that removes all the pollutants.. Such systems are entirely compatible with the need described by Dr. Byron for regular additions of new fresh water into the RAS system.

Nordic's other witness, Simon Dunn, claimed that zero discharge cannot be used for "a project of this scale," but he based his conclusion on the same meaning of zero discharge as Dr. Byron.³⁸ He did not explain or support his assertion with any facts concerning treatment systems, and as a result his claim is contradicted by the facts presented by Upstream's witnesses.

Moreover, the fact that the "scale of Nordic's project" would preclude acceptable treatment *at this site* is irrelevant to the question whether treatment systems exist that could achieve the degree of pollutant removal required by law – it only establishes *that Nordic's problem is the site – not the technology*. The State and federal goal of eliminating discharge of pollutants into navigable waters would be rendered meaningless unless it applied uniformly to all

³⁷ [DI #0652](#), Hearing transcript, 12 February 2020, (Day 2), p. 24, L 14-17. In its Response to Comments on the SLODA/NRPA permit, p. 60, the Board cites a statement by Nordic that if the need to reduce water usage arose, Nordic stated that "the facility would use technology that allows it to recycle and recirculate water through the facility or change the saltwater to freshwater ratio."

³⁸ [DI #0653](#), Hearing transcript 02-13, 13 February 2020, p. 400, L8 – p. 401.

projects regardless of size. Both Dr. Byron and Mr. Dunn emphasized the scale of Nordic's proposed facility, and both assumed that this scale poses an insuperable barrier to zero-discharge treatment, as they understood that term. There can be no excuse for this confusion. The law clearly requires the use of the Best Practicable Treatment, regardless of where the applicant wants to build. The applicant doesn't write the standards, nor may the applicant re-define the terms used by an Intervenor's expert witness.

The testimony of both Messrs. Kruger and Gulezian, and Mr. Bryden, quoted at length below, describes clearly and in detail technology that treats wastewater *after it is discharged from the circulation system to remove all pollutants and before it enters navigable waters*. (Some of Upstream's testimony and comments does refer to "closed" recirculating systems, but not to the exclusion of wastewater treatment systems for "open" systems.) There is no evidence in the record that the Board ever considered the treatment technologies identified by Upstream's witnesses.

By not considering zero-discharge treatment alternatives, the Board violated 38 M.R.S. § 414-A(1)(D). The court should vacate the Board's issuance of the Water Permit as it was issued in violation of the law, and without sufficient support in the record.

4. Upstream's witnesses established that zero-discharge treatment is effective and economically feasible.

For land-based aquaculture, elimination of pollutant discharge into navigable waters is now achievable. It is both economically successful for the facilities that have adopted it, and far more effective than the older technology on which the Board's permit is based as it eliminates the discharge of pollutants. The Board erred when it failed to determine and find that zero-discharge meets the criteria in Section 414-A(1)(D) for Best Practicable Treatment.

38 M.R.S. § 414-A(1)(D) defines "best practicable treatment" as:

... the methods of reduction, treatment, control and handling of pollutants ... [that] are best calculated to protect and improve the quality of the receiving water and that are consistent with the requirements of the Federal Water Pollution Control Act, as amended and published in 40 Code of Federal Regulations [*sic*].

On December 13, 2019, Upstream submitted pre-filed testimony from expert witnesses John A. Krueger and Gary V. Gulezian. In light of its statutory obligation to identify the “best practicable treatment,” the Board was required to consider the testimony of Upstream’s expert witnesses. Nothing in the record shows that it did.³⁹ Having not done so, and not put any response in the record, the Board lacked any basis to claim claiming that it followed the law and based the permit on “best practical treatment,” according to the definition above. The record shows that the Board considered only the treatment system described by Nordic.

Upstream’s witnesses’ testimony is worth quoting at length, as it demonstrates that this is technology that DEP legally erred. Krueger and Gulezian’s testimony⁴⁰ stated:

While NAF [Nordic Aquafarms] should be lauded for its use of proven technologies such as Moving Bed Biofilm Reactor (MBBR) designs, Staff is encouraged to ask questions regarding its ability to meet desired outflow concentrations of nutrients and other parameters...*Newer technologies exist and are being tested around the planet. Aquamaof, Superior Fresh, and Sustainable Blue are examples.*

(Emphasis added).

Some use vertical hydroponics/aquaponics that run hydraulically (a water driven system rather than a pumped vertical effluent, with low energy use). There are others which use electric driven pumps to pump water up and believe that numerous small tanks are the way to go. Another option is airlift fixed media recirculating systems to provide a minimal liquid discharge to zero liquid discharge with the use of micro-algae as the primary denitrification reactor. These micro- algae systems allow the production of algae to produce a food source for

³⁹ The Board issued a draft of the Water Permit on August 13, 2020. See [DI # 0927](#), MEPDES/WDL draft proposed Board order issued for public comment, 13 August 2020. The draft did not contain a Response to Comments, as it initiated a 30 day comment period. The Board’s Response to Comments is part of the Final Order ([DI #0001](#), Final Fact Sheet pp. 38-62). At no time did the Board respond to the comments described herein.

⁴⁰ [DI #0478](#) 03, Pre-filed Testimony of Upstream’s John A. Krueger and Gary V. Gulezian, 13 December 2019, pp. 13-14.

fish or generate a bio-fuel. Ozone is also used for pathogen control.

This description was more than adequate to put the Board on notice that it had to follow the statute and consider this technology, as it describes both the treatment mechanisms in use and identifies the companies using them. There is nothing in the record showing that the Board considered it at all.

Upstream also submitted Mr. Bryden's testimony,⁴¹ which included the following:

In Canada, Sustainable Blue has commercialized a licensable methodology for zero effluent discharge for Atlantic Salmon in saltwater as well as other species. They recycle 100% of all water they utilize, both fresh and salt except for that water that resides in the fish when slaughtered. This is accomplished by utilizing a combination of ozone and advanced filtration methodologies. Their fish is marketed and distributed throughout eastern Canada. Sustainable Blue's CEO and Chief Technology Officer has reviewed the public documents describing Nordic's proposed facility in Maine and have confirmed their methodology can scale to accommodate Nordic's proposed volumes of fish. They are prepared to do so under license to Nordic. In the United States, Superior Fresh has commercialized their freshwater operation in Wisconsin. They have utilized greenhouses to receive their freshwater effluent. They are marketing their salmon and greenhouse produce. While Nordic may only be interested in producing salmon in saltwater, saltwater can be used to grow out eelgrass or saltwater vegetables for human consumption.

In the United States and Europe, there is work underway by commercial Land Based RAS operators like AquaMaof, as well as Universities, to achieve zero effluent discharge through the use of tank repositories of microalgae. These microalgae produce materials that are used for either producing fish food, bio-fuels or cosmetic ingredients.

So whether by utilizing a licensed technology, or a hybrid of several methodologies, Nordic Aquafarms is able to achieve zero liquid effluent to the public waterways and greatly reduce their freshwater requirements.⁴²

The Board did not respond to any of this testimony.

⁴¹ [DI # 0481 08](#), Pre-filed Testimony of Bill Bryden, 13 December 2019, p. 2-3.

⁴² [DI # 0481 08](#), Pre-filed Testimony of Bill Bryden, 13 December 2019, p. 2-3.

On October 5, 2020, Upstream submitted further comments by Gulezian and Krueger⁴³ on zero discharge treatment technology in its comments on the draft SLODA permit (including descriptions of “closed RAS systems”):

The RAS technology chosen for this facility is not appropriate given the ground water resources and effluent concerns at this location. A better technology is available and would significantly eliminate risks to ground and surface water.

RAS can support the use of methodologies and systems that are sustainable and environmentally sound. Nordic’s RAS system does not do that. Nordic’s RAS does not represent best available practice. Nordic’s use of a partially closed RAS should be compared to other RAS methodologies that include aquaponics, and the use of closed RAS (CRAS) system designs.

There are designs that recycle 100% of fresh, brine water, minimize power usage and don’t pollute the oceans or aquatic environments. ... These systems work, they don’t pollute, and done right they are power efficient. AquaMaof is no longer just an equipment provider and facility operator. They are teamed with 8F who provides financing and funding. Together they are building multiple land-based RAS systems in the US and world-wide under the brands “Pure Salmon” and “Soul of Japan”. ... The point is that zero discharge and minimal discharge systems not only reduce the amount of effluent to the bay, but importantly reduce the need for groundwater.

Better technologies exist than ... what Nordic is proposing. These better technologies are being designed in the US, Canada, and the Middle East (these are Zero Discharge and Minimal Liquid Discharge). AquaMaof Aquaculture, Superior Fresh and Sustainable Blue use these and Nordic should, too.

Maine’s Department of Marine Resources has recognized and anticipated “Zero Liquid Discharge” in their new application forms.

Sustainable Blue has been growing and shipping their salmon to restaurants and distributors in Canada. This past November, Forbes held an investors conference in New York. 400 participants were fed salmon provided by Sustainable Blue and Atlantic Sapphire and declared it delicious. Forbes’ message to investors is that Closed Land Based RAS is where the industry is headed.

⁴³ See [DI # 0975](#), Redacted version of filing by David Losee setting forth Upstream’s comments on the Site/NRPA/WQC draft proposed Board order [Redacted per Twenty-Third Procedural Order], 5 October 2020, pp. 30-32.

Atlantic Sapphire has their own patented injection well technologies that they utilize to grow-out saltwater salmon with zero discharge into the ocean or aquifers.

Superior Fresh has been utilizing aquaponics for raising Atlantic Salmon to accomplish zero effluent discharge. They have been marketing it successfully for several years in the Mid-West and recently were the first US facility to win the coveted Best Aquaculture Practice (BAP) certification by the Global Aquaculture Alliance. (GAA). While they use a minimal amount of salt in their grow-out water for general fish health, blind taste tests have shown that their salmon is just as flavorful as those grown in more concentrated brine.

Another example is the move to Zero Liquid Discharge (ZLD) used by AquaMaof. AquaMaof, a highly successful company with a long track record and multiple sites raising fish for market worldwide. They have multiple sites that raise Atlantic Salmon in brine water using and licensing their proprietary Minimal Liquid Discharge (MLD) system. Their Zero Liquid Discharge effort is underway. AquaMaof will be licensing their ZLD technology for new systems construction.

Nordic's partially closed RAS not only affects the effluent, but the amount of groundwater needed. The need for groundwater supply is also a function of how well the RAS is operating. If problems occur in bringing the RAS system to planned operating conditions, i.e. removing wastes, or microbiological contamination, additional sources of fresh water will be needed.⁴⁴

At the public hearing held on February 13, 2020, Richard Podolsky provided further testimony as an expert witness for Upstream and identified another designer of biological treatment systems for wastewater from fish farms, Dr. John Todd, who is a professor emeritus at the University of Vermont.⁴⁵

Upstream's pre-filed and live testimony, along with Upstream's subsequent post-hearing brief, and subsequent comments on the draft SLODA/NRPA permit, shows that the companies referred to, Superior Fresh, Sustainable Blue and Aquamaof, are operating land-based aquaculture facilities for raising salmon, with zero, or close to zero, discharges of pollutants.

⁴⁴ See [DI # 0975](#), Redacted version of filing by David Losee setting forth Upstream's comments on the Site/NRPA/WQC draft proposed Board order [Redacted per Twenty-Third Procedural Order], 5 October 2020, pp. 30-32.

⁴⁵ [DI #00654](#), Hearing transcript 02-13, 13 February 2020, p. 51. Dr. Todd's wastewater treatment systems are available online < <https://www.toddecological.com/> >.

They are demonstrating that their treatment technology is effective, financially feasible, and “scalable” to large facilities. But the Board put nothing in the record in response to these comments, violating its obligations under Maine law.⁴⁶

5. The Board’s failure to consider zero-discharge technology was an abuse of discretion.

Section 414–A(1)(D)’s mandate to “consider existing technology” cannot be an optional exercise. The statute sets forth criteria for the Board’s consideration: the “effectiveness” and the “economic feasibility” of the technologies. The “effectiveness” of technologies must be measured in light of the fundamental, long-standing goal of both the state and federal Acts: to eliminate the discharge of pollutants into the navigable waters.⁴⁷

The Law Court has established that a failure by the Board to consider an available alternative to its decision is an abuse of discretion. *Friends of Maine's Mountains v. Board of Environmental Protection*, 2013 ME 25, ¶ 11, 61 A.3d 689 (“An abuse of discretion may be found where ... the decisionmaker exceeded the bounds of the reasonable choices available to it, considering the facts and circumstances of the particular case and the governing law.”). The same reasoning applies here to the Board’s disregard of zero-discharge alternatives.

The Board abused its discretion by not considering the existing technology identified by Upstream. Board’s decision instead to issue a permit allowing a wastewater discharge of 7.7 million gallons per day, was a violation of Section 414–A(1)(D) and an abuse of discretion. The record does not present any evidence that the Board evaluated the effectiveness or financial feasibility of zero discharge technology, as recommended by Upstream’s experts.⁴⁸

⁴⁶ 06-096 C.M.R ch. 522, § 12. See Footnote 5, *supra*.

⁴⁷ CWA § 101(a)(1) & 38 M.R.S. § 464.

⁴⁸ See [DI #0001](#), Final Fact Sheet, 19 November 2020, pp. 38-62, which does not discuss zero discharge technology at all. See Upstream’s comments, [DI # 0813](#), Upstream’s Post-Hearing Brief submitted by David Perkins with Proposed Findings of Fact and Conclusions of Law, 4 May 2020, p. 13.

The Board stated in its Final Fact Sheet that the permits' effluent limits for Biological Oxygen Demand and Total Suspended Solids, were based on limits proposed by EPA for land-based aquaculture twenty years ago, in 2002, which EPA never adopted.⁴⁹ As quoted above. Upstream's expert testimony identified companies that today are actively developing new treatment technology that achieves zero discharge. The Board should have responded to Upstream's comments by considering and evaluating these current technologies, rather than accepting the applicant's view that its system was too large to be measured against current technologies and instead technology found in an unadopted EPA proposal more than 20 years should comply. That the applicant could not meet current technology is not a sound reason to ignore the statutory requirements even if it meant the permit would have to be denied.

The Board and DEP staff should have contacted the companies identified by Upstream, and evaluated their treatment technologies by applying the criteria in Section 414-A(1)(D). The Board and DEP staff should have determined whether the technologies are "effective" and "economically feasible." If Upstream's witnesses were correct in describing zero-discharge treatment technology that is successful and profitable, the Board should have found that such technology supersedes EPA's 2002 technology as "Best Practicable Treatment."

If the Board had properly considered these comments, it would have found that zero discharge *is* the Best Practicable Treatment under the terms of Section 414-A(1)(D). 38 M.R.S. § 414-A(1)(D) calls for the *best* treatment technology, based on consideration of *existing* technology. Technology does not stand still, and what may have been "state of the art" at one

⁴⁹ See [DI #0001](#), Final Fact Sheet, Maine Board of Environmental Protection (BEP or Board) Order #ME0002771/W009200-6F-A-N, approving Maine Pollutant Discharge Elimination System (MEPDES) Permit and Waste Discharge License application for Nordic Aquafarms, Inc. (Nordic), 19 November 2020, p. 85. See USEPA, [Technical Development Document for the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category \(Revised August 2004\)](#), August 2004, Table 2.2-2 on p. 2-13.

time can be surpassed by newer, better technology – and this is what has happened for land-based aquaculture. Although Section 414–A(1)(D) calls for “best professional judgment” in establishing permit limits, “best practicable treatment” necessarily requires that the judgment be based on *current* technology, which the Board must identify by considering “existing technology.” This the Board has manifestly failed to do.

In conclusion, the availability of zero–discharge treatment technology is good news. It has been the goal of the federal Clean Water Act since it was passed in 1972, which established elimination of pollution as a national goal. Although it has frequently been postponed, that national goal has never been abandoned, and remains the law of the land, the “guiding star” of Clean Water law. We have now arrived in a time when the technology exists that makes it possible for land-based aquaculture to operate with zero discharge of pollutants, and that is good news for all the parties in this matter, including Nordic. Such technology may substantially lower Nordic’s overall costs, and *will* eliminate the risk posed by a 7.7 million gallons per day discharge into the Bay. The Board erred when to failed without any explanation to give zero discharge treatment the consideration required by 38 M.R.S. § 414–A(1)(D), and to adopt zero discharge as the basis for the permit if it is shown to be effective and affordable. The court should therefore vacate and reverse the Board’s decision to issue the Water Permit..

6. The court should invalidate the Board’s Order pursuant to the Maine APA, 5 M.R.S. § 11007(4), as made upon unlawful procedure and an abuse of discretion.

In reviewing an administrative decision, the court applies the standards of Maine’s Administrative Procedure Act (“APA”), 5 M.R.S. § 11007(4)(C).⁵⁰ For the reasons set forth

⁵⁰ *S.D. Warren Co. v. Bd. Of Environmental Protection*, 2005 ME 27, ¶ 4, 868 A.2d 210, *aff’d*, 547 U.S. 370 (2006).

above, the court should find that the Board's decision was: 1) "made upon unlawful procedure," because of the Board's repeated failures to respond to Upstream's comments, (and, as discussed in Part III below, its improper admission of revised testimony after the close of the adjudicatory hearing) and issued in violation of the requirements of 38 M.R.S. § 414-A(1)(D); 2) "unsupported by substantial evidence on the whole record," because the record contains no evidence at all supporting the Board's decision to disregard zero discharge technology; and 3) an abuse of discretion, because the Board chose to approve a less protective technology than an alternative established in the record.

The Board's decision was not purely discretionary. The Board's discretion under Section § 414-A(1)(D) is limited (as it must be to avoid an unlawful delegation of legislative powers) by the criteria and the overriding goals of the statute. Maine's laws were created to implement the federal Clean Water Act and its goals, and Section 414-A(1)(D) must therefore be understood as calling for the best technology *for achieving the goals of the both the state and federal Clean Water Acts, i.e., the elimination of the discharge of pollutants.*

The pre-filed testimony of Upstream's experts concerning zero discharge technologies should have led the Board and DEP staff to give these technologies serious consideration.⁵¹ But the Record does not show any such consideration, let alone any determinations concerning the effectiveness and economic feasibility of this technology, in spite of Upstream's expert testimony and the threat to water quality posed by Nordic's proposed discharge, discussed below. The Board has therefore issued a decision that is unsupported by evidence in the record.

The Board cannot defend its decisions in this matter by calling on the court to defer to its expertise, as in, e.g., *Champlain Wind, LLC v. Bd. Environmental Protection*, 2015 ME 156, 129

⁵¹ [DI #0478](#) 03, Pre-filed Testimony of John A. Krueger and Gary V. Gulezian.

A.3d 279. As stated in *Champlain Wind*:

We do not second-guess an agency on issues within its area of expertise; rather, we review only to ascertain whether its conclusions are unreasonable, unjust, or unlawful. (quotation marks omitted).

Id. 2015 ME 156, ¶ 15, 129 A.3d 279.

Here, the record shows *no* expertise for the court to defer to. Instead, the Board simply swept the question of zero-discharge treatment aside, and made a decision that is unsupported by facts, and that cries out to be found unreasonable and unlawful. This is not a record of expert decision-making, but a record of abandonment of responsible decision-making. The court should vacate and reverse the Board's decision that issued Nordic a water discharge permit.

- III. Water Quality: The record does not support either:**
- (A) the Board's findings concerning anti-degradation limits to protect water quality in Belfast Bay; or**
 - (B) its finding that Nordic's high temperature discharge will not violate Maine's Thermal Discharge Standard.**
- 1. The Board's decision did not satisfy Maine's anti-degradation requirements, 38 M.R.S. §§ 414–A(1)(C) and 464(4)(F).**

Maine's anti-degradation limits are a federally required component of the state's water pollution elimination program. The Clean Water Act § 303 requires an "anti-degradation" policy for setting discharge limits stricter than technology-based limits, when necessary, to prevent pollutants from degrading water quality in the receiving water. The anti-degradation policy is described by the Supreme Court in *PUD No. 1 of Jefferson County v. Washington Dept. of Ecology*, 511 U.S. 700, 705 (1994), emphasizing the CWA's statement of its goals:

. . . EPA's regulations implementing the Act require that state water quality standards include "a statewide antidegradation policy" to ensure that "existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." 40 CFR § 131.12 (1993). At a minimum, state water quality standards must satisfy these conditions. The Act also allows States to impose more stringent water quality controls.

EPA incorporated the requirements of CWA § 303, at 40 C.F.R. § 131.12. Maine has incorporated them in 38 M.R.S. §§ 464(4)(F), 465-B, and 469 (*inter alia*); and in DEP’s regulations at 06-096 C.M.R. chs. 520-525, 579, 581 and 587. *Watts v. Bd. Environmental Protection*, 2014 ME 91, ¶ 6 nn.5-6, 97 A.3d 115.

2. Maine provides specific requirements for Waldo County in Penobscot Bay, to preserve “20% of assimilative capacity.”

38 M.R.S. § 469(6) gives the waters of Waldo County in Penobscot Bay the second highest water quality classification of “SB.” Section 465-B(2)(B) provides that the dissolved oxygen concentration in SB waters may not be less than 85% saturation. There is a direct link between nitrogen discharges and this minimum standard for dissolved oxygen: nitrogen is a nutrient for oxygen consuming organisms such as algae that proliferate in high nitrogen waters, creating “Biological Oxygen Demand” (“BOD”). As noted by the Board in its Final Fact Sheet:⁵²

Nitrogen is generally the limiting nutrient for primary productivity in marine waters. Discharges of excess quantities of immediately bioavailable nitrogen can cause algal blooms in the receiving waters, which can lead to negative impacts to dissolved oxygen levels. . . .

The Board stated that Nordic’s treatment system will remove 99% of biological oxygen demand, total suspended solids and total phosphorus, but only 85% of total nitrogen.⁵³ In the Final Fact Sheet, the Board explains its approach⁵⁴ to setting effluent limits for new discharges to prevent such negative impacts, based on a non-binding “Antidegradation Waste Discharge Program Guidance” developed with EPA and dated June 13, 2001. That provided that on a case-by-case basis, using its best professional judgment, the department will seek to limit the new discharge so that it will not consume “greater than 20% of the remaining assimilative capacity

⁵² See [DI #0001](#), Final Fact Sheet, 19 November 2020, p. 21.

⁵³ See [DI #0001](#), Final Fact Sheet, 19 November 2020, p. 9.

⁵⁴ See [DI #0001](#), Final Fact Sheet, 19 November 2020, pp. 23-25.

for dissolved oxygen or other parameter.” If the discharge will reduce the water to less than 20% of its assimilative capacity, “water quality will generally be considered by the department to be lowered”⁵⁵

The Fact Sheet then explains that to preserve 20% of the remaining capacity, the Board found that a nitrogen discharge of 21 mg/l would be the necessary limit for Nordic’s permit, lower than the 23 mg/l that Nordic requested. The Board’s decision complied with 38 M.R.S § 465-B(2)(C), which further sets forth in narrative terms the state’s anti-degradation requirement:

Discharges into Class SB waters *may not cause adverse impacts* to estuarine and marine life so that the receiving waters must be of sufficient quality to support all marine species indigenous to the receiving water without detrimental changes to the resident biological community. . . . (Emphasis added)⁵⁶

This provision requires that a permit be denied if the record does not show that the applicant’s discharge can be kept within acceptable limits. Nordic and the Board failed to make that showing.

3. The Board based its anti-degradation decision on revised modelling results, which it improperly admitted after closing the adjudicatory hearing.

In the hearing, DEP staff recommended denial of Nordic’s permit based on DEP’s anti-degradation requirements. The record closed on February 18, 2020. After closure, the Board improperly substituted revised findings⁵⁷ based on faulty expert testimony that Nordic had placed in the record in the sworn pre-filed and live testimony of its witness, Nathan Dill.⁵⁸

⁵⁵ See [DI #0001](#), Final Fact Sheet, 19 November 2020, pp. 23-25; See “[Waste Discharge Program Guidance.](#)” Memo from Brian Kavanah to Water Licensing & Compliance Staff, Maine Department of Environmental Protection, 13 June 2001.

⁵⁶ [DI #0001](#), Final Fact Sheet, p. 10-11.

⁵⁷ See [DI #0001](#), Final Fact Sheet pp. 12 – 17.

⁵⁸ See [DI #0472](#), Pre-Filed Testimony of Nathan Dill, 13 December 2019, pp. 4-5. See [DI #0655](#), Hearing Transcript 14 February 2020, p. 31, L 12 – p. 39, L1. See [DI #0652](#), Hearing Transcript 12 February 2020, p. 52, L 25 – p. 72, L 13.

The abrupt change involved the calculation of dilution of Nordic's discharge, as it would affect dissolved nitrogen. As noted above, the nitrogen concentration in the discharge must not lower the water quality classification from "SB." Early in the application process, Nordic calculated that the nitrogen concentration in its discharge would be 23.02 mg/L⁵⁹ and that that concentration was fixed.⁶⁰ Nordic asserted that its nitrogen concentration was appropriate because, although the dilution conditions to which the discharge was exposed would change over time and distance, the "steady state" dilution ratio, and thus the appropriate dilution ratio to anticipate, would be 300:1.⁶¹ Nordic's witnesses testified under oath and submitted calculations, under oath, that 300:1 was the correct steady state ratio and should be used to calculate the impact of the discharge. DEP staff performed the usual and proper calculations using Nordic's figure, the 300:1 dilution ratio, and concluded that the proposed discharge would clearly fail to meet the antidegradation requirements necessary to retain the SB water quality in Penobscot Bay. DEP staff concluded that the permit, as applied for, must be denied.⁶²

Prior to May 15, 2020, DEP staff prepared memoranda⁶³ providing background information prepared by DEP in preparation for the BEP's upcoming deliberative session.⁶⁴ Those memoranda were distributed to Nordic and the Intervenors, including Upstream, on

⁵⁹ See [DI #0021a](#), Attached/hyperlinked 10-19-2018 MEPDES application, 19 October 2018, p. 94.

⁶⁰ See [DI #0021a](#), Attached/hyperlinked 10-19-2018 MEPDES application, 19 October 2018, p. 79: "Further discharge reductions are not feasible..."

⁶¹ See [DI #0472](#), Pre-Filed Testimony of Nathan Dill, 13 December 2019, Memo Nathan Dill to Nordic Aquafarms, "Far Field Dilution of Proposed Discharge – Supplemental Information," 3 November 2019, pp. 3-5.

⁶² DI #0839, Board Meeting: packet materials, PowerPoint, meeting minutes, 5 May 2020; Final Fact Sheet, p. 65.

⁶³ DI # 0839, Board Meeting: packet materials, PowerPoint, meeting minutes, 5 May 2020; Final Fact Sheet, p. 15 (DI #0001).

⁶⁴ DI #0833, Email from Ms. Bertocci to interested persons notifying them that materials for the Board's May 20 meeting are posted on the Board's webpage, 15 May 2020.

Friday, May 15, 2020. The staff memoranda included the memo⁶⁵ which revealed that DEP's calculations, based on Nordic's model results, showed that Nordic's proposed nitrogen discharge would be too high to maintain the "SB" water quality standard in Penobscot Bay, and recommended denial of the MPDES permit.⁶⁶

The Board's adjudicatory hearing closed on February 14, 2020. Sometime between May 15 and May 20, 2020, a representative of Nordic contacted Gregg Wood, a DEP staff person, and requested that the dilution numbers that Nordic provided be changed from 300:1 to 530:1.⁶⁷ On May 20, 2020, Mr. Wood presented the change to the Board,⁶⁸ in contravention of his earlier memo, announcing the change in the dilution ratio had been made at the request of Nordic, and recommending approval.⁶⁹

No engineering change had been accomplished. The proposed discharge was exactly the same before and after the call from Nordic to Mr. Wood. The new dilution ratio of 530:1, a ratio that although generated by Nordic, still left Nordic 8% short of the level necessary to satisfy antidegradation,. was apparently selected from Nordic's dilution graph at a point that was temporary and was not steady state. It just happened to coincide with a factor almost, but not quite, meeting the required standard. All this was done outside of the public realm. The Board agreed to the change and thus permitted a nitrogen discharge that fails to protect the SB water

⁶⁵ DI # 0839, Board Meeting: packet materials, PowerPoint, meeting minutes, 5 May 2020, p. 62-88.

⁶⁶ DI # 0839, Board Meeting: packet materials, PowerPoint, meeting minutes, 5 May 2020, p. 86-88.

⁶⁷ DI # 0835, Email from Elizabeth Ransom to Gregg Wood and Robert Mohlar forwarding Mr. Dill's emails providing additional information on the modelling of the far-field dilution factor - provided by Mr. Wood to the Board and parties on May 29, 2020 at 2:01 pm, p. 1: "The 300:1 dilution number for the median area of 2-day-old discharge was really just a rough estimate at the bottom number for the median time series line. I think a more representative number would be a longer-term tidally averaged value. If we average the dilution over the last fortnight of the simulation, the dilution comes out to 530:1." *See also* [DI #0001](#), Final Fact Sheet, p. 15.

⁶⁸ DI # 0839, Board Meeting: packet materials, PowerPoint, meeting minutes, 5 May 2020, p. 92. *See also* [DI #0001](#), Final Fact Sheet, p. 15.

⁶⁹ A transcription of this meeting was not made available.

quality classification of Penobscot Bay, in violation of 38 M.R.S. §§ 464, et. seq.

Upstream requested a copy of the calculations on which the revised results submitted by Mr. Wood were based. DEP told Upstream that there were none available but there would be in a few days. On May 26, 2020, Upstream moved that the Board strike the evidence entered by Gregg Wood,⁷⁰ but on June 2, 2020 the Board denied Upstream's motion.⁷¹ To date, Upstream has not seen the calculations, in spite of repeated requests.⁷² The Board did provide a 30-day period for written comment on its draft permit after August 13, 2020.⁷³ On June 10, 2020, Upstream renewed its Motion to Strike,⁷⁴ arguing that the opportunity to submit written comments provided by the Board was not a substitute for cross-examination and live rebuttal testimony at the hearing, or for the opportunity to comment on the calculations that were never produced.

In *Mallinckrodt US LLC v. Dep't of Env'tl. Prot.*, 2014 ME 52, ¶ 28, 90 A.3d 428, the Law Court held that in an administrative hearing: “[p]ursuant to the APA, ‘every party shall have the right ... to make oral cross-examination of any person present and testifying.’ 5 M.R.S. § 9056(2).” The court also held in *Mallinckrodt* that:

The Board is permitted by statute to have “the aid or advice of those members of his own agency staff, counsel or consultants retained by the agency who have not

⁷⁰ DI # 0856, “Upstream Watch’s Motion to BEP/DEP to Strike Testimony of Gregg Wood Relating to Total Nitrogen at Deliberative Hearing.”

⁷¹ See [DI #0858](#), Seventeenth Procedural Order, p. 4.

⁷² See DI #0838, Email from Mr. Lannan re: deliberative session and change in far-field dilution factor, 20 May 2020; See DI #0841, Email from Ms. Grant (Upstream) requesting calculations on change in far-field dilution factor, 20 May 2020; See DI #0845, Email from Ms. Bertocci to Ms. Grant regarding response to request for far-field calculations, 21 May 2020; See DI #0855, Email from Ms. Tucker to Ms. Bertocci re: deliberative session, alleging violations of due process, 25 May 2020; See DI #0870, Email from Mr. Lannan stating his question not answered and requesting DEP’s initial and revised calculations re: far-field dilution factor, 29 May 2020.

⁷³ See DI #0859, Email from Ms. Bertocci to parties transmitting [Seventeenth Procedural Order](#), 28 May 2020, p. 5.

⁷⁴ DI #0882, Email from Ms. Kubiak transmitting letter from David Perkins (Upstream) re: Renewed Motion to Strike from the Record the Material Product of Communication between Nordic Aquafarms, Inc. and DEP Staff after the Close of the Record, 10 June 2020.

participated and will not participate in the adjudicatory proceeding in an advocate capacity.” 5 M.R.S. § 9055(2)(B) (2013). Such advisors are not subject to cross-examination. (Citation omitted).

Id. 2014 ME 52, ¶ 28.

Here, the Board found, in its Seventeenth Procedural Order,⁷⁵ that because Mr. Wood is a DEP staff member, his revision to the dilution factor was not testimony or evidence subject to the DEP’s rules for the administrative hearing. But the facts here are not the same as in *Mallinckrodt*, because the communication did not originate with Mr. Wood. Mr. Wood had not arrived at the revision on his own initiative. He had received communications from Nordic personnel,⁷⁶ apparently Nordic’s consultant, Ms. Elizabeth Ransom (see fn. 67, *supra*), which conveyed what Nordic failed to present at the hearing. The individual from Nordic or its consultant who communicated with Mr. Wood should have been subject to cross-examination.

Mr. Wood revised Nordic’s model results without notice to parties, without explanation, without the proponent being placed under oath, without benefit of cross examination and without an opportunity for rebuttal testimony, as was otherwise the case for all evidence offered in this case prior to May, 2020, as required by the Maine APA, 5 M.R.S. § 9056, by DEP’s Rules, 06-096 C.M.R. ch. 3, §§ 16 and 19(B), and by the rules established by the Presiding Officer at the first pre-hearing conference, and set forth in the Second Procedural Order. Nordic’s communication with Mr. Wood was therefore an *ex parte* communication, prohibited by 06-096, C.M.R. ch. 3, § 6 (*ex parte communications*). Due process is implicated by *ex parte* communications, as stated by the Law Court in *Lane Constr. Corp. v. Town of Washington*, 2008 ME 45, ¶ 32, 942 A.2d 1202. As stated in *Duffy v. Town of Berwick*, 2013 ME 105, ¶ 18, 82 A.3d

⁷⁵ DI # 0858, [Seventeenth Procedural Order](#): MGL’s May 21 renewed motion denied; record reopened for limited purpose of additional information on far-field dilution factor, 28 May 2020, p. 3.

⁷⁶ DI # 0862, Email from Ms. Bertocci to parties transmitting information received from Gregg Wood on correspondence between Nordic and DEP staff, 29 May 2020.

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Communications between a decision-maker and only one party, without notifying the opposing party or providing that party with an opportunity to be heard, are *ex parte* communications that implicate the due process rights of the excluded party. *See Mutton Hill Estates, Inc.*, 468 A.2d at 992; *see also* Black's Law Dictionary 316 (9th ed. 2009) (defining “*ex parte* communication”). We will vacate a planning board's decision if, as a result of these communications, the decision results in procedural unfairness.

Nordic's personnel who contacted Mr. Wood should have been required to testify under oath, subject to cross-examination. Under these circumstances, the Board's acceptance of Nordic's revision violated both the Board's own procedural requirements, and the due process rights of Upstream and the other intervenors to a fair and unbiased hearing. The Court should therefore vacate and reverse the Board's decision.

4. Nordic's Dispersion Model is unverified and insufficient.

Nordic presented the model discussed above to demonstrate the fate and transport of the 7.7 million gallons per day of wastewater, would meet the required standard necessary to assure that the wastewater would not harm the beaches, cause algal blooms, destroy eelgrass, or degrade the water quality in Penobscot Bay, and generally to show dispersion of the pollution Nordic proposed to discharge.⁷⁷ Nordic did not offer or attempt to field-verify their model for necessary credibility, nor did the Board require the applicant to field-verify and assess Penobscot Bay's currents, flow and thermal effects.⁷⁸

⁷⁷ *See* [DI #0472](#), Pre-Filed Testimony of Nathan Dill, 13 December 2019; *See* [DI #0655](#), Hearing transcript 02-14, 14 February 2020, p. 31, L 12 – p. 39, L1.

⁷⁸ [DI #0472](#), Pre-Filed Testimony of Nathan Dill, 13 December 2019, p. 30-31. Dill notes that “The information presented here is based entirely upon numerical modeling with limited knowledge of the in-situ conditions...It is recommended that a field data collection program be designed and implemented to provide site specific data for further analysis, and to validate the accuracy of model results.”

Upstream's expert witness, Prof. Neal Pettigrew, of the University of Maine, testified in his pre-filed testimony⁷⁹ and also in his live testimony,⁸⁰ based on his 37 years of real data collection and analysis of the flows, tides and currents of the entire Gulf of Maine, that Nordic's model was lacking in sufficient current "real time" data, that is, data from actual monitoring of tides, currents and temperatures in the Bay,⁸¹ and conflicts with data collected from research buoys over a year-long period. In its Final Fact Sheet and Response to Comments, DEP acknowledged the lack of real data, by requiring after the fact current and flow studies as a permit condition but found, inconsistently, and with no supporting evidence, that the model results were sufficient to demonstrate that the proposed discharge would not degrade water quality.⁸² Upstream disputes this unsupported finding.

The Board should have considered the pre-filed testimony in the record from Upstream's expert witnesses, including not only Prof. Pettigrew, but also John Krueger and Gary Gulezian, and Dr. Kyle Aveni-Deforge,⁸³ which establish the potentially catastrophic effect of the proposed discharge on Upper Penobscot Bay, and the almost complete lack of data from actual monitoring of the Bay. Upstream's witnesses concluded that the existing evidence cannot support issuance of a discharge permit without further investigation into conditions in the Bay.⁸⁴ Only proper field

⁷⁹ [DI #0480](#), NVC/Upstream 5: Testimony of Dr. Neal R. Pettigrew admitted, 14 December 2019.

⁸⁰ [DI #0652](#), Hearing transcript 02-12, 12 February 2020, p. 36 Line 11- p. 44, L 17.

⁸¹ See [DI #0480](#), NVC/Upstream 5: Testimony of Dr. Neal R. Pettigrew admitted, 14 December 2019, p. 8; See [DI #0652](#), Hearing transcript, 12 February 2020, p. 39, L22- p. 40 L17; See [DI #0001](#), Final Fact Sheet, p. 45, Comment #7: "Because Nordic has failed to provide local, site specific data, the utility, reliability, and accuracy of Nordic's models has been compromised...Nordic's modeling is therefore unsuitable for the purpose of determining dilution factors used to set precise discharge concentrations, especially when the model predicts impacts on the cusp of or exceeding State standards."

⁸² See [DI #0001](#), Final Board Order, p. 3-4, Conclusion and Findings.

⁸³ See [DI #0479](#), NVC/Upstream 4: Dr. Kyle Aveni-Deforge testimony with exhibits, 13 December 2019. Dr. Aveni-Deforge testifies to specific negative impacts, currents, and describes an effective monitoring program.

⁸⁴ See [DI #0478](#) 03, Pre-filed Testimony of John A. Krueger and Gary V. Gulezian, and [DI #0480](#), NVC/Upstream 5: Testimony of Dr. Neal R. Pettigrew, 14 December 2019.

testing in upper Penobscot Bay would supply the data necessary to predict the impact of Nordic's proposed discharge and determine whether Nordic met the required standard. Nordic's permit was awarded without the Board knowing where the pollution would go and how soon. Thus the Board abused its discretion and committed an error law in issuing the permit.

Ostensibly in order to backfill the Board's unsupported finding, the Board added permit condition F to the permit, requiring a dye study when the facility begins full discharge, and condition G, requiring utilization of two Acoustic Doppler Current Profilers to collect data on currents in the vicinity of near-field and far-field dilution areas, to be begun early in 2021. A study with sufficient data to determine distribution of effluent in the Bay should have been completed as part of the application as without the study, the Board lacked any credible basis to find that the anti-degradation standard was met. Asking an applicant post permit award to supply missing but necessary information needed in the first instance to determine whether the applicant met the standards is not authorized by statute and an abuse of discretion.

Instead, the Board's permit condition F requires after the issuance of the permit that Nordic conduct dye tests to determine flow and dispersion characteristics in Penobscot Bay.⁸⁵ Nordic is to begin the study within 6 months after the project becomes capable of discharging 7.7 million gallons per day of effluent (and only if it should reach that capacity). After operations have commenced, if the dye test shows a problem with the 7.7 million gallon per day discharge, little, if anything, can be done. The project will have been built.

The Board directed that dye testing must be accomplished, acknowledging that dye testing is necessary to determine if the Bay is able to absorb the pollution imposed by Nordic. If dye testing is necessary and dye testing is not performed prior to the issuance of the permit, the

⁸⁵ See [DI#0001](#), p. 9.

permit was granted without substantial evidence of the Bay's ability to absorb Nordic's pollution. Although Nordic had ample time before it filed its application to perform dye tests, and after it filed its application and the commencement of the hearings, the Board chose instead to impose a permit condition allowing Nordic to perform the dye tests after construction of the project, when it would be too late to undo illegal levels of pollution.

Nordic's dispersion model was not based on reasonable or competent data collected over sufficient time to prove the model was reliable. This unverified modelling is not substantial evidence sufficient to support the Board's findings. "Substantial evidence exists when a reasonable mind would rely on that evidence as sufficient support for a conclusion." *Osprey Family Trust v. Town of Owls Head*, 2016 ME 89, ¶ 9, 141 A.3d 1114. Here, the record does not show that a reasonable mind would rely of the Board's evidence, given Dr. Pettigrew's testimony, and the Board's improper alteration of the calculations and conclusions concerning results of Nordic's modelling. The Board should have addressed the threat to water quality posed by Nordic's proposed discharge by not allowing discharges to the Bay.⁸⁶

The Board should not have allowed the application process to proceed without requiring Nordic to submit information that should have been part of the application.⁸⁷ It was arbitrary and capricious for the Board to allow material application requirements to be addressed after the permits were awarded, by making those application requirements into after-the-fact and sometimes post-completion of the project. By converting application requirements into after-the-fact permit conditions, the Board acknowledges that Nordic's application is incomplete. Any Board decision granting a permit with an application that is materially incomplete creates a

⁸⁶ This issue would become moot if DEP replaced the proposed permit with a no- discharge permit, as Upstream is urging in this appeal.

⁸⁷ See 06-096 C.M.R. ch. 3, § 16, authorizing the Department to require submission of additional information by the applicant during the application process.

permit that is not supported by substantial evidence.

The permit must therefore be denied, because the fate of the pollutants has not been determined, so the Board cannot make an informed decision. In no event would the Board be justified in permitting the massive discharge allowed by the current permit without the real data necessary to demonstrate that the discharge would not degrade the water quality of the Bay.

5. The Board's data show that only a zero-discharge permit will completely prevent water quality degradation.

When it issued the Final Order, the Board stated in the Fact Sheet that it found that the Permit would adequately protect water quality. But the Board's nitrogen limit will not remove the risk of significantly lowered water quality, as defined by DEP. The Final Order explains that:

... in any case where the new or increased discharge will consume greater than 20% of the remaining assimilative capacity for dissolved oxygen or other water quality parameter, the resulting lowering of water quality will be determined to be significant. ”

This policy is consistent with the “no[] adverse impact” terms of the anti-degradation statute, 38 M.R.S. § 465-B(2)(C).

The Fact Sheet states that dissolved nitrogen will be “at the 20% remaining assimilative capacity,” once Nordic begins discharging. The Board should treat this dissolved nitrogen data as a warning flag, and recognize the likelihood that the 20% remaining capacity will be consumed, at least periodically, without better protection. Water quality is very sensitive to small changes, so the Board should get it right. Only the zero-discharge alternative would provide such protection.

In summary, the data cited by the Board do not show that the assimilation capacity of Belfast Bay will be protected once Nordic starts discharging. Under the “no[] adverse impact” terms of the anti-degradation statute cited above, 38 M.R.S. § 465-B(2)(C), given the absence of this data the Board was legally required to deny the permit.

6. Nordic has failed to demonstrate the technical ability to meet the Board's proposed total Nitrogen concentration in its effluent.

The Board did in fact impose a water-quality based effluent limit for dissolved nitrogen of 21 mg/l, rather than the 23 mg/l originally proposed by Nordic.⁸⁸ But the record does not show that this limit would be sufficient to meet the goals of Maine's anti-degradation policy, nor that Nordic could actually meet this, or any, water-quality based limits that would be lower than the limits proposed by Nordic, by any means other than zero-discharge treatment.

Nordic asserts in the record that the nitrogen concentration of the wastewater will be 23 mg/liter.⁸⁹ The Board's Final Fact Sheet acknowledges that given this nitrogen concentration, the far-field, diluted nitrogen concentration violates the antidegradation policy, even using the favorably-altered dilution ration of 530:1.⁹⁰ The Board is therefore issuing the permit with a lower discharge limit for total Nitrogen of 21 mg/l, which it finds will keep total Nitrogen "at" – not below – its goal of preserving "20% of the remaining assimilative capacity."⁹¹ Nothing in the record indicates that Nordic's treatment system is able to meet this limit, especially not on a consistent basis.

Further, nothing in the record explains how remaining at the threshold of preserving 20% assimilative capacity will attain the "no adverse impact" standard for Class SB waters set forth in 38 M.R.S. § 465-B(2) for Class SB waters: "Discharges to Class SB waters may not cause

⁸⁸ See [DI #0001](#), Final Fact Sheet, pp. 26-27.

⁸⁹ See [DI #0021a](#), Attached/hyperlinked 10-19-2018 MEPDES application, 19 October 2018, p. 94; p. 148.

⁹⁰ See [DI #0001](#), Final Fact Sheet, p. 26: "Based on the Department staff's review and analysis and the record information as described in this Fact Sheet, the Board finds that Nordic's proposed discharge concentration of 23 mg/L would not meet the default antidegradation licensing criteria threshold of 21 mg/L at full flow. This is because, in the Department staff's view based on its review and analysis, the proposed discharge value of 23 mg/L would consume 22% of the remaining assimilative capacity of the receiving water."

⁹¹ See [DI #0001](#), Final Fact Sheet, pp. 20 & 37.

adverse impact to estuarine and marine life.”⁹² If this standard cannot be met, the permit must be denied – and the time to do so is when the proposed facility has not yet begun to discharge, not after the harm has already been done.

The Board’s proposed limitation of 21 mg/l of Nitrogen in the effluent, is due to the fact that even with a factor of 2 variance from the anti-degradation policy, Nordic’s 23 mg/l would still exceed water quality. While this 21 mg/l effluent concentration may seem like a small difference, it is an 8.7% reduction in Nitrogen removal. Nordic has not demonstrated any ability to remove nitrogen at this capability. Nordic has claimed 85% removal of Nitrogen will enable it to obtain 23 mg/l. Nordic would have to attain 86+% removal capability to discharge at 21 mg/l. Nordic has not demonstrated that it knows how to do this.

These facts are not new. Upstream presented them in its comments on the SLODA permit.⁹³ The Board did not respond to these comments by Upstream, in its Response to Comments on the SLODA, or anywhere else. Nordic’s witnesses at the hearing, although they repeatedly claimed that Nordic would use the best treatment available, did not claim that Nordic would be able to reduce dissolved nitrogen by more than 85%. The Board erred in issuing the permit given Nordic failed to meet its burden to show its application met the above standard.

7. Nordic provided insufficient temperature data in its Maine PDES permit application to verify that it will meet the state Tidal Water Thermal Discharge Standard.

Nordic’s wastewater will be discharged at a significantly higher temperature than the receiving waters of Belfast Bay, which poses a serious potential for harm.⁹⁴

⁹² See [DI #0001](#), Final Fact Sheet, pp. 10 – 11.

⁹³ See [DI # 0975](#), Redacted version of filing by David Losee setting forth Upstream’s comments on the Site/NRPA/WQC draft proposed Board order [Redacted per Twenty-Third Procedural Order], 5 October 2020.

⁹⁴ Temperature is a unique pollutant. Temperature is not measured as concentration and is instead a property of water. Thermal energy is not “in” the water in the same sense that copper atoms and

Because of the risk presented by heated discharges into colder water, Maine has a strict Tidal Water Thermal Discharge Standard, 06-096 C.M.R. ch. 582, § 5, which provides:

No discharge of pollutants shall cause the monthly mean of the daily maximum ambient temperatures in any tidal body of water, as measured outside the mixing zone, to be raised more than 4 degrees Fahrenheit, nor more than 1.5 degrees Fahrenheit from June 1 to September 1. In no event shall any discharge cause the temperature of any tidal waters to exceed 85 degrees Fahrenheit at any point outside a mixing zone established by the Board.

Nordic's discharge will occur at a depth of approximately 34 feet. At that depth, water is chronically cold. Because the discharge water will be much warmer than the receiving water, it will be impossible for Nordic's discharge to comply with ch. 582 § 5.

The Board's Final Fact Sheet shows that DEP staff did not sample the surface water to collect real temperature data, but rather conveniently used achievable numbers for which the Fact Sheet cites no source.⁹⁵ The Fact Sheet mistakenly claims that it was permissible to use a surface water temperature because the discharge wastewater will rapidly rise to the surface and surface water. But Nordic own witness Nathan Dill testified at the hearing that stratification occurs in the area of the discharge preventing the wastewater from rapidly rising.⁹⁶

Thus, Nordic provided insufficient information to show that it can meet Maine's temperature standard. DEP's calculations shown in the Fact Sheet relied on unsupported high surface temperatures surrounding the mixing zone, temperatures that are just happen to be favorable to calculations of the temperature difference.⁹⁷ Even then, DEP's calculations indicate that Nordic's discharge would meet the summertime maximum allowance, but by only one tenth

ammonium ions are in water. Thermal energy is absorbed by the water molecules, which is manifested as temperature and a property of the water.

⁹⁵ See [DI #0001](#), Final Fact Sheet, pp. 28-31.

⁹⁶ [DI #0655](#), Hearing transcript 02-14, 14 February 2020, p. 15 L 7 – p. 22 L20.

⁹⁷ [DI #0001](#), The Board's Final Fact Sheet presents DEP's temperature calculations on pp. 28-31, and again in response to comments on pp. 38-40.

of a degree (Change in temperature = 1.4 degrees F v. 1.5 degrees as the maximum allowed).⁹⁸

The Fact Sheet, on p. 27, states that DEP staff's calculations used a discharge temperature (18 degrees Celsius (64.4 F)) from Nordic's application, and used "ambient," (i.e., water in the Bay) temperatures used for summer (50 degrees F.) and non-summer (34.3 degrees F), but it gives *no source* for those temperatures.⁹⁹ In response to a comment by the Maine Lobsterman's Union, the Fact Sheet (p. 29) states that DEP staff "appropriately utilized used surface water ambient temperatures in its analysis because the discharge will be buoyant and rise to the surface quickly."¹⁰⁰

DEP thus relied on unverified water temperatures and assumptions of buoyancy. An August 14, 2019 memo from Ransom Consulting to Kevin Martin states that:

Temperature of the effluent is expected to be constant at 13 degrees centigrade. Ambient temperatures range from 0 centigrade to 22 centigrade (Normandeau, 1978). **Attachment F** shows estimated effluent temperatures that bracket the range of high and low ambient temperatures based on the far-field dilution estimated in our October 2, 2018 memorandum. Overall the far-field temperature anomaly is expected to be less than 0.2 degrees centigrade in either season based on this analysis.¹⁰¹

This painted a picture of a small 0.2-degree Celsius increase in the bay. For clarity, the range of 0 degrees Celsius to 22 degrees Celsius converts to 32 degrees Fahrenheit to 71.6 degrees Fahrenheit. Upstream disputed the 70-degree F high temperature. In its post-hearing brief, Upstream instead submitted that the temperature used should be derived from the

⁹⁸ DI # 0839, Board Meeting: packet materials, PowerPoint, meeting minutes, 5 May 2020, BEP Agenda, p. 67 ("Receiving water volume = 69.3 MG (calculated from the acute near-field dilution factor of 10:1).")

⁹⁹ [DI #0001](#), Final Fact Sheet, p. 29.

¹⁰⁰ [DI #0001](#), Final Fact Sheet, p. 29.

¹⁰¹ DI #0297, Email from Kevin Martin to service list forwarding 8/14/2019 NAF response to 7/31/2019 DEP request for information, Memo from Ransom Consulting to Kevin Martin, "Response to Review Comments," 14 August 2019, p. 4.

Northeastern Regional Association of Coastal Ocean Observing Systems (“NERACOOS”).¹⁰² NERACOOS data has been collected 24/7 at buoys in the Penobscot Bay over several years. Using this more extensive data set, the highest reading for 2018, for example, was 64.3 degrees Fahrenheit (17.9 degrees Celsius). During testimony, Mr. Dill agreed that the effluent temperature is really predicted to be 15-18 degrees Celsius, not the 13 degrees Celsius cited in his model.¹⁰³ So, the temperature of the effluent can be 5 degree C more than modeled by Mr. Dill, and the temperature in the bay is not likely to ever be as high as has been modeled by Nordic.

DEP based its calculations on the assumption that 100% of the effluent will be within the top fraction of an inch of the bay, with no temperature mixing between the discharge and the surface.¹⁰⁴ This is an unsupportable assumption that is in conflict with conclusions of the CORMIX modelling described in the DEP application. Mr. Dill estimated the size of the mixing zone and the temperature dilution that might be expected, even with the incorrect temperature ranges (lower than accurate effluent temperature and higher than accurate bay temperature). According to Mr. Dill’s testimony, the model shows that 15 minutes after discharge, the effluent plume will be trapped by stratification within the bay (“...a trapped buoyant plume in the spring, summer,...” ... “during slack tides in the other [non-winter] seasons the upstream intruding plume is expected to become trapped within the ambient stratification.”¹⁰⁵ “As a result, the effluent will rise about one-third of the way between where it was discharged and the surface.”¹⁰⁶ With this stratification, the discharge plume will be about 20 feet below the surface, depending

¹⁰² [DI #0813](#), Upstream’s Post-Hearing Brief submitted by David Perkins with Proposed Findings of Fact and Conclusions of Law, 4 May 2020, p. 23.

¹⁰³ [Docket ID #0655](#), Hearing Transcript 02-14, 14 February 2020, Nathan Dill, p. 76 L 14-22.

¹⁰⁴ [DI #0001](#), Final Fact Sheet, p. 29.

¹⁰⁵ [Docket ID #0655](#), Hearing Transcript 02-14, 14 February 2020, Nathan Dill, p. 28 L21 – p. 29; *See* [DI #0021a](#), Attached/hyperlinked 10-19-2018 MEPDES application, 19 October 2018, p. 85.

¹⁰⁶ [Docket ID #0655](#), Hearing Transcript 02-14, 14 February 2020, Nathan Dill, p. 28, L21 – p. 29 L 5.

on the tide. Even with calculations based on surface temperature, the change in water temperature “passed” the test by only 0.1 degree.¹⁰⁷

Had Nordic used the water temperatures more realistically adjacent to the mixing zone indicated by Nordic’s own model, beginning at the point of discharge and ending 1/3 of the way to the surface, the Nordic discharge would be in violation of the rule in ch. 582. As an example, if the June mean temperature used in the calculation was 48 degrees F instead of 50 degrees F,¹⁰⁸ the calculated temperature difference would be 1.64 degrees, which would exceed the allowable limit of 1.5 degrees F by 0.14 degrees F. This would be a violation.

As calculated by Nordic, the effluent mixing zone is based on a model that does not include factors that could allow for aberrant temperature variations and secondary circulation events. Nordic’s own calculations using their CORMIX model and corroborated by the testimonies of Wood and Dill suggest a 3 degree increase in Winter and a 1.2 degree increase in Summer.¹⁰⁹

The impact of the thermal discharge is more significant, the cooler the temperature of the background. DEP’s rule calls for the background temperature outside of the mixing zone. Nordic predicted, and the Board accepted, that the mixing zone is some 69 million gallons. The mixing zone must begin at the discharge 34 feet below the surface, where obviously the water is coldest. Instead of determining the background temperature profile outside this 69-million-gallon mixing zone, the DEP used measurements that would be the warmest possible. Although the Board’s decision does not identify the sources of its temperature data, the warmest possible water

¹⁰⁷ DI # 0839, Board Meeting: packet materials, PowerPoint, meeting minutes, 5 May 2020, BEP Agenda, p. 67.

¹⁰⁸ [DI #0001](#), Final Fact Sheet, pp. 28-31.

¹⁰⁹ [Docket ID #0655](#), Hearing Transcript 02-14, 14 February 2020, p. 89 L2 – p. 94 L1. CORMIX models are +/- 50%.

temperature in Belfast Bay would be the daily satellite readings provided by the NOAA. These temperatures are the sea surface temperatures, which are most relevant to recreational users. These surface temperatures reflect the top fractions of an inch. Temperatures at the top fraction of an inch are NOT representative of the background temperature adjacent to the mixing zone that begins at the discharge point, 34 feet below the surface. The use of a lower and more likely temperature from below the surface in June would have the effect of increasing the calculated temperature difference beyond the 1.5-degree F difference allowed by the rule. The use of the warmest possible temperature to determine the temperature effect is a deliberate distortion of the rule.

The assumption that 100% of the effluent will be within the top fraction of an inch of the bay, with no temperature mixing between the discharge and the surface, is a non credible assumption. Even with this assumption, the change in water temperature in Nordic's model "passed" the test by only 0.1 degree.¹¹⁰ Nordic's temperature data are therefore misleading and fail to show compliance with ch. 582. Nordic has relied on unverified models to demonstrate its thermal impact. Nordic's discharge temperature should have been verified with additional data collected over several seasons to take into account anomalies in the currents and wind, and sub-circulations within the Bay. The Court should find that the record does not support DEP's data used to calculate temperature rise, nor the Board's decision to accept DEP's calculations.

Moreover, DEP abused the review process in that it did not reveal the data source for the receiving water temperatures. That source appears to have been a chart, Exhibit 33, provided by a Nordic consultant in prehearing rebuttal testimony regarding fish diseases.¹¹¹ Nordic also did

¹¹⁰ [DI #0001](#), Final Fact Sheet, pp. 28-31. *See also* [Docket ID #0655](#), Hearing Transcript 02-14, 14 February 2020, Nathan Dill, p. 28, L21 – p. 29 L 5.

¹¹¹ DI #0538, Transmittal email 2 of 3, Rebuttal Testimony of Ian Bricknell, Addendum A. and Nordic Ex. 33: "Belfast Sea Temperature online, 2020", 17 January 2020, p. 63.

not disclose the mathematical formula for computing temperature rise with respect to Ch. 582 until May 15, 2020, well after the record was closed.¹¹² Intervenors had no opportunity to review or comment on the data source or the methodology. Considering these abuses, the MEPDES permit cannot be issued due to lack of evidence regarding the effect of Nordic's effluent on the temperature of the Bay.

Moreover, the record shows that had Nordic used the water temperatures more realistically adjacent to the mixing zone, the Nordic discharge would be in violation of the standard in Ch. 582, § 5. As an example, if the June mean temperature used in the calculation was 48 degrees F instead of 50 degrees F, the calculated temperature difference would be 1.64 Degrees. This exceeds the allowable limit of 1.5 degrees F by 0.14 degrees F. This would be a violation.

8. Nordic treated salinity differently in its MePDES dispersion than in its SLODA permit, throwing doubt on its conclusions.

The problems of Nordic's dispersion and thermal discharge data cast doubt on the SLODA permit as well as the MePDES permit, with additional difficulties. SLODA requires the Board to determine that a proposed project will not have "an adverse effect on water quality."¹¹³ As discussed above, Nordic's expert witness, Nathan Dill, described the use of "CORMIX" modelling to predict the initial mixing and the behavior of the effluent plume in the near-field. Certain assumptions were made to run the model, including a flowrate of 7.7 million gallons per day (maximum plant capacity), and a 2:1 mixture of saltwater to freshwater.¹¹⁴ A 2:1 mix of saltwater to freshwater requires $\frac{1}{3}$ of the 7.7 million gallon per day flow, 2.567 million gallons per day, of freshwater. Results of this CORMIX model, based on a 2:1 saltwater to freshwater

¹¹² DI # 0839, Board Meeting: packet materials, PowerPoint, meeting minutes, 5 May 2020, BEP Agenda, p. 67-68.

¹¹³ Site Law, 38 M.R.S. § 484(3).

¹¹⁴ See [DI #0021a](#), Attached/hyperlinked 10-19-2018 MEPDES application, 19 October 2018, Nathan Dill memo to Nordic Aquafarms, Near-field Dilution of Proposed Discharge," 27 September 2018, p. 80.

mix, were further used to configure the model to predict far-field effluent dilution and behavior.¹¹⁵ In contrast, Nordic's SLODA permit states "At full operation, the proposed project would consume 1,205 gpm [gallons per minute, equal to 1.735 million gallons per day] of freshwater and 3,925 gpm [equal to 5.652 million gallons per day] of seawater."¹¹⁶ These quantities, using the maximum amount of freshwater available, would create a mix exceeding 3:1 saltwater to freshwater, a ratio that is substantially different than that used for nearfield models. This greater ratio would show a higher rate of dilution of Nordic's effluent.

The Board should not base the required finding for the SLODA permit on assumptions and data that conflict with those used for the MePDES permit. In fact, as shown by the discussion above, the data and testimony in the record show that Nordic's proposed discharge *will* have an impermissible adverse effect on water quality, a fact that should preclude issuance of the SLODA permit.

In summary, the environmental consequences of thermal discharge violations, especially if continued for a long time, would not be trivial, any more than the water quality impacts of the pollutants modelled in Nordic's dispersion model, particularly dissolved nitrogen. DEP's thermal discharge limits exist for good reasons, and the threat of violations should not be ignored. A permit should not be allowed knowing that violation of a rule is likely. In light of this threat, the Court should vacate the Board's decision.

¹¹⁵ [DI #0655](#), Hearing Transcript 02-14, 14 February 2020, Wood/Dill, P. 89 L2 – P. 94 L 1.

¹¹⁶ [DI #0002](#), BEP Order #L-28319-26-A-N/ L-28319-TG-B-N /L-28319-4E-C-N/ L- 28319-L6-D-N/ L-28319-TW-E-N approving Natural Resources Protection (NRPA), Water Quality Certification, and Site Location of Development Law (Site Law) applications submitted by Nordic, 19 November 2020, p. 61. *Bracketed wording added.*

9. In summary, BEP violated its own procedural rules, abused its discretion and made findings unsupported by record evidence when it issued the Water Permit.

In reaching its decision on the Water Permit, the Board departed from the procedural rules established at the first pre-hearing conference.¹¹⁷ Those rules call for witnesses to be subject to cross-examination, as discussed above. Cross-examination is not required for Rule-making, nor for every adjudicatory step in the record-making process, *but it is required by the Board's own rules for adjudicatory hearings*, and here, it was improper for the Board to receive, and rely on, new evidence without permitting cross-examination by Upstream Watch and others.

In conclusion, the court should reverse the Board's issuance of the Permit, under the APA, 5 M.R.S. § 11007, which provides that a decision may be overturned if it was arrived at by unlawful procedure, were unsupported by substantial evidence in the record, arbitrary and capricious, an error of law, or an abuse of discretion.

IV. Neither the Air Emissions License nor the SLODA permit are supported by substantial evidence in the record.

1. The Board misinterpreted 38 M.R.S. § 590, and DEP's regulations in 06-096 C.M.R. ch. 115, by allowing Nordic to qualify for "minor source" status, without submitting data on its total power needs to support its claim for "minor source" status.

Nordic applied for the Air License as a "minor source," committing in its application to limit its facility-wide annual fuel usage to 900,000 gallons for its generators.¹¹⁸ Nordic thus

¹¹⁷ See [DI #0303](#). The First Procedural Order: documents the Board's decisions on petitions to intervene, 15 August 2019. See [DI #0316](#), Email from Ms. Bertocci to Service List transmitting Second Procedural Order including revised service list and list of relevant licensing criteria, 23 August 2019. See [Second Procedural Order](#), 23 August 2019. See also [DI #0389](#), Third Procedural Order, 1 November 2019. See also the Department Rules at 06-096 C.M.R. ch. 3, § 16, and the APA, 5 M.R.S. § 11007.

¹¹⁸ Nordic applied for a new 'minor source air emission license' for eight stationary source generators, pursuant to 06-096 C.M.R. ch. 115 for air emission sources. See [DI # 0003](#), BEP Order #A-1146-71-A-N approving Air Emissions License application submitted by Nordic, 19 November 2020, p. 12. The federal Clean Air Act distinguishes between major and minor sources, providing federal requirements for the licensing of major sources, and for delegation by EPA to states the responsibility for licensing minor

applied for a license as a “synthetic minor,” i.e., a source with a voluntary constraint on its fuel use.¹¹⁹ Although this voluntary limitation is allowed by Chapter 115, Nordic never disclosed how much power it will actually need. Nordic has never disclosed what its full power demand will be. Nordic’s permitted generators could generate 12–14 MW. To make up the difference and allow Nordic to operate during a power outage, Nordic would need an undisclosed number of portable generators, all exempt.

Thus, the record does not demonstrate that Nordic will be able to operate within its voluntary limit. If Nordic cannot show that it will be able to meet all its power needs, including its obligations to Central Maine Power (“CMP”), discussed below, it cannot show that it will be able to stay within its voluntary minor source limits, and the Board should have denied it the minor source status it sought.

2. The Board did not respond to Upstream’s comments on the potential for exceedance of air quality limits by emissions from the generators “in combination with other sources,” on which data was readily available.

In disregard of Upstream’s comments,¹²⁰ and of the requirements in 38 M.R.S. § 590.2(C), and 06-096 C.M.R. ch. 115, § 4–C(6), for limits as necessary to prevent excessive air pollution that would be caused by the proposed source “alone or in combination with” other sources, the Board did not require Nordic to submit readily available data on sources of air emissions other than its generators. As a result, the Board issued the License based on a record that does not contain sufficient evidence, and does not comply with 38 M.R.S. § 590(2)(C).

sources, which Maine has implemented in Chapter 115. Specific Condition 17(A)(2) of the Air License limits the facility to the use of ultra-low sulphur distillate fuel, as defined by EPA in 40 C.F.R. § 60.4207(b).

¹¹⁹ See [DI # 0003](#), Air License Final Order, p. 11.

¹²⁰ See [DI #0933](#), Upstream Response to draft proposed order, 15 August 2020.

3. Nordic’s undisclosed Agreement with Central Maine Power precludes its classification as a “minor source,” and also precludes the findings required by SLODA.¹²¹

Nordic failed to disclose the extent of obligations Nordic may have or may be negotiating with CMP regarding producing power on demand when needed by CMP, without regard to self-imposed constraints. Nordic originally represented to the Board that its power plant was for “Peak Shaving,” and then that it was for “Emergency Generation,”¹²² but in fact, it will be available for “On-call Power” for CMP, *meaning that Nordic does not have control over the use of its power plant and cannot limit its fuel consumption the amount promised to qualify as a “synthetic minor source,” because CMP can demand power beyond the limitations voluntarily committed to by Nordic.*¹²³

If Nordic’s contract with CMP calls for Nordic to generate power according to CMP’s needs, Nordic could not assure the Board that it can voluntarily restrict its fuel use. Because this restriction is what qualifies Nordic’s emissions as a “minor source” of air pollution, the “minor source” permit is invalid and the court should invalidate the awarded air permit. Nordic should have applied for a permit as a major source, based on its arrangement with CMP.

4. The record does not show that Nordic will have sufficient emergency back-up power.

Nordic failed to establish that it will have sufficient emergency back-up power in the event of emergency power failures. Without a showing of the total power needs of the facility, Nordic cannot show that it will have an adequate backup power source in the event of a power outage. Without backup power, Nordic will be at risk of having to shut

¹²¹ DI #0473, Tab 14: Direct Testimony of Steven Whipple (Mainely Environmental) on Air Emissions and Addendum A., p. 0654; p. 3, #11, bullet 2; *See also* [DI #0654](#), Hearing Transcript 02-13 Corrected Version, 13 February 2020, Whipple, p. 218 L 15-19.

¹²² [DI #0654](#), Hearing Transcript 02-13 Corrected Version, 13 February 2020, p. 236, L8-13, and p. 238.

¹²³ [DI #0654](#), Hearing Transcript 02-13 Corrected Version, 13 February 2020, p. 241, L7 – p. 242 L19.

down its entire production facility, with potential fish kills, and the discharge of untreated wastewater into Penobscot Bay.

The Board's discussion of Nordic's power sources in the SLODA permit¹²⁴ acknowledges Nordic's expected dependence on power sources other than its own generators, but it does not explain how Nordic will meet its needs or stay under its voluntary minor source limit in the event of a power outage.¹²⁵

5. Nordic has not made the showings concerning cumulative air pollution impacts required by both 38 M.R.S. § 590(2)(C), 06-096 C.M.R. ch. 115, § 4-C(6), and SLODA, 38 M.R.S. § 484(3).

The Board violated the requirements for an air emissions license in 38 M.R.S. § 590(2)(C) by not requiring Nordic to submit data demonstrating that its total emissions would not violate ambient air quality standards in combination with existing sources.

Neither the Air Emissions License, issued pursuant to 38 M.R.S. § 590(2), and DEP regulations at 06-096 ch. 115 ("Chapter 115"), nor the permit issued pursuant to SLODA, 38 M.R.S. §§ 484(3), allow Nordic to avoid disclosing its total overall air emissions. For the reasons discussed below, the Board's failure to address the questions presented by these permits resulted in a record that does not support its decisions.. The Court should therefore vacate the issuance of the Air Emissions License and SLODA/NRPA permit as not supported by the record.

The Air Emissions Act provides, in 38 M.R.S. § 590(2), that DEP shall grant a license:

. . . and may impose appropriate and reasonable conditions as necessary to secure compliance with ambient air quality standards if the department finds that the proposed

¹²⁴ [DI #0002](#), BEP Order #L-28319-26-A-N/ L-28319-TG-B-N /L-28319-4E-C-N/ L- 28319-L6-D-N/ L-28319-TW-E-N approving Natural Resources Protection (NRPA), Water Quality Certification, and Site Location of Development Law (Site Law) applications submitted by Nordic, 19 November 2020, p. 16.

¹²⁵ [DI #0002](#), BEP Order #L-28319-26-A-N/ L-28319-TG-B-N /L-28319-4E-C-N/ L- 28319-L6-D-N/ L-28319-TW-E-N approving Natural Resources Protection (NRPA), Water Quality Certification, and Site Location of Development Law (Site Law) applications submitted by Nordic, 19 November 2020, p. 16, A. Air Quality.

emission will:

- A. Receive the best practical treatment;
- B. Not violate or be controlled so as not to violate applicable emission standards;
and
- C. Either alone *or in conjunction with existing emissions*, not violate or be controlled so as not to violate applicable ambient air quality standards. (Emphasis added).

To meet the requirement of Section 590(2), the applicant must provide sufficient information on all the existing emissions at its proposed facility, but, as noted repeatedly in the Upstream’s comments on both the draft Air Emissions permits and the SLODA permit, Nordic has not done so. As stated in Upstream’s comments on the draft air emissions permit: “There is very likely no such thing as an ‘insignificant source’ with respect to maintaining ambient air quality standards when the primary source(s) consume nearly all of the standard.”¹²⁶

Nordic’s omissions of data on multiple sources of emissions which, if they were quantified, could, and likely would, have shown the proposed facility’s potential to violate ambient air quality standards, prevented the Board from issuing the Air Emissions License. The statutory requirement for considering all emissions in combination prohibits DEP from issuing an Air Emissions License without evaluating all existing emissions which would, when combined with emissions from the proposed new source, cause a violation of an ambient air quality standard. Here, the Board’s fact sheet, its draft permit and its response to comments, all show that the Board did not consider any data on existing emissions other than from the stationary generators in issuing the Air Emissions License to Nordic. With no data from any of the other activities and emissions on the site, the court must find that the Board’s findings that

¹²⁶ See [DI #0933](#), Upstream Response to draft proposed order, 15 August 2020, p. 2. See also [DI #0975](#), Redacted version of filing by David Losee setting forth Upstream’s comments on the Site/NRPA/WQC draft proposed Board order [Redacted per Twenty-Third Procedural Order], 5 October 2020, pp. 55 – 70.

the combined emissions from all of the sources will not violate ambient air quality standards, is not supported by the record, and the issuance of the Air Emissions License was contrary to 38 M.R.S. § 590(2)(C).

6. The Board violated SLODA, 38. M.R.S. § 484(3), by not considering all the sources that could have contributed to adverse effects on air quality.

As discussed above, Nordic refused to disclose the full extent of several sources of emissions on site, including but not limited to: the fish processing plant; the wastewater treatment plant; the huge fish “grow-out” tank buildings; the office building; and the on-site cement plant. In its comments on the draft SLODA permit, Upstream objected to Nordic’s failure to disclose data on these omissions, and showed that they could be quantified. Upstream’s comments were as follows:

The proposed power plant will consume up to 90+% of the assimilative capacity directly around the facility and double, triple, or quadruple the background pollution levels for a large area of influence in Northport and Belfast during peak summer conditions when it is operating. The air pollution from this ancillary source alone suggests that the site is not suitable, that this facility would have an “Unreasonable adverse impact on air quality.”¹²⁷

In addition to trucks, there must be bulldozers, excavators, lifts, graders, dump trucks, stripped land, stock piles of topsoil, stock piles of very fine unsuitable soil, stock piles of gravel, unpaved roadways, scraping of earthen material, crushed stones or rocks, crushing and stockpiling of blasted material, etc. Again, the list goes on and on. Each and every one of the examples above have emission factors and usage factors. They are readily available from large projects such as the Boston Big Dig, and from the Department of Transportation, and the EPA (the EPA AP-42 emissions factors). Manufactures have more specific equipment emission data, and there are many historical studies available on the internet for dust emissions. Air quality determinations are often required for large water and wastewater infrastructure projects.

These types of fugitive emissions are not exempt. They are easily estimated and defined. The statement about “not easily quantifiable” cannot be

¹²⁷ [DI #0975](#), Redacted version of filing by David Losee setting forth Upstream’s comments on the Site/NRPA/WQC draft proposed Board order [Redacted per Twenty-Third Procedural Order], 5 October 2020, p. 62.

justified. It may be very hard to assess VOC leakage from an industrial facility, but it was never suggested that there is a VOC concern from this facility. Since CO, NOx, and PM2.5 are readily quantifiable from construction point, area, and volume sources, the Applicant is deficient by not examining these emissions for Phase 1 and Phase 2 construction, separately and concurrently. Construction at this site will not be temporary. It will extend for years and the area will be exposed to the emissions for years.¹²⁸

The Applicant cannot justify the statement that there are minimal air quality impacts from process and equipment that have odor potential or noise potential or nuisance dust potential during construction and/or during operations, because it simply has not provided sufficient information to the record to do so. Clearly the air pollution increase from odor- or noise-producing operations is not ZERO, but likely “comparable” to other industrial facilities. Given the size and intricacy of this proposed facility the undisclosed potential impact to air quality from odor and noise is substantial, so the permit(s) must be denied.¹²⁹

In its Response to these Comments on the SLODA/NRPA permit, the Board asserted that it did not need any data on these emissions. The Board claimed that in its professional judgment and experience these sources would not be significant.¹³⁰ The Board in the Draft Board Order for the Air Emission License stated:

“[T]he 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*. [Emphasis added].”¹³¹

¹²⁸ [DI #0975](#), Redacted version of filing by David Losee setting forth Upstream’s comments on the Site/NRPA/WQC draft proposed Board order [Redacted per Twenty-Third Procedural Order], 5 October 2020, p. 64.

¹²⁹ [DI #0975](#), Redacted version of filing by David Losee setting forth Upstream’s comments on the Site/NRPA/WQC draft proposed Board order [Redacted per Twenty-Third Procedural Order], 5 October 2020, p. 67.

¹³⁰ [DI #0002](#), BEP Order #L-28319-26-A-N/ L-28319-TG-B-N /L-28319-4E-C-N/ L- 28319-L6-D-N/ L-28319-TW-E-N approving Natural Resources Protection (NRPA), Water Quality Certification, and Site Location of Development Law (Site Law) applications submitted by Nordic, 19 November 2020, pp. 17-18.

¹³¹ [DI #0905](#), Chapter 115 Minor Source Air Emissions draft proposed order issued for public comment, 17 July 2020, P. 23

In spite of having recited this standard, the Board’s discussion of other sources reveals that having received no data on such emissions from Nordic, the Board’s decision was unsupported by any evidence that they would not contribute to any adverse effect on air quality. For the reasons discussed about, the Board’s response is simply not credible, and can only be regarded as arbitrary and capricious.

In the draft Air Emissions License, the Board stated that it was not required to consider other sources at all in setting air emissions standards for Nordic’s generators. The draft Air Emissions License, issued on July 17, 2020, includes the following response to a comment:

In its post-hearing brief, Northport 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.* (Emphasis added).¹³²

This finding by the Board is explicitly contrary to 38. M.R.S. § 590(2)(C). The statute provides no basis for this finding by the Board, nor do the subsequent response to comments on the SLODA permit showed that the Board ever revised the basis for its findings in the Air Emissions License.

The Board’s claim in the draft and final Air Emissions License that it is only responsible for setting emission limits on minor sources was a misstatement of the Board’s legal obligations under the Air Emissions Act and Chapter 11.¹³³ The Board is in fact required to evaluate the facility’s overall impact on air quality by 38 M.R.S. § 590(2)(C), and 06-096 C.M.R. ch. 115, §

¹³² [DI #0905](#), Chapter 115 Minor Source Air Emissions draft proposed order issued for public comment, 17 July 2020, p. 10.

¹³³ In the draft of the Air Emissions License issued on July 17, 2020, the Board stated that: “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.”

4–C(6), which provide that the Board must determine that the emission, “[e]ither alone *or in conjunction with existing emissions* will not violate ... applicable ambient air quality standards” (Emphasis added). Secondly, SLODA, 38 M.R.S. § 484(3) requires that a developer must show that a proposed project will not “adversely affect existing uses, scenic character, *air quality*, water quality, or other natural resources....” (Emphasis added). Both statutes require that Nordic should have submitted estimated emissions from multi-year construction activities, including approximately 45,000 truckloads of excavated soil; the fish processing plant; the wastewater treatment plant; the huge fish “grow-out” tank buildings; the office building; and the on-site cement plant.

In its Response to Comments issued with the Air Emissions License, the Board also maintained that 06-096 C.M.R. Chapter 115 does not require information concerning emissions on sources identified as “insignificant sources” in Chapter 115.¹³⁴ The Board’s Response relied solely on Chapter 115’s specific exclusion of such sources, while overlooking the requirements cited above and the fact that Nordic did not identify what the emissions would actually be from the facilities listed above, or what its overall power needs will be for those facilities. The Board’s response correctly states that “insignificant sources” of emissions are excluded by Chapter 115 from the requirement that the application disclose all emissions, but the Board’s response misses three points: 1), without more information, the record doesn’t show that the portions of the facility listed above are all “insignificant sources;” 2), the power needs of these operations must be included for the purpose of determining whether a source can stay under the limit necessary for it to qualify as a minor source; and 3), the requirements of Chapter 115, § 4–C(6), and

¹³⁴ [DI # 0003](#), BEP Order #A-1146-71-A-N approving Air Emissions License application submitted by Nordic, 19 November 2020, Addendum A, p. 3. The Board addressed the Question of “Insignificant Sources” as the first topic of its Response to Comments.

SLODA, 38 M.R.S. § 484(3), for a demonstration that the total emissions from the site will not violated Ambient Air Quality Standards or have an “adverse effect on air quality.”

By allowing Nordic to submit an application lacking in complete information with respect to its cumulative air quality impacts, the Board created a record which cannot support the findings required by 38 M.R.S. § 590(2)(C) and 06-096 C.M.R. ch. 115, § 4–C(6), and SLODA, 38 M.R.S. § 484(3). Based on this record, the Board could not have fully evaluated the potential impact of Nordic’s overall project on air quality.

SLODA, 38 M.R.S. § 484(3), requires that an applicant obtain an Air Emissions License, but it is expressly *not* limited to permitted sources. Without knowing the other emissions sources and being able to analyze both Nordic’s power needs and its outputs, it is not possible for the Board to make the required finding of no negative impact on air quality, or whether Nordic should have been required to apply for a permit as a Major Source.

Without knowing the other air emission sources and analyzing both Nordic’s power needs and its output, it was not possible for the Board to know if the facility’s emissions will cause an exceedance of any air pollution standard. The record therefore does not support the Board’s findings that: 1) Nordic was not required to apply for a permit as a major source of Air Pollution; and 2) Nordic’s project would have “no adverse effect on the natural environment [including] ... air quality.”

The record does not demonstrate that the cumulative impact of all the potential sources of air emissions, both during construction and when it begins operations, would not adversely affect air quality, as required by both Chapter 115, § 4–(C)(6), and 38 M.R.S. §§ 484(3). The court should therefore find that the record is insufficient to show that the Board fully carried out the evaluations required by either the Air Emissions Act or SLODA.

SUMMARIES

Summary of Air Emissions Issues

Based on the forgoing, the court should invalidate both the Air License and the SLODA permit as issued contrary to law and unsupported by the record.

1. **Nordic failed to submit sufficient information to allow the Board to find that Nordic would meet the requirements of SLODA, 38 M.R.S. § 484(3). The Record therefore does not support the Board's approval of these permits.**¹³⁵

Nordic has not demonstrated that it will not have adverse water quality effects under SLODA, 38 M.R.S. § 484(3). In addition to SLODA's requirement of a demonstration of no adverse on air quality, SLODA also requires an applicant to demonstrate that its proposed project will have no adverse impact on water quality. In addition to the water quality impacts discussed in Part I above, there are several potential adverse impacts on water quality shown by Nordic's proposal, which the Board erred by not addressing.

a) **Nordic's freshwater needs: groundwater**

In testimony, Nordic stated that its proposal "reflects the capacity of the resources and the amount of withdrawal that is responsible without risk or with minimum risk of adverse impacts. It has not stated what the facility's precise requirements are in terms of water use..."¹³⁶ Nordic has not quantified its freshwater needs essential to maintain operations and support a financially-competitive rate of fish growth. Without knowing this number, it is impossible to determine

¹³⁵ [DI # 0975](#), Redacted version of filing by David Losee setting forth Upstream's comments on the Site/NRPA/WQC draft proposed Board order [Redacted per Twenty-Third Procedural Order], 5 October 2020.

¹³⁶ [DI #0002](#), BEP Order #L-28319-26-A-N/ L-28319-TG-B-N /L-28319-4E-C-N/ L- 28319-L6-D-N/ L-28319-TW-E-N approving Natural Resources Protection (NRPA), Water Quality Certification, and Site Location of Development Law (Site Law) applications submitted by Nordic, 19 November 2020, p. 61.

whether freshwater sources are sufficient, and also impossible to determine the potential adverse impacts from overuse.

Nordic's water supply estimate relies on unverified estimated yields. Nordic's application identifies the following sources of fresh water:

- i. Groundwater from 3 onsite production wells, 455 gallons per minute (gpm);
- ii. Surface water from the lower reservoir, 70 gpm (not quantified in the permit) and/or inflows from Little River, 250 gpm;
- iii. Belfast Water District (BWD), 500 gpm, for total maximum sustainable estimated yields of 1,275 gpm.¹³⁷

These projections are unreliable for the following reasons:

Drawdown of the groundwater aquifer. Withdrawal of the specified quantities of water from onsite wells will result in substantial drawdown in the aquifer. Nordic models are insufficient to predict long-term consequences of this extraction on water level and water quality because Nordic modeled only for supply, not for impact on neighboring homeowners' wells. The Board's Response to Comments acknowledged the uncertainty of the project's effects on groundwater:

Department staff's assessment is that the hydrogeological modeling and pump tests generally show that the specified volume of water can be obtained from the site, although it is possible that some drawdown of the aquifer may result. The long-term consequences of the water extraction on water levels and water quality are somewhat beyond the scope of the model, although the model does suggest some salt water intrusion at the project site, reduced baseflow, and increase in the volume of the larger bedrock aquifer contributing to the watershed). . . . *A revised monitoring program would more fully capture issues*

¹³⁷ [DI #0002](#), BEP Order #L-28319-26-A-N/ L-28319-TG-B-N /L-28319-4E-C-N/ L- 28319-L6-D-N/ L-28319-TW-E-N approving Natural Resources Protection (NRPA), Water Quality Certification, and Site Location of Development Law (Site Law) applications submitted by Nordic, 19 November 2020, p. 61.

associated with potential effects of the proposed water withdrawal and will be required to include measures to prevent adverse effects. [Emphasis added].¹³⁸

Upstream commented that the data from such a revised monitoring should be required prior to the issuance of the permit, but the Board chose instead to incorporate requirements for an extensive monitoring program to be carried out *after the permit's issuance*:

After careful consideration of the applicant's proposal and revisions to its proposal, the testimony and comments of intervenors and members of the public, and staff analysis, the Board determines that Nordic's HGI report and WRMP were assembled using the best available data at the time and reasonable efforts were made to assemble that data. However, given the size of the project and uncertainties associated with any modeling effort, it is prudent to require additional on-site data collection to further establish baseline data of both groundwater resources and surface water resources.¹³⁹

The court should find that the Board in effect acknowledged, and Nordic admitted, that the existing information was insufficient to meet the required standard, but the Board chose to address that insufficiency by requiring further study after the permit was issued. The court should therefore rule that the Permit is not supported by evidence in the record and vacate the issuance of the permit.

Alteration of aquifer recharge by stormwater drainage. Nordic projects that the 3 onsite production wells will pump water from an aquifer below the Nordic site. Nordic claims that it can obtain 455 gallons per minute from a series of new on-site groundwater wells that it installed. Nordic's claim is based on a model that is, in turn, based on the results of a 72-hour pump test conducted on the new on-site wells. The 72-hour pump tests were conducted on the land unaltered by the proposed stormwater drainage system. The aquifer from which the wells

¹³⁸ [DI #0002](#), BEP Order #L-28319-26-A-N/ L-28319-TG-B-N /L-28319-4E-C-N/ L- 28319-L6-D-N/ L-28319-TW-E-N approving Natural Resources Protection (NRPA), Water Quality Certification, and Site Location of Development Law (Site Law) applications submitted by Nordic, 19 November 2020, p. 66.

¹³⁹ [DI #0002](#), BEP Order #L-28319-26-A-N/ L-28319-TG-B-N /L-28319-4E-C-N/ L- 28319-L6-D-N/ L-28319-TW-E-N approving Natural Resources Protection (NRPA), Water Quality Certification, and Site Location of Development Law (Site Law) applications submitted by Nordic, 19 November 2020, p. 68.

pump is recharged by rainwater, which is unlikely to occur in the same amounts, if at all, once the site is excavated and stormwater drainage has replaced recharge of the aquifer by rainwater.

Based on Nordic's pre-filed testimony, Nordic's stormwater drainage system will remove 61% of the rainwater falling on the site.¹⁴⁰ Nordic's stormwater drainage system will divert water running on to the site from off-site into perimeter drains and thence to the Little River down gradient from the site where it will be unavailable to the well pumps. The water so removed cannot recharge the aquifer from which the wells draw. This stormwater withdrawal and diversion was not considered when Nordic modeled its on-site well yields. Therefore, the model and the predicted production from the wells are unverified, and unreliable. The correct amount of water that will be available once the stormwater drains are installed must be less than 455 gallons per minute. No one knows what that number will be, but it cannot be 455 gallons per minute.

Saltwater intrusion. Nordic has experienced saltwater intrusion into one of its test wells.¹⁴¹ Michael Mobile in testimony at the February 11, 2020 public hearing stated that "saltwater intrusion was not specifically or explicitly represented in our modeling effort."¹⁴² The Site Location Law establishes the "no adverse effect on the natural environment" standard under 38 M.R.S.A. Section 484(3). In the Department's implementing regulations under Chapter 375 Section 8 ("No Unreasonable Adverse Effect on Groundwater Quality"):

"[T]he Department shall consider all relevant evidence to that effect, such as evidence that:

- (1) The quantity of water to be taken from ground water sources will not substantially lower the found water table, cause salt water intrusion,

¹⁴⁰ DI #0466, Tab 7: Testimony of Maureen P. McGlone, Addendum A, and Exhibit 15: Stormwater Management Plan Text & CW-103 & CW-104, 13 December 2019.

¹⁴¹ [DI #0648](#), Hearing Transcript, 11 February 2020, T. Neilson, p. 160 L11 – L19.

¹⁴² [DI #0648](#), Hearing Transcript, 11 February 2020, M. Mobile, p. 161 L8 – L19.

cause undesirable changes in ground water flow patterns, or cause unacceptable ground subsidence.”¹⁴³

Nordic did not address the potential effects of ground water use compromised by saltwater intrusion, other than to assert that since Nordic could use salt contaminated water in its process, contaminating the aquifer with saltwater was somehow acceptable.

b) Nordic’ water needs: fresh water from surface water

Nordic proposes to rely in part on surface water from the reservoir and the Little River, but these sources could be affected by groundwater withdrawals that will occur. Such potential withdrawals have not been measured and are not factored into Nordic’s calculations. Nordic therefore failed to provide proper information needed to design a monitoring program regarding water levels and resultant impacts on water quality.

c) Nordic’s water needs: water from the Belfast Water District

Nordic has proposed to rely in part on Belfast’s municipal water, but Nordic has not studied the Goose river aquifer, Belfast’s only source of water. Nordic has therefore not demonstrated that the supply of water from that source is adequate. Nordic has not supplied to the Board or to the DEP staff, both of which requested it, existing water availability data regarding the Goose River aquifer.

With its application, Nordic submitted a Capacity Evaluation by A. E. Hodsdson Engineers, dated February 27, 2018, that provided maps and a study of the well array that serves the City of Belfast.¹⁴⁴ Nordic has asked the DEP, the Board, and the public, including petitioners, to rely on that report. hat report neglected to reveal that in the middle of the cluster of wells

¹⁴³ 06-096 C.M.R. ch. 375, § 8(B)(1).

¹⁴⁴ Hydrogeologic Investigation Report Proposed Commercial Land-Based Aquaculture Facility, Ransom Consulting, 18 April 2019, See p. 13 for discussion of Capacity Evaluation by A. E. Hodsdson Engineers, dated February 27, 2018. http://www.belfastwater.org/2018_CAPACITY_EVALUVATION_BY_AE_HODSDON_FOR_BWD.pdf

serving the City of Belfast is an old, closed landfill and an active solid waste transfer station. The report neglected to reveal that as of 1994, landfill leachate had traveled from the landfill site 460 feet toward the Goose River aquifer in which the wells are drilled.

The report neglected to reveal that since 1994, no testing has been done to see if, in the intervening quarter century, the landfill leachate plume has reached that part of the aquifer from which well withdrawal has occurred. The report neglected to reveal that no water quality testing has been done to ascertain if the Belfast wells are contaminated by landfill leachate.

The report neglected to reveal that there has been no study to test the intake reach or “Cone of Depression” formed or, in the case of the well nearest to the landfill, the cone of depression that will be formed when the well is turned on to accommodate Nordic’s needs. A “Cone of Depression” is a conical shaped area in the subsurface from which a well can extract water. This Cone will vary depending on depth, subsurface material, size of the well casing, size of the pump and the pumping regimen employed by the operator. Knowing the reach of the Cone of Depression is necessary to predict what will be drawn into the well water when the pump is engaged. In the case of the Belfast wells and the nearby landfill, it is necessary to know whether the leachate from the bottom of the landfill will be induced into the wells by pumping made necessary to the needs of Nordic.

Nordic also has not considered the impact of exercise of the authority of the Belfast Water District to curtail water sales to non-essential customers in time of drought or emergency. Nordic’s contract with the Belfast Water District is in place for only the first six years and the facility, Nordic claims, will last for at least 30 years.

d) Nordic’s water needs: water for construction

Finally, Nordic has not provided estimates of freshwater use for construction, including

dust control and a proposed onsite concrete plant.

2. Thermal effect on tidal waters

As discussed above in Part III, Nordic has failed to show that it will comply with DEP's regulations that require dischargers to meet temperature limits provided under "Tidal Water Thermal Discharge Standard," 06-096 C.M.R. ch. 582. In addition, as discussed in Part III above, Nordic has relied on unverified models to demonstrate its thermal impact. Nordic's discharge temperature should have been verified with additional data collected over several seasons to consider anomalies in the currents and wind, and sub-circulations within the Bay.

Summary of adverse water quality effects

In summary, Nordic did not submit sufficient evidence to allow the Board to make a positive finding concerning Nordic's potential adverse effects on water quality, given Nordic's failure to quantify its freshwater needs or sources, or its thermal effects on tidal waters. The court should therefore find that Nordic has not met the requirements for a SLODA permit in 38 M.R.S. § 484(3).

Summary of the SLODA requirements for which Nordic did not submit sufficient information

In summary, the record is replete with SLODA's requirements for information which Nordic did not submit, including information relating to power needs, surface and groundwater impacts, impacts on neighboring wells, overall environmental adverse effects on air and water quality, and financial capacity. The Board issued the permit with no fewer than 15 post permit study and reporting requirements. Without this required information, the Board did not have a record which with "substantial evidence" to support its issuance of this permit. It was not the intent of SLODA to allow a site development to go forward with such a pervasive failure by the applicant to submit the information necessary to protect the interests identified by the statute.

CONCLUSION

For the reasons discussed above, the Court should find that:

- 1) The Board's decisions to issue the Water Permit was contrary to statute and an abuse of discretion.**

The Court should find that the Board violated 38 M.R.S. § 414-A(1)(D), by not considering and evaluating the zero-discharge treatment technology now in use at other land-based aquaculture facilities. That decision was a violation of law and an abuse of discretion. Companies that have achieved zero-discharge have shown that we have reached a time when, at least for Nordic Aquaculture's industry, zero discharge is attainable – a goal set in the Clean Water Act of 1972, and never abandoned. This is a possibility that should be celebrated. Fifty years of experience under the Clean Water Act has demonstrated that clean water is a treasure – a treasure that has been hard won, and can be easily lost. Exempting out proposals that are too big as Nordic asserted from the zero-discharge standard is nowhere to be found in the Act.

- 2) The Board's decisions to issue the Air Emissions License and the SLODA/NRPA permits were contrary to law, abuses of discretion, and were not supported by sufficient evidence in the record.**

The Board should have reviewed the power plant stacks as "Major Sources." Because Nordic submitted no information on its overall power needs, the record does not support the Board's decision to allow Nordic's stacks to be permitted as minor sources, because it does not show that Nordic will be able to stay within those limits. The Air License should therefore impose EPA's major source control requirements.

The record does not support a finding of "no adverse effect" on air quality. The court should find that the Board violated [citation] Chapter 115 of DEP's Air Emissions regulations and § [citations] of the [Air Act]; and [SLODA], by not requiring Nordic to submit sufficient information to support a finding that the proposed facility would not have an adverse effect on

air quality.

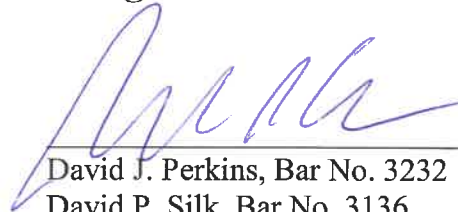
Upstream is respectfully calling on this Court to sustain the pursuit of this goal.

Dated: August 25, 2021



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