

2025

NSARB-2025-001

Nova Scotia Aquaculture Review Board

IN THE MATTER OF: Applications made by **WFN FISH FARM LIMITED PARTNERSHIP (FORMERLY KNOWN AS WAYCOBAH FIRST NATIONS BAND COUNCIL AND AS WE'KOQMA'Q FIRST NATION)** for a **BOUNDARY AMENDMENT TO AQ#0814X** and for two new **MARINE FINFISH AQUACULTURE LICENCES and LEASES, AQ#1430 and AQ#1431** for the cultivation of **RAINBOW TROUT (Oncorhynchus mykiss)** in **WHYCOCOMAGH BAY, INVERNESS COUNTY**

WFN Fish Farm Limited Partnership

APPLICANT

-and-

Minister of Fisheries and Aquaculture

PARTY

Affidavit of Jessica Feindel

I, Jessica Feindel, of Shelburne, Nova Scotia, affirm and give evidence as follows:

1. I am the Manager of Aquaculture Operations in the provincial Department of Fisheries and Aquaculture (the Department). As part of this position, I am responsible for the Farm Management Plan (FMP) Program, the Environmental Monitoring Program (EMP), the Containment Management Program and the management of the Department's marine equipment. I started this position on November 7, 2017. I have been employed with the Department since 2013. Attached to this Affidavit as **Exhibit A** is a copy of my resume.
2. I have personal knowledge of the evidence affirmed in this affidavit except where otherwise stated to be based on information or belief.
3. I state, in this affidavit, the source of any information that is not based on my own personal knowledge, and I state my belief of the source.

Review Team

4. My Team and I participated in the evaluation of the boundary amendment application brought by WFN Fish Farm Limited Partnership (the Applicant) for license and lease AQ#0814x as well as the applications for new aquaculture licences and leases AQ#1430 and AQ#1431. We assisted in evaluating the operational aspects of these applications. This included assessing various aspects of the Applicant's Development Plans, from the Department's Operations Unit perspective, including the production plan, oceanographic environment, and the baseline environmental monitoring data.
5. Additionally, considering the Applicant's operation of licence and lease sites AQ#0814, AQ#0600, and AQ#0845 since 2011, and special experimental licence and lease sites AQ#5010 (since 2019) and AQ#5013 (since 2021), my Team and I reviewed the past performance records for the Applicant's aquaculture operations under the Department's FMP Program, the EMP, and the Containment Management Program.

Farm Management Plan (FMP) Program

6. As the Manager of Aquaculture Operations, one of the programs I am responsible for is the FMP Program.
7. Under the Aquaculture Management Regulations (AMRs), all aquaculture licence holders must prepare an FMP that includes detailed information and procedures on:
 - fish health management;
 - containment management;
 - environmental monitoring; and
 - farm operations.
8. An FMP is a comprehensive document prepared by aquaculture licence holders and kept at their place of business.
9. The AMRs outline in detail the information and procedures the Department requires in an FMP. The Department has established minimum compliance requirements for the procedures contained in FMPs. Attached to this Affidavit as **Exhibit B**, is a chart outlining the minimum compliance requirements for marine finfish aquaculture operations in Nova Scotia that must be described in the FMP.
10. FMP templates were created by the Department to assist licence holders with organizing information on their farm operations, procedures, and records to document that they operate in a way that is compliant with the AMRs.
11. FMPs are reviewed by the Department to ensure that the information is complete, and the aquaculture licence holder's described inputs and procedures comply with the AMRs. If the licence holder's described inputs and procedures comply with the AMRs, the Department approves their FMP for implementation.

12. All licence holders must have an approved FMP prior to stocking any aquaculture site in the Province.
13. Licence holders are required to adhere to the procedures contained in their FMP. Records must be maintained:
 - a) To verify adherence to procedures, when applicable;
 - b) To indicate an amendment to the FMP; and,
 - c) To verify that effective action was taken at a critical control point(s).
14. The Department may audit the implementation of a licence holder's FMP, or request records and information contained in the FMP, at any time to assess compliance with the FMP requirements.

Section 17 Factors

15. The parts of the Applicant's current applications that my team and I evaluated are relevant to several of the factors listed in section 17 of the *Aquaculture Licence and Lease Regulations*. The remainder of this affidavit is organized by the s. 17 factors most relevant to the Development Plan sections evaluated by my team.

Section 17(1)(a) Contribution of the Proposed Operation to Community and Provincial Economic Development

Environmental Monitoring Program (EMP)

16. The EMP is an important monitoring and regulatory tool used to maintain balance between licensed aquaculture operations in the province and the environments they operate within. The function of the EMP is to monitor the effects of an aquaculture operation on the marine environment and respond if balance is disrupted.
17. The EMP was established in 2002 and monitoring was carried out by the Department until 2008. The responsibility to conduct monitoring as part of the EMP was transferred to the industry beginning in 2009.
18. Environmental monitoring takes place at stations located directly within aquaculture lease boundaries and at an outside reference station(s).
19. The EMP uses a risk-based approach to monitoring that recognizes that increased risk requires increased monitoring. This approach can be consistently applied to the diverse nature of the aquaculture industry in the province. The EMP framework includes a variety of environmental indicators and variables to define environmental performance. Over time these site-specific data can be used to identify how each marine finfish aquaculture operation interacts with the surrounding marine benthic environment.

20. Attached to this Affidavit as **Exhibit C** is the Environmental Monitoring Program Framework for Marine Aquaculture in Nova Scotia, which describes the EMP in more detail.
21. One of the primary concerns regarding a marine finfish aquaculture operation is the potential for impacts on the surrounding marine benthic environment through organic loading.
22. Significant organic deposition emanating from marine finfish aquaculture operations can result in increased biochemical oxygen-demand (BOD) in benthic sediments.
23. The Department's primary objective with the EMP is to ensure that the marine environments where aquaculture operations occur maintain oxic sediment conditions. Oxic conditions result when the BOD is *less than the oxygen available*.
24. Hypoxic or Anoxic sediment conditions result when BOD is *greater* than the oxygen available. Hypoxic or anoxic sediment conditions have the potential to negatively impact localized fish habitat and decrease the abundance and diversity of faunal populations.
25. Using the EMP, the Department monitors impacts to benthic environments in two ways. First, impacts are monitored by conducting geochemical analysis of sediments (ex. sulfide concentration). Second, benthic impacts are monitored by assessing visual indicators of benthic health.
26. All marine finfish aquaculture operations that currently have production are subject to the EMP. Since the EMP is a risk-based program, sites of potential concern are subject to increased scrutiny, including additional sampling and, where necessary, the Department will require the operators of these sites to identify and implement appropriate remediation and mitigative actions.

Production Plan

Maximum Biomass

i. AQ#0814x

27. AQ#0814x has two proposed maximum biomasses: one for the production area and one for the over-wintering area.
28. The maximum biomass for the production area of AQ#0814x is 200,000 kilograms (kg). There will be 10 (ten) 100-meter (m) cages in a 2x5 array, with a maximum of 56,000 fish per cage, totaling 560,000 fish.
29. Rainbow trout are generally grown to 2 kg. With 560,000 fish on the Applicant's farm at AQ#0814x, the calculated maximum biomass is 1,120,000 kg. However, the Applicant plans to only rear juveniles/small fish of approximately 100-350 grams (g) in the AQ#0814x production area. Therefore, based on the Applicant's production plan, the maximum biomass for the AQ#0814x production area will not exceed 200,000 kg.

30. Secondly, the maximum biomass for the AQ#0814x overwintering area is 2,000,000 kg. These applications propose that fish from AQ#1430, AQ#1431 and the AQ#0814x production area will be brought to the AQ#0814x overwintering area in early winter each year to avoid ice and ice movement in Whycocomagh Bay.

ii. AQ#1430

31. AQ#1430 has a proposed maximum biomass of 940,000 kg. There will be 10 (ten) 100 m cages, in a 2x5 array, with a maximum of 56,000 fish per cage.
32. Rainbow trout at this site will be grown to an approximate size of 1.7 kg or less, due to the Applicant's intention to pursue juvenile rearing only.
33. Fish reared at AQ#1430 will be transferred in early winter each year to the overwintering area at the proposed amended AQ#0814x. Should the Applicant's boundary amendment and new licence applications be approved, each following spring, these fish will be transferred to AQ#1431 for final grow-out prior to harvesting. Therefore, the maximum biomass at AQ#1430 should regularly be lower than 1,120,000 kg and closer to 940,000 kg.

iii. AQ#1431

34. There will be 10 (ten) 100 m cages, in a 2x5 array, with a maximum of 56,000 fish per cage at AQ#1431. Therefore, as cultured rainbow trout are generally grown to 2 kg, with 560,000 fish onsite in all 10 proposed cages, the Department's calculated maximum biomass is 1,120,000 kg.
35. However, the Applicant is proposing that the maximum biomass for AQ#1431 will be 1,146,000 kg. This is because AQ#1431 will receive fish each spring from the overwintering area at the proposed amended AQ#0814x, to grow to market size (~2 kg). Therefore, the Applicant proposes a slightly higher maximum site biomass for AQ#1431 to account for weight variations in market size fish.

iv. Conclusion – Maximum Biomass

36. DFO indicated that the production levels cited above could result in the exceedance of the 3000 μ M sulfide threshold (exceedance would temporarily prevent restocking under the federal *Aquaculture Activities Regulations* (AARs) at one or more of these sites. (NSARB Exhibit 005a, p. 178, 319, 326)
37. Environmental monitoring plays an important role in evaluating maximum biomass. These leases will be assessed annually through the EMP. Should environmental results exceed the regulatory thresholds, the EMP is designed to determine the spatial degree of impact as well as which mitigations may be required to reduce BOD matter that is contributing to the exceedance of regulatory thresholds.
38. Irrespective of the maximum biomasses proposed by the Applicant, performance at the proposed AQ#0814x, AQ#1430, and AQ#1431 will be assessed using information collected

from the EMP. These program results will inform the Department's approval of stocking levels at each proposed lease site.

39. Department approvals for marine finfish stocking levels are reassessed prior to each production cycle.

Baseline Assessment

i. AQ#0814x

40. A mandatory baseline monitoring event was conducted on the boundary expansion area on May 18, 2018. The Applicant provided the Department with the raw data from this baseline monitoring event, which the Department submitted to the Aquaculture Review Board (ARB) in excel format on November 10, 2025. For ease of reference, that raw data is reproduced as **Exhibit D** to this Affidavit.
41. This monitoring event consisted of four corners, four center stations, and three reference stations.
42. Of the four corner stations sampled, three were soft bottom and the fourth was hard bottom.
43. The four center stations (in the middle of the proposed expanded lease site) were all soft bottom.
44. The average sulfide of the seven soft bottom stations at AQ#0814x was 352 μM and the one hard bottom corner sampled passed the assessment of visual indicators of benthic health.
45. The average sulfide of the three reference stations at AQ#0814x was 277 μM .
46. This baseline sulfide data falls within Oxidic conditions.

ii. AQ#1430

47. A mandatory baseline monitoring event was conducted on this proposed new lease site on October 10 and 23, 2018. The Applicant provided the Department with the raw data from this baseline monitoring event, which the Department submitted to the ARB in excel format on November 10, 2025. For ease of reference, that raw data is reproduced as **Exhibit E** to this Affidavit.
48. This monitoring event consisted of four corners, one center station, and two reference stations.
49. The four corner stations and one center station at this proposed site were soft bottom and had an average sulfide of 21 μM .

50. Of the two reference stations evaluated, one was hard bottom and passed the assessment of visual indicators of benthic health and the other reference station had an average sulfide value of 35.8 μM .
51. This baseline sulfide data falls within Oxidic conditions.

iii. AQ#1431

52. A mandatory baseline monitoring event was conducted on this proposed new lease site on October 23, 2018. The Applicant provided the Department with the raw data from this baseline monitoring event, which the Department submitted to the ARB in excel format on November 10, 2025. For ease of reference, that raw data is reproduced as **Exhibit F** to this Affidavit.
53. This monitoring event consisted of four corners, one center station, and two reference stations.
54. The average sulfide of three soft bottom corner stations, and the center, was 19 μM .
55. The fourth corner was hard bottom and passed the assessment of visual indicators of benthic health.
56. One reference station evaluated at AQ#1431 was hard bottom and passed the assessment of visual indicators of benthic health. The second reference station at this site had an average sulfide of 78 μM .
57. This baseline sulfide data falls within Oxidic conditions.

iv. Conclusion – Baseline Assessment

58. In summary, the baseline assessments for AQ#0814x, AQ#1430, and AQ#1431 presented with oxidic conditions for sulfide analysis and a pass as per the hard bottom protocol. The Applicant's consultant followed the sampling methodology required by the Department at that time.

BOD Modelling

59. These baseline assessments also inform the modelling DFO requires under the federal AARs. The modelling is done to predict BOD impacts from proposed aquaculture operations. The modelling conducted by the Applicant for these three sites was reviewed by DFO, which predicted that the production levels could result in each site mean exceeding the 3000 μM sulfide threshold. (NSARB Exhibit 005a, p. 178, 319, 326)
60. The 3000 μM sulfide threshold is a regulatory threshold used by DFO for allowable BOD impacts on the benthic environment. If the sulfide site mean exceeds this threshold there can be no restocking of the site until the mean sulfide concentration has dropped below the 3000 μM threshold.

Past Performance

61. Attached to this Affidavit as **Exhibit G** is a document showing a summary of the environmental monitoring results for the Applicant's existing aquaculture licences and leases from 2011 to present. This data is available on the Province's public Open Data Portal.
62. The list below defines the Department's oxix classification thresholds related to sulfide concentrations:

Oxic A: 0-749 μM sulfide

Oxic B: 750-1499 μM sulfide

Hypoxic A: 1500-2999 μM sulfide

Hypoxic B: 3000-5999 μM sulfide

Anoxic: 6000+ μM sulfide

63. The AMRs require certain mitigation and/or steps to be taken if particular thresholds are exceeded. Steps could include mitigative actions regarding overstocking of fish, fish feces settlement, net biofouling, overfeeding, and improper feeding technique.
64. If the mitigative actions do not succeed in bringing down the sulfide average, the Minister may order specific actions be taken such as expediting the harvest program, extending fallowing periods, limiting approved stocking levels or adjusting the site layout.

i. AQ#0814x (i.e. Former Licence and Leases AQ#0814, AQ#0600 and AQ#0845)

65. The Applicant's boundary amendment application includes the combination and expansion of three pre-existing finfish aquaculture leases: AQ#0814, AQ#0600 and AQ#0845. A historical review of the EMP results for these three leases indicate that, since first being licensed, these leases have had varying cage configurations and numbers and biomass of fish.
66. Classifications have ranged from Oxic to Anoxic and, as a result, additional sampling and mitigations have been required (e.g., fish biomass reductions, improvements to feeding techniques and net cleaning procedures, changes to site configurations and the implementation of fallowing regimes). These historical leases have been compliant with the EMP.
67. It is noted in the application package that the deep-water basin of Whycocomagh Bay is typically anoxic at depths lower than 25 m. This means that there is typically no dissolved oxygen in this area of the Bay at depths below 25 m. (NSARB Exhibit 004a, p. 46)
68. This water column anoxia is not directly attributed to the Applicant's existing aquaculture operation, but rather to the oceanographic conditions in Whycocomagh Bay. This area has

low current speeds and limited oxygen supply to the sediment, which influences the process of organic matter decomposition. This has led to performance challenges under the EMP for the Applicant's existing sites.

69. To mitigate these EMP performance issues, as set out in the Applicant's Development Plan, the proposed AQ#0814x will have a lower biomass of fish than has been historically cultured in the Applicant's three existing leases. It is expected that the proposed expanded lease will be used to rotate the location of the production area as EMP results dictate, thus allowing the seabed to fallow between production cycles.

ii. AQ#1430 (i.e. Former Special Experimental Licence and Lease AQ#5010)

70. A historical review of the EMP results for the special experimental lease AQ#5010, which has been operated within the western half of the proposed lease boundary for AQ#1430, showed that this lease site has been utilized since 2019 with varying levels of biomass and with different cage sizes and cage numbers than what is proposed for AQ#1430.
71. AQ#5010's EMP classifications have ranged from Oxidic to Hypoxic B between 2019 and 2025, requiring additional monitoring and mitigation (e.g., improvements to feeding techniques and net cleaning procedures). Overall, AQ#5010 has been compliant with the EMP.
72. The proposed new lease AQ#1430 has been sized to allow for two separate cage grids, which the Applicant will use as alternating production areas, allowing a longer fallow period of 15 months.

iii. AQ#1431 (i.e. Former Special Experimental Licence and Lease AQ#5013)

73. A historical review of the EMP results for the special experimental lease AQ#5013, which has been operated within the western half of the proposed lease boundary for AQ#1431, showed that this lease site has been utilized since 2022.
74. AQ#5013's EMP classifications have ranged from Oxidic to Hypoxic B between 2022 and 2025, requiring additional monitoring and mitigation (e.g., improvements to feeding techniques and net cleaning procedures). Overall, AQ#5013 has been compliant with the EMP.
75. Like the proposed AQ#1430, the proposed AQ#1431 has been sized to allow for two separate cage grids, which the Applicant intends to use as alternating production areas, allowing a longer fallow period of 15 months.

iv. Conclusion – Past Performance

76. As a result of the historical review of the environmental performance of AQ#0814, AQ#5010, and AQ#5013, the current baseline information for all three lease sites, and the Department's regulatory framework programs (including proactive risk mitigation

methodologies), my team is satisfied that the maximum proposed biomass can be reasonably managed.

77. The annual EMP assessment regime, including assessments of stocking level applications, is a risk management approach to effectively managing marine finfish aquaculture operations. Additionally, the Applicant has proposed a rotating fallowing regime, which is a proactive mitigatory approach that my team agrees could allow for uninterrupted Rainbow trout culture.
78. As stated above, ultimately each lease site's performance under the EMP will inform the stocking levels approved by the Department as time goes on, if these three applications are approved by the ARB.

Section 17(1)(c): Oceanographic and Biophysical Characteristics

Engineer's Approval of Site Design

79. As outlined in Section 15(g) of the AMRs, marine finfish aquaculture operators in the Province are required to provide the Department with proof of a professional engineer's approval of the design of the structures in place for containment management. The Containment Management Framework, which is a policy document developed by the Department, outlines what is required for professional engineer approval.
80. Attached to this Affidavit as **Exhibit H**, is the Containment Management Framework.
81. The Containment Management Framework requires that the professional engineer retained to approve a licence holder's site design must take into consideration the prevailing oceanographic and meteorological conditions at the proposed site. This includes wind, waves, currents, depth and tidal range. Proof of a professional engineer's approval is required prior to each stocking event at any new, or existing, sites.
82. The engineer's approval must be tailored to the operation. In the case of these applications, the ARB must decide whether to approve the proposed boundary amendment and two new sites.
83. The Applicant has already obtained an engineer's approval for the existing AQ#5010 and AQ#5013. However, a new engineer's approval will be required if the ARB approves the proposed AQ#1430 and AQ#1431.
84. The Applicant has not yet obtained an engineer's approval for AQ#0814x. Once again, this approval will be required if the ARB approves the Applicant's proposed boundary amendment application.
85. As a result, although the Review Team assessed the information about oceanographic environment within these applications, a final determination on the suitability of the Applicant's proposed infrastructure for these applications must and will be assessed by a

professional engineer. Pursuant to the Containment Management Framework, this approval must be submitted to the Department before the proposed lease sites are stocked.

Wind Exposure

86. The Applicant provided summary wind data for the Whycocomagh Bay area from several online sources. A maximum wind speed of 98 kilometers per hour (km/h) and an average of 14.5 km/h were observed at a standalone weather station installed on Indian Island from October 2020 through October 2023. This data is likely representative of conditions in the area as it was collected in the local vicinity of the three proposed sites, as follows:
 - a) AQ#0814x: ~0.5 km;
 - b) AQ#1430: ~7.3 km; and,
 - c) AQ#1431: ~6.5 km.
87. The nearest Environment Canada Weather Station to the proposed lease areas is in Eskasoni, approximately 30-35 km to the east. The maximum hourly wind speed reported at this station was 96 km/h.
88. In 2021, the Center for Marine Applied Research (CMAR) commissioned Dynamic Systems Analysis (DSA) to model expected extreme wind conditions around the three proposed lease areas. Their analysis predicted maximum 10- and 50-year return period wind speeds of approximately 114 km/h and 159 km/h.
89. The directions of most significant wind exposure at the three proposed sites are as follows:
 - a) AQ#0814x: SE;
 - b) AQ#1430: SW; and,
 - c) AQ#1431: W and NE.
90. The locations of all three proposed leases are relatively well sheltered from all directions due to the inland nature of Whycocomagh Bay and the significant elevation of the surrounding land.

Current Speed and Wave Height

91. The Department has deployed Acoustic Doppler Current Profilers (ADCPs) to measure current and wave conditions in the vicinity of the proposed leases on six (6) occasions since 2015. Mean current velocities and wave heights from each deployment are as follows (where “n/c” is indicated, the instrument used to collect the measurements that date did not measure wave height):

Nearby Site	Deployment Date	Deployment Duration (d)	Average Current Speed (cm/s)	Average Wave Height (m)	Maximum Wave Height (m)
0814x	May 31, 2018	35	2.26	n/c	n/c
0814x	Dec. 14, 2019	138	3.07	0.02	0.38
0814x	April 25, 2023	90	2.39	0.04	0.45
1430	Nov. 25, 2015	24	4.23	0.06	0.28
1430	Oct. 31, 2018	41	11.70	0.16	1.20
1431	July 5, 2018	41	4.28	n/c	n/c

92. These ADCP deployments met the Department's requirements.
93. CMAR also commissioned DSA in 2021 to model expected extreme wave conditions around the three proposed leases. Their analysis predicted maximum 10- and 50-year return period wave heights of approximately 0.88 m and 1.36 m.
94. Current and wave data will be considered by the professional engineer when assessing the proposed sites and signing off on approval of the infrastructure to be added there.
95. Wind, current and wave data available within the vicinity of Whycocomagh Bay, as described in this Affidavit, should be sufficient to inform an engineer's assessment of the proposed infrastructure.

Section 17(1)(f): The Sustainability of Wild Salmon

Containment Management

96. Containment Management is one of the Department's programs used to mitigate potential impacts on the sustainability of wild salmon.
97. My team oversees most of the Containment Management program, except for the traceability component which is administered by the Development section. All other components of the Containment Management program are under my team. These components involve all aspects of a marine finfish aquaculture operation including infrastructure, operating procedures, and reporting procedures for suspected or confirmed breaches.
98. Containment management is principally addressed in the AMRs. Section 15 of the AMRs prescribes the following minimum requirements for finfish containment management that must be addressed in every marine finfish aquaculture operator's FMP:
 - (a) operating procedures that limit the risk of a breach;
 - (b) processes for installing and maintaining infrastructure in place to limit the risk of a breach;
 - (c) responses to breaches;

- (d) areas of potential impact if a breach occurs;
- (e) management of the site if unusual events or severe weather occurs;
- (f) schedules for reporting all of the following:
 - (i) initial farm stocking,
 - (ii) inventory levels during production,
 - (iii) audits of the containment management system;
- (g) proof of a professional engineer's approval of the design of the structures in place for containment management; and,
- (h) a finfish marking plan.

99. These minimum requirements are explained in more detail in the Containment Management Framework (**Exhibit H**) and the FMP minimum compliance requirements chart for marine finfish (**Exhibit B**).
100. Section 33 of the AMRs prescribes that a licence holder who knows or suspects a breach must immediately notify the Department.
101. Section 34 of the AMRs prescribes that when a breach of more than 50 fish is reported, a third-party audit of the containment management section of an FMP is required.

Past Containment Performance at AQ#0814x, AQ#5010, and AQ#5013

102. Since November 2019, the Department's policy has been to post public notices on its website for any confirmed escape of 50 or more fish from any licensed marine finfish aquaculture operation in the Province. Additionally, starting in 2021, inventory reconciliation following site harvesting became a Departmental requirement for all breach events.
103. In addition to the Department's website and inventory reconciliation, Canada (Department of Fisheries and Oceans), being a party to the North Atlantic Salmon Conservation Organization (NASCO), requests a summary of confirmed escape events and final escape numbers from the Atlantic Canadian provinces and provides it to NASCO, annually. This information is publicly available through Annual Reports produced by the NASCO.
104. The Department received twelve breach event reports from the Applicant between 2017-2025. Seven of the breach events were reported as suspected and not confirmed breaches and therefore did not result in public notices. These events are outlined in paragraphs 105-106, below. Five of the breach events were determined to be confirmed breaches and met the requirement for public notices. Those events are listed below in paragraphs 107-114.
105. The Department received seven reports of suspected breach events between 2019 to 2021 at AQ#0814 and AQ#5010. The cause of the reports for these suspected breaches included storm damage to nets and holes found during net inspections.

106. In these seven cases of suspected breaches, mitigations were required. This included immediate net repairs and site-wide net inspections. Corrective actions were also required in response to these suspected breach events, including a review of each site's setup, review of the Applicant's boat handling procedures, and changes to the Applicant's net weights. In 2021, inventory reconciliation was retroactively requested for sites AQ#0814 and AQ#5010; however, these seven suspected breach events did not meet the Department's requirements for public reporting.

i. AQ#0814x (i.e. Former Licence and Leases AQ#0814, AQ#0600 and AQ#0845)

107. In August 2017, the Applicant reported a suspected breach event at AQ#0600. This suspected breach event was referenced in NASCO's public annual report for 2017. The cause was an operational error during the harvesting transfer process. Mitigation efforts were implemented (e.g. underwater net inspections) and corrective actions applied (e.g. staff training).

108. In May 2018, the Applicant reported a known breach event of more than 50 fish from AQ#0600. The cause was an operational error of improperly securing one containment net ahead of an expected windstorm. Mitigation efforts were implemented (e.g. recapture of escaped fish).

109. On this occasion, a third-party audit report was submitted to the Department with proposed corrective actions (e.g. increased net inspections and reporting). The Department verified the inclusion of these corrective actions in the Applicant's FMP during the FMP's review and ultimate approval on June 4, 2019.

110. In November 2019, the Applicant reported a known breach event of approximately 600 dead Rainbow trout from AQ#0814. The cause was an operational error (a fish pump line detached from the site harvest tanker). Mitigation efforts were implemented (e.g. fish were cleaned up from the site and disposed).

111. In this case, 2 third-party audit reports were again submitted to the Department (in December 2019 and January 2020), with proposed corrective actions (e.g. staff training, extra check of lines prior to fish pumping, enhanced record keeping). On September 22, 2021, the Department conducted a follow-up audit of the Applicant's FMP and notified the Applicant of a repeated non-conformity (not maintaining records to verify adherence to procedures).

112. In response, on November 16, 2021, the Applicant submitted a response to the Department identifying the root causes of the October 2019 breach event and corrective actions taken to prevent reoccurrence (e.g. staff training and responsibility review, updating service provider contracts, scheduling procedure reviews with staff on site).

ii. AQ#1430 (i.e. Former Special Experimental Licence and Lease AQ#5010)

113. In September 2021, the Applicant reported a suspected breach event at AQ#5010. The cause was an operational error: staff improperly securing one containment net. Mitigation efforts

were implemented (e.g. all cages checked for deficiencies). Inventory reconciliation at harvest confirmed that this event resulted in the release of 50 fish or more.

iii. AQ#1431 (i.e. Former Special Experimental Licence and Lease AQ#5013)

114. On July 10, 2025, the Applicant reported a known breach event which occurred in June 2025 at AQ#5013. The cause was a hole in the containment net. Mitigation efforts were implemented (the net was repaired immediately). The Department required the Applicant to submit a corrective action report. The Applicant submitted the requested corrective action report on July 31, 2025. The corrective action report identified the root cause of the non-compliance and measures to prevent reoccurrence (the Applicant was required to review and properly execute all internal reporting responsibilities for all reportable events under the Department's regulatory programs).

iv. Conclusion – Past Containment Performance

115. A historical review of containment management performance at AQ#0814, AQ#0845, AQ#0600, AQ#5010, and AQ#5013 indicates the occurrence of operational errors that resulted in Rainbow trout escapes. Following each of these escape events, the Applicant complied with regulatory auditing requirements and the Department's requirements to implement mitigative measures and corrective actions.

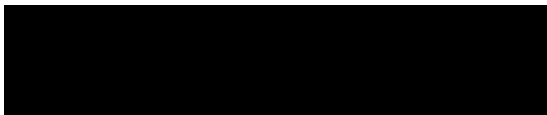
116. The AMRs, the FMP Program and the Containment Management Program, along with the continued evolution of these programs, provides an effective risk management system for reducing, responding to and reporting of escapes, and preventing reoccurrence.

Section 17(1)(g): The Number and productivity of Other Aquaculture Sites in the Public Waters Surrounding the Proposed Aquacultural Operation

117. The Applicant is the only aquaculture lease and licence holder in the area.

118. I was not physically present before Ms. Menczel-O'Neill when I affirmed this affidavit. I was linked with Ms. Menczel-O'Neill using video conferencing technology.

Sworn to before me by videoconference
from Shelburne, Nova Scotia (location of
affiant) to Halifax, Nova Scotia (location
of lawyer taking oath) on the 17th day of
February 2026.



Caitlin Menczel-O'Neill
A Barrister of the Supreme Court of Nova
Scotia

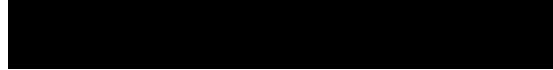


Jessica Feindel

TAB A

NSARB-2025-001

This is Exhibit "A" referred to in the
Affidavit of Jessica Feindel
affirmed before me by videoconference
on February 17, 2026




Signature

CAITLIN MENCZEL-O'NEILL

A Barrister of the Supreme Court of Nova Scotia

JESSICA FEINDEL, M.Sc.

Shelburne, NS 

EDUCATION

Master of Science - Biology | University of New Brunswick, Fredericton, NB

2009 – 2012

Thesis: Ovarian development and sex ratios of gynogenetic Atlantic cod (Gadus morhua)

Publication: Whitehead, J.A., Benfey, T.J., and Martin-Robichaud, D.J. 2011. Ovarian development and sex ratio of gynogenetic Atlantic cod (*Gadus morhua*). *Aquaculture*:324-325, 174-181.









Bachelor of Science (Honours) – Marine Biology | University of New Brunswick, Saint John, NB

2004 – 2008

EXPERIENCE







Manager, Aquaculture Operations | NS Dept. Fisheries and Aquaculture, Shelburne, NS

2017 – PRESENT

-  Manages the day-to-day administration of the Environmental Monitoring and Farm Management Plan Programs to ensure policies and procedures are followed.
-  Supervises a working unit to ensure services and projects are accomplished efficiently and effectively.
-  Ensures a risk-based management strategy is applied to respective aquaculture programs, while promoting sustainability.
-  Conducts comprehensive reviews and assessments of Farm Management Plans (FMPs) to ensure operations reflect strong and sustainable management practices.
-  Evaluates environmental suitability of new sites and performance of existing sites using data and modelling results.
-  Plans and coordinates inter-related field work efforts, including the maintenance, operation and scheduling of all marine field equipment.
-  Represents the department on federal and provincial committees, forums and at meetings to collaborate on the development of environmental and operational aquaculture programs, policies, and regulations.
-  Interacts with industry, communities, municipalities, and special interest groups/individuals on aquaculture operational and environmental management matters.

Environmental Monitoring Program Supervisor | NS Dept. Fisheries and Aquaculture, Shelburne, NS

2013 – 2017

-  Led the implementation of provincial environmental management and compliance practices for aquaculture.
-  Planned and coordinated the ongoing development and implementation of a risk-based environmental monitoring program for aquaculture.
-  Reviewed program submissions and conducted data analysis to ensure standards of quality were met.
-  Conducted data interpretation to evaluate environmental suitability of new sites and performance of existing sites.
-  Conducted internal and external audits to ensure field and laboratory operations followed program standard operating procedures.
-  Represented the department on federal and provincial committees, forums, and meetings to collaborate on the development of standard operating procedures, guidelines, and protocols for the environmental management of aquaculture.

- ✚ Provided consultative and specialized expertise to senior department staff on aquaculture environmental management.
- ✚ Interacted with industry, communities, municipalities, and special interest groups/individuals on all aquaculture environmental management matters.
- ✚ Responsible for maintenance and safe storage of laboratory equipment, supplies and resources.
- ✚ Responsible for accurate calibration of laboratory equipment and ensures technical requirements meet ISO standards.
- ✚ Deployed Acoustic Doppler Current Profilers and temperature loggers to inform oceanographic research related to aquaculture siting.
- ✚ Policy development.
- ✚ Familiarity with Hazard Analysis Critical Control Point system.

Marine Environmental Biologist | Sweeney International marine Corp., St. Stephen, NB

2011 – 2013

- ✚ Conduct environmental monitoring of marine aquaculture farms in NB, NS and NL with a field team.
- ✚ Adhere to field sampling and sediment analysis SOPs.
- ✚ Experience with Ekman, Ponar and Hunter Simpson sediment grabs.
- ✚ Familiar with underwater drop cameras with top side units and amphibico diver-held cameras.
- ✚ Perform sulphide and redox analysis on marine sediments.
- ✚ Extensive experience of Windows and Microsoft Office.
- ✚ Experience writing Environmental Monitoring, Baseline, Environmental Assessment (CEAA), current meter and temperature profile reports.
- ✚ Perform current meter deployments.
- ✚ Analyze sulphide, redox, water current and temperature data.
- ✚ Initiation and development of R&D projects.
- ✚ Writing funding applications (NRC-IRAP, ACOA, NB TACP, ACRDP).
- ✚ Knowledge of MapSource, GPS devices and formats.
- ✚ 3D visualization, contouring and surface modeling of side scan sonar data.
- ✚ Conduct third party audits of farms with poor environmental ratings.

Teacher's Assistant, Aquaculture in Canada Course | University of New Brunswick, Fredericton, NB

2011

- ✚ Supervised and provided academic support to students during labs and field trips.
- ✚ Graded and provided constructive feedback toward reports and presentations.

Lab Assistant, Biological Effects Study | Dept. of Fisheries and Oceans, St. Andrews, NB

2011

- ✚ Assisted with biological effects studies related to oil and gas program.
- ✚ Responsible for daily collection of Atlantic cod gametes.
- ✚ Prepared chemical solutions.
- ✚ Exposed gametes and cod larvae to produced water, chemical dispersants, and oil.
- ✚ Assessed fertilization rates, hatching success and lethality of chemicals acting upon larvae.

Lab Assistant, Fish Physiology | Dept. of Fisheries and Oceans, St. Andrews, NB

2011

- ✚ Executed care for diploid and triploid Atlantic cod larvae.
- ✚ Conducted routine tank husbandry.
- ✚ Measured and recorded water quality parameters.
- ✚ Administered hand feedings.
- ✚ Observed and recorded fish behaviour.

Master of Science - Biology | University of New Brunswick, Fredericton, NB & Dept. Fisheries and Oceans, St. Andrews, NB
2009 – 2012

- ✚ Handled Atlantic cod broodstock:
 - Familiar with finfish anaesthesia; applied spawning techniques for gamete collection; constructed and used catheters for milt collection.
- ✚ Implemented UV treatments for DNA inactivation.
- ✚ Performed artificial fertilization procedure.
- ✚ Operated hydrostatic pressure shocker for ploidy manipulation.
- ✚ Prepared samples for genotyping (fin clips and embryos).
- ✚ Experience rearing embryos via flow-through incubation systems.
- ✚ Participated in rotifer culture practices.
- ✚ Practiced with larval tank set-up and larval rearing.
- ✚ Programmed and operated “AMD” feeding systems.
- ✚ Conducted histology on ovarian tissue.
- ✚ Experience writing scientific documents:
 - Master’s thesis, Aquaculture Journal manuscript, AAC Bulletin article, Animal Use Protocol, ACRDP project update
- ✚ Presented scientific research.
- ✚ Well versed with Microsoft Office (Excel, Powerpoint, Word, Outlook).
- ✚ Familiar with both ImagePro Plus and ImageJ.
- ✚ Analyzed data with SPSS, SigmaPlot, MS Excel and Minitab.
- ✚ Utilized SigmaPlot for graph design.
- ✚ Demonstrated effective experimental design.

Aquaculture Research Technician | Huntsman Marine Science Center, St. Andrews, NB
2008 – 2009

- ✚ Handled Atlantic cod Broodstock:
 - Familiar with finfish anaesthesia and sedation; performed weight, length measurements and data entry; administered injections: Ovaplant, antibiotic, floy tags; practiced with spawning techniques.
- ✚ Knowledgeable of recirculation systems (backwashing, pump changes, flows).
- ✚ Performed sea cage assessments (length, weight, external morphologies).
- ✚ Participated in fish quality assessments at fish processing plant.
- ✚ Implemented artificial fertilization procedures.
- ✚ Practiced in fertilization rates and photo capture.
- ✚ Prepared biological samples.
- ✚ Utilized “Image J” for egg diameter analysis.
- ✚ Familiar with ozonating procedures for sterilization.
- ✚ Acquainted with incubation systems.
- ✚ Performed larval tank set-up and administered larval care.
- ✚ Contributed and performed live feed culture (algae, rotifers and artemia).
- ✚ Conducted submersion vaccinations of juveniles.
- ✚ Demonstrated effective pit-tagging skills and deformity recognition.
- ✚ Performed water quality analysis via spectrophotometry.

TAB B

NSARB-2025-001

This is Exhibit "B" referred to in the
Affidavit of Jessica Feindel
affirmed before me by videoconference
on February 2026


Signature

CAITLIN MENCZEL-O'NEILL

A Barrister of the Supreme Court of Nova Scotia

Marine Finfish Farm Management Plan Minimum Compliance Requirements

The following document outlines the minimum compliance requirements for marine finfish aquaculture operations in Nova Scotia. The minimum compliance requirements are organized by Farm Management Plan (FMP) section.

Section 2.0: Stocking Level

Before initial stocking or restocking of an aquaculture site, the population number to be stocked must be reported and approved. This section outlines the stocking plan for the site for the time period covered within the FMP and provides information required to assess the stocking level. This section includes a production plan, site diagram, fallowing plan, and production reporting information.

Subject	Species	Minimum compliance requirement
2.1 Production plan	<i>All finfish</i>	<ul style="list-style-type: none"> Production plan must be provided
2.1 Species and year class	<i>Atlantic salmon</i>	<ul style="list-style-type: none"> One year-class stocking
	<i>Rainbow Trout</i>	<ul style="list-style-type: none"> Up to a maximum of two year-classes stocked
	<i>Other species</i>	<ul style="list-style-type: none"> Subject to review by Chief Aquatic Animal Health Veterinarian or Veterinary Administrator
2.2 Site plan	<i>All finfish</i>	<ul style="list-style-type: none"> Scaled site diagram must be provided
2.3 Historical environmental monitoring and production information	<i>Atlantic salmon</i>	<ul style="list-style-type: none"> Historical production levels and environmental monitoring results (two previous production cycles minimum) provided upon stocking request
	<i>Rainbow Trout</i>	<ul style="list-style-type: none"> Historical production levels and environmental monitoring results (four previous years minimum) provided upon stocking request
	<i>Other species</i>	<ul style="list-style-type: none"> Historical production levels and environmental monitoring results provided according to request by NSDFA
2.4 Aquaculture Management Area (if AMA is established)	<i>All finfish</i>	<ul style="list-style-type: none"> Written AMA agreements with other licence holders if required by the Minister
2.5 Fallowing plan (for sites NOT within an AMA)	<i>Atlantic salmon</i>	<ul style="list-style-type: none"> Maximum of 36 months continuous stocking Fallowing period according to stocking cycle length, as described
	<i>Rainbow Trout</i>	<ul style="list-style-type: none"> Maximum of two consecutive year class stockings before fallowing Fallowing period according to stocking cycle length, as described
	<i>Other species</i>	<ul style="list-style-type: none"> Subject to review by Chief Aquatic Animal Health Veterinarian or Veterinary Administrator
2.5 Fallowing plan (for sites within an AMA)	<i>Atlantic salmon</i>	<ul style="list-style-type: none"> Fallowing according to AMA agreement
	<i>Rainbow Trout</i>	<ul style="list-style-type: none"> Fallowing according to AMA agreement
	<i>Other species</i>	<ul style="list-style-type: none"> Fallowing according to AMA agreement
2.6 Inventory control and reporting	<i>All finfish</i>	<ul style="list-style-type: none"> Reporting of stocking level upon request

Section 5.0: Description of Inputs

This section describes the physical components and material elements of the farm. These inputs affect all components covered within the FMP, including Fish Health Management, Containment Management, Farm Operations, and Environmental Monitoring.

Subject	Species	Minimum compliance requirement
5.1 Site, infrastructure and holding system	<i>All finfish</i>	<ul style="list-style-type: none"> • Provide technical specifications of containment equipment and infrastructure • Describe installation processes for containment equipment and infrastructure • The design of the structures in place for containment management follow requirements as defined in AMR 15(g)
5.4 Veterinary service provider	<i>All finfish</i>	<ul style="list-style-type: none"> • Provide name of veterinary service provider

Section 6.0: Procedures for Fish Health Management and Containment Management

This section defines the procedures and plans required for meeting compliance requirements common for all operations (as defined by species) to ensure they meet the AMR requirements for Fish Health Management and Containment Management. Topics affecting fish health are often relevant for containment management and vice versa, so that the procedures relevant to these aspects have been combined within this template plan.

Subject	Species	Minimum compliance requirement
6.1 Bird deterrence	<i>All finfish</i>	<ul style="list-style-type: none"> • Bird deterrent strategies described
6.2 Predator management	<i>All finfish</i>	<ul style="list-style-type: none"> • Predator deterrent strategies described
6.3 Equipment maintenance	<i>All finfish</i>	<ul style="list-style-type: none"> • Removal of nets from the water after each production cycle for cleaning, disinfection, and testing • Up to date net inventory records • Up to date net history records • Up to date net testing records • Net biofouling control strategy(ies) described • On-site net repair kit • Net repair procedure described • Up to date net inspection records • Net mesh sizing strategy described • Net changing procedure described • Records to support application of net changing SOP • Minimum weekly bird net inspections • Up to date inspection and history records for bird nets • Biannual mooring and anchor inspection • Up to date inspection and repair records (moorings and anchors) • Biannual grid system inspection • Inspection and repair records (grid system)
6.4 Equipment inspection	<i>All finfish</i>	<ul style="list-style-type: none"> • Weekly surface inspections • Up to date surface inspection records (to include enclosure nets, bird nets, predator nets, moorings and anchors, and grid) • Below-water net inspection (every 60 days) • Up to date below-water net inspection records (to include enclosure nets, predator nets) • Biannual below-water infrastructure inspection • Up to date below-water infrastructure inspection records (to include moorings and anchors, and grid)

Section 6.0: Procedures for Fish Health Management and Containment Management

Subject	Species	Minimum compliance requirement
6.5 Response to a breach of containment	<i>All finfish</i>	<ul style="list-style-type: none"> • Areas of potential impact of a breach described • Procedures to respond to a breach described • Immediate notification of knowledge or suspicion of a breach
6.6 Unusual event and severe weather response	<i>All finfish</i>	<ul style="list-style-type: none"> • Strategy for responding to unusual events described • Strategy for responding to severe weather described
6.7 Biosecurity	<i>All finfish</i>	<ul style="list-style-type: none"> • Wharf usage biosecurity SOP described • Up to date records demonstrating application of wharf usage biosecurity SOP • Cleaning and disinfection standard operating procedures described • Up to date records demonstrating application of cleaning and disinfection SOP • Staff and visitor cleaning and disinfection standard operating procedures described • Up to date records demonstrating application of staff and visitor cleaning and disinfection SOP
6.8 Feeding	<i>All finfish</i>	<ul style="list-style-type: none"> • Structured monthly feeding schedule • Recorded feed consumption and up to date calculated feeding rate records
6.9 Pest management	<i>All finfish</i>	<ul style="list-style-type: none"> • Pest management strategy described • Pest management records
6.10 Waste management	<i>All finfish</i>	<ul style="list-style-type: none"> • Strategy to manage waste described • Blood water and offal containment and treatment strategy that assures the killing or rendering of pathogens of concern inert
6.11 Water quality	<i>All finfish</i>	<ul style="list-style-type: none"> • Up to date daily and monthly water quality monitoring and recording of oxygen and temperature • Described algae monitoring regime and up to date records of algae monitoring according to regime • Strategies for responding to low oxygen, low and high temperatures, and suspected algae effects on fish health described
6.12 Mortality collection	<i>All finfish</i>	<ul style="list-style-type: none"> • Described mortality collection procedures that include all aspects of storage and disposal • Records supporting application of mortality collection SOP • Described mortality collection schedule- a minimum of one mortality dive for each of the stocked cages per week is mandatory • Up to date mortality collection records • Classification of all mortalities • Up to date records of mortality classification

Section 6.0: Procedures for Fish Health Management and Containment Management

Subject	Species	Minimum compliance requirement
6.13 Fish handling	<i>All finfish</i>	<ul style="list-style-type: none"> • Euthanasia method(s) described • Anesthesia method described • List anesthetics • Described mean weight determination procedure • Records supporting application of mean weight determination SOP • Described grading or splitting procedure (if applicable) • Records supporting application of grading or splitting procedure • Described harvesting procedure • Records supporting application of harvesting procedure
6.14 Transport	<i>All finfish</i>	<ul style="list-style-type: none"> • Defined live transport procedure • Certificate of Health for Transfer (COHFT) permit for all live transfers (refer to Section 6.19.5) • All pertinent Federal transfer permits • Records supporting application of live transport procedure • Defined dead fish transport procedure • Fish transport biosecurity procedures described • Records supporting application of fish transport biosecurity procedures
6.15 Broodstock	<i>All finfish</i>	<ul style="list-style-type: none"> • Described method for egg and milt collection • Described egg disinfection procedures • Up to date egg disinfection records • Egg and milt records to identify parentage or batch
6.16 Vaccination	<i>All finfish</i>	<ul style="list-style-type: none"> • Vaccination status described
6.17 Stock treatment	<i>All finfish</i>	<ul style="list-style-type: none"> • Up to date stock treatment records • Reporting of antibiotic use to the Province • Reporting of products to treat sea lice to the Province
6.18 Sea lice management	<i>Atlantic salmon and Rainbow trout</i>	<ul style="list-style-type: none"> • At a minimum, weekly sea lice counts from April 1 to January 15th of each year • Personnel to perform sea lice counts must be trained and records of training kept • Sea lice counts records kept on file and made available for review within 7 days of count • If weekly sea lice count is not complete an explanation for the omission must be recorded in the sea lice count record • Site access for auditors during sea lice counting, if requested • Sea lice treatments applied according to Farm Management Plan (unless deviations from this schedule were approved) • Sea lice treatment plans approved by Chief Aquatic Animal Health Veterinarian • Record of sea lice treatment • Sea lice biosecurity procedures described

Section 6.0: Procedures for Fish Health Management and Containment Management

Subject	Species	Minimum compliance requirement
6.19 Disease surveillance	<i>All finfish</i>	<ul style="list-style-type: none"> • Adherence to and documentation of routine surveillance • Adherence to minimum sampling and testing requirements for fish transfers from a marine site (if applicable) • Adherence to the Health Policy for the Transfer of Live Cultured Fish in Atlantic Canada • Possession of a Certificate of Fish Health for Transfer permit during and post transport • Use of an approved laboratory for testing • Possession of health records for current stock
6.19.9 Mandatory reporting	<i>All finfish</i>	<ul style="list-style-type: none"> • Reporting of provincially reportable diseases • Reporting of mass mortality events • Reporting of significant mortality events of unknown etiology
6.19.10 Managing disease outbreaks	<i>All finfish</i>	<ul style="list-style-type: none"> • Adherence to authority requests during disease outbreak (if applicable) • Adherence to a Quarantine Order (if ordered) • Disease management measures approved by Chief Aquatic Animal Health Veterinarian

Section 7.0: Hazard Assessment for Fish Health Management and Containment Management

This section allows the completion of hazard analyses to define procedures that have critical control points necessary for effective Fish Health and Containment Management. These supplement the procedures described in Section 7 by ensuring that operation specific hazards are accounted for in the FMP.

Subject	Species	Minimum compliance requirement
7.1 Hazard analysis for Fish Health Management	<i>All finfish</i>	<ul style="list-style-type: none"> • A hazard analysis of the production process must be completed for Fish Health Management • Each procedure contained in a Farm Management Plan must include any of the following that apply to with respect to that procedure: <ul style="list-style-type: none"> a) Critical control points b) Critical control limits c) Details about how the procedure is monitored d) Details about corrective actions to be taken
7.2 Hazard analysis for Containment Management	<i>All finfish</i>	<ul style="list-style-type: none"> • A hazard analysis of the production process must be completed for Containment Management • Each procedure contained in a Farm Management Plan must include any of the following that apply to with respect to that procedure: <ul style="list-style-type: none"> a) Critical control points b) Critical control limits c) Details about how the procedure is monitored d) Details about corrective actions to be taken

Section 8.0: Farm Operations

This section describes aspects that demonstrate responsible operation of a marine shellfish operation. The FMP must include information and procedures that are consistent with industry best practices relating to the following:

Subject	Species	Minimum compliance requirement
8.1 Supply storage	<i>All finfish</i>	<ul style="list-style-type: none"> • Strategy for the storage and disposal of fuel described • Strategy for the storage and disposal of lubricants and chemicals described
8.2 Accumulated refuse and decommissioned farm supplies and equipment	<i>All finfish</i>	<ul style="list-style-type: none"> • Strategy to deal with accumulated refuse and decommissioned farm supplies and equipment described • Immediate reporting to NSDFA and DFO regarding equipment dropped to the bottom
8.3 Retrieving loose gear	<i>All finfish</i>	<ul style="list-style-type: none"> • Strategy for retrieval of loose gear or debris described
8.4 Maintaining the site in good order	<i>All finfish</i>	<ul style="list-style-type: none"> • Strategy to maintain the site in good order described
8.5 Noise	<i>All finfish</i>	<ul style="list-style-type: none"> • Strategy to minimize noise disruption described

Section 9.0: Environmental Monitoring

This section defines the procedures and plans required for effective environmental monitoring of a marine finfish operation. A hazard analysis defines those procedures that can be put into place in the event that poor environmental performance is indicated by monitoring.

Subject	Species	Minimum compliance requirement
9.1.2, 9.1.3 Benthic monitoring, Level I	<i>All finfish</i>	<ul style="list-style-type: none"> • Annual Level I benthic monitoring for active sites • Electronic site diagram (kg fish/cage and number and location of proposed monitoring locations) submitted at least two weeks prior to monitoring • Anticipated monitoring date submitted at least two weeks prior to monitoring • Monitoring method submitted at least two weeks prior to monitoring
9.1.4 Benthic monitoring, Level II	<i>All finfish</i>	<ul style="list-style-type: none"> • Level II benthic monitoring for Hypoxic B and Anoxic sites • Electronic site diagram (kg fish/cage and number and location of proposed monitoring stations submitted within one week of monitoring • Monitoring to occur no later than 35 days after the date of the Level I monitoring event
9.1.5 Benthic monitoring, Level III	<i>All finfish</i>	<ul style="list-style-type: none"> • Level III monitoring for sites that consistently fail to meet oxic conditions • Compliance with enhanced monitoring regimen determined by AESMC in discussion with the site operator
9.1.7 Benthic monitoring procedures	<i>All finfish</i>	<ul style="list-style-type: none"> • Procedures for collection of samples for benthic monitoring provided
9.1.8 Video recording	<i>All finfish</i>	<ul style="list-style-type: none"> • Video recording procedures for benthic monitoring provided
9.1.9 Field observations	<i>All finfish</i>	<ul style="list-style-type: none"> • Recording of field observations during benthic monitoring
9.1.10 Analysis of sediment samples	<i>All finfish</i>	<ul style="list-style-type: none"> • List of chemicals and equipment to be used for EMP approved by NSDFA prior to monitoring season • Procedures for sediment sample analysis provided
9.1.11 Benthic monitoring reporting	<i>All finfish</i>	<ul style="list-style-type: none"> • For Level I monitoring, field observations, coordinate table, redox and sulfide analysis results reporting within 14 days of sediment collection • For Level I monitoring, all remaining sample analyses results (porosity and organic matter), video and grab log sheets, and photos and video recordings reporting within 21 days of sediment collection • For Level II monitoring, all reporting must be within 14 days of sample collection

Section 9.0: Environmental Monitoring

Subject	Species	Minimum compliance requirement
9.2 Mitigation plan	<i>All finfish</i>	<ul style="list-style-type: none"> • A hazard analysis of the production process must be completed for Environmental Impact to determine mitigation plan options to address poor environmental performance • Each mitigation procedure must include any of the following that apply to with respect to that procedure: <ol style="list-style-type: none"> a) Critical control points b) Critical control limits c) Details about how the procedure is monitored d) Details about corrective actions to be taken
9.3 Oxic condition remediation, for change from Oxic to Hypoxic A site classification	<i>All finfish</i>	<ul style="list-style-type: none"> • Mitigation plan and timeline for implementation described • Updated mitigation plan described
9.3 Oxic condition remediation, for change to Hypoxic B, or Anoxic site classifications	<i>All finfish</i>	<ul style="list-style-type: none"> • Level II monitoring conducted no later than 35 days after the Level I monitoring event • Results of Level II monitoring submitted no later than 14 days following monitoring • Updated mitigation plan submitted no later than 14 days following Level II monitoring • Compliance with additional directives from NSDFA to reduce environmental impact, if applicable.

Section 10.0: Record Keeping

This summarizes the minimum record keeping requirements for the operation, as determined by compliance requirements, procedures, and critical control points established within the risk analyses.

Subject	Species	Minimum compliance requirement
10.1 Compliance record requirements	<i>All species</i>	<ul style="list-style-type: none"> • Records must be kept to verify adherence to the procedures and to demonstrate that effective action was taken at critical control points, when applicable. • Records must be kept for at least seven years from the date the record is created or updated • Records must be available when requested

Section 13.0: Record of Amendments

Once the FMP is approved, records must be kept by the aquaculture licence holder of any amendments to the FMP.

Subject	Species	Minimum compliance requirement
13.0 Record of Amendments	<i>All species</i>	<ul style="list-style-type: none"> • Records must be kept of any amendments to the FMP

TAB C

NSARB-2025-001

This is Exhibit "C" referred to in the
Affidavit of Jessica Feindel
affirmed before me by videoconference
on February 17, 2026.



Signature
CAITLIN MENCZEL-O'NEILL
A Barrister of the Supreme Court of Nova Scotia

**ENVIRONMENTAL MONITORING
PROGRAM FRAMEWORK FOR MARINE
AQUACULTURE IN NOVA SCOTIA**



Fisheries and Aquaculture

July 2021

TABLE OF CONTENTS

1. INTRODUCTION	1
2. ENVIRONMENTAL MANAGEMENT FRAMEWORK.....	3
2.1. Monitoring Principles	3
2.2. Station and Site Classifications.....	4
2.2.1. Determination of Monitoring Station Type	4
2.2.2. Environmental Indicators and Definitions.....	4
2.2.2.1. Soft Bottom Environmental Indicators	6
2.2.2.2. Hard Bottom Environmental Indicators.....	7
2.2.3. Environmental Performance Classification of Sites	7
2.2.3.1. Predominantly Soft Bottom Sites.....	7
2.2.3.2. Predominantly Hard Bottom Sites	8
2.2.3.3. Mixed Bottom Sites	8
2.3. Levels of Monitoring	8
3. SITE MANAGEMENT RESPONSES.....	10
3.1. Oxic Site Responses.....	10
3.2. Hypoxic A Site Responses.....	10
3.3. Hypoxic B Site Responses	10
3.4. Anoxic Site Responses.....	11
3.5. Mitigation plans	11
4. COMMITTEES FOR REGULATION AND DEVELOPMENT OF ENVIRONMENTAL MANAGEMENT OUTCOMES.....	12
5. ANNUAL SCHEDULES	13
6. AUDITING AND REPORTING	15
APPENDIX A: ASSOCIATED BEST MANAGEMENT PRACTICES FOR MARINE FINFISH AQUACULTURE - PROVIDED BY AQUACULTURE ASSOCIATION OF NOVA SCOTIA (AANS).....	16
APPENDIX B: EXAMPLES OF MITIGATION PLANS AND SUBMISSIONS	19
LIST OF REFERENCES.....	22

Environmental Monitoring Program Framework for Marine Aquaculture in Nova Scotia

1. INTRODUCTION

The Nova Scotia Aquaculture Environmental Monitoring Program (EMP) began in the fall of 2002 when the Aquaculture Association of Nova Scotia (AANS) produced a draft plan recommending that the Province implement and regulate an EMP for the marine aquaculture industry. This draft plan originated from the document *Design of the Environmental Monitoring Program for the Marine Aquaculture Industry in Nova Scotia* (Smith et al., 2002). The Aquaculture Division of the Nova Scotia Department of Fisheries & Aquaculture (NSDFA) accepted the lead role and began implementing the EMP.

The EMP examines the relationship between an aquaculture operation and the surrounding benthic marine environment. Environmental monitoring takes place at stations located directly within the lease boundaries and at a reference station(s) that is located outside of the lease boundaries.

The EMP applies to all active and inactive, marine finfish and shellfish aquaculture leases in Nova Scotia. As of March 2021, there were a total of 206 licensed marine aquaculture sites in Nova Scotia (164 shellfish, 35 finfish, and 7 shellfish/marine plant sites). Species grown at marine aquaculture leases in Nova Scotia include: salmon, trout, mussels, scallops, clams, quahogs and oysters.

The regulatory provisions for the EMP are referenced in the Aquaculture Management Regulations (S.10-11 and S.30-32) created pursuant to the Fisheries and Coastal Resources Act (S.64). Each operator is responsible to include all information and procedures related to the EMP in their site-specific Farm Management Plan. In addition, a Memorandum of Understanding (MOU) has been signed by both the NSDFA and Fisheries and Oceans Canada (DFO) stating responsibilities of each party:

"The Parties will co-operate in the development of an industry wide environmental effects monitoring program. Nova Scotia will be responsible for the implementation of the environmental effects monitoring program and the implementation of a follow-up program, where applicable, and will report to Canada in a manner that is mutually agreeable to the Parties."

The EMP uses a risk-based approach to monitoring that recognizes that increased risk requires increased monitoring. This risk-based approach is based on almost two decades of empirical data that has been collected across the spectrum of Nova Scotia aquaculture activities and environmental conditions. This approach can be consistently applied to the diverse nature of the aquaculture industry in the province. The dataset includes a variety of environmental indicators and variables to define environmental performance. Over time these site-specific datasets can be used to identify how each aquaculture lease interacts with the surrounding marine benthic environment.

All marine aquaculture leases that currently have production are assessed as part of the EMP. Active marine finfish sites are required to conduct monitoring at least once annually. Additional monitoring, remediation and mitigative actions may be required based on results from annual

monitoring. Active shellfish sites may be required to conduct monitoring if deemed necessary by NSDFA or DFO. It should be recognized that shellfish culture is different with respect to environmental interactions, and that the monitoring and management practices reflect this difference.

Environmental monitoring is a critical part of the management of a marine resource industry. NSDFA believes that the growing body of data that has been and will continue to be collected, helps to ensure that the aquaculture industry in Nova Scotia remains environmentally sustainable.

This document is designed as a companion paper to the *Standard Operating Procedures for the Environmental Monitoring of Marine Aquaculture in Nova Scotia* (NS EMP SOP; PNS 2021B). These documents are intended to be used as a framework and protocol for environmental monitoring of the Nova Scotia aquaculture industry. These documents will be reviewed and adjusted as needed.

The objective of this document is to detail key components of the NS EMP. These are:

- **Environmental Management Framework** – this section describes the rationale for the regulatory framework and determining appropriate levels of monitoring;
- **Site Management Responses** – this section describes site management responses based on the environmental quality classification reported from a sample location with reference to industry Best Management Practices (BMP);
- **Committees for Regulation and Development of Environmental Management Outcomes** – this section describes the role and responsibilities of the committee to make recommendations on the conduct of the EMP;
- **Annual Schedules** – this section describes the timing deadlines for monitoring and mitigation; and
- **Auditing and Reporting** – this section describes the types of auditing that will be performed by NSDFA as well as the reporting requirements for Industry self-monitoring.

2. ENVIRONMENTAL MANAGEMENT FRAMEWORK

The NS EMP lays out a series of principles and criteria to guide the management process and to determine the level of monitoring required for each aquaculture lease. Depending on the monitoring results, the EMP also provides guidance on the level of mitigation required for an aquaculture lease.

2.1. Monitoring Principles

The information obtained from the monitoring program is valuable both to government regulators and the aquaculture industry. Monitoring is carried out to:

- Ensure compliance with conditions of a site approval;
- Ensure environmental quality objectives (EQOs) and other standards are met;
- Assess the effects of an operation on the environment;
- Verify and validate mathematical models (if any);
- Determine mitigative action to be taken (if any); and
- Audit the results of self-monitoring.

One of the primary concerns regarding a marine aquaculture operation is the potential for negative impact on the surrounding marine benthic environment through organic loading. Significant organic deposition can result in increased Biological Oxygen Demand (BOD) in benthic sediments. If BOD is greater than the incoming supply of oxygen, hypoxic or anoxic sediment conditions will result, potentially impacting localized fish habitat and decreasing the abundance and diversity of macrofauna populations.

The EMP aims to monitor such impacts in benthic communities through both geochemical analysis of sediments and the assessment of visual indicators of hypoxic conditions. These assessments are used to classify the environmental performance of an aquaculture lease based on established relationships between the collected parameters and benthic community health. In instances where site classification indicates compromised benthic conditions as a result of organic loading, the EMP dictates increasing levels of monitoring to improve understanding of the scope and severity of the impacts as well as mandatory management responses to be undertaken by the facility operator.

The primary EQO for the marine environment where an aquaculture operation occurs is to maintain oxic sediment conditions. If oxic sediment conditions cannot be maintained within a lease, operators must comply with the regulatory process that identifies steps required to improve onsite environmental conditions.

2.2. Station and Site Classifications

In July of 2015, the Aquaculture Activities Regulations (AARs) were introduced by the Department of Fisheries and Oceans Canada (DFO), resulting in the creation of federal monitoring requirements which aquaculture site operators must comply with in addition to the provincial program. The AAR's inclusion of assessment requirements for stations where sediments can not be collected has since led to the incorporation of similar considerations within the Nova Scotia Environmental Monitoring Program for assessing and classifying stations and leases (AAR 2021). While previous iterations of the EMP relied solely on measurements of sediment sulfide ion concentration to determine environmental impacts, the inclusion of hard bottom monitoring methodologies has required the consideration of additional benthic health indicators and classification metrics for the assessment of the environmental performance of aquaculture operations.

2.2.1. Determination of Monitoring Station Type

All monitoring events conducted under the Environmental Monitoring Program consist of the assessment of a series of individual monitoring stations. The means by which these stations are assessed and how the results are used in the classification of the environmental performance of an aquaculture lease as a whole is dependant on the representative bottom types present. Within the context of the EMP, monitoring stations can be considered hard bottom or soft bottom stations. A monitoring location is considered to be a soft bottom station only when a sufficient number of sediment samples can be collected which satisfy the methodology and quality criteria presented in Section 5 of the NS EMP SOP (PNS 2021B). Where the composition or consolidation of the benthic substrate is such that sufficient, acceptable samples can not be collected, a monitoring location will be considered a hard bottom station for the purposes of that monitoring event.

2.2.2. Environmental Indicators and Definitions

The NS EMP focuses on benthic marine habitat directly underneath the aquaculture site. The objectives of the environmental parameters assessed for soft and hard bottom stations are to:

- Maximize habitat information by providing scientific confidence in the parameters and methods of monitoring and analysis used to describe changes to the benthic community structure;
- Provide long-term record of habitat quality with variables that are sensitive to the potential organic enrichment effects of aquaculture;
- Provide repeatability and consistency in monitoring and analysis;
- Provide clear specification of spatial and temporal bounds; and
- Optimize logistics and field efforts while ensuring cost effectiveness.

Several additional, well-established, environmental indicators allow for the classification of sediment conditions into oxic, hypoxic and anoxic categories based on the following Environmental Quality Definitions (EQD). These indicators may be used, in addition to environmental performance classification metrics (Section 2.2.3) in determining specific site management response requirements resulting from the monitoring and classification of aquaculture leases.

Table 1. Environmental Quality Definitions

Measurement	Sediment Classification		
	Oxic	Hypoxic	Anoxic
Sediment colour	Tan to depth > 0.5 cm	Tan to < 0.5 cm with some black sediments at surface	Surface sediments black
Microbial presence	No <i>Beggiatoa</i> -like bacteria present	Patchy <i>Beggiatoa</i> -like bacteria	Widespread <i>Beggiatoa</i> -like bacterial mats
Macrofaunal Assemblage	Wide array of infauna and epifauna	Mixed group of mostly small infauna	Small infauna only
Sulfide, μM	≤ 749 (A) 750 to 1499 (B)	1500 to 2999 (A) 3000 to 5999 (B)	≥ 6000
Redox (Eh), mV_{NHE}	>100 (A) 100 to -50 (B)	-50 to -100 (A) -100 to -150 (B)	< -150
Organic matter, %	\leq reference*	1.5 to 2X ref.	> 2X reference
Porosity, %	\leq reference*	1 to 10X ref.	> 10X reference

Modified from the *Design of the Environmental Monitoring Program for the Marine Aquaculture Industry in Nova Scotia* (Smith et al 2002) and *Towards a Classification of Organic Enrichment in Marine Aquaculture* (Hargrave et al. 2008a)

2.2.2.1. Soft Bottom Environmental Indicators

The primary environmental indicator used to assess the benthic health at a soft bottom monitoring station is the mean concentration of free sulfide in the sediment. The use of mean sediment sulfide to classify the environmental quality of a soft bottom aquaculture station or lease is based on recommendations made by Wildish et al. (1999) in the paper, *A recommended method for monitoring sediments to detect organic enrichment from mariculture in the Bay of Fundy*. Sediment is generally considered to be hypoxic when sulfide levels reach 1500 micromoles per litre (μM).

Additional environmental indicators are assessed at soft bottom stations as a means of validating mean sediment sulfide results. These include oxidation-reduction potential (redox), porosity and organic matter prevalence in sediment. These indicators are incorporated into the calculation of a Benthic Enrichment Index (BEI), which provides a multi-variate measure of sediment organic enrichment. The index is correlated with total 'free' sulfides and biological indicators such as macrofauna biodiversity indices that can be altered by increased organic matter sedimentation, and the formation of hypoxic or anoxic conditions in sediment. It serves as an internal check by applying more than one method for quality control in monitoring programs using geochemical methods to measure benthic organic enrichment (Hargrave 1994, Shaw 1998, Holmer et al. 2005, Hargrave et al. 2008a, b). The index can, therefore, be used to verify the degree of benthic organic enrichment in marine sediment based on measures of sulfide (Hargrave, 2009).

Comparison of the relative sensitivity of variables for detecting sediment organic enrichment due to aquaculture, has shown that porosity and organic matter are not as good indicators of differences between farm and reference sites as redox. However, when combined with measures of redox to calculate the BEI, detection of differences between farm and reference site sediments using BEI, approaches levels obtained using sulfide (Hargrave et al., 1997).

Measurements of porosity and organic matter therefore serve more than one purpose. Primarily, these parameters allow inference of sediment texture to ensure that the depositional-erosional characteristics at farm and reference sites are comparable. In addition, they provide an internal check on data quality. Sediments with high porosity typically have higher levels of organic content. Over time, as data is collected from the same location, a database can be developed to identify temporal trends in organic matter to be detected independent of the effect of grain size inferred from porosity measurements. Finally, porosity must be known if the absolute mass of organic matter in surface sediments is to be calculated on a dry weight basis (Hargrave 2009). This is required not only for comparisons of organic matter in sediments from farm and reference locations, but to ensure that organic content inventories are being compared on the same basis between locations where porosity differs (Hargrave 2009).

Sulfate reduction and the production of sulfide are closely related to redox potential. While the relationship weakens somewhat for oxic sediments, redox acts as a quality control measure for sulfide measurements and vice versa (Grant 2010).

Detailed instruction for collecting and analyzing sediment and video for the assessment of soft bottom environmental indicators can be found within the NS EMP SOP (PNS 2021B).

2.2.2.2. Hard Bottom Environmental Indicators

The inability to collect sufficient acceptable sediment samples characterizes a monitoring station as hard bottom. For hard bottom stations, the primary environmental indicators used to assess benthic health result from visual observation of the seafloor at and nearby the monitoring station. The three (3) hard-bottom environmental indicators include: the abundance of *Beggiatoa*-like bacterial species, opportunistic polychaete complexes, and barrenness. The decision to use these indicators to assess the benthic health of hard bottom stations is based on recommendations made by DFO.

Methodology for assessing these indicators is explained by the Aquaculture Activity Regulations (AAR 2021) and supporting documents, found on DFO's website ([Aquaculture Activities Regulations \(dfo-mpo.gc.ca\)](https://www.dfo-mpo.gc.ca/aquaculture-activities-regulations-dfo-mpo.gc.ca)) and in the NS EMP SOP (PNS 2021B) document, found on NSDFA's website ([Aquaculture Management - Government of Nova Scotia, Canada](https://www.nsdfa.ca/aquaculture-management-government-of-nova-scotia-canada)).

2.2.3. Environmental Performance Classification of Sites

The metrics by which an aquaculture site's environmental performance is classified will depend on the proportion of monitoring stations which are determined to be soft and hard bottom during a given monitoring event. The Environmental Performance Classification of an aquaculture lease resulting from an annual Level I monitoring event will determine the required site management response, if any (Section 3). If an analytical or independent audit is conducted on a monitoring event, the results indicating a higher level of impact will be used to determine site management responses.

2.2.3.1. Predominantly Soft Bottom Sites

At sites where 75% or more of non-reference monitoring stations are determined to be soft bottom, the site's environmental performance classification will be determined using the mean sulfide ion concentration of sediment samples collected from these stations (Table 2). Monitoring locations which are determined to be soft bottom stations are subject to monitoring as described in the NS EMP SOP (PNS 2021B).

Table 2. Environmental performance classification levels and associated mean sediment sulfide concentrations for predominantly soft bottom sites

Site Classification	Sediment Sulfide Concentrations
Oxic A	≤ 749 µM
Oxic B	750 - 1499 µM
Hypoxic A	1500 - 2999 µM
Hypoxic B	3000 - 5999 µM
Anoxic	≥ 6000 µM

2.2.3.2. Predominantly Hard Bottom Sites

At sites where less than 25% of non-reference monitoring stations are determined to be soft bottom, the site's environmental performance classification will be determined using the proportion of stations which pass or fail visual assessment of benthic impacts. Monitoring locations which are determined to be hard bottom stations are subject to spatially expanded visual assessments consisting of multiple video collection locations, as described in the EMP SOP Section 4.2.2. If during these assessments, evidence of hard bottom indicators (Section 2.2.2.2) are observed at 70% or more of the video collection locations along a video transect, the monitoring station will be considered as having failed to meet the Environmental Quality Objectives of the EMP (PNS 2021B). If the number of stations which pass this visual assessment is greater than the number of stations which fail, the site will be classified as having passed. If the number of stations which fail is greater than or equal to the number of stations which pass this visual inspection, the site will be classified as having failed.

2.2.3.3. Mixed Bottom Sites

At sites where the number of stations determined to be soft bottom is between 25% and 74%, environmental performance classification will be determined using a combination of average sulfide ion concentrations from soft bottom stations and visual assessment results from hard bottom stations. Monitoring locations which have been determined to be hard bottom stations will be assessed as having passed or failed visual assessment, as described in Section 2.2.3.2. Soft bottom stations will be considered as having passed or failed based on the mean sulfide ion concentration of sediments collected from that monitoring location. Where mean sulfide concentrations are found to be $\geq 3,000 \mu\text{M}$, the station will be considered as having failed. If the number of stations which pass is greater than the number of stations which fail, the site will be classified as having passed. If the number of stations which fail is greater than or equal to the number of stations which pass, the site will be classified as having failed.

2.3. Levels of Monitoring

A risk-based approach is required to address the variety of potential impacts on the marine benthic environment. The risk-based approach is based on the interaction of site conditions, culture methods and culture intensities that vary greatly among finfish and shellfish marine aquaculture operations in Nova Scotia. Sites are subject to baseline environmental monitoring. For more information on baseline requirements, please refer to Section 2 of the NS EMP SOP (PNS 2021B).

Up to three levels of monitoring events may be required in the annual assessment of a given aquaculture lease. Detailed methodology for conducting the required monitoring associated with each of these events is presented in the NS EMP SOP (PNS 2021B).

Level I –Level I monitoring is required annually on all active finfish sites. The site is classified on the results from the Level I monitoring unless further monitoring is required. Level I monitoring procedures are described in the NS EMP SOP (PNS 2021B).

Level II – Additional monitoring is required when the results of annual Level I monitoring classify a lease as Hypoxic B, Anoxic, having failed based on the mixed or hard bottom classification, , or as determined to be required through an audit. (Section 2.2.3). The additional information gathered during a Level II monitoring event is used to better define the outer limits of the affected area and

more effectively define the zone of influence. Level II monitoring procedures are described in the NS EMP SOP (PNS 2021B).

Level III – Monitoring is required when a site consistently fails to meet oxia conditions, when the results of annual Level I monitoring classify a lease as Anoxic or otherwise severely impacted, or at the discretion of NSDFA. This monitoring is used to capture seasonal variation on a lease and is used to closely monitor affected areas within the lease boundaries through increased temporal monitoring intensity. Additional requirements may be imposed at the discretion of NSDFA in order to better assess the environmental impacts and ongoing sustainability of an aquaculture operation. These may include, but are not limited to:

- The addition of more monitoring stations;
- The addition of seasonal monitoring events;
- Sediment profiling;
- Collection of oceanographic data, such as current profiles;
- Development of oceanographic models (e.g. flushing, carrying capacity, depositional); and/or
- Collection of additional water quality parameters.

Details and specific conditions of all follow-up monitoring are to be determined by NSDFA and DFO in discussion with the operator.

3. SITE MANAGEMENT RESPONSES

In order to meet the EQO of oxic sediment conditions, it is important to define a suite of measures that could be implemented to achieve the goal. These measures include BMP that are determined by industry and are deemed to be effective in mitigating potential environmental effects. If, after monitoring, there is evidence of organic enrichment on the site, then enhanced BMP's are to be implemented on the lease.

Potential site mitigation responses, as outlined in Appendix B of this document, will be based on results of annual Level I monitoring events, or results from an audit. Other parameters and information, such as redox, porosity, organic matter and video/visual observations will continue to be included as part of the weight-of-evidence approach for the overall site assessment and classification. These other parameters will aid in determining cause-effect relationships and appropriate management responses.

The following are management responses based on site classification of marine finfish aquaculture sites in Nova Scotia. Responses within the shellfish sector will be similar but more prescribed to the differences between shellfish and finfish growing operations (infrastructure, growing environments, etc.).

3.1. Oxic Site Responses

Sites classified as Oxic A or Oxic B are considered to have low environmental effects on the marine sediments. The operator will continue to follow the site's operational BMP's and will continue to complete annual Level I monitoring. If a site remains 100% oxic for two production cycles, and there is no significant stocking increase, they may apply to conduct EMP monitoring every 2 years instead of annually.

3.2. Hypoxic A Site Responses

Sites classified as Hypoxic A, or sites indicating audit results with a site sulfide mean between 1500-2999 μM , may be causing adverse environmental effects on marine sediments. In addition to following the sites BMP's for the lease, the operator will submit an updated mitigation plan to NSDFA for approval and must identify which predetermined risk control plans from their Farm Management Plan (FMP) are appropriate to address the sub-optimal environmental performance. The updated mitigation plan must be implemented in a timeframe determined by the Minister. The operator will be required to conduct Level I monitoring for the next monitoring season.

3.3. Hypoxic B Site Responses

Sites classified as Hypoxic B, or sites indicating audit results with a site sulfide mean between 3000-5999 μM , are likely causing adverse environmental effects on the marine sediments. Level II monitoring will be required at sites receiving this classification or as required due to audit results. In addition to following operational BMP's, the operator must submit an updated mitigation plan to NSDFA for approval and must identify which predetermined risk control plans from their FMP are appropriate to address the lease's poor environmental performance. The updated mitigation plan must be implemented in a timeframe determined by the Minister. The operator must also provide a strong rationale for maintaining or increasing production levels.

3.4. Anoxic Site Responses

Sites classified as Anoxic, or sites indicating audit results with a site sulfide mean $\geq 6000 \mu\text{M}$, are considered to be causing adverse environmental effects on the surrounding marine sediments. Large portions of the site are likely affected due to the excessive accumulation of organic material. The operator must conduct both Level II and Level III monitoring on the site. The operator will work closely with regulators to resolve the situation. In addition to following the sites BMP's for the lease, the operator will submit an updated mitigation plan to NSDFA for approval and must identify which predetermined risk control plans from their Farm Management Plan (FMP) are appropriate to address the sub-optimal environmental performance. The updated mitigation plan must be implemented in a timeframe determined by the Minister.

3.5. Mitigation plans

When poor environmental performance (Hypoxic A, B, Anoxic, or Fail) has been determined through a Level I monitoring event (or an audit), the aquaculture operator must implement appropriate enhanced mitigation strategies. All enhanced mitigation measures to be implemented on an aquaculture lease must be submitted to NSDFA within **14 days** of receiving a **Hypoxic A site classification, within 14 days of a Level II monitoring event for Hypoxic B or Anoxic site classification, if the site is classified with a "fail" under the mixed and hard bottom protocol, or as required by NSDFA due to audit results.** The mitigation plan must specify the timelines in which the mitigation measures will be implemented and explain how the measures will reduce any environmental impacts caused by the operation, in addition to how each measure will be monitored to prevent recurrence. Additionally, the known production history of the site along with historical EMP performance and site characteristics will be important in determining mitigation and must be incorporated into an operator's updated mitigation plan.

Appendix A highlights the standard BMPs that all marine aquaculture operators are expected to implement as part of their daily operations. In addition to these BMPs, aquaculture operators are also required to determine enhanced mitigation strategies that can be implemented on a lease when poor environmental performance has been identified. Examples of enhanced mitigation measures that can be implemented by the operator when poor environmental performance has been identified are detailed in Appendix B. If the operator identifies that the recommended enhanced mitigation measures listed below are unsuitable for addressing the cause of the environmental impact(s), alternative mitigation strategies may be submitted. These alternate mitigation strategies must be approved by NSDFA prior to implementation.

4. COMMITTEES FOR REGULATION AND DEVELOPMENT OF ENVIRONMENTAL MANAGEMENT OUTCOMES

On an ongoing basis NSDFA consults with the Nova Scotia Aquaculture Environmental Coordinating Committee (NSAECC) which is co-chaired by NSDFA and DFO through the Canada-Nova Scotia MOU.

The NSAECC will provide a mechanism for both industry and regulators to provide input into the NS EMP processes. Any program revisions will be vetted through this committee. It has representatives from all aquaculture related regulatory agencies such as NSDFA, DFO, and representatives of the finfish and shellfish industry through the AANS. This body has no regulatory authority to make site specific decisions but is a means of exchanging ideas and making recommendations on the conduct of the EMP.

Under the MOU, NSDFA also takes the lead role in the management of the NS EMP through a Nova Scotia Aquaculture Environmental Site Management Committee (NSAESMC) which is co-chaired by NSDFA and DFO.

The NSAESMC provides a review on site-specific results of the NS EMP. This committee interprets the results of the NS EMP monitoring events and provides site-specific recommendations for any remedial action required. This approach provides a method of integrating the regulatory requirements of both agencies with respect to environmental management.

In summary:

- NSDFA and DFO co-chair the NSAECC;
- NSAECC has representation from NSDFA, Nova Scotia Environment and Climate Change (NSECC), DFO, AANS and other provincial and federal government agencies, as needed;
- NSAECC will be the advisory body and forum for information exchange with Industry on EMP matters;
- NSAESMC will be co-chaired by NSDFA and DFO. The committee will review EMP data and make remediation/mitigation recommendations based on EQOs and a risk-based approach; and
- NSDFA will perform the lead role on EMP management and will perform the audit function of the EMP, however regulators on the NSAESMC can make any determinations and actions on their own based on their respective legislation and regulations.

5. ANNUAL SCHEDULES

The optimal time for conducting environmental monitoring on a lease is when feeding and waste production (i.e., organic deposition) are at a peak for both marine finfish and shellfish operations. It is also important to complete monitoring when seasonal storm potential is limited.

Annual Level I monitoring of Nova Scotia marine aquaculture sites will be conducted from July 1st to October 31st. Level II monitoring will also be conducted between July 1st to October 31st. Dependent on when Level I monitoring occurs, Level II monitoring can also take place during the month of November. Level III monitoring will occur between March 1st and May 31st when the weather permits and prior to restocking a site with fish. Site operators are expected to comply with the schedules in Table 3 for the submission of data, materials, and, if necessary, updated mitigation plans. Only complete, final copies of reports, results, coordinates, log sheets and video are to be submitted. An electronic copy of the monitoring event and corresponding video files can be sent to Aquaculture Operations via the secure file transfer system upon request. Requests can be made by email to EMPSupervisor@novascotia.ca.

OR

A physical copy of the monitoring event and video files can be sent to the attention of Aquaculture Operations at the following mailing address:

Aquaculture Operations
Nova Scotia Department of Fisheries and Aquaculture, Aquaculture Division
1575 Lake Road
Shelburne, Nova Scotia
B0T 1W0

Incomplete reports and partial submissions are considered late. Any delays to these timelines require approval by the EMP Supervisor via email or telephone (902-875-7436).

The deadlines for each type of monitoring and mitigation response are as follows:

Table 3. Monitoring Deadlines for the Operator and NSDFA

Requirement	Deadline for Industry	Deadline for NSDFA
Annual Level I EMP Monitoring	Must be completed between July 1st to October 31st	
All submissions for Level I monitoring event	Must be submitted within 14 days of the completion of Level I monitoring event.	
Level I Follow-up (Site Classification and QA/QC Audit Results)		Letter provided within 28 days of Level I monitoring
Updated Mitigation Plan	Hypoxic A classification or as required due to audit results: updated mitigation plan must be submitted 14 days after site classification notification.	Response provided to Industry within 14 days of receipt of updated mitigation plan
Level II monitoring (Hypoxic B, Anoxic site classification, or as required due to audit results)	Must be completed within 35 days of the Level I monitoring event.	
Updated Mitigation Plan and all submissions for Level II monitoring event	Must be submitted within 14 days of the completion of the Level II monitoring event.	
Level II Monitoring Follow-up (final site classification, mitigation plan status)		Letter provided within 28 days of Level II monitoring
Level III EMP Monitoring	Must be completed between March 1st and May 31st of the following year and prior to stocking the site.	
All submissions for Level III monitoring event	Must be submitted within 14 days of the completion of the Level III monitoring event.	
Level III Follow-up (QA/QC Audit Results)		Letter provided within 28 days of Level III monitoring

6. AUDITING AND REPORTING

Auditing will be conducted by NSDFA on an annual basis. All monitoring events (I, II and III) are eligible to be assessed via a NSDFA audit. The purpose of an audit is to ensure that the information submitted to NSDFA is accurate, consistent, and reliable. Access to accurate, consistent and reliable data ensures that government agencies and operators make sound management decisions. Audits are also used to ensure that the proper monitoring methodology is being followed. Detailed information regarding audit types and determination can be found within the Environmental Monitoring Program Audit Policy for Marine Aquaculture in Nova Scotia (PNS 2021A).

The principles of transparency and collaboration are tenets of responsible environmental management and described in the original 2002 EMP document (Smith et al. 2002); therefore, one goal of the NS EMP is to release information regarding the monitoring results to the public. NS EMP monitoring results can be accessed through the province's open data portal: <https://data.novascotia.ca/>.

APPENDIX A: Associated Best Management Practices for Marine Finfish Aquaculture - provided by Aquaculture Association of Nova Scotia (AANS)

These Best Management Practices are extracted from the New Brunswick Environmental Management Program for the Marine Finfish Cage Aquaculture Industry in New Brunswick (July 2006) as requested by industry representatives within the AANS.

The following Operational Best Management Practices are designed to minimize the organic and inorganic loading from marine finfish cage aquaculture sites and are a requirement of all marine finfish cage aquaculture operators.

Waste Management

- Cage site operators are required to develop and comply with site-specific waste management plans as required by provincial and federal regulators. The aim of the plan is to ensure proper disposal of all waste materials generated at the facility. Categories of waste include, but are not limited to operational debris, hazardous waste, human waste, bio-fouling, fish mortalities, fish feed, waste products from harvesting, etc.

Record Keeping and Reporting

- Marine finfish cage aquaculture site operators are required to maintain production records and report information as required by provincial and federal regulators; and
- Environmental monitoring data will be reported to NSDFA within timelines set out above in *Section 5: Annual Schedules*.

Equipment Cleaning (nets, cages, mooring, and other equipment)

- It is recommended that no net washing be conducted on-site, and that farmers monitor nets for biofouling organisms during routine mortality dives;
- In some circumstances, maintenance washing of lightly fouled nets still attached to cage structures is allowed on-site. However once nets are removed, they must be brought to shore for cleaning;
- Washing of lightly fouled equipment or nets with washing systems at the site will be conducted only under conditions that maximize dispersal of the dislodged materials away from the site and neighboring sites (e.g. strongest currents);
- Nets will be replaced at least at the beginning of each production cycle, and more often as required;
- No nets or other equipment shall be dropped to the bottom for the purpose of storage or cleaning. In the event of emergency circumstances such as worker safety or fish survival, any nets or equipment dropped to the bottom must be within lease boundaries and must be reported to NSDFA and DFO immediately; and
- Sites classified as Hypoxic B or Anoxic will not conduct any on-site net cleaning.

Equipment Disinfection (nets, cages, mooring, and other equipment)

- Steam is the only disinfectant to be used on-site to clean cages and equipment;
- The cages will be cleaned on the aquaculture site prior to transport to the off-site location where the disinfection will take place;
- Only the following disinfecting agents will be used to clean cages at a location other than on the aquaculture site: steam, chlorine-based solutions, iodophor-based solutions, and hydrogen peroxide-based solutions;
- Environment Canada (EC) has suggested maximum discharge concentrations for each of the indicated disinfectants so that runoff from the disinfection process should not be deleterious to fish. The release of disinfectant solutions to waters frequented by fish could be considered a violation of Section 36(3) of the federal *Fisheries Act* at concentrations above the following maximum values:
 - Chlorine = 0.02 ppm
 - Iodine = 0.1 ppm
 - Hydrogen peroxide = 0.5 ppm
- During disinfection, the disinfectants will be stored such that any spill is contained and not released into the environment. All reasonable precaution will be taken to avoid releases due to spills;
- Disinfection of cages will only take place during sunny days, especially with chlorine-based solutions. Bright sunshine will aid in decreasing the concentration of chlorine and speed up the evaporation of other disinfectant solutions;
- Care will be taken to ensure that disinfectant is not applied in excess. Direct discharge of disinfectants other than steam to waters of the province, including marine waters, is a violation of Section 36(3) of the federal *Fisheries Act*
- Disinfectant solutions will be directed only at cage structures, with care taken to avoid over-spraying onto the beach;
- Ample drying time will be allotted to ensure that all disinfectant has completely dried prior to inundation with the next high tide;
- The disinfection of the cages will be spread out over a number of days to reduce the potential for impacts from the disinfectant residues;
- Disinfectant storage will occur in an area not in danger of being inundated by tidal waters or any other water source; and
- To whatever extent possible, disinfection events will be coordinated with other growers within the same bay/harbour to spread it out over time and space.

Feed Handling and Storage

- Site staff and feed delivery personnel will take all reasonable precautions to reduce spills during delivery of feed to the site;
- Should a spill of feed occur, immediate cleanup is required to minimize the loss of feed into the ocean;
- Accurate records will be maintained detailing the amount of feed delivered to the site, stored at the site, fed to the fish, spilled and/or returned unused to the manufacturer. These records will provide a mass balance of feed use at the site;
- The amount of feed on site at any one time will be limited to an amount that can be safely and properly stored at the site;

- Feed will be stored, as much as practically possible, at the site in covered areas including hoppers, bins, or buildings so that spills and spoilage are minimized;
- Bags or open containers of feed will not be left exposed or uncovered at the site; and
- Any feed that is unusable will be removed from the site as new feed is delivered and disposed of at an approved site.

Feeding Practices

- Amounts of feed given to stock will be based on biomass contained in the pen and environmental conditions present;
- Feeding will be reduced or stopped if conditions such as low temperature, low dissolved oxygen, high tide currents, or heavy weather suggest that utilization of feed by the stock will be affected;
- Site staff will monitor all feeding operations at the facility. Feeding equipment must be regularly monitored during operations. Staff will closely observe fish feeding behavior;
- The use of underwater video cameras to monitor the feeding activity is recommended for all sites and will be used when available or when required;
- Feeding rates should be reduced or stopped when staff observes changes in fish activity indicating a reduction in appetite and/or if uneaten feed is detected passing through the bottom of the cage nets;
- Feeding will be temporarily reduced or suspended at times of strong currents flowing through the net pens that impact the ability of the fish to efficiently eat the feed;
- Hand feeding will be conducted in a manner to ensure an even distribution and reduce the amount of waste feed. Feeding will be slowed or paused if staff observes a reduction in feeding activity;
- Feeding performed with feed blowers will be conducted in a manner to ensure minimum loss of uneaten fish feed. Feeding will be slowed or paused if staff observes a reduction in feeding activity;
- Feeding equipment must be properly maintained to minimize crushing of the feed pellets which can result in fine feed dust that will not be eaten by the fish. The operator must establish a schedule for the regular maintenance of mechanical feed blowers;
- Mechanical feed blower nozzles must be carefully aimed and controlled to ensure that the feed is being evenly distributed across the surface of the net pen and that no feed is missing the net pen entirely;
- Computer-controlled feeding systems require that a qualified operator be on duty at all times when feed is being administered;
- Detailed records will be maintained for each cage of feed type and amount, fish numbers, total fish biomass, water temperature, and growth rates to ensure optimal feed conversion rates are being achieved at the site, minimizing feed losses;
- Feeding of moist feed will be conducted slowly to ensure that the fish have adequate time to consume the feed being distributed in the net pens;
- Feeding will be timed to coincide with the times of the day that the fish are eating well.
- Continual evaluation of the size of the pellets being used to feed the fish to ensure that the proper size pellets are being utilized; and
- All staff must be trained in the above practices. Detailed records of training must be maintained for each employee including training received and dates of training.

APPENDIX B: Examples of Mitigation Plans and Submissions

Environmental Impact: Stocking of Cages

Overstocking of the site or specific areas within the site, can lead to increased organic loading on certain parts of the site.

Enhanced Mitigation Measures

- A cage stocking strategy that helps to ensure oxic conditions based on the results of the environmental monitoring;
- Adjustment of the on-site cage stocking levels based on the environmental monitoring results; and
- Adjustment of the cage position based on the environmental monitoring results.
- How this will be monitored to prevent recurrence

Environmental Impact: Increased Faecal Matter

The settlement of faecal matter on the bottom of the lease can result in increased organic loading and impact the condition of the bottom sediment.

Enhanced Mitigation Measures

- Completion of a tidal current study through the deployment of a current meter on the lease for thirty-five days. The operator should evaluate the tidal patterns on both the overall site and at the individual cages using modelling. The use of the current meter and modelling studies will allow the operator to fully understand the dispersion of organic matter that is released from the farm operation;
- Adjustment in cage stocking levels based on the monitoring results;
- Adjustment in cage stocking levels based on the evaluation of tidal current patterns and modelling study;
- Adjustment in the cage positions on the lease according to monitoring results;
- Adjustment in the cage positions on the lease based on the tidal current study and modelling study during the grow out period;
- Modification to the harvest schedule to reduce biomass on the lease over those areas of the lease with greatest amount of degradation;
- Readjustment of the cages during the subsequent production cycles to avoid further impacts to areas showing adverse environmental conditions;
- Increase in the fallow period of the site to allow the site to recover; and
- Conduct an audit of site operations in addition to any regular scheduled auditing. This audit should be completed by an internal site manager working for the same operator at a different farm location. The auditor will examine the waste management practices employed on the site. A written report identifying any deficiencies observed as well as any recommendations to improve waste management practices is to be submitted to NSDFA by the auditor.
- How this will be monitored to prevent recurrence

Environmental Impact: Net Cleaning

When net cleaning occurs on a lease it can lead to a large release of biofouling from the nets which can settle on the bottom.

Enhanced Mitigation Measures

- Increase frequency of site cleaning practices to reduce amount of biofouling;
- Monitor and record the amount and frequency of biofouling over a set period and adjust net cleaning procedures to address biofouling accumulation;
- Evaluate site staff in terms of experience, qualification and awareness of site policies and procedures- increase staff training if necessary;
- Ensure all net cleaning equipment is maintained and remains in good working order. Ensure records are kept of the equipment maintenance schedules;
- Use of alternative methods on site to reduce the amount of biofouling that occurs;
- Creation and implementation of a standard operating procedure regarding the level of biofouling that is acceptable on a net cage and when net cleaning must occur;
- More frequent net changes when net washing is not feasible; and
- Conduct an audit of site operations in addition to any regular scheduled auditing. This audit should be completed by an internal site manager who works for the same operator at a different farm location. The auditor will examine the net cleaning practices used on the lease. A written report identifying any deficiencies observed as well as any recommendations to improve net cleaning practices is to be submitted to NSDFA by the auditor.
- How this will be monitored to prevent recurrence

Environmental Impact: Feeding

Improper feeding techniques can lead to the settlement of feed on the bottom of the lease, can lead to increased organic loading on the site.

Enhanced Mitigation Measures

- Evaluation of the site staff in terms of experience, qualifications and awareness of site policies and procedures;
- Update staff training on feeding methods when necessary;
- Compare feeding activities of the fish, feed conversion rates, and feed usage per cage for cages fed moist feed and dry feed to determine if the switch can be made earlier;
- Evaluate feed records to confirm the switch to dry feed is being made at the correct time according to the critical limit defined by the operator;
- Implementation of an equipment maintenance schedule if not in place;
- Implementation of a weekly maintenance schedule of on- site feed equipment. Ensure that all equipment used for feeding is kept in good working order;
- Increase record keeping from weekly records to daily records;
- Review the camera settings on site;
- Calibration of the feeding equipment; and

- Conduct an audit of site operations in addition to any regular scheduled auditing. This audit should be completed by an internal site manager who works for the same operator at a different farm location. The auditor will examine feeding practices used on the lease. A written report identifying any deficiencies observed as well as any recommendations to improve feeding is to be submitted to NSDFA by the auditor.
- How this will be monitored to prevent recurrence

Environmental Impact: Overfeeding

Overfeeding of fish can lead to the settlement of uneaten feed on the bottom of the aquaculture site.

Enhanced Mitigation Measures

- Calculate the weekly anticipated feed rate;
- Increased record keeping on the lease to monitor the weekly feed rate- compare to the calculated weekly feed rate;
- Adjust weekly feed rates to ensure it is not over the weekly feed rate;
- Increase staff training; and
- Conduct an audit of site operations in addition to any regular scheduled auditing. This audit should be completed by an internal site manager who works for the same operator at a different farm location. The auditor will examine feeding practices used on the lease. A written report identifying any deficiencies observed as well as any recommendations to improve feeding is to be submitted to NSDFA by the auditor.
- How this will be monitored to prevent recurrence

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TAB D

NSARB-2025-001

This is Exhibit "D" referred to in the
Affidavit of Jessica Feindel
affirmed before me by videoconference
on February 2026



Signature

CAITLIN MENCZEL-O'NEILL

A Barrister of the Supreme Court of Nova Scotia

Date	Level	Old Station ID	NSDFA ID	Lat	Long	Location
8-May-18	Baseline	Corner 2		45.94359	-61.13391	Whycocomagh Bay
8-May-18	Baseline	Corner 2		45.94359	-61.13391	Whycocomagh Bay
8-May-18	Baseline	Corner 2		45.94359	-61.13391	Whycocomagh Bay
8-May-18	Baseline	Reference A		45.9456	-61.13488	Whycocomagh Bay
8-May-18	Baseline	Reference A		45.9456	-61.13488	Whycocomagh Bay
8-May-18	Baseline	Reference A		45.9456	-61.13488	Whycocomagh Bay
8-May-18	Baseline	Reference C		45.94785	-61.1197	Whycocomagh Bay
8-May-18	Baseline	Reference C		45.94785	-61.1197	Whycocomagh Bay
8-May-18	Baseline	Reference C		45.94785	-61.1197	Whycocomagh Bay
8-May-18	Baseline	Reference B		45.94744	-61.12128	Whycocomagh Bay
8-May-18	Baseline	Reference B		45.94744	-61.12128	Whycocomagh Bay
8-May-18	Baseline	Reference B		45.94744	-61.12128	Whycocomagh Bay
8-May-18	Baseline	Center Lease 1		45.9505	-61.12716	Whycocomagh Bay
8-May-18	Baseline	Center Lease 1		45.9505	-61.12716	Whycocomagh Bay
8-May-18	Baseline	Center Lease 1		45.9505	-61.12716	Whycocomagh Bay
8-May-18	Baseline	Center Lease 2		45.95047	-61.12773	Whycocomagh Bay
8-May-18	Baseline	Center Lease 2		45.95047	-61.12773	Whycocomagh Bay
8-May-18	Baseline	Center Lease 2		45.95047	-61.12773	Whycocomagh Bay
8-May-18	Baseline	Center Lease 3		45.95039	-61.12804	Whycocomagh Bay
8-May-18	Baseline	Center Lease 3		45.95039	-61.12804	Whycocomagh Bay
8-May-18	Baseline	Center Lease 3		45.95039	-61.12804	Whycocomagh Bay
8-May-18	Baseline	Center Lease 4		45.95045	-61.12853	Whycocomagh Bay
8-May-18	Baseline	Center Lease 4		45.95045	-61.12853	Whycocomagh Bay
8-May-18	Baseline	Center Lease 4		45.95045	-61.12853	Whycocomagh Bay
8-May-18	Baseline	Corner 3		45.94746	-61.13477	Whycocomagh Bay
8-May-18	Baseline	Corner 3		45.94746	-61.13477	Whycocomagh Bay
8-May-18	Baseline	Corner 3		45.94746	-61.13477	Whycocomagh Bay
8-May-18	Baseline	Corner 4		45.95312	-61.12462	Whycocomagh Bay
8-May-18	Baseline	Corner 4		45.95312	-61.12462	Whycocomagh Bay
8-May-18	Baseline	Corner 4		45.95312	-61.12462	Whycocomagh Bay

Old Station ID	Lease #	Fin/Shell/Ref	Rep	Sample Temp (°C)	Redox (mV)	Redox (mV _{NHE})
Corner 2	Superlease	Fin	1	17.3	312.9	519.6
Corner 2	Superlease	Fin	2	19.4	-16.3	188.3
Corner 2	Superlease	Fin	3	18.8	-66.5	138.7
Reference A	Superlease	Ref	1	16.9	323.3	530.4
Reference A	Superlease	Ref	2	18.5	21.7	227.2
Reference A	Superlease	Ref	3	19.3	-22.5	182.2
Reference C	Superlease	Ref	1	18.0	315.3	521.3
Reference C	Superlease	Ref	2	19.1	-131.1	73.8
Reference C	Superlease	Ref	3	19.3	-171.4	33.3
Reference B	Superlease	Ref	1	18.6	-319.7	-114.3
Reference B	Superlease	Ref	2	19.5	-285.1	-80.6
Reference B	Superlease	Ref	3	19.3	-307.7	-103.0
Center Lease 1	Superlease	Fin	1	18.2	-355.2	-149.4
Center Lease 1	Superlease	Fin	2	19.2	-362.3	-157.5
Center Lease 1	Superlease	Fin	3	19.5	-367.7	-163.2
Center Lease 2	Superlease	Fin	1	19.3	-152.4	52.3
Center Lease 2	Superlease	Fin	2	19.7	-282.6	-78.3
Center Lease 2	Superlease	Fin	3	18.9	-128.9	76.2
Center Lease 3	Superlease	Fin	1	18.8	-341.7	-136.5
Center Lease 3	Superlease	Fin	2	19.5	-328.8	-124.3
Center Lease 3	Superlease	Fin	3	19.2	-66.2	138.6
Center Lease 4	Superlease	Fin	1	18.1	-55.2	150.7
Center Lease 4	Superlease	Fin	2	19.9	-77.2	126.9
Center Lease 4	Superlease	Fin	3	19.3	-114.3	90.4
Corner 3	Superlease	Fin	1	18.7	-101.7	103.6
Corner 3	Superlease	Fin	2	19.5	-46.5	158.0
Corner 3	Superlease	Fin	3	19.7	-156.1	48.2
Corner 4	Superlease	Fin	1	19.4	-216.3	-11.7
Corner 4	Superlease	Fin	2	19.6	-316.3	-111.9
Corner 4	Superlease	Fin	3	19.3	-248.3	-43.6

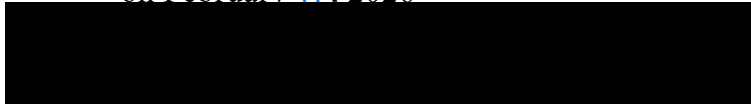
Old Station ID	Adjusted Sulphide (μM)	Sulphide (mV)	Porosity (%)	POM (%)
Corner 2	89.7	-859.1	73.69	53.10
Corner 2	46	-850.6	66.91	45.64
Corner 2	46.1	-851.5	79.92	3.04
Reference A	59.2	-853.2	39.97	12.94
Reference A	41.8	-849.8	48.95	53.10
Reference A	20.4	-846.4	58.63	54.55
Reference C	102	-861.5	59.43	62.17
Reference C	104	-861.1	55.41	66.16
Reference C	103	-860.1	58.54	62.79
Reference B	918	-886.9	55.13	64.87
Reference B	830	-885.1	54.24	65.89
Reference B	314	-873.2	59.86	51.29
Center Lease 1	1500	-895.4	54.45	68.51
Center Lease 1	1350	-891.6	55.98	64.76
Center Lease 1	1380	-891.8	58.77	62.51
Center Lease 2	95	-859.0	54.58	59.63
Center Lease 2	245	-869.9	42.91	56.48
Center Lease 2	114	-861.1	58.04	55.41
Center Lease 3	878	-887.5	70.92	54.55
Center Lease 3	316	-872.6	47.51	54.44
Center Lease 3	65.5	-854.5	62.44	52.16
Center Lease 4	47.5	-853.4	56.08	50.90
Center Lease 4	33.6	-847.3	50.13	56.52
Center Lease 4	46.3	-851.8	57.24	41.84
Corner 3	62.9	-855.1	54.44	54.69
Corner 3	73	-858	52.84	56.93
Corner 3	40.1	-849.6	62.35	53.76
Corner 4	153	-872.7	45.46	54.84
Corner 4	577	-880.4	64.13	52.85
Corner 4	228	-874	56.17	62.88

Old Station ID	Field/Lab Notes	QA/QC Notes
Corner 2	No samples for Lease Corner 1	
Corner 2	(hard bottom video transect recorded)	
Corner 2		
Reference A		
Reference A		
Reference A		
Reference C		
Reference C		
Reference C		
Reference B		
Reference B		
Reference B		
Center Lease 1		
Center Lease 1		
Center Lease 1		
Center Lease 2		
Center Lease 2		
Center Lease 2		
Center Lease 3		
Center Lease 3		
Center Lease 3		
Center Lease 4		
Center Lease 4		
Center Lease 4		
Corner 3		
Corner 3		
Corner 3		
Corner 4		
Corner 4		
Corner 4		

TAB E

NSARB-2025-001

This is Exhibit "E" referred to in the
Affidavit of Jessica Feindel
affirmed before me by videoconference
on February 17, 2026



CAITLIN MENCZEL-O'NEILL
A Barrister of the Supreme Court of Nova Scotia

Date	Level	Old Station ID	NSDFA ID	Lat	Long	Location	Lease #	Fin/Shell/Ref	Rep	Sample Temp (°C)	Redox (mV)
18-Oct-10	Baseline	Lease Corner 3		45.975037	-61.027859	Whycocomagh Bay	WBN	Fin	1	18.8	-110.9
18-Oct-10	Baseline	Lease Corner 3		45.975037	-61.027859	Whycocomagh Bay	WBN	Fin	2	18.8	-80.5
18-Oct-10	Baseline	Lease Corner 3		45.975037	-61.027859	Whycocomagh Bay	WBN	Fin	3	18.6	-43.7
18-Oct-10	Baseline	Center Lease		45.978291	-61.024765	Whycocomagh Bay	WBN	Fin	1	19.1	-66.3
18-Oct-10	Baseline	Center Lease		45.978291	-61.024765	Whycocomagh Bay	WBN	Fin	2	17.6	-75.5
18-Oct-10	Baseline	Center Lease		45.978291	-61.024765	Whycocomagh Bay	WBN	Fin	3	17.9	-95.6
18-Oct-10	Baseline	Lease Corner 4		45.97821	-61.01832	Whycocomagh Bay	WBN	Fin	1	19.7	-37.5
18-Oct-10	Baseline	Lease Corner 4		45.97821	-61.01832	Whycocomagh Bay	WBN	Fin	2	18.3	-66.5
18-Oct-10	Baseline	Lease Corner 4		45.97821	-61.01832	Whycocomagh Bay	WBN	Fin	3	18.3	-46.6
18-Oct-10	Baseline	Lease Corner 1		45.981216	-61.021183	Whycocomagh Bay	WBN	Fin	1	20.7	-22.4
18-Oct-10	Baseline	Lease Corner 1		45.981216	-61.021183	Whycocomagh Bay	WBN	Fin	2	18.1	-0.5
18-Oct-10	Baseline	Lease Corner 1		45.981216	-61.021183	Whycocomagh Bay	WBN	Fin	3	18.5	-62.3

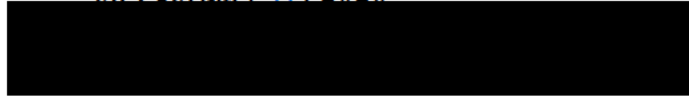
Old Station ID	Redox (mV _{NHE})	Adjusted Sulphide (μ M)	Sulphide (mV)	Porosity (%)	POM (%)	Field/ Lab Notes	QA/QC Notes
Lease Corner 3	94.3	9.62	-842.7	71.53	14.51	DNS	
Lease Corner 3	124.7	40.4	-859.6	70.49	12.58	DNS	
Lease Corner 3	161.7	23.8	-853.8	73.77	11.64		
Center Lease	138.6	29.4	-856.4	68.87	12.55	DNS	
Center Lease	130.9	19	-850.6	71.07	12.56	DNS	
Center Lease	110.5	23.4	-853.5	68.94	12.29	DNS	
Lease Corner 4	166.8	50.2	-862.3	70.64	13.75	DNS	
Lease Corner 4	139.2	0.42	-803.6	68.79	12.66	DNS	
Lease Corner 4	159.1	37.1	-858.4	67.29	12.21	DNS	
Lease Corner 1	180.9	5.13	-838.9	66.02	11.00	DNS	
Lease Corner 1	205.4	0.03	-772.5	77.68	12.91	DNS	
Lease Corner 1	143.2	0.34	-802.7	80.16	13.55		

Date	Level	Old Station ID	NSDFA ID	Lat	Long	Location	Lease #	Fin/Shell/Ref	Rep	Sample Temp (°C)	Redox (mV)	Redox (mV _{NHE})	Adjusted Sulphide (µM)	Sulphide (mV)	Porosity (%)	POM (%)	Field/Lab Notes
10/23/18	Baseline	Reference 2		45.97538	-61.0353	Whycocomagh Bay	WBN	Ref	1	16.5	-90.3	117.2	71.4	-860.2	72.87	13.07	DNS
10/23/18	Baseline	Reference 2		45.97538	-61.0353	Whycocomagh Bay	WBN	Ref	2	15.2	-88.8	120.0	15.4	-840.4	72.29	12.38	DNS
10/23/18	Baseline	Reference 2		45.97538	-61.0353	Whycocomagh Bay	WBN	Ref	3	14.5	-78.5	131.0	20.5	-844.5	74.67	12.73	DNS
10/23/18	Baseline	Lease Corner 2		45.97778	-61.031	Whycocomagh Bay	WBN	Fin	1	15.5	11.8	220.3	7.64	-831.4	60.78	8.37	DNS
10/23/18	Baseline	Lease Corner 2		45.97778	-61.031	Whycocomagh Bay	WBN	Fin	2	16.5	12.6	220.1	33.5	-850.3	58.84	8.31	DNS
10/23/18	Baseline	Lease Corner 2		45.97778	-61.031	Whycocomagh Bay	WBN	Fin	3	15.8	-9.4	198.8	29.5	-848.7	68.16	11.21	S

TAB F

NSARB-2025-001

This is Exhibit "F" referred to in the Affidavit
of Jessica Feindel
affirmed before me by videoconference
on February 17, 2026



CAITLIN MENCZEL-O'NEILL
A Barrister of the Supreme Court of Nova Scotia

Date	Level	Old Station ID	NSDFA ID	Lat	Long	Location	Lease #	Fin/Shell/Ref	Rep	Sample Temp (°C)	Redox (mV)	Redox (mV _{NHE})	Adjusted Sulphide (µM)	Sulphide (mV)	Porosity (%)	POM (%)	Field/Lab Notes	QA/QC Notes
10/23/18	Baseline	Reference 1		45.95882	-61.03986	Whycocomagh Bay	WBS	Ref	1	17.0	-58.7	148.3	125	-867.7	71.20	11.81	DNS	
10/23/18	Baseline	Reference 1		45.95882	-61.03986	Whycocomagh Bay	WBS	Ref	2	16.9	-92.1	115.0	48.3	-855	72.74	12.44	DNS	
10/23/18	Baseline	Reference 1		45.95882	-61.03986	Whycocomagh Bay	WBS	Ref	3	14.7	-108.4	100.9	63.5	-860.8	72.14	12.70	S	
10/23/18	Baseline	Center Lease		45.96054	-61.02726	Whycocomagh Bay	WBS	Fin	1	16.8	-133.1	74.1	23.5	-845.9	74.27	9.53	DNS	
10/23/18	Baseline	Center Lease		45.96054	-61.02726	Whycocomagh Bay	WBS	Fin	2	16.6	10.8	218.2	13.8	-839	73.85	13.80	S	
10/23/18	Baseline	Center Lease		45.96054	-61.02726	Whycocomagh Bay	WBS	Fin	3	16.4	-38.2	169.4	31.2	-851.5	75.93	13.85	S	
10/23/18	Baseline	Lease Corner 4		45.9594	-61.02065	Whycocomagh Bay	WBS	Fin	1	14.7	1.4	210.7	20.9	-845.2	69.84	13.89	DNS	
10/23/18	Baseline	Lease Corner 4		45.9594	-61.02065	Whycocomagh Bay	WBS	Fin	2	18.5	13.7	219.2	25.3	-846.8	68.84	9.20	S	
10/23/18	Baseline	Lease Corner 4		45.9594	-61.02065	Whycocomagh Bay	WBS	Fin	3	16.0	45.7	253.7	10.5	-837.4	70.59	9.70	S	
10/23/18	Baseline	Lease Corner 1		45.9627	-61.02195	Whycocomagh Bay	WBS	Fin	1	14.5	-120.5	89.0	39.1	-852.7	71.63	12.84	DNS	
10/23/18	Baseline	Lease Corner 1		45.9627	-61.02195	Whycocomagh Bay	WBS	Fin	2	17.3	-18.5	188.2	2.12	-816.5	75.37	14.98	DNS	
10/23/18	Baseline	Lease Corner 1		45.9627	-61.02195	Whycocomagh Bay	WBS	Fin	3	16.7	-81.1	126.2	10.7	-835.8	77.15	14.92	S	
10/23/18	Baseline	Lease Corner 2		45.96081	-61.03368	Whycocomagh Bay	WBS	Fin	1	15.2	-4.0	204.8	14	-839.9	75.95	14.13	DNS	
10/23/18	Baseline	Lease Corner 2		45.96081	-61.03368	Whycocomagh Bay	WBS	Fin	2	15.8	-36.5	171.7	22	-845.3	74.72	14.62	DNS	
10/23/18	Baseline	Lease Corner 2		45.96081	-61.03368	Whycocomagh Bay	WBS	Fin	3	14.9	-69.9	139.2	14	-848.7	74.09	14.12	S	

TAB G

NSARB-2025-001

This is Exhibit "G" referred to in the Affidavit
of Jessica Feindel
affirmed before me by videoconference
on February 17, 2026



CAITLIN MENCZEL-O'NEILL
A Barrister of the Supreme Court of Nova Scotia

AQ#0814 historically and then AQ#0814x as of 2020

Year	Site Classification	Sulfide average (μM)	# of Stations	Audit	Mitigation (Y/N)	Notes
2011	No EMP					
2012	Hypoxic A	2793	3		N	3/3 stations >1500 μM
2013	Oxic	722	3	Field and Analytical	N	3/3 stations <1500 μM
2014	Anoxic	4681	3	Field	Y	2/3 stations >6000 μM
2014 LII	Anoxic	7945	6		n/a	6/6 stations >6000 μM
2015	Hypoxic B	3036	8	Field and Lab	Y	7/8 stations >3000 μM
2016	Hypoxic A	2397	11		N	
2017	Oxic B	1326	12	Field and Lab	N	
2018	Hypoxic A	2362	13	Lab	Y	
2019	Hypoxic B	4631	16		Y	
2019 LII	Hypoxic B	3525	22		n/a	
2020* LIII	Hypoxic A	2891	17		n/a	
2020* Enhanced Baseline	Oxic A	489	21		n/a	
2020*	Hypoxic B	3958	43	Lab	Y	
2020* Enhanced	Oxic B	1174	9		n/a	
2021*	Hypoxic B	4595	27	Field and Lab	Y	
2021* LII	Hypoxic A	1774	11		n/a	
2022*	Hypoxic A	2848	29		Y	
2023*	Hypoxic A	2354	28		Y	
2024*	Hypoxic A	2192	25	Lab	Y	
2025*	Hypoxic A	2985	24		Y	

***2020, and onward, the lease was evaluated based on the proposed lease boundaries, as opposed to keeping AQ#0600, AQ#0845, and AQ#0814 as individual leases. The data presented before this was strictly based off AQ#0814 site boundaries.**

AQ#0600

Year	Site Classification	Sulfide average (μM)	# of Stations	Audit	Mitigation (Y/N)	Notes
2011	No EMP					
2012	No EMP					
2013	No EMP					
2014	Hypoxic B	2538	3	Field	Y	2/3 stations >3000 μM
2014 LII	Hypoxic B	2621	4		n/a	2/4 stations >3000 μM
2015	Hypoxic A	2284	5	Field and Lab	Y	3/5 stations >1500 μM
2016	Hypoxic B	3481	5		N	
2017	Hypoxic A	1830	5	Field and Lab	Y	
2018	Hypoxic A	2129	5	Lab	Y	
2019	Hypoxic B	4103	7	Lab	Y	
2019 LII	Hypoxic B	4555	10		n/a	

AQ#0845

Year	Site Classification	Sulfide average (μM)	# of Stations	Audit	Mitigation (Y/N)	Notes
2011	No EMP					
2012	No EMP					
2013	Hypoxic A	1581	3	Field and Analytical	Y	2/3 stations > 1500 μM
2014	No EMP					
2015	No EMP					
2016	Hypoxic A	1890	2		N	
2017	Oxic B	1244	2	Field and Lab	N	
2018	No EMP					
2019	Hypoxic B	4380	2		Y	
2019 LII	Hypoxic B	3735	8		n/a	

Figure 1: Environmental Monitoring Program sulfide decision thresholds for 2002-2015

<p>Anoxic: $\geq 70\%$ of sampling station with means $>$ than 6000 μm. Otherwise, Hypoxic B</p> <p>Hypoxic B: $\geq 50\%$ of sampling stations with means $>$ than 3000 μm. Otherwise, Hypoxic A</p> <p>Hypoxic A: $\geq 50\%$ of sampling stations with means $>$ than 1500 μm. Otherwise, Oxic</p> <p>Oxic: Remainder</p>

Figure 2: Environmental Monitoring Program sulfide classification thresholds for 2016-Present

Site Classification	Sediment Sulfide Concentrations
Oxic A	$\leq 749 \mu\text{M}$
Oxic B	750 - 1499 μM
Hypoxic A	1500 - 2999 μM
Hypoxic B	3000 - 5999 μM
Anoxic	$\geq 6000 \mu\text{M}$

AQ#5010

Year	Site Classification	Sulfide average (μM)	# of Stations	Audit	Mitigation (Y/N)	Notes
2019 LI	Oxic A	1025	4		N	
2020 Enhanced	Oxic A	193	4		N	
2020 LI	Oxic A	479	8	Field and Analytical	N	
2021 LI	Oxic B	1332	7	Independent	Y	
2022 LI	Hypoxic A	2739	7		Y	
2023 LI	Hypoxic A	2780	5	Field and Lab	Y	
2024 LI	Hypoxic B	3918	5		Y	
2024 LII	Hypoxic A	2356	10		n/a	
2025 LI	Hypoxic B	3696	10		Y	
2025 LII	Hypoxic B	3515	10		n/a	


AQ#5013

Year	Site Classification	Sulfide average (μM)	# of Stations	Audit	Mitigation (Y/N)	Notes
2022 LI	Oxic A	472	5	Field and Lab	N	
2023 LI	Hypoxic A	1534	6		Y	
2024 LI	Hypoxic B	3359	5	Field and Analytical	Y	
2024 LII	Hypoxic A	2137	8		n/a	
2025 LI	Hypoxic A	2855	6	Field and Lab	Y	

TAB H

NSARB-2025-001

This is Exhibit "H" referred to in the Affidavit
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on February 17, 2026



CAITLIN MENCZEL-O'NEILL
A Barrister of the Supreme Court of Nova Scotia

Containment Management Framework
Nova Scotia Department of Fisheries and Aquaculture
2021

Introduction

Containment management is an important function of comprehensive and effective management of marine finfish farming. Proper containment is crucial to address environmental sustainability from wild fish genetics, ecological and fish health perspectives and it makes good business sense to maintain a valuable crop.

A solid governance regime has an integral role in effective containment management, which, in the province of Nova Scotia is led by the establishment of the **Aquaculture Management Regulations (AMRs)** made under Section 64 of the *Fisheries and Coastal Resources Act* (2015). These Regulations provide the regulatory tools that are used to support a responsible approach to aquaculture. The Containment Management content of these Regulations provide the basis for the Containment Management Framework for the aquaculture industry in Nova Scotia.

Principles

Reducing and minimizing the chance of any fish being released or escaping from a marine finfish site are the primary goals of containment management measures.

The Containment Management Framework concentrates on two elements:

- farm infrastructure and operating procedures; and
- traceability of escaped fish

Subsequently, it addresses:

- 1) minimum infrastructure and cage array design/construction requirements;
- 2) site operational procedures;
- 3) mandatory reporting of suspected or confirmed escapes or breaches of containment;
- 4) provisions for recapture plans;
- 5) techniques/procedures that enable traceability of escaped fish (marking plan); and
- 6) an auditing regime to ensure application of the Containment Management components of the Farm Management Plan (FMP).

Farm Management Plan Requirements

While the core of the Containment Management Framework is the AMRs, it is augmented by the contents of the FMP, which by Regulation, focus on: the infrastructure and procedures needed for containment management; reporting procedures for suspected or confirmed breaches of containment; and the marking specifics used to effectively identify the ownership of any farmed fish detected outside of a farmed fish enclosure.

Specifically, the FMP must include any information required by the Minister that pertains to:

- operating procedures that limit the risk of a breach;
- processes for installing and maintaining infrastructure in place to limit the risk of a breach;
- responses to breaches;
- areas of potential impact if a breach occurs;
- management of the site if unusual events or severe weather occurs;
- schedules for reporting:
 - initial farm stocking;
 - inventory levels during production;
- proof of a professional engineer's approval of the design of the structures in place for containment management; and
- marking of fish in such a manner that it can be traced to the licensed grower of the said fish.

It is also important to note, that as per the AMRs, the containment management sections of the FMP must be audited by a third-party auditor approved by the Minister, during time periods specified in the AMRs. The FMP Containment Management Audit Framework outlines the conformity requirements, assessment guidelines, and scoring criteria that auditors must use during an audit. Auditors must contact the Aquaculture Operations Manager at the Nova Scotia Department of Fisheries and Aquaculture (NSDFA) prior to the commencement of any audit to outline and discuss all requirements associated with each individual audit.

1) Farm Infrastructure

Prior to the initial stocking or re-stocking of an aquaculture site, an aquaculture licence holder must be in possession of an approved FMP, which includes approved/certified engineering documentation pertaining to the integrity of the site's infrastructure. In essence, the site infrastructure design and construction must have been deemed as being satisfactory to reasonably withstand the prevailing oceanographic and meteorological conditions (e.g., weather, currents, ice flow, etc.) at the site's location to ensure the fish stay contained.

The engineering documentation referenced above must be submitted to the NSDFA and must include a professional engineer's assessment of the design of the structure in place for the fish farm operation. If the assessment does not contain technical specifications for all materials utilized in the mooring systems (i.e. anchors, ropes, chains, buoys, thimbles, shackles, etc.), it is the responsibility of the farm operator to include such information in their FMP. In addition, any auxiliary equipment, barges, rafts or secondary working vessels must also be included in the engineer's assessment or described in the FMP.

Professional engineers must be licensed to practice in Nova Scotia. They must do a risk analysis using recognized standards/best practices that apply to the design and construction of a marine

finfish net pen array and its supporting infrastructure. Any standards/best practice utilized by the professional engineer must be identified in the risk analysis. It is important to acknowledge that technology and associated standards are constantly evolving. Therefore, mandating explicit standards or best practices may in fact hinder efficient operations versus allowing professional engineers to use a standard or best practice that would be appropriate for their client's operating environment.

All marine finfish sites will require a professional engineer's comprehensive assessment prior to stocking fish on the site and the first such assessment will be known as an original assessment.

Documentation to be included in the original assessment is as follows:

- details from a site survey/assessment outlining the oceanographic and meteorological conditions of the site, to support a risk analysis;
- a risk analysis assessing whether the infrastructure in place, or to be installed, is able to withstand prevailing oceanographic and meteorological conditions (including any safety margins required) at the site;
- a statement from the engineer indicating his/her assessment of the site infrastructure and that the site infrastructure is constructed and installed appropriately, using undamaged parts, for the prevailing oceanographic and meteorological conditions at the site; and
- a drawing of the site infrastructure stamped with the professional engineer's seal.

After an original assessment, and prior to re-stocking, a third-party audit is required which must include one of two sets of documents:

- a statement from an auditor or engineer that there have been no changes in the design or components of the site infrastructure and equipment and no change in the prevailing oceanographic and meteorological conditions at the site that would compromise the integrity of the site infrastructure and equipment since the last professional engineer assessment; **or**
- if it has been determined by an auditor or an engineer that, since the last professional engineer assessment, the site infrastructure and/or equipment integrity have been compromised, the Operator has changed or altered the infrastructure, as described below, or a change in the prevailing oceanographic and meteorological conditions have compromised the site infrastructure and/or equipment integrity, the farm operator will be required to have a reassessment of the site. Upon completion of the re-assessment, the farm operator must provide a statement from a professional engineer indicating that appropriate adjustments have been made and that, as per his/her assessment, the site infrastructure and equipment remains constructed and installed appropriately for the prevailing oceanographic and meteorological conditions at the site.

Although general triggers that would flag compromised site infrastructure and equipment integrity are listed below, the onus is upon the site operator to seek the expertise of an engineer to determine that since the last professional engineer assessment, the site infrastructure or equipment integrity has not been compromised.

- Removal of mooring lines
- Major change in anchor location
- Reduction in mooring line length
- Reduction in mooring line strength
- Addition of net pens or expansion of the system within the approved lease area
- Addition of feed barge
- Change in site orientation (i.e. anchor positions change)
- Change in net half mesh size of netting, change of net size affecting drag, or net and weighting system design
- Change in floater high-density polyethylene (HDPE) rings
- Any substantive change which will affect the loads (including any increase in stocking density above the maximum planned density previously approved), or any reduction in the specification of minimum break strength (MBS) of a component
- Any substantive change in materials used or in the system design

In addition to the engineering documentation discussed above, other infrastructure requirements in the FMP include:

- tagging of specific equipment so that components that have gone adrift can be traced back to the fish farm;
- manufacturer and equipment technical/life cycle specifications;
- breaking strengths, where applicable;
- maintenance records;
- installation/removal procedures; and
- inspection schedules/procedures.

2) Breaches of Containment

With regards to containment management, the FMP must describe:

- procedures that limit the risk of a breach, including fish leakage/losses during farm operations such as fish transfers, counting, grading, harvesting, net cleaning/changes and net pen re-positioning;
- processes for installing and maintaining infrastructure in place to limit the risk of a breach;
- responses to breaches;
- areas of potential impact if a breach occurs; and

- management of the site if unusual events or severe weather occurs.

There are also mandatory notification requirements in the event that a breach occurs or is suspected. Aquaculture licence holders for marine finfish or any personnel of their aquacultural operation who know or suspect a breach must immediately¹ notify the NSDFA by phone with an e-mail follow up of the initial notification.

Information included in the notification includes details pertaining to:

- contact information of the party making the report;
- date and time of the event;
- location of the event;
- attributes of the fish that escaped (e.g. species, number of fish, age, size, year stocked, weight, health status);
- the freshwater place of origin of the fish that escaped;
- cause of the breach; and
- mitigation efforts and/or corrective actions to prevent further escapes.

Experience has indicated that immediate recovery or recapture activities of escaped salmon in the immediate area of the accountable farm, has resulted in minimum success and has caused harm to other marine life. A more efficient endeavour to prevent escaped salmon from interacting with wild fish may be an enhanced river monitoring program that is triggered once a breach of farmed fish has been detected. The NSDFA will be assessing the effectiveness of an enhanced monitoring program by developing such a program in partnership with the aquaculture industry, organizations devoted to the conservation of wild Atlantic salmon as well as other provincial and federal government organizations. Once developed, all marine finfish farmers operating within Nova Scotia are expected to be a participant in the enhanced river monitoring program.

Information and experience concerning recapture of escaped trout is very minimal. Therefore, recapture plans of escaped trout will be developed through discussions with the NSDFA and each individual trout farm operator. Both on-site and off lease recapturing efforts will be developed.

3) Marking

Growers may use the marking plan of their choice, but it must be approved by the Minister and meet the following criteria:

¹ The term “immediately” means as soon as it is safe, or it is possible to do so. This is expected to be within an hour of the determination of a known or suspected breach.

- Any marking (e.g., fin clipping that is unique to the farm operator, coded wire tags (CWTs), genotyping, branding, etc.) must be auditable. Where genetic markers are used, the Minister reserves the right to have access to the genetic information for auditing purposes.
- The mark must identify the fish as originating from a Nova Scotian marine fish grower.
- Fish must be marked prior to stocking.
- The marking scheme must take fish welfare into consideration and be a generally accepted industry practice.

While a marking plan is not a new concept, the implementation of a marking plan can require an extensive timeframe. Therefore, marking plans will be implemented in phases as per discussions between the licensed grower and the NSDFA. During the implementation process, the origin of any species of suspected farmed fish found in the wild, will be determined by the standby method. This method involves the collection of fish from farms in the area where the suspected farmed fish was detected and are of the same species and comparable year class. The data collected from testing these fish is then compared to the suspected escaped fish.

Containment Management Framework Revisions

The Containment Management Framework will be reviewed and updated by the NSDFA, as required, but at a minimum, on an annual basis by March 31 of each calendar year.