Newfoundland Labrador

Government of Newfoundland and Labrador
Department of Municipal Affairs and Environment
Office of the Minister

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Reg. #1834

Dr. Stephen Sutton
Atlantic Salmon Federation
P.O. Box 5200
St. Andrews NB E5B 3S8

Mr. J. Alex Templeton
McInnes Cooper
5th Floor, 10 Fort William Place
P.O. Box 5939
St. John's NL A1C 5X4

Dear Dr. Sutton and Mr. Templeton:

Re: Placentia Bay Atlantic Salmon Aquaculture Project Section 107 *Environmental Protection Act* Appeal

Thank you for your Notice of Appeal received on October 25, 2018.

Background

On May 22, 2018, Grieg NL Nurseries Ltd. and Grieg NL Seafarms Ltd. (Grieg NL) submitted an environmental impact statement (EIS) for the Placentia Bay Atlantic Salmon Aquaculture Project (the undertaking). The EIS informs that Grieg NL is planning to build and operate a land-based Recirculating Aquaculture System Hatchery for Atlantic salmon in the Marystown Marine Industrial Park, and marine-based farms located in the northern portion of Placentia Bay. The development will undergo a phased approach before reaching peak production of seven million salmon per year in year eight.

As per the routine process, the EIS was circulated to the project-environmental assessment committee for a scientific and technical review, and posted on the Department of Municipal Affairs and Environment (this Department) web page for a 50-day public review. All review comments were considered, including a submission from the Atlantic Salmon Federation on June 22, 2018. On September 6, 2018, the Minister announced that the EIS was acceptable and the undertaking was released from further environmental assessment with conditions. The Minister's EIS acceptance letter and the undertaking release letter can be found at: www.mae.gov.nl.ca/env_assessment/projects/Y2016/1834/index.html.

The role of the environmental assessment process, as defined in section 45 of the *Environmental Protection Act* (the *Act),* is to ensure the environmental effect of an undertaking is predicted and evaluated before the undertaking has begun or occurred. Environment, which as stated in section 2 of the *Act,* includes air, land, water, plant, animal,

and human life, social, economic, recreational, cultural, and aesthetic conditions, and factors that influence quality of life. During this process, all relevant facts are considered, including those presented in the EIS, public comments, and scientific and technical review comments, to come to a reasonable decision on the acceptability and overall environmental impact of a proposed undertaking.

Appeal

Section 107 of the *Act* provides that a person who is aggrieved by a decision made under the *Act* may appeal that decision in writing to the Minister within 60 days of receipt of that decision.

On October 25, 2018, this Department received your appeal pursuant to section 107, which stated, in part:

> *"We are appealing on the grounds that the decision to accept the EIS and recommend release of the project is contrary to the principles, purpose and requirements of the EPA (i.e., the EIS is non-compliant), and is therefore an unreasonable decision that could not be made by the minister pursuant to the EPA."*

In support of that conclusion, you make the following three points:

1. The EIS is patently deficient with respect to the requirements outlined in the EPA and the EIS guidelines in four key areas:

i. Lack of original data collection to augment the information presented in the project registration document;
ii. Evaluation of potential impacts is not rigorous, reasonable, balanced, or transparent, resulting in conclusions that are not justified;
iii. Lack of meaningful detail about the proponent's approach to follow-up monitoring programs; and
iv. Superficial evaluation of project alternatives with unjustified conclusions.

2. The minister does not have the discretion to accept a deficient EIS.

3. The minister does not have the discretion to recommend release of a project when an EIS has been determined to be deficient.

In consideration of your appeal of the former Minister's decision to accept the EIS as compliant with the *Act* and the EIS Guidelines, and your conclusion that the EIS is deficient based on your points noted above, I offer the response below.

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1. The EIS is patently deficient with respect to the requirements outlined in the EPA and the EIS guidelines.

i. Lack of original data collection to augment the information presented in the project registration document

The EIS Guidelines require that Grieg NL describe relevant aspects of the existing environment prior to implementation of the undertaking, in order to evaluate the environmental effects and/or to develop mitigation measures and follow-up monitoring programs. The expectation, as stated in section 4.2, is that if the information available from government or other agencies is insufficient or no longer representative, the proponent shall complete the description of the environment by conducting original surveys and research according to generally accepted practices.

The EIS and Component Studies cite information and data that was collected from various academic research, and federal and provincial government sources and studies, and provide original data collected by Grieg NL and from recent and past studies by other parties, on Placentia Bay. The table below outlines a sample of the baseline information provided in the EIS and Component Studies and the source of that information.

Baseline Information	**Source** (full references can be found in the EIS and each Component Study)
Wild Atlantic salmon, fish, sea birds, and species at risk	COSEWIC (2006-2017), Lawson and Rose (2000), Bradbury et al. (2001, 2003), Campana et al. (2001), Archambault et al. (2001), O'Driscoll and Rose (2002), Ramey and Snelgrove (2003), Sjare et al. (2003), Wheeler et al. (2004), Bird Studies Canada and Nature Canada (2004-14), Mello and Rose (2005), Windle and Rose (2005), Brattey and Healey (2005), Robichaud and Rose (2001-2006), Kulka et al. (2007) Gilkinson and Edinger (2009), Neilson (2009), C-NLOPB (2010), GNL (2010), Westley and Fleming (2011), Kearley (2012), DFO (2013-2017), Letto et al. (2015), LGL (2007, 2015), FFAW|Unifor (2018), FLR (2018), ECCC-CWS Unpublished Data and OCEARCH 2018.
Benthic habitat	Surficial sediments collected at six stations in northern Placentia Bay (Ramey and Snelgrove (2003), Benthic habitat sampling conducted by SCUBA Divers in early 2000s (Amec 2007), Benthic habitat surveys by ROVs, October 2005 and October 2006 (LGL 2007).
Bathymetry and substrate	Geologic Survey of Canada and Canadian Hydrographic Service using multibeam sonar and subbottom profilers (Shaw et al. 2011) to map sea floor mapping. Sea cage sites with less than 90% multibeam survey coverage were composited with CHS10-m resolution bathymetry data and were subsequently surveyed by Grieg NL using drop camera video at 100-m grid intervals. For each proposed sea cage site, the depth range, percentage

	multibeam coverage, and percentages of hard and soft substrate data were used to designate the potential sites as having either hard or soft bottoms.
Wind and waves	Wind climate statistics for the area were extracted from the MSC50 North Atlantic wind and wave climatology data base (1954-2015) compiled by Ocean weather Inc. under contract to Environment and Climate Change Canada (MSC50 Wind and Wave Reanalysis, 2006). Additional wind speed data was collected from two SmartBay Buoys in the study area: the Red Island Shoal buoy (deployed since 2010) and the Head of Placentia Bay buoy. These buoys measure wind speed and direction, wave height, sea surface temperature, ocean current, and barometric pressure. Wind speed, air temperature, and visibility statistics were calculated from the Environment and Climate Change Canada Stations near the BMAs. Grieg NL presented a weekly analysis of 30-year (1981-2010) frequency of ice presence for the four BMA's from the Canadian Ice Service. Grieg NL provided an analysis of weekly sea ice charts for Placentia Bay during the past 10 years, based on data from the Canadian Ice Service for the presence of sea ice within the northern half of Placentia Bay.
Ocean currents	Data within and near the BMAs provided by, including, but not limited to, the following: the Department of Physics and Physical Oceanography (MUN), the Bedford Institute of Oceanography, the Marine Institute School of Ocean Technology (via SmartBay Buoy), the Canadian Tide and Current Tables, Volume 1 Atlantic Coast and Bay of Fundy (DFO 2018), and original data collected by Grieg NL in each of the 11 proposed aquaculture sites during January to March 2016 (DHI 2016).
Ice dynamics	Canadian Ice Service
Weather/storm data	Collected from five Environment and Climate Change Canada weather stations in northern Placentia Bay. A subset of tropical cyclone climatology data (April–September, 1960–2015) was analyzed from the National Hurricane Centre's best-track dataset, obtained from the National Oceanic and Atmospheric Administration Coastal Services Centre Historical Hurricane Tracks online database. Data were analyzed for all storms within a 150-nautical miles buffer zone of the BMAs.
Water quality	Water quality data, including temp., dissolved oxygen, and depth profiles near sea cage sites recorded by Grieg NL from March 2016 and February 2018.
Commercial & Recreational Fisheries	FFAW-Unifor, DFO Database (2010-2015), NAFO STATLANT21A Database (2010-2016), Vale 2008, NLRC 2007; consultations with local commercial fishers. Recreational fishery statistics for scheduled Atlantic salmon rivers in Placentia Bay from 2012–2016, Interviewed local fishers, DFO (2017), Veinott et al. (2018), Dempson et al. (2012), BriLev (2008). The Cultural, Recreational, and Commercial Importance of the Waters of Placentia Bay Component Study (Gratten et al., 2018) includes baseline information of the existing socio-economic environment of the area surrounding the undertaking including, but not limited to: federal, provincial and municipal government records, information and personnel; relevant academic and research

	documents; recent environmental impact assessments; the work of the Placentia Bay Integrated Management Planning Committee and the Placentia Bay Traffic Committee; discussions with fishers in the BMAs; and consultation with individuals, organizations, and community organizations.
Economy and Employment	Statistics Canada 2018a; S. Synard, Mayor, Town of Marystown, 14 March 2018; Mayor and Councillors, Town of Marystown, 14 March 2018; CFI 2018 a, b; PPR 2017

This overview cites only a sample of the sources that were used by the EIS and Component Studies to provide baseline information to describe important features of the existing biophysical and socio-economic environment in the study area.

Data will continue to be collected to meet the conditions of release related to monitoring and permitting requirements. For example, section 8(1) of the *Aquaculture Activities Regulations* requires that the owner or operator of a marine finfish aquaculture facility must submit data on the biochemical oxygen demanding matter that will be deposited by the facility, a survey of fish and fish habitat on the seabed, and the bathymetry of the seabed to further evaluate the benthic habitat at least 300 days before making a first deposit of a deleterious substance in the operation of the facility. This original data and information is required to inform the exact placement of sea cages within the lease sites and will be collected by Grieg NL and submitted to the Department of Fisheries and Land Resources as part of the site licence application process.

Your appeal also includes a Table in which you provide examples under the following topics which you believe are absent from the EIS:

1) Baseline data necessary for impact assessment monitoring not collected;
2) Analysis is not focused on wild salmon in Placentia Bay;
3) Data on specific aspects of Placentia Bay salmon biology and ecology are missing;
4) Discussion of genetic and ecological interactions of wild and farmed salmon in Placentia Bay is missing;
5) Literature review of disease and parasite impacts is missing;
6) Discussion of proximity of sea cages sites to wild salmon rives and impacts on migrating wild salmon is missing;
7) Predicted further condition of the environment is missing; and
8) Description of monitoring programs for impacts of disease and parasites is missing.

I have responded to each of these areas in the attached Table 1.

ii. Evaluation of potential impacts is not rigorous, reasonable, balanced, or transparent, resulting in conclusions that are not justified.

The effects assessment methodology prescribed in section 6.2 of the EIS Guidelines generally follows the assessment methodology outlined in Appendix 1 and 2 of the 2015 Canadian Environmental Assessment Agency guidance document for determining the significance of environmental effects. Appendix 1 of the document sets the framework for environmental assessments in five key steps: scoping, analysis of information collected, mitigation of effects, determination of significance, and development of follow up programs. Appendix 2 of the document outlines the key criteria for determining the significance of environmental effects, based on consideration of magnitude, geographic extent, timing, frequency, duration, and reversibility of the effects.

The effects assessment methodology used by Grieg NL and described in section 3.0 of the EIS followed this methodology and documents uncertainty when present. For example, section 3.3 of the EIS explains that the scoping exercise "*was accomplished through a series of steps including: issues scoping through regulatory and public consultation; meetings involving project personnel and environmental consultants; review of the EIS Guidelines; and consideration of recent environmental assessments for other projects in the province.*" Additionally, section 3.7 of the EIS describes that "*The systematic assessment of the potential effects of the Project involved the following major steps: 1. preparation of interaction matrices (between project activities and the environment); 2. identification and evaluation of potential effects of project activities on VECs* [valued ecosystem components] *including description of mitigation measures and residual effects; 3. preparation of residual effects summary tables; and 4. evaluation of cumulative effects.*". Also, section 3.7.4 of the EIS states that standard criteria were taken into account when evaluating the nature and extent of environmental effects as per the EIS Guidelines and standard assessment procedure for determining the significant of the environmental effects, including: magnitude; geographic extent; duration and frequency; reversibility; and ecological, social, cultural and economic context. The effects of the undertaking on the environment are described and assessed in section 7.0 of the EIS, including an assessment of the effects on key factors and an assessment of the cumulative and residual effects.

In addition to the review of the EIS by the appointed environmental assessment committee, which included members and expertise from key regulators such as the Department of Fisheries and Land Resources and Fisheries and Oceans Canada (DFO), this Department posted on the project web page all information provided by Grieg NL for a 50-day public review. All review comments were considered, including a submission from the Atlantic Salmon Federation. A list of committee members, as well as all project related information can be found at: www.mae.gov.nl.ca/env_assessment/projects/Y2016/1834/index.html.

The above are examples of the approach to the evaluation of the potential impacts of this undertaking. The legal process set in the *Act* and associated *Environmental Assessment*

Regulations was strictly followed. This process has led to a rigorous evaluation of potential impacts and conclusions that were fully justified.

iii. Lack of meaningful detail about the follow-up monitoring programs.

In accordance with section 57(h) of the *Act*, section 7.4 of the EIS Guidelines requires the proponent to describe the environmental and socio-economic monitoring and follow-up programs to be incorporated into construction, operation, and maintenance activities of the undertaking. The purpose of these programs is to verify the accuracy of the predictions made in the assessment of the effects, the effectiveness of the mitigation measures, and to determine whether additional mitigative measures and /or follow up monitoring is needed.

Section 7.8.1 and 7.8.2. of the EIS describes the proponent's proposed monitoring plans including, for example: underwater camera surveys of benthic habitat; collection and analysis of samples of the deposited organic material in the vicinity of the sea cages; deployment of instrumentation at the BMAs to collect data on water temperature, wave profiles, conductivity, salinity, pH, total dissolved solids, and dissolved oxygen; and, in the event of an escape, determine and monitor the effects of escaped farm salmon that have entered the freshwater systems.

Grieg NL was notified in the EIS Guidelines that they would be required to prepare and submit Environmental Effects Monitoring Plans (EEMPs) subsequent to the completion of the EIS, but before the initiation of the undertaking. On September 5, 2018, the undertaking was released from further environmental assessment subject to conditions. One such condition requires Grieg NL to prepare EEMPs in consultation with the applicable government departments, and submit them for approval prior to the start of operations. The EEMPs will be developed to monitor effects as a result of the undertaking and to ensure that effects are documented and mitigated. The EEMPs will cover the following components:

a) Performance of sea cages;
b) Genetic and ecological interactions of escaped farmed salmon on wild salmon;
c) Genetic and ecological interactions of escaped farmed lumpfish on lumpfish;
d) Performance of European-strain triploid fish;
e) Fish, marine mammals, and seabird;
f) Benthic habitat health;
g) Groundwater quantity and quality at the hatchery; and
h) Climate and Weather.

The reporting component of EEMPs will include oversight of necessary government departments. In addition, as a condition of release from environmental assessment, Grieg NL is required to prepare an annual report of the results of the EEMPs obtained at all monitoring sites and make the report available publicly. Final copies of the EEMPs, as well

as annual reports, will be posted on the project website. This website can be found at: www.mae.gov.nl.ca/env_assessment/projects/Y2016/1834/index.html.

iv. Superficial evaluation of project alternatives with unjustified conclusions

Section 2.0 of the EIS advises that the proponent considered the alternative of not carrying out the undertaking, in comparison to the preferred option of carrying out the undertaking. This section describes both alternatives in terms of the advantages and disadvantages to the environment, proposed use of technology, the economy, and market access for the local industry. The EIS provides an analysis of the environmental effects of carrying out, versus not carrying out the undertaking, provides a description of the analysis methodology, and provides a justification for the preferred alternative.

Section 2.7.3 of the EIS also describes alternatives within the undertaking, such as: alternative locations, an "on-land" versus sea cage component, and conventional technology (diploid eggs and current sea cages) versus proposed technology (triploid eggs versus Aqualine Midgard sea cages). The EIS provides the rationale for selecting project components, discusses the technologies being proposed, analyzes and compares the design alternatives in relation to their environmental and social costs and benefits, and considers the annual production and scale of the operation in the discussion of alternatives. The Department of Fisheries and Land Resources advise that Grieg NL has adequately considered and characterized the alternatives to the proposed undertaking.

The second page of your appeal letter references an EIS review that was conducted by Fisheries and Oceans Canada (DFO), which I will reference as the CSAS 2018/045 report. As referenced in the appeal document, the CSAS 2018/045 review concludes that: *"the EIS is lacking in the sections dealing specifically with impacts on the local and broader environment. Additionally, the conclusions made throughout the document are not consistently supported by existing information. DFO Science's assessment of the risks associated with the proposed project identified a long list of significant uncertainties. Despite significant and numerous knowledge gaps, the report [EIS] consistently states that there is medium to high certainty of non-significant impacts. This is highly unlikely."* The appeal and the CSAS 2018/045 comments do not provide examples to substantiate which results are highly unlikely and why or how "highly unlikely" would be the outcome.

The CSAS 2018/045 report was not released until after the decision on the acceptability of the EIS was complete. During the review of the EIS, the Department of Fisheries and Oceans was consulted on similar questions and did not require further review, stating that *"The Minister of Environment and Climate Change for Canada determined in 2016 that the project did not require a federal environmental assessment, and that potential impacts under federal jurisdiction would be considered and addressed through appropriate*

regulatory processes, including the federal Fisheries Act, Fishery (General) Regulations and the Aquaculture Activities Regulations."

With respect to knowledge gaps, it is accepted practice to present scientific studies that: acknowledge data gaps; consider these gaps when assessing risk and determining the level of confidence of conclusions; and identify how these gaps will be addressed. This approach is consistent with the provincial and Canadian Environmental Assessment Agency EIS guidelines recently issued for the 2018 Foxtrot Rare Earth Minerals and for the 2016 Cape Ray Gold Project. The EIS Guidelines for both projects require that the proponent identify significant gaps in knowledge and understanding related to key conclusions, and describe their steps and efforts to address these gaps. Similarly, section 5.0 of the EIS Guidelines required Grieg NL to identify information gaps from a lack of research or practice where baseline information or existing data cannot accurately represent environmental conditions.

The EIS acknowledges data gaps for assessing the effects of the undertaking on valued ecosystem components under consideration, and identifies that the data gaps affect the level of confidence in the effects predictions. Section 4.8 of the EIS describes the key data gaps that were taken into consideration when assessing effects of the undertaking on key factors. When describing the overall conclusions of the EIS, section 7.9.3 summarizes that, *"With the implementation of mitigation measures, the residual effects of planned Project activities and accidental events are predicted as not significant on fish and fish habitat, wild Atlantic salmon, species at risk, and sensitive areas within Placentia Bay. Data gaps, particularly those related to wild Atlantic salmon migration routes and the degree of ecological interaction between wild salmon and escaped farmed salmon, limit the confidence in some effects predictions."*

Page 3 of the appeal states "*...there is no evidence that the proponent intends to design and implement follow-up monitoring programs for these key impacts.*" As noted above, Grieg NL is required to prepare and submit EEMPs for a number of key factors. The EIS states Grieg NL's commitment to follow up monitoring in a number of sections. For example, the Executive Summary states, "*Follow-up monitoring will be implemented to validate predictions regarding the residual effects of planned Project activities on the Fish and Fish Habitat VEC at the sea cage sites. The focus will be on monitoring benthic habitat and water quality at the sea cage sites. Follow-up monitoring with the guidance of DFO and DFLR would also be conducted in the event of an accidental escape of farm fish. This monitoring would include sampling Atlantic salmon in scheduled salmon rivers located nearest the location of the escape in order to determine whether escaped farm salmon have entered the freshwater systems. Sampling would involve collecting and analyzing blood samples, which will provide information such as source of the fish (i.e., wild or farm), the broodstock of the fish, and whether or not the fish is triploid and/or female. If the follow-up*

monitoring identifies unforeseen negative effects, mitigation measures will be adjusted or new mitigation measures will be implemented and additional follow-up monitoring will be conducted as warranted." In addition, section 7.8 of the EIS states that, *"Grieg NL will prepare and submit an Environmental Effects Monitoring and Follow-up Program (EEMP) subsequent to the completion of the EIS but prior to initiation of Project construction"* and "*If the follow-up monitoring identifies unforeseen negative effects, Grieg NL commits to an adaptive management approach to address issues. More specifically, mitigation measures will be adjusted or new mitigation measures will be implemented and additional follow-up monitoring will be implemented as warranted."*

2. The minister does not have the discretion to accept a deficient EIS. AND
3. The minister does not have the discretion to recommend release of a project when an EIS has been determined to be deficient.

The last two points of the appeal are addressed together since they both deal with the exercise of discretion.

After having fully examined the information provided by Grieg NL, the former Minister determined, pursuant to section 51(1)(b) that an EIS was required. The former Minister appointed an environmental assessment committee to advise him on the scientific and technical matters related to the undertaking. The Committee consisted of a 12-member Federal/Provincial team. As required by section 53 of the *Act* that Committee provided Guidelines for the Minister's consideration with respect to the EIS. These Guidelines were announced and provided to the public. Section 8 of the *Regulations* sets out five requirements which must be included in all EIS Guidelines. Section 57 of the *Act* states that the EIS shall be prepared in accordance with the Guidelines and sets out detailed criteria of what else it must include. The EIS Guidelines were provided to Grieg NL on March 8, 2018.

Upon receipt of the EIS, the Minister has to provide it to the Committee, which has to make a recommendation to the Minister whether or not the EIS is deficient or that the undertaking be released. Where in the Minister's opinion an EIS is deficient, section 61 of the *Act* provides the Minister with authority to require a proponent to conduct further work, amend the EIS, or revise and submit another EIS or amendment to that statement. After full consideration of the EIS submitted by Grieg NL on May 22, 2018, the former Minister was of the opinion that the EIS had been completed and complied with Part X of the *Act* and the Guidelines. A copy of this letter is available at: www.mae.gov.nl.ca/env_assessment/projects/Y2016/1834/index.html. Pursuant to section 67(1) of the *Act*, where the Minister is of that opinion he shall make a recommendation to

the Lieutenant-Governor in Council that the undertaking be released or not permitted to proceed.

All of this process discloses that the Grieg NL EIS was subjected to a robust examination including scrutiny by a Federal/Provincial environmental assessment committee and an opportunity for public input at the registration, draft EIS Guidelines, and EIS stages. Grieg NL had to abide by directions outlined in the Guidelines prepared by that Committee. All parts of the EIS were examined and considered in light of those Guidelines.

A decision was made to accept what was considered a valid EIS prepared in accordance with the legislation and the Guidelines and I agree with that decision. A recommendation to the Lieutenant-Governor in Council as required under section 67(1) was also made. The Minister at the time was of the opinion, based on all the information presented to him, that the EIS was not deficient and I agree with his position on that. Since the EIS was considered to be acceptable the decision to proceed with it and make a recommendation on it were proper exercises of discretion. All relevant facts were considered and a reasonable decision reached based on those facts.

Decision

For all of these reasons, and after fully considering all your arguments and comments, pursuant to section 107 of the *Environmental Protection Act*, I am dismissing your appeal.

If you have any questions concerning this matter, please contact Dr. Susan Squires, Director, Environmental Assessment Division, at (709) 729-0673 or susansquires@gov.nl.ca.

Sincerely,

GRAHAM LETTO, MHA
District of Labrador West
Minister of Municipal Affairs and Environment