



BOARD ORDER

IN THE MATTER OF

NORDIC AQUAFARMS, INC.) SITE LOCATION OF DEVELOPMENT ACT
Belfast and Northport, Waldo County) NATURAL RESOURCES PROTECTION ACT
LAND-BASED AQUACULTURE FACILITY) FRESHWATER WETLAND ALTERATION
L-28319-26-A-N (approval)) COASTAL WETLAND ALTERATION
L-28319-TG-B-N (approval)) STREAM ALTERATION
L-28319-4E-C-N (approval)) SIGNIFICANT WILDLIFE HABITAT
L-28319-L6-D-N (approval)) WATER QUALITY CERTIFICATION
L-28319-TW-E-N (approval))
) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of the Natural Resources Protection Act (38 M.R.S. §§ 480-A–480-JJ) (NRPA), the Site Location of Development Act (38 M.R.S. §§ 481–489-E) (Site Law), Section 401 (33 USC § 1341) of the Clean Water Act (CWA), and Chapters 2, 3, 310, 315, 335, 372, 373, 375, 376, 500, and 587 of the Department of Environmental Protection (Department) rules, the Board of Environmental Protection (Board) has considered the applications of NORDIC AQUAFARMS, INC. (Nordic or applicant) with the supportive data, agency review comments, hearing testimony, public comments, analysis by staff of the Department, and all other related materials in the administrative record. Based on all information contained in the record, the Board makes the following findings of fact, determinations, and conclusions:

1. PROJECT DESCRIPTION AND ADMINISTRATIVE BACKGROUND

A. Overview and Purpose

Nordic proposes to construct, operate, and maintain a land-based Recirculating Aquaculture System (RAS) facility for the production of Atlantic salmon on the east and west sides of U.S. Route 1 (Northport Avenue) in the City of Belfast and the Town of Northport. The proposed facility will be constructed in two phases (Phase 1 and Phase 2) and consists of two major components: a primary facility site and a seawater access system. Construction of Phase 2 will commence following the start of operation of Phase 1. Combined at full buildout, the proposed facility will include 10 buildings, the seawater access system, and several other associated structures and infrastructure for functions including, but not limited to, utilities and stormwater management.

The applicant's stated purpose of this project is to provide 33,000 metric tons per year of sustainable seafood to consumers in the northeastern United States to meet a growing demand for protein. The applicant stated that the design and engineering of the proposed project is based on standardized modular designs developed in Europe which require one smolt module supporting three grow-out modules. Collectively, these four modules equal

one production unit. Nordic proposes to construct two of these production units for the proposed facility.

(1) Primary Facility Site

Nordic proposes to construct 10 buildings with associated parking areas and an access drive at its primary facility site on the east side of U.S. Route 1 in the City of Belfast. (Combined Site Law and NRPA application (App.), Section 1.4.1, C-102 Site Context Plan, dated May 14, 2019.)

Building 1 and Building 2 will each contain three grow-out modules, areas where fish will grow to marketable size. Building 3 will contain Smolt 1 and Smolt 2, areas that will raise salmon from egg to smolt for the grow-out modules of Building 1 and Building 2. Building 4 will be used as a fish processing area that will receive salmon from the grow-out modules. Building 5 is a central utility plant that will contain heating and cooling equipment for temperature control and eight generators that will provide back-up electricity to the facility. Building 6 is an oxygen generation building that will contain equipment for generating and storing oxygen that will be used to oxygenate the water. Building 7 will contain administrative offices. Building 8 is a water treatment plant that will contain intake and discharge water treatment systems for freshwater and saltwater sources. Building 9 will consist of a gatehouse to control access to the facility and Building 10 will serve as a visitor center. (App., Section 1.4.1, AP001 Overall Site Plan.)

Phase 1 of the proposed project will include the construction of Building 1 (containing grow-out Modules 1, 2, and 3), Smolt 1 of Building 3, and Buildings 4 through 9. Phase 1 construction also will include supporting infrastructure consisting of an access drive, utilities, and stormwater management structures. Phase 2 of the proposed project will include Building 2 (containing grow-out Modules 4, 5, and 6), Smolt 2 of Building 3, and Building 10 and supporting infrastructure for these buildings. The overall construction of the primary facility site will be conducted in sequential sections adhering to a site-specific erosion and sedimentation control phasing plan that was developed by the applicant and based on consultation with staff of the Department. (App., Appendix 14-A, CE110 Soil Erosion & Sediment Control Phasing Plan-1 Phase 1 Site Clearing through CE118 Soil Erosion & Sediment Control Phasing Plan-9 Phase 2B, dated April 10, 2019 with a last revision date of October 25, 2019.)

(2) Seawater Access System (Pipeline)

Nordic proposes to construct a seawater access system (pipeline) during Phase 1 of the overall project. The pipeline is a collection of three pipes: one 36-inch diameter wastewater discharge outfall pipe and two 30-inch diameter seawater intake pipes. The pipeline leads from Building 8 at the primary facility site in the City of Belfast, traverses east across U.S. Route 1 for a length of 70 feet, through a 40-foot wide upland construction easement area (known as the Eckrote property) for a length of 330 feet, and then extends into the intertidal and subtidal areas of the coastal wetland. From the highest annual tide (HAT) line, the outfall pipe extends approximately 3,700 linear feet into the

coastal wetland, and the intake pipes extend approximately 6,400 linear feet into the coastal wetland crossing into the Town of Northport. For approximately the first 2,700 feet below the HAT line, all of the pipeline will be buried beneath the seabed substrate. The remainder of the pipeline will be exposed above the seabed and anchored by concrete footers spaced at 15-foot intervals. Much of the portion of the pipeline will be elevated approximately 12 inches to minimize direct impact to the coastal wetland. As the depth of water increases, the elevation of the pipeline will stay relatively consistent. As the topography/bathymetry changes and the pipeline elevation remains relatively consistent, the distance between the pipeline and substrate increases such that at the terminus of the pipeline the intake structures will be approximately 10 feet above the substrate. (App., Section 1.4.2, CS101 Intake/Discharge Piping Plan & Profile, dated May 2, 2019 with a last revision date of August 14, 2019 and CS501 Civil Details-1, dated May 2, 2019 with a last revision date of August 12, 2019.)

The portion of pipeline in the subtidal area was initially designed by the applicant to rest on the seabed substrate anchored by concrete mattresses, which would have resulted in approximately 144,000 square feet of permanent alteration to the coastal wetland. On August 22, 2019, in a response to comments from Department staff, Nordic submitted a revised design of the proposed pipeline consisting of its current elevated design with anchoring concrete footers. This amended design resulted in a reduction to the proposed amount of permanent alteration to the coastal wetland, which now totals 6,703 square feet.

Construction of the pipeline will begin with installation of the pipes beneath U.S. Route 1 at a depth of approximately 25 to 30 feet. To accomplish this installation and route traffic away from the construction area, the applicant proposes to construct a temporary two-lane traffic bypass road on its property adjacent to U.S. Route 1. The bypass road will be removed and the area will be restored to its pre-existing condition following installation of the pipeline under the roadway and reopening of U.S. Route 1. (App., Section 1.4.2, BP-1 Route 1 Temporary Construction Bypass Sketch, dated May 1, 2019.) Subsequent to the removal of the bypass road, approximately 200 linear feet of pipeline will be installed from U.S. Route 1 extending west towards Building 8. This installation will occur at the same time as construction of the pipeline through the Eckrote property. The portion of pipeline within the Eckrote upland property will be buried beneath an existing driveway to a depth of approximately 10 feet below the existing grade.

Construction of the proposed pipeline in the coastal wetland will occur within a 100-foot wide construction area along the length of the proposed route. Within the upper and mid intertidal areas of the coastal wetland, a 30-foot wide trench will be excavated to bury the pipeline for a distance of approximately 1,450 linear feet. For this section of the pipeline, Nordic proposes to work from construction mats in small sections at low tide. Within the lower intertidal area, construction of the trench will continue using a barge-mounted crane with a closed dredge bucket for a distance of approximately 1,250 linear feet. The remaining in-water work within the subtidal area of the coastal wetland will occur for a distance of approximately 3,700 linear feet by installing temporary guide piles and tethering pipeline segments to the piles while floating in the water. The pipeline segments

will then be sunk and anchored into place onto the seabed. All in-water work will occur between November 1 and April 1 of a given calendar year.

The stated purpose of the pipeline is to draw seawater into, and to discharge treated process wastewater from, Building 8 of the primary facility site to serve the operational needs of the proposed project. At full operational capacity, the project as proposed is anticipated to withdraw seawater at a rate of approximately 5.6 million gallons per day (gpd) and to discharge treated wastewater at a rate of 7.7 million gpd.

(3) Overall Details

At full buildout, the proposed project will create 37.9 acres of developed area, of which 27.4 acres will be impervious area. The applicant submitted a stormwater management plan that addresses pollutant removal or treatment by the project's proposed stormwater management system. The Board's analysis of stormwater quality and quantity for stormwater management is discussed in Section 12 of this Order.

At full operational capacity, the proposed project will require a supply of freshwater for potable drinking water and for fish production and processing at an approximate rate of 1,205 gallons per minute (gpm). Freshwater sources include on-site groundwater wells, surface water from the Little River, and public water from Belfast Water District. The Board's analysis of groundwater and surface water usage is discussed in Section 14 below.

At full buildout, the proposed project will result in 196,030 square feet of permanent and temporary alteration to freshwater wetlands, 645,283 square feet of permanent and temporary alteration to the coastal wetland, and 2,037 linear feet of permanent and temporary alteration to streams. The applicant further proposes to temporarily alter 127,000 square feet of a mapped Tidal Waterfowl and Wading Bird Habitat, which is a significant wildlife habitat. The Board's analysis of impacts to natural resources is discussed in Section 7 below.

The proposed project, in its entirety, is shown on a set of plans, the first of which is entitled "C-001 Site Notes & Legends," prepared by Ransom Consulting, Inc., and dated May 14, 2019, with a last revision date of November 4, 2019 on any of the plans.

(4) Site Selection

Prior to narrowing its site selection to the Northeastern US, the applicant used geospatial desktop analysis of coastal land extending from Washington D.C. to the Canadian border to initially identify potential sites for the proposed facility. The applicant stated that ideally the facility would be located in relatively close proximity to major cities in the Northeastern U.S., such as Portland, Boston, New York City or Philadelphia, as these cities have existing infrastructure capable of further transporting the final product. This analysis, as well as the need for optimal amounts of clean and cold fresh and saltwater, aided the applicant's determination that the most suitable location for the facility would

be located within the State of Maine. After narrowing the site selection to the State of Maine, the applicant considered and applied 10 criteria to several sites to determine the final site including: availability of property, access to clean and cold seawater, attractive workplace location, buildable lot size, available road and utility infrastructure, effluent impacts to local waterbody, construction impact to natural resources, lack of adverse pre-existing environmental conditions, ground conditions favorable to construction and access to abundant freshwater resources. The Board's analysis of the applicant's strategies for avoiding and minimizing impacts to protected natural resources is further discussed in Section 7 of this Order.

B. Current Use of Site

The upland component of the proposed project is comprised of several parcels totaling 54 acres. These parcels are commonly referenced as the Belfast Water District (BWD) property, the Cassida property, the Eckrote property, and the Matthews Brothers (or Goldenrod) property. Overall, these parcels are primarily comprised of open field and woodlands. Timber harvesting and agricultural activities have previously occurred at the primary facility site. Approximately two acres of the BWD property is currently developed with several structures, a parking area, an access road, and a concrete water control structure (known as the Little River or Lower Reservoir dam) and remnants of former hydroelectrical generating equipment associated with the dam. The BWD property also contains an existing pedestrian trail, which is located adjacent to the primary facility site and parallel to Belfast Reservoir #1 and the Little River. The Eckrote property contains an existing driveway and a residential structure. The seaward component of the proposed project will occur within Belfast Bay, a coastal wetland, and the applicant applied for a submerged lands lease and a submerged lands dredging lease from the Maine Department of Agriculture, Conservation and Forestry's Bureau of Parks and Lands (BPL) for all relevant work within the coastal wetland.

C. Procedural History

On May 17, 2019, Nordic filed applications for a Site Law permit and an NRPA permit for the proposed land-based salmon aquaculture facility. In combination with these applications, Nordic submitted a Notice of Intent (NOI #67776) to comply with the standards and requirements of the Maine Construction General Permit. NOI #67776 was accepted by the Department on May 31, 2019.

On June 13, 2019, the Department determined Nordic's applications to be complete for processing. The Department determined that Nordic demonstrated title, right or interest (TRI) sufficient for the applications to be processed pursuant to Chapter 2, §11(D) of the Department's rules.

On June 20, 2019, the Board voted to assume original jurisdiction over Nordic's Site Law and NRPA applications, in addition to Nordic's applications for a Maine Pollutant Discharge Elimination System (MEPDES) Permit and Maine Waste Discharge License (WDL) (MEPDES Permit #ME0002771/WDL #W009200-6F-A-N) and a new minor

source application for a Chapter 115 Air Emission License (#A-1146-71-A-N). The Board voted to hold a public hearing on the consolidated applications in accordance with the Maine Administrative Procedure Act, 5 M.R.S. §§ 8001-11008, and Chapter 3 of the Department's rules.

(1) Intervenors

In the First Procedural Order, dated August 15, 2019, the Board set a date for a pre-hearing conference, granted petitions to intervene to nine parties, and denied petitions to intervene to two parties, in accordance with Chapter 3, § 11(F). The parties granted intervenor status in the Board's proceeding were: the Maine Lobstering Union (IMLU), Wayne Canning; David Black; Upstream Watch; Jeffrey R. Mabee and Judith B. Grace; Eleanor Daniels and Donna Broderick; Northport Village Corporation (NVC); The Fish Are Okay (TFAO); Lawrence Reichard; the Gulf of Maine Research Institute (GMRI); and the University of New England (UNE).

The IMLU, Wayne Canning, David Black, and Jeffrey R. Mabee and Judith B. Grace were later consolidated and referred to as Jeffrey R. Mabee, Judith B. Grace, and Lobstering Representatives (MGL). Upstream Watch and NVC were also later consolidated and referred to as Upstream/NVC.

MGL are intervenors opposed to the project. This consolidated group is comprised of residents that own property abutting the project site, a resident of Belfast and lobsterman, a Zone D Lobster Council representative for District 11 lobstermen, and other individuals who are licensed lobstermen and sternmen that commercially and traditionally use Belfast Bay and Penobscot Bay. MGL, among others, maintains that Nordic lacks sufficient TRI to use or develop the intertidal area of the coastal wetland in the location of the proposed pipeline.

Upstream/NVC are entities comprised of members who reside within close proximity to the project site and are opposed to the project¹.

Ms. Eleanor Daniels and Ms. Donna Broderick own property that abuts the project site and are opposed to the project.

TFAO is a non-profit entity that is in support of the project.

Mr. Lawrence Reichard is a resident of Belfast and is opposed to the project.

GMRI is a non-profit entity that is neither for nor against the project.

UNE is a higher education institution that is neither for nor against the project.

¹ Upstream Watch and the Northport Village Corporation submitted separate comments on the draft proposed Order and both stated they are not opposed to the proposed project, per se. Rather, they are opposed to the proposed project's location and support a denial of the permit applications based on issues including site suitability, the proposed technology, and the wastewater discharge.

(2) Public Hearing

After consideration of input from the parties to the proceeding, the Board's Third Procedural Order, dated November 1, 2019, set forth the Site Law and NRPA topics to be addressed at the public hearing. Those topics included:

- a. Financial Capacity – 38 M.R.S. § 484(1), Department Rules 06-096 C.M.R. Chapter 373, § 2
- b. Water Usage – 38 M.R.S. §§ 480-D(3) and (10); 38 § 484(3); Department Rules 06-096 C.M.R. Chapter 375, §§ 7 and 8, and Chapter 587
 - (i) Groundwater Withdrawal
 - (ii) Surface Water Withdrawal
- c. Natural Resource Impacts (Streams and Freshwater Wetlands, Alternatives Analysis) – 38 M.R.S. § 480-D(1), (3), (4), and (5); 38 M.R.S. § 484(3); Department Rules 06-096 C.M.R. Chapters 310 and 375, §§ 3, 6, and 15
 - (i) Avoidance
 - (ii) Minimization
 - (iii) Compensation
- d. Natural Resource Impacts (Coastal Wetland) – 38 M.R.S. § 420-C; 38 M.R.S. § 480-D(3), (5), and (9); 38 M.R.S. § 484(3), (4-A), and (6); Department Rules 06-096 C.M.R. Chapters 310 and 375, §§ 5, 6, 15, and 16
 - (i) Staging
 - (ii) Erosion and Sedimentation Control
 - (iii) Impacts to Protected Natural Resources and Water Quality including concerns about HoltraChem mercury
 - (iv) Alternatives Analysis
- e. Stormwater Management and upland Erosion and Sedimentation Control – 38 M.R.S. § 420-C and D; 38 M.R.S. §§ 480-D(2) and (4); 38 M.R.S. § 484 (4-A); Department Rules 06-096 C.M.R. Chapters 375, §§ 4, 5, and 6 and 500
- f. Existing Uses – 38 M.R.S. §§ 484(3) and (9); Department Rules 06-096 C.M.R. Chapter 375, § 17.
 - (i) Blasting
 - (ii) Odor

The Third Procedural Order, and the Board's Fourth Procedural Order, dated November 8, 2019, identified other topics to be addressed at the hearing; those topics are associated

with Nordic's applications for a MEPDES Permit/WDL and a Chapter 115 Minor Air Emission License.

The Third Procedural Order also addressed MGL's request to include TRI as one of the hearing topics and noted the Board's awareness of the dispute and pending litigation over ownership of the intertidal area where the proposed pipeline would be located. The Presiding Officer stated that the Board would not hear testimony on TRI at the hearing and that the issue is better suited to written evidence and argument than to live testimony and cross-examination. In the Fourth Procedural Order, the Board voted to deny MGL's appeal of the Third Procedural Order and uphold the Presiding Officer's ruling that TRI would not be an issue for testimony at the hearing.

The Board conducted a public hearing from February 11 through 14, 2020, with one evening session devoted to receiving testimony from the general public. At the conclusion of the hearing on February 14, 2020, the Presiding Officer allowed the record to remain open for specific limited evidence to be entered into the record and for comment and evaluation of that evidence from the parties. These submissions included: the Department staff's additional air dispersion modeling to estimate ambient air concentrations from the proposed project; Nordic's comments and intervenors' subsequent responses on the January 27, 2020 analysis by Department staff pertaining to groundwater usage; copies of Nordic's boring logs and photographs of Vibracore sediment samples acquired from within the coastal wetland; intervenors' responses to the Maine Department of Marine Resources' (DMR) February 5, 2020 memorandum to the Department's Bureau of Water Quality; and DMR's assessment of the impact to commercial fishing activities based on DMR's public hearing on March 2, 2020 with associated comments from the parties following submittal of DMR's assessment. The record also remained open for written comments from the general public until February 18, 2020.

Overall, the record was open to accept and consider evidence and arguments from intervenors, interested persons, and the general public for approximately eight months, from June 13, 2019 to February 18, 2020. Further comments, evidence, and arguments that were submitted after the record was closed, other than those specifically allowed, were preserved but are outside of the record and were not considered by the staff of the Department or the Board during the review of the applications.

On April 16, 2020, the Board held a meeting by teleconference to consider a motion by MGL to dismiss (return) Nordic's applications based on lack of sufficient TRI to use the coastal wetland for development of the pipeline. Alternatively, MGL requested that the Board hold an adjudicatory hearing on the topic of TRI. The Board voted to deny the request to hold an adjudicatory hearing and voted to deny the motion to return the applications.

On May 20, 2020, the Board held a deliberative session by videoconference to discuss the applications, the record, and the licensing criteria with staff of the Department.

On July 17, 2020, the Department staff's draft recommended decision on the applicant's minor source air emissions application was issued for public comment pursuant to Chapter 3, § 27(B) of the Department's rules.

On August 13, 2020, the Department staff's draft recommended decision on the applicant's MEPDES and WDL application was issued for public comment pursuant to Chapter 3, § 27(B) of the Department's rules.

On September 4, 2020, the Department staff's draft recommended decision on the applicant's combined Site Law and NRPA application was issued for public comment pursuant to Chapter 3, § 27(B) of the Department's rules.

All comments received on the draft recommended Board Orders were reviewed and considered by staff of the Department and the Board. Comments received on the draft Site Law and NRPA Board Order were related, among other topics, to TRI, financial capacity, technical ability, air quality, the alteration of wetlands and streams and associated compensation methods, impacts to marine fisheries, soil types, water usage, infiltration of groundwater and stormwater, buffer strips, the scope of the conditions in the draft Order, and the overall thoroughness of the application materials.

During its review of the consolidated applications, the Board issued twenty-three procedural orders. In general, these procedural orders reflect decisions and procedures followed on a wide range of matters relevant to the Board's review of the applications, such as pre-hearing conferences; deadlines and issues pertaining to the hearing and overall proceedings; deadlines for submittal of pre-filed testimony, and post-hearing briefs; agenda and dates of the Board's site visits; rulings of the Presiding Officer on objections and motions; rulings of the Presiding Officer on requests to supplement the record and requests for a stay of the proceedings; and the Board's decisions on appeals of the Presiding Officer's rulings.

D. Issues Raised by Interested Persons and General Public

During the course of review of the applications, the Board received comments in opposition to and in support of the proposed project. Comments in opposition to the project addressed concerns related to TRI, the NRPA and Site Law licensing criteria, and also concerns in regard to the overall scope and nature of the project, quality of life, technological alternatives to the project (RAS versus an enclosed aquaculture system), a potential increase in greenhouse gas emission and carbon contribution, the ability of the applicant to fund the long-term operation of the proposed facility, and the Board's management of the proceedings. Comments in support the project described the uniqueness of the project, the advanced technology proposed for the facility, the project's potential economic benefits for the community, and the applicant's safeguard measures to protect private wells.

On February 11, 2020, the Board devoted one evening session of the hearing to receiving oral and written testimony from the general public. Much of the testimony focused on

various aspects of the pipeline. Witnesses in opposition to the project testified that Nordic failed to meet the licensing criteria regarding financial capacity, impacts to scenic character, recreational and traditional use of the resource, and groundwater and surface water quality. Witnesses in opposition of the project emphasized concerns that construction and operation of the pipeline will cause an unreasonable impact to public health, marine resources, and recreational and traditional uses of Belfast Bay and Penobscot Bay as a result of mercury exposure within the water column and the chemical composition of the wastewater generated by the project. Witnesses in support of the project testified that the proposed project meets the licensing criteria because it would not adversely affect existing uses. Witnesses in support of the project also testified that the proposed project would provide economic benefit and diversity to the community.

E. Site Visits

During the course of review, members of the Board and staff of the Department visited the locations of all major components of the proposed project to gather information relevant to the Board and Department's analysis of the NRPA and Site Law applications.

(1) Department Staff

Staff of the Department visited the primary facility site and the site of the proposed pipeline on May 17, 2019, July 3, 2019, September 18, 2019, and November 1, 2019. The purpose of these site visits was to observe and assess on-site natural resources and their associated functions and values, to confirm the data presented in the applicant's natural resources reports, habitat evaluations, and resource impact compensation plan, and to observe the features of the project site and surrounding area.

(2) Board

On October 24, 2019, members of the Board visited the site to observe the primary facility site, the site of the proposed pipeline, the trail along the Little River, neighboring properties, viewpoints from which the project might be visible, and other locations relevant to the proposed project as suggested by the intervenors. Other attendees at this site visit included Department staff and representatives of the applicant and intervenors. On February 10, 2020, two members of the Board that were not in attendance on October 24, 2019, visited the site of the proposed project and other relevant locations. The two Board members were accompanied by staff of the Department. The intervenors and the applicant waived their right to attend the February 10 site visit.

2. TITLE, RIGHT, OR INTEREST

Pursuant to Department rules, Chapter 2, § 11(D), prior to acceptance of an application, an applicant must demonstrate to the Department's satisfaction sufficient TRI in all of the property that is proposed for development or use. An applicant must maintain sufficient TRI throughout the entire application processing period. Methods of proving TRI may include deeds, easements, option agreements, and any other such evidence the

Department deems acceptable to demonstrate sufficient TRI. When the project requires a submerged lands lease from the State, evidence must be supplied that the lease has been issued or that an application is pending.

Nordic submitted initial evidence of TRI in its October 19, 2018 MEPDES/WDL application, including purchase and sale agreements for easements and relevant parcels, and evidence of a pending submerged lands lease application before the BPL. The Department determined that this demonstrated sufficient TRI and accepted the application on November 9, 2018. Individuals and entities who later became intervenors to this proceeding submitted evidence challenging the sufficiency of TRI. In a letter, dated January 22, 2019, the Department requested additional information in response to these filings, which included confirmation that an easement option providing waterfront access included intertidal rights, specific locations of the proposed intake and outfall pipes, identification of any implicated property boundaries in the intertidal area, and evidence of sufficient rights to cross U.S. Route 1. Nordic proposed consolidating the MEPDES/WDL application with the Site Law, NRPA, and Chapter 115 Air Emissions applications it planned to submit, and also petitioned for Board assumption of jurisdiction to review all of the applications jointly.

Intervenors again commented, submitting new challenges to the sufficiency of the evidence, including arguments concerning the ownership of the intertidal area and allegations that Nordic was withholding evidence that would undermine its claim of TRI.

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

Pursuant to Chapter 2, the Department may return an application after it has been accepted as complete for processing if the Department determines that the applicant did not have, or no longer has, sufficient TRI. Invoking this provision, intervenors have requested multiple times that the Department, and then the Board, return the applications for lack of TRI. The Department initially addressed these requests in its June 13, 2019 letter accepting the applications, and the Board denied subsequent, similar requests throughout the proceeding, including: in the Second Procedural Order (responding to July 12, 2019 motion), in the Fifth Procedural Order (responding to a filing entitled "Notice of NAF's Lack of [TRI]" based on a remand in a BPL proceeding), in the Ninth Procedural Order (following a request to return the applications based on statements made in an oral argument in related quiet title proceedings), in the Twentieth Procedural Order (following a request that the applications be returned based on the Maine Supreme Court decision in *Tomasino v. Town of Casco*, 20 ME 96), and in a vote following oral argument at an

April 16, 2020 Board meeting (in response to February 14, 2020 and February 18, 2020 motions to return the applications). An appeal of the Board's April 16, 2020 decision was filed in Waldo County Superior Court and subsequently dismissed by the Court on July 14, 2020. On August 16, 2020, MGL submitted a second renewed motion to the Board to stay the Board's proceedings or dismiss Nordic's applications for lack of TRI. On August 27, 2020, the Presiding Officer determined there was no basis for revisiting the issue or the analysis previously laid out in the Twentieth Procedural Order.

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

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

....

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

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

Further, as referenced in Section 1(B), Nordic has applied for submerged lands leases from BPL for all relevant work within the coastal wetland. An evaluation and determination of these applications by BPL is currently pending.

The Board continues to concur with the Department's interpretation of Chapter 2's TRI provisions and its analysis with respect to the intertidal portion of the property proposed for use as set forth in the June 13, 2019 acceptance letter. As explained in the Department's acceptance letter, this conclusion is not an adjudication of property rights and does not grant legal ownership or right to use land. That determination can only be made by a Court. The Board has reviewed the evidence in the record and has again considered the arguments raised regarding TRI pursuant to the Department's Chapter 2 and its TRI provisions. Pursuant to the Board's interpretation of these TRI provisions, the Board finds that the applicant has made a sufficient showing of TRI to develop and use the property as proposed for the applications to be processed and decided. As the Department found in its June 13, 2019 acceptance letter, the deeds and other submissions, including Nordic's options to purchase, and the analysis of the chain of title remain unchanged and remain a sufficient showing for the Board to act on the applications.

3. FINANCIAL CAPACITY

Pursuant to 38 M.R.S. § 484(1) and Chapter 373 of Department rules, an applicant must demonstrate financial capacity to design, construct, operate, and maintain a development in a manner consistent with state environmental standards and the provisions of the Site Law. Evidence regarding financial capacity must be provided prior to a decision on an application, however, pursuant to the Site Law, 38 M.R.S. §484(1), the Board may issue a permit that defers a final finding on financial capacity by including a condition that requires the permittee to provide final evidence of financial capacity before the start of any site alterations. Chapter 373, § 2(A) of the Department's rules echoes the provision of the Site Law that allows the deferral of a final finding on financial capacity to after a permit is issued. Nordic proposes a phased development; in such cases Chapter 373, §4 provides the Board may find an applicant has met the financial capacity requirement for a separate first phase provided the permit is conditioned to require that evidence of financial capacity adequate for review and approval be submitted to the Department prior to construction of each subsequent phase.

Nordic estimates the total cost of the proposed development to be approximately \$500 million. Phase I of the development is expected to cost \$269.75 million. Phase II of the development is expected to cost \$230.25 million. Nordic submitted cost estimates for each phase broken down by cost category and construction milestone. Nordic states that funding for the project is contingent on final approval, but will consist of a combination of equity capital, debt, and cash flow from operations. Nordic proposes to determine the proportion of each funding sources prior to construction of each phase and projects the relative contribution of each source to shift from equity to debt, then from debt to cash flow from operations as the development progresses.

Nordic provided several submissions in support of financial capacity. A letter from the CEO and CFO of Nordic's parent corporation Nordic Aquafarms AS describes the financial plans for the project, including phasing and cost estimates for the development, likely sources of funding, and a summary of shareholders, shareholder investment, and recent history of capital raised and share performance. A joint letter from Carnegie Investment Bank and Pareto Securities, based upon their analysis of the aquaculture industry and knowledge of investor sentiment, characterizes Nordic as well positioned to secure necessary funding through private placement of shares with international investors. Nordic also supplied a letter of interest from EKF, a Danish export credit agency, and an audit of shares issued, and capital raised, performed by Norwegian auditing and consulting firm BDO. In addition, Nordic's CFO provided testimony at the hearing concerning financial capacity.

Intervenors Upstream/NVC and Mr. Lawrence Reichard contend in testimony and/or comments on the draft proposed Order that Nordic has not demonstrated a sufficient showing of financial capacity. The intervenors contend that Nordic has not provided necessary submissions required by the Site Law application and that submissions provided in the application fail to demonstrate a definite plan for financing the project. Intervenors assert that Nordic fails to identify equity dedicated to the proposed development and lacks evidence to support its ability to fund later phases of the project through cash flow from operations.

Submission requirements are detailed in Chapter 373, § 2(B); however, that evidence, including the items described in the Site Law application, may be submitted after a permit is issued in cases in which the [Board] defers a final determination as set forth in Section 2 (A). The Board has considerable discretion in deferring financial capacity determinations for initial and subsequent phases through appropriate conditions as authorized by the Site Law and Chapter 373. The Board has considered the information contained in the record here and the arguments of the intervenors. The Board finds that with the evidence of existing equity and the likelihood of securing financing, given the mechanism allowing an applicant to demonstrate final financial capacity before construction provided in 38 M.R.S § 484(1), Nordic has demonstrated adequate financial capacity for development, provided the applicant:

- Prior to the start of construction on Phase I of the development, including any site alterations, submits evidence of sufficient funds or that it has been granted a line of credit or a loan by a financial institution authorized to do business in this State or evidence of any other form of financial assurance consistent with Chapter 373, to the Department for review and approval. Such evidence must include an updated time schedule for the development and updated cost estimates for the project, including costs necessary to comply with all terms and conditions of this order and any updated costs necessary to comply with Department rules, including but not limited to wetland compensation. The applicant must provide evidence of any updates to the its corporate structure and demonstrate that the proposed financing is either clearly linked from the financing institution to the licensee or that sufficient funds have been set aside and specifically dedicated for the proposed development; and
- Prior to the start of construction of future components, including Phase II of the development, submits evidence that it has been granted a line of credit or a loan by a financial institution authorized to do business in this State or evidence of any other form of financial assurance consistent with Chapter 373, to the Department for review and approval. When the applicant proposes to utilize cash flow from operations, evidence must include the most recent annual corporate report, financial statements, bank statements, or other evidence indicating that funds are available and have been set aside for the proposed development.

4. TECHNICAL ABILITY

Pursuant to the technical ability standard of the Site Law, and Chapter 373, § 3, an applicant must demonstrate the technical ability to design, construct, operate, and maintain the proposed development in a manner consistent with state environmental standards and the provisions of the Site Law.

In its application and in pre-filed testimony, Nordic provided resume information for key persons involved with the proposed project, a statement of Nordic's experience in the industry, and a description of projects that Nordic has successfully designed and operates. Nordic retained the services of several consulting firms to assist in the permitting, design, and engineering of the project. These firms, among others, and their involvement in the proposed project are as follows:

- Ransom Consulting, Inc. for permitting services, geotechnical engineering, hydrogeologic investigation, and stormwater management design, among other services
- SMRT Architects and Engineers for visual impact assessment and landscaping design
- Cianbro Corporation for construction design of the pipeline
- Woodard & Curran for civil design and engineering of the pipeline and wastewater treatment facility
- Normandeau Associates, Inc for assessment of natural resources

- McDonald Morrissey Associates, LLC for modeling of groundwater withdrawal
- Maine Drilling & Blasting for rock blasting services
- Mainely Environmental, LLC for assessment and modeling of air emissions

The Board finds that Nordic, through the combination of its experience and its retained consultant expertise, has demonstrated the technical ability to develop the proposed project in compliance with the provisions of the Site Law, in 38 M.R.S. § 484(1).

5. AIR QUALITY AND ALTERATION OF CLIMATE

The Site Law, in 38 M.R.S. § 484(3), requires that an applicant make adequate provision for fitting the development harmoniously into the existing natural environment and that the development must not adversely affect existing uses, scenic character, air quality, water quality or other natural resources in the municipality or neighboring municipalities.

In determining whether a proposed development will have an unreasonable adverse effect on ambient air quality or will cause an unreasonable alteration of climate, the Department considers its rules pertaining to air quality and localized climate impacts, as set forth in Chapter 375, §§ 1 and 2.

Pursuant to Chapter 375, § 1, the Board considers relevant evidence as to whether the proposed development will have an unreasonable adverse effect on ambient air quality, through point or non-point sources of chemical pollutants or particulate matter.

In determining whether a proposed development will cause an unreasonable alteration of climate, the Board considers all relevant evidence to that effect pursuant to Chapter 375, § 2. Evidence demonstrating that there will be no unreasonable alteration of climate may include evidence that the proposed development will not unreasonably alter the existing cloud cover, fog, or rainfall characteristics of the area.

A. Air Quality

On May 17, 2019, Nordic submitted a new minor source license application for a Chapter 115 Air Emission License, #A-1146-71-A-N, pursuant to the Department's *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. Chapter 115. (App., Appendix 21-A.) The applicant proposes to install eight, 2-megawatt electrical generating diesel engines at the primary facility site. A maximum of seven of these generators will run simultaneously at any given time, and the eighth generator will serve as an installed backup generator. The electrical needs of the overall development will be supplied by the local utility, and the proposed generators will be used as emergency back-up electrical sources during power outages and for peak shaving during times of high energy demand on the State's electrical grid.

(1) Intervenor Testimony

As referenced in Section 1(C)(2) above, the Board's Fourth Procedural Order, dated November 8, 2019, added Nordic's Air Emissions application to the list of the issues to be heard at the public hearing. Oral testimony on this issue was presented on February 13, 2020.

Upstream/NVC argued in its testimony and in comments on the draft proposed Order that air emissions from alternative operating scenarios for the proposed generators, emissions from other mobile sources on the site, and emissions from fugitive sources related to the construction, operations, and maintenance of the proposed development was not sufficiently represented in the evidence or accurately calculated in the analysis and modeling conducted by staff of the Department. Upstream/NVC contends that emissions from construction activities should have been included in all modeling. Upstream/NVC further asserts that, in addition to mobile sources, emissions from Nordic's proposed wastewater treatment plant, fish processing buildings, and heating and cooling system should have been addressed in its air emissions application.

(2) Board Analysis and Finding

The Board evaluated the proposed project, considered all testimony and evidence presented by Upstream/NVC, and reviewed the analysis conducted by staff of the Department, which included modeling of ambient air dispersion. In an Order of even date, the Board approved Nordic's application for a minor source air emission license application pursuant to Chapter 115 (Order #A-1146-71-A-N) (the Air Emissions License). In the Air Emission License order, the Board concluded that the analysis, calculations, and modeling conducted by the Department of potential impact on air quality demonstrates that emission sources from the proposed project would not cause or contribute to a violation of applicable ambient air quality and emissions standards.

With regard to emissions from construction activities, this type of emission is considered a temporary and fugitive source. Emissions from construction activities are not directly considered in the Department's air dispersion modeling because this emission type is fugitive, not easily quantified, and is temporary for the duration of construction.

With regard to mobile source emissions, the Department has permitted industrial and commercial developments and is generally familiar with this type of development. While vehicles, such as those transporting fish product or waste product from the facility, delivering materials or driven by employees presumably will result in emissions, the Board finds the scale of activity is consistent with what is reasonably expected at a comparable industrial facility, and, based on its professional judgement and experience, will not result in an unreasonable impact to ambient air quality. The intervenors' testimony focused on potential emissions from construction equipment, especially when combined with emissions from the generators. Emissions from the generators are not likely to be occurring to a significant extent at the same time as construction equipment is operating on the site. Most of the site alterations will occur in the construction of Phase 1,

when the generators would not be in operation. However, to reduce the emission potential from construction equipment the Board is requiring the applicant to use lower emission vehicles that meet Tier 2 emission standards.

Recognizing that the Air Emission License of even date has been issued, the Boards finds that the proposed development and operation of the facility will not have an unreasonable adverse effect on ambient air quality pursuant to Chapter 375, § 1. The Board finds that the applicant made adequate provisions for fitting the development harmoniously into the existing natural environment in accordance with the Site Law, in 38 M.R.S. § 484(3), and that the development will not adversely affect air quality, including during construction, provided the applicant:

- Employs the use of nonroad heavy equipment during all phases of construction of the project such as, but not limited to, backhoes, bulldozers, front-end loaders, excavators, and dump trucks, that are equipped with engines which at minimum meet U.S. Environmental Protection Agency Tier 2 emission standards as specified in 40 C.F.R. § 89.112 (effective June 17, 1994 and last revised July 13, 2005) and 40 C.F.R. § 89.113 (effective June 17, 1994 and last revised October 23, 1998); and
- Employs the use of dust control and minimization techniques for reducing dust emissions from construction activities beyond the project site. Methods for controlling and minimizing dust emissions may include watering surface materials, minimizing surface wind speed using windbreaks or source enclosures, covering trucks while hauling materials, early paving of access roads when practicable, early seeding and loaming of disturbed areas when practicable, and placing limitations on the time and location of idling heavy equipment.

B. Alteration of Climate

The Board received oral and written testimony and written comments from the general public that articulated concerns that removal of vegetation from the project site would result in an unreasonable increase in greenhouse gas emission and carbon contribution.

The provision in Chapter 375, § 2 addressing climate impacts is focused on the potential for highly localized climate impacts that facilities such as powerplants could have on atmospheric conditions such as rainfall, fog, and humidity. The Board has interpreted Chapter 375, § 2 in this manner, and does not apply it to issues of global climate change. The Site Law, as applicable to this project, does not require an applicant to make any particular showing regarding a project's impact on issues of global climate change. With regard to Chapter 375, § 2, the Board finds that the construction and operation of the proposed project will not cause any adverse environmental impact on the local climate, and that the proposed project will not cause unreasonable alterations of climatic characteristics such as rainfall, fog, and relative humidity patterns in the area.

6. WASTEWATER DISCHARGE AND DISPOSAL

The Site Law, in 38 M.R.S. § 484(6), requires an applicant to demonstrate that it has made adequate provision of utilities, including water supplies, sewerage facilities and solid waste disposal, required for the development, and that the development will not have an unreasonable adverse effect on the existing or proposed utilities in the municipality or area served by those services.

At full buildout, the proposed project is estimated to discharge 1,500 gallons of domestic wastewater (e.g., sanitary water) per day to the City of Belfast's wastewater treatment facility. To connect and convey wastewater to existing sewer infrastructure, Nordic proposes to construct a pump station and a sewer extension along Perkins Road. The applicant submitted a letter, dated March 14, 2019, from the Superintendent of the City of Belfast Wastewater Treatment Facility stating that the facility has the capacity to accept the estimated flows.

The proposed disposal method for domestic wastewater was reviewed by the Department's Bureau of Water Quality, which stated in comments, dated September 12, 2019, that the City of Belfast is a Combined Sewer Overflow (CSO) community, authorized and licensed by the Department, and confirmed that the City has the capacity to accept the generated flows.

As referenced in Section 1(C), Nordic submitted a MEPDES/WDL application to discharge a monthly average flow of 7.7 million gpd of treated process wastewater to Belfast Bay. Excluding domestic wastewater, the wastewater generated by the facility will be treated using an advanced biological treatment system via drum filtration, aerobic moving bed bio-reactors, chemical precipitation, micro-filtration in membrane bio-reactors, sludge dewatering and ultraviolet disinfection prior to discharge. The treated wastewater will be discharged via an outfall pipe with a multi-port diffuser discharging at approximately 38 feet below mean low water at a distance of approximately 3,700 linear feet from the HAT line.

The Board's Third Procedural Order, dated November 1, 2019, listed aspects of Nordic's application for a MEPDES permit/WDL as topics to be heard at the public hearing. Oral testimony on the listed issues associated with this application was presented on February 13 and 14, 2020.

Intervenors and the general public presented oral and written testimony that described concerns in regard to the nature and composition of the influent and effluent, the proposed treatment process, the technique and results of the modeling of the discharge, and potential impact of the discharge on the water quality of Belfast Bay. The Board also received written comments from the general public on these issues.

Pursuant to the Pollution Control Law, in 38 M.R.S. §§ 411 through 424-B and 451, the Water Classification Program, in 38 M.R.S. §§ 464 through 470, and other relevant

Department regulations, the Board evaluated and weighed water quality impacts of the anticipated wastewater discharge against Nordic's proposed effluent treatment methods. The Board's analysis of the proposed discharge of treated wastewater from the pipeline and a summary of intervenor and public testimony associated with this issue is set forth in greater detail in MEPDES Permit #ME0002771/WDL #W009200-6F-A-N.

Based on the evidence contained in the record, and the findings outlined in the above MEPDES Permit, the Board finds that the applicant has made adequate provision for wastewater disposal at a sewerage facility that has the capacity to ensure satisfactory treatment and the development will not have an unreasonable adverse effect on the existing wastewater treatment utilities in the municipality in accordance with the Site Law, in 38 M.R.S. § 484(6).

7. NATURAL RESOURCE IMPACTS

The NRPA, in 38 M.R.S. § 480-D(3), requires an applicant to demonstrate that the proposed activity will not unreasonably harm any freshwater wetland plant habitat, aquatic habitat, freshwater, estuarine or marine fisheries or other aquatic life. The Department's *Wetlands and Waterbodies Protection Rules*, 06-096 C.M.R. ch. 310, elaborate on the NRPA criteria for obtaining a permit for a project that entails wetland alterations and guide the Department in determining whether a project's impacts would result in an unreasonable impact as stated in 38 M.R.S. § 480-D(3). Chapter 310 contains general standards that require an applicant to consider whether a practicable alternative to the activity exists which would be less damaging to the environment, minimize environmental impacts to the greatest practicable extent while still meeting the project purpose, and if required, compensate for these impacts. When evaluating the reasonableness of impacts the Department considers the area and degree to which a wetland is altered, the functions and values provided by the altered wetland, any proposed compensation, and cumulative effects of frequent minor alteration of the wetland.

The Department's *Significant Wildlife Habitat* rules, 06-096 C.M.R. ch. 335, interpret and elaborate on the NRPA criteria for obtaining a permit for a project that entails alterations to significant wildlife habitat as defined in 38 M.R.S. § 480-B(10). Chapter 335 contains general standards that require an applicant to determine whether a practicable alternative to the activity exists that would be less damaging to the environment and to minimize environmental impacts to the greatest practicable extent while still meeting the project purpose, and if required, compensate for these impacts. When evaluating reasonableness of impacts the Department considers the disturbance and degradation to the significant wildlife habitat and the effect the disturbance and degradation would have on the continued use of the habitat by subject wildlife species.

A. Wetlands, Streams, and Significant Wildlife Habitat

(1) Project Impacts

Nordic proposes permanent and temporary alteration of freshwater wetlands, coastal wetland, and intermittent streams at the project site. The amount of impact to these protected resources evolved during the review period as a result of design changes, revised wetland delineations, and modifications of the identification of wetland and stream boundaries. Several areas initially identified by the applicant as wetland drainages were later determined to be streams as defined in NRPA, 38 M.R.S. § 480-B(9).

Following final design changes and updated delineations, Nordic proposes to permanently alter 192,070 square feet of freshwater wetlands, 6,703 square feet of coastal wetland, and 1,917 linear feet of intermittent streams to develop the primary facility site and install the pipeline system. Nordic also proposes temporary impacts to these three resources, as well as to Tidal Waterfowl and Wading Bird Habitat (TWWH). All resources subject to temporary impacts will be restored following construction. A summary of the proposed impacts can be seen in the table below:

Resource Type	Permanent Alteration	Temporary Alteration	Total
Freshwater Wetlands ¹	192,070 square feet	3,960 square feet	196,030 square feet
Coastal Wetlands ²	6,703 square feet	638,580 square feet	645,283 square feet
Streams ³	1,917 linear feet ⁴	120 linear feet	2,037 linear feet
Tidal Waterfowl and Wading Bird Habitat ⁵	0	127,000 square feet	127,000 square feet

1. Table 1 of Nordic’s November 4, 2019 response to the Department’s Oct. 9, 2019 Request for Information Letter.
2. Table 2 of Nordic’s August 22, 2019 response to the Department’s July 3, 2019 Request for Information Letter.
3. Table 3 of Nordic’s August 22, 2019 response to the Department’s July 3, 2019 Request for Information Letter.
4. The permanent alteration total includes Stream 4, which is 54 linear feet in length.
5. Table 4 of Nordic’s August 22, 2019 response to the Department’s July 3, 2019 Request for Information Letter.

Nordic proposes to permanently alter 192,070 square feet of forested, scrub shrub, and wet meadow wetlands as a result of developing the primary facility site. Based on evaluation of the site by Department staff and the Board, along with review of the application materials, the Board finds these wetlands on site show signs of previous alterations from agricultural and forestry land use practices. The types of wetlands present at the site are not rare or unique and are found throughout the State of Maine. Additionally, given that the predominate soils present at the site are silt loam, these wetlands onsite have a short hydro-period, therefore limiting the functions and values they provide. The principle functions of these wetlands include floodflow alteration, sediment/shoreline stabilization, production export, and wildlife habitat.

Nordic also proposes to alter 6,703 square feet of coastal wetlands as a result of installing the concrete footers on which the elevated portion of pipeline system will rest. The pipeline installation also will result in the temporary alteration of a band of salt marsh vegetation, a cobble beach, and unconsolidated sediments in the intertidal and subtidal areas. The proposed permanent wetland impacts, both freshwater and coastal, include alterations to wetlands defined as wetlands of special significance. The applicant proposes to permanently alter 7,291 square feet of freshwater wetlands of special significance. All coastal wetlands also are defined as wetlands of special significance. For activities proposed in, on, or over wetlands of special significance the activity must be among the types listed in Chapter 310, § 5(A). The Board finds the project, a Recirculating Aquaculture System facility, is a water dependent use and is specifically provided for in Chapter 310, § 5(A)(1)(c).

Nordic proposes to permanently fill the upper headwater reaches of Streams 3, 5, and 6 and the entirety of Stream 4 as a result of constructing the primary facility site. During the Board's review, Stream 4 was re-evaluated by the applicant and determined to be a stream rather than a wetland drainage. Stream 4 is a tributary of Stream 3 and is 54 feet in length. All impacted streams flow into Reservoir #1 and have intermittent flow regimes. Nordic proposes to ensure continuation of comparable flow regimes in the reaches of Streams 3, 5, and 6 not directly impacted by the project. To do this, the applicant designed a conveyance system that would capture surface runoff and groundwater from the upgradient contributing areas of the impacted stream reaches, and convey the collected water into lower reaches of Streams 3, 5, and 6, below the impacted areas, in order to augment baseflow and, therefore, maintain aquatic habitat in those reaches. (The applicant's proposed conveyance system is described in further detail in Section 8.) Streams 3, 4, 5, and 6 have formed as a result of runoff eroding channels on the steeper topography near Reservoir #1.

At the request of the Department, the applicant conducted stream habitat assessments for onsite streams on July 19, 2019, utilizing "Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)." The QHEI evaluates and scores the quality of stream habitat based on six parameters: 1) substrate, 2) instream cover, 3) channel morphology, 4) bank erosion and riparian zone, 5) pool/glide and riffle/run quality, and 6) gradient/drainage area. The score for each of the six parameters is totaled to give a cumulative score representative of the quality of the stream habitat. Cumulative scores greater than 70 are considered "excellent" and scores of less 30 are considered "very poor." During the QHEI surveys the applicant also conducted macro-invertebrate surveys. The applicant submitted the results in the "Stream Assessment Report" prepared by Normandeau Associates Inc., and dated July 29, 2019.

An assessment for Stream 4 was not conducted by the applicant, because it was determined to be a stream subsequent to the QHEI surveys. Because the physical characteristics of Stream 4 are similar to all other on-site streams, and given its location near Streams 3, 5, and 6, the Board finds it is reasonable to conclude that the QHEI score of Stream 4 would be similar to those of Streams 3, 5, and 6. Stream 9, located on the eastern side of the project site, was divided into three sampling reaches given the

segmented habitat conditions within the stream. Stream 9a is the upper headwater reach of stream 9. Stream 9b is the middle reach of Stream 9 and is channelized and lacking riparian vegetation as grass is maintained to the top of the stream bank. Stream 9c is the lower reach of Stream 9 and terminates at the coastal wetland.

According to the QHEI, the streams with proposed impacts, Streams 3, 5 and 6, were found to fall within the “poor” habitat category with cumulative QHEI scores of 36, 35, and 38 respectively. During the QHEI survey, no instream flow was observed in Streams 3, 5, and 6, as water within the stream channels was only present in isolated and stagnant pools. The applicant states that the impacted streams exhibited low habitat complexity as riffle, run, and pool development was not present. The substrate of the impacted streams is covered in a heavy layer of silt and as a result larger substrate is embedded in the stream channel. During the QHEI surveys, mosquito larvae were the only macroinvertebrate observed in the impacted streams.

Department staff visited the site on May 17, 2019 and observed species indicative of higher water quality and stream habitat quality than that observed by the applicant’s consultants. Department staff observed macroinvertebrates species indicative of higher quality stream habitat, but few were observed indicating low abundance. This would be consistent with the overall assessment of the poor stream habitat. Additionally, Department staff visited the site in September 2019 and concurred with the applicant’s overall assessment of the surveyed streams, that they are of low quality, primarily as a result of their intermittent flow regimes, excessive siltation, and low habitat complexity.

The highest scoring stream reaches, although still falling into the “poor” habitat category according to the QHEI, were found in Streams 8 and 9, located on the eastern side of the project site. Streams 8, 9a, 9b, and 9c had QHEI scores of 38.5, 39, 17, and 42, respectively. During the applicant’s QHEI surveys, instream flow was observed in reaches of Streams 8 and 9, indicating that these streams have a longer hydroperiod compared to the streams with proposed impacts. Additionally, reaches of Streams 8 and 9 contain areas with gravel and cobble substrate and only moderate silt deposits and normal substrate embeddedness. The assessment of stream habitat involves the consideration of various factors. Overall, compared to the impacted streams, Stream 8 and Stream 9 contain higher value habitat as indicated by the QHEI scores, longer hydroperiods, and less siltation and substrate embeddedness. Stream 9 also has several associated floodplain wetlands within the project boundary. (Attachment G of Nordic’s August 22, 2019 response to the Department’s July 3, 2019 Request for Information Letter.)

The Board finds that the evaluation of stream habitat involves consideration of multiple factors, these factors are captured well in the overall QHEI scores, and the QHEI score of Stream 4 would be similar to those of Streams 3, 5, and 6. The Board further finds that the impacted streams – Streams 3, 4, 5, and 6 – are of low quality for habitat, primarily as a result of their intermittent flow regimes, excessive siltation and low habitat complexity.

According to the Department’s Geographic Information System (GIS) database a mapped TWWH is located within a portion of the coastal wetland with proposed impacts. The

GIS database reflects that the TWWH has an identification number of #1318 and is approximately 153.26 acres in size. TWWH is significant wildlife habitat as set forth in Chapter 335, § 10(B). Nordic proposes to temporarily alter 127,000 square feet of this mapped TWWH as a result of trench excavation associated with installation of the pipeline system. In a letter, dated March 11, 2019, Maine Department of Inland Fisheries and Wildlife (MDIFW) confirmed that a mapped TWWH is located at the project site. MDIFW further commented that TWWHs serve as a feeding and breeding habitat for a variety of waterfowl and wading bird species. These species of birds utilize the intertidal area of the coastal wetland when exposed at low tide to forage for aquatic invertebrates. There are no other significant wildlife habitats present at the project site.

(2) Avoidance

Nordic submitted an alternatives analysis to demonstrate that a practicable alternative with less environmental impact does not exist. As discussed in Section 1(A)(4), the applicant considered alternative sites along the northeast coast of the U.S. extending from Washington D.C. to the Canadian Border. Through the initial selection process, the applicant narrowed the potential sites down to four sites, all located within the State of Maine. Given the unique requirements of the proposed development, any selected project site would require a number of specific attributes to meet the purpose of the project. As such, the applicant considered 10 criteria for the final site selection including availability of property, access to clean and cold seawater, attractive workplace location, buildable lot size, available road and utility infrastructure, ability to minimize effluent impacts to local waterbodies, construction impact to natural resources, lack of adverse pre-existing environmental conditions, ground conditions favorable to construction, and access to abundant freshwater resources. Nordic stated in this analysis that during the selection process the presence of wetlands, significant vernal pools, and species of special concern was considered. The applicant developed a ranking system that compared the final four sites based on the ten criteria listed above. When comparing the scores for the anticipated construction impacts to natural resources among the final four potential project sites, the selected site was determined to have less anticipated natural resource impact than two of the other sites and the same anticipated natural resource impact as the final remaining potential site, however, that site lacked access to clean and cold freshwater. The applicant determined, based on the ranking system, that the proposed project site scored high on all assessment criteria and clearly stood out as the preferred location. Although the project impacts protected natural resources, Nordic determined that there is no practicable alternative that would result in less environmental impact while still fulfilling the purpose of the project.

At the public hearing, Upstream Watch/NVC asked questions of the applicant's witnesses regarding the site selection process. In a post hearing brief and in comments on the draft recommended Order, Upstream Watch/NVC argues the applicant has selected an unsuitable project site based the amount of proposed wetland and stream impacts.

The Board accepts that in order to meet the purpose of the project, a project site would need to possess a number of specific attributes such as those considered by the applicant.

The applicant began by evaluating potential project sites across an expansive geographic area and, after narrowing down potential sites, used a ranking system to compare the final four sites. The ranking system determined that among the final four locations, the selected project site is anticipated to have the least environmental impact while still meeting the project purpose. The analysis of project alternatives is credible and reasonable, and the Boards finds the applicant adequately demonstrated that project alternatives were considered and that the selected project site is a reasonable choice considering the purpose of the project and proposed environmental impacts.

(3) Minimization

The applicant considered various layouts of the facility in an effort to minimize impacts to protected resources and maximize the use of upland (non-wetland) areas. The applicant considered four different layouts for the primary facility:

- Option 1: Six modules occupying 39 acres
- Option 2: Three modules occupying 39 acres
- Option 3: Six modules occupying 54 acres
- Option 4: Five Modules occupying 54 acres

The applicant selected option 3, six modules on 54 acres. With the use of the additional land available, as compared to option 1 and 2, the development can be situated in a location that avoids impacting Stream 9 and associated floodplain wetlands, located on the eastern side of the project site. Additionally, the larger project site allows the final developed area to have more moderate slopes and larger buffer areas from the Belfast Reservoir #1 and abutting property boundaries. The applicant did not select option 1 because that option would have resulted in greater impacts to the above-mentioned resources on the eastern side of the property and presented additional design and engineering challenges associated with fitting critical infrastructure on the site. The applicant did not select option 2 or option 4 primarily because they were found to be financial unfeasible from a business perspective.

Although the selected layout avoids impacting a higher value stream on the eastern side of the project site, the proposed project entails the filling of the intermittent Streams 3, 4, 5, and 6 as noted in Section 7(A)(1). To minimize impacts to these impacted streams, the applicant has designed a conveyance system to ensure the downstream reaches of these streams maintain instream flow during times of the year when they are typically wetted. The conveyance system is further discussed in Section 8.

The applicant considered three different pipeline layouts, in an effort to minimize environmental impacts:

- Option 1: Little River Route
- Option 2: Eckrote Property Route
- Option 3: Tozier Road Route

The applicant selected option 2, the Eckrote Property Route. Option 2 entails constructing a pipeline system that accesses the bay by crossing an easement located on the Eckrote property. Option 1 would entail trenching the pipeline system within the channel of Little River to provide access to the bay. This option would result in additional environmental impacts as the Little River channel and the banks would require permanent stabilization measures following construction. The trenching process also could impact the structural integrity of the Route 1 bridge that crosses the Little River. Additionally, this route would result in the alteration of the coastal wetland near the mouth of the Little River, an area of the bay the applicant believed, based on scientific studies, to contain more abundant sea life. Option 3 would entail routing sections of the pipeline system across a steep coastal bluff as well as along an existing drainage way with steep side slopes. This route would also require permanent stabilization measures following construction. Both option 1 and 3 were not selected, in part, because of the greater environmental impacts resulting from trenching and permanently stabilizing protected resources and steep slopes adjacent to protected resources. Additionally, the applicant was further restricted to selecting option 2 as the other options would add additional difficulty associated with obtaining easements to access the bay.

Since the TWWH is located along the entire shoreline frontage at the project site, all of the considered pipeline routes entailed disturbing the TWWH during construction. In an effort to minimize impacts to the TWWH, the applicant consulted with MDIFW prior to submitting the application. In response to feedback from MDIFW, the applicant proposes to minimize impacts by constructing in the TWWH outside of the Fall migration period as well as utilizing erosion control measures as discussed in Section 9. The applicant has also designed the project such that all impacts in the TWWH are temporary in nature; the habitat will be restored following construction.

During the Board's review of the project, the applicant further minimized coastal wetland impacts by redesigning the portion of the pipeline system that is not trenched, such that it is elevated above the seabed and supported by concrete footers rather than resting directly on the seabed. As previously proposed, the pipeline resting on the seabed, with the stabilization and rock covering required, would have resulted in 144,000 square feet of direct alteration rather than the 6,703 square feet that is currently proposed.

The Board finds that by selecting the proposed primary facility layout and, therefore, proposing to alter lower quality intermittent streams at the project site rather than Stream 9 and its associated floodplain wetlands, the applicant has minimized the overall impact to stream and wetland functions at the project site. The Board further finds that by maintaining flow in the downstream portions of Streams 3, 5, and 6 the applicant has reduced impacts to those streams. The redesigning of the elevated portion of the pipeline system has significantly reduced the amount of direct alteration to the coastal wetland. The proposed construction practices, work window, and restoration of disturbed areas within the TWWH minimizes impacts to the significant wildlife habitat. Given the minimization efforts, through planning and design engineering, the Board finds the applicant has kept natural resource alterations to the minimum amount necessary to construct the facility.

(4) Compensation

Pursuant to the NRPA, 38 M.R.S. § 480(Z), the Department may require compensation for impacts to certain types of protected natural resources due to a proposed activity. Compensation includes the restoration, enhancement, creation, or preservation of an area or areas that have functions and values similar to the area impacted by the activity, unless otherwise approved by the Department. Chapter 310, § (5)(C) allows the Department to require compensation to achieve the goal of no net loss of wetland functions and values. Title 38, Section 480-D(3) and Chapter 335, § (3)(D) provide for compensation for impacts to significant wildlife habitat and allow the Department to require compensation to achieve the goal of no net loss of habitat functions and values. Every case where compensation may be applied is unique due to differences in resource type, habitat type, and geographic location. For this reason, the method, location, and amount of compensation required by Department through the permitting process is specific to each specific project.

Based on consultation with the Department, the applicant submitted a compensation plan for the lost functions and values of permanently altered freshwater wetlands, coastal wetland, and streams. The compensation plan consists of a combination of In-Lieu Fee (ILF) payments (towards compensation for freshwater and coastal wetland impacts), stream preservation, stream enhancements, and stream restoration. Fees collected by the Department through the ILF program are allocated to compensation projects through the Maine Natural Resource Conservation Program (MNRCP). The MNRCP is a cooperative program between the Department and the US Army Corps of Engineers. The MNRCP compensates for impacts to protected natural resources in Maine by funding the restoration, enhancement, and preservation of similar resources with similar functions and values.

a. Streams

To compensate for the proposed stream impacts, the applicant has proposed to establish a deed restricted, vegetative buffer along Stream 9. This buffer totals 2,164 linear feet and varies in width from 75 feet to 150 feet. (Attachment E of Nordic's August 22, 2019 response to the Department's July 3, 2019 Request for Information Letter.) The applicant proposes to enhance the buffer with native plantings of varying species. The proposed enhancements can be seen on the wetland compensation plan, entitled "Impact Compensation Plan," prepared by Normandeau Associates, Inc. and dated November 4, 2019. The enhancements within the buffer are expected to improve instream cover, bank stabilization, and channel morphology of Stream 9, which is, thus, expected to improve the habitat quality. The applicant further proposes to restore to a higher value habitat a total of approximately 126 linear feet of Streams 5, 6, and 8. (Question 4 of Nordic's November 4, 2019 response to the Department's October 9, 2019 Request for Information.) Of the 126 linear feet of proposed stream restoration, approximately 30 linear feet includes the replacement of a group of perched culverts on Stream 8 with an open bottom culvert, which will improve aquatic passage. (App., Appendix C.) The

remaining 96 linear feet of restoration includes the removal of existing and unnecessary culverts and the creation of riffle and pool complexes in Streams 5 and 6, which will improve aquatic habitat. These areas of restoration are located in stream reaches off the project site.

Although the proposed alteration to onsite streams was not raised as an issue by many interveners, in its post hearing brief and in comments on the draft recommended Order, Upstream Watch/NVC stated that the filling of the upper portions of the impacted streams will result in the elimination of stream functions within the entirety of each stream. Upstream Watch also argues that Nordic's proposed compensation plan does not adequately mitigate for the loss of stream functions.

The Board evaluated the applicant's proposal to alter streams of limited habitat value, the applicant's proposal for enhancement, restoration, and preservation methods within on-site streams, and the arguments of Upstream Watch/NVC. The Board finds that Nordic prepared a compensation plan, with input from the Department, that considered and weighed the quality of stream functions against the overall loss of their functions. Given the results of Nordic's QHEI evaluation, and the staff's assessment, the Board further finds significant potential for habitat improvement is located within Streams 8 and 9 and that the loss of low-quality stream habitat will be offset by the expected stream habitat improvements in Streams 8 and 9 and the habitat improvements in streams 5, 6, and 8. Given this, and due to the fact that the applicant has designed the conveyance system to maintain and augment flow in the downstream portions of the impacted streams, the Board also finds there will not be an unreasonable harm to aquatic habitats as set forth in the NRPA, 38 M.R.S. § 480-D(3), provided the applicant:

- Submits an executed and recorded deed restriction that protects the riparian area of Stream 9 in perpetuity prior to the start of construction. The applicant shall submit a recorded copy to the Department within 30 days of the execution of the deed;
- Conducts additional baseline macroinvertebrate and QHEI stream habitat surveys for Stream 9 and submits the reported data to the Department prior to the start of construction to ensure the proposed enhancements improve aquatic habitat. Monitoring reports shall include QHEI survey data, observed macroinvertebrates, photographic documentation and a narrative of the observed condition of the subject streams. The applicant shall continue to conduct these surveys, and submit the reported data, on an annual basis until five years following the full build-out of the proposed project to ensure the functions of those reaches are improved in Stream 9. The surveys shall be conducted at an appropriate time of the year as determined in conjunction with the Department. If the Department determines the physical and biological characteristic of Stream 9 are not equal to or better than characteristics lost due to the proposed project, the applicant shall submit a plan for review and approval for enhancing these characteristics or otherwise compensating for the impacts; and

- Conducts additional baseline macroinvertebrate and QHEI stream habitat surveys for the downstream reaches of Streams 3, 5, and 6, below the proposed impacted areas, and submit the reported data to the Department prior to the start of construction. Following construction of the primary facility, the applicant shall conduct additional QHEI and macroinvertebrate surveys in Streams 3, 5, and 6 to ensure aquatic habitat of the downstream reaches of Streams 3, 5, and 6 is maintained. Monitoring reports shall include QHEI survey data, observed macroinvertebrates, photographic documentation, and a narrative of the observed condition of the subject streams. The applicant shall continue to conduct these surveys, and submit the reported data, on an annual basis, until five years following the full build-out of the proposed project to ensure the functions of those reaches are maintained in Streams 3, 5, and 6. The surveys shall be conducted at an appropriate time of the year as determined in conjunction with the Department. If the Department determines the physical and biological characteristics of Streams 3, 5, and 6 are not equal to or better than their existing condition, the applicant shall submit a plan for enhancing these characteristics or compensating for the impacts.

b. Freshwater and Coastal Wetlands

Nordic proposes to permanently alter 192,070 square feet of forested, scrub shrub and wet meadow wetlands as a result of developing the primary facility site. Wetlands on site show signs of previous alterations from agricultural and forestry land use practices. The types of wetlands present at the site are not rare or unique and are found throughout the State of Maine. Additionally, given that the predominate soils present at the site are silt loam, wetlands onsite have a short hydroperiod, therefore limiting the functions and values they provide. Despite these factors limiting the wetlands' value, the proposed project will still result in the loss of freshwater wetland functions and values. The principle functions of these wetlands include floodflow alteration, sediment/shoreline stabilization, production export, and wildlife habitat. To compensate for the loss of these wetland functions the applicant shall make a contribution to the ILF program in the amount of \$710,659.00.

The applicant proposes to permanently alter 6,703 square feet of unconsolidated subtidal coastal wetland as a result of installing the anchoring system that will support the pipeline system. The soft bottom habitat is primarily a homogenous mixture of unconsolidated sediments with some cobble also present. The area of proposed impacts, in terms of value provided, is minimal in comparison to the surrounding bay with similar substrate and habitat. Although the amount of proposed impact is minimal in comparison to the surrounding area, the proposed project will still result in the loss of soft bottom habitat. To compensate for this loss of habitat the applicant shall make a contribution to the ILF program in the amount of \$49,602.20.

The Board finds that the applicant's methodology for compensating for the loss of freshwater and coastal wetland function and values is reasonable and adequate and that

the proposed project will not result in unreasonable impact to freshwater and coastal wetlands pursuant to 38 M.R.S. § 480-D(3), provided the applicant:

- Makes a contribution to the ILF program in the amount of \$760,261.20, prior to the start of construction, as described above.

c. Significant Wildlife Habitat

Nordic proposes to temporarily alter 127,000 square feet of mapped TWWH as a result of trench excavation associated with installation of the pipeline. The amount of temporary alteration represents less than 2% of the area of this TWWH. Upon completion of construction activities all disturbed areas will be restored to existing condition. In its pre-filed testimony, Nordic stated that the bird species expected to use this TWWH and within the area of the proposed pipeline include all common sea duck species and shorebird bird species that occur within this region of the State. The applicant further stated that sea ducks generally use tidal areas as overwintering habitat and shorebirds typically use tidal areas as stopover and feeding habitat during migration.

In a letter, dated March 11, 2019, MDIFW confirmed that a mapped TWWH is located at the project site. MDIFW further commented that TWWHs serve as a feeding and breeding habitat for a variety of waterfowl and wading bird species. These species of birds utilize the intertidal area of the coastal wetland when exposed at low tide to forage for aquatic invertebrates. During the course of the Board's review, MDIFW reviewed the proposed project and further stated in comments, dated September 13, 2019, that if the alteration to the TWWH occurs outside of the Fall migration period of July 15 through September 30, and the habitat is restored, minimal impacts to wildlife are expected. Based on the temporary nature of the proposed construction impacts, the lack of permanent disturbance and degradation to the TWWH, the minimal in-water work window, and IFW review comments, the Board finds that compensation is not required for the temporary alteration to the TWWH.

(5) Summary: Wetlands, Streams, and Significant Wildlife Habitat

After consideration of the applicant's proposal, the arguments and evidence submitted by the intervenors and members of the public, and the Department's observations and evaluation of on-site protected natural resources, the Board finds that given the functions and values of the impacted resources, and the applicant's plan for minimizing and compensating for impacts to stream and wetlands, the applicant has adequately offset the loss of freshwater wetland, coastal wetland, and significant wildlife habitat functions and values from the proposed project. The Board also finds that the applicant has avoided and minimized wetland, waterbody, and significant wildlife habitat impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project. Based upon the information in the record, the Board further finds that the activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, freshwater, estuarine or

marine fisheries, or other aquatic life and satisfies NRPA, 38 M.R.S. § 480-D(3), provided the applicant:

- Submits an executed and recorded deed restriction for Stream 9, prior to the start of construction, as described in Section 7(A)(4)(a);
- Conducts macroinvertebrate and QHEI surveys for Stream 9, prior to the start of construction, as well as following construction, as described in Section 7(A)(4)(a);
- Conducts macroinvertebrate and QHEI surveys for the downstream reaches of Streams 3, 5, and 6, prior to the start of construction, as well as following construction, as described in Section 7(A)(4)(a); and
- Makes a contribution to the ILF program, prior to the start of construction, as described in Section 7(A)(4)(b).

B. Wildlife and Fisheries

The Site Law, 38 M.R.S. § 484(3), requires an applicant to make adequate provision for fitting the development harmoniously into the existing natural environment and demonstrate that the development will not adversely affect existing uses, water quality or other natural resources in the municipality or in neighboring municipalities. Chapter 375, § 15 aids the Department in determining whether the developer has made adequate provision for the protection of wildlife and fisheries. In order to make this determination, the Department must ensure that alterations and activities will not adversely affect wildlife and fisheries life cycles, and that there will be no unreasonable disturbance to significant wildlife habitats.

The Natural Resource Report, submitted by Nordic and dated May 8, 2019, provides analysis of potential impacts to fisheries and wildlife species at the project site. The Natural Resource Report also describes the suitability and quality of fisheries and wildlife habitats present at the project site. This analysis is based on natural resource surveys and review of relevant scientific literature, as well as on publicly available datasets. Given the nature of the proposed project, the Natural Resource Report addresses both marine and terrestrial species and habitats.

(1) Marine Resources

The applicant submitted a characterization of the marine habitat present at the proposed project site. The habitat characterization was completed by collecting several Vibracore sediment samples and by recording underwater camera footage of the intertidal and subtidal areas within the proposed project footprint. The predominate substrate at the project site is unconsolidated sediments with some small cobble. Limited patches of vegetation also were observed, that could provide suitable habitat for a variety of finfish or shellfish. Although areas of vegetation are present, the area is predominately devoid of

vegetation. Prior to submitting the application, Nordic consulted with DMR to determine species of interest and to discuss potential mitigation strategies. The applicant submitted impact assessments for species of finfish, shellfish, and benthos. DMR reviewed the proposed project and provided review comments dated January 24, 2020 and an additional assessment dated April 7, 2020.

a. Finfish and Shellfish

Based on consultation with DMR, Nordic submitted impact assessments for five species of finfish, including: American eel, alewife, blueback herring, winter flounder and rainbow smelt. This analysis states that winter flounder and rainbow smelt have the potential to be disturbed or displaced during the construction phase of the pipeline system. Winter flounder come inshore to spawn in soft substrate during the late winter and early spring. Given that the project site contains suitable spawning habitat for winter flounder and the construction window coinciding with the spawning period, winter flounder may be impacted or displaced. Nordic's assessments indicate that, although winter flounder are expected to be present at the project site, adults searching for suitable spawning areas during construction are likely to avoid the area. It is likely, given the availability of similar substrate present in Belfast Bay, that winter flounder will find suitable spawning areas outside the footprint of the project site. Rainbow smelt come inshore during the spring months to spawn in freshwater river systems and some limited disturbance or displacement impacts are possible. Aside from winter flounder and potentially rainbow smelt, other species of finfish listed above are not likely to be present in significant numbers at the project site during the proposed construction window. In DMR's review comments, the agency stated that impacts to Atlantic Salmon are unlikely. Atlantic salmon are anadromous. Juvenile Atlantic salmon will rear in natal streams before migrating to marine waters as smolts. After growing in marine waters, adult Atlantic salmon will then migrate back to freshwater systems to spawn. DMR stated that impacts to Atlantic Salmon during migration between the Penobscot River and marine waters are unlikely because the observed primary route of salmon occurs along the eastern side of Islesboro and outside of the project footprint. DMR also stated that impacts to shortnose and Atlantic sturgeon are unlikely as they have also been observed utilizing areas of the Penobscot Bay outside of the footprint of the proposed project.

The applicant also submitted impact assessments for four species of shellfish including the American lobster, Atlantic sea scallop, blue mussel, and softshell clam. The applicant stated in this assessment that no lobsters or lobster burrows were observed in the marine habitat characterization surveys. The applicant also stated that lobsters would be at a developmental stage where they would be able to self-relocate and move away from construction activities. In its review comments, DMR stated that lobster fishing activity is present within the Belfast Bay. DMR further stated that during the proposed construction window and at the proposed depths of the pipeline, lobsters would not be present due to water temperatures and natural migration to deeper waters. DMR stated that the construction of the pipeline should have little or no long-term impacts to the lobster biology or the lobster industry and that the pipeline system, upon completion, should have little impact on the movement of lobsters.

Nordic stated that shellfish species that are present at the project site are not likely to be significantly impacted given the ability of these species to withstand suspended solids for the duration of the construction activity, as well as the planned use of erosion and sedimentation controls that will be installed during construction and limit sedimentation. See Section 11. Any loss of shellfish, aside from lobsters, would likely be a result of being physically crushed during construction and that would be a relatively small, insignificant impact.

When the intake is operational, there is the potential for limited entrainment impacts to finfish and shellfish at larval and egg developmental stage. To minimize these impacts, Nordic has designed the intake system to have a through screen velocity of less than half-a-foot per second. The intake also will have a one-inch slot size wedge wire mesh screen to further minimize impacts.

MGL, Mr. David Black, and Mr. Wayne Canning, and members of the public testified that they were concerned that effluent from the discharge pipe would negatively affect marine species such as scallops and lobsters. The effect of effluent on the water quality is discussed in MEPDES Permit #ME0002771/WDL #W009200-6F-A-N.

MGL, Mr. David Black, and Mr. Wayne Canning and members of the public also expressed concern in their testimony that any disturbance of marine sediment due to construction of the proposed pipeline would introduce mercury into the water column, produce an unreasonable amount of turbidity during construction, and adversely affect existing fisheries in Belfast Bay. The Board's discussion and analysis of the potential effects of mercury to marine fisheries at the site of the proposed pipeline is set forth in Section 9; the control of sedimentation is discussed in Section 11.

In its review comments, DMR stated that there are limited shellfish resources present in the intertidal area. DMR stated that the area is open for scallop harvest; however, there are no recent landings or known harvest activities in the area of the proposed pipeline or the general Belfast Bay area.

Based on DMR's review and assessment, the evaluation by staff of the Department, the acceptable mercury levels in the sediment in the vicinity of the project and additional sampling requirements and insurance measures required as a condition of this Order (see Section 9), the sedimentation control measures proposed by the applicant and required as a condition of this Order (see Section 11), and all information contained in the record, and after consideration of the testimony and evidence presented by intervenors and members of the public, the Board finds that the applicant has made adequate provision for the protection of fisheries, specifically finfish and shellfish, pursuant to Chapter 375, § 15.

b. Benthos

To assess the presence and abundance of benthic organisms the applicant collected eight, 4-inch, sediment cores in the vicinity of the proposed pipeline system. The top six-inches of each core were washed in the field through a 500 micron-mesh sieve, and samples were preserved and sent for lab analysis. All collected samples were identified to the lowest practical taxon, except for species who by convention are identified to higher taxa. Overall, the abundance of benthic organisms was found to be relatively low. A total of 18 species were identified, including two nemerteans, 12 annelids, one gastropod, and three bivalves.

In its review comments, DMR stated that with the use of erosion control measures and the proposed work window there would be little to no long-term impact to benthos, including bivalves or marine worms, within the construction area or general project area. DMR further stated that the project, as proposed, should not result in significant adverse impacts to marine resources.

Based on DMR's review and assessment, the evaluation by staff of the Department, and all information contained in the record, the Board finds that the applicant has made adequate provision for the protection of fisheries, specifically marine benthic organisms, pursuant to Chapter 375, § 15.

(2) Other Wildlife and Wildlife Habitat

The applicant submitted a characterization of the terrestrial habitat present at the proposed project site. The project site is primarily forested and slopes towards the Lower Reservoir. The project site contains a hardwood stand, approximately 19-acres in size, and two pine stands, that when combined total approximately 15-acres in size. Based on the age and condition of the stands and the presence of barb wire fence, it is likely the site was previously used for agricultural land practices. Portions of some stands appear to have been selectively harvested in recent years. The project site also contains areas of meadow that appear to be regularly mowed. Prior to submitting the application, Nordic consulted with MDIFW to request information regarding the presence of any protected fish and wildlife species at the project site.

MDIFW commented that while a comprehensive statewide inventory for bats has not been completed, historical evidence suggests that several protected species of bats are likely to occur within the project area during migration and/or the breeding season. However, MDIFW stated that significant impacts to any bat species is not anticipated as a result of the proposed project. MDIFW did not identify any mapped Essential Habitats or other known locations or occurrences of Endangered, Threatened, or Special Concern wildlife habitats or inland fisheries habitats associated with the project site. In addition, no inland fisheries concerns were identified.

To assess the impact on avian species, the applicant conducted onsite habitat assessments and reviewed bird records from the nearby recreational areas that have been submitted to

an online platform. Based on the habitat assessment and bird records, the applicant determined that 56 terrestrial bird species are likely to utilize the habitat present at the project site. Of the 56 identified species, 13 species are listed as either Species of Greatest Conservation Need or Species of Special Concern by the State, however, no species are listed as State or Federal threatened or endangered. In its impact assessment the applicant stated that the onsite terrestrial bird habitat will largely be lost as a result of developing the primary facility site, however, the impacted habitat is not unique or rare and that similar habitat is present in the area surrounding the project site; therefore, the applicants states that the project will not significantly alter habitat to local bird species and associated habitat on a larger landscape scale. MDIFW did not request any avian-specific impact assessment for bird species and, in its review comments, did not raise concerns about the loss of terrestrial bird habitat.

Upstream/NVC testified that Nordic did not adequately characterize avian-conducive ecological communities at the project site and surrounding area, resulting in a gap of information of potential avian species at risk of being disturbed by the proposed project. In response to questions from the Board about whether a particular or unusual habitat feature exists at the project site which may suggest that there is a species of particular concern, Upstream/NVC testified that there is nothing unique to the project site and that similar habitats exist in other places. (Hearing Transcript (“Tr.”), Feb. 13, 2020, p. 41, line 11-p. 45, line 19.)

In determining whether an applicant meets the wildlife and fisheries standard, the Board requires evidence that proposed alterations and activities will not adversely affect wildlife and fisheries lifecycles and that there will be no unreasonable disturbance to habitat of any species declared threatened or endangered by the Commissioner, Maine Department of Inland Fisheries and Wildlife or the Director of the U.S. Fish and Wildlife Service and to significant wildlife habitat. As referenced above, Atlantic salmon 7(B)(1)(a) are unlikely to be impacted by the proposed project.

The Board finds Nordic’s assessment of all site-specific natural resources to be credible and acceptable. Based on Nordic’s assessment and testimony regarding on-site natural resources, the observations made at the site visits by the Board and the Department staff, the comments submitted by MDIF&W, the analysis by Department staff, the breadth of the mitigation of adverse impacts to protected natural resources, and after consideration of the testimony of MGL, Mr. David Black, Mr. Wayne Canning, Upstream/NVC, and the general public, the Board finds that the applicant has demonstrated that the proposed development meets the wildlife and fisheries standard pursuant to the Site Law Rules, Chapter 375, § 15 and satisfies the requirements of the Site Law, 38 M.R.S. § 484(3).

8. SURFACE WATER FLOW AND QUALITY (Primary Facility Site)

The NRPA, 38 M.R.S. § 480-D(4) and (5), requires an applicant to demonstrate that the proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters and that the proposed activity will not violate any state water quality law. Section 401 of the CWA, 33 U.S.C. § 1341, requires that any applicant for a federal

license or permit to conduct any activity that may result in a discharge into waters of the United States obtain a water quality certification (WQC) to ensure that the discharge will comply with applicable State water quality standards. One of the purposes of the Department's Chapter 310 rules is to ensure, through compliance with that chapter, the standards set forth in Section 480-D of the NRPA and state water quality standards are met by applicants proposing regulated activities in, on, over, or adjacent to wetlands and water bodies.

The Site Law, 38 M.R.S. § 484(3), requires an applicant to make adequate provision for fitting the development harmoniously into the existing natural environment and that the development will not adversely affect existing uses, water quality or other natural resources in the municipality or in neighboring municipalities. Chapter 375, § 3 further elaborates on the Site Law and aids the Department in determining whether a proposed development will cause an unreasonable alteration of natural drainage ways. The Site Law rules, Chapter 375, § 6, aids the Department in its evaluation of whether the proposed development will have an unreasonable adverse effect on surface water quality. The applicant proposes to fill Stream 4 and the upper reaches of Streams 3, 5, and 6. In its review, the BWQ raised concerns that, as the project was initially proposed, the filling of the upper reaches of Streams 3, 5, and 6 would reduce the amount of flow in the remaining downstream reaches of those streams. In response to these comments, the applicant designed a conveyance system that will capture surface and shallow groundwater from the upgradient contributing area and convey the collected water into the unimpacted downstream reaches of Streams 3, 5, and 6. The conveyance system consists of bypass culverts placed in the existing stream channels and edge drains, as well as an upgradient diversion trench connected to a network of underdrains. The water collected and conveyed through this system will flow into the lower reaches of the impacted streams.

During the construction phase, the applicant proposes to install bypass culverts within the existing channels of the impacted reaches of Streams 3, 5, and 6. As excavation of the site progresses, the applicant proposes to install edge drains at the foot of excavated areas that will connect to the installed bypass culverts. These bypass culverts and edge drains will accept onsite groundwater and convey it into the lower reaches of the impacted streams. These bypass culverts and underdrains will collect and convey water in the existing impacted stream channels. Upon full buildout, the surface and groundwater that is collected in the diversion trench will be conveyed around the project site, through a network of underdrains and will flow back into the lower reaches of Streams 3, 5, and 6. The conveyance system will remain in place after construction. (Response 1a of Nordic's November 4, 2019 Response to the Department's October 3, 2019 Technical Review Memorandum.)

Upon full buildout, the conveyance system is designed to intercept the same amount of runoff and shallow groundwater from the upgradient contributing area that currently provides baseflow for these channels and, therefore, the downstream reaches are expected to have a similar magnitude of baseflow as compared to the pre-developed condition. (Response 4 of Nordic's November 4, 2019 responses to the Department's October 3,

2019 Technical Review Memorandum.) For each phase of construction, the applicant has designed the conveyance system to maintain minimum baseflow to these downstream reaches of Streams 3, 5, and 6.

In comments on the draft recommended Order, Upstream Watch states its position that Nordic must provide a 30-foot wide drainage right-of-way where all natural drainage ways traverse the proposed project site. Upstream Watch further states that impacts to on-site streams, as proposed, would result in an unreasonable alteration to natural drainage ways in violation of Chapter 375, § 3.

As part of its evaluation of the project, the Board considered the potential impacts to natural drainage ways and to the flows of surface and subsurface waters. The filling of Stream 4 and the upper portion of Streams 3, 5, and 6 will impact the flow of water on the site. The development also will impact subsurface water flows. The Board finds the project, as designed, will provide adequate post-development drainage and flow that is similar to pre-development conditions. Additionally, the remaining downgradient portions of on-site streams will contain riparian areas that extend beyond 15 feet on each side of the streams, effectively providing a drainage right-of-way consistent with the type of evidence the Board looks for when evaluating alteration of natural drainage ways pursuant to Chapter 375, § 3. Recognizing the purpose of the project and necessary scale of the type of facility proposed by the applicant, the Board finds these impacts are not unreasonable in light of the measures the applicant proposes to take to collect upgradient surface and groundwater flow, to develop a conveyance system that accommodates this water, and to maintain flow in the downstream reaches of Streams 3, 5, and 6; and in light of the condition required below. The Board finds the proposed conveyance system is not expected to result in any increase in erosion or pollution to the downstream reaches of the impacted streams. Since the conveyance system is expected to maintain the existing contributing area above the streams, maintain the existing flow paths of the existing drainage ways, and provide baseflow to the downstream reaches of the impacted streams, and given that the riparian area of the downstream reaches of the streams will remain undisturbed at an overall width greater than 30 feet, the Board finds the project will not violate state water quality standards and that there will be no unreasonable alteration of onsite drainageways or the flow of surface or subsurface waters, pursuant to the NRPA, 38 M.R.S. § 480-D(4) and (5), the Site Law, 38 M.R.S. § 484(3), and the Site Law Rules, Chapter 375, §§ 3 and 6, provided the applicant:

- Develops and submits a finalized plan for continuous instream flow monitoring in the downstream reaches of Streams 3, 5, and 6 prior to the start of construction. Monitoring equipment, locations, and methodology must be determined in consultation with the Department. Monitoring shall take place within one year of the completion of Phase 1 of the project until five years following the full build-out of the proposed project. During the monitoring period, the applicant shall submit collected instream flow data to the Department for review twice per a one-year period. A monitoring report of instream flow data from January to June of each year shall be submitted to the Department by July 15 of the same year and a monitoring report of instream flow data from July to December of each year shall

be submitted by February 15 of the following year. If the Department determines the conveyance system is not appropriately maintaining instream flow in the downstream reaches of Stream 3, 5, and 6, the applicant shall develop a plan to make the changes necessary to maintain instream flow in Stream 3, 5, and 6.

The Board's analysis and finding in regard to the potential water quality impacts associated with the pipeline in Belfast Bay is set forth in greater detail in Section 9 below.

9. SURFACE WATER QUALITY (Pipeline)

The Site Law, 38 M.R.S. § 484(3), requires an applicant to demonstrate that the development fits harmoniously into the existing natural environment and does not adversely affect water quality or other natural resources in the municipality or neighboring municipalities. The corresponding Site Law rules, in Chapter 375, § 6 instruct the Department to consider all relevant evidence as part of its evaluation on whether the proposed development will have an unreasonable adverse effect on surface water quality.

The NRPA, 38 M.R.S. § 480-D (3) and (5), require an applicant to demonstrate that the proposed activity will not unreasonably harm any aquatic habitat, estuarine or marine fisheries or other aquatic life and to demonstrate that the proposed activity will not violate any state water quality law, including those governing the classification of the State's waters. Section 401 of the CWA, 33 U.S.C. § 1341, requires that any applicant for a federal license or permit to conduct any activity that may result in a discharge into waters of the United States obtain a water quality certification (WQC) to ensure that the discharge will comply with applicable State water quality standards. One of the purposes of the Department's Chapter 310 rules is to ensure, through compliance with that chapter, the standards set forth in Section 480-D of the NRPA and state water quality standards are met by applicants proposing regulated activities in, on, over, or adjacent to wetlands and water bodies.

A. Overview – Construction Activities Within Coastal Wetland

Beginning at the HAT line, the 6,400 linear foot pipeline will be installed sequentially in six 1000-foot long segments and one 400-foot long segment, of which the first 2,700 feet of pipeline will be buried beneath the seabed substrate.

Within the upper and mid intertidal areas of the coastal wetland, the applicant proposes to excavate an approximately 10-foot deep trench to bury the pipeline with approximately five feet of cover over the pipeline for a distance of approximately 1,450 linear feet. Construction will occur in the dry at low tide using excavating equipment positioned on timber construction mats. The excavated trench is anticipated to range between 12 to 15 feet wide at the bottom of the trench with the side slopes broadening to approximately 30 feet wide at the top of the trench. Pipeline segments will be temporarily moored to one side of the trench route and excavated material from the trench will be located on the

opposite side of the trench route. The trench will be backfilled once the pipeline segments are installed. (Response 11 of Nordic's November 4, 2019 response to the Department's October 9, 2019 Request for Information and Exhibit 19 of Nordic's Pre-filed Direct Testimony.) Erosion and sedimentation control measures will be employed to contain and stabilize the work area during this time and, as appropriate, to account for tides, currents, and depth of water. Further, all in-water work will occur between November 1 and April 1 of a given calendar year.

Within the lower intertidal area and subtidal area of the coastal wetland, construction of the trench will continue using a barge-mounted crane with a closed dredge bucket for a distance of approximately 2,700 feet and measuring approximately 108,000 square feet in area. Approximately 36,000 cubic yards (cy) of marine sediment would be excavated from this area. (App., Appendix C.) Of this estimated volume, up to 15,000 cy of excess dredge spoil material may be generated by installation of the proposed pipeline. (App., Table A, Appendix 18-B, Section 18.) Excess spoils would be placed in a containment structure, transported by barge to Mack Point in the Town of Searsport, and then to an upland licensed location for disposal, identified by the applicant as either Waste Management Disposal Services of Maine (also known as Crossroads Landfill) or Juniper Ridge Landfill. Silt fabric will be utilized around the perimeter of the barge to contain and capture fines prior to transportation to Mack Point, however, while on the barge, water from the excavated material will drain off the edges. Once at Mack Point, sealed dump trucks will haul the material to a licensed disposal facility. If necessary for handling, sawdust will be mixed with the excavated material at Mack Point prior to loading onto dump trucks.

To prevent an unreasonable amount of temporary sedimentation within the coastal wetland, Nordic proposes to implement a number of erosion and sedimentation control measures during construction of the pipeline. These measures include, but are not limited to, working in small sections at low tide, operating equipment from construction mats, installation of a coffer dam and turbidity curtain, use of a closed dredge bucket, limiting the hoist speed of the dredge bucket within the water column, and visual monitoring of the work area. (Response 9 of Nordic's November 4, 2019 response to the Department's October 9, 2019 Request for Information and Nordic's Pre-filed Direct Testimony of Ms. Lauren Walsh). These erosion and sedimentation control measures proposed by Nordic, in addition to the erosion and sedimentation control measures that will be implemented during construction of the primary facility site, are described in further detail in Section 11.

Nordic collected eight Vibracore sediment samples of marine sediment for initial characterization of the substrate's biological, chemical, and physical composition. The sample locations are proximate to, but not exactly along, the proposed pipeline route. (App., Figure 7-2 and Figure 18-1.) Biological data consisting of benthic macrofaunal organism identification and physical data consisting of substrate identification and grain size analysis was collected from all eight samples. Two of these eight samples (known as Sample B3 and Sample A6/A7) were collected for analysis of multiple chemical parameters, with mercury being one of several parameters that were analyzed.

Sample B3 was a depth composite sample collected to a sediment penetration depth of 6.5 feet. Sample A6/A7 was a two-sample depth composite sample from Stations A6 and A7. Station A6 was sampled to a sediment penetration depth of one foot, and Station A7 was sampled to a sediment penetration depth of 3.75 feet.

When testing and analyzing Sample B3 and Sample A6/A7, Nordic applied the “rule of 20” technique. The “rule of 20” is a commonly applied sampling technique in which a sample is mixed or diluted with a volume of extraction fluid that equals 20 times the weight of the sample. If the total concentration of a particular analyte, such as mercury, is less than 20 times the upper toxicity limit (also known as Toxicity Characteristic Leaching Procedure (TCLP) limit), then the waste may be considered to be non-hazardous for that analyte. Applying this methodology, a mercury concentration below 4,000 ng/g (or 4 milligrams per kilogram) is non-hazardous.

The results of Nordic’s analysis reflect that the sediment in the two samples was non-hazardous when the “rule of 20” was applied. (The full laboratory report can be seen in Appendix 18-C of the Site Law application.) In specific regard to mercury, the concentration level in Sample B3 was determined to be 267 Nanograms per gram (ng/g) and the concentration level in Sample A6/A7 was determined to be less than 103 ng/g, which is less than the laboratory reporting limit. (App., Table 18-3.)

Nordic compared the results of Sample B3 and Sample A6/A7 against the results of other previously tested sample sites from within the Penobscot River system, which are described in the the Penobscot River Mercury Study (PRMS).² The PRMS is a court-ordered report of mercury contamination levels and trends within the Penobscot River system and recommends possible targets and procedures for remedial action. The study concentrates and compares much of its evaluation against historic releases of mercury contamination from a former chlor-alkali processing plant, known as the Holtra-Chem facility, in the Town of Orrington. The study does not provide any data that is specific to Belfast Bay or the project area, but does provide general context when reviewing the applicant’s sampling results. Nordic stated that the PRMS describes several sampling sites that are located in the lower estuary in the area between Sears Island and Islesboro Island and east of Belfast Bay, including stations ES 7A, ES 8A, ES 8C, and ES 15A. These stations, which are the closest stations to the project site for which sediment mercury data were available, had mercury concentrations of 290-383 ng/g in surface sediments and sediment mercury concentrations of 111-145 ng/g as a column average (total column depth 90 cm). The PRMS demonstrates that mercury concentration varies by depth in the affected marine sediments with the highest concentrations typically located at depths of 10-30 cm in the sediment column with lower values in surface sediments.

² Bodaly, R.A. 2013. Penobscot River Mercury Study Chapter 17 Background concentrations of mercury in central Maine estuaries. Submitted to Judge John Woodcock United States District Court (District of Maine). April 2013.

By comparison, the historic discharge of mercury into the Penobscot River at its source of contamination in Orrington, Maine resulted in a mercury level of about 800 ng/g.

Nordic concluded that the mercury levels in Sample B3 and Sample A6/A7 were equivalent to the concentration levels of mercury in the lower reaches of the Penobscot River system and below the concentration levels of mercury in the upper reaches of the Penobscot River system.

B. Intervenor Testimony and Evidence

MGL presented testimony, and written comment, about Nordic's characterization of the biological, chemical, and physical composition of the coastal wetland. Specifically, MGL argued that the sediment sampling techniques used by Nordic to analyze the composition of the marine substrate are not sufficient for determining the proposed pipeline's effects on the water quality of Belfast Bay. MGL further asserts that excavation activities within the coastal wetland will introduce mercury into the water column and produce an unreasonable amount of turbidity during construction, which would result in an adverse effect on fisheries and the fishing industry within Belfast Bay and Penobscot Bay. MGL testified that mercury-laden sediment from the source of contamination at the Holtra-Chem facility site may have traveled and been deposited over time within Belfast Bay and Penobscot Bay based on the PRMS' results of the sediment analysis of the stations sampled and their proximity to the proposed pipeline route. For this reason, and to achieve a more site-specific and comprehensive profile of potential contaminants within the marine substrate, MGL contends that the Board should have compelled Nordic to collect and analyze the marine substrate along the proposed pipeline route according to the "Regional Implementation Manual for the Evaluation of Dredged Material Proposed for Disposal in New England Waters" (RIM), prepared by the U.S. Environmental Protection Agency (EPA) Region 1 and the New England District (CENAE) of the U.S. Army Corps of Engineers (Corps), effective May 6, 2004.

MGL and Upstream Watch/NVC assert that incidental effects associated with the removal and transport for upland disposal of dredge spoils during the proposed construction of Nordic's pipelines are equivalent to a discharge that requires an additional and separate MEPDES Permit pursuant to the CWA.

The Board received oral and written testimony during the evening session of the public hearing some of which echoed the testimony and evidence presented by MGL.

C. Board Analysis and Finding

As referenced in Finding 1(C), Nordic applied for a MEPDES Permit and a Waste Discharge License. It is through that permitting process that the Department typically evaluates potential water quality impacts of a discharge, including any effect on surface water temperature. In MEPDES Permit #ME0002771/WDL #W009200-6F-A-N, the Board states that the waters of Belfast Bay at the site of the proposed pipeline are currently classified as SB pursuant to 38 M.R.S. § 469(6). For this reason, the Board

considered the standards contained in 38 M.R.S. § 465-B(2) relevant to potential water quality impacts as a result of the project's proposed treatment of wastewater. Based on the information contained in the record and the Board's analysis and decision in MEPDES Permit #ME0002771/WDL #W009200-6F-A-N, the Board finds the requirements of the Site Law rules, Chapter 375, § 6(B)(4) and (C)(2) have been satisfied with respect to the proposed discharge of treated wastewater.

With regard to construction, the excavation of the trench for the pipeline and installation of the pipeline has the potential to cause sedimentation. Suspension and subsequent deposition of sediment can have an impact on water quality and the extent of any such impact can be influenced by the composition of the sediment, including any contaminants it may contain. It is typically through the administration of the NRPA and the Department's Section 401 WQC authority that the Department evaluates potential impacts of sedimentation and sediment composition on water quality associated with construction activities. In the Board's Sixteenth Procedural Order, dated May 6, 2020, the Presiding Officer ruled that the NRPA and Section 401 WQC permitting processes are an appropriate mechanism for assessing Nordic's proposed construction methods and incidental effects associated with those activities, and that an additional and separate MEPDES Permit, beyond the one reference above, is not necessary.

(1) Habitat and Marine Life

Pursuant to the NRPA, 38 M.R.S. § 480-D(3), an applicant must demonstrate that the proposed activity will not unreasonably harm any aquatic habitat, estuarine or marine fisheries or other aquatic life.

Nordic's Natural Resources Report, dated May 8, 2019, states that the portion of Belfast Bay at the site of the pipeline does not contain any area that is open to conventionally-harvested shellfish, any commercial fishery resources, or eelgrass habitat. In DMR's review comments, dated January 30, 2020, DMR stated that the proposed pipeline is located within an area open for scallop harvesting; however, scallop harvest activities are not common in the general Belfast Bay area. DMR stated that lobsters would not be present in the area due to the natural migration to deeper offshore locations during the proposed timeframe for construction of the pipeline and that the pipeline's physical structure and location above the seabed will have minimal impact to the movement of lobsters. DMR further commented that fisheries such as Atlantic salmon, Atlantic sturgeon, and shortnose sturgeon, would not be present during the proposed construction window given typical migration behavior patterns for these species.

Based on DMR's review, the Board finds that the applicant's construction method for installation of the proposed pipeline will not permanently alter the benthic characteristics and function of the marine habitat of Belfast Bay. The Board further finds that the proposed project will not unreasonably harm Class SB habitat and marine life pursuant to the NRPA, 38 M.R.S. § 480-D(3).

(2) Maintenance and Protection of Water Quality

The State's water quality standards state that the existing uses and the level of water quality necessary to protect those existing uses must be maintained and protected. The State may not issue a WQC unless the applicant demonstrates that the proposed activity will not have a significant impact on existing estuarine or marine life use and habitat. A significant impact is a significant impairment to growth and reproduction or an alteration of the habitat which impairs viability of the existing population.

As discussed above, Belfast Bay is used by lobster and scallops, and as habitat for such populations. Belfast Bay also is used for recreation and commercial fishing of marine species. Based on its natural resources report and the results of its sediment analysis, the applicant states that the proposed activity will not result in a significant degradation of recreational uses and commercial fishing in Belfast Bay. Some intervenors and members of the public testified about potential sedimentation impacts from the construction of the pipeline.

Based on DMR's January 30, 2020 review comments and DMR's April 7, 2020 assessment, Nordic's assessment of the coastal wetland and its proposed construction methods, conditions included in this Order intended to address potential sedimentation (See Section 11) and ensure mercury levels are consistent with the levels expected and data already collected by the applicant (See Section 9(C)(3) and (4)), and other information contained in the record, the Board finds that the proposed installation of the pipeline will maintain and protect existing uses and the level of water quality necessary to protect existing uses in Belfast Bay; will protect the existing water quality of the bay; will not significantly impair the viability of the existing populations of lobster, scallops, and other marine life; and will not result in a significant degradation of existing recreation and commercial fishing of marine species.

(3) Mercury

Staff of the Department's Bureau of Remediation and Waste Management (BRWM) reviewed Nordic's sampling methodology and the results of Nordic's sediment analysis. BRWM commented that Nordic's use of the "rule of 20" is an acceptable method to gain a baseline depiction of the composition of the substrate within the project area. BRWM staff also commented that mercury data collected by the applicant showed mercury levels within the expected range of values, compared to previous studies, including the PRMS. BRWM further commented that no remedial sediment removal within the project area was recommended by the PRMS as part of the overall remediation plan for the Penobscot Bay area. BRWM stated that the removal and upland disposal of excess excavated material from construction of the proposed pipeline is likely to result in an overall reduction in the amount of mercury contaminated sediment in the coastal wetland. BRWM concluded that the excavation and upland disposal of the excavated material associated with the pipeline poses no risk to human health or the environment.

MGL argues that due to the discharge of mercury from the Holtra-Chem facility in Orrington and the resulting deposition in Penobscot Bay, the applicant's sampling of the

sediment is inadequate. They argue that the applicant should test the sediment in small, distinct layers in accordance with the EPA and Corps' RIM manual to determine if there is a layer of sediment with a higher concentration of mercury.

The sediment sampling method used in the PRMS was applied to study the location, distribution, and impacts of the contamination discharges from the Holtra-Chem facility. Generally, in a trenching or dredging operation, sediment is removed by a dredge bucket mounted to a crane and then placed in a scow or other type of containment structure with other sediment. The material already in the scow mixes with the excavated sediment being placed in it. There may be a thin layer of sediment with higher concentrations of mercury in any one of those bucket-loads of sediment, but that distinct layer is mixed with the other sediment in the scow. For this reason, the Board concludes that depth composite sampling technique applied by the applicant is a conventional, common, and appropriate sampling method to gain a baseline depiction of the composition of the substrate for this project.

MGL, Upstream/NVC, and members of the general public also argue that the presence of mercury in the sediment poses a threat to fish and shellfish in the area. They cite recommendations made in the PRMS and in federal permitting documentation, to not remove sediment from areas where there are elevated levels of mercury.

Given the distance of the project site from the Holtra-Chem site and the consistency of the applicant's mercury sample results with other sampling results in the same general area, the Board finds the sampling conducted by the applicant is credible and sufficient. However, as added assurance the Board is requiring as a condition of this Order that additional sampling be conducted by the applicant prior to construction and that these results, along with the mercury results of any other samples collected by the applicant, be submitted to the Department for review.

After reviewing the record and considering the hearing testimony, the Board recognizes that the levels of mercury in the area of the pipeline are above natural background levels, but finds the present levels are sufficiently low that the pipeline installation and associated excavation can be conducted safely and without posing an unreasonable risk. Intervenors pointed out that in this general area of Belfast Bay leaving sediment in place was recommended as part of the Holtra-Chem response, as opposed to removal. The Board recognizes that leaving contaminated sediment in place, as opposed to general removal as a method to address the Holtra-Chem issues, may be the appropriate response when taking into account factors such as the potential for resuspension of contaminants or limited environmental improvement that may come from removal. It does not automatically follow, however, that where sediment removal is not the preferred form of remedial action that the excavation of that same sediment as part of project construction is inappropriate or unreasonably risky. Here, in light of the samples collected by the applicant showing the sediment in the project area is non-hazardous; the sedimentation control measures proposed by Nordic and the conditions imposed by the Board (see Section 11), which will minimize sedimentation and potential resuspension of mercury; the professional experience of BRWM staff and their assessment of the risk posed by the

proposed installation of the pipeline; DMR's review and assessment; and the conditions identified in Section 9(C)(4) below; the Board finds the installation of the pipeline, including any resuspension of sediment or incidental fallback, will not result in an unreasonable adverse impact to marine benthic organisms, fisheries, shellfish, or surface water quality.

(4) Overall Findings

The Board evaluated Nordic's proposal and weighed the evidence in the record, the analysis by the Department staff, and the testimony and evidence presented by MGL, Upstream/NVC, the other intervenors, and the general public and considered the applicable standards. As a result of its analysis, the Board finds that that the proposed project will maintain and protect existing uses and the level of water quality necessary to protect existing uses; will protect the existing water quality of Belfast Bay; will not significantly impair the viability of the existing populations of lobster, scallops, and other marine life; and will not result in a significant degradation of existing recreation and commercial fishing of marine species. The Board also finds that as construction of the pipeline is proposed and further restricted by this Order – specifically, through the condition below that Nordic regularly haul excavated material from the project site to Mack Point and not store this material in a barge beyond the time reasonably needed to conduct the excavation, fill the barge, and transport the material to Mack Point – any material excavated during this part of the project that falls back into the water is incidental to the excavation and any dewatering that may occur while a barge is being filled with excavated material or transported to Mack Point is *de minimus*. Given this, the Board finds that the proposed project will not unreasonably harm any aquatic habitat, estuarine or marine fisheries or other aquatic life; will meet the Department's water quality standards for Class SB waters and that resuspension of sediment will not result in an unreasonable adverse impact to the water quality of Belfast Bay. The Board finds the requirements of the Site Law, 38 M.R.S. § 484(3), the NRPA, 38 M.R.S. § 480-D(3) and (5), and Section 401 of the CWA are satisfied, provided the applicant:

- Regularly hauls excavated material from the project site to Mack Point, and from there directly to a landfill licensed to receive the material. The applicant shall not store dredged material in a barge beyond the time reasonably needed to conduct the excavation, fill the barge, and transport the material to Mack Point; or engage in purposeful dewatering;
- Utilizes silt fabric around the perimeter of the barge to contain and capture fines prior to transportation of the excavated material to Mack Point; and
- Conducts further sampling and analyses of the marine sediment along the proposed pipeline route prior to the start of construction. A sufficient number of samples, as determined using Chapter 9 of *Test Methods for Evaluating Solid Wastes*, USEPA, SW-846, 3rd Edition, 2013, shall be taken along the horizontal route and vertical depth of the proposed pipeline to further characterize the expected character of the excavated spoils for disposal in accordance with the

sampling and analyses requirements of the upland receiving disposal facility. The sampling results and associated Toxicity Characteristic Leaching Procedure (TCLP) analyses, as described in SW-846, shall be submitted to the Department for review prior to the start of construction of the pipeline. If the applicant conducts any additional sediment sampling, the applicant shall submit the results of that sampling, as well. If the Department determines a particular analyte to be hazardous, the applicant shall submit to the Department for review and approval an updated erosion and sedimentation control plan, a revised transportation and disposal plan for excess spoil material, and an updated construction method and sequencing plan that addresses the testing results. Further, should these or any other results of sediment sampling and analysis taken along the pipeline route reflect that the project may no longer comply with state water quality standards as determined by the Department, the Department reserves the right to, in its discretion and upon notice to the applicant and opportunity for hearing, reopen this Order and Water Quality Certification to consider requiring modification to ensure the State's water quality standards will be met.

10. SOLID WASTE AND DREDGE SPOILS DISPOSAL AND TRANSPORTATION

Pursuant to the Site Law, 38 M.R.S. § 484(6), and Chapter 375, § 16, an applicant must demonstrate that it has made adequate provision for solid waste disposal to ensure that no unreasonable adverse effects on the natural environment will result; that public health, safety, and welfare will not be adversely affected; and that the wastes will not combine with other wastes, water, or other natural or man-made substances to create additional harmful effects to the natural environment or the public health, safety, and welfare.

If a proposed activity involves dredging, dredge spoils disposal or transporting dredge spoils by water, the NRPA, 38 M.R.S. § 480-D(9), requires an applicant to demonstrate that the transportation route minimizes adverse impacts on the fishing industry and that the disposal site is geologically suitable.

A. Solid Waste

The applicant submitted an estimated breakdown of the types and quantities of waste that will be generated during the operation of the proposed project at full buildout. Types of waste streams from operation include filtrate (a byproduct of the wastewater treatment process), salmon processing solids, salmon processing grease, general solid waste from office administration, universal waste, and recyclable products. Several composting and waste disposal and transport companies provided letters of commitment to accept the identified wastes. These companies include Crossroads Landfill, Casella Organics, Agri-Cycle Energy, Channel Fish Company, Coast of Maine Organic Products, and Compost Maine.

Approximately 30 acres of forested area will be cleared of vegetation, with an estimated volume of approximately 5,433 cubic yards of marketable timber. Timber will be sold or used as firewood by Comprehensive Land Technologies, Inc. or donated to the Waldo

County Woodshed, a non-profit group that provides free firewood to the surrounding community. Other vegetative debris, such as brush and stumps, will be used on site for erosion control or disposed off-site at Waste Management Disposal Services of Maine (Crossroads Landfill) or at one of Casella Organics' licensed facilities such as Juniper Ridge Landfill.

At full buildout, the proposed project is anticipated to generate approximately 90 cubic yards of construction debris and demolition debris per day. The applicant anticipates that renovation of the existing BWD buildings and water control structure will generate a small volume of special waste, including asbestos insulation, asbestos roofing, and localized polycyclic aromatic hydrocarbon (PAH) impacted soils. All construction and demolition debris and special waste generated by construction of the proposed project will be disposed of at Crossroads Landfill or at one of Casella Organics' licensed facilities.

A full list of proposed solid waste streams associated with construction and operation of the project can be seen on Table A, Appendix 18-B in Section 18 of the Site Law application.

Staff of the Department's BRWM reviewed Nordic's proposal to dispose solid waste and excess spoil material. BRWM commented that the solid waste disposal facilities identified by Nordic are licensed to accept the proposed wastes and have the capacity to properly process or dispose of the estimated wastes. BRWM also stated that the transport of non-hazardous wastes in Maine must be conducted by transporters that are licensed to do so under the Department's rules, Chapter 411, Non-Hazardous Waste Transporter Licenses. BRWM concluded that upland disposal of the excavated material associated with the pipeline as proposed poses no risk to human health or the environment.

B. Dredge Spoils Disposal & Transportation

As referenced in Section 1 and Section 9, Nordic proposes to excavate a trench for a distance of approximately 2,700 linear feet within the lower intertidal area and subtidal area of the coastal wetland with construction occurring between November 1 and April 1 of a given calendar year. Approximately 36,000 cy of marine sediment would be excavated from this area, and, of this estimated volume, up to 15,000 cy of excess spoil material may be generated by installation of the proposed pipeline. Excess spoils will be transported to Crossroads Landfill or Juniper Ridge Landfill for disposal. Crossroads Landfill and Juniper Ridge Landfill are regulated and authorized by the Department.

DMR reviewed the proposed route for transporting excess dredge spoil material and held a public hearing on March 2, 2020 in accordance with 38 M.R.S. § 480-D(9). In its April 2, 2020 assessment, DMR noted that excess spoil material would be hauled by barge to Mack Point, located in the Town of Searsport, prior to transportation of materials to Crossroads Landfill or Juniper Ridge Landfill. DMR also summarized Nordic's construction methods and sequencing plan, public concerns, and potential impacts to marine resources and the fishing industry. DMR recommended several measures to minimize

adverse effects on the local fishing industry, which includes marking the location of the proposed pipeline, providing notice of nautical bearings and width of the of travel route and the location of the anchorage points at the project site and Mack Point to the local Lobster Zone Council, and providing a mechanism for compensation of lost fishing gear if the barge transporting excess spoil material deviates from the specified haul route. Nordic acknowledged and agreed to implement DMR's recommendations.

C. Intervenor Testimony

During the course of the Board's review, MGL argued that transportation of excess spoil material to Mack Point would result in potential disruption to local fishing activities in the area and a loss of fishing gear. The Board received oral and written testimony during the evening session of the public hearing and written comments in the course of the Board's review which voiced arguments similar to those of MGL.

D. Board Analysis and Finding

The Board evaluated Nordic's proposed disposal provisions for solid waste and excess spoil material to assess whether the project would have an unreasonable adverse effect on the natural environment; whether public health, safety, and welfare would be adversely affected; and whether the wastes would combine with other wastes, water, or other natural or man-made substances to create additional harmful effects to the natural environment or the public health, safety, and welfare.

Based on BRWM's review of Nordic's proposed disposal provisions for solid waste and excess spoil material, the Board finds that the facilities proposed by Nordic for the disposal of solid waste, including waste generated during routine operation of the proposed facility (e.g., filtrate, salmon processing solids and grease, general solid waste, universal waste, and recyclable materials), vegetative debris, construction and demolition debris, and special wastes, as well as excess spoils, which are listed above, are licensed, and in compliance with the Maine Solid Waste Management Rules. The anticipated quantities of different solid waste types generated during routine operation of the facility, during both Phase 1 and Phase 2, is addressed in the application and summarized in the above-referenced Table A. How this waste will be disposed of also is adequately addressed. The Board finds the RAS technology proposed by the applicant to allow the land-based production of Atlantic salmon is an emerging technology. The scale of production using this technology proposed by Nordic – up to 33,000 metric tons of seafood per year – is greater than existing production levels with which Nordic has experience. In light of the newness of this technology and proposed scale of operations, the Board finds contingency planning, in the form of an emergency response and facility closure plan, is warranted to ensure solid waste is adequately managed and will not have unreasonable adverse effects on the natural environment and public health, safety, and welfare. Accordingly, the Board finds the applicant has made adequate provision for solid waste disposal and satisfied the requirements of the Site Law, 38 M.R.S. § 484(6), and Chapter 375, § 16, provided the applicant:

- Utilizes a licensed transporter for the transport of non-hazardous wastes in Maine in accordance with the Department's rules, Chapter 411, Non-Hazardous Waste Transporter Licenses;
- Develops an emergency response and facility closure plan that identifies worst case scenarios, including unanticipated disease outbreak and spread, unanticipated fish die-off, and unanticipated closure of the wastewater treatment facility or the facility as a whole. The plan may be a standalone document or incorporated into an overall operations and maintenance plan for the facility. The emergency response and facility closure plan must establish thresholds that trigger implementation of the plan. For the scenarios accounted for in the plan, the plan must identify all possible solid waste types and potential volumes associated with each phase of operation, including those types of solid waste identified by Nordic in its application and additional waste types associated with closure of the wastewater treatment facility and facility as a whole, if any. The plan also must address how each type of solid waste will be handled and disposed. The plan, which may be developed sequentially with each phase, must be submitted to the Department for review and approval prior to construction of the corresponding phase of development; and
- Implements the emergency response and facility closure plan should a triggering event occur.

Given that Crossroads Landfill and Juniper Ridge Landfill are upland disposal locations licensed by the Department, the Board finds that the applicant has demonstrated that the disposal sites chosen for disposal of excess spoil material associated with trenching activities for the pipeline are geologically suitable pursuant to the NRPA, 38 M.R.S. § 480-D(9). Based on DMR's assessment of Nordic's provisions for transporting excess spoil material generated by installation of the proposed pipeline and implementation of DMR's recommendations for minimizing impacts to the local fishing industry through the required conditions below, the Board further finds that the applicant has demonstrated that the transportation route minimizes adverse impacts on the fishing industry pursuant to the NRPA, 38 M.R.S. § 480-D(9), provided the applicant:

- Marks the location of the proposed pipeline for navigational safety in accordance with the U.S. Coast Guard's and U.S. Department of Commerce's National Oceanic and Atmospheric Administration's nautical chart marking and labeling requirements. The applicant also shall mark or designate the transportation route for the spoils;
- Conducts public outreach by means of written notice to the local Lobster Zone Council in coordination with DMR. Notice shall include specific nautical bearings of the proposed haul route and width for the safe travel of the barge to avoid entanglement with fishing gear. The notice shall include the anchorage point for the barge at both the proposed construction site and at a safe docking location off

Mack Point. The barge transporting the excess spoil material to Mack Point shall be equipped with a Vessel Monitoring System (VMS) to track its transit activity along the proposed haul route;

- Provides a detailed mechanism by which area fishermen may seek compensation for lost gear should the barge deviate from the specified haul route. The applicant shall publish in a local newspaper of general circulation adjacent to the transportation route the procedure that the applicant will use to respond to inquiries regarding the loss of fishing gear during the dredging operation; and
- Publishes the barge transportation route in a local newspaper of general circulation.

11. SOIL EROSION AND SEDIMENTATION CONTROL

Pursuant to the Site Law, 38 M.R.S. § 484(4-A), an applicant must demonstrate that its proposed development meets the standard for erosion and sedimentation control found in 38 M.R.S. § 420(C) of the Stormwater Management Law. Pursuant to Chapter 375, § (5), which further specifies the Site Law criterion, the Department must determine whether a developer has made adequate provision for controlling erosion and sedimentation.

The Department's Chapter 500 Stormwater Management Rules (06-096 C.M.R. ch. 500) elaborate on the Site Law and the Stormwater Management Law and set out detailed application and design requirements for meeting water quality and quantity standards, including those that address erosion and sedimentation, construction and installation, inspection, maintenance, drainage, and treatment measures. An applicant is required to meet these standards to control the release of pollutants to waterbodies, wetlands, and groundwater, and reduce impacts associated with increases and changes in flow. Specifically, to meet the Basic Standards contained in Chapter 500, § 4(B), an applicant must demonstrate that the erosion and sedimentation control, inspection and maintenance, and housekeeping performance standards are met, and that the grading or other construction activity will not impede or otherwise alter drainageways so as to have an unreasonable adverse impact on a wetland or waterbody, or an adjacent downslope parcel.

The NRPA, in 38 M.R.S. § 480-D(2), requires an applicant to demonstrate that the proposed activity will not cause unreasonable erosion of soil or sediment, nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

The Erosion and Sedimentation Control Law, 38 M.R.S. § 420-C, requires a person displacing or exposing soil to "take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource."

A. Overview

Nordic submitted Erosion and Sedimentation Control (ESC) plans for all components and phases of the proposed project. The ESC plan for the primary facility site (App., Section 14) is based on the performance standards contained in Appendix A of Chapter 500 and the Best Management Practices (BMPs) outlined in the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers* (October 2016), which were developed by the Department. The ESC plan for the pipeline (App., Section 1.3.1 and Attachment A (Construction Details), Nordic Aug. 2019) is based the BMPs outlined in the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers*.

(1) Primary Facility Site

Due to the nature of the project, the applicant submitted a site-specific, phased ESC plan that considers all major earthwork activities that will occur at the primary facility site during construction and post-construction. Nordic's Major Earthwork Phasing Narrative & Soil Erosion and Sediment Control Phasing Plans were prepared by Atlantic Resource Consultants and are dated April 10, 2019, with a last revision date of October 25, 2019. The applicant's phasing plan provides a detailed breakdown of the type of work that will be conducted in each phase and all work areas and includes a construction sequencing plan which minimizes the time of soil exposure between initial disturbance and final stabilization of the project site.

Erosion control details and the applicant's ESC phasing plan for the primary facility site (App., Section 14, Appendix 14-A, CE110 Soil Erosion & Sediment Control Phasing Plan-1 Phase 1 Site Clearing through CE118 Soil Erosion & Sediment Control Phasing Plan-9 Phase 2B, dated April 10, 2019 with a last revision date of October 25, 2019) will be included in the bundle of final construction plans and the erosion control narrative will be included in the project specifications to be provided to the construction contractor.

Nordic further submitted an inspection and maintenance plan and a housekeeping list, which address maintenance requirements for stormwater control measures and also requirements for the storage of construction and waste materials during construction and post-construction. The inspection and maintenance plan is based on the performance standards contained in Appendix B of Chapter 500, and the housekeeping list is based on the performance standards contained in Appendix C of Chapter 500.

(2) Pipeline

Nordic acknowledged that disturbance of marine sediments would expose and mix sediment at varying depths during construction of the proposed pipeline. For this reason, Nordic proposes to implement a number of ESC measures to prevent an unreasonable amount of temporary sedimentation during the construction within the coastal wetland. These measures include, but are not limited to, working in small sections at low tide, operating equipment from construction mats, installation of a coffer dam and turbidity

curtain, use of a closed dredge bucket, limiting the hoist speed of the dredge bucket within the water column, and visual monitoring of the work area. All in-water work would be conducted between November 1 and April 1 of a given calendar year. The erosion and sedimentation control plan and construction methodology for installation of the pipeline was prepared by Cianbro Corporation and Ransom Consulting, Inc. and dated May 17, 2019, with a last revision date of October 29, 2019.

Erosion control and construction details and the applicant's ESC plan for the pipeline will be included in the bundle of final construction plans and the erosion control narrative will be included in the project specifications to be provided to the construction contractor.

B. Intervenor Testimony

During the course of the Board's review, MGL, Upstream /NVC, and some members of the public asserted that construction of the proposed pipeline would result in an unreasonable amount of turbidity within the water column and that Nordic's proposed erosion and sedimentation control measures are not adequate for preventing sedimentation within the coastal wetland. At the public hearing, Upstream/NVC, MGL, staff of the Department, and members of the Board questioned Nordic's soil erosion and sedimentation control witness for the pipeline regarding studies and sediment sampling techniques used to design the construction methods and sequencing for installation of the pipeline, and the specific equipment and techniques that would be used during installation of the pipeline. (Tr., Feb. 12, 2020, p. 224, line 20-p. 294, line 8.) Nordic's witness, Ms. Lauren Walsh, provided a description of the proposed construction methods within the coastal wetland used to install the pipeline and specific details of the sequence of construction and measures to reduce sedimentation and manage turbidity during construction and installation of the pipeline. Nordic's witness also provided clarifying answers to questions from Upstream/NVC, MGL, staff of the Department, and members of the Board. (Tr., Feb. 12, 2020, p. 121, line 12-p. 126, line 25 and p. 224, line 23-p. 294, line 13.)

Also, at the public hearing, Upstream/NVC questioned Nordic's soil erosion and sedimentation control witness for the primary facility site about the duration of time necessary to conduct earthwork activities at the primary facility site, requested clarification of the techniques that would be used to control sediment from leaving the primary facility site during construction, and questioned whether Nordic had considered a plan for construction oversight and reporting. Nordic's witness, Mr. Andrew David Johnston, P.E., described details of how the construction phasing plan and stormwater conveyance system would be utilized and implemented during construction. Specifically, he testified that the amount of open area during excavation activities would be limited to approximately 80,000 square feet at any given time to minimize and control the work area, and the stormwater conveyance system would capture stormwater and groundwater and divert the runoff away from the work area to minimize contact with exposed sediment. Nordic's witness further testified that third-party construction oversight and reporting and response protocols are common measures that are implemented during construction and these measures are likely to be required by Nordic, its contractor, the City, and the Department. (Tr., Feb. 13, 2020, p. 88, line 3-p. 94, line 19.)

C. Board Analysis and Finding

The Department staff reviewed and commented on Nordic's plan and plan sheets containing the details regarding erosion and sedimentation control, inspection and maintenance, and housekeeping for the primary facility site. The Board considered Nordic's final plans, the testimony and questions posed by the intervenors and the members of the public, the testimony of Nordic's witnesses, and the Department's review of the plans. The Board also reviewed the proposed plan for erosion and sedimentation control during installation of the pipeline. The Board finds that the erosion and sedimentation control measures proposed by Nordic for construction at the primary facility site and the site of the proposed pipeline reflect best management practices, as described in the Department's *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers*. The BMPs described in the manual are measures that have been determined by the Department to be an effective means of preventing or minimizing non-point source pollution to maintain or achieve water quality goals. Based on credible testimony provided by Nordic's witnesses, Ms. Lauren Walsh and Mr. Andrew Johnston, P.E., who demonstrated their experience with the construction processes and soil erosion and sedimentation measures that will be implemented during construction of the proposed project, the Board finds Nordic's proposal for erosion and sedimentation control for all components and phases of the proposed project to be reasonable and appropriate. In light of the above, and given that Nordic created a construction strategy for the primary facility site and the pipeline that utilizes BMPs developed by the Department and demonstrated to be effective through the Department's experience, the Board finds the applicant's plans for erosion and sedimentation control, construction sequencing, and phasing of earthwork activities to be sufficient to protect against erosion and sedimentation damage to the resources at issue.

In light of the above, the Board finds that Nordic's plans for construction of the primary facility site and the pipeline contain ESC measures for preventing unreasonable erosion or natural transfer of sediment beyond the project site, into a protected natural resource, or from the terrestrial to the marine or freshwater environment. The Board further finds that the proposed project meets the Basic Standards contained in Chapter 500, § 4(B) pursuant to 38 M.R.S. § 420(C), and that Nordic has made adequate provision for controlling erosion and sedimentation, such that the proposed project will not cause an unreasonable erosion of soil or sediment and satisfies the requirements of the Site Law, in 38 M.R.S. § 484(4-A), and of the NRPA, in 38 M.R.S. § 480-D(2), provided the applicant:

- Retains the services of at least two third party inspectors to monitor all phases of construction of the proposed primary facility site. The inspectors must be retained and work in accordance with the Special Condition for Third-Party Inspection Program included with this Order. The applicant may alter the number of third party inspectors needed for the project with prior Department approval;

- Retains the services of a third party inspector to monitor installation of the proposed pipeline, all disturbance, excavation, and removal of sediment from within the coastal wetland, and transportation of dredge spoils from the coastal wetland to an upland disposal location. A third party inspector must be on-site at all times to monitor installation of the pipeline on a continual and daily basis until all in-water work within the coastal wetland is completed. Inspector selection, reporting responsibilities, and other duties, as assigned by the Department, shall occur in accordance with the Department's Third Party Inspection Program; and
- Conducts a pre-construction meeting prior to each phase of the project to discuss, among other topics, the construction schedule, erosion and sedimentation control, and adherence to the conditions of this Order. This meeting must be attended by the applicant's representative, Department staff, the ESC and stormwater design engineers, the contractor(s), and the third party inspectors for that phase of the project.

12. STORMWATER MANAGEMENT

Pursuant to the Site Law, 38 M.R.S. § 484(4-A), an applicant must demonstrate that its proposed development meets the quality and quantity standards for stormwater management found in 38 M.R.S. § 420(D) of the Stormwater Management Law. Pursuant to Chapter 375, §§ 4 and 6, the Department must determine whether a proposed project will have an unreasonable effect on runoff/infiltration relationships and whether a proposed project will have an unreasonable adverse effect on surface water quality.

The Department's Chapter 500 Stormwater Management Rules (06-096 C.M.R. ch. 500) elaborate on the Site Law and the Stormwater Management Law and set out detailed application and design requirements for meeting water quality and quantity standards, including those that address stormwater runoff treatment measures. An applicant is required to meet these standards to control the release of pollutants to waterbodies, wetlands, and groundwater, and reduce impacts associated with increases and changes in flow.

A. Overview of Applicant's Proposal

At full buildout, the proposed project will create 37.9 acres of developed area, of which 27.4 acres will be impervious area. The proposed project will lie within the watershed of the Belfast Reservoir #1-Little River and Goose Pond-Frontal Penobscot Bay Drainages. The stormwater management plan submitted by Nordic was based on the Basic Standards, pursuant to 38 M.R.S. § 420(C), which is described in Finding 11, and also on the General and Flooding standards contained in Chapter 500, § 4(C) and (F). The proposed stormwater management system consists of several treatment structures, which include four green roofs, eight areas of pervious pavers in certain parking areas, eight subsurface sand filters, and 18 grassed underdrained soil filters.

B. Intervenor Testimony

At the public hearing, Upstream/NVC questioned Nordic regarding the existing flow path of stormwater runoff, argued that stormwater infiltration from existing conditions would be unacceptably reduced, and requested clarification of post-development receiving waters. These questions were similarly raised in comments on the draft recommended Order. Upstream/NVC also questioned Nordic's witness at the hearing regarding potential effects of colder temperatures on the proposed grass rooftop stormwater treatment measures, and the witness stated that the vegetation in these systems would be dormant during winter and further testified that the evapotranspiration that the grass rooftops would provide would be additional stormwater treatment, above what is required. (Tr., Feb. 13, 2020, p. 79, line 13-p. 88, line 2.)

C. Board Analysis and Finding on General Standards

The General Standards contained in Chapter 500, § 4(C) require that an applicant address pollutant removal or treatment by a project's stormwater management system. The General Standards are based upon technology-based performance criteria, and when designed and implemented according to the General Standards and the Department's guidelines, proposed stormwater treatment measures will remove stormwater pollutants, and achieve water quality treatment.

The Board evaluated the applicant's stormwater management system and the Department staff's assessment of its associated stormwater treatment calculations. The Board finds that applicant's stormwater management plan that includes the general treatment measures listed above will mitigate for the increased frequency and duration of channel erosive flows due to runoff from small storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts of stormwater. This mitigation will be achieved by using treatment measures that will treat runoff from 96.1% of the impervious area and 83.9% of the developed area.

The Board finds that the applicant's stormwater management system is designed to be consistent with the Department's guidelines for removing stormwater pollutants and achieving water quality treatment. The Board therefore finds that the applicant has made adequate provision to ensure that the proposed project meets the General Standards contained in Chapter 500, § 4(C), pursuant to 38 M.R.S. § 420(D), which satisfies the requirements of the Site Law, 38 M.R.S. § 484(4-A), provided the applicant:

- Retains the stormwater design engineer to oversee the installation of the stormwater treatment structures according to the details and notes specified on the approved plans. Within 30 days of completion of the stormwater structures, the applicant must submit a log of inspection reports detailing the items inspected, photographs taken, and the dates of each inspection to the Department for review;
- Submits an updated or as-built plan of all phases and components of the project to the Department for review at least once per year or within 30 days of project

completion. The plans must include, among other things, the permanent underdrain system consisting of diversion trenches, bypass culverts, and edge drains; and

- Demonstrates, prior to the construction of the subsurface sand filters, that the proprietary pretreatment row plans associated with relevant stormwater structures have been reviewed by the manufacturer's representative.

D. Board Analysis and Finding on Flooding Standard

When a project requires a Site Law permit or permit modification, an applicant must demonstrate that the proposed project meets the Flooding Standard contained in Chapter 500, § 4(F) to ensure that there will be no unreasonable effect on runoff/infiltration relationships. To obtain approval, an applicant must generally demonstrate that post-development runoff will not adversely affect downgradient properties and waterbodies, unless the project is eligible for a waiver.

For the portion of the proposed project that will directly discharge to the Goose Pond-Frontal Penobscot Bay Drainages watershed, Nordic is proposing to utilize a stormwater management system that is based on estimates of pre- and post-development stormwater runoff flows obtained by using Hydrocad, a stormwater modeling software that utilizes the methodologies outlined in Technical Releases #55 and #20, U.S.D.A., Natural Resources Conservation Service (June 1986 and May 1982, respectively) and detains stormwater from 24-hour storms of 2-, 10-, and 25-year frequency. The effect of the proposed project on peak flows was assessed by the applicant using multiple analysis points. Based on the results of its model, the applicant determined that the post-development peak flow from the primary facility site will not exceed the pre-development peak flow from the site with implementation of the stormwater management system.

For the portion of the proposed project that discharges directly into the Little River (a coastal wetland) on the downstream side of the Lower Reservoir dam, the applicant is not proposing a formal stormwater management system to detain stormwater from 24-hour storms of 2-, 10-, and 25-year frequency. Instead, the applicant requested a waiver from the Flooding Standards pursuant to Department Rules, Chapter 500, § 4(F)(3)(a). Chapter 500, § 4(F)(3)(a) states, in pertinent part, that a waiver is available for a project in the watershed of a coastal wetland provided that the project conveys stormwater directly into the resource. The reasoning behind this allowance for a waiver in the rules is that, due to the sizing of the receiving waters, coastal wetlands can absorb the runoff without flooding.

Nordic's witness, Ms. Maureen P. McGlone, P.E., testified that, to avoid stormwater discharge to the Lower Reservoir, a closed conveyance system using structures and piping will be utilized to collect and transport treated stormwater, as well as flows from larger volume storms, to discharge below the dam. Nordic further testified that this method allows for a waiver of the Flooding Standard in Chapter 500, reducing the need

for large retention structures and reducing the project impacts. (Tr. Feb. 13, 2020, p. 75, lines 2-9.)

The Department staff evaluated the applicant's Hydrocad model and calculations and the proposed stormwater management system. Based on the staff's analysis, the Board finds the applicant's model and resulting calculations to be credible and appropriate for assessing pre-development and post-development water quantity and control.

Based on Nordic's assessment of pre- and post-development stormwater runoff flows, the design of its stormwater management system, and the evaluation by the Department, the Board finds that the project will not result in flooding or channel erosion, provides adequate conveyance measures to ensure that the receiving waters will be protected, and that any post-development peak flow, if any, would be insignificant. The Board further finds that Nordic has demonstrated the proposed development meets the Flooding Standards contained in Chapter 500, § 4(F), pursuant to 38 M.R.S. § 420(D), and therefore satisfies the requirements of the Site Law, 38 M.R.S. § 484(4-A). The Board further waives the Chapter 500 Flooding Standard for peak flow from the project site, and channel limits and runoff areas for the portion of the proposed project that discharges directly into the Little River due to the project's conveyance of stormwater to a coastal wetland in accordance with Chapter 500, § 4(F)(3)(a).

13. SOIL TYPES

Pursuant to the Site Law, 38 M.R.S. § 484(4), an applicant must demonstrate that its proposed development will be built on soil types that are suitable for the nature of the undertaking. The Department's Soil Type Standard of the Site Location Law, Chapter 376, further elaborates on the Site Law criteria and guides the Department in its determination of whether the proposed development will be located on soils suitable for the nature of the development, such as an evaluation of whether all major limitations to the proposed development presented by soil characteristics will be overcome by proper engineering techniques.

A. Primary Facility Site

Nordic submitted a Class B high intensity soil survey and report and a geotechnical evaluation for the primary facility site. The soil survey and report were prepared by Broadwater Environmental, LLC and dated March 2019. (App., Appendix 11-A, Section 11.) The geotechnical evaluation was prepared by Ransom Consulting, Inc. and dated April 18, 2019. (App., Appendix 15-A, Section 15.) Based on laboratory results of soil test borings, the geotechnical evaluation analyzed the soils at the project site and evaluated various engineering and construction factors, including, but not limited to, building load, compaction, and construction vibrations. The soils assessments reflect that surficial geology of the primary facility site and surrounding area generally consists of glacially deposited sediments of the Presumpscot formation. Glacial tills are also present at or surrounding the project site. Soil borings taken at the project site indicate that Presumpscot silts and clays are abundant across the proposed development area and

are generally underlain by a thin layer of glacial till above the bedrock surface. At the primary facility site, the applicant proposes to excavate and remove native clay and silt-comprised surface soil down to bedrock, which will then be replaced with granular borrow material. The applicant's assessments of on-site soils are that the subsurface conditions at the primary facility site can support the proposed development.

B. Pipeline

As referenced in Section 9(A), Nordic collected several Vibracore sediment samples of marine sediment for initial characterization of the substrate's biological, chemical, and physical composition. Physical data consisting of substrate identification and grain size analysis was collected from all of the samples. The majority of the sediment samples were composed of seven to ten inches of silt over clay. Two samples contained occasional ½-inch stone, one sample contained well-graded sand, and one sample consisted of gray clay throughout the length of the sample. Based on the soil composition of the collected samples, Nordic determined that the predominate substrate within the pipeline corridor is unconsolidated sediments with some small cobble. Further description of the applicant's soil cores can be seen in a field report titled "Nordic Aquafarms Belfast – Field Observations", prepared by Woodard & Curran and dated November 28 and 29, 2018. (Coastal Wetland Boring Logs, Post-Hearing Submission described in the Board's Eleventh Procedural Order in Section 6(C), dated February 19, 2020.)

Nordic further submitted an analysis of load requirements for anchoring and stabilizing the pipeline onto the seabed. In addition to the composition of the marine substrate, the applicant factored weather, buoyancy, and shear forces from tides and currents into its calculations for designing an anchoring mechanism for the pipeline. The applicant's analysis calculated the load requirements for the pipeline at 15-foot anchorage spacings in consideration of a weight requirement of 3,000, 6,000 and 9,000 pounds for the one-, two-, and three-pipe installations. To achieve sufficient load requirement, the applicant determined that a two-foot thickness for all anchors would meet the design criteria for supporting the pipeline on the marine substrate. The applicant determined, based on its analysis, that, to structurally support the pipeline above the seabed, the dimensions of the base of each anchor for the one-, two-, and three-pipe installations will be sized, beginning at Station 32+00, as follows: 2 feet wide by 11 feet long 3-Pipe Anchors; 2 feet wide by 7.5 feet long 2-Pipe Anchors; and 2 feet wide by 4.5 feet long 1-Pipe Anchors. Details of the applicant's anchoring analysis can be seen in a report titled "Anchoring Requirements for Submerged Pipelines (REV1)," prepared by Woodard & Curran and dated August 13, 2019 (Attachment C, Nordic Aug. 22, 2019.)

Based on results of a bathymetric survey of the coastal wetland, the applicant identified a pockmark field seaward of the proposed pipeline. According to Nordic's survey and soils assessments, the pockmarks are located approximately 75 feet east of the end of the proposed intake pipe. The applicant states that these pockmarks will not be directly disturbed as a result of installation of the pipeline and do not constitute a limitation to the proposed installation, operation, and maintenance of the pipeline. The pockmarks are discussed in further detail in Section 21 below.

Nordic stated that additional subsurface exploration within the pipeline corridor would be performed prior to the start of construction of the proposed project to further verify field conditions at the site.

C. Issues Raised by Intervenors, Interested Persons, and Members of the Public

The Board received written comments from MGL, Upstream/NVC, interested persons, and members of the public regarding the suitability of soils to support the proposed project. Specifically, interested persons and members of the public expressed concern that the existing soils and the underlying bedrock at the primary facility site would not be able to support the weight of the proposed modules and processing buildings, and questioned the plan to remove a considerable amount of native soil from the primary facility site.

MGL and interested persons also expressed concern that the marine substrate does not contain the structural properties necessary to support the weight of the proposed pipeline given the substrate's soil type and the pipeline's proximity to known pockmarks. MGL and interested persons suggested that further subsurface exploration of the seabed is necessary to confirm field conditions within the pipeline corridor.

D. Board Analysis and Finding

The Board considered Nordic's assessment of soil type and suitability at the proposed project site and the submissions and testimony of MGL, interested persons, and members of the public. Although MGL, Upstream/NVC, interested persons, and the members of the public raised concerns of the structural capacity and suitability of the soils at the primary facility site and location of the pipeline, the Board finds the sediment sampling and analysis completed by Nordic shows the proposed design for all buildings and infrastructure and for anchoring of pipeline will work as intended, and all structures will be adequately supported as designed. However, in response to the concerns expressed, and as an additional precaution, Nordic will be required to complete additional sampling and analysis prior to construction and to further ensure soil suitability and load capacity and enable engineering adjustments, if needed.

Based on the applicant's soils analyses at the primary facility site and of the coastal wetland and all evidence contained in the record, the Board finds that the soils on the proposed project site do not create limitations to the proposed project that cannot be overcome through standard engineering practices in accordance with the soil type standards contained in Chapter 376, which satisfies the requirements of the Site Law, 38 M.R.S. § 484(4), provided the applicant:

- Completes the additional sampling proposed in the application and submits the results of all subsurface explorations taken at the primary facility site and within the pipeline corridor, along with any proposed engineering adjustments to the pipeline, to the Department for review and approval prior to the installation of the

pipeline. Submissions shall include a detailed report of the collection and handling of cores and samples, a core and sample log containing the length of each core and a description of the observed soil type and rock units within each core, photographs of each sample, a description of any seabed features and obstructions, and results of any further surveys and laboratory tests conducted to define geophysical and geotechnical characteristics of the facility site soils and marine sediment.

14. GROUNDWATER AND SURFACE WATER USAGE

The Site Law, 38 M.R.S. § 484(3), requires an applicant to make adequate provision for fitting the development harmoniously into the existing natural environment and to demonstrate that the development will not adversely affect existing uses, water quality, or other natural resources in the municipality or in neighboring municipalities. Further, 38 M.R.S. § 484(6) requires an applicant to make adequate provision of utilities, including water supplies for the development, and to demonstrate the development will not have an unreasonable adverse effect on the existing or proposed utilities in the municipality or area served by those services. Chapter 375, §§ (7) and (8) direct that, in the analysis under these criteria, the Board consider whether the proposed development will have an unreasonable adverse effect on ground water quality and whether the proposed development will have an unreasonable adverse effect on ground water quantity. Chapter 375, § 18 requires that an applicant make adequate provision for securing and maintaining a sufficient and healthful water supply for the proposed development.

The NRPA, in 38 M.R.S. § 480-D(3), requires an applicant to demonstrate that the proposed activity will not unreasonably harm any freshwater wetland plant habitat, aquatic habitat, freshwater, estuarine or marine fisheries or other aquatic life.

Chapter 587 applies to withdrawals or other direct or indirect removal, diversion, activities, or use of river and stream flows that causes the natural flow or water level to be altered for all non-tidal fresh surface waters of the State.

A. Overview

Surficial geology at the site is mapped as clay, silt, and sand glaciomarine deposits of the Presumpscot Formation. Bedrock geology at the site is mapped as thinly interbedded metapelite and metasandstone of the Presumpscot Formation. According to Maine Geological Survey (MGS) maps and information, there are no significant sand and gravel aquifers underlying the project site and no mapped bedrock wells either on or immediately adjacent to the project site.

In support of the proposed project, Nordic hired Ransom Engineering to conduct a site-specific hydrogeological investigation, which included the installation of test wells, four separate aquifer pumping tests, and the development of a numerical groundwater flow model for the site. (App., Appendix 15-A, report titled "Hydrogeologic Investigation Report Proposed Commercial Land-Based Aquaculture Facility Belfast Water District,

Cassida Back Lot and Mathews Brothers West Filed Properties 285 Northport Avenue Belfast Maine,” prepared by Ransom Consulting, Inc. and dated April 18, 2019 (HGI Report).)

The two phases of site development will each encompass approximately 38 acres of land. Phase I will include buildout capacity to support 50% of the proposed fish production. Phase II will expand the facility to reach full fish production.

At full operation, the proposed project would consume 1,205 gpm (gallons per minute) of freshwater and 3,925 gpm of seawater. Nordic stated that it designed a water use plan for the facility that gives it flexibility should the need to make operational adjustments become necessary. 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. 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 and will instead design and shape the project to the abilities of the site. Nordic states that its water use plan is flexible. (Tr. February 11, 2020, p. 122, line 11-24.) The proposed water use plan is as follows:

- Groundwater withdrawal from three on-site production wells for a total of 455 gpm,
- Surface water withdrawal from the Lower Reservoir of the Little River (also known as the Belfast Reservoir #1), 70 gpm plus inflows,
- A contract with Belfast Water District (BWD) to supply 500 gpm of water for drinking, process water and other uses, which will be withdrawn from the Goose River aquifer using BWD’s existing infrastructure, and
- Seawater withdrawn thru two 30-inch diameter intake pipes installed in the coastal wetland.

The groundwater extracted from wells on the site and the surface water extracted from the Lower Reservoir would be combined, treated, and used in the grow-out tanks for fish rearing, while freshwater for food processing and domestic use would be provided by BWD. Seawater would be treated and used in the grow-out tanks. With additional treatment, water supplied from BWD could be used in the grow-out tanks, however, it is not the applicant’s preference. Freshwater would be used in greater quantities for young fish and mixed with increasing amounts of seawater as the fish age and progress through the aquaculture operation. Seawater would be drawn through two proposed intake pipes, which would start approximately 6,400 feet from shore, with the majority of the subtidal portion of the pipeline elevated twelve inches off the seafloor. The intake structures at the terminus of the pipeline will be approximately 10 feet above the seafloor with a one-inch mesh screen over the ends of each pipe. Nordic stated that the project has been designed with flexibility to account for the possibility of using less fresh process water by

increasing saltwater intake rates and increasing the salinity of the process water. Similarly, as discharge from the Little River into the Lower Reservoir increases above baseflow, groundwater withdrawals could be slowed and more of the total process water could be supplied by surface water. This flexibility provides the operation leeway to allow for system maintenance (well maintenance or repairs) and hydrologic variability (decreased surface water inflows).

Nordic entered into an agreement with BWD to purchase 720,000 gallons per day or 500 gpm of freshwater. The agreement requires the applicant to purchase a minimum of 100,000,000 gallons per year or make a payment in lieu of the minimum purchase. This water will be withdrawn from BWD's existing infrastructure located in the Goose River aquifer. BWD currently withdraws water from two existing groundwater wells to provide water for its customers, the Smart Road well and the Jackson Pit well. A 2018 A.E. Hodsdon Engineers report for Belfast Water District (2018 Capacity Report) recommends that BWD bring one additional well on line, the Talbot well, which is in place but not currently operational. With the Talbot Well on-line, BWD would have enough backup capacity to meet the daily demands of its users, including Nordic, should any one of its wells be taken temporarily out-of-service. The Public Utilities Commission (PUC) approved the sale of water from BWD to Nordic in Docket Number 2018-00043, dated June 8, 2018.

Nordic conducted four separate aquifer tests at the project site, with total pumping rates ranging from 100 to 600 gpm from up to six test wells simultaneously. Data collected during the aquifer tests reflects that groundwater flow at the site is not uniform in all directions. In general, groundwater flow through the bedrock aquifer occurs along and through fractures in the bedrock. The results of the aquifer tests were used to develop a numerical groundwater flow model. The model results resulted in Nordic proposing a withdrawal scenario utilizing three pumping wells located in the southeastern portion of the site with a total combined pumping rate of approximately 455 gpm.

The proposed surface water withdrawal of 70 gpm plus inflows from the Lower Reservoir is based on Nordic's interpretation of Chapter 587. In the pre-filed direct testimony of Thomas B. Neilson dated December 4, 2019, Nordic stated that a rate of 250 gpm is presented as a conservative estimate of the five percent duration flow of the Little River (a five percent chance that stream flows will be 250 gpm or less during any given year). Nordic used 250 gpm as a planning tool when estimating available surface water from the Little River. Nordic states that the ability to maintain a minimum withdrawal of 70 gpm from the Lower Reservoir, up to a maximum of the Little River inflow into the Lower Reservoir and/or the design flow of the intake structure, whichever is lower, will provide flexibility to the freshwater usage of the proposed facility. This includes the ability to shift freshwater use away from groundwater resources when needed. Nordic states that a qualitative sensitivity analysis of the numerical groundwater flow model shows that fluctuations in the head of the Lower Reservoir due to the proposed surface water withdrawal is unlikely to affect the sustainability of the proposed groundwater withdrawal.

To assess the effectiveness of groundwater degradation prevention measures and ensure no adverse impacts to existing groundwater users, natural resources, and waters of the State are caused by the development or the proposed groundwater extraction, Nordic proposes to implement a monitoring program. The monitoring program will include data collection and evaluation of monitoring wells, piezometers, surface water stages, wetlands, streams, and weather as detailed in the “Water Resource Monitoring Plan,” prepared by Ransom Engineering dated April 16, 2019 (WRMP). (App., Appendix 15-B.) Annual reports would be provided to the Department, City of Belfast, and Town of Northport. Reports for each year ending December 31 would be submitted by March 31 of the following year. Nordic would also provide the Department, City of Belfast, and Town of Northport with quarterly tracking reports that would include the volume of water withdrawn, water elevations, and additional parameters at monitoring points identified in the WRMP. For the first three months of groundwater extraction and surface water withdrawal following both initial Phase 1 and Phase 2 operations, Nordic proposes to submit interim monthly reports of pumping rates, precipitation, groundwater and surface water levels. The purpose of the interim report is to assess any adverse impacts on water resources indicated by monthly data and propose operational modifications if appropriate.

The WRMP includes a plan to monitor private wells of neighboring properties, but the extent of this monitoring will depend on private well owner participation. Nordic has experience working with well owners in the area. As stated in the HGI Report, during the pumping tests Nordic contacted eleven private well owners surrounding the project site to confirm the existence of their well and ask if they would participate in a voluntary monitoring program to evaluate possible interaction between on-site wells and surrounding private wells. Of the eleven individuals contacted, eight consented to participate in the monitoring program and monitoring equipment was installed in a total of six wells.

Nordic stated in Appendix F of its November 4, 2019 response to review comments memorandum, (submitted in response to the Department’s request for information dated October 9, 2019) that the project schedule includes two years of site work and construction, during which monitoring would be conducted and baseline data would be gathered. Additionally, following construction, facility operations will be scaled in phases, the first of which will require a small fraction of the freshwater volume reflected in the submitted application.

The project includes the construction of a pumping station and an Intake Water Treatment Plant (IWTP), both of which would be constructed during Phase 1, designed and installed for full buildout capacity. The IWTP has been designed with a total flow capacity of approximately 5,130 gallons per minute (gpm), divided into 3,925 gpm seawater and 1,205 gpm freshwater (with only 455 gpm drawn from on-site wells). The IWTP will treat freshwater drawn from bedrock wells and surface water. The treatment system consists of four key functions: aeration, filtration, ozonation, and sterilization. After the treatment process, treated well and surface water is combined with treated municipal water and distributed between two buffer tanks, one tank consisting of

freshwater and the other a mixture of freshwater and seawater. From the buffer tanks, the water is distributed between the smolt and grow-out facilities.

Water coming from the BWD will enter the site after normal municipal treatment measures and is safe for drinking and food grade quality. When BWD water is to be used for growing salmon, the temperature, flow rate, and pH will be measured. The water will then be treated using an activated carbon filter for the removal of chlorine, which is detrimental to salmon. BWD water that will be used for fish processing and employee use will not be subject to chlorine removal.

Saltwater pumped in from Belfast Bay will be subjected to a multiphase treatment process to ensure proper water quality and biosecurity. It will be filtered, then temperature, flow rate, and pH will be measured before it passes through an ozonation unit to improve water clarity prior to being subjected to UV-treatment for sterilization. Distribution of water throughout the facility from the buffer tanks will be almost entirely subterranean. Nordic submitted information describing the maintenance of the water treatment and distribution system.

B. Intervenor Testimony

Upstream/NVC submitted oral testimony, written testimony, and written comments stating concerns regarding the location of the project as unsuitable, the condition of both the Upper Reservoir dam and the Lower Reservoir dam, saltwater intrusion as a result of groundwater extraction, groundwater recharge and its relationship with the proposed perimeter drains and stormwater management system, and the facility's overall water use plan.

TFAO submitted oral testimony, written testimony, and written comments raising questions about the project's proposed water use and potential impacts on private wells in the surrounding area. TFAO stated its satisfaction with Nordic's proposal to monitor private wells and commitment to resolve unanticipated water problems in the future.

Mr. Lawrence Reichard submitted oral testimony, written testimony, and written comments questioning Nordic's ability to operate a facility of this size and the overall water use of the project. Mr. Reichard testified that climate change, and increasing drought conditions, may result in less groundwater recharge and that the proposed project would cause increased negative impacts on groundwater supply.

Ms. Eleanor Daniels & Ms. Donna Broderick submitted oral testimony, written testimony, and written comments regarding the project's water use and the adverse impacts it may have on private wells, the use of BWD's existing infrastructure to deliver water to the site, and the potential for salt water intrusion. During the public hearing, in response to Ms. Daniels cross-examination, Nordic described how its proposed monitoring plan would detect issues in participating private wells before a homeowner could detect those same issues and that if a non-participating private well owner experiences problems with their well, they could contact Nordic. (Tr., Feb. 11, 2020, p. 166, line 15-

p. 167, line 2.) Nordic further stated that, if a problem in a private well is detected with regard to either water quality or water quantity, Nordic is committed to resolving the problem. Options for resolving issues with a private well include adding a filtration system, replacing the well, or connecting the well owner to public water. (Tr., Feb. 11, 2020, p. 230, line 6-p. 231, line 2.)

The Board received oral and written testimony from the general public during the evening session of the public hearing which voiced concerns about the water supply for the proposed project and potential impacts on wells in the area.

C. Board Analysis and Finding

Dr. John Hopeck, senior geologist with the Department's Division of Environmental Assessment, reviewed the proposed project and wrote two memoranda, the first one dated September 17, 2019, and the second one dated January 14, 2020 and revised January 27, 2020. Dr. Hopeck also attended the public hearing and asked questions of some witnesses. Rob Mohlar, a Senior Environmental Engineer, also with the Department's Division of Environmental Assessment, reviewed the proposed project in relationship to water withdrawals from the Little River and Chapter 587.

Department staff provided a number of technical comments regarding the proposed WRMP, which outlined the need for Nordic to collect background data regarding groundwater level and quality during project construction, and the appropriate frequency and measurement of those data. Staff recommend that measurements be taken no less often than monthly for deep unpumped wells and more frequently for shallow overburden wells and water supply wells, as drinking water wells and shallow groundwater wells are likely to show more rapid fluctuations in water levels and should be monitored more frequently. Department staff commented that surface water levels of the Little River may vary rapidly and should be monitored in near-real time. Shorter reporting intervals between collection of groundwater level data would be necessary during the period ramping up to full production and for some time after, depending on the amount and rate of groundwater withdrawal. Department staff stated that it may be appropriate to reduce data collection and reporting frequency at some or all monitoring points if groundwater usage by the project stabilizes at some level less than anticipated at full production volume, provided the Department determines that data collected to that point show no unreasonable impact or threats of impact on groundwater or surface water quality and quantity. Any future production increases beyond this lower rate would then require approval by the Department.

In response to staff review comments, Nordic agreed to install new overburden monitoring wells as pairs of shallow and deep wells, with screens installed in shallow wells located in the silty overburden and deeper wells extending to and below the overburden/weathered rock transition. Nordic also proposes to install shallow and deep piezometers in the vicinity of wetland W7. Staff noted these should be installed as close to possible to a wetland monitoring transect. The location of these piezometers and wetland tract location should be shown in a revised monitoring plan to be submitted for

review and approval. Pressure transducers and automated data loggers should be used unless an acceptable alternative is demonstrated. Water levels in shallow piezometers could be expected to fluctuate relatively rapidly, so that monthly monitoring would not be sufficient to assess the range of normal conditions during the background monitoring phase, although quarterly data reporting should be acceptable during the background data collection phase. Automated data collection would allow frequent measurements sufficient to assess conditions before and during operation of the pumping wells. If the rate of variation in the wetland piezometers is shown to be relatively slow during operation of the facility, Nordic may apply to reduce the measurement frequency.

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 (with consequent minor reduction in the volume of that aquifer contributing to adjacent watersheds). A revised monitoring program would more fully capture issues associated with potential effects of the proposed water withdrawal and will be required to include measures to prevent adverse effects.

Chapter 587 specifies the allowable withdrawal from a surface water body. It allows for up to one acre-foot of water per acre of the waterbody at normal high water conditions between April 1 and July 31, and up to two acre-feet of water per acre of waterbody at normal high water flows from August 1 to March 31 during any given year without inflow. Where there is inflow, the regulation allows for the inclusion of surplus water demonstrated to have been delivered to the waterbody.

Department staff commented on the importance of monitoring the surface flows of the Little River to determine what, if any, unanticipated impacts the project may have on surface flows. Staff acknowledge that the relevant section of the Little River channel presents certain problems for collection of accurate flow data at some times of year and under certain flow conditions. However, instrumentation can be installed to obtain real-time and continuous data during most of the year at a measured cross section, particularly since the bedrock channel minimizes the risk of major changes in channel cross-section, and an appropriate location for such measurement could be defined as part of the background monitoring plan. Monthly or even weekly stage measurements are not adequate to accurately assess pumping impacts on surface water systems, which are subject to rapid changes due to precipitation and other factors, or to capture the possible range of flow conditions. Department staff recommend that real-time, continuous monitoring of the Little River surface flows be incorporated into the WRMP. Staff noted that if collected continuously as recommended, a monthly download frequency of the data collected real-time may be acceptable during non-pumping periods, provided that data storage between downloads is sufficient to allow automated data collection at a frequency acceptable to the Board.

Nordic stated in its application materials and through witness testimony, and reiterated in its post-hearing brief dated May 4, 2020, that its proposal for the surface water withdrawal from the Little River would primarily operate as run-of-river withdrawal, except that in the absence of inflow to the lower reservoir, a withdrawal of 70 gpm may occur. It states that because the freshwater portion of the Little River does not continue below the lower dam, where it becomes tidal waters, up to 100% of the inflows into the lower reservoir could be withdrawn in accordance with Chapter 587. For its own planning purposes and to ensure sufficient alternative sources of water during low flow periods, Nordic calculated the five percent duration flow of the Little River (which represents a five percent chance that the stream flow will be 250 gpm or less in any given year), but states that based on the estimated mean annual flow of the Little River, most of the year the inflow to the lower reservoir will exceed the total freshwater demand for the project at full build-out.

Department staff reviewed the application materials and the HGI Report and determined that the proposed surface water usage from the Lower Reservoir of the Little River was developed to generally comply with Chapter 587. However, as stated above, the implementation of a monitoring plan that includes real-time, continuous monitoring of the Little River surface flows, along with the development of warning levels and action plans, will provide an increased level certainty and should be incorporated in the WRMP.

In its response to comments dated February 18, 2020, Nordic acknowledges the need for a revised WRMP. Nordic anticipates having a revised WRMP, including specific monitoring locations, proposed equipment, measurement frequency, expected dates of installation for equipment, and data submission frequency to the Department within two months of receipt of a license conditioned upon requiring a revised and updated WRMP. Nordic states that implementation of the monitoring network, including equipment purchase, installation, and configuration will take place as quickly as possible if it receives Department approval of the proposed project. Nordic stated that it is committed to establishing a monitoring network that meets any requirements imposed by the Board.

In its response to comments, Nordic acknowledged the Department staff's preference for near real-time measurement of stage height and/or flow from the Little River. Nordic states that in the revised WRMP, it will propose a location along the relevant reach of the Little River to establish a USGS-style bubbler gage (or other acceptable technology) that will record stage height at 15-minute intervals. Similarly, Nordic states that it will propose a plan and timeline for establishing a rating curve that can be used to calculate discharge of the Little River from stage height at the gage. Nordic anticipates installing the stage height measurement equipment as soon as reasonable if a permit is issued and commits to conducting manual discharge measurements of the stream (or propose another acceptable technology) regularly (e.g., approximately monthly) and at a variety of flows throughout the background data collection period, such that a reliable rating curve can be developed prior to any pumping taking place.

Nordic states that it agrees with Department staff that it is necessary to establish warning levels that are "indicative of conditions trending toward a potential adverse impact, as

opposed to being confirmation of occurrence,” and that these levels must be defined by analysis of the baseline data and approved by the Department. Nordic further stated that once warning levels are established, remedial actions must be identified to halt or mitigate unreasonable impacts.

Nordic stated in its response to comments and through witness testimony, and reiterated in its post-hearing brief dated May 4, 2020, that it proposes to submit an addendum to its WRMP that will propose alert and action levels in appropriate locations (private water supply wells, key surface water and groundwater points, etc.) and consider the baseline data collected, groundwater model predictions and appropriate thresholds. It also will include remedial actions Nordic can undertake in the event that adverse impact is observed to be imminent or occurring. Nordic stated that the implementation of the proposed WRMP will ensure that the project’s water use would not cause unreasonable adverse impacts.

In its response to comments letter, dated February 25, 2020, and comments on the draft recommended Order, Upstream/NVC argues that the Board should require the requested information, including a revised monitoring plan, prior to issuance of any license.

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. Nordic proposes to modify its WRMP to include the above requested data collection and frequency and will establish an onsite weather station. The Board acknowledges Nordic’s desire for a decision from this Board prior to undertaking the expense of additional data collection at the site and agrees with Department staff’s assessment that the evidence demonstrates the volumes of water Nordic seeks authorization to use from different sources are available at the project site and that it is likely the project can be undertaken without unreasonable impacts. Therefore, the Board finds that the proposed project has made adequate provision for fitting the development harmoniously into the existing natural environment and that the development will not adversely affect existing uses, water quality, or other natural resources in the municipality or in neighboring municipalities; the project makes adequate provision of utilities, including water supplies for the development; that the proposed project will not have an unreasonable adverse effect on ground water quality or quantity; that the applicant has made adequate provision for securing and maintaining a sufficient and healthful water supply for the proposed development and that the activity will not unreasonably harm any freshwater wetland plant habitat, aquatic habitat, freshwater, estuarine or marine fisheries or other aquatic life, provided the applicant:

- Prior to the start of construction, submits for review and approval a revised WRMP that includes: monitoring items and frequencies consistent with this

Order; an onsite weather station; a monitoring plan for the Little River that identifies the instrumentation to be installed at specific locations by specific dates, identifies the proposed monitoring parameters, and provides for real-time, continuous monitoring of the Little River surface flows; and establishment of minimum flows for the Little River, consistent with Chapter 587, and a suitable warning level above this flow, along with a plan to maintain those minimum flows within the affected reach of the Little River. The revised WRMP submitted to the Department for review and approval also shall provide for the monitoring of private wells owned by individuals in the vicinity of the project who elect to allow monitoring for both water quantity and quality; identify monitoring parameters and warning levels, as well as actions Nordic will take if warning levels are reached; and include Nordic's commitment to resolve, including through installation of a new well or connection to a public water supply, any detected water quantity or quality issues in neighboring private wells. Future changes to the WRMP will require review and approval from the Department prior to implementation; and

- During construction, collects background data regarding groundwater quantity and surface flows of the Little River. The applicant shall submit reports to the Department no less often than monthly.

D. Board Analysis and Finding Regarding Offsite Water Use

At full production, the applicant proposes to withdraw 3,925 gpm of seawater from Belfast Bay for use in the grow out tanks. Seawater would be drawn through two proposed intake pipes extending approximately 6,400 feet from the shoreline, elevated off the seafloor, with one-inch mesh screens over the ends of both pipes. Seawater would be treated in the IWTP prior to its use at the facility. Department staff's assessment of the project's proposed seawater withdrawal is that because of the volume of available seawater and the location and configuration of the proposed intake pipes, the proposed seawater withdrawal would have no unreasonable effects on aquatic habitats, estuarine or marine fisheries, or other aquatic life.

The applicant proposes to obtain a significant component of its freshwater from BWD. BWD draws its water from the Goose River sand and gravel aquifer and, according to Nordic, BWD monitors water quantity and quality of the Goose River aquifer. Part IV(F)(1) (p. 12) of the PUC Docket Number 2018-00043, dated June 8, 2018, approving the land transfer between BWD and Nordic notes that there are "no specific contractual curtailment provisions in the water supply agreement...during the first 6 years," under drought conditions or other circumstances, but that the utility states that it would apply "its general authority to curtail or reduce water sales...in the case of a drought or other water supply emergency." During their review, Department staff considered that the PUC did not address in its written decision the requirement to maintain necessary environmental/minimum flows in the Goose River during drought and non-drought conditions, in PUC Docket Number 2018-00043. The 2018 Capacity Report (p. 8) notes that "a large portion of the water derived from the Goose River Aquifer is from induced

infiltration” although data collected by BWD from a location downstream of its wells suggests that “at current pumping rates, the wells are not deriving much water from induced recharge.” These data also show that “under most circumstances... flow in the Goose River is greater down-stream of the wells than it is at the dam.” This report further notes, however, that “this might not be the case as pumping is increased from this aquifer in the future.” Department staff’s assessment is that it is normal that a system such as the Goose River and its associated aquifer shows exchange of water in both directions between groundwater and surface water, under either natural or pumping conditions. The applicant did not provide flow data for the Goose River in either the 2018 Capacity Report or the application, and the measurement techniques used to produce the 2018 Capacity Report are not described. It is not clear that surface flows have been measured under pumping conditions within the immediate area of influence from the wells, and minimum required environmental flows from that area are also not known. Nordic recommends in the HGI report that BWD’s existing additional municipal well, the Talbot well, be brought online to support the increased water use. Department staff’s analysis is that bringing the Talbot well online could have the effect of distributing the increased stress across a longer reach of the river – aquifer system in the vicinity of the pumping wells, reducing impacts to both surface water and groundwater in the area.

Nordic is proposing to obtain a significant amount of water from the BWD. The delivery of this water is authorized by the PUC, but there is some uncertainty about the potential impacts of that withdrawal to the surface water of the Goose River. Department staff recommended that the Board require the applicant to submit a monitoring plan similar to the one outlined above for the Little River, including establishment of an appropriate minimum flow, the establishment of a suitable warning level above this flow and a plan to assure the minimum flow in the Goose River. The monitoring plan should include equipment setup at a measured cross section of the river where reliable data can be collected to relate water depth to flow; a data logger recording water depth at frequent intervals and some other system to function during ice and very high flow conditions; piezometers to record water levels in the aquifer near the river and pumping well(s); and daily usage data from the pumping well(s).

In its February 18, 2020 response memorandum, Nordic stated its understanding that the matter of BWD’s compliance with Chapter 587 rules are the responsibility of the BWD, however, Nordic stated its commitment to meeting the Board’s monitoring requirements in connection with the proposed water use.

The Board has reviewed the information and arguments regarding the issues involved regarding withdrawing water from the Goose River. The Board finds it reasonable to assume that the existing public water supply system is being operated in compliance with Chapter 587, however, no monitoring information has been provided to date. The issue is relevant to this project because Nordic proposes to utilize water from BWD in its operations, enough water to require an additional ground water well to be put into service. Nordic’s use will increase the amount of water withdrawn from the Goose River aquifer and has the potential to impact surface water in the Goose River. The 2018 Capacity Report submitted by Nordic states that this increased use will result in induced

recharge from the Goose River to the aquifer, and consequently lower flows in the Goose River. Therefore, the Board finds that it is appropriate to require Nordic to monitor or to coordinate with the BWD for monitoring the surface flows of the Goose River.

Based on the evidence in the record, including staff's assessment of Nordic's proposed use of seawater and water provided by BWD, the Board finds that the proposed project makes adequate provision of utilities, including water supplies for the development; that the proposed project will not have an unreasonable adverse effect on ground water quality or quantity; that the applicant has made adequate provision for securing and maintaining a sufficient and healthful water supply for the proposed development and that the activity will not unreasonably harm any freshwater wetland plant habitat, aquatic habitat, freshwater, estuarine or marine fisheries or other aquatic life, provided the applicant:

- Prior to construction of the project, submits information establishing background data regarding water quantity for the Goose River, including information regarding river flows and flow measurement locations, to the Department for review and approval; and
- Prior to operation of the facility, establishes and submits a monitoring plan for, or coordinates with the BWD for monitoring of, the Goose River to the Department for review and approval. The monitoring plan shall include equipment setup at a measured cross section of the river where reliable data can be collected to relate water depth to flow; a data logger recording water depth at frequent intervals and some other system to function during ice and very high flow conditions; piezometers to record water levels in the aquifer near the river and pumping well(s); and daily usage data from the pumping well(s). The plan also shall establish minimum flows for the Goose River, consistent with Chapter 587 and establish a suitable warning level above this flow, along with a plan to maintain those minimum flows within the affected reach of the Goose River.

15. GROUNDWATER QUALITY

The Site Law, 38 M.R.S. § 484(5), requires an applicant to demonstrate that a proposed development will not pose an unreasonable risk that a discharge to a significant groundwater aquifer will occur.

Chapter 375, § 7 elaborates on the Site Law and requires that, in determining whether a proposed development will have an unreasonable adverse effect on groundwater quality, the Board shall consider evidence that the development will not result in the existing groundwater quality becoming inferior to the physical, biological, chemical, and radiological levels for raw and untreated drinking water supply sources.

Groundwater is the water that is present in soil spaces and within fractures of rock formations. An aquifer is an underground permeable rock formation from which groundwater can be extracted. Groundwater is typically withdrawn from an aquifer by

means of extraction wells, and groundwater is often recharged by surface water that percolates through the soil from the surface and into an aquifer.

A. Overview

Based on the results of its hydrogeologic and soils investigations, Nordic determined that there are no significant sand and gravel aquifers underlying the project site, and there are no mapped bedrock aquifers on or adjacent to the project site. (App., Figure 15-1 and Figure 15-3 of Section 15.)

The applicant considered and identified potential sources of groundwater contamination associated with the construction and operation of the proposed project. Potential sources of contamination during the construction phases of the project may include fuel and hydraulic and lubricating oils used in the operation of vehicles and construction equipment. Potential sources of contamination during the operational phases of the project may include solid wastes such as domestic waste and fish processing by-products and filtrate from Building 8, and liquid wastes from fish process wastewater and stormwater runoff.

To prevent groundwater contamination caused by a hazardous chemical spill during operation of the proposed project, the applicant submitted a draft, site-specific, hazardous materials Spill Prevention Control and Countermeasures (SPCC) plan, prepared by Ransom Consulting, Inc and dated October 31, 2019. (Attachment E of Nordic's November 4, 2019 Response to the Department's October 9, 2019 Request for Information.) The plan contains procedures for the prevention of spills, actions for emergency response and notification in the event of a minor and major spill, and a list of potential hazardous chemicals that may be used during operation of the proposed project. The Department's BWQ reviewed the applicant's plan, agrees that the procedures outlined in the plan are appropriate, and recommended that a final SPCC plan for the primary facility site should be submitted prior to the start of operation of each phase of the proposed project.

To further assess the effectiveness of groundwater degradation prevention measures and ensure that adverse impacts to existing groundwater users and protected natural resources caused by groundwater extraction or contamination do not occur, the applicant proposes to implement a monitoring program that will provide for monitoring production wells, bedrock monitoring wells, private water supply wells, overburden monitoring wells, piezometers, surface water stages, wetlands, streams, and weather. Nordic's Water Resource Monitoring Plan is described in greater detail in Section 14.

B. Issues Raised by Intervenors, Interested Persons, and the General Public

Intervenors Upstream/NVC, Mr. Reichard, and Ms. Daniels and Ms. Broderick, interested persons, and some members of the general public asserted in written testimony that due to the size and nature of the proposed project and the quantities and types of chemicals that may be used and stored during operation of the proposed project, risk exists that contamination of groundwater at the project site may occur which would adversely affect neighboring private wells. For this reason, intervenors, interested

persons, and the members of the general public stated that Nordic should be required to submit a contingency plan for groundwater contamination at the primary facility site. No specific evidence was submitted to the record that supported their contention that groundwater contamination would occur at the project site, but they argued that Nordic failed to demonstrate that the proposed project would not have such impacts.

C. Board Analysis and Finding

The Board has considered the information contained in the record describing the applicant's groundwater degradation prevention and response measures and the testimony of intervenors, interested persons, and members of the general public. Based on the analysis of groundwater supplies at the project site by the Department and the breadth of the applicant's groundwater degradation prevention and mitigation measures, including its Water Resources Monitoring Program, the Board finds that the proposed project will not have an unreasonable adverse effect on groundwater quality pursuant to the Site Law, 38 M.R.S. § 484(5) and Site Law rules, Chapter 375, § 7, provided the applicant:

- Submits a final, site-specific SPCC plan to the Department for review and approval prior to construction and operation of each phase of the project. The SPCC plan must be prepared in accordance with the criteria contained in Chapter 40 of the U. S. Environmental Protection Agency's Code of Federal Regulations Part 112 (40 CFR Part 112) and include the specific quantities and onsite storage locations of oils and hazardous materials.

The Board's analysis of the applicant's methods for solid waste disposal is set forth in greater detail in Section 10; the Board's analysis of the applicant's management of stormwater is set forth in greater detail in Section 12; and the Board's analysis of liquid waste discharge is set forth in greater detail in MEPDES Permit #ME0002771/WDL #W009200-6F-A-N.

16. BLASTING

Pursuant to the Site Law, 38 M.R.S. § 484(9), any blasting that is required for a project must comply with the requirements of 38 M.R.S. § 490-Z(14), Performance Standards for Quarries.

Based on the results of its soils survey and geotechnical investigations as referenced in Section 13 above, Nordic estimates that approximately 18,000 cy of bedrock will require blasting during the construction of the proposed project. Of this estimated blast volume, approximately 500 cy of blasted bedrock is associated with installation of the pipeline and located within the pipeline corridor on the upland portion of the Eckrote property and in the upper intertidal area of the coastal wetland, approximately 900 cy of blasted bedrock is specifically associated with the construction of Building 8, and the remaining 16,600 cy of bedrock is associated with construction of other structures and infrastructures at the primary facility site. Anticipated blasting areas for the proposed pipeline and Building 8 are depicted on a plan, titled "Nordic Aquafarms WTP/PS and Seawater

Piping Blasting,” prepared by Cianbro Corporation and dated March 5, 2019. Anticipated blasting areas for the primary facility site are shown on a plan, titled Ledge Removal Plan,” prepared by Ransom Consulting, Inc. and dated April 25, 2019. (App., Exhibit IBL of Appendix 20-B and Figure 20-1 of Section 20.) Nordic also submitted a pre-blast survey that shows the location of the proposed project with potential blasting limits with a ½-mile pre-blast survey radius. The pre-blast survey, titled “Pre-Blast Survey Drawing,” was prepared by Maine Drilling & Blasting and is dated April 18, 2019, with a last revision date of January 8, 2020. (Exhibit 31, Nordic’s Rebuttal Testimony by Mr. Brett Doyon of Maine Drilling & Blasting.)

Nordic submitted a blasting plan for the proposed project prepared by Maine Drilling & Blasting, Inc. and dated April 18, 2019. Based on the conclusions of its blasting plan and pre-blast survey, the applicant, through its witness, testified that the potential for adverse effects from blasting on natural resources, structures, surface water, and wells associated with off-site structures will be negligible.

A. Intervenor Testimony

Upstream/NVC testified that blasting occurring at the primary facility site could damage the Upper Reservoir Dam (on the downstream side of Belfast Reservoir #2) and the Lower Reservoir Dam (on the downstream side of Belfast Reservoir #1) due to the dams’ current structural state and age, citing to an evaluation of the two dams conducted by GEI Consultants, Inc., which it submitted as Exhibit NVC/Upstream 2 in its pre-filed testimony. Upstream/NVC testified that Nordic’s blasting submissions are not comprehensive and do not contain enough information to fully assess the potential for adverse effects of blasting on the Upper Reservoir Dam and the Lower Reservoir Dam in addition to all other protected natural resources and structures within the pre-blast survey radius.

B. Board Analysis and Finding

The Board evaluated Nordic’s blasting proposal and accompanying testimony and evidence and considered the testimony and exhibits presented by Upstream/NVC. In light of the concerns expressed by Upstream/NVC, in its site visit the Board viewed the area, including the Upper River Dam. The Board finds the applicant’s blasting plan and assessment and pre-blast survey adequately addresses the overall blasting requirements described in 38 M.R.S. § 490-Z. The Board finds that on-site blasting will be done in accordance with the Site Law, 38 M.R.S. § 484(9), however, given the testimony provided by Upstream/NVC, to ensure the safety of neighboring structures, provided the applicant:

- Submits a final site-specific blasting plan, blast assessment and pre-blast survey to the Department for review and approval prior to the start of construction. In its submissions, the applicant must also include an assessment of vibration and overpressure in multiple directions from the project site and an assessment of vibration predictions at the Upper Reservoir Dam and the Lower Reservoir Dam, as a result of blasting.

17. CONTROL OF ODORS

Pursuant to Chapter 375, § 17, an applicant must demonstrate that it has made adequate provision for controlling odors.

Nordic stated that modern fish production facilities capture and store byproduct waste streams in airtight and/or cooled storage, and that odor from the seafood industry generally emanates from waste exposure to air. In general, potential sources of odor associated with land-based aquaculture may include: ensilage of mortalities, fish processing, the wastewater treatment plant, and feed storage.

Nordic stated that the proposed project is designed to prevent the detection of offensive odors outside of the facility and any production of odiferous gases in its process will be addressed using appropriate storage and handling techniques and best management practices.

Nordic testified that to ensure that adjacent areas outside the limits of the primary facility site will not be adversely affected by offensive odor from the proposed project, several measures will be implemented in its facility to control odors. Production and storage buildings will be enclosed and constructed with air treatment infrastructure that includes filtration technology, such as industrial multistage scrubbers and/or carbon adsorption filters. Mortalities will be removed, ensiled, and tank-stored in a weak organic acid solution to maintain a pH below 4 as a means of preserving these materials in air-sealed containers prior to disposal at an off-site recycling or solid waste facility. After the processing of fish, residual fish products (or byproducts) will be chilled or frozen to prevent spoilage and stored in insulated containers prior to shipment to commercial partners for reuse as a secondary product. Organic material (filtrate) removed by water filtration systems from the wastewater treatment plant will be removed from the facility on a regular basis. The filtrate will be immediately pumped into and stored in sealed tanks without exposure to air until they are disposed at an off-site facility. Feed will be stored indoors in enclosed silos in temperature-controlled rooms to prevent spoilage.

A. Intervenor Testimony

Upstream/NVC interprets the standards of Chapter 375, § 17 as implying that an odor control plan is a required application submission and testified that, without a facility odor control plan or an odor control technology assessment, the applicant does not comply with the provisions of the Site Law. Upstream/NVC testified that Nordic's proposal does not demonstrate compliance below the perception of odor or consider the City of Belfast's municipal odor ordinance, which states that "No land use or establishment shall be permitted to produce noxious or harmful odors perceptible beyond the lot lines, either at ground or habitable elevation."

B. Board Analysis and Finding

The Board evaluated the proposed project's potential sources of odors, the applicant's mitigation measures to capture and control offensive odors at the development site, and the testimony and evidence presented by Upstream/NVC.

In its determination, the Board considers whether an applicant has made adequate provision for the control of odors, including, but not limited to: the identification of any sources of odors from the development; an estimation of the area that would be affected by the odor, based on experience in dealing with the material or process used in the development, or similar materials or processes; proposed systems for enclosure of odor-producing materials and processes, and proposed uses of technology to control, reduce, or eliminate odors. There is no requirement that an applicant prepare and submit a facility odor control plan in advance of permit issuance. In a letter, dated June 13, 2019, the Department determined the Nordic's Site Law and NRPA applications to be complete for processing, and the Board shares the Department's determination of completeness.

In regard to the applicability of the City of Belfast's odor ordinance, municipalities have distinct regulatory regimes that are separate and often different than the State's environmental regulations. The Board does not have authority to apply the City of Belfast's odor ordinance as a basis for determining whether State permitting requirements have been satisfied for this project.

The Board finds reasonable the applicant's proposal to control odors using a combination of odor control equipment and technology and odor control procedures. The equipment and technology proposed by the applicant include air treatment infrastructure with filtration technology such as industrial multistage scrubbers or carbon absorption filters. The procedures proposed by the applicant to control potential sources of odor include removal and ensilage of fish mortalities, chilling and freezing of processed fish, storage of wastewater treatment plant filtrate in sealed tanks prior to regular removal, and storage of feed in enclosed solos in temperature-controlled rooms. All of these odor control measures are addressed in Nordic's application materials and were explained through credible testimony by Nordic's witness, Mr. Cathal Dineen, M.S. The Board finds, with the additional safeguards outlined below, that the applicant has made adequate provision for controlling odors pursuant to Chapter 375, § 17, provided the applicant:

- Submits an odor complaint response and resolution protocol to the Department for review and approval prior to operation of the facility. The proposed protocol shall establish guidelines for reporting, documenting, investigating, responding to, and providing notification to the Department, of odor complaints associated with project operations. The applicant shall notify the Department of any complaints within three business days of receiving them and shall notify the Department of the outcome of its investigation including any corrective actions taken within three business days of its completion; and

- Upon any finding by the Department of non-compliance with Chapter 375, § 17, the applicant shall take immediate short-term action to adjust operations at the source of the odor to reduce odor output and achieve compliance. Within 21 days of a determination of non-compliance by the Department, the applicant shall submit, for review and approval, a mitigation plan, including a schedule for implementation, that proposes long-term actions to bring the development into compliance.

The Board's analysis, discussion, and findings regarding solid waste disposal methods is set forth in greater detail in Section 10.

18. CONTROL OF NOISE

The Site Law, 38 M.R.S. § 484(3), requires that an applicant make adequate provision for fitting the development harmoniously into the existing natural environment and the development must not adversely affect existing uses, scenic character, air quality, water quality, or other natural resources in the municipality or neighboring municipalities. Section 3 establishes parameters for the Department's regulation of noise, exempting daytime noise from the construction of a project.

In determining whether a developer has made adequate provision for the control of noise, the Department considers its rules, Chapter 375, §10. Pursuant to Chapter 375, § 10, the Department must determine whether a proposed project has made adequate provision to control excessive environmental noise that may degrade the health and welfare of nearby neighbors.

The hourly equivalent sound level resulting from routine operation of a development is limited to 75 dBA at any development property boundary as outlined in Chapter 375, § 10(C)(1)(a)(i). The hourly equivalent sound level limits at any protected location varies depending on local zoning or surrounding land uses and existing (pre-development) ambient sound levels. At protected locations within commercially or industrially zoned areas, or where the predominant surrounding land use is non-residential, the hourly sound level limits for routine operation are 70 dBA daytime (7:00 a.m. to 7:00 p.m.) and 60 dBA nighttime (7:00 p.m. to 7:00 a.m.).

At protected locations within residentially zoned areas or where the predominant surrounding land use is residential, the hourly sound level limits for routine operation are 60 dBA daytime and 50 dBA nighttime. In addition, where the daytime pre-development ambient hourly sound level is equal to or less than 45 dBA and/or nighttime ambient hourly sound level is equal to or less than 35 dBA, "quiet location" limits apply. For such "quiet locations," the hourly sound level limits for routine operation are 55 dBA daytime and 45 dBA nighttime. At protected locations more than 500 feet from living and sleeping quarters, the daytime hourly sound level limits shall apply regardless of the time of day.

A. Overview of Project Sound

Nordic retained Gridworks Energy Consulting, LLC to study and develop a sound level prediction model to estimate sound levels from the construction, operation, and maintenance of the proposed project at full buildout. The applicant's sound assessment includes sound modeling results at the project site and a map of protected locations within the vicinity of the project site. The assessment is titled Construction, Operation, and Maintenance Noise Impact Assessment and dated April 2019, with a last revision date of July 16, 2019. (App., Appendix 5-A of Section 5 and Attachment K of Nordic's August 22, 2019 Response to the Department's July 3, 2019 Letter.) Sound level measurements were taken in accordance with the requirements of the Department's noise standards contained in Chapter 375, § 10.

(1) Construction Noise

The applicant stated that construction activities associated with the primary facility site and the pipeline will occur during the time period during which construction noise is not regulated as set forth in 38 M.R.S. § 484(3)(A): daytime hours from 7:00 a.m. to 7:00 p.m. or during daylight hours, whichever is longer. For informational purposes, the applicant provided in its assessment the typical on-site equipment that may be used during construction will include trucks, dozers, excavators, loaders, graders, backhoes, cranes, compressors, pumps, generators, welders, and rollers, with a table that lists representative equivalent noise levels associated with construction equipment during the typical workday at the primary facility site. The sound levels of the construction equipment shown in the table ranged between 46 dBA and 60 dBA at 500 feet from the primary facility site.

(2) Operation and Maintenance Noise

The proposed project site is located on the east and west sides of U.S. Route 1 (Northport Avenue). Land uses in the area surrounding the project site are residential and commercial in nature. The applicant's assessment states that the project site is located in the Route One South Business Park Zoning District of the City of Belfast and abuts other properties in the Route One South Business Park Zoning District and in the Residential II Zoning District.

The applicant stated that potential sources of noise that may be emitted during operation and maintenance of the development include ventilation systems, building attenuators, and the central utility plant (Building 5), which will contain the generator system. To reduce the noise emitted from these systems and structures, generator units will be enclosed within a concrete building and a critical grade silencer will be installed on each engine exhaust. Because the rooftop of Building 5 will contain air-cooled condenser units rated for a 3-foot sound pressure of 75 dBA, and a 30-foot rating of 64 dBA, the applicant has designed the central utility plant to be centrally located within the development. As a result of this design, Building 5 will be sited at least 500 feet from the development boundary and will be among the module buildings.

In its sound assessment, the applicant identified six protected locations; the nearest protected location is approximately 585 feet from the project center. The assessment reflects that, of the identified protected locations, the estimated sound levels for routine operation of the project at full buildout would range between 31 dBA and 44 dBA. The applicant stated that the predicted noise emitted from the project site is in compliance with the Department's noise standards contained in Chapter 375, § 10.

B. Intervenor Testimony

Upstream Watch/NVC expressed concern that noise generated during construction of the proposed project would be excessive and unreasonably affect existing uses of the surrounding area. Upstream Watch/NVC also requested the issue of construction noise to be a topic to be heard at the public hearing. NVC argues that the applicant failed to provide adequate design information for construction equipment that would generate noise.

An unreasonable amount of noise generated by the operation of the proposed project was also expressed as a concern by interested persons and the general public; however, no specific evidence of conflicting technical information was submitted to the Board on this issue.

C. Board Analysis and Finding

In the Fourth Procedural Order, dated November 8, 2019, the Presiding Officer stated that noise from the proposed development would not be an issue for the hearing. Thus, while the hearing did not focus on this issue, the topic could be addressed through written filings. The Presiding Officer clarified to the parties to the proceeding that certain types of sounds, such as daytime construction noise and noise from registered and inspected vehicles, are exempt from regulation by the Department pursuant to the Site Law, 38 M.R.S. §484 (3)(A). The Board finds the applicant's sound assessment, supplemented with its responses to questions from the Department, complete and credible. Based on the applicant's sound assessment, the Board finds that provided the applicant does construction on the project only between 7 a.m. and 7 p.m., or during daylight hours, whichever is longer on any given day, the construction noise will be exempt pursuant to the Site Law's statutory standard regarding construction noise.

Given the breadth of technical information provided in its application and supplemental responses to the Department, the Board finds the applicant's submissions assessing predicted sound levels for operation and maintenance at the project site to be technically sound and persuasive. With regard to the sound level at the property boundary, the Board finds that based on the enclosure of the generators, the expected sound levels of rooftop equipment, the distance of the sound generating equipment from the property boundary, and other information in the applicant's sound assessment the hourly equivalent sound level at the property boundary resulting from routine operation of a development will be below the 75 dBA limit. Further, the Board finds that at all protected locations the sound

level from routine operation will be less than 45 dBA, the most restrictive standard applied at nighttime in quiet locations. Therefore, the project will satisfy the hourly sound level limits set in the Department's rules. Based on this evidence and these findings, the Board further finds that the applicant has made adequate provisions to ensure that noise standards pursuant to the Site Law rules, Chapter 375, § 10 are met, that the project will not generate excessive operational noise, and that the applicant made adequate provisions for fitting the sound of the development harmoniously into the existing natural environment.

19. SCENIC CHARACTER & EXISTING USES

The Site Law, 38 M.R.S. § 484(3), and the NRPA, 38 M.R.S. § 480-D(1), both have standards pertaining to scenic impacts that must be satisfied in order to obtain a permit from the Board. Pursuant to 38 M.R.S. § 484(3), an applicant must make adequate provision for fitting the proposed project into the existing natural environment and the development may not adversely affect scenic character in the surrounding area. The NRPA, in 38 M.R.S. §480-D(1), requires an applicant to demonstrate that the proposed project will not unreasonably interfere with existing scenic, aesthetic, recreational, and navigational uses. The criteria of the two laws reflect a similar intent in that they both allow development or an activity that will result in a visual impact, but when this impact is too great an applicant fails to satisfy the review criteria. This is reflected in the corresponding Site Law and NRPA rules, both of which specify that the applicant's burden is to demonstrate that there would be no "unreasonable adverse" impacts or effects and the Board's assessment is on that basis.

A. Overview – Scenic Character

The proposed project site is located on the east and west sides of U.S. Route 1 (Northport Avenue). Land uses in the area surrounding the project site are both residential and commercial in nature. Impacted freshwater wetlands and streams are located and contained on the applicant's property. Belfast Reservoir #1 and the Little River are located approximately 350 feet south of the project site, and Belfast Bay, a coastal wetland, is located immediately east of the project site. Pursuant to Chapter 315, § 10, *Assessing and Mitigating Impacts to Scenic and Aesthetic Uses* (06-096 C.M.R. ch. 315, effective June 29, 2003), Belfast Reservoir #1, the Little River, and Belfast Bay are scenic resources visited by the general public, in part, for the use, observation, enjoyment, and appreciation of its natural and cultural visual qualities.

To address the scenic impact criteria, the applicant submitted a visual impact assessment (VIA) in accordance with Chapter 315, § 7 that was prepared by SMRT Landscape Architects and Engineers and dated April 5, 2019. (App., Appendix 6-A, Section 6.) The VIA examined the potential scenic impacts of the proposed project by describing in both narrative and graphic forms the changes to the visual environment that may result from the project. In the VIA, two "public viewing areas" were identified as existing within 2,000 feet of the project boundary. These areas are the Little River Community Trail in the City of Belfast and the McLellan-Poor Preserve in the Town of Northport, which are

located approximately 300 feet and 1,200 feet, respectively, south of the primary facility site. The applicant states that other vantage points that afford views into the project site will include public rights-of-way, such as U.S. Route 1 and Perkins Road.

To soften views from vantage points, the applicant proposes to maintain a vegetative buffer along the property boundary in most developed portions of the primary facility site adjacent to the west side of U.S. Route 1, and along Stream 9, to the extent practicable. Further, the applicant submitted a landscaping plan that incorporates several types of plantings in order to soften the immediate view of the primary facility site. The applicant's landscaping efforts are detailed on several plans, the first of which is titled "Planting Plan Area A," prepared by SMRT Landscape Architects and Engineers and dated May 14, 2019 with a last revision date of July 1, 2019. (App., Section 1.4.1, LP101 Planting Plan Area A through LP 501 Planting Details & Schedule dated May 14, 2019 with a last revision date of July 1, 2019.)

Because the pipeline will be buried beneath the marine substrate of the coastal wetland, the pipeline will not be visible from Belfast Bay at low tide. Further, Nordic submitted a photosimulation of the primary facility site from the perspective of the bay, a scenic resource. The photosimulation, prepared by SMRT Landscape Architects and Engineers, indicates that the visual impact of the primary facility site to users of Belfast Bay would be minimal due to existing vegetation along the shoreline and sloping land topography, which limits the visibility of the primary facility site from the scenic resource. (Attachment J of Nordic's August 14, 2019 Supplemental Site Law Information.)

Based on its VIA and given its proposed landscaping efforts, the applicant stated there will be no unreasonable adverse impact to public viewing areas and identified scenic resources due to existing vegetative buffers which will serve as an effective visual screen and due to buffer protection in perpetuity along Belfast Reservoir #1 and the Little River.

B. Overview – Existing Uses

(1) Little River Trail

The Little River Community Trail is a commonly used pedestrian trail system that runs parallel to Belfast Reservoir #1 and the Little River. This trail system is located within a 250-foot wide municipally-regulated shoreland zoned area that abuts the southern boundary of the primary facility site. The applicant stated that this trail is commonly used for recreation by the Belfast community. This area currently is owned by BWD and consists primarily of tall, mature stands of vegetation. This zoned area is subject to municipal shoreland zoning regulations, which generally restrict the amount of vegetation removal that may occur within this area. In addition to being subject to shoreland zoning restrictions, this property is proposed to be transferred by BWD to the City for permanent protection. The applicant does not propose to directly disturb this 250-foot buffered area, or the Little River Community Trail, and the structures at the primary facility site will not be visible from the trail or Belfast Reservoir #1 due to intervening vegetation and topography.

(2) Navigation

The proposed pipeline will extend approximately 6,400 linear feet into Belfast Bay and will be buried through the intertidal area and elevated approximately 12 inches above the seabed in the subtidal area. As stated above, Belfast Bay is a scenic resource visited by the general public, in part, for the use, observation, enjoyment, and appreciation of its natural and cultural visual qualities.

As a consulting Federal agency, the U.S. Coast Guard (USCG) reviewed the proposed pipeline design as it relates to navigability of Belfast Bay. In a letter, dated October 3, 2019, USCG stated that it does not have concern that the proposed pipeline will adversely affect the navigability of the Belfast Bay waterway.

As a consulting State agency, DMR reviewed the proposed project in regard to recreational and navigational uses of Belfast Bay. DMR provided comments about the proposed pipeline, dated January 30, 2020, and provided an assessment of certain aspects of the proposal following its public hearing, dated April 7, 2020. DMR concluded that, based on Nordic's construction techniques and proposed in-water construction window, the proposed pipeline should not result in adverse impacts to navigation provided that the applicant implement certain navigational measures, which are discussed in greater detail in Section 10.

(3) Traditional Uses of Belfast Bay

Commercial fishing is a common, economically valuable, important, and traditional activity for users of Belfast Bay, with lobster fishing being most prevalent.

In its review, DMR stated that, during the construction window proposed by Nordic and at depth along the pipeline, lobsters would not be present in the area due to the natural migration to deeper offshore locations during this time. Further, DMR anticipates that the pipeline's physical structure and location above the seabed should have minimal impact to the movement of lobsters. DMR concluded that, based on Nordic's proposed in-water construction window, the proposed pipeline should not result in adverse impacts to marine resources, recreation, and the commercial fishing industry, which includes lobster fishing, provided the applicant implement certain mitigation measures, which are discussed in greater detail in Section 10.

C. Intervenor and Public Testimony

Mr. Reichard testified that he commonly uses Belfast Bay and the Little River Trail for recreation purposes such as hiking and swimming, as do members of the general public, and that development of the proposed project would hinder the ability to access and recreationally use Belfast Bay.

MGL and several members of the public presented oral and written testimony regarding the potential temporary and permanent disruption and loss of commercial fishing gear and grounds in Belfast Bay due to installation and operation of the proposed pipeline.

Upstream/NVC also provided comments on potential impacts on uses of Belfast Bay by residents of Northport, including boating and swimming.

D. Board Analysis and Finding

The Board visited the site of the proposed project, observed the identified scenic resources, and traversed the Little River Trail to the terminus of Stream 3. The Board also viewed the site from the pier in Northport Village to observe the flow direction of the proposed effluent from the outfall pipe and also used the opportunity to view the project site from this location. The Board considered its observations from the site visit in its evaluation of the potential impact of the Nordic's proposed project on scenic character and existing uses. The Board also considered the testimony at the hearing and other evidence in the record, including the VIA, which the Board finds credible and persuasive.

The Board recognizes that recreational and traditional uses are important to residents of and visitors to Belfast and Northport. Despite the primary facility site's proximity to the McLellan-Poor Preserve and Little River Community Trail, recreationalists will still be able to use the McLellan-Poor Preserve and Little River Community Trail. Based on the construction design and DMR and USCG's review, navigation and traditional commercial fishing operations will not be hindered by the proposed pipeline. For these reasons, the Board finds that the proposed project will not impose limitations on, or unreasonably impact, existing uses.

The Board finds that the pipeline will be buried beneath the marine substrate of the coastal wetland and, therefore, the pipeline will not be visible from Belfast Bay at low tide. With regard to potential views of the project from the McLellan-Poor Preserve and Little River Community Trail, the Board finds based on review of Nordic's proposal and its observations during the site visit that existing intervening vegetation and topography will screen the project from users of the trail. Notably, the applicant does not propose to directly disturb the 250-foot buffered area along the Little River Community and municipal shoreland zoning requirements, that must comply with minimum requirements mandated by State law, are protective of this area and significantly limit any potential vegetation removal. While this alone supports the Board's finding, the conveyance of this property containing the Little River Community Trail from BWD to the City for permanent protection, as proposed, will provide added assurance that the project will remain screened from the Little River Community Trail. With regard to Belfast Bay, due to land topography, existing vegetation, and residential structures between the primary facility site and the bay, the Board finds that the primary facility site will be minimally visible from the scenic resource and will not result in an unreasonable impact to the view from Belfast Bay. Given this, the Board finds that the proposed project will not adversely affect the scenic character or scenic uses of Belfast Bay.

Finally, after consideration of the evidence of the specific uses of the area and potential impacts on those uses, based on the applicant's VIA and landscaping plans and the analysis of the Department, DMR, and USCG, the Board finds that the proposed project will not have an unreasonable adverse effect on the scenic character of the surrounding area pursuant to Chapter 375, § 14 and the Site Law, 38 M.R.S. § 484(3). The Board further finds that the proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, traditional, or navigational uses of the McLellan-Poor Preserve, the Little River Community Trail, Belfast Reservoir #1, the Little River, or Belfast Bay pursuant to the Department's Chapter 315 and the NRPA, 38 M.R.S. §480-D(1).

20. HISTORIC SITES

The Board recognizes the value of preserving sites of historic significance and, pursuant to the Site Law rules, Chapter 375, § 11, considers whether a proposed development will have an adverse effect on the preservation of historic sites either on or near the development site.

Based on initial consultation with the Maine Historic Preservation Commission (MHPC), the applicant conducted a Phase I Archaeological Survey of the primary facility site and the site of the proposed pipeline. (App., Appendix 8-A, Section 8.) The goal of the survey was to determine if archaeological sites of potential significance that meet the eligibility criteria for the National Register of Historic Places were located at or near the project site. Results of the survey reflect that no archaeological sites, such as, but not limited to, artifacts, shell middens, or other evidence of Native American habitation, were identified at the project site.

As a consulting State agency, MHPC reviewed the proposed project and the applicant's archaeological survey and report. In a letter dated October 25, 2018, and confirmed in correspondence dated June 21, 2019, MHPC acknowledged and agreed with the conclusions in the applicant's survey. MHPC further determined that no historic or archaeological properties will be affected by the proposed project.

Based on MHPC's review and the evidence on this issue contained in the record, the Board finds that the proposed development will not have an adverse effect on the preservation of historic archaeological resources or properties either on or near the development site and satisfies the Site Law rules, Chapter 375, § 11.

21. UNUSUAL NATURAL AREAS

The Site Law, 38 M.R.S. § 484(3), requires that an applicant make adequate provision for fitting the development harmoniously into the existing natural environment and that the development must not adversely affect existing uses, scenic character, air quality, water quality, or other natural resources in the municipality or neighboring municipalities.

Pursuant to Chapter 375, § 12, the Board evaluates whether a proposed development will have an adverse effect on the preservation of unusual natural areas either on or near the development site. An unusual natural area is defined as any land or water area which is undeveloped and which contains natural features of unusual geological, botanical, zoological, ecological, hydrological or other scientific, educational, scenic, or recreational significance. Unusual natural areas may include, among other things, rare plant communities.

After undertaking a series of desktop reviews, agency consultation, and field surveys, the applicant did not identify any natural communities or resources that have unusual significance or uniqueness to the State of Maine.

The applicant conducted a bathymetric survey of the coastal wetland that identified a pockmark field, a geological feature, present seaward of the proposed pipeline. The applicant's bathymetric survey is titled "Bathymetric Survey of Little River and Belfast Bay," prepared by Normandeau Associates, Inc., and dated April 10, 2018. Pockmarks are circular depressions in the seafloor formed primarily by the escape of methane gas through the marine sediment, which then displaces the substrate forming a pockmark.³

According to Nordic's survey and report, the pockmarks range in size from 1 meter in diameter up to greater than 1 kilometer in diameter. At their closest point, the pockmarks are approximately 75 feet east of the end of the proposed intake pipe. Nordic does not propose to disturb these pockmarks as a result of installation of the pipeline.

At the public hearing, MGL questioned Nordic in regard to the breadth of its evaluation of the marine substrate and whether methane deposits exist within the substrate that would affect the load capacity of the pipeline. Nordic's witness, Mr. Edward Cotter, provided testimony describing how its bathymetric survey, seismic analysis, soil core analyses, and analysis of load requirements for the pipeline's anchoring system takes into account the location of existing pockmarks. (Tr. Feb. 12, 2020, p. 170, line 18-p. 175, line 28 and Nordic Exhibit 38.)

As a consulting State agency, the Maine Natural Areas Program (MNAP) in the Department of Agriculture, Conservation, and Forestry reviewed the proposed project. In comments dated June 20, 2019, MNAP stated that its Biological and Conservation System database did not contain any record of rare or unique biological features in the vicinity of the project site.

As referenced in Section 7(B), MDIFW reviewed the proposed project and did not identify any mapped Essential Habitats or other known locations or occurrences of Endangered, Threatened, Rare, or Special Concern faunal species, wildlife habitats, or inland fisheries habitats associated with the project site.

³ Fandel, C. L. 2013. Observations of Pockmark Flow Structure in Belfast Bay, Maine. Thesis. Submitted to the University of New Hampshire.

Based on MNAP and MDIFW's review, and the materials and credible testimony provided by the applicant, the Board finds that the applicant has made adequate provision for the preservation of unusual natural areas and that the applicant made adequate provisions for fitting the development harmoniously into the existing natural environment with regard to the Site Law, 38 M.R.S. § 484(3), and Chapter 375, § 12.

22. BUFFER STRIPS

The Site Law, 38 M.R.S. § 484(3), requires that an applicant make adequate provision for fitting the development harmoniously into the existing natural environment and that the development must not adversely affect existing uses, scenic character, air quality, water quality or other natural resources in the municipality or neighboring municipalities. The Department's rules, in Chapter 375, § 9, elaborate on how a developer should address this criterion by the adequate provision for buffer strips to protect water quality and wildlife habitat. The rules also state that buffer strips can serve as visual screens which can serve to lessen the visual impact of incompatible or undesirable land uses. The width and nature of buffer strips, when required, are determined by the Department on a case-by-case basis.

Nordic proposes to maintain several existing vegetated areas, landscape certain areas, and restore certain disturbed areas post-construction.

More specifically, the applicant proposes to maintain a 40-foot vegetative buffer along the property boundary of most of the primary facility site in accordance with the City of Belfast's ordinance. The applicant also proposes to maintain a 75-foot vegetative buffer adjacent to the west side of U.S. Route 1 and maintain a 75-foot vegetative buffer along the majority of Stream 9, in accordance with Nordic's proposed compensation plan as described in Section 7. These existing buffers currently consist of tall, woody vegetation and will be maintained by Nordic in their current state.

The applicant also proposes to revegetate the slope along the northern property line and at the southeast corner of the project site with a variety of native plantings to provide a visual screen and minimize the visibility of the development between the primary facility site and neighboring properties.

Areas with high visual interest and visibility, such as the main entrance, will be landscaped with flowering accent trees, low shrubs, and ornamental grasses.

As part of its proposal to compensate for impacts to freshwater wetlands, Nordic proposes to restore portions of the riparian area along Stream 9 and install native plantings to enhance stream and wetland characteristics. Nordic further proposes to restore certain wetland areas that will be temporarily disturbed as a result of construction activities. Specifically, these wetland areas are associated with the proposed Route 1 bypass (Wetland 6 and Wetland 7), installation of the sewer force main extension (Wetland 16), culvert replacement within Stream 8 on the Eckrote property, and installation of the pipeline (Wetland 11) on the Eckrote property.

The applicant's vegetative enhancement, restoration, and landscaping efforts are detailed on several plans, the first of which is titled "Planting Plan Area A," prepared by SMRT Landscape Architects and Engineers and dated May 14, 2019 with a last revision date of July 1, 2019, and on the wetland compensation plan, titled "Impact Compensation Plan," prepared by Normandeau Associates, Inc. and dated November 4, 2019.

The Board has authority to require maintenance of existing vegetation as a natural buffer strip and incorporation of buffer strip maintenance into deed covenants, depending on the potential extent of a development's impacts. Based on all information provided, in conjunction with observations made at the site visits, the Board finds that the applicant has made adequate provision for buffer strips to reduce impacts to nearby properties and minimize potential visual impacts, as well as to protect water quality. The Board further finds that the applicant made adequate provisions for fitting the development harmoniously into the existing natural environment with regard to Chapter 375, §9, and that the development will not adversely affect existing uses, provided the applicant:

- Completes the vegetative enhancement, restoration, and landscaping detailed in its landscaping plans, the first of which is titled "Planting Plan Area A," prepared by SMRT Landscape Architects and Engineers and dated May 14, 2019 with a last revision date of July 1, 2019, and in its wetland compensation plan, titled "Impact Compensation Plan," prepared by Normandeau Associates, Inc. and dated November 4, 2019. Within 60 days of completing the planting and restoration pursuant to the landscaping plans, the applicant shall submit to the Department for review and approval a Vegetation Management Plan (VMP) that specifies how vegetation in designated buffer areas, restored areas, and revegetated areas will be permanently maintained at the primary facility site and in areas on the Eckrote property as identified in its landscaping plans, on the compensation plan, and as referenced in this Section 22, which includes, but is not limited to, post-construction restoration of the riparian areas of Stream 8 and the intertidal salt marsh vegetation within the pipeline right-of-way. The applicant shall implement and adhere to the VMP and shall permanently protect the areas subject to the VMP from disturbance by deed restriction or other permanent legal mechanism within 90 days of the date of the Department's completed review of the VMP.

23. FLOODING

The Site Law, 38 M.R.S. § 484(7), and the NRPA, 38 M.R.S. § 480(D)(6), require an applicant to demonstrate that a proposed project would not unreasonably cause or increase the flooding of the alteration area or adjacent properties. Under the Site Law regulations, Chapter 375, § 4, an applicant must demonstrate that a proposed project will not have an unreasonable effect on runoff/infiltration relationships.

Belfast Reservoir #1 and Stream 9 are mapped by the U.S. Federal Emergency Management Agency as unnumbered A zones, meaning that these waterbodies are

subject to inundation by a 100-year flood event. Belfast Bay is mapped as a coastal Special Flood Hazard Area. The applicant submitted a Flood Insurance Rate map (Appendix 19-A of the Site Law application), which shows that any portion of the A flood zones on the project parcels are not proposed for development, but rather are adjacent to the site of the proposed development. There will be no construction of permanent structures in Belfast Reservoir #1 and Stream 9 that would alter the floodwater capacity or hydrological connectivity of the waterbodies. The pipeline is proposed to be installed within the mapped coastal flood zone; however, Nordic stated that installation of the pipeline or any other site development within Belfast Bay is not anticipated to alter the topography or hydrology of the bay and no coastal flooding is expected as a result of proposed construction or development.

Based on the Flood Insurance Rate map depicting the flood zones, the layout of the developed area on the parcel, and the nature of the proposed development, including the installation of the pipeline within Belfast Bay, the Board finds that the proposed project is unlikely to cause or increase flooding or cause an unreasonable flood hazard to any structure. The Board's analysis, discussion, and finding in regard to infiltration relationships, storm-water management, and the Flooding Standard contained in Chapter 500, § (4)(F) is set forth in greater detail in Section 12.

24. ACCESS TO SUNLIGHT

The Board recognizes that some existing structures utilize active or passive solar energy systems for purposes such as heating air or water and, pursuant to the Site Law rules, Chapter 375, § 13, considers whether a proposed development will have an unreasonable effect on existing uses to deny access to direct sunlight.

Nordic submitted a model of projected post-construction shadow throw, titled "Shadow Study Diagram," prepared by SMRT Landscape Architects and Engineers and dated March 29, 2019. (App., Appendix 24-A, Section 24.) When factoring a maximum building height of 45 feet, flat topography, and the longest potential shadow occurring on the winter solstice at 9:00 am and 3:00 pm, the applicant's model indicates that the projected shadow from Building 1 yields a maximum shadow throw of approximately 57 feet onto the northern abutting property. The applicant stated that there are no existing structures in the project shadow area, and the nearest residential structure is approximately 300 feet from Building 1. Given this, Nordic stated that the construction and operation of the proposed project will not block access to direct sunlight.

Based on the applicant's analysis and study of shadow throw at the project site, which the Board finds credible, and the evidence contained in the record, the Board finds that the proposed project, at full buildout, will not have an adverse effect on access to direct sunlight, pursuant to Chapter 375, § 13, and that the applicant made adequate provisions for fitting the development harmoniously into the existing natural environment in accordance with the Site Law, 38 M.R.S. § 484(3).

25. OTHER CONSIDERATIONS

With regard to the NRPA, 38 M.R.S. §§ 480-D(7) and (8), the proposed project is not located on or adjacent to a coastal sand dune system and is not a crossing of an outstanding river segment as identified in 38 M.R.S. § 480-P.

The applicant must obtain and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.

BASED on the above findings of fact, and subject to the conditions listed below, the Board makes the following conclusions pursuant to 38 M.R.S. §§ 481–489-E:

- A. The applicant has provided adequate evidence of financial capacity and technical ability to develop the project in a manner consistent with state environmental standards provided that applicant complies with the requirements in Section 3 (Financial Capacity) and the corresponding conditions below.
- B. The applicant has made adequate provision for fitting the development harmoniously into the existing natural environment and the development will not adversely affect existing uses, scenic character, air quality, water quality or other natural resources in the municipality or in neighboring municipalities provided the applicant complies with the requirements in Sections 5 (Air Quality), 8 (Surface Water Flow and Quality – Primary Facility Site), 9 (Surface Water Quality – Pipeline), 14 (Groundwater and Surface Water Use), 17 (Control of Odors), and 22 (Buffer Strips) and the corresponding conditions below.
- C. The proposed development will be built on soil types which are suitable to the nature of the undertaking provided the applicant complies with the requirements in Section 13 (Soil Types) and the corresponding condition below.
- D. The proposed development meets the standards of the Stormwater Management Law, 38 M.R.S. § 420-C for erosion and sedimentation control provided the applicant complies with the requirements in Section 11 (Soil Erosion and Sedimentation Control) and the corresponding conditions below.
- E. The proposed development meets the standards of the Stormwater Management Law, 38 M.R.S. § 420-D for stormwater management provided the applicant complies with the requirements in Section 12 (Stormwater Management) and the corresponding conditions below.
- F. The proposed development will not pose an unreasonable risk that a discharge to a significant groundwater aquifer will occur provided that applicant complies with the requirements of Section 15 (Groundwater Quality) and the corresponding condition below.

- G. The applicant has made adequate provision of utilities, including water supplies, sewerage facilities and solid waste disposal required for the development and the development will not have an unreasonable adverse effect on the existing or proposed utilities in the municipality or area served by those services provided the applicant complies with the requirements in Sections 10 (Solid Waste) and 14 (Groundwater and Surface Water Use) and the corresponding conditions below.
- H. The activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties nor create an unreasonable flood hazard to any structure.
- I. Blasting will be conducted in accordance with the standards in 38 M.R.S. § 490-Z(14) provided the applicant complies with the requirements in Section 16 (Blasting) and the corresponding condition below.

BASED on the above findings of fact, and subject to the conditions listed below, the Board makes the following conclusions pursuant to 38 M.R.S. §§ 480-A–480-JJ and Section 401 of the Clean Water Act:

- A. The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses.
- B. The proposed activity will not cause unreasonable erosion of soil or sediment nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment provided the applicant complies with the requirements in Section 11 (Soil Erosion and Sedimentation Control) and the corresponding conditions below.
- C. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life provided the applicant complies with the requirements in Section 7 (Natural Resource Impacts) and the corresponding conditions below.
- E. The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters provided the applicant complies with the requirements in Section 8 (Surface Water Flow and Quality – Primary Facility Site) and the corresponding conditions below.
- F. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters provided the applicant complies with the requirements in Sections 8 (Surface Water Flow and Quality – Primary Facility Site) and 9 (Surface Water Quality – Pipeline) and the corresponding conditions below.
- G. The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.
- H. The proposed activity is not on or adjacent to a sand dune.

- I. The proposed activity is not on an outstanding river segment as identified in 38 M.R.S. § 480-P.
- J. The proposed transportation route for transporting dredge spoils by water minimizes impacts on the fishing industry and the spoil disposal site is geologically suitable provided the applicant complies with the requirements in Section 10 (Dredge Spoils Disposal & Transportation) and the corresponding conditions below.

THEREFORE, the Board APPROVES the applications of NORDIC AQUAFARMS, INC. to construct, operate, and maintain a land-based aquaculture facility as described in Finding 1, SUBJECT TO THE FOLLOWING CONDITIONS and all applicable standards and regulations:

1. The Standard Conditions of Approval, a copy attached.
2. In addition to any specific erosion control measures described in this or previous orders, the applicant shall take all necessary actions to ensure that its activities or those of its agents do not result in noticeable erosion of soils or fugitive dust emissions on the site during the construction and operation of the project covered by this approval.
3. Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.
4. Prior to the start of construction on Phase I of the development, including any site alterations, the applicant shall submit evidence of sufficient funds or that it has been granted a line of credit or a loan by a financial institution authorized to do business in this State or evidence of any other form of financial assurance consistent with Chapter 373, to the Department for review and approval. Such evidence must include an updated time schedule for the development and updated cost estimates for the project, including costs necessary to comply with all terms and conditions of this order and any updated costs necessary to comply with Department rules, including but not limited to wetland compensation. The applicant must provide evidence of any updates to its corporate structure and demonstrate that the proposed financing is either clearly linked from the financing institution to the licensee or that sufficient funds have been set aside and specifically dedicated for the proposed development.
5. Prior to the start of construction of future components, including Phase II of the development, the applicant shall submit evidence that it has been granted a line of credit or a loan by a financial institution authorized to do business in this State or evidence of any other form of financial assurance consistent with Chapter 373, to the Department for review and approval. When the applicant proposes to utilize cash flow from operations, evidence must include the most recent annual corporate report, financial statements, bank

- statements, or other evidence indicating that funds are available and have been set aside for the proposed development.
6. The applicant shall employ the use of nonroad heavy equipment during all phases of construction of the project such as, but not limited to, backhoes, bulldozers, front-end loaders, excavators, and dump trucks, that are equipped with engines which at minimum meet U.S. Environmental Protection Agency Tier 2 emission standards as specified in 40 C.F.R. § 89.112 (effective June 17, 1994 and last revised July 13, 2005) and 40 C.F.R. § 89.113 (effective June 17, 1994 and last revised October 23, 1998).
 7. The applicant shall employ the use of dust control and minimization techniques for reducing dust emissions from construction activities beyond the project site. Methods for controlling and minimizing dust emissions may include watering surface materials, minimizing surface wind speed using windbreaks or source enclosures, covering trucks while hauling materials, early paving of access roads when practicable, early seeding and loaming of disturbed areas when practicable, and placing limitations on the time and location of idling heavy equipment.
 8. The applicant shall submit an executed and recorded deed restriction that protects the riparian area of Stream 9 in perpetuity prior to the start of construction. The applicant shall submit a recorded copy to the Department within 30 days of the execution of the deed.
 9. The applicant shall conduct additional baseline macroinvertebrate and QHEI stream habitat surveys for Stream 9 and submit the reported data to the Department prior to the start of construction to ensure the proposed enhancements improve aquatic habitat. Monitoring reports shall include QHEI survey data, observed macroinvertebrates, photographic documentation and a narrative of the observed condition of the subject streams. The applicant shall continue to conduct these surveys, and submit the reported data, on an annual basis until five years following the full build-out of the proposed project to ensure the functions of those reaches are improved in Stream 9. The surveys shall be conducted at an appropriate time of the year as determined in conjunction with the Department. If the Department determines the physical and biological characteristics of Stream 9 are not equal to or better than characteristics lost due to the proposed project, the applicant shall submit for review and approval a plan for enhancing these characteristics or otherwise compensating for the impacts.
 10. The applicant shall conduct additional baseline macroinvertebrate and QHEI stream habitat surveys for the downstream reaches of Streams 3, 5, and 6, below the proposed impacted areas, and submit the reported data to the Department prior to the start of construction. Following construction of the primary facility, the applicant shall conduct additional QHEI and macroinvertebrate surveys in Streams 3, 5, and 6 to ensure aquatic habitat of the downstream reaches of Streams 3, 5, and 6 is maintained. Monitoring reports shall include QHEI survey data, observed macroinvertebrates, photographic documentation, and a narrative of the observed condition of the subject streams. The applicant shall continue to conduct these surveys, and submit the reported data, on an annual basis, until five years following the full build-out of the proposed project to ensure

- the functions of those reaches are maintained in Streams 3, 5, and 6. The surveys shall be conducted at an appropriate time of the year as determined in conjunction with the Department. If the Department determines the physical and biological characteristics of Streams 3, 5, and 6 are not equal to or better than their existing condition, the applicant shall submit a plan for enhancing these characteristics or compensating for the impacts.
11. Prior to the start of construction, the applicant shall make a contribution to the ILF program in the amount of \$760,261.20.
 12. Prior to the start of construction, the applicant shall develop and submit a finalized plan for continuous instream flow monitoring in the downstream reaches of Streams 3, 5, and 6. Monitoring equipment, locations, and methodology must be determined in consultation with the Department. Monitoring shall take place within one year of the completion of Phase 1 of the project until five years following the full build-out of the proposed project. During the monitoring period, the applicant shall submit collected instream flow data to the Department for review twice per a one-year period. A monitoring report of instream flow data from January to June of each year shall be submitted to the Department by July 15 of the same year and a monitoring report of instream flow data from July to December of each year shall be submitted by February 15 of the following year. If the Department determines the conveyance system is not appropriately maintaining instream flow in the downstream reaches of Stream 3, 5, and 6, the applicant shall develop a plan to make the changes necessary to maintain instream flow in Stream 3, 5, and 6.
 13. The applicant shall regularly haul excavated material from the project site to Mack Point, and from there directly to a landfill licensed to receive the material. The applicant shall not store dredged material in a barge beyond the time reasonably needed to conduct the excavation, fill the barge, and transport the material to Mack Point; or engage in purposeful dewatering.
 14. The applicant shall utilize silt fabric around the perimeter of the barge to contain and capture fines prior to transportation of the excavated material to Mack Point.
 15. Prior to the start of construction, the applicant shall conduct further sampling and analyses of the marine sediment along the proposed pipeline route. A sufficient number of samples, as determined using Chapter 9 of *Test Methods for Evaluating Solid Wastes*, USEPA, SW-846, 3rd Edition, 2013, shall be taken along the horizontal route and vertical depth of the proposed pipeline to further characterize the expected character of excavated spoils for disposal in accordance with the sampling and analyses requirements of the upland receiving disposal facility. The sampling results and associated Toxicity Characteristic Leaching Procedure (TCLP) analyses, as described in SW-846, shall be submitted to the Department for review prior to the start of construction of the pipeline. If the applicant conducts any additional sediment sampling, the applicant shall submit the results of that sampling, as well. If the Department determines a particular analyte to be hazardous, the applicant shall submit to the Department for review and approval an updated erosion and sedimentation control plan, a revised transportation and disposal plan for excess spoil material, and an updated construction method and sequencing plan

that addresses the testing results. Further, should these or any other results of sediment sampling and analysis taken along the pipeline route reflect that the project may no longer comply with state water quality standards as determined by the Department, the Department reserves the right to, in its discretion and upon notice to the applicant and opportunity for hearing, reopen this Order and Water Quality Certification to consider requiring modification to ensure the State's water quality standards will be met.

16. The applicant shall utilize a licensed transporter for the transport of non-hazardous wastes in Maine in accordance with the Department's rules, Chapter 411, Non-Hazardous Waste Transporter Licenses.
17. The applicant shall develop an emergency response and facility closure plan that identifies worst case scenarios, including unanticipated disease outbreak and spread, unanticipated fish die-off, and unanticipated closure of the wastewater treatment facility or the facility as a whole. The plan may be a standalone document or incorporated into an overall operations and maintenance plan for the facility. The emergency response and facility closure plan must establish thresholds that trigger implementation of the plan. For the scenarios accounted for in the plan, the plan must identify all possible solid waste types and potential volumes associated with each phase of operation, including those types of solid waste identified by Nordic in its application and additional waste types associated with closure of the wastewater treatment facility and facility as a whole, if any. The plan also must address how each type of solid waste will be handled and disposed. The plan, which may be developed sequentially with each phase, must be submitted to the Department for review and approval prior to construction of the corresponding phase of development.
18. The applicant shall implement the emergency response and facility closure plan should a triggering event occur.
19. The applicant shall mark the location of the proposed pipeline for navigational safety in accordance with the U.S. Coast Guard's and U.S. Department of Commerce's National Oceanic and Atmospheric Administration's nautical chart marking and labeling requirements. The applicant also shall mark or designate the transportation route for the spoils.
20. The applicant shall conduct public outreach by means of written notice to the local Lobster Zone Council in coordination with DMR. Notice shall include specific nautical bearings of the proposed haul route and width for the safe travel of the barge to avoid entanglement with fishing gear. The notice shall include the anchorage point for the barge at both the proposed construction site and at a safe docking location off Mack Point. The barge transporting the excess spoil material to Mack Point shall be equipped with a Vessel Monitoring System (VMS) to track its transit activity along the proposed haul route.
21. The applicant shall provide a detailed mechanism by which area fishermen may seek compensation for lost gear should the barge deviate from the specified haul route. The applicant shall publish in a local newspaper of general circulation adjacent to the

transportation route the procedure that the applicant will use to respond to inquiries regarding the loss of fishing gear during the dredging operation.

22. The applicant shall publish the barge transportation route in a local newspaper of general circulation.
23. The applicant shall retain the services of at least two third party inspectors to monitor all phases of construction of the proposed primary facility site. The inspectors must be retained and work in accordance with the Special Condition for Third-Party Inspection Program included with this Order. The applicant may alter the number of third party inspectors needed for the project with prior Department approval.
24. The applicant shall retain the services of a third party inspector to monitor installation of the proposed pipeline, all disturbance, excavation, and removal of sediment from within the coastal wetland, and transportation of dredge spoils from the coastal wetland to an upland disposal location. A third party inspector must be on-site at all times to monitor installation of the pipeline on a continual and daily basis until all in-water work within the coastal wetland is completed. Inspector selection, reporting responsibilities, and other duties, as assigned by the Department, shall occur in accordance with the Department's Third Party Inspection Program.
25. The applicant shall conduct a pre-construction meeting prior to each phase of the project to discuss, among other topics, the construction schedule, erosion and sedimentation control, and adherence to the conditions of this Order. This meeting must be attended by the applicant's representative, Department staff, the ESC and stormwater design engineers, the contractor(s), and the third party inspectors for that phase of the project.
26. The applicant shall retain the stormwater design engineer to oversee the installation of the stormwater treatment structures according to the details and notes specified on the approved plans. Within 30 days of completion of the stormwater structures, the applicant must submit a log of inspection reports detailing the items inspected, photographs taken, and the dates of each inspection to the Department for review.
27. The applicant shall submit an updated or as-built plan of all phases and components of the project to the Department for review at least once per year or within 30 days of project completion. The plans must include, among other things, the permanent under-drain system consisting of diversion trenches, bypass culverts, and edge drains.
28. Prior to the construction of the subsurface sand filters, the applicant shall demonstrate that the proprietary pretreatment row plans associated with relevant stormwater structures have been reviewed by the manufacturer's representative.
29. The applicant shall complete the additional sampling proposed in the application (and discussed in Section 13 of this Order) and submit the results of all subsurface explorations taken at the primary facility site and within the pipeline corridor, along with any proposed engineering adjustments to the pipeline, to the Department for review and

- approval prior to the installation of the pipeline. Submissions shall include a detailed report of the collection and handling of cores and samples, a core and sample log containing the length of each core and a description of the observed soil type and rock units within each core, photographs of each sample, a description of any seabed features and obstructions, and results of any further surveys and laboratory tests conducted to define geophysical and geotechnical characteristics of the facility site soils and marine sediment.
30. Prior to the start of construction, the applicant shall submit for review and approval a revised WRMP that includes: monitoring items and frequencies consistent with this Order; an onsite weather station; a monitoring plan for the Little River that identifies the instrumentation to be installed at specific locations by specific dates, identifies the proposed monitoring parameters, and provides for real-time, continuous monitoring of the Little River surface flows; and establishment of minimum flows for the Little River, consistent with Chapter 587, and a suitable warning level above this flow, along with a plan to maintain those minimum flows within the affected reach of the Little River. The revised WRMP submitted to the Department for review and approval also shall provide for the monitoring of private wells owned by individuals in the vicinity of the project who elect to allow monitoring for both water quantity and quality; identify monitoring parameters and warning levels, as well as actions Nordic will take if warning levels are reached; and include Nordic's commitment to resolve, including through installation of a new well or connection to a public water supply, any detected water quantity or quality issues in neighboring private wells. Future changes to the WRMP will require review and approval from the Department prior to implementation.
 31. During construction, the applicant shall collect background data regarding groundwater quantity and surface flows of the Little River. The applicant shall submit reports to the Department no less often than monthly.
 32. Prior to construction of the project, the applicant shall submit information establishing background data regarding water quantity for the Goose River, including information regarding river flows and flow measurement locations, to the Department for review and approval.
 33. Prior to operation of the facility, the applicant shall establish and submit a monitoring plan for, or coordinate with the BWD for monitoring of, the Goose River to the Department for review and approval. The monitoring plan shall include equipment setup at a measured cross section of the river where reliable data can be collected to relate water depth to flow; a data logger recording water depth at frequent intervals and some other system to function during ice and very high flow conditions; piezometers to record water levels in the aquifer near the river and pumping well(s); and daily usage data from the pumping well(s). The plan also shall establish minimum flows for the Goose River, consistent with Chapter 587 and establish a suitable warning level above this flow, along with a plan to maintain those minimum flows within the affected reach of the Goose River.

34. Prior to construction and operation of each phase of the project, the applicant shall submit a final, site-specific SPCC plan to the Department for review and approval. The SPCC plan must be prepared in accordance with the criteria contained in Chapter 40 of the U. S. Environmental Protection Agency's Code of Federal Regulations Part 112 (40 CFR Part 112) and include the specific quantities and onsite storage locations of oils and hazardous materials.
35. Prior to the start of construction, the applicant shall submit a final site-specific blasting plan, blast assessment and pre-blast survey to the Department for review and approval. In its submissions, the applicant must also include an assessment of vibration and overpressure in multiple directions from the project site and an assessment of vibration predictions at the Upper Reservoir Dam and the Lower Reservoir Dam, as a result of blasting.
36. Prior to operation of the facility, the applicant shall submit an odor complaint response and resolution protocol to the Department for review and approval. The proposed protocol shall establish guidelines for reporting, documenting, investigating, responding to, and providing notification to the Department, of odor complaints associated with project operations. The applicant shall notify the Department of any complaints within three business days of receiving them and shall notify the Department of the outcome of its investigation including any corrective actions taken within three business days of its completion.
37. Upon any finding by the Department of non-compliance with Chapter 375, § 17, the applicant shall take immediate short-term action to adjust operations at the source of the odor to reduce odor output and achieve compliance. Within 21 days of a determination of non-compliance by the Department, the applicant shall submit, for review and approval, a mitigation plan, including a schedule for implementation, that proposes long-term actions to bring the development into compliance.
38. The applicant shall complete the vegetative enhancement, restoration, and landscaping detailed in its landscaping plans, the first of which is titled "Planting Plan Area A," prepared by SMRT Landscape Architects and Engineers and dated May 14, 2019 with a last revision date of July 1, 2019, and in its wetland compensation plan, titled "Impact Compensation Plan," prepared by Normandeau Associates, Inc. and dated November 4, 2019. Within 60 days of completing the planting and restoration pursuant to the landscaping plans, the applicant shall submit to the Department for review and approval a Vegetation Management Plan (VMP) that specifies how vegetation in designated buffer areas, restored areas, and revegetated areas will be permanently maintained at the primary facility site and in areas on the Eckrote property as identified in its landscaping plans, on the compensation plan, and as referenced in Section 22 of the Order, which includes, but is not limited to, post-construction restoration of the riparian areas of Stream 8 and the intertidal salt marsh vegetation within the pipeline right-of-way. The applicant shall implement and adhere to the VMP and shall permanently protect the areas subject to the VMP from disturbance by deed restriction or other permanent legal mechanism within 90 days of the date of the Department's completed review of the VMP.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER
REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY
COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

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

BOARD OF ENVIRONMENTAL PROTECTION

BY: _____
Robert S. Duchesne, Presiding Officer

BLR/L28319ANBNCNDN&EN/ATS#84543,84544,84545,84546,84662

Department of Environmental Protection
SITE LOCATION OF DEVELOPMENT (SITE)
STANDARD CONDITIONS

- A. Approval of Variations from Plans.** The granting of this approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation. Further subdivision of proposed lots by the applicant or future owners is specifically prohibited without prior approval of the Board, and the applicant shall include deed restrictions to that effect.
- B. Compliance with All Applicable Laws.** The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.
- C. Compliance with All Terms and Conditions of Approval.** The applicant shall submit all reports and information requested by the Board or the Department demonstrating that the applicant has complied or will comply with all preconstruction terms and conditions of this approval. All preconstruction terms and conditions must be met before construction begins.
- D. Advertising.** Advertising relating to matters included in this application shall refer to this approval only if it notes that the approval has been granted WITH CONDITIONS, and indicates where copies of those conditions may be obtained.
- E. Transfer of Development.** Unless otherwise provided in this approval, the applicant shall not sell, lease, assign or otherwise transfer the development or any portion thereof without prior written approval of the Board where the purpose or consequence of the transfer is to transfer any of the obligations of the developer as incorporated in this approval. Such approval shall be granted only if the applicant or transferee demonstrates to the Board that the transferee has the technical capacity and financial ability to comply with conditions of this approval and the proposals and plans contained in the application and supporting documents submitted by the applicant.
- F. Time frame for approvals.** If the construction or operation of the activity is not begun within four years, this approval shall lapse and the applicant shall reapply to the Board for a new approval. The applicant may not begin construction or operation of the development until a new approval is granted. A reapplication for approval may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.
- G. Approval Included in Contract Bids.** A copy of this approval must be included in or attached to all contract bid specifications for the development.
- H. Approval Shown to Contractors.** Work done by a contractor pursuant to this approval shall not begin before the contractor has been shown by the developer a copy of this approval.



Natural Resources Protection Act (NRPA) Standard Conditions

THE FOLLOWING STANDARD CONDITIONS SHALL APPLY TO ALL PERMITS GRANTED UNDER THE NATURAL RESOURCES PROTECTION ACT, 38 M.R.S. § 480-A ET SEQ., UNLESS OTHERWISE SPECIFICALLY STATED IN THE PERMIT.

- A. Approval of Variations From Plans. The granting of this permit is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation.
- B. Compliance With All Applicable Laws. The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.
- C. Erosion Control. The applicant shall take all necessary measures to ensure that his activities or those of his agents do not result in measurable erosion of soils on the site during the construction and operation of the project covered by this Approval.
- D. Compliance With Conditions. Should the project be found, at any time, not to be in compliance with any of the Conditions of this Approval, or should the applicant construct or operate this development in any way other the specified in the Application or Supporting Documents, as modified by the Conditions of this Approval, then the terms of this Approval shall be considered to have been violated.
- E. Time frame for approvals. If construction or operation of the activity is not begun within four years, this permit shall lapse and the applicant shall reapply to the Board for a new permit. The applicant may not begin construction or operation of the activity until a new permit is granted. Reapplications for permits may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.
- F. No Construction Equipment Below High Water. No construction equipment used in the undertaking of an approved activity is allowed below the mean high water line unless otherwise specified by this permit.
- G. Permit Included In Contract Bids. A copy of this permit must be included in or attached to all contract bid specifications for the approved activity.
- H. Permit Shown To Contractor. Work done by a contractor pursuant to this permit shall not begin before the contractor has been shown by the applicant a copy of this permit.

STORMWATER STANDARD CONDITIONS

STRICT CONFORMANCE WITH THE STANDARD AND SPECIAL CONDITIONS OF THIS APPROVAL IS NECESSARY FOR THE PROJECT TO MEET THE STATUTORY CRITERIA FOR APPROVAL

Standard conditions of approval. Unless otherwise specifically stated in the approval, a department approval is subject to the following standard conditions pursuant to Chapter 500 Stormwater Management Law.

- (1) Approval of variations from plans. The granting of this approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the permittee. Any variation from these plans, proposals, and supporting documents must be reviewed and approved by the department prior to implementation. Any variation undertaken without approval of the department is in violation of 38 M.R.S. §420-D(8) and is subject to penalties under 38 M.R.S. §349.
- (2) Compliance with all terms and conditions of approval. The applicant shall submit all reports and information requested by the department demonstrating that the applicant has complied or will comply with all terms and conditions of this approval. All preconstruction terms and conditions must be met before construction begins.
- (3) Advertising. Advertising relating to matters included in this application may not refer to this approval unless it notes that the approval has been granted WITH CONDITIONS, and indicates where copies of those conditions may be obtained.
- (4) Transfer of project. Unless otherwise provided in this approval, the applicant may not sell, lease, assign, or otherwise transfer the project or any portion thereof without written approval by the department where the purpose or consequence of the transfer is to transfer any of the obligations of the developer as incorporated in this approval. Such approval may only be granted if the applicant or transferee demonstrates to the department that the transferee agrees to comply with conditions of this approval and the proposals and plans contained in the application and supporting documents submitted by the applicant. Approval of a transfer of the permit must be applied for no later than two weeks after any transfer of property subject to the license.
- (5) Time frame for approvals. If the construction or operation of the activity is not begun within four years, this approval shall lapse and the applicant shall reapply to the department for a new approval. The applicant may not begin construction or operation of the project until a new approval is granted. A reapplication for approval may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.
- (6) Certification. Contracts must specify that "all work is to comply with the conditions of the Stormwater Permit." Work done by a contractor or subcontractor pursuant to this approval may not begin before the contractor and any subcontractors have been shown a copy of this approval with the conditions by the permittee, and the permittee and each contractor and subcontractor has certified, on a form provided by the department, that the approval and conditions have been received and read, and that the work will be carried out in accordance with the approval and conditions. Completed certification forms must be forwarded to the department.

- (7) Maintenance. The components of the stormwater management system must be adequately maintained to ensure that the system operates as designed, and as approved by the Department. If maintenance responsibility is to be transferred from the permittee to another entity, a transfer request must be filed with the Department which includes the name and contact information for the person or entity responsible for this maintenance. The form must be signed by the responsible person or agent of the responsible entity.
- (8) Recertification requirement. Within three months of the expiration of each five-year interval from the date of issuance of the permit, the permittee shall certify the following to the department.
- (a) All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
 - (b) All aspects of the stormwater control system are operating as approved, have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system, as necessary.
 - (c) The stormwater maintenance plan for the site is being implemented as approved by the Department, and the maintenance log is being maintained.
 - (d) All proprietary systems have been maintained according to the manufacturer's recommendations. Where required by the Department, the permittee shall execute a 5-year maintenance contract with a qualified professional for the coming 5-year interval. The maintenance contract must include provisions for routine inspections, cleaning and general maintenance.
 - (e) The Department may waive some or all of these recertification requirements on a case-by-case basis for permittees subject to the Department's Multi-Sector General Permit ("MSGP") and/or Maine Pollutant Discharge Elimination System ("MEPDES") programs where it is demonstrated that these programs are providing stormwater control that is at least as effective as required pursuant to this Chapter.
- (9) Transfer of property subject to the license. If any portion of the property subject to the license containing areas of flow or areas that are flooded are transferred to a new property owner, restrictive covenants protecting these areas must be included in any deeds or leases, and recorded at the appropriate county registry of deeds. Also, in all transfers of such areas and areas containing parts of the stormwater management system, deed restrictions must be included making the property transfer subject to all applicable terms and conditions of the permit. These terms and conditions must be incorporated by specific and prominent reference to the permit in the deed. All transfers must include in the restrictions the requirement that any subsequent transfer must specifically include the same restrictions unless their removal or modification is approved by the Department. These restrictions must be written to be enforceable by the Department, and must reference the permit number.
- (10) Severability. The invalidity or unenforceability of any provision, or part thereof, of this permit shall not affect the remainder of the provision or any other provisions. This permit shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

Special Condition
for
Third Party Inspection Program

THIRD-PARTY INSPECTION PROGRAM

1.0 THE PURPOSE OF THE THIRD-PARTY INSPECTION

As a condition of this permit, the Maine Department of Environmental Protection (MDEP) requires the permit applicant to retain the services of a third-party inspector to monitor compliance with MDEP permit conditions during construction. The objectives of this condition are as follows:

- 1) to ensure that all construction and stabilization activities comply with the permit conditions and the MDEP-approved drawings and specifications,
- 2) to ensure that field decisions regarding erosion control implementation, stormwater system installation, and natural resource protection are based on sound engineering and environmental considerations, and
- 3) to ensure communication between the contractor and MDEP regarding any changes to the development's erosion control plan, stormwater management plan, or final stabilization plan.

This document establishes the inspection program and outlines the responsibilities of the permit applicant, the MDEP, and the inspector.

2.0 SELECTING THE INSPECTOR

At least 30 days prior to starting any construction activity on the site, the applicant will submit the names of at least two inspector candidates to the MDEP. Each candidate must meet the minimum qualifications listed under section 3.0. The candidates may not be employees, partners, or contracted consultants involved with the permitting of the project or otherwise employed by the same company or agency except that the MDEP may accept subcontractors who worked for the project's primary consultant on some aspect of the project such as, but not limited to, completing wetland delineations, identifying significant wildlife habitats, or conducting geotechnical investigations, but who were not directly employed by the applicant, as Third Party inspectors on a case by case basis. The MDEP will have 15 days from receiving the names to select one of the candidates as the inspector or to reject both candidates. If the MDEP rejects both candidates, then the MDEP shall state the particular reasons for the rejections. In this case, the applicant may either dispute the rejection to the Director of the Bureau of Land Resources or start the selection process over by nominating two, new candidates.

3.0 THE INSPECTOR'S QUALIFICATIONS

Each inspector candidate nominated by the applicant shall have the following minimum qualifications:

- 1) a degree in an environmental science or civil engineering, or other demonstrated expertise,
- 2) a practical knowledge of erosion control practices and stormwater hydrology,
- 3) experience in management or supervision on large construction projects,
- 4) the ability to understand and articulate permit conditions to contractors concerning erosion control or stormwater management,
- 5) the ability to clearly document activities being inspected,
- 6) appropriate facilities and, if necessary, support staff to carry out the duties and responsibilities set forth in section 6.0 in a timely manner, and
- 7) no ownership or financial interest in the development other than that created by being retained as the third-party inspector.

4.0 INITIATING THE INSPECTOR'S SERVICES

The applicant will not formally and finally engage for service any inspector under this permit condition prior to MDEP approval or waiver by omission under section 2.0. No clearing, grubbing, grading, filling, stockpiling, or other construction activity will take place on the development site until the applicant retains the MDEP-approved inspector for service.

5.0 TERMINATING THE INSPECTOR'S SERVICES

The applicant will not terminate the services of the MDEP-approved inspector at any time between commencing construction and completing final site stabilization without first getting written approval to do so from the MDEP.

6.0 THE INSPECTOR'S DUTIES AND RESPONSIBILITIES

The inspector's work shall consist of the duties and responsibilities outlined below.

- 1) Prior to construction, the inspector will become thoroughly familiar with the terms and conditions of the state-issued site permit, natural resources protection permit, or both.
- 2) Prior to construction, the inspector will become thoroughly familiar with the proposed construction schedule, including the timing for installing and removing erosion controls, the timing for constructing and stabilizing any basins or ponds, and the deadlines for completing stabilization of disturbed soils.
- 3) Prior to construction, the inspector will become thoroughly familiar with the project plans and specifications, including those for building detention basins, those for installing the erosion control measures to be used on the site, and those for temporarily or permanently stabilizing disturbed soils in a timely manner.
- 4) During construction, the inspector will monitor the contractor's installation and maintenance of the erosion control measures called for in the state permit(s) and any additional measures the inspector believes are necessary to prevent sediment discharge to off-site properties or natural resources. This direction will be based on the approved erosion control plan, field conditions at the time of construction, and the natural resources potentially impacted by construction activities.
- 5) During construction, the inspector will monitor the contractor's construction of the stormwater system, including the construction and stabilization of ditches, culverts, detention basins, water quality treatment measures, and storm sewers.
- 6) During construction, the inspector will monitor the contractor's installation of any stream or wetland crossings.
- 7) During construction, the inspector will monitor the contractor's final stabilization of the project site.
- 8) During construction, the inspector will keep logs recording any rain storms at the site, the contractor's activities on the site, discussions with the contractor(s), and possible violations of the permit conditions.
- 9) During construction, the inspector will inspect the project site at least once a week and before and after any significant rain event. The inspector will photograph all protected natural resources both before and after construction and will photograph all areas under construction. All photographs will be identified with, at a minimum the date the photo was taken, the location and the name of the individual taking the photograph.
Note: the frequency of these inspections as contained in this condition may be varied to best address particular project needs.
- 10) During construction, the inspector will prepare and submit weekly (*or other frequency*) inspection reports to the MDEP.

- 11) During construction, the inspector will notify the designated person at the MDEP immediately of any sediment-laden discharges to a protected natural resource or other significant issues such as the improper construction of a stormwater control structure or the use of construction plans not approved by the MDEP.

7.0 INSPECTION REPORTS

The inspector will submit weekly written reports (*or at another designated frequency*), including photographs of areas that are under construction, on a form provided by the Department to the designated person at the MDEP. Each report will be due at the MDEP by the Friday (*or other designated day*) following the inspection week (Monday through Sunday).

The weekly report will summarize construction activities and events on the site for the previous week as outlined below.

- 1) The report will state the name of the development, its permit number(s), and the start and end dates for the inspection week (Monday through Sunday).
- 2) The report will state the date(s) and time(s) when the inspector was on the site making inspections.
- 3) The report will state the date(s) and approximate duration(s) of any rainfall events on the site for the week.
- 4) The report will identify and describe any erosion problems that resulted in sediment leaving the property or sediment being discharged into a wetland, brook, stream, river, lake, or public storm sewer system. The report will describe the contractor's actions to repair any damage to other properties or natural resources, actions to eliminate the erosion source, and actions to prevent future sediment discharges from the area.
- 5) The report will list the buildings, roads, parking lots, detention basins, stream crossings or other features open to construction for the week, including those features or areas actively worked and those left unworked (dormant).
- 6) For each area open to construction, the report will list the date of initial soil disturbance for the area.
- 7) For each area open to construction, the report will note which areas were actively worked that week and which were left dormant for the week. For those areas actively worked, the report will briefly state the work performed in the area that week and the progress toward final stabilization of the area – e.g. “grubbing in progress,” “grubbing complete,” “rough grading in progress,” “rough grading complete,” “finish grading in progress,” “finish grading complete,” “permanent seeding completed,” “area fully stable and temporary erosion controls removed,” etc.
- 8) For each area open to construction, the report will list the erosion and sedimentation control measures installed, maintained, or removed during the week.
- 9) For each erosion control measure in-place, the report will note the condition of the measure and any maintenance performed to bring it to standard.

Third Party Inspection Form

This report is prepared by a Third Party Inspector to meet the requirements of the Third Party Inspector Condition attached as a Special Condition to the Department Order that was issued for the project identified below. The information in this report/form is not intended to serve as a determination of whether the project is in compliance with the Department permit or other applicable Department laws and rules. Only Department staff may make that determination.

TO: <i>PM, Maine DEP (@maine.gov)</i>	FROM:
PROJECT NAME/ LOCATION:	DEP #:
DATE OF INSPECTION:	DATE OF REPORT:
WEATHER:	CONDITIONS:

SITE CHARACTERISTICS:

# ACRES OPEN:	# ACRES ACTIVE:	# ACRES INACTIVE:
LOCATION OF OPEN LAND:	LOCATION OF ACTIVE LAND:	LOCATION OF INACTIVE LAND:
OPEN SINCE:	OPEN SINCE:	OPEN SINCE:

PROGRESS OF WORK:

INSPECTION OF:	Satisfactory	Minor Deviation (corrective action required)	Unsatisfactory (include photos)
STORMWATER CONTROL (VEGETATIVE & STRUCTURAL BMP'S)			
EROSION & SEDIMENTATION CONTROL (TEMPORARY & PERMANENT BMP'S)			
OTHER: (PERMIT CONDITIONS, ENGINEERING DESIGN, ETC.)			

COMMENTS/CORRECTIVE ACTIONS TAKEN (attach additional sheets as necessary):

Photos (must be labeled with date, photographer and location):

Cc:		
<i>Original and all copies were sent by email only.</i>		

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