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NOVA SCOTIA AQUACULTURE REVIEW BOARD

IN THE MATTER OF: *Fisheries and Coastal Resources Act*, SNS 1996, c 25

- and -

IN THE MATTER OF: An Application by KELLY COVE SALMON LTD. for a boundary amendment and two new finfish aquaculture licenses and leases for the cultivation of Atlantic salmon (*Salmo salar*) - AQ#1205x, AQ#1432, AQ#1433, in Liverpool Bay, Queens County (the "**Application**")

Affidavit of Jeffery Nickerson affirmed on January 22, 2024

I affirm and give evidence as follows:

1. I am Jeffery Nickerson, of Conquerall Mills, Nova Scotia. I am the Business Development Manager for the Applicant in this proceeding Kelly Cove Salmon Ltd, the Canadian Farming Division of Cooke Aquaculture Inc ("**KCS**").

2. I have personal knowledge of the evidence affirmed in this Affidavit except where otherwise stated to be based on information and 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.

(1) WITNESSES & VIDEO

Witness Panel

4. KCS seeks to present a witness panel consisting of Michael Szemerda, Cooke's Global Chief Sustainability Officer, Adam Turner, PEng, Cooke's mechanical engineer, Dr. Amanda Borchardt, KCS's Salmon Fish Health Manager, Shaun Allain of Sweeney International Marine Corp ("**SIMCorp"**), and me to address and respond to questions regarding the Liverpool Bay Development Plan for the Application prepared by SIMCorp for KCS dated March 6, 2019 ("**Development Plan**") as contained in the Application Package filed by the Department of Fisheries and Aquaculture ("**DFA**") with the Nova Scotia Aquaculture Review Board.

5. The Development Plan addresses multiple topics and subject matters. Attached as **Exhibit A** is a table which identifies the members of the witness panel and the various topics in the Development Plan for which they are each principally responsible.

6. The CVs outlining the witness panel members' experience and qualifications are attached as follows:

   (a) My CV is attached as **Exhibit B**;

   (b) CV of Michael Szemerda, Cooke's Global Chief Sustainability Officer, is attached at **Exhibit C**;

   (c) CV of Mr. Allain as well as SIMCorp's company profile are attached at **Exhibits D and E**; and

   (d) CV of Dr. Borchardt, KCS's Salmon Fish Health Manager, is attached at **Exhibit F**.[1]

Kelly Cove Salmon Video

7. Under my direction, KCS prepared a video titled "NS ARB Hearing of Kelly Cove Salmon Ltd.'s application for a boundary amendment and two new marine finfish aquaculture licenses and leases for the cultivation of Atlantic salmon (Salmo salar) – Coffin Island (AQ#1205x), Brooklyn Point (AQ#1432), and Mersey Point (AQ#1433), in Liverpool Bay, Queens County" dated January 17, 2024 (the "**Video**").

8. A secure USB flash drive copy of the Video is attached at **Exhibit G**. The password for the USB flash drive will be provided under separate correspondence, as well as a secure video link, to the Board and the parties.

9. The Video provides a virtual tour of KCS's aquaculture sites, including Coffin Island, and addresses the following topics, amongst others:

   (a) details of the farm operations in detail;

   (b) its connection with the other operations of KCS and Cooke, including its land-based hatchery and operations before introducing salmon to the farm and the harvesting of production from the farm;

   (c) the origin of the fish stock and efforts to improve it;

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[1] Mr. Turner's CV is attached as Exhibit A to his affidavit affirmed on January 16, 2024.

(d) the life cycle of the salmon;

(e) the feeding and treatment of the fish;

(f) its feed monitoring facility in Bridgewater;

(g) the science behind the farm operations;

(h) the environmental effects of the farm;

(i) the contribution of the operations to the community and Provincial economic development; and

10. To the best of my knowledge, information and belief the statements of fact and the opinions expressed in the video are true and correct.

11. The name, employer and role of the individuals in the Video are listed in the table below:

Name	Employer	Role
Jeff Nickerson	KCS	Business Development Manager
Michael Szemerda	Cooke Aquaculture	Global Chief Sustainability Officer
Jennifer Hewitt	KCS	Compliance Manager
Tom Taylor	KCS	Feed and Inventory Manager
Adam Turner, PEng	Cooke Aquaculture	Engineer
Dr. Jake Elliott	KCS	VP Freshwater Operations
Dr. Amanda Borchardt	KCS	Fish Health Manager/Veterinarian
Dr. Andrew Swanson	Cooke Aquaculture	VP of Research & Development
Scott Leslie	KCS	Production Manager
Chad Schrader	KCS	Site Manager
Raymond Garland	KCS	Site Manager
Nick Dorman	KCS	Diver
Michael Dickie	KCS	Diver
Dr. Jonathan Grant	Dalhousie University	Professor
Shaun Allain	SIMCorp	Senior Biologist
Ted Weaire	KCS	Director of Saltwater Operations
Todd Sherwood	KCS	Remote Feeding Manager
Ryan Scott	KCS	Net Cleaner Boat Captain

(2) KCS's OPERATIONS

12. KCS has operated the Coffin Island farm since 2011.

13. In 2016, the Province identified that a portion of the infrastructure, including some of the moorings and cages, present at Coffin Island AQ#1205 was outside the lease boundaries. The moorings and cages were outside the lease boundaries when KCS acquired the farm.

14. Nova Scotia Environment (now Nova Scotia Environment and Climate Change) provided KCS two options: (1) to bring the Coffin Island farm operation within the lease boundary; or (2) apply for a boundary amendment.

15. In September 2018, DFA granted KCS the option to scope Liverpool Bay.

16. Following the scoping, on March 6, 2019, KCS submitted to DFA the following two applications to cultivate Atlantic salmon in Liverpool Bay:

    (a) A boundary amendment for Coffin Island AQ#1205, to expand the farm from 14 cages to 20 cages; and

    (b) Two new marine finfish licences and leases for Brooklyn Point AQ#1432 and Mersey Point AQ#1433, with each farm having 20 cages.

- ***Coffin Island***

17. During the twelve years KCS has operated the Coffin Island farm, there have been only a few incidents which required reporting to DFA and/or DFO which were as follows:

    (a) In 2012, infectious salmon anaemia virus ("**ISAV**") was detected in two of the 14 cages. It was reported to DFA, DFO, and the Canadian Food Inspection Agency, as required. In response, KCS voluntarily culled the fish in the two cages to prevent the spread of the virus. The remainder of the fish were grown to market size and they were harvested;

    (b) In March 2018, there was a mortality event related to predator damage. It was reported to DFA. In response, the predator nets were tightened as a mitigation measure to prevent future predator damage;

(c) In September 2018, there was a mortality event related to low dissolved oxygen in the water. To prevent future mortalities due to low oxygen, KCS developed a supplemental oxygen supply system for the cages which was implemented during the next grow out;

(d) In March 2019, there was a mortality event due to storm damage during a period of low water temperatures. It was reported to DFA. KCS increased its harvest rates to mitigate the number of mortalities; and

(e) In June 2021, a small hole was detected on the net for Cage 6. It is believed that a seal made the hole. KCS divers inspected the cages and patched the small hole. There was no evidence of fish escape. Again, DFA was notified.

- ***Research, Development and Innovation***

18. Cooke and KCS are committed to continually improving our operations.

19. Since 2019 when it made the applications which are the subject of this hearing, KCS has implemented a number of improved technologies on its Nova Scotia marine farms, including Coffin Island such as:

(a) A water borne feed delivery mechanism which delivers the salmon feed into the cage underwater instead of through the air. It minimizes the interaction of the farm with sea birds because the feed is under water and therefore not accessible for the birds to scavenge;

(b) Use of high-definition cameras during feeding in every cage. The cameras allow KCS staff to monitor the feeding in real time to determine when the salmon are satiated and to ensure that additional feed is not deposited into the water; and

(c) Database software program (AquaCom) which tracks all repairs and maintenance completed on each farm's infrastructure as well as tracks every component from cradle to grave.

20. KCS is exploring the use of artificial intelligence technologies in its operations such as feed pellet detection, harmful algal bloom monitoring, and weight sampling the salmon.

The artificial intelligence technologies would assist KCS staff to perform their duties. It would not reduce the number of employees.

21. In February 2022, Cooke announced its appointment of Michael Szemerda as its Global Chief Sustainability Officer. In his role, Mr. Szemerda will oversee all environmental programs and regulatory programs, industry certifications, and sustainability initiatives across Cooke's global wild and farmed subsidiaries, including KCS's Nova Scotia marine farms.

22. Cooke and KCS hold the following sustainable certification and recommendation:

    (a) Best Aquaculture Practices ("**BAP**")[2] which is a seafood-specific certification program that addresses the four key areas of responsible seafood - environmental, social, food safety, and animal health & welfare - at each step of the aquaculture production chain. All of KCS's Atlantic Canada farms hold 4-star BAP certifications; and

    (b) The Monterey Bay Aquarium's Seafood Watch program[3] which is a rating system that provides a recommendation based on various criteria. It is not a certification program. The Seafood Watch program undergoes regular reviews and revisions to ensure the latest science and best management practices are incorporated in aquaculture (among other seafood industries). Cooke and KCS operations in Nova Scotia and Maine were assessed and rated with the "Good Alternative" Seafood Watch recommendation.

23. Cooke and KCS are currently exploring and evaluating the following sustainability initiatives for implementation in Nova Scotia, including the farm, or farms if approved, in Liverpool Bay:

    (a) KCS purchased four hybrid feed systems in 2023. The hybrid feed systems have a battery system charged by diesel generator, thereby reducing the generator run time by 40% and thus reducing greenhouse gas emissions; and

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2 *See*: Best Aquaculture Practices, online: https://www.bapcertification.org/.

3 *See*: Monterey Bay Aquarium Seafood Watch, online: https://www.seafoodwatch.org/.

(b) Implementing the use of shore power from the electrical grid to power the feed systems to reduce and/or eliminate the use of diesel fuel. KCS has one Nova Scotia farm in the permitting stage for the use of shore power.

(3) THE DEVELOPMENT PLAN

24. The Development Plan was submitted to DFA on March 6, 2019.[4] In preparation for this Application, under my direction, KCS reviewed the Development Plan and identified information which needs to be corrected and/or updated as set out below.

(a) Section 1: The Optimum Use of Marine Resources

25. In our view, the Development Plan supports the conclusion that the proposed aquaculture operations would be highly productive while using only a small area of Liverpool Bay without affecting adversely other uses of the marine resources of the Liverpool Bay.

(b) Section 2: Contribution to Community and Provincial Economic Development

Section 2.1 Production Plan

26. The Proposed Production Plan for this Application was set out in Section 2.1 of the Development Plan (the "**2019 Production Plan**"). It proposed that a maximum of 660,000 fish be introduced into all three farms (each with 20 cages).

27. Since the Application was submitted in March 2019, KCS has consulted with aquaculture experts, scientists, and stakeholders to review its 2019 Production Plan. Based on its consultation, KCS now proposes that the Aquaculture Review Board approve its Application based on its "Staged-Approach Production Plan" to reach maximum production of all three farms by 2029.

28. The details of the staged-approach Proposed Production Plan are illustrated in **Exhibit H** and the number of fish stocked per farm is summarized as follows:

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[4] Application Package, Vol 1, page 29.

	Coffin Island 20 cages	Mersey Point 20 cages	Brooklyn Point 20 cages
2025	600,000 fish	475,000 fish	0 fish
2027	660,000 fish	600,000 fish	475,000 fish
2029	660,000 fish	660,000 fish	600,000 fish
2031 onward	660,000 fish	660,000 fish	660,000 fish

29. In addition to the staged-approach Proposed Production Plan, KCS further proposes that the Aquaculture Review Board approve its Application, subject to enhanced environmental monitoring using station selection methods adapted from Level I EMP as outlined by DFA. The proposed Enhanced Environmental Monitoring as set out in **Exhibit I.**

Section 2.4 Employment

30. As of December 2023, Cooke / KCS employs 430 people in Nova Scotia which results in

(a) $21.5 million in employment income;

(b) $12.3 million in taxation; and

(c) $22.8 million in consumer spending.

31. KCS has 12 fulltime positions in Liverpool to operate the Coffin Island farm.

32. If the Application is granted, KCS will require 20 additional full-time employees in Liverpool, resulting in Cooke / KCS employing 450 people in Nova Scotia.

Section 2.5 Other Economic Benefits

- ***Commercial Economic Benefits***

33. KCS contributes to the local economy in Queens County and Nova Scotia by utilizing local services and suppliers whenever possible. If the Application is granted, it will not only benefit Queens County but also support businesses across Nova Scotia, including but not limited to boat shops, trucking companies, hardware stores, machine shops, Bay Ferries, engineers, etc.

34. In addition, Cooke has engineering and permitting underway for a $120 million land-based hatchery and post-smolt facility near Centreville on Digby Neck, with a project end date of 2027. The facility will grow large salmon smolt (~500g) to be placed in the marine cages and as a result will reduce the time the salmon spend in the marine environment. This hatchery and post-smolt facility will employ a state-of-the-art recirculating aquaculture system (RAS) investment.

35. This project has been identified by the Atlantic Provinces Economic Council ("**APEC**") as a "major project" in Nova Scotia, i.e. a capital project values at $25 million or more that adds to the capital stock of the region. This capital budget also includes upgrades to harvest vessels, seawater sites, feed barges, well boats, and other equipment.

36. Based on the information provided by Cooke with respect to the hatchery and post-smolt facility, APEC concluded that it is expected to create over 566 direct construction jobs and 370 indirect and induced jobs. A copy of APEC's Major Projects Inventory 2023 is attached as **Exhibit J**.[5]

- ***Community Support Benefits***

37. In addition to commercial economic benefits, Cooke and KCS support many Nova Scotia community organizations through donations and sponsorships.

38. Since 2020, Cooke has donated over $121,000 in Nova Scotia for projects such as:

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[5] Note: APEC provided KCS permission to file its Major Projects Inventory 2023 with the Aquaculture Review Board.

(a) the South Shore Regional Hospital expansion project;

(b) local food banks; and

(c) various other community initiatives.

39. Many of KCS's staff are active volunteers in their local communities with organizations such as volunteer fire departments, Lions Clubs, amongst others.

40. Cooke and KCS also support the communities where we operate during times of need. By way of example, during the June 2023 Shelburne County wild forest fires, KCS:

(a) Supplied food and meals to firefighters and evacuated residents;

(b) Provided three refrigerated trailers for volunteer organization to store perishable relief items;

(c) Mobilized our emergency response team consisting of 2 trained firefighters to assist with the emergency efforts;

(d) Liaised with Nova Scotia Emergency Management Office and fire departments to identify and provided additional equipment to assist with the emergency efforts. For example, KCS supplied forestry hoses, pumps, clothing, and communication equipment; and

(e) Delivered fuel directly to fire scenes which allowed the fire equipment require on scene and save homes.

41. The June 5, 2023 summary of Cooke and KCS support is attached as **Exhibit K**.

- ***Research & Development Benefits***

42. Since 2014, Cooke has contributed $11 million and in-kind assistance to university research, supporting approximately 100 students and staff at Acadia University, University of New Brunswick, Memorial University, Dalhousie University, University of Prince Edward Island, University of Guelph, Laval University, University of Saskatchewan, University of Maine, University of New Hampshire, and University of Maryland.

(c) Section 3: Fishery activities in the Public Waters

43. Section 3 of the Development Plan addresses the fishery activities surrounding the three farms.

Section 3.1.1 Commercial Fisheries

44. As explained in the Development Plan, Liverpool Bay contains suitable habitat for lobster. Lobster have been observed inhabiting under the Coffin Island farm.[6] KCS permits local fishers, including First Nation fishers to utilize the lease area for fishing, including inside the moorings. As illustrated in Figures 60 and 61 in the Development Plan[7], the cage grid system only occupies a portion of the leased area and does not sit on the seafloor.

45. After its review of the Application Package, the Canadian Science Advisory Secretariat Science (CSAS) concluded that 3.4% of Liverpool Bay would be occupied by the proposed leased area for all three farms.[8]

Section 3.1.3 Aboriginal Fisheries

- ***First Nations Fisheries***

46. The Development Plan states that KCS was unable to obtain First Nations landing data due to privacy concerns.

47. KCS staff at Coffin Island have observed First Nation fishers placing lobster traps and successfully harvesting lobsters very close and even within the boundaries of the Coffin Island farm prior to DFO's opening day for the commercial lobster fishery in the area. Photographs of the fishers on October 19, 2023 and November 7, 2023 are attached as **Exhibit L**.

- ***Archaeology Resource Impact Assessment***

48. The Development Plan states that consultation with the Aboriginal community was tentatively scheduled for March 2019 and that following engagement a report would be

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6 Application Package, Vol 1, page 101.
7 Application Package, Vol 1, pages 221-222.
8 Application Package, Vol 3, page 194.

submitted. The report, titled "Public Engagement – Liverpool Addendum," is located in Volume 2 of the Application Package, pages 1056 – 1058.

49. Prior to submitting the Development Plan to DFA, KCS prepared its Report on Liverpool Public Engagement.[9] Section 5 of that report sets out KCS's engagement with the First Nations communities in 2018. In February 2018, KCS reached out to the Acadia First Nation band and requested a meeting to discuss the proposed expansion in Liverpool Bay. In response, the Band office told us that they do not have any operations Liverpool and we should reach out to the Native Council of Nova Scotia.[10]

50. KCS reached out and met with the Native Council. No issues were raised with respect to the Application. A copy of the letter KCS received from the Native Council after the meeting is attached as **Exhibit U**. Following which, the Native Council invited KCS to attend and present at its Annual General Assembly Meeting in September 2019, which we did.

51. On March 7, 2022, KCS reached out to Kwilmu'kw Maw-klusuaqn ("**KMKNO**") and requested a meeting to discuss the Application. A copy of the email from Jennifer Hewitt, KCS Compliance Manager to Twila Gaudet of KMKNO is attached as **Exhibit M**.

52. We received a response from KMKNO with respect to KCS's applications for Victoria Beach (AQ#1042) and Annapolis Basin (AQ#1040).

53. For clarity, the Province did not delegate any of the procedural aspects of the duty to consult to KCS. Prior to submitting the Development Plan to DFA, DFA contacted KCS and advised that the Acadia First Nation requested a meeting with KCS to discuss the proposed aquaculture farm expansion in Liverpool Bay (i.e. the Application). The Acadia First Nation's Medway River Reserve is the closest First Nation community to Liverpool Bay.[11]

54. Following delays due to the COVID-19 pandemic, on April 13, 2022, KCS held an information session at the Milton Community Center with the Acadia First Nation council

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9 Application Package, Vol 2, page 831.
10 Application Package, Vol 2, page 923.
11 Application Package, Vol 1, page 181.

and band members as well as two representatives of KMKNO and archaeologist Sara Beanlands. A copy of KCS's meeting notes are attached as **Exhibit N**.

55. At the meeting, various topics were discussed, including the Food, Social and Ceremonial (FSC) Fishery as well as the archaeology of the Mersey River corridor. More specifically, Acadia First Nation raised concerns about the possible effect of the proposed farm expansion on the archeological artifacts under Liverpool Bay.

56. In response to Acadia First Nation's concern, KCS hired archaeologist Sara Beanlands, MA of Boreas Heritage Consulting Inc (who was recommended by Acadia First Nation) to conduct an archaeology resource impact assessment ("**ARIA**") of the proposed farm expansion sites. Boreas Heritage hired Ella Stevens of Acadia First Nation to assist with the project.

57. On July 6, 2022, KCS, Acadia First Nation, two representatives from KMKNO, and Ms. Beanlands met to discuss the scope of the ARIA. A copy of KCS's meeting notes are attached as **Exhibit O**.

58. The ARIA was ultimately conducted in two phases.

59. In Phase 1, Boreas Heritage conducted a desk-based assessment of the proposed expansion and two new farms, a site tour of KCS' operations in Liverpool Bay, and prepared a report dated October 2022 (the "**Phase 1 ARIA Report**").

60. Prior to receipt of the Phase 1 ARIA Report, on October 3, 2022, KCS proposed to a schedule a meeting with Acadia First Nation to discuss the findings. A copy of the email from Jennifer Hewitt, KCS Compliance Manager to Charmaine Stevens of Acadia First Nation is attached as **Exhibit P**.

61. We did not receive a response to our request to meet.

62. On October 12, 2022, KCS provided the Phase 1 ARIA Report to DFA.[12] The Phase 1 ARIA Report was reviewed and approved by the Nova Scotia Department of Communities, Culture, Tourism and Heritage ("**CCTH**").[13]

63. On October 19, 2022, KCS provided the Phase 1 ARIA Report to Acadia First Nation. A copy of the email from Jennifer Hewitt, KCS Compliance Manager to Charmaine Stevens of Acadia First Nation is attached as **Exhibit Q**.

64. On November 2, 2022, Acadia First Nation asked KCS if the Phase 1 ARIA Report could be shared with KMKNO, to which KCS said yes. A copy of the emails between Jennifer Hewitt, KCS Compliance Manager, Charmaine Stevens of Acadia First Nation, and Tamara Young of KMKNO are attached as **Exhibit R**.

65. The Phase 1 ARIA Report identified "two (2) areas considered to exhibit high potential for encountering submerged archaeological resources (HPA-01 and HPA-02)" and that the remaining areas were "considered to exhibit low potential for encountering submerged archaeological resources."[14] HPA-01 is located under the proposed Brooklyn Point farm.[15] HPA-02 is located under the proposed expansion of the Coffin Island farm.[16]

66. The Phase 1 ARIA Report recommended that the two areas of high archaeological potential, HPA-01 and HPA-02, be avoided during any proposed development, and if they cannot be avoided, that subsurface archaeological sampling be conducted to confirm the presence (or absence) of archaeological resources.

67. As recommended, KCS retained Boreas Heritage to complete the subsurface archaeological sampling in the two areas of high archaeological potential, HPA-01 and HPA-02, referred to as Phase 2.

68. KCS advised the Acadia First Nation and KMKNO that it was proceeding with Phase 2.

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12 Application Package, Vol 3, pages 530 – 587.
13 Application Package, Vol 3, pages 590 – 591.
14 Application Package, Vol 3, page 533.
15 Application Package, Vol 3, page 570.
16 Application Package, Vol 3, page 573.

69. In January and February 2023, Boreas Heritage collected and analyzed 39 subsurface sediment core samples (18 anchor positions at Brooklyn Point and 21 anchor positions at Coffin Island) and prepared a report dated March 2023 (the "**Phase 2 ARIA Report**").

70. SIMCorp SCUBA divers collected the 39 core samples. As explained in the Phase 2 ARIA Report, the 20-inch core samples were inserted into the sediment, with a target depth of 15cm. Some core samples had to be inserted on an angle due to the hardness of the sea floor.[17]

71. The Phase 2 ARIA Report stated that none of the 39 core samples were positive for cultural material, i.e. the 39 samples were negative for cultural material.[18] It recommended that the proposed farm expansion areas be cleared of any requirement for further archaeological investigation and that KCS's proposed development may proceed.

72. On March 15, 2023, KCS provided the Phase 2 ARIA Report to the Acadia First Nation and KMKNO. A copy of the email from Jennifer Hewitt, KCS Compliance Manager, to Charmaine Stevens of Acadia First Nation, and Tamara Young of KMKNO is attached as **Exhibit S**.

73. On March 15, 2023, KCS provided the Phase 2 ARIA Report to DFA.[19] It was approved by CCTH on March 22, 2023.[20]

74. On March 30, 2023, KCS provided CCTH's approval letter to Acadia First Nation and KMKNO. KCS did not receive a response from either Acadia First Nation or KMKNO. A copy of the email from Jennifer Hewitt, KCS Compliance Manager, to Charmaine Stevens of Acadia First Nation, and Tamara Young of KMKNO is attached as **Exhibit T**.

75. In its application for intervenor status[21], KMKNO raised concern about the potential loss of archaeological heritage and resources and asserted that there was inadequate testing conducted of the marine environment. More specifically, KMKNO asserted that the

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17 Application Package, Vol 3, page 602.
18 Application Package, Vol 3, page 595.
19 Application Package, Vol 3, page 592.
20 Application Package, Vol 3, pages 618.
21 NSARB-20023-001-INT-022 filed on September 15, 2023.

archaeological sampling conducted at Coffin Island (AQ#1205) and Brooklyn Point (AQ#1432) did not penetrate the seafloor deep enough.

76. I understand, based on the Phase 2 ARIA Report and meetings with Ms. Beanlands, that the 39 core samples could not be collected any deeper without the need to drill the seafloor, due to its hardness, and that the drilling could destroy or disturb cultural material, if any were present.

77. KCS's marine farm infrastructure, including the mooring anchors, does not penetrate the subsurface of the seafloor. The mooring anchors rest on the seafloor and will not disturb the subsurface of the seafloor. No drilling or disruption of the seafloor is required to install the marine farm infrastructure at the proposed farms. Therefore, in the event that there is cultural material (below the depth of the core samples) it will not be disturbed by the marine farm infrastructure.

Section 3.2.4 Fish Health

78. Section 3.2.4 of the Development Plan addresses fish health, including disease surveillance and sea lice monitoring and treatment.[22]

79. The sub-section "*Disease Outbreak, Quarantine & Mandatory Reporting*" referenced the Province's reporting criteria. In 2019, the Province's reporting criteria changed with respect to mortalities. Aquaculture farm operators are no longer required to report "mass mortalities" or "significant mortalities" as explained in Section 3.24 of the Development Plan.

80. Since 2019, the *Aquaculture Management Regulations* require aquaculture farm operators to report a "mortality event" to DFA which means the death of a number of fish:

    (a) within a 24-hour period, equivalent to at least 2% of the current aquaculture site inventory; or

[22] Application Package, Vol 1, pages 125 – 127.

(b) within a 5-day period, equivalent to at least 5% of the current aquaculture site inventory.[23]

- ***Sea lice***

81. I wish to correct and update the statement in the Development Plan that KCS has not treated for sea lice in Nova Scotia.[24]

82. Prior to the submission of the Development Plan in 2019, KCS had performed a treatment for sea lice since it began its Nova Scotia operations. That treatment occurred in 2014 and involved an in-feed treatment at a farm in the Annapolis Basin.

83. Since 2019, KCS also performed the following three sea lice treatments:

(a) In 2021, an in-feed treatment at a farm in Annapolis Basin; and

(b) Also, in 2021, a mechanical sea lice removal at two farms in the Annapolis Basin.

84. The sea lice treatments noted above were reported to DFA.

85. There have been no sea lice treatments at the Coffin Island farm. In addition, KCS has never performed sea lice treatments along the South Shore of Nova Scotia.

- ***Green Technologies***

86. Due to the low levels of sea lice in the waters surrounding Nova Scotia it is unlikely that treatment will be required but, if needed, KCS has a variety of alternate methods to treat sea lice available to it...

87. KCS has significantly invested in innovation technologies to develop and acquire green technologies to address sea lice if they become an issue at a farm, including, for example, using thermo and hydro-mechanical washes (i.e. mechanical sea lice removal), skirts, as well as a cleaner fish program using lumpfish.

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[23] *See*: Section 21 of the *Aquaculture Management Regulations.*

[24] Application Package, Vol 1, page 127.

88. In some farms, lumpfish are used as a 'cleaner fish.' Lumpfish are indigenous to Nova Scotia and supplement their diet with sea lice, thereby controlling the sea lice population. The lumpfish are placed into the cage with the salmon and consume the sea lice, if they are present.

89. Currently, in Nova Scotia, KCS does not have a sea lice issue and therefore does not use lumpfish in its Nova Scotia marine farms. However, two of KCS's Nova Scotia farms are licensed for the use of lumpfish, if needed. It is my understanding that DFA is working to permit lumpfish to be added to all marine finfish aquaculture licenses, in the event they are required.

90. In Newfoundland KCS also uses semi-permeable tarps around the circumference of its marine cages to prevent sea lice larvae from entering and attaching to the fish stock. Sea lice larvae float within the top 5-6 meters of the water surface and attach to a host fish. The semi-permeable tarps impede and prevent the sea lice larvae from entering the cage and attaching to a host fish. KCS could also implement the use of such tarps in Nova Scotia if sea lice were to become a problem.

91. KCS has also acquired technologies to perform a warm water bath treatment if sea lice have attached to the fish stock. Sea lice naturally detach from its host fish in fresh water and in warm water temperatures. During a warm water bath treatment, the fish are pumped from the marine cage onto a vessel outfitted with warm water or turbulent water bath. As the fish stock passes through the water bath, the sea lice detach. The fish are returned to the marine cage. The water bath is then filtered and sea lice are captured and disposed of in a composting facility on land (i.e. the sea lice is not returned to the ocean).

- ***Antibiotics***

92. In Canada and Nova Scotia, any therapeutant treatments, including antibiotics and sea lice treatments, administered to Atlantic salmon must be prescribed by a veterinarian. The therapeutant treatment must be reported to DFA. Prophylactic antibiotic treatments used in other types of farming, particularly land-based aquaculture, are not permitted in marine aquaculture farms.

93. If therapeutant treatments are used, withdrawal times (i.e. the time needed for the antibiotic to no longer be detectable in the fish flesh, which is dependant upon time and

water temperature) must be met and the fish are tested prior to sale to the consumer to ensure compliance with the federal and provincial regulations.

94. Due to improved practices and innovation, use of antibiotics has decreased significantly in finfish aquaculture. KCS has not administered antibiotics at the Coffin Island farm since 2012.

(g) Section 7: The Sustainability of Wild Salmon

95. Section 7 of the Development Plan addresses the sustainability of wild salmon.[25]

Section 7.2 Support of the Sustainability of Wild Salmon

- ***Mortality Collection***

96. Section 7.2.3.2 of the Development Plan discussed the mortality collection at Coffin Island. The Coffin Island mortalities are no longer picked up by Whynot Trucking.[26] They are collected by Bill Harris Transport and transported to Spec Resources Ltd in Digby. The mortalities are composted for use in fertilizer.

- ***DNA Traceability Program***

97. The Doelle-Lahey Report[27] recommended a Regulatory Advisory Committee be struck (which it was) to provide recommendations to the Minister of DFA. The Regulatory Advisory Committee is chaired by the Nova Scotia Salmon Association and consists of industry, government, scientists, and NGOs. Both Cooke and the Atlantic Salmon Federation are members of the Regulatory Advisory Committee

98. The Doelle-Lahey Report also recommended Nova Scotia to consider Maine's containment management systems and requirements for farmed salmon to have traceable genetic markers, in the event of an escape.

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25 Application Package, Vol 1, pages 236 - 256.

26 Application Package, Vol 1, page 251.

27 A New Regulatory Framework for Low-Impact/High-Value Aquaculture in Nova Scotia, The Final Report of the Independent Aquaculture Regulatory Review for Nova Scotia [The Doelle-Lahey Panel], Province of Nova Scotia, 2014.

99. In January 2016, a committee was appointed to provide the government with advice on a practical way to trace escaped finfish, such as trout and salmon, back to their source.[28]

100. As of the Spring of 2023, all Nova Scotia marine salmon farmers are required to have an approved and auditable program in place to trace all farmed fish back to the operator.[29]

101. Cooke/KCS implemented its DNA traceability program in 2023. The fish stocked in 2023 in the Coffin Island farm, Blue Island farm and McNutt's Island farm are traceable.

102. If the Application is granted, the three farms in Liverpool Bay would be stocked with DNA traceable salmon.

103. This DNA traceability program will allow any fish to be identified as a KCS fish simply and quickly by taking a small sample from the tail of the fish without harming it.

- ***Wild Salmon Recovery Efforts***

104. In addition to the wild salmon restoration efforts detailed in Section 7.2.2 of the Development Plan[30], KCS is supporter of the Medway River Salmon Association's Salmon Recovery Project. Harry Freeman & Son Limited and the Acadia First Nation are also supporters of the Salmon Recovery Project.

105. In 2019, Medway River Salmon Association, Department of Fisheries and Oceans, DFA, Acadia University, Aquaculture Association of Nova Scotia, NS Salmon Association, and Cooke - KCS met to discuss a Salmon Recovery Project. It is a multi-year endeavour with the goal to grow salmon in a marine cage until they have reached mature spawning age and then release the salmon to the Medway River to spawn.

106. Under the supervision of Dr. Trevor Avery of Acadia University, the Salmon Recovery Project has:

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28 Nova Scotia News release, Committee Advising on Finfish Traceability Learning About Best Practices, 18 May 2016, online: https://news.novascotia.ca/en/2016/05/18/committee-advising-finfish-traceability-learning-about-best-practices.

29 *See*: Section 15(h) of the *Aquaculture Management Regulations*.

30 Application Package, Vol 1, pages 240 – 242.

(a) Completed the baseline assessment of the river water quality;

(b) Collected data on the wild salmon in the Medway River through the use of smolt wheels over the past three years; and

(c) Completed genetic testing on the wild salmon population to identify family groups within the river system.

107. The Salmon Recovery Project is hopeful that collection of wild salmon smolts will be permitted by DFO so that the program can be started in 2024.

(h) Section 8: The Number and Productivity of Other Aquaculture Sites

Section 8.2.1 Environmental Conditions

108. Table 32 in Section 8.2.1 of the Development Plan included the environmental monitoring results for the Coffin Island farm, current to 2018.[31] The updated environmental monitoring results, which were reported to DFA, are as follows:

Year	EMP Sampling Date	Site Classification
2013	25 - June	Oxic A
2014	15 - July	Oxic A
2015	13 - July	Oxic A
2016	5 - July	Pass
2017	11 - Oct	Oxic A
2018	10 - July	Oxic B
2019	11- July	Oxic A
2020	28 - July	Oxic A
2021	14 - July	Oxic A
2022	15 - Aug	Oxic B

[31] Application Package, Vol 1, pages 260.

Year	EMP Sampling Date	Site Classification
2023	12 - July	Oxic A

109. Since 2013, with the exception of 2016, the Coffin Island farm has received "oxic" classifications under DFA's Standard Operating Procedures for Environmental Monitoring of Marine Aquaculture Sites in Nova Scotia ("**SOP**").

110. In 2016, DFA assessed the marine aquaculture sites under its hard/mixed bottom protocol. The Coffin Island farm received a "pass" under this protocol.

111. In June 2016, DFA released its updated version of its SOP for environmental monitoring, introducing the 'grab quality criteria' which required, in part, an acceptable grab sample to penetrate 5cm into the sea floor sediment. Previously, there was no required depth. Any amount of sediment could be collected as long as the grab sample did not leak or appear washed out.

112. In 2016 and prior years, SIMCorp's largest grab sampling device was a Standard Ponar. It is not heavy enough to sink into hard packed substrate (such as the hard-packed sand in Liverpool Bay) to achieve 5 cm sediment depth. However, DFA provided the industry less than 30 days notice of the change to the SOP prior to the July 1st start date so there was no time to prepare accordingly and complete field trials to determine how this would affect sample collection.

113. For this reason, in 2016, the EMP sampling for Coffin Island farm was performed using the hard bottom protocol and video transects, resulting in a classification of "pass" vs "oxic."

114. The classifications of "oxic" and "pass" both indicate that the farm was managed sustainably with respect to environmental monitoring.

115. I make this affidavit in support of KCS's Application and for no improper purpose.

VIRTUALLY AFFIRMED before me in Halifax, Nova Scotia, on MS Teams, with Mr. Nickerson in Bridgewater, Nova Scotia on January 22, 2024.

[redacted]

A Barrister of the Nova Scotia Supreme Court

[redacted]

Jeffery Nickerson

EXHIBIT INDEX

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B.	CV of Jeffery Nickerson
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D.	CV of Shaun Allain
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F.	CV of Dr. Amanda Borchardt
G.	Video of Virtual Tour of KCS' Aquaculture Sites, including Coffin Island
H.	Liverpool Bay Proposed Production Plan
I.	Liverpool Bay Proposed Enhanced Environmental Monitoring
J.	APEC's Major Projects Inventory 2023
K.	Summary of Cooke and KCS Support regarding Barrington Wild Fires dated June 5, 2023
L.	Photographs of First Nation Fishers
M.	Copy of Email from Jennifer Hewitt, Compliance Manager to Twila Gaudet of KMKNO dated March 7, 2022
N.	KCS Meeting Notes with Acadia First Nation dated April 13, 2022
O.	KCS Meeting Notes with Acadia First Nation dated July 6, 2022
P.	Email from Jennifer Hewitt, KCS Compliance Manager to Charmaine Stevens of Acadia First Nation dated October 3, 2022
Q.	Email from Jennifer Hewitt, KCS Compliance Manager to Charmaine Stevens, Acadia First Nation, dated October 19, 2022 attaching Phase 1 ARIA Report
R.	Email exchange between Jennifer Hewitt, Charmaine Stevens, Acadia First Nation, and Tamara Young of KMKNO on November 2, 2022
S.	Email from Jennifer Hewitt, KCS Compliance Manager to Charmaine Stevens, Acadia First Nation, and Tamara Young of KMKNO dated March 15, 2023 attaching Phase 2 ARIA Report
T.	Email from Jennifer Hewitt, KCS Compliance Manager to Charmaine Stevens, Acadia First Nation, and Tamara Young of KMKNO dated March 30, 2023, attaching CCTH's approval letter
U.	Letter from Native Council to KCS dated April 5, 2019

TAB A

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit A referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

KCS Witnesses and the Area of Principal Responsibility in connection with Pre-Filed Evidence

Section	Topic	KCS Witness	Expert Witness
All	Application form	Jeff Nickerson	
1	Optimum Use of Marine Resouses	Jeff Nickerson	
2	Contribution to Community and Provincial Economic Development	Jeff Nickerson	
3	Fisheries Activities in the Public Waters	Jeff Nickerson	Dr. Shaun Robinson
4.1	Oceanographic and Biophysical Characteristics	Jeff Nickerson	
4.2	Baseline Data	Shaun Allian	
4.3	Site Design	Adam Turner	
5	Other Users of the Public Waters	Jeff Nickerson	
6	The Right of Public Navigation	Jeff Nickerson	Eric MacKintosh
7	Sustainability of Wild Salmon	Jeff Nickerson	Dr. Kurt Samways
8	The Number and Productivity of Other Aquaculture Sites	Jeff Nickerson	
Appendix A	Coffin Island Baseline Report	Shaun Allian	
Appendix B	Mersey Point Baseline Report	Shaun Allian	
Appendix C	Brooklyn Baseline report	Shaun Allian	
Appendix D	Finacial Viability Letter	Jeff Nickerson	
Appendix E	Wildlife Interaction Plan	Michael Szemerda	
Appendix F	Notice of Works-Coffin Island	Jeff Nickerson	
Appendix G	Notice of Works- Mersey Point	Jeff Nickerson	
Appendix H	Notice of Works- Brooklyn	Jeff Nickerson	
	Site Development plans	Jeff Nickerson	
	DFO CSAS Report	Michael Szemerda	
	DFO Letters of Advice	Michael Szemerda	
	BAP Standard	Michael Szemerda	
	Fish Health Management	Dr. Amanda Borchardt	
	Scoping Report	Jeff Nickerson	
	Baseline Addendum report	Shaun Allian	
	Tourism		Stephen Coyle
	Visual Impact		Chris Glebe
	Sound report		David Richards

TAB B

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit B referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

PERSONAL DETAILS

Jeffery Edward Nickerson
[redacted], NS

EDUCATION

1987 Barrington Regional High School- Barrington, NS
1991 Aquaculture Technician Program- NBCC St Andrews, NB

EMPLOYMENT HISTORY

1987 – 1990 Commercial Fisherman- Southwest Nova Scotia
Fished for various NS fishing companies, concentrating on swordfish, Tuna, Lobster and Mackerel.

1991 – 1994 Commercial Fisherman- Southwest Nova Scotia
Fished for various NS fishing companies, concentrating on swordfish, Tuna, Lobster and Mackerel.

1994-1996 – Co-owner and President- Bayside Seafarm, Ltd, Digby, NS
Founded and operated a salmon aquaculture farm at Rattling Beach

1996- 2003- General Manager- Deer Island Ltd, Shelburne, Nova Scotia
Responsible for all aspects of Deer Island Salmon Ltd's Nova Scotia operations.

2004- Procurement Manager- Scotia Garden Seafoods, Yarmouth, Nova Scotia
Managed Seafood procurement and fleet ops

2004-2006- Site Manager, Kelly Cove Salmon Ltd. Aspatoghan , NS
Managed farm operations for Saddle Island Marine Farm.

2006-2008 Area Manager, Kelly Cove Salmon Ltd

Managed farming operations in southern NS.

2008-2017- Production Manager, Kelly Cove Salmon Ltd
Managed farming operations throughout NS

2017-2019- Regional Manager- NS, Kelly Cove Salmon Ltd.
Managed farming operations throughout NS

2019-Present- Business Development Manager, Kelly Cove Salmon
Responsible for business development and project management for Atlantic Canada.

OTHER EXPERIENCE

1 Vice President of the Aquaculture Association of Nova Scotia
2 Minister's Advisory Committee, NS
3 Minister's Traceability Committee, NS
4 Member of the NS Aquaculture Environmental Advisory Committee.

TAB C

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit C referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

MICHAEL **SZEMERDA**

[redacted] NB, [redacted]

EXPERIENCE

JANUARY 2023 – PRESENT

GLOBAL CHIEF SUSTAINABILITY OFFICER, COOKE INC

- Develop sustainability disclosures for Cooke Aquaculture Inc.'s North America operations.
- Work with all global divisions to set goals for sustainability disclosures that can be reported by Cooke Inc.
- Primary contact for inquiries by financial institutions about ESG reports.
- Leading the Certification team for Cooke North America.
- Leading the compliance team for North American farming operations.

JANUARY 1999 – JANUARY 2022

VICE PRESIDENT SALTWATER OPERATIONS, COOKE AQUACULTURE INC

- Responsible for all company farms in North America (New Brunswick, Nova Scotia, Newfoundland and Labrador, Maine and Washington)
- Part of core company team that evaluates and facilitates acquisitions of other farms and farming companies.
- Responsible for keeping within budget while still reaching production goals.
- Communicate and negotiate with all levels of government.
- Develop overall budget and capital spending budget for Saltwater operations

OCTOBER 1997 – 1999

PRODUCTION CO-ORDINATOR, COOKE AQUACULTURE INC

- Working directly for the VP Saltwater Operations.
- Responsible for helping the VP Saltwater Operations to make yearly production plans for all the farms (10 to 16 sites).
- Communicated directly with government officials with regards to all the farms.
- Help implement new computer software for inventory control of the farms.

JUNE 1992 – 1997

BRACKISH SITE MANAGER/ VACCINATION SERVICES MANAGER, COOKE AQUACULTURE INC

- Responsible for site operation including crew and all livestock.
- Responsible for proper feeding and husbandry of the livestock on the farm site.
- Dealing with government officials and contract services on matters pertaining to the farm.
- Established a new vaccination team for Cooke Aquaculture Inc.

- Responsible for day-to-day operation and planning for the five-person team.
- Responsible for purchasing and maintaining all equipment needed for the operations

EARLY CAREER EXPERIENCE

SITE TECHNICIAN, HAWKINS BROTHERS AQUACULTURE

- Feeding Atlantic salmon on site.
- Help in all site maintenance including net changing and mooring work.
- General husbandry duties for the farm.

DECK HAND, VONDEL FISHERIES LTD, FV MARGART ELIZABETH I

- Deck hand on herring seining vessel
- Help in maintenance including mending nets

EDUCATION

FEBRUARY 2023

GRI CERTIFIED SUSTAINABILITY PROFESSIONAL, GLOBAL REPORTING INITIATIVE

SEPTEMBER 2019

POSTGRADUATE CERTIFICATE IN SUSTAINABLE AQUACULTURE, UNIVERSITY OF ST ANDREWS

1989-1992

MECHANICAL ENGINEERING, UNIVERSITY OF NEW BRUNSWICK

Three years completed of five-year degree program

AUGUST 2009

MARINE MEDICAL DUTIES (MED A1), ST ANDREWS COMMUNITY COLLAGE

AUGUST 2008

RADIO OPERATOR CERTIFICATE (ROC-MC), ST ANDREWS COMMUNITY COLLAGE

SKILLS

- Master of Fishing vessel
- Class 1E drivers' license
- Software
- 60 ton
- Microsoft 365, FishTalk

ASSOCIATIONS:

- Board Member: NERACOOS (Northeast Regional Association of Costal Ocean Observation Systems), Northeastern U.S. *2008 to 2015*

- Board Member: CIMTAN (Canadian Integrated Multi-Trophic Aquaculture Network), Saint John NB *2008 to 2017*

- Board Member: Family Worship Center, St George NB *2006 to 2023*

TAB D

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit D referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

Shaun Allain, BSc., EP

[redacted]/

Professional Designations

Environmental Professional (EP) February 2019 – Present
Environmental Careers Organization of Canada (ECO Canada)

Education

Bachelor of Science (Biology; Geography & the Environment) September 2005 – May 2009
Mount Allison University, Faculty of Science
Sackville, New Brunswick, Canada

Professional Experience

Sweeney International Marine Corp – Halifax, Nova Scotia
Senior Environmental Project Manager February 2023 – Present

- Responsible for developing project management plans and coordinating tasks and workloads companywide to ensure all project deliverables are met in a timely manner and in line with provincial and federal regulations.
- Collaborating with SIMCorp's CEO and CAO to identify technical and business development opportunities within the ocean sciences sector leading to the company's diversification and growth.
- Continuing as lead for all SIMCorp operations in Nova Scotia and duties as a Senior Marine Environmental Biologist.

Senior Marine Environmental Biologist, Nova Scotia November 2019 – December 2021

- Lead biologist and supervisor for all SIMCorp operations in Nova Scotia ranging from environmental site assessments, environmental monitoring, aquaculture site applications, and processing data.
- Maintaining and building relationships with new and existing clients.
- Participating on government coordinating committees and working closely with government regulators.

Marine Environmental Biologist February 2016 – November 2019

- Field supervisor and lead biologist for environmental monitoring, site assessments, and marine data collection occurring at aquaculture sites in Nova Scotia.
- Collection of marine biophysical data including bathymetry, current profiling, habitat assessments, and population dynamics as part of environmental site assessments.
- Report preparation and submission to government regulators.
- Established and maintained productive relationships with clients.
- Assisted in sample analysis in the SIMCorp Environmental Sciences Lab.

Fundy Ocean Research Centre for Energy (FORCE) – Dartmouth, Nova Scotia
Environmental Program Manager December 2021 – February 2023

- Responsible for managing all aspects of the Environmental Effects Monitoring Program (EEMP) including environmental monitoring, directing the processing of data, integrating with advisory committees, and contributing towards ongoing sensor technology research.

- Senior management role included team organization, time management, developing budgets, monitoring progress and preparing reports.
- Hands-on involvement in the deployment and recovery of instruments used for monitoring and data acquisition as part of the EEMP.
- Responsible for managing all communications and engagement initiatives undertaken by FORCE including presentations and seminars to stakeholders and rightsholders, event planning, media releases, and social media.

Mount Allison University – Sackville, New Brunswick
Research Technician July 2014 – October 2014

- Trapped and collected data on various species of crustaceans along the Bay of Fundy mudflats to study habitat competition. Collected live specimens from the field and cared for them in a laboratory environment.
- Performed 'Fundy Pull-trap' captures of Semipalmated Sandpipers during their migration south and conducted tagging, and re-sighting (land and air) efforts with a team of students and government collaborators.
- Built, programmed, and maintained sensor arrays along coastlines to track sandpiper movement.
- Collected mud samples and identified various invertebrates for dietary studies.

Fishermen and Scientists Research Society – Dartmouth, Nova Scotia
Senior Fisheries Technician March 2010 – July 2014

- Conducted at sea and shore-based research on commercially fished species throughout Nova Scotia such as American Lobster and various crabs and fish species. This included length frequency analysis, blood protein sampling, tagging, and life cycle studies.
- Project leader responsible for collecting and analyzing data, creating informational posters and writing articles for several of the society's research projects.
- Worked to promote the society's mandate of creating and maintaining a collaborative relationship between fishermen and scientists.
- Lead role in all education and outreach work ranging from presentations to high school students and teachers, website and display development, and attendance at conferences and other fisheries related events.

Mersey Tobeatic Research Institute – Kempt, Nova Scotia
Stewardship Biologist, Project Coordinator July 2009 – October 2009

- Responsible for the creation, logistics, and sustainability of the 'EMPOWER!' youth outreach and environmental engagement program.
- Successful funding proposals including an En-Vision Project Fund from the Nova Scotia Youth Conservation Corps (Formerly of the NS Dept. of the Environment).
- Designed the framework for an environmental youth resource network.
- Coordinated a 3-day youth retreat at Kejimkujik National Park which included workshops, speakers, and a career/education fair.
- Assisted researchers with population assessment fieldwork on Blanding's turtles, eastern ribbon snakes, and common loons.

Certification

Marine Basic First Aid
St. John Ambulance Emergency Certification
Certified March 1st, 2023 to March 1st, 2026

Marine Emergence Duties with respect to Basic Safety (MED A1)
Nova Scotia Community College – School of Fisheries
Certified May 28th, 2010

Marine Emergency Duties with Respect to Small Non-Pleasure Vessel Basic Safety (MED A3)
Survival Systems Training Ltd.
Certified April 11th, 2016

Small Vessel Operator Proficiency
Survival Systems Training Ltd.
Certified April 15th, 2016

Restricted Radio Operator's Certificate (Maritime)
Canadian Power and Sail Squadrons
Certified May 23rd, 2017

WHMIS 2015
Successfully completed on February 17th, 2016

Canadian Aquatic Biomonitoring Network (CABIN) Training
University of New Brunswick
In progress

TAB E

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit E referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

Sweeney International Marine Corp.

Company Profile

Head Office
Charlotte County
Province of New Brunswick

Sweeney International Marine Corp.
Head Office:
46 Milltown Blvd.
St. Stephen, NB
E3L 1G3
Canada
Tel: (506) 467-9014
Fax: (506) 467-9503
www.simcorp.ca

SIMCorp Environmental Sciences Lab
120 Milltown Blvd.
St. Stephen, NB
E3L 1G6
Tel Line 1: (506) 467-2063 Fax: (506) 467-2101

New Brunswick Newfoundland Nova Scotia

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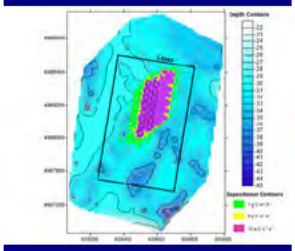
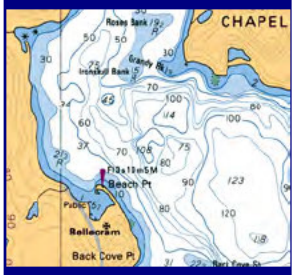
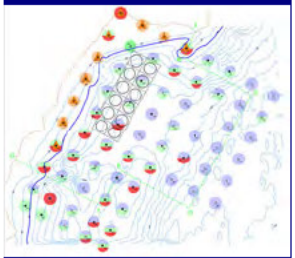






1.0 Our Mission Statement

Our mission is to provide a full range of aquaculture environmental management services to both finfish and shellfish producers to support the long-term economic and environmental sustainability of their aquaculture businesses.

2.0 Our History

Owned by Bob and Liza Sweeney, ***Sweeney International Marine Corp.*** was established by Bob as a one-person business operation in February 2002, working with the salmon-farming industry in Southwest New Brunswick's Bay of Fundy Region. Taking its roots from a small office in his home in St. Stephen, New Brunswick, the business has now grown to become one of the aquaculture industry's leaders in marine environmental assessments and monitoring throughout Atlantic Canada. In 2011, SIMCorp established a marine sediments laboratory, offering our clients a controlled environment in which to have sediment samples analyzed for redox potential, sulphide concentration, porosity, percent organic matter, and grain size.

With offices located in New Brunswick and Newfoundland, a new lab facility in New Brunswick, and a satellite office in Prince Edward Island, the SIMCorp teams of professional Marine Environmental Biologists and Environmental Specialists are of service to the aquaculture industry along the Atlantic coast.

Since opening in February 2002, SIMCorp's core business has been working with the Atlantic-salmon farming industry in New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland, and in the State of Maine. During our time of operations, SIMCorp has gained considerable experience with licencing and environmental regulations, environmental compliance monitoring, waste management, and new site applications in each of the respective jurisdictions. Our teams have also worked with species including Atlantic salmon, Arctic char, rainbow trout, Atlantic halibut, Atlantic cod, green sea urchins, blue mussels, sea scallops, and sea cucumbers. The SIMCorp client base now includes most marine finfish operators in the Atlantic Region and the company, its staff, and the

quality of the services delivered are well known to all levels of government throughout the Region.

An **EP Employer** through **ECO Canada** and the recipient of a **2008 Gulf of Maine Council on the Marine Environment *Visionary of the Year Award***, SIMCorp and our teams are committed to only the highest level of ethics in environmental, community, and corporate stewardship.

3.0 Our Services

SIMCorp and our professional teams of Marine Environmental Biologists and Environmental Specialists have a strong client base of aquaculture producers throughout Atlantic Canada and the State of Maine who are provided with a range of services including: project design; containment-systems audits; pre-site and baseline environmental assessments; preparation of applications including environmental-assessment documentation for the permitting of new and existing marine aquaculture sites; environmental compliance monitoring of permitted aquaculture sites; development of environmental mitigation responses; assets appraisals for the financing or disposal of aquaculture assets; and risk assessments for insurance purposes. SIMCorp is also capable of collecting physical oceanographic data such as temperature, salinity, dissolved oxygen, bathymetry, and current data. Our aerial drone, side-scan sonar, and underwater remotely operated vehicle allow us to visualize the marine environment from various perspectives.

3.1 Field Teams

The SIMCorp field teams of Marine Environmental Biologists and Technicians located throughout Atlantic Canada have more than 90 person-years of technical experience conducting pre-site assessments, baseline surveys, and operational monitoring of marine aquaculture sites. The SIMCorp teams have experience in deploying, servicing, and retrieving data from discrete data logging devices such as temperature loggers, current profilers, salinity profilers, and other water-quality data loggers.

Additionally, the SIMCorp field teams have collected more than 150,000 minutes of underwater video footage of the seafloor. Our seafloor imaging devices include several models of drop camera systems providing video feeds to topside monitors, HD video cameras deployed by SCUBA divers with underwater housings, remotely operated vehicles, and side-scan sonar.

All SIMCorp field teams are fully self-sufficient with vessels that are loaded onto trailers at the end of each field day for cleaning and disinfection to ensure biosecurity protocols are employed to protect the health of the fish stocks on the aquaculture sites we service and their neighbours.

3.2 Project Development & Management

With expertise in the preparation, development, and implementation of aquaculture development projects in both the public and private sectors throughout Atlantic Canada, Saskatchewan, and the State of Maine, SIMCorp provides both producers and government agencies with contract services to take development projects from the initial conceptual stages through to full implementation. Project management includes preparation of submissions to governments for new site applications, production increases, or boundary amendments; the development of management plans and implementation strategies; and assisting with the acquisition of property rights, permits, and licences needed from all levels of government for aquaculture operations.

3.3 Environmental Assessments, Baseline Surveys & Compliance Monitoring

Many of today's producers are now being challenged with balancing their time and energies between the need to put full attention on managing a business with the increasing requirements for compliance with government regulations. SIMCorp provides services to those producers who wish to focus their full attention on growing their products and running a business by providing both technical and government liaison services through the preparation of environmental assessments, environmental management plans, and waste management plans, and the design and performance of baseline surveys under the *Aquaculture Activities Regulations*. The SIMCorp services also include environmental monitoring of operational sites to assess compliance with environmental standards, preparation of environmental mitigation plans where necessary, and continued monitoring of the operation to measure the level of success upon implementation.

3.4 Assets Evaluations

SIMCorp has conducted more than 160 assets evaluations of equipment and operational licences for financing, refinancing, or disposal purposes. SIMCorp will deploy a team to the designated sites or properties where all assets are catalogued, inspected, and photographed to determine their condition factors and value. SIMCorp will then provide a report including an opinion of value containing the orderly liquidation values or forced liquidation values, depending on the financing or disposal requirements.

4.0 SIMCorp Project Teams

The SIMCorp Project Teams deliver a wide range of expertise and skills to our clients. The teams include access to a Senior Project Manager and Marine Environmental Biologists with expertise in finfish and shellfish production, environmental management, site remediation strategies, and waste management plans. With certified scuba divers or with remote underwater camera systems, the SIMCorp teams can aid our clients in all facets of aquaculture project

development, implementation, management, and monitoring. SIMCorp has provided extensive project-management services for clients submitting applications to both the Federal and Provincial agencies throughout Canada including New Brunswick, Nova Scotia, Newfoundland, Prince Edward Island, and Saskatchewan on matters related to new site leasing and licencing, approvals under the *Navigation Protection Act*, the *Canadian Environmental Assessment Act*, the *Aquaculture Activities Regulations*, new species development, waste management protocols, industry codes of practice, and site remediation.

5.0 Our Clientele and Projects

We are grateful to our long list of clients who have given us the opportunity to provide project-management services for their aquaculture businesses. Some of our clients and projects include:

Clients

- Nantucket Seafarm Inc.
- Fundy Aquaculture Ltd.
- Atlantic Silver Inc.
- Canadian Caviar Co. Inc.
- Atlantic Sea Smolt Ltd.
- Lime Kiln Fisheries Ltd.
- Aquaculture Association of New Brunswick
- The Huntsman Marine Science Centre
- Supreme Sturgeon & Caviar Ltd.
- Harbour de Loutre Products Ltd.
- Cards Aquaculture Products Ltd.
- Phoenix Agritech (Canada) Ltd.
- Silver Harvest Ltd.
- Florenceville Fish Hatchery
- St. Mary's First Nations
- Cooke Aquaculture Inc.
- Province of New Brunswick
- Global Seafarms Corporation
- PSP Investments
- Northeast Salmon Inc.
- Ross Island Salmon Ltd.
- Future Nets
- Magellan Aqua Farms Inc.
- Canadian Halibut Inc.
- Grand Harbour Cod Company Ltd.
- Professional Shellfish Growers of New Brunswick
- Atlantic Canada Opportunities Agency
- Vanaqua Salmon Ltd.
- Benson Aquaculture Ltd.
- Majogo Aqua Ltd.
- Grays Aqua Farms Ltd.
- GE Commercial Finance
- Ernst & Young
- CIBC
- Aquaculture Engineering Group
- Wild West Steelhead
- Callidus Capital Corporation
- Marine Harvest Atlantic Canada/MOWI
- Nova Fish Farms Ltd.
- Atlantic Aqua Farms
- Fisheries and Oceans Canada
- Royal Greenland A/S
- Grieg NL

Projects

- Dalhousie aquaculture project
- Phoenix seal wailer project
- Identification of new sites for aquaculture (assessment exercises)
- New marine site applications - Nova Scotia, New Brunswick, Newfoundland, and Saskatchewan
- Aquaculture licence amendments - New Brunswick
- CEAA submissions
- Marine farm assessments
- New species diversification for
  - Atlantic halibut
  - Atlantic cod
  - Green sea urchins
  - Lumpfish
  - Cunners
  - Kelp
  - Mussels
- Marine site remediation strategies
- Waste management plans
- Binding arbitration
- Site acquisitions and disposals
- Conflict management & resolution
- NBSGA Code of Practice
- Quality Farm Records Program
- Environmental monitoring
- Fish inventory verification
- Assets appraisals
- Insurance risk analysis
- Salmon farming operations & management
- Baseline assessments under the AAR
- Compliance audits
- Depositional modelling of fish farms

6.0 The SIMCorp Project Teams

6.1 Management and Coordination

6.1.1 Robert H. (Bob) Sweeney, CEO & Sr. Project Manager

While considered by many in the aquaculture industry to be an expert in aquaculture-development initiatives in the Atlantic Region, Bob Sweeney was originally a graduate Architectural Technician from Ontario's Algonquin College with post-graduate studies at Carleton University and the University of New Brunswick in disciplines including computer programming, legal surveys, remote sensing, property law, and environmental law. Bob's early career was spent in the field of surveys and mapping throughout Ontario and New Brunswick, conducting cadastral, geodetic, engineering, and aerial surveys. In 1982, he moved to the public sector in the Province of New Brunswick as a Project Manager in the Crown Lands Branch of the Department of Natural Resources and Energy and was responsible for terrestrial and coastal resource acquisitions and disposals, with the transferring of wharf facilities to other Provincial and Federal agencies. In 1988, Bob became the Aquaculture Development Officer with the Department of Fisheries and Aquaculture and was responsible for site allocations, leasing, licencing, and policy development in the Bay of Fundy. Bob moved back into the private sector in 1996 when he took a position with Cooke Aquaculture Inc. as their Director of Operations and Development and then as the Manager of Operations and Development with Deer Island Salmon Ltd. and the Sussex Scotia Group. With an extensive background in both the private and public sectors, a background which has included key roles in the development of

the aquaculture industry from both an administrative and an operations perspective, in February 2002, Bob established “Sweeney International Marine Corp.” (SIMCorp) to provide project management and environmental monitoring services to the Atlantic Region’s aquaculture sector. He has also served on many of the industry boards and committees throughout the region with organizations including the New Brunswick Salmon Growers’ Association, the Aquaculture Association of New Brunswick, the Aquaculture Association of Nova Scotia, President of *AquaFair* in St. Andrews, the Steering Committee for the Bay of Fundy Marine Resource Planning, and Co-chair of the Marine Advisory Committee for the Bay of Fundy. He currently serves as the Secretary-Treasurer for the Atlantic Canada Fish Farmers’ Association.

6.1.2 Amanda Dinsmore, Chief Administrative Officer

Amanda joined the SIMCorp Project Management team in 2004 after working as the Office Manager for the Aquaculture Association of New Brunswick in St. George, New Brunswick. Amanda completed the Office Administration Program in 2000 at the New Brunswick Community College in St. Andrews, New Brunswick. She volunteered as a member of the Atlantic Aquaculture Fair committee, assisting in the planning and preparation of the conference. Amanda has now transitioned into the position of Chief Administrative Officer for SIMCorp; she is competent in project management; her management skills, along with her familiarity of and strong understanding of the aquaculture industry, serve SIMCorp well. She has a good understanding of application processes and regulations within the provinces of New Brunswick, Nova Scotia, and Newfoundland. Amanda is also responsible for managing staff and workloads and coordinating and assisting the environmental teams by scheduling field-work operations within the Atlantic Provinces.

6.1.3 Tara Daggett, MSc, Sr. Marine Environmental Biologist, Atlantic Region

Tara completed her Bachelor of Science degree with an Advanced Major Certificate in marine biology from Dalhousie University in 1995. In 2004, she graduated with a Master of Science in biology from the University of New Brunswick, Saint John. Her focus of study during her MSc program was aquaculture and the green sea urchin, and she established herself as one of the Atlantic Region's authorities on the subject. She joined the SIMCorp Project Management teams in 2003, after completing a green-sea-urchin roe-enhancement project for Ross Island Salmon Ltd. on Grand Manan Island and became the SIMCorp lead in the Harmful Algal Bloom Information Technology and Monitoring Program implemented for the Grand Manan salmon growers in the late summer and early autumn of 2003.

Tara then transitioned into project management for alternate species applications, the development of new aquaculture site applications, and

environmental monitoring of existing aquaculture sites. Her work included scoping of potential areas for development and overseeing and conducting the environmental monitoring programs for several producers needing to conduct near-field and far-field monitoring of their aquaculture operations.

As the Senior Marine Environmental Biologist for the Atlantic Region, Tara is SIMCorp's senior advisor on habitat surveys, environmental monitoring, and environmental impact assessments. Additionally, she simulates environmental impacts around aquaculture sites with the use of depositional modelling software, evaluates and processes current data, and prepares habitat maps, bathymetry plots, and other graphics using GIS software.

Tara also served on the Aquaculture Association of Canada Board of Directors during the years 2014 – 2018, functioning as an editor for the AAC Bulletin from 2016 – 2018 and two years as Secretary.

6.1.4 Allison Kendall, BSc, MTM, EP, Regional Manager, NL

Allison completed her Bachelor of Science degree, with Honours in marine biology from Memorial University in 2006. She joined SIMCorp in May 2007 after completing the Advanced Diploma in Sustainable Aquaculture post-graduate program from the Marine Institute of Memorial University. Within this program, she gained various practical and applied experiences in finfish and shellfish biology, anatomy, physiology, and health, along with relevant experience in the processes involved in assessing and selecting an aquaculture site and water quality monitoring. Allison completed a Master of Technology Management (Aquaculture) program to further her skills in the management and aquaculture fields.

As a Senior Marine Environmental Biologist with SIMCorp, Allison coordinates the efforts of the Newfoundland branch, based in Grand Falls-Windsor, NL. Allison is responsible for managing, coordinating, and conducting projects regarding pre-site assessments and baseline studies of new aquaculture sites, environmental monitoring under the *Aquaculture Activities Regulations*, aquaculture site applications, and preparing and submitting environmental assessment reports for clients and government regulatory agencies. She also leads various research and development projects, asset appraisals, and risk assessments.

6.1.5 Shaun Allain, BSc, EP, Sr. Environmental Project Manager, NS

In 2009, Shaun received a Bachelor of Science degree in biology and environmental science from Mount Allison University. The cores of his studies were field ecology and species conservation. Upon completion of his degree, he entered the world of marine biology and began working as a Senior Fisheries Technician for the Fishermen and Scientists Research Society. While at the

FSRS he was responsible for leading several field projects and spent much of his time aboard commercial fishing vessels collecting catch data and biological samples for future analysis. As the Society's communication and outreach coordinator, he was also responsible for writing newsletter articles and visiting high-school classes throughout Nova Scotia to educate the public about fisheries conservation.

Shaun joined the SIMCorp teams in February 2016 as a Marine Environmental Biologist. After a year long hiatus to explore the field of tidal energy, Shaun returned to SIMCorp and resumed his duties overseeing our Nova Scotia projects. He also is currently responsible for company-wide operations such as field scheduling and logistics, technical and business development, and side-scan sonar projects.

6.3 Provincial Teams

6.3.1 New Brunswick

6.3.1.1 Amanda Smith, BSc, EP, Regional Biologist

In 2001, Amanda received a Bachelor of Science degree with Honours in biology from Dalhousie University. The major focus of her degree was genetics; however, after graduation she went on to work at the Atlantic Reference Centre of the Huntsman Marine Science Centre in St. Andrews, New Brunswick. Here she was tasked with cataloguing preserved fishes from Newfoundland waters and studied the reproduction of the Atlantic spiny lumpsucker as a DFO intern. Following this contract, Amanda was employed in the education department of the Atlantic Salmon Federation. The wild population of Atlantic salmon was her focus as she educated the public on the preservation of this species through environmental stewardship.

Amanda joined SIMCorp in January 2009 and has been involved with environmental assessments, environmental monitoring, aquaculture site applications, preparing and submitting environmental assessment reports for clients and government regulatory agencies, and working with clients to ensure compliance with their NPP approvals. She is currently the lead biologist for the SIMCorp New Brunswick office.

6.3.1.2 Alex Hart, BSc

Alex graduated from Acadia University in May of 2023 with a BSc in Biology and a minor in Chemistry. During his undergrad he spent summers working as a field technician alongside the Peskotomuhkati Recognition Group, focusing on alewife populations in streams within Charlotte County, habitat monitoring, and river restoration. Alex joined the SIMCorp team shortly after graduating and is based out of our New Brunswick office but also takes an active role in our Nova Scotia fieldwork and is our licenced drone pilot.

6.3.2 Newfoundland

6.3.2.1 Machaela McDonald

In 2016, Machaela started her education at the Marine Institute of Memorial University of Newfoundland where she is currently completing her diploma in Marine Environmental Technology. During her studies she gained knowledge in various theoretical and technical aspects of the marine environmental field, such as environmental economics & project management, fundamentals of coastal zone management, marine sampling, and policies and laws.

Throughout her education, Machaela was actively involved in the conservation industry, through work terms with Conservation Corps and the Centre for Fisheries and Ecosystems Research, working to help restore the ecosystem in Placentia Bay. Both experiences lead Machaela into a strong conviction to continue work in the environmental field.

As an Environmental Field Technician with SIMCorp, Machaela aids in the completion of projects regarding environmental monitoring of the aquaculture sector in Newfoundland. She, alongside the field crew, complete pre-site assessments, baseline studies, and environmental monitoring as per the Aquaculture Activities Regulations, using underwater camera systems, remotely operated vehicles, and benthic sediment sampling equipment. While found mostly on the water, Machaela can at times be found on dry land, analyzing benthic videos for environmental assessment reports.

6.3.2.2 Ivan Roberts

Ivan has been our Senior Field Technician and vessel operator for Newfoundland since 2009. He holds a Technical Certificate in Aquaculture from Memorial University and is certified as a radio operator and small vessel operator. Ivan conducts site visits and deploys scientific equipment for environmental monitoring around aquaculture sites across the South Coast of Newfoundland. His knowledge of the waters and local conditions of the South Coast make him a valued member of the SIMCorp team.

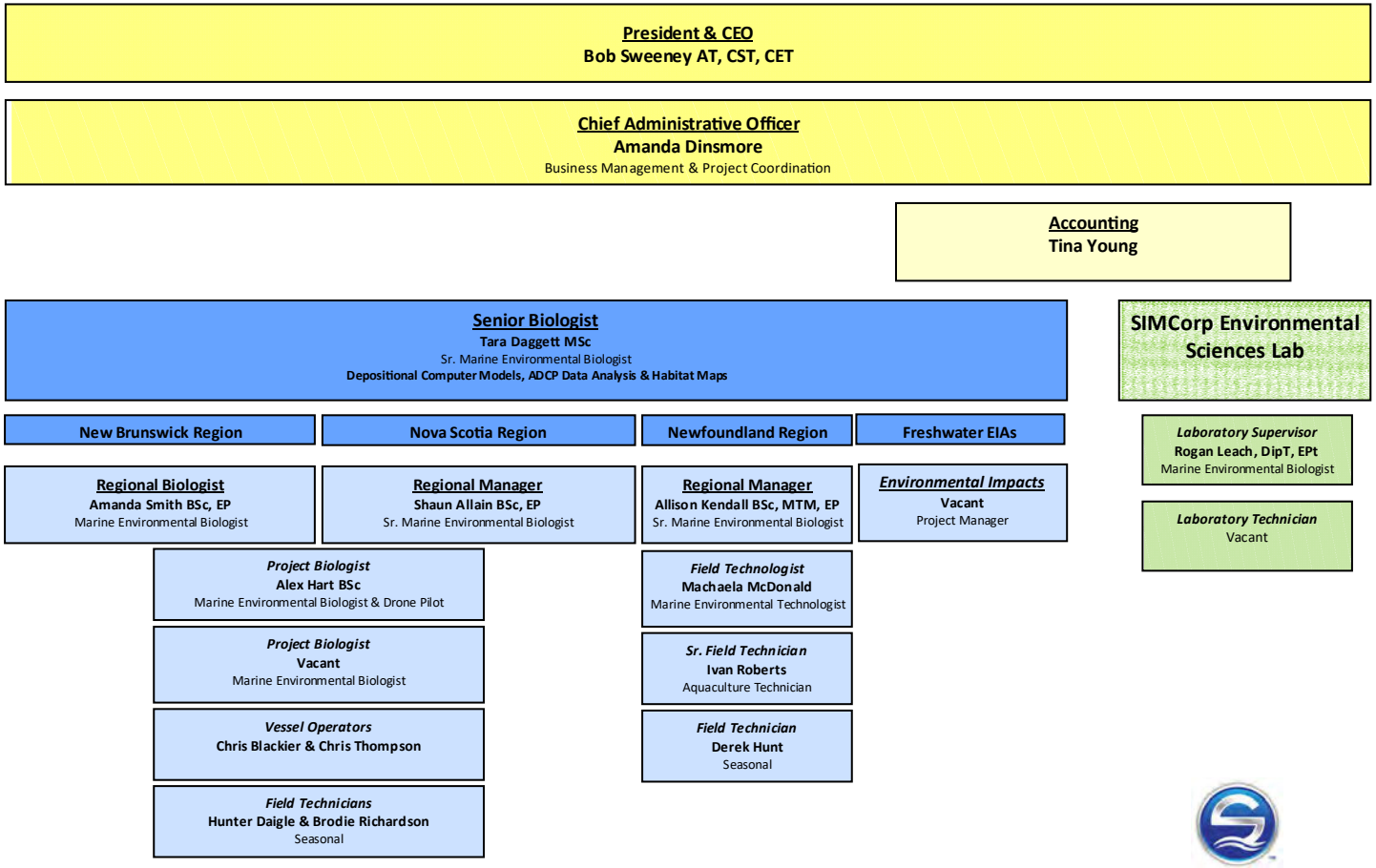
6.3.3 SIMCorp Environmental Sciences Lab

6.3.3.1 Rogan Leach, BSc

After completing three years of a BSc at the University of New Brunswick with a major in biology and ocean conservation, Rogan graduated from the Marine Institute at Memorial University where he received his Diploma of Technology - Marine Environmental. Rogan joined the SIMCorp team as a Laboratory Technician in 2021 but has since stepped into the role of Laboratory Supervisor where he plays an integral role in managing the day-to-day activities.

7.0 The SIMCorp Organizational Chart

Sweeney International Marine Corp. and SIMCorp Environmental Sciences Lab
Organizational Chart



www.simcorp.ca

8.0 Professional Memberships and Affiliations

Aquaculture Association of Canada
Atlantic Canada Fish Farmers Association
Newfoundland Aquaculture Industry Association
PEI Aquaculture Alliance
Aquaculture Association of Nova Scotia
Eco Canada
Conservation Council of New Brunswick

9.0 References

Dean Foss
Wild West Steelhead
Lucky Lake, SK
CANADA S0L 1Z0
Tel: 306-858-2208
dfoss@wildweststeelhead.com

Michael Szemerda
Cooke Aquaculture Inc.
1 Fundy Bay Drive
St. George, NB
CANADA E5C 3E2
Tel: 506-755-1335
mszemerda@cookeaqua.com

George Kinsman
Ernst & Young Inc.
RBC Waterside Centre
1871 Hollis Street, Suite 500
Halifax, Nova Scotia
CANADA B3J 0C3
Tel: 902-421-6282
george.c.kinsman@ca.ey.com

10.0 Contact SIMCorp

The SIMCorp main office is in the Town of St. Stephen, New Brunswick, approximately two (2) blocks east of the border between Canada and the United States. The SIMCorp Environmental Sciences Lab is in the same vicinity as the main office. Our Newfoundland operations are managed out of Grand Falls-Windsor. We also have biologists stationed in Prince Edward Island and Nova Scotia. We can be contacted or located on Google Earth as follows:

Sweeney International Marine Corp.

46 Milltown Blvd.
St. Stephen, New Brunswick
Canada E3L 1G3
Tel: (506) 467-9014 Fax: (506) 467-9503
Latitude 45º 11' 33.04" / Longitude 67º 16' 39.85"

SIMCorp Environmental Sciences Lab
120 Milltown Blvd.
St. Stephen, NB
E3L 1G6
Tel Line 1: (506) 467-2063 Fax: (506) 467-2101
Line 2: 506-467-2064 Line 3: 506-467-2100
Latitude 45º 11' 32.40" / Longitude 67º 16' 50.14"

www.simcorp.ca

APPENDIX 1
Resumes

Resume
ROBERT H. SWEENEY

CONTACT INFORMATION

Office: Sweeney International Marine Corp.
46 Milltown Blvd
St. Stephen, N.B.
Canada E3L 1G3

Tel: (506) 467-9014
Fax: (506) 467-9503

E-mail: bsweeney@simcorp.ca

www.simcorp.ca

Home: [redacted]
[redacted], N.B.
[redacted]

[redacted]

E-mail:
[redacted]

EDUCATION & Certifications

1969 Grade 13 General Panet High School, Petawawa, Ontario
1972 Certified Architectural Technician, Algonquin College, Pembroke, Ontario
1974 Certified Survey Technician, Association of Certified Survey Technicians & Technologists of Ontario
1978 Certified Survey Technologist, New Brunswick Association of Certified Survey Technicians and Technologists
1982 Certified Engineering Technician, New Brunswick Association of Certified Engineering Technicians and Technologists

CAREER SUMMARY

2002 - Present	President & Sr. Project Manager Sweeney International Marine Corp., New Brunswick & Nova Scotia SIMCorp Marine Environmental Inc., Newfoundland & Labrador CaribeAqua Marine Environmental Company, Caribbean Region
2000 – 2002	Manager of Operations and Development (Freshwater & Saltwater) Deer Island Salmon Ltd., Lords Cove, N.B
1996 - 2000	Director of Operations and Development (Saltwater) Cooke Aquaculture Inc., St. George, N.B.
1989 - 1996	Aquaculture Development Officer Department of Fisheries and Aquaculture, Fredericton, N.B.
1982 - 1989	Project Manager Department of Natural Resources and Energy, Fredericton, N.B.
1978 - 1982	Senior Survey Technologist Trainor Surveys (1974) Ltd., Fredericton, N.B
1972 - 1978	Survey Technician J.D. Barnes Ltd. Surveyors, Ottawa, Ont.

AQUACULTURE PROJECT EXPERIENCE

Aquaculture Development Officer, New Brunswick Department of Fisheries and Aquaculture, 1989 - 1996

The Aquaculture Development Officer was responsible for receiving and processing all applications for marine and freshwater finfish and/or shellfish aquaculture licences and/or leases. At the time of taking the position with DFA there were 18 marine aquaculture sites in Southwest New Brunswick, and a moratorium had been placed by governments on receiving any new applications for marine sites in the Bay of Fundy. Although the *Aquaculture Act* had been passed by the Legislative Assembly, it was not proclaimed pending the development of a General Aquaculture Regulation to provide criteria for any new site approvals. During the moratorium, I placed a key on the teams developing internal DFA policies, which in turn were the template for the General Regulation. The process involved considerable stakeholder consultations and public consultation before the Act and Regulation were given Royal Assent. Within the framework of the policies, standard leases and licences were developed for marine and freshwater aquaculture along with application forms and public information documents appropriate to the type of licence required by the proponent. After the moratorium was lifted, I was responsible for receiving and processing in excess of 250 applications for marine finfish applications in the Bay of Fundy. As such, I was a key member of the Aquaculture Site Evaluation Committee (ASEC), and, for a period of time, chaired that committee. In an effort to ensure that all applications were assessed equitably, I developed an environmental formula known as the Estimated Site Potential (ESP) formula that continues to be used by DFA and some of the review agencies.

Director of Operations and Development, Cooke Aquaculture Inc., 1996 – 2000
As the Director of Operations and Development I was responsible for all marine production sites in the Bay of Fundy. Those responsibilities included: hiring staff appropriate to the need; managing all marine, salmon, cage-site operations; co-ordinating smolt deliveries and harvest schedules; managing feed for each of the marine sites; ensuring that only the highest environment and fish health protocols were put into place; ensuring that high standards of excellence were maintained; representing the company's interests at all levels of government and in industry associations in New Brunswick and Nova Scotia; and, assessing and applying for new marine sites to provide for future growth opportunities.

Board of Directors, Aquaculture Association of Nova Scotia, 1998 – 2001, 2009
During this period I was on the Board of Directors of the Aquaculture Association of Nova Scotia and was involved in several committees developing policies and regulations for aquaculture development in the Province. As Vice-President (Finfish) I also chaired and was actively involved with the committee that developed and put into place the Environmental Code of Practice for Aquaculture in Nova Scotia. During this period I was also on the committee developing the DFO Workbook for aquaculture.

Manager of Operations and Development, Deer Island Salmon Ltd., 2000 – 2002
As the Manager of Operations and Development I was responsible for all marine production sites and fish hatcheries in New Brunswick and Nova Scotia. Those responsibilities included: hiring staff appropriate to the need; managing all cage-site and hatchery operations; co-ordinating smolt production, deliveries and harvest schedules; managing feed for each of the marine sites and hatcheries; ensuring that only the highest environment and fish health protocols were put into place; ensuring that high standards of excellence were maintained; representing the company's interests at all levels of government and in industry associations in New Brunswick and Nova Scotia; and, assessing and applying for new marine sites to provide for future growth opportunities.

Board of Directors, Atlantic Canada Fish Farmers Association, 2003 to Present
An Executive member of the Board of Directors and Secretary-Treasurer of the Association since 2003. In this capacity I have been actively involved with development of the new System Framework for restructuring the Atlantic salmon farming industry in the Bay of Fundy and the new Performance Based System to manage the environmental performance of the aquaculture industry.

Sr. Project Manager, SIMCorp, 2002 - Present
SIMCorp.'s core business since opening in February 2002 has been with the Atlantic salmon farming industry in New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland, and in the State of Maine. Over that period, we have gained considerable experience working with the licensing and environmental regulations, environmental compliance monitoring, waste management and new site applications in each of the respective jurisdictions. SIMCorp has worked with species including Atlantic salmon, Arctic char, rainbow trout, Atlantic halibut, Atlantic cod, green sea urchins, blue mussels, sea scallops and sea cucumbers. The SIMCorp client base now includes the vast majority of marine finfish operators in the Atlantic Region, and, as such, the company, its staff, and the quality of services delivered are well-known to all levels of government throughout the Region.

Co-chair of the Bay of Fundy Southwest New Brunswick Marine Advisory Committee, 2012 – 2017

The Marine Advisory Committee (MAC) envisions a future in which the Bay of Fundy is environmentally, economically, and socially sustainable. It is intended to add value to existing processes without duplicating them and to help provide community input and a greater focus on the overarching issues and priorities in the Marine Resources Planning (MRP) Area.

The purpose of the MAC is to provide advice and recommendations to federal and provincial governments on relevant policies, processes, strategic matters, or issues of significant public interest related to new and existing activities from a non-sector community-based perspective. The Committee does not review individual day-to-day applications from departments, except if requested by departments or if deemed to be of significant public interest as agreed to by the Advisory Committee and Government Secretariat Co-Chairs. The Community Values Criteria (CVC) and local knowledge provided by its members through interaction and communication with local community members is used to help guide the Committee in developing its consensus-based recommendations or advice.

[redacted], PE
[redacted]

Tara Daggett, M.Sc.

University Education

- 2015 Field certification for CABIN through Environment Canada & UNB
- 2000 – 2003 M.Sc. in biology from UNBSJ
- 1994 – 1995 Advanced Major Certificate in marine biology from Dalhousie
- 1992 – 1994 Fine Arts studies at Simon Fraser University
- 1988 – 1991 B.Sc. in biology from Dalhousie University

Skills & Certifications

- Master of Science in biology
- Field certification for Canadian Aquatic Biomonitoring Network (CABIN)
- Certified advanced open water SCUBA diver (PADI)
- Marine Emergency Duties A1 certification
- Canadian Red Cross – Pleasure Craft Operator Card
- Canadian Red Cross – Marine Basic First Aid & CPR AED-C
- WHMIS Training Certificate
- Experienced with computer programs such as Image-Pro®, Systat®, SAS®, Minitab®, Microsoft Office suite, Garmin MapSource™ and Homeport™, Surfer® 13, HumViewer, Adobe® Acrobat® 9 Pro, SnagIt®, ACDSee™, AquaModel, Google Earth, ReefMaster, WRPLOT View™

Work History

2006 – present Sweeney International Marine Corp. – Senior Marine Environmental Biologist, Atlantic Region

Responsible for compilation, visualization, and interpretation of a diverse array of oceanographic, environmental, and geographic data; creation of marine mapping graphics; construction of detailed technical reports and documentation such as, monitoring reports, environmental impact assessments, baseline assessments, etc.; and providing guidance and direction to team members.

2003 – 2006 Sweeney International Management Corp. – Project Biologist

Lead biologist for conducting field work in accordance with provincial and federal regulations, including sample collection and analysis and the associated documentation and reporting; deployment and maintenance of experimental equipment and oceanographic instrumentation; and general laboratory duties.

2002 – 2003 Ross Island Salmon Ltd. – Juvenile Sea Urchin Grow-out Project – Project Manager

Principal in overseeing research project execution, data collection, data interpretation, and report completion. Responsible for dissemination of information through conference presentations and production of peer-reviewed articles. Management of laboratory staff and general maintenance of laboratory operations.

2000 – 2002 Ross Island Salmon Ltd. – Juvenile Sea Urchin Grow-out Project – Research Assistant

Collaborated on and assisted with experimental design, execution, maintenance, data collection and management, and report preparation. Responsible for general maintenance of laboratory operations, collection of specimens, phytoplankton culture, and animal husbandry.

1998 – 2000 Ross Island Salmon Ltd. – Sea Urchin Enhancement Project – Laboratory Technician
Responsible for maintenance of aquaria, equipment maintenance, collection of specimens, plant and animal husbandry, experimental feed production, general laboratory maintenance, and data entry.

1996 – 1998 Supply teacher for NB District 10 and self-employed as a dance instructor and math tutor

Publications

Thesis

Daggett, TL (2003) Effect of Macro-algal and Prepared diets on Growth of Juvenile Green Sea Urchin (*Strongylocentrotus droebachiensis*). M.Sc. Thesis, UNBSJ, Saint John, New Brunswick, Canada.

Journal Publications

Grant J, M Simone, T Daggett (2019) Long-term studies of lobster abundance at a salmon aquaculture site, eastern Canada. Canadian Journal of Fisheries and Aquatic Sciences, 76(7): 1096-1102.

Daggett TL, CM Pearce, SMC Robinson, T Chopin (2010) Does method of kelp (*Saccharina latissima*) storage affect its food value for promoting somatic growth of juvenile green sea urchins (*Strongylocentrotus droebachiensis*)? Journal of Shellfish Research 29: 247-252.

Daggett TL, CM Pearce, SMC Robinson (2006) A comparison of three land-based containment systems for use in culturing green sea urchins (*Strongylocentrotus droebachiensis*) Müller (Echinodermata: Echinoidea). Aquaculture Research 37: 339-350.

Daggett TL, CM Pearce, M Tingley, SMC Robinson, T Chopin (2004) Effect of prepared and macro-algal and seed stock source on somatic growth of juvenile green sea urchins (*Strongylocentrotus droebachiensis*). Aquaculture 244: 263-281.

Pearce CM, TL Daggett, SMC Robinson (2004) Effect of urchin size and diet on gonad yield and quality in the green sea urchin (*Strongylocentrotus droebachiensis*). Aquaculture 233: 337-367.

Pearce CM, TL Daggett, SMC Robinson (2003) Effects of starch type, macroalgal meal source, and β-carotene on gonad yield and quality of the green sea urchin, *Strongylocentrotus droebachiensis* (Müller), fed prepared diets. Journal of Shellfish Research 22 (1): 505-519.

Pearce CM, TL Daggett, SMC Robinson (2002) Effect of binder type and concentration on prepared feed stability and gonad yield and quality of the green sea urchin, *Strongylocentrotus droebachiensis*. Aquaculture 205: 301-323.

Pearce CM, TL Daggett, SMC Robinson (2002) Optimizing prepared feed ration for gonad production of the green sea urchin, *Strongylocentrotus droebachiensis*. Journal of the World Aquaculture Association 33(3): 268-277.

Pearce CM, TL Daggett, SMC Robinson (2002) Effect of protein source ratio and protein concentration in prepared diets on gonad yield and quality of the green sea urchin, *Strongylocentrotus droebachiensis*. Aquaculture 214: 307-332.

Allison Kendall, BSc, MTM

[redacted] NL,
(Local: [redacted] or cell: [redacted])

Education History

MASTER OF TECHNOLOGY MANAGEMENT (AQUACULTURE) **2015**
Memorial University of Newfoundland

ADVANCED DIPLOMA IN SUSTAINABLE AQUACULTURE **2008**
Marine Institute of Memorial University

BSC. (HONS.) DEGREE, MARINE BIOLOGY **2006**
Memorial University

CERTIFICATE IN FRENCH IMMERSION **2003**
Université Sainte-Anne

Summary of Additional Training

MARINE ADVANCED FIRST AID **2010**
PLEASURE CRAFT OPERATORS CARD **2009**
RESTRICTED OPERATOR'S CERTIFICATE **2009**
MARINE EMERGENCY DUTIES A3 CERTIFICATION **2007**
CERTIFIED CLASS 2 CREW LEADER FOR ELECTROFISHING **2006**

Employment History

SWEENEY INTERNATIONAL MARINE CORP. / SIMCORP MARINE ENVIRONMENTAL INC. **2007-PRESENT**
Senior Marine Environmental Biologist (Harbour Breton and Grand Falls-Windsor, NL)

HERITAGE FOUNDATION FOR TERRA NOVA NATIONAL PARK **2006**
Resource Conservation Assistant (Terra Nova, NL)

MEMORIAL UNIVERSITY OF NEWFOUNDLAND AND LABRADOR **2005-2006**
Student Researcher (St. John's and Terra Nova, NL)

PARKS CANADA, TERRA NOVA NATIONAL PARK **2003-2004**
Bilingual Interpreter (Terra Nova, NL)

PARKS CANADA, RYAN PREMISES NATIONAL HISTORIC SITE **2001-2002**
Bilingual Heritage Interpreter (Bonavista, NL)

LES ATELIERS LORANGER (ART STUDIO) **1998-2000**
Manager (Hillview, NL)

Shaun Ryan Allain, BSc., EP

[redacted]

Professional Designations

Environmental Professional (EP) February 2019 – Present
Environmental Careers Organization of Canada (ECO Canada)

Education

Bachelor of Science (Biology; Geography & the Environment) September 2005 – May 2009
Mount Allison University, Faculty of Science
Sackville, New Brunswick, Canada

Professional Experience

Sweeney International Marine Corp – Halifax, Nova Scotia
Senior Environmental Project Manager February 2023 – Present

- Develop project management plans and coordinating tasks and workloads to ensure all project deliverables are met in a timely manner and in line with provincial and federal regulations.
- In collaboration with SIMCorp's CEO and CAO, identifying technical and business development opportunities within the ocean sciences sector leading to the company's diversification and growth.
- Continue as lead for all SIMCorp operations in Nova Scotia.

Senior Marine Environmental Biologist, Nova Scotia November 2019 – Present

- Lead biologist and supervisor for all SIMCorp operations in Nova Scotia ranging from environmental site assessments, environmental monitoring, aquaculture site applications, and processing data.
- Maintaining and building relationships with new and existing clients.
- Participating on government coordinating committees and working closely with government regulators.

Marine Environmental Biologist February 2016 – November 2019

- Field supervisor and lead biologist for environmental monitoring, site assessments, and marine data collection occurring at aquaculture sites in Nova Scotia.
- Collection of marine biophysical data including bathymetry, current profiling, habitat assessments, and population dynamics as part of environmental site assessments.
- Report preparation and submission to government regulators.
- Established and maintained productive relationships with clients.
- Assisted in sample analysis in the SIMCorp Environmental Sciences Lab.

Fundy Ocean Research Centre for Energy (FORCE) – Dartmouth, Nova Scotia
Environmental Program Manager December 2021 – February 2023

- Responsible for managing all aspects of the Environmental Effects Monitoring Program (EEMP) including environmental monitoring, directing the processing of data, integrating with advisory committees, and contributing towards ongoing sensor technology research.

- The management role included team organization, time management, developing budgets, monitoring progress and preparing reports.
- Hands-on involvement in the deployment and recovery of instruments used for monitoring and data acquisition as part of the EEMP.
- Also responsible for managing all communications and engagement initiatives undertaken by FORCE which included presentations and seminars to stakeholders and rightsholders, event planning, media releases, and social media.

Mount Allison University – Sackville, New Brunswick
Research Technician July 2014 – October 2014

- Trapped and collected data on various species of crustaceans along the Bay of Fundy mudflats to study habitat competition. Collected live specimens from the field and cared for them in a laboratory environment.
- Performed 'Fundy Pull-trap' captures of Semipalmated Sandpipers during their migration south and conducted tagging, and re-sighting (land and air) efforts with a team of students and government collaborators.
- Built, programmed, and maintained sensor arrays along coastlines to track sandpiper movement.
- Collected mud samples and identified various invertebrates for dietary studies.

Fishermen and Scientists Research Society – Dartmouth, Nova Scotia
Senior Fisheries Technician March 2010 – July 2014

- Conducted at sea and shore-based research on commercially fished species throughout Nova Scotia such as American Lobster and various crabs and fish species. This included length frequency analysis, blood protein sampling, tagging, and life cycle studies.
- Project leader responsible for collecting and analyzing data, creating informational posters and writing articles for several of the society's research projects.
- Worked to promote the society's mandate of creating and maintaining a collaborative relationship between fishermen and scientists.
- Lead role in all education and outreach work ranging from presentations to high school students and teachers, website and display development, and attendance at conferences and other fisheries related events.

Mersey Tobeatic Research Institute – Kempt, Nova Scotia
Stewardship Biologist, Project Coordinator July 2009 – October 2009

- Responsible for the creation, logistics, and sustainability of the 'EMPOWER!' youth outreach and environmental engagement program.
- Successful funding proposals including an En-Vision Project Fund from the Nova Scotia Youth Conservation Corps (Formerly of the NS Dept. of the Environment).
- Designed the framework for an environmental youth resource network.
- Coordinated a 3-day youth retreat at Kejimkujik National Park which included workshops, speakers, and a career/education fair.
- Assisted researchers with population assessment fieldwork on Blanding's turtles, eastern ribbon snakes, and common loons.

Certification

Marine Basic First Aid
St. John Ambulance Emergency Certification
Certified March 1st, 2023 to March 1st, 2026

Marine Emergence Duties with respect to Basic Safety (MED A1)
Nova Scotia Community College – School of Fisheries
Certified May 28th, 2010

Marine Emergency Duties with Respect to Small Non-Pleasure Vessel Basic Safety (MED A3)
Survival Systems Training Ltd.
Certified April 11th, 2016

Small Vessel Operator Proficiency
Survival Systems Training Ltd.
Certified April 15th, 2016

Restricted Radio Operator's Certificate (Maritime)
Canadian Power and Sail Squadrons
Certified May 23rd, 2017

WHMIS 2015
Successfully completed on February 17th, 2016

Canadian Aquatic Biomonitoring Network (CABIN) Training
University of New Brunswick
In progress

APPENDIX 2
ECO Canada Certification

ENVIRONMENTAL CAREERS ORGANIZATION OF CANADA

hereby certifies that

Sweeney International Marine Corp.

has been awarded the title of

EP Employer

In recognition of their commitment to enhancing HR practices within the Canadian environmental sector, for a certification term of five (5) years, from:

January 12, 2021 to January 11, 2026

Sweeney International Marine Corp. has been a certified member since
January 12, 2021

EP EMPLOYER

Registrar

Sweeney International Marine Corp.
46 Milltown Blvd.
St. Stephen, NB
E3L 1G3

SIMCorp Environmental Sciences Lab
120 Milltown Blvd.
St. Stephen, NB
E3L 1G6

TAB F

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit F referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

Amanda Borchardt, D.V.M.

[redacted] NB; [redacted]

PROFESSIONAL SUMMARY

A competent and driven professional with fifteen years of experience working in fish health within the aquaculture industry. Six of these years I have been head of the fish health departments for the two major companies on the east coast of Canada – Mowi Canada East and Cooke Aquaculture. During this time I supervised staff and made daily decisions on the management of our salmonid stocks. These decisions were informed by science, both from studies done internally within these groups, and externally from the scientific community. Having previously worked as a regulatory veterinarian for the province of Newfoundland and Labrador for 5 years, and now working as head veterinarian for an aquaculture company which deals with multiple regulatory agencies, I am quite proficient at leading and participating in projects which require multi-agency cooperation. I have a very strong sense of urgency in everything I do, which allows me to complete important tasks and multi-dimensional projects successfully and on time. In addition to my regulatory and industry experience, I was also a committee member on the first ever Canadian Code of Practice for the Care and Handling of Farmed Salmonids, which was released by the National Farm Animal Care Council of Canada in the fall of 2021 and sets a minimum standard of care for the welfare of farmed salmonids.

FINFISH PROFILE

- Representative for the aquaculture industry on the code committee for the first ever Canadian Welfare Code of Practice for Farmed Salmonids (2018-present)
- A member of the executive committee for the Eastern Aquaculture Veterinary Association from 2012-2020
- Co-Instructor of the Fish Health course at Memorial University for the Aquaculture graduate level Sustainable Aquaculture Program 2012-2017

EMPLOYMENT HISTORY

Cooke Aquaculture **December 2022 - present**
Fish Health Manager
Blacks Harbour, NB

- Provide direction, guidance and training for a fish health team of 6 veterinarians, 2 lab technologists and 9 fish health technicians. This team is responsible for the health and welfare of all of our fish in New Brunswick, Nova Scotia, Newfoundand and Labrador, and the State of Maine (USA).
- Manage a laboratory which provides in-house diagnostics for all of our farms in New Brunswick, Nova Scotia, and Newfoundland, including bacterial culture, BKD IFATs and PCR tests for various pathogens of bacterial and viral origin.
- Represent the company in federal and provincial government groups, as well as non-government groups, including first nations, in relation to projects, communication of company plans and activities, and environmental studies that relate to fish health.
- Write, distribute, and instruct husbandry staff on fish health management plans:
    - Salmonid Fish Health Management Plan
    - Biosecurity Plan
    - Integrated Pest Management Plan

- Provide fish health and biosecurity guidance/training for all business unit activities, such as harvesting, feeding, vessel movements, transfers, etc.
- Provide primary veterinary care for freshwater and saltwater sites in Newfoundland and Labrador. This includes Atlantic salmon, Rainbow Trout and Lumpfish. This involves managing field investigations, taking appropriate samples, analyzing diagnostics, and recommending treatments (both medical and non-medical)

Mowi Canada East **September 2018 – November 2022**

Fish Health and Welfare Director

St. Albans, NL

- Outline and manage a fish health budget of over $10 million per year
- Lead and instruct husbandry staff on daily activities for the rearing of our finfish species (Atlantic salmon and lumpfish), advocating for fish health and welfare in all aspects of their life cycle
- Develop and implement testing protocols for Broodstock at spawning as part of a disease elimination program.
- Write, distribute, and instruct staff on fish health management plans:
    - Salmonid Fish Health Management Plan
    - Lumpfish Health Management Plan
    - Biosecurity Plan
    - Integrated Pest Management Plan
- Provide primary veterinary care for sites in Newfoundland, Prince Edward Island, and New Brunswick (freshwater and saltwater).
- Manage any potential disease outbreaks and/or quarantine orders. This includes working with different internal departments to decide upon best practices for the management, and control of disease, which could include methods of euthanasia or slaughter.
- Provide leadership to the fish health team and activities to ensure a full spectrum of veterinary medical services are available to the animals under my care
    - Veterinarians (in-house and contract)
    - Fish Health Technicians
    - Sea Lice Treatment Support Managers
- Represent the company in federal and provincial government groups, as well as non-government groups, including first nations, in relation to projects, communication of company plans and activities, and environmental studies that relate to fish health.

Northern Harvest Sea Farms **April 2017-September 2018**

Aquaculture Veterinarian

St. Albans, NL

- Developed and implemented surveillance program for salmonids (Atlantic salmon and Rainbow Trout)
- Set up and obtained official licensure for a Veterinary Laboratory in Newfoundland
- Provided primary veterinary care for sites in Newfoundland (freshwater and saltwater)
- Assisted and advised on Sea Lice Management

Government of Newfoundland **September 2012-April 2017**
Aquaculture Veterinarian
St. Albans, NL

- Provided primary veterinary care for sites in Newfoundland (freshwater and saltwater Atlantic salmon, Arctic charr, Rainbow Trout, Blue Mussels, and Oysters)
- Provided advice and input on fish health policies.
- Drafted ministerial briefings for the Fish Health Director's approval and input
- Provided oversight of laboratory activities at a remote location
- Co-operated with other government agencies when government oversight overlapped between agencies For example
    - participated in meetings with DFO over sea lice regulations
    - participated in meetings with CFIA over federally reportable diseases, such as Infectious Salmon Anaemia virus (ISAv)

EDUCATION

Atlantic Veterinary College **April 2011 – September 2012**
Graduate Studies – incomplete PhD in Epidemiology
Charlottetown, PE

- Studied the effects of Hydogen peroxide on the skin of Atlantic salmon; in particular the effects on the mucous layer, epidermis and dermis.
- Terminated studies in order to take a position with the Government of Newfoundland

Atlantic Veterinary College (AVC) **September 2007 – April 2011**
Doctorate in Veterinary Medicine
Charlottetown, PE

- Heavy emphasis on aquaculture medicine in all of my elective courses
- Several work terms were completed under the guidance of global aquaculture veterinarians during last year of study:
    - B.C. (CAHS BC/Marine Harvest)
    - Ireland (Vet-Aqua International)
    - Scotland (Fish Vet Group)
    - Norway (Norwegian School of Veterinary Science)
    - East Canada (AVC and Government of Newfoundland)

Nova Scotia Agricultural College **September 2005 – April 2007**
Pre-Veterinary Program
Truro, NS

- Heavy emphasis on basic sciences such as Biology and Chemistry
- Elective courses included Small Business Management and Welding

INTERESTS

- Camping
- Gardening
- Home Renovations – electrical and plumbing work
- Beekeeping

REFERENCES AVAILABLE UPON REQUEST

TAB G

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit G referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

Exhibit G

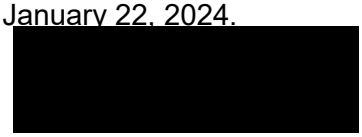
Video titled “NS ARB Hearing of Kelly Cove Salmon Ltd’s application for a boundary amendment and two new marine finfish aquaculture licenses and leases for the cultivation of Atlantic salmon (Salmo salar) – Coffin Island (AQ#1205x), Brooklyn Point (AQ#1432), and Mersey Point (AQ#1433), in Liverpool Bay, Queens County”

Secure Link provided to the ARB and parties under separate cover.

TAB H

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit H referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.



A Barrister of the Nova Scotia Supreme Court

Proposed Production Plan

KCS is proposing a measured approach to stocking the new sites in Liverpool Bay. This involves staging production levels and enhanced environmental monitoring for the first few grow outs to allow for adjustments depending upon environmental monitoring results.

1. Coffin Island

Current Stocking Levels

Species and Strain	Number of Cages and Type	Cage Size (m)	Rearing & Predator Net Depth (m)		Total Number of Fish Introduced	Mean Weight of Fish Introduced (g)	Mortality Rate (%)	*Maximum Stocking Density (kg/m^3)	*Maximum Biomass (kg)	Average Harvest Weight (kg)
Atlantic Salmon, Saint John River	14	100 M	Rearing	9	440,000	150	10	21.7	2,178,000	5.5

Proposed 2025 Stocking Levels

Species and Strain	Number of Cages and Type	Cage Size (m)	Rearing & Predator Net Depth (m)		Total Number of Fish Introduced	Mean Weight of Fish Introduced (g)	Mortality Rate(%)	*Maximum Stocking Density (kg/m^3)	*Maximum Biomass (kg)	Average Harvest Weight (kg)
Atlantic Salmon, Saint John River	20	100 M	Rearing	9	600,000	150	10	20.7	2,970,000	5.5

Proposed 2027 Onward Stocking Levels

Species and Strain	Number of Cages and Type	Cage Size (m)	Rearing & Predator Net Depth (m)		Total Number of Fish Introduced	Mean Weight of Fish Introduced (g)	Mortality Rate(%)	*Maximum Stocking Density (kg/m^3)	*Maximum Biomass (kg)	Average Harvest Weight (kg)
Atlantic Salmon, Saint John River	20	100 M	Rearing	9	660,000	150	10	22.8	3,267,000	5.5

2. Brooklyn Point

Proposed 2025 Stocking Levels

Species and Strain	Number of Cages and Type	Cage Size (m)	Rearing & Predator Net Depth (m)		Total Number of Fish Introduced	Mean Weight of Fish Introduced (g)	Mortality Rate(%)	*Maximum Stocking Density (kg/m^3)	Average Harvest Weight (kg)
Atlantic Salmon, Saint John River	20	100 M	Rearing	9	475,000	150	10	16.4	5.5

Proposed 2027 Stocking Levels

Species and Strain	Number of Cages and Type	Cage Size (m)	Rearing & Predator Net Depth (m)		Total Number of Fish Introduced	Mean Weight of Fish Introduced (g)	Mortality Rate(%)	*Maximum Stocking Density (kg/m^3)	Average Harvest Weight (kg)
Atlantic Salmon, Saint John River	20	100 M	Rearing	9	600,000	150	10	20.7	5.5

Proposed 2029 Onward Stocking Levels

Species and Strain	Number of Cages and Type	Cage Size (m)	Rearing & Predator Net Depth (m)		Total Number of Fish Introduced	Mean Weight of Fish Introduced (g)	Mortality Rate(%)	*Maximum Stocking Density (kg/m^3)	Average Harvest Weight (kg)
Atlantic Salmon, Saint John River	20	100 M	Rearing	9	660,000	150	10	22.8	5.5

3. Mersey Point

Proposed 2027 Stocking Levels

Species and Strain	Number of Cages and Type	Cage Size (m)	Rearing & Predator Net Depth (m)		Total Number of Fish Introduced	Mean Weight of Fish Introduced (g)	Mortality Rate(%)	*Maximum Stocking Density (kg/m^3)	Average Harvest Weight (kg)
Atlantic Salmon, Saint John River	20	100 M	Rearing	9	475,000	150	10	16.4	5.5

Proposed 2029 Stocking Levels

Species and Strain	Number of Cages and Type	Cage Size (m)	Rearing & Predator Net Depth (m)		Total Number of Fish Introduced	Mean Weight of Fish Introduced (g)	Mortality Rate(%)	*Maximum Stocking Density (kg/m^3)	Average Harvest Weight (kg)
Atlantic Salmon, Saint John River	20	100 M	Rearing	9	600,000	150	10	20.7	5.5

Proposed 2031 Onward Stocking Levels

Species and Strain	Number of Cages and Type	Cage Size (m)	Rearing & Predator Net Depth (m)		Total Number of Fish Introduced	Mean Weight of Fish Introduced (g)	Mortality Rate(%)	*Maximum Stocking Density (kg/m^3)	Average Harvest Weight (kg)
Atlantic Salmon, Saint John River	20	100 M	Rearing	9	660,000	150	10	22.8	5.5

Projected Timelines and Fallow Periods for KCS Liverpool Bay Sites

	2025												2026												2027												2028												2029												2030											
Site Name	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Coffin Island							660,000 smolt stocked, (20) 100m cages																								660,000 smolt stocked, (20) 100m cages																								660,000 smolt stocked, (20) 100m cages																							
Brooklyn							475,000 smolt stocked, (20) 100m cages																								660,000 smolt stocked, (20) 100m cages																								660,000 smolt stocked, (20) 100m cages																							
Mersey Point																																					475,000 smolt stocked, (20) 100m cages																								660,000 smolt stocked, (20) 100m cages																							

Stocking
Growout
Harvest
Fallow

TAB I

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit I referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

Liverpool Bay Enhanced Environmental Monitoring

If the Coffin Island (AQ1205) expansion and the application for new sites at Brooklyn and Mersey Point are approved by the Nova Scotia Aquaculture Review Board (NSARB), Kelly Cove Salmon Inc. (KCS) will implement an enhanced environmental monitoring program to compliment the staged production plan. The goal of enhanced environmental monitoring is to better assess the benthic health at these sites as production in Liverpool Bay increases. All sites will undergo enhanced environmental monitoring using station selection methods adapted from Level I EMP as outlined by the Nova Scotia Department of Fisheries and Aquaculture (NSDFA).

Each stocked farm will complete its regular Level I EMP sampling event between July 1st and October 31st. Usually, the number of sampling stations is prescribed based on the number of fish that are stocked at a site, however, KCS is proposing to have enhanced environmental monitoring basing the number of stations off the full capacity (600,001-700,000 fish) of each site even though the actual amount for the first crop at Brooklyn and Mersey Point will be less. This would include a total of 8 Level I stations and 24 sediment samples, with 7 of those stations at cage edge and an additional station at a reference location off lease (Table 1). Sediment samples collected from Level I EMP will be analyzed for redox (mV), total dissolved sulfide (µM), porosity (%), and percent organic matter (%).

Table 1. Number of Monitoring Stations Required for Level I Sediment and Video Collection (NSDFA, 2021)

Maximum number of fish within cage site array during production cycle	Number of sampling stations (not including reference stations)	Number of samples (3 samples/station for soft bottom sites)
1-200,000	2	6
200,001-300,000	3	9
300,001-400,000	4	12
400,001-500,000	5	15
500,001-600,000	6	18
600,001-700,000	7	21
700,001-800,000	8	24
800,001-900,000	9	27
900,000-1,000,000	10	30

*Contact NSDFA if more than 1,000,000 finfish are stocked and when number of sampling stations exceeds number of cages

In addition to Level I monitoring, the enhanced monitoring will consist of up to 8 additional sampling stations to assess benthic health over a larger area to complement the Level I sampling. Location of the additional sampling stations will be determined with the assistance of NSDFA. Sediment samples collected from these stations will be analyzed for redox (mV), and total dissolved sulfide (µM).

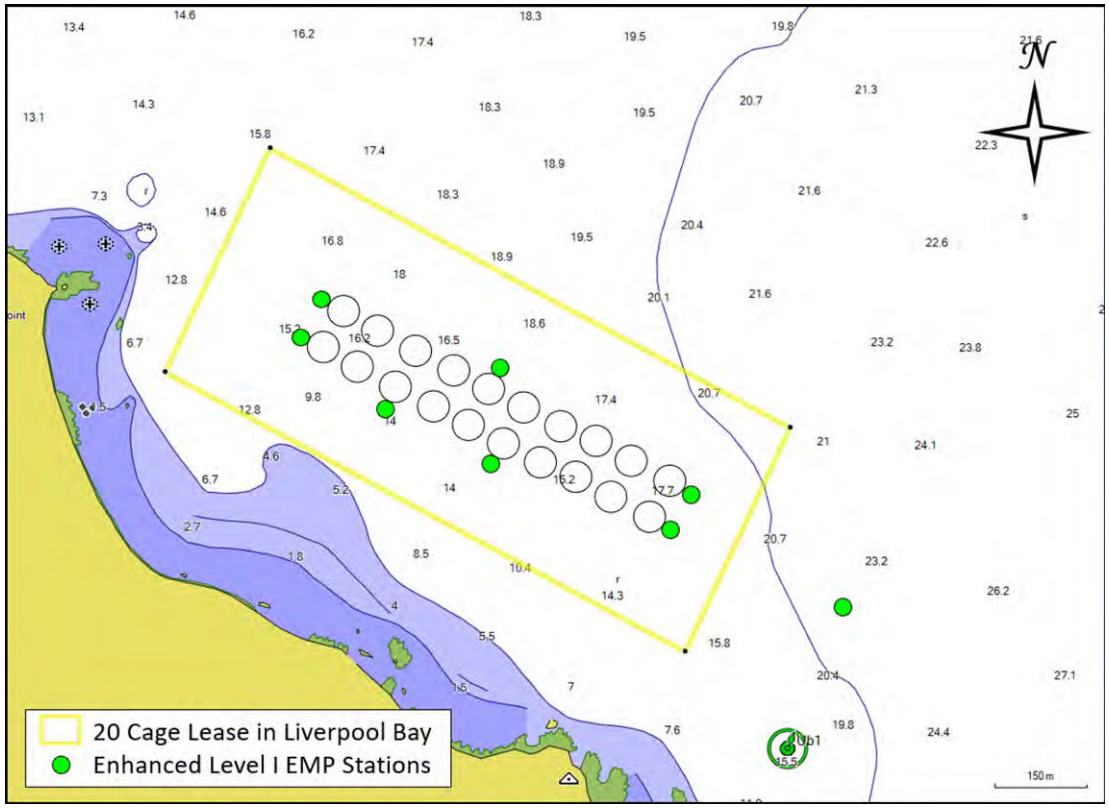
Enhanced monitoring will be in effect up to and including the first full production cycle where a farm reaches its maximum capacity. Brooklyn and Mersey Point are proposed to take 2 production cycles to reach maximum capacity and thus enhanced environmental monitoring will be in effect for a longer period than the existing Coffin Island site which would increase to its maximum capacity during the next production period (Table 2).

Potential locations of Level I sampling stations are presented in Figure 1 as a reference tool. These sample locations are subject to change as they are ultimately dependent on fish biomass in each cage at the time of sampling. Additional enhanced monitoring stations will be added prior to when the environmental monitoring events take place and will be done in consultation with NSDFA to determine the best locations.

Table 1. Proposed Enhanced Environmental Monitoring Schedule at Liverpool Bay Sites

	Year						
Site Name	2025	2026	2027	2028	2029	2030	2031
Coffin Island AQ1205	Enhanced Monitoring	Enhanced Monitoring	Level I Monitoring	Level I Monitoring	Level I Monitoring	Level I Monitoring	Level I Monitoring
Brooklyn	Enhanced Monitoring	Enhanced Monitoring	Enhanced Monitoring	Enhanced Monitoring	Level I Monitoring	Level I Monitoring	Level I Monitoring
Mersey Point			Enhanced Monitoring	Enhanced Monitoring	Enhanced Monitoring	Enhanced Monitoring	Level I Monitoring

Figure 1. Potential Locations of Level I Environmental Monitoring Stations



Note: Additional enhanced environmental monitoring stations will be added during consultations with NSDFA.

TAB J

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit J referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

ATLANTIC

Major Projects Inventory

June 6, 2023

Major Projects Inventory 2023

Detailed project list

A searchable Major Projects Inventory is available on the APEC member website at www.apec-econ.ca/members

This member resource includes our mapping tool which allows you to more closely examine all projects

The Atlantic Provinces Economic Council is the source for independent research, insights and ideas vital to supporting a healthy, inclusive and sustainable Atlantic Canadian economy.

ATLANTIC PROVINCES ECONOMIC COUNCIL | CONSEIL ÉCONOMIQUE DES PROVINCES DE L'ATLANTIQUE

About APEC's Major Projects Inventory

APEC produces an annual project-by-project inventory of the major investment activity ongoing and proposed for Atlantic Canada. A "major project" is defined as any capital project valued at $25 million or more ($10 million or more in Prince Edward Island) that adds to the capital stock of the region. Larger projects without a currently declared value are listed for reference

Industry Classification

EDU - education and research capital spending including schools, universities, colleges and research institutes

ELE - electricity generation, distribution and electric utility capital spending

ENV - environmental infrastructure spending including site cleanups and programs supporting environmental infrastructure initiatives

HEA - health care infrastructure including hospitals and long-term care facilities

HOU - housing, including large scale developments of apartments, condos, townhouses, single family dwellings, social housing, or a combination of these types of housing

MAN - manufacturing and other primary capital spending which includes industrial construction by manufacturing and primary industries (other than oil and gas and mining).

MIN - mining capital spending including new mine development, expansions to existing mines and mineral exploration

O&G - oil and gas capital spending including offshore and onshore oil and gas exploration, extraction and distribution

OTH - other public infrastructure projects including broad federal infrastructure programs, water and wastewater projects, defense infrastructure, justice facilities, and government office buildings

REC - recreation and tourism infrastructure including recreation facilities (rinks, pools, multipurpose facilities) and tourism developments (hotels, resorts, golf courses, arts and entertainment)

SER - other services including capital investment in telecommunications, retail and commercial construction

TRA - transportation infrastructure spending including highways, bridges, airports, ports, rail and public transit

Classification by Stage of Development

Underway or approved – These projects are already underway or have been approved to begin soon.

Near approval – These are projects nearing approval but require some final component (such as financing or regulatory approval) to be resolved.

Under development or review – These projects have passed the proposal stage and are under review. Feasibility studies, drilling tests, public consultations, engineering studies and other technical analysis are being conducted to finalize the details and viability of the project.

Proposal stage – These projects are in the proposal stage or are projects for which there is some economic rationale but no detailed proposal.

* A project with an asterisk next to its value indicates that it is an estimate made by APEC. Estimates are made on available information.

Projects that are new to the Inventory are in blue text.

For further information about the Inventory, please contact APEC at: info@apec-econ.ca

Contributors to MPI 2023 – Patrick Brannon, Peter Ogunmodede

CIB BIC | Canada Infrastructure Bank

INVESTING IN IMPACT

Infrastructure investment plays a critical role in the transition to a net-zero economy.

We are an impact investor developing the next generation of infrastructure Canadians need. Our purpose is to invest in revenue-generating infrastructure which attracts private capital. We deliver outcomes such as sustainable economic growth, connected communities and climate change action.

5.1 MT annual GHG reduction	**174,000** daily transit riders	**340,884** homes connected to broadband	**5,466** ZEBs financed	**27** Indigenous communities benefiting	**200,000** acres of addition farm-land irrigated

We are working on investment opportunities across Canada in our priority sectors - **green infrastructure, clean power, public transit, trade and transportation, and broadband infrastructure.**

Do you have infrastructure projects we can help to accelerate in Atlantic Canada?

Contact the CIB investment team.

investments@cib-bic.ca

cib-bic.ca

Nova Scotia Major Projects Inventory Underway or Approved Projects					
Ind	**Project Name**	**$Value**	**Begins**	**Ends**	**Details**
HOU					
SER					
OTH					
EDU					
OTH					
MAN	Cooke Aquaculture Capital Plan - NS	$125 million	2023	2027	Engineering and permitting is underway for a large $120 million land-based hatchery and post-smolt facility near Centreville on Digby Neck for development between 2024-2027. This world-class recirculating aquaculture system (RAS) investment is a multi-phased project expected to take three years to complete and create over 566 direct construction jobs and 370 indirect and induced jobs. This capital budget also includes upgrades to harvest vessels, seawater sites, feed barges, well boats, and other equipment.
HOU					
TRA					

TAB K

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit K referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

Cooke Aquaculture -- Barrington Lake fire SitRep Summary 06-05-2023 12:00hrs -- Joel Richardson

- NB Cooke employees remain in Shelburne working with NS employees to support volunteer firefighters. Several Cooke employees in Shelburne and South Shore area are firefighters on front lines.
- 3 tonnes of ice, gel packs, styro coolers delivered to DNRR and volunteer FDs.
- 150 cases of water/gatorade delivered to FF in hot zone at FDs and community halls.
- Cooke hot meal BBQ provided for FF/evacuees 06-01/02-2023 at Shelburne FD.
- Coveralls (40), raingear and sweaters delivered by Cooke to Harbour FD and other FDs 06-04-2023.
- Our True North Salmon reefer #1 trailer remains at Birchtown Community Center for as long as they need it to store food and beverages for FF meal prep and distribution. Reefer refueled 06-05-2023.
- Due to significant food donations, Warden Penny Smith has requested Cooke reefer #2 be moved to Birchtown Community Center. Will be moved 06-05-2023 via Bill Harris Transport Ltd.
- No operational impacts to Cooke fish farms in Shelburne Harbour and area. 0530-0900 hrs daily morning exemption granted by Transport Canada to allow feed vessels to access one farm not on remote feeding.
- Cooke will demobilize its heavy gear incl fire truck apparatus, large high pressure water pumps (10) and 1200 L water tanks (20) starting Tuesday. Cooke's Shoreland Transport tractor trailers plan to depart Wednesday.
- Cooke Starlink communications equipment (2) provided to Town of Shelburne EMO remain in place.
- We continue to provide daily volunteer fire engine, equipment and community hall refueling services with Cooke slip tanks trailered into the hot zone in collaboration with West Nova Fuels and Shelburne EMO.
- Cooke will leave light gear such as backpack tanks (10), 6000 ft forestry hoses/nozzles/fittings, and high-pressure portable stryker pumps (4) on loan that are currently deployed with Town of Shelburne and Shelburne County volunteer FDs for spot fires until Barrington Lake fire extinguished or further resources arrive.

Cooke Incident Contacts:

Derek Hatt, Director of Corporate Services (Cooke Incident Commander in Shelburne)

[redacted]

Jeff Nickerson, NS Business Development Manager, Kelly Cove Salmon Ltd.

[redacted]

Joel Richardson, Vice President Public Relations

[redacted]

TAB L

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit L referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

IMG 1220

IMG 1218

IMG 1223

IMG 1224

IMG 1225

IMG 1332

IMG 1334

IMG 1335

TAB M

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit M referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

From: Jennifer Hewitt
Sent: Monday, March 7, 2022 3:43 PM
To: tgaudet@mikmaqrights.com
Cc: Jeff Nickerson <jnickerson@cookeaqua.com>
Subject: Meeting Cooke Aquaculture

HI Twila,

I hope all is well with you, seems like we are getting over the worst of COVID (we hope).
We would love the opportunity to come and give a presentation to you and your colleagues on Cooke's upcoming boundary amendments, proposed expansions for Nova Scotia and our current First Nations partnerships.

I look forward to hearing from you,
Regards Jennifer

Jennifer Hewitt
Kelly Cove Salmon Ltd.
Division of Cooke Aquaculture INC
Compliance Manager, NS
[redacted]
134 North Street
Bridgewater, NS
B4V 2V6

TAB N

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit N referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

Acadia First Nations Consultation
April 13, 2022, 6-8:30 pm,
Milton Community Center

Attendance:

- Cooke
  - Jeff Nickerson, Joel Richardson, Jennifer Hewitt
- Acadia Fist Nation
  - Charmaine Stevens – councillor, education & fisheries portfolio.
  - Jeff Purdy – councillor, Finance, Forestry, Indigenous Protection Conservation Areas, Nova Scotia Power Inc., Species at Risk
  - Curtis Falls – band member
  - Bill – lobster Fisherman – band member
  - Sarah – Archeology
  - 1 more band member
- KMKNO
  - Tamara Young – Jr Consultation researcher
  - Eldon Paul – Article Clerk

Main Concerns of Acadia Fist Nations:

1. Acadia and Native Council owns commercial lobster licence and Food Social and ceremonial (FSC) fishery in the area. The FSC fishery patrons (~100) only use small skiffs and can't go further in the bay like bigger boats can. They are allowed 3 traps per member and traditionally set traps in the Liverpool Bay area where sites will be located thus, encroaching on their grounds. They mention the "research" completed in Port Mouton as evidence that lobster fishery will be impacted.
2. The Mersey Corridor is a known Mi'kmaq archeology site rich with artifacts. ¼ of Mi'kmaq artifacts were found in the Mersey corridor ~ 10,000 years of Mi'kmaq history. Site #1432 know as Brooklyn site is believed to have significant artifacts. This needs to be recognized, area could possibly contain burial sites, fishing camps, ceremonial areas, etc. as the Mi'kmaq built their communities in close proximity to water. Site could have the potential of destroying the culture of a nation, the ethics needs to be understood and the risks associated with any destruction. The Archeology assessment has to be done by someone with Mi'kmaq knowledge.

Comments & Questions from the meeting:

- Acadia was wondering why Cooke is not at the table during the consultation with the province, Acadia don't know if their concerns are being brought forward to the company.
- Why are we not going to land based fish farms are there are some in the province with product being sold in Liverpool Sobeys.
- Band Member lives by a fish farm in Port Mouton, seen massive fish die-offs, there are escapes, seen people lining the Medway River catching salmon.
- Why is Cooke coming? We don't want you! The community don't want you; we know what is going on here, Cookes and government will get their way.
- Why are divers on the site so often? What is making the fish die? – Jeff discussed routine mortality.
- What is the rate of escapes? Are sea lice an issue in NS? – Jeff discussed escapes and the addition of cleaner fish.
- "To make sure its on the record we are concerned about environmental issues as well".
- Site is an eye sore, don't want to see it on our beautiful coastline.
- Cooke – Offered to take anyone out on site for a farm visit as well as them to visit the release event with Fort Folly First Nation.
- Acadia very interested in continuing with Medway project.

Actions

Jeff – To send Charmaine map of Liverpool Bay with sites overlaid.
Jeff – To send full application to Charmaine

TAB O

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit O referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

Acadia First Nations Consultation
July 6, 2022, 1:30 – 3:00 pm,
Queens Place Emera Board Room

Attendance:

- Cooke
  - Jeff Nickerson, Jennifer Hewitt
- Acadia Fist Nation
  - Charmaine Stevens – Councillor, Education & Fisheries portfolio.
  - Curtis Falls – Band Member
  - Ella Stevens – Band Member
- Boreas Heritage Consulting
  - Sarah Beanlands – Archeologist - Boreas Heritage Consulting
- KMKNO
  - Twila Gaudet – Director of Consultation
  - Mise'l Abram – Assistant to the Director of Consultation

- Meeting was organized by Cooke.
- Intend was to bring the Archaeologist & Acadia First Nations together to discuss the path forward with the Mi'kmaw archology survey of Liverpool Bay.
- Sara Beanlands discussed her approach to complete the archaeological Impact Assessment:
  - Apply for heritage research permit
  - Background study from archive resources
    - Topo maps, modelling, review of under water bathymetry
  - Archaeological reconnaissance
    - Site visit/possible field survey
  - Report
    - Submitted to Tourism, Cultural & Heritage, Cooke & Acadia First Nations
- Jeff spoke to how we feel this is an extremely important. We don't expect Acadia to go to ARB and be supporters Cooke just feels this archology is important to the Mi'kmaw and it's the right thing to do.
- Cooke wants Boreas Heritage to work with Acadia to ensure their interests are met with the survey.

- Charmaine Stevens invited the KMKNO to attend the meeting. Both groups thanked us for this approach. They are used to addressing their concerns, but they are not used to industry groups “hearing their concerns and acting on them in their best interests”.
- Cooke offered use of resources if needed for the assessment / vessels, divers, core tube, etc.
- Charmaine Stevens daughter Ella will be working with Sara from Boreas Heritage for the next few months to complete the assessment and report.
- KMKNO was very pleased with how Cooke is approaching the assessment and our willingness to build the relationship with Acadia.

TAB P

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit P referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

From: Jennifer Hewitt
Sent: Monday, October 3, 2022 2:59 PM
To: [redacted]@acadiaband.ca; Jeff Nickerson <jnickerson@cookeaqua.com>
Subject: Archeological assessment

Hi Charmaine,

I'm touching base as Sara and Ella will have their assessment done for Liverpool Bay the end of this week. I assume Sara will submit to you and the band at the same time.

Should we schedule a meeting to discuss the findings?

Regards Jennifer

Get Outlook for iOS

TAB Q

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit Q referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

From: Jennifer Hewitt
Sent: Wednesday, October 19, 2022 4:22 PM
To: [redacted]@acadiaband.ca
Cc: Jeff Nickerson <jnickerson@cookeaqua.com>
Subject: ARIA Report Liverpool Bay

Good day Charmaine,
I've attached the ARIA report completed by Boreas Heritage on Liverpool Bay.
We are hoping to discuss the next steps with you and your fellow band members once you had an opportunity to review the findings.
Take Care & hope to hear from you soon,
Jennifer

Jennifer Hewitt
Kelly Cove Salmon Ltd.
Division of Cooke Aquaculture INC
Compliance Manager, NS
[redacted]
134 North Street
Bridgewater, NS
B4V 2V6

LIVERPOOL BAY AQUACULTURE ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT QUEENS COUNTY

Submitted to:
Cooke Aquaculture
and the
Special Places Program

Submitted by:
Boreas Heritage Consulting Inc.

Heritage Research Permit:
A2022NS130

October 2022

BOREAS HERITAGE

PROJECT PERSONNEL

PRINCIPAL INVESTIGATOR:	Sara J. Beanlands, M.A.
PROJECT MANAGEMENT:	Sara J. Beanlands, M.A.
DESKTOP COMPONENT:	Sara J. Beanlands, M.A.
	Ella Stevens
REPORT PREPARATION:	Sara J. Beanlands, M.A.
	Ella Stevens
GIS / FIGURE DRAFTING:	Stephen G. Garcin, M.A.

EXECUTIVE SUMMARY

Kelly Cove Salmon Ltd., the Canadian salmon farming division of Cooke Aquaculture Inc., has applied for two new aquaculture sites (Mersey & Brooklyn) and the expansion of an existing site (Liverpool) in Liverpool Bay, located within the greater Mi'kmaw territory of Kespukwitk, Queens County, Nova Scotia. In order to evaluate the potential for impacting archaeological resources during this work, Cooke Aquaculture has retained Boreas Heritage Consulting Inc. (Boreas Heritage) to conduct an Archaeological Resource Impact Assessment (ARIA) of the proposed Project development areas.

The ARIA was conducted in accordance with the terms of Heritage Research Permit A2022NS130, issued by the Nova Scotia Department of Communities, Culture, Tourism, and Heritage (CCTH) – Special Places Program (SPP), and was directed by Sara Beanlands, with the assistance of Ella Stevens (Acadia First Nation). The purpose of the Survey is to highlight areas of potential archaeological sensitivity associated with the proposed Project. As the proposed development footprints are currently submerged, the first phase of the ARIA involved a desk-based assessment only, so that an appropriate field component strategy could be devised.

Based on the results of the desk-based assessment, which examines the environmental context, the archaeological context, and the historical context of the Assessment Area, Boreas Heritage identified **two (2)** areas considered to exhibit high potential for encountering submerged archaeological resources (HPA-01 & HPA-02). The remaining portions of the Assessment Area are considered to exhibit low potential for encountering archaeological resources.

Based on the results of the ARIA, Boreas Heritage recommends the **two (2)** areas of high archaeological potential (HPA-01 & HPA-02), as described in this report, be avoided during any proposed development and/or ground disturbance activities associated with the proposed Project, to prevent accidental impacts to areas ascribed high archaeological potential. Additionally, if areas of high archaeological potential, or parts thereof, cannot be avoided during development activities related to the proposed Project, it is recommended these areas be subjected to subsurface archaeological sampling probes in order to confirm the presence or absence of archaeological resources. Furthermore, if any changes or deviations from the original plans relating to the proposed Project, as provided to Boreas Heritage for this Survey, are necessary, and are found to impact areas outside the Assessment Area described in this report, then additional archaeological resource impact assessment(s) may be warranted for amended portions of the proposed Project. Finally, it is recommended that the remainder of the Assessment Area, as described in the report, be cleared of any requirement for further archaeological investigation and that development within these areas may proceed as planned

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1.0 INTRODUCTION

Kelly Cove Salmon Ltd., the Canadian salmon farming division of Cooke Aquaculture Inc., has applied for two new aquaculture sites (Mersey & Brooklyn) and the expansion of an existing site (Liverpool) in Liverpool Bay, located within the greater Mi'kmaw territory of Kespukwitk, Queens County, Nova Scotia (***Plate 1***). In order to evaluate the potential for impacting archaeological resources during this work, Cooke Aquaculture Inc. has retained Boreas Heritage Consulting Inc. (Boreas Heritage) to conduct an Archaeological Resource Impact Assessment (ARIA) of the proposed Project development areas.

The ARIA was conducted in accordance with the terms of Heritage Research Permit A2022NS130 (***Appendix A***), issued by the Nova Scotia Department of Communities, Culture, Tourism, and Heritage (CCTH) – Special Places Program (SPP), and was directed by Sara Beanlands, with the assistance of Ella Stevens (Acadia First Nation). The purpose of the Survey is to highlight areas of potential archaeological sensitivity associated with the proposed Project. As the proposed development footprints are currently submerged, the first phase of the ARIA will involve a desk-based assessment only, so that an appropriate field component strategy can be devised. The desk-based assessment outlines the environmental, [redacted], and historical context of the Assessment Area. This report includes an overview of the methods applied during the Survey, a summary of the results of the Survey, and archaeological resource management recommendations for the proposed Project.

Plate 1: ***View southeast of existing Liverpool aquaculture site.***

2.0 ASSESSMENT AREA

The Assessment Area includes two proposed new aquaculture sites (Mersey & Brooklyn) and the expansion of an existing site (Liverpool) in Liverpool Bay, located within the greater Mi'kmaw territory of Kespukwitk, Queens County, Nova Scotia (***Figures 1 & 2***).

The Liverpool marine aquaculture site #1205 is situated in Liverpool Bay, on the western side of Coffin Island. The current lease has dimensions of approximately 200 metres x 200 metres, comprising a total area of approximately 4 hectares (***Plate 2***). The proposed boundary amendment extends the lease boundaries to add six additional cages south of the existing grid and to accommodate all below surface gear. The dimensions of the proposed lease are approximately 405 metres x 1005 metres, comprising a total area of approximately 40.7 hectares. The proposed new Mersey Point aquaculture site is situated in Liverpool Bay, between Black Point and Moose Harbour. The proposed lease has dimensions of approximately 405 metres x 1005 metres, comprising a total area of approximately 40.7 hectares. If approved, the proposed lease would have a 2 x 10 cage grid configuration. The proposed new Brooklyn aquaculture site is situated in Liverpool Bay, southwest of Eastern Head. The proposed lease has dimensions of approximately 405 metres x 1005 metres, comprising a total area of approximately 40.7 hectares. If approved, the proposed lease would have a 2 x 10 cage grid configuration.

Plate 2: ***View north of existing Liverpool aquaculture site.***

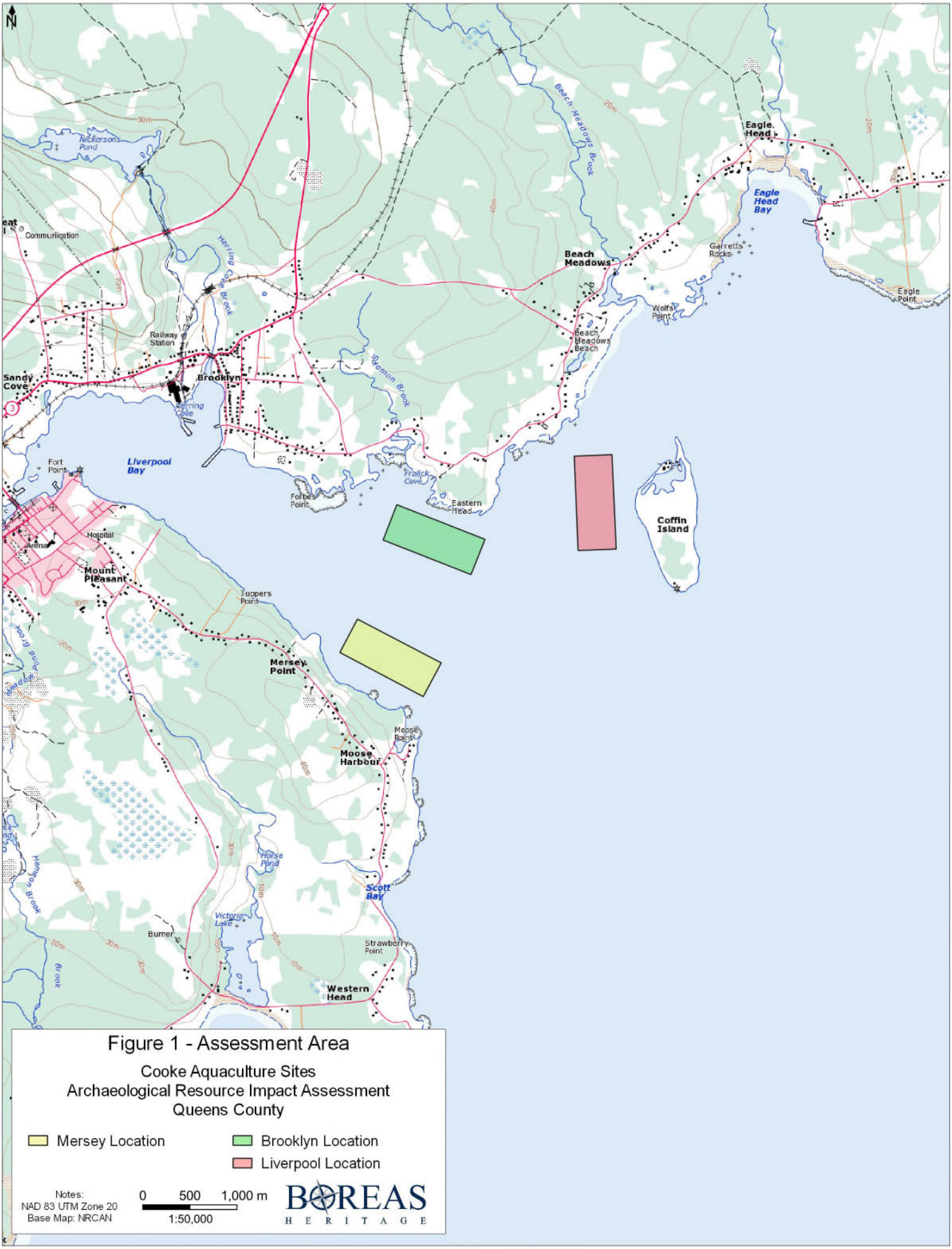


Figure 1 - Assessment Area

Cooke Aquaculture Sites
Archaeological Resource Impact Assessment
Queens County

Mersey Location

Brooklyn Location

Liverpool Location

Notes:
NAD 83 UTM Zone 20
Base Map: NRCAN

0 500 1,000 m
1:50,000

BOREAS HERITAGE

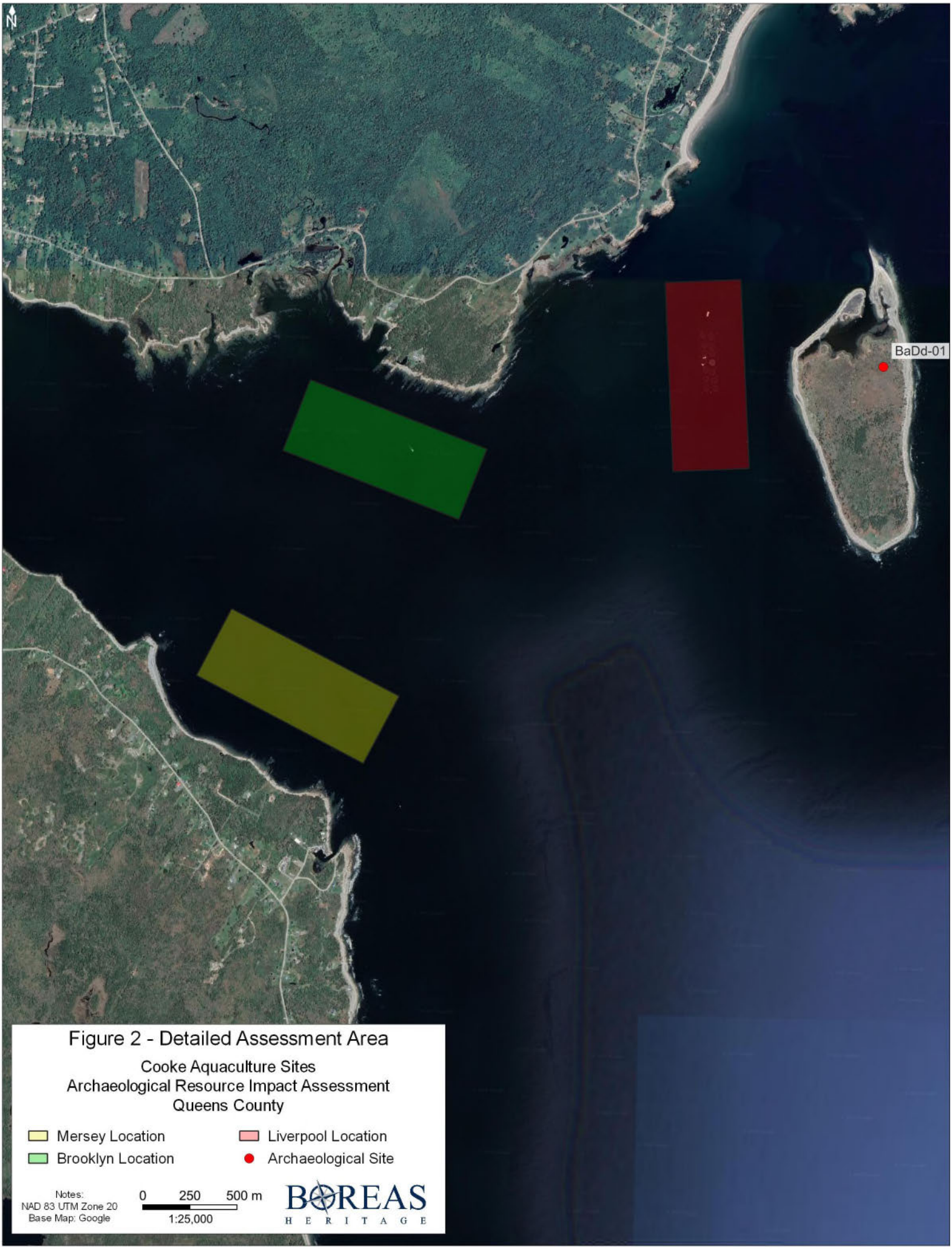


Figure 2 - Detailed Assessment Area

Cooke Aquaculture Sites
Archaeological Resource Impact Assessment
Queens County

Mersey Location
Liverpool Location
Brooklyn Location
Archaeological Site

Notes:
NAD 83 UTM Zone 20
Base Map: Google

0 250 500 m
1:25,000

BOREAS HERITAGE

3.0 METHODS

The objectives of the Survey are to (1) evaluate archaeological potential within the Assessment Area, (2) identify and delineate areas considered to exhibit high potential for encountering archaeological resources, (3) provide detailed and accurate information on the results of the Survey, and (4) offer comprehensive recommendations so that appropriate archaeological resource management strategies can be devised. As the proposed development footprints are currently submerged, the first phase of the ARIA will involve a desktop component (background screening) only. A guided boat tour of Liverpool Bay, including the existing Liverpool aquaculture site and was provided by Cooke Aquaculture Ltd. on September 27, 2022.

3.1 Desktop Component – Methods

The purpose of the desktop component of the Survey is to identify areas considered to exhibit high potential for encountering archaeological resources within the Assessment Area. Any areas of elevated archaeological potential identified during the desktop component are targeted during the field component of the Survey. Areas confirmed to exhibit high archaeological potential during the field component of the Survey are delineated and designated as High Potential Areas (HPA). The results of the desktop component provide interpretative and evaluative context for any potential archaeological resources identified during the field component of the Survey. It is also noted that, as per Heritage Research Permit requirements, the Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO) was advised of the proposed Project as part of the desktop component for the Survey.

The desktop component of the Survey examines three elements: the environmental context, the archaeological context, and the historical context of the Assessment Area. The environmental context, including analysis of bathymetric data, is examined to identify past and current environmental influences or conditions that may elevate archaeological potential within the Assessment Area (e.g.: topography, local resources, and potential for agriculture). The archaeological context of the Assessment Area is examined to identify how people used and occupied the surrounding landscape based on evidence from previously registered archaeological sites and past archaeological work conducted near the proposed Project. The historical context of the Assessment Area is examined to identify how people used and occupied the local area based on evidence from published archival documents, ethno-historic records, local oral traditions, historic maps, local and/or regional histories, scholarly texts, and available property records.

In Nova Scotia, the Maritime Archaeological Resource Inventory (MARI) is maintained by the Nova Scotia Museum, on behalf of CCTH. Reports from past archaeological assessments and academic research conducted near the Assessment Area provide archaeological context, which informs the interpretation and evaluation of any potential archaeological resources identified during the field component of the Survey. Additionally, the desktop component of the Survey involves a general review of topographic maps, coastal charts, and aerial photographs related to the Assessment Area, to identify

topographical and hydrological attributes that correlate with high archaeological potential (e.g., waterfalls/rapids as focal points for fishing or requiring portage, submerged marine terraces representing former coastline). These attributes are also incorporated into the archaeological potential model (APM), developed by Boreas Heritage.

The model described above has been developed by analysing a range of natural and cultural attributes considered to have influenced past patterns of land use and settlement, and by extension, archaeological potential across the landscape. The attributes include proximity to water (essential for drinking and transportation), slope, aspect, and elevation, as well as proximity to known archaeological sites. The result of the modelling is a continuous depiction of archaeological potential within the Assessment Area. It is important to note, however, that people have lived in what is now Nova Scotia for more than 12,000 years and have persisted through a series of climate shifts, including changes in annual precipitation and temperatures. The modern bioclimatic scheme, which incorporates several of the variables used to assess archaeological potential, can only be assumed to be reliable for current environmental conditions. Bioclimatic variations may have changed the past nature of variables, such as aquatic features or forest cover. As a result, appropriate caution must be exercised when relying solely upon the models, which depend on contemporary biophysical characteristics. The APM should only be employed in conjunction with the detailed results of the desktop component of the Survey and augmented or refined following the results of the field component of the Survey.

In general, 21st century maps, satellite imagery and GIS data reflect the land and coastline as they are today. Where possible, the APM uses topographic data that reflects the historic, unmodified landforms as they were in the past. Modifications such as causeways, canals, and reservoirs, as well as shoreline reclamation and development, have significantly reshaped the modern landscape. The APM takes these variables into account and provides a continuous representation of the predicted archaeological potential across the entire landscape. Areas of high archaeological potential are highlighted in red, and areas of low archaeological potential are represented in green. The APM is designed only for use in conjunction with the combined results of the desktop and field components of the Survey and should not be viewed as a stand-alone archaeological assessment tool. In addition to the terrestrial APM, Boreas Heritage created an approximate shoreline reconstruction map based on available and conceptual data regarding sea level rise during the Holocene and Late Holocene.

Boreas Heritage applies background research methods that compile context information from a diverse range of sources. The historical and cultural information is integrated with the environmental and physiographic date to identify areas of archaeological potential within the Assessment Area and to provide a framework for the initial interpretation of any archaeological resources encountered during the field component of the Survey. Combined, these critical lines of inquiry inform the results of the Survey and provide context for the Assessment Area as it relates to episodes of past human land-use, cultural interaction, settlement, and development.

3.2 Respecting Mi'kma'ki

Boreas Heritage recognizes and acknowledges the Indigenous Peoples of Atlantic Canada as treaty partners. We are honoured to work and live on the unceded, ancestral, and traditional lands of the Beothuk, Innu, Labrador Inuit, L'nuk/Mi'kmaq, Passamaquoddy, and Wolastoqiyik. We offer our support as allies to First Nation representatives, businesses, and communities as they build capacity and progress toward self-determination. We also recognize that archaeological methods can dishonour Ancestral places and inflict harm on descendent communities (Lelièvre et al 2020).

The Liverpool Bay Aquaculture Assessment Area is located within the greater Mi'kmaw territory of [redacted] Having listened to Mi'kmaw leadership, Elders, and community representatives, we understand that respect is a basic element of Mi'kmaw spirituality, and we embrace the belief that all things on earth have a spirit.

Before beginning any archaeological field work within Mi'kma'ki, all Boreas Heritage staff, and crew, participate in an offering of tobacco. While standing in a circle, each team member respectfully acknowledges the land and the Ancestors and expresses gratitude for the opportunity to work in Mi'kma'ki. When an Indigenous member of our team is present, we also participate in 'smudging', which involves burning medicine to produce smoke, and using the smoke for daily spiritual cleansing.

Recognizing that archaeological field methods can be destructive to the land and natural soils, some of which have taken over 10,000 years to develop, Boreas Heritage believes that when we remove something from the land, we must give something in return. At the completion of each shovel test, and before the unit is backfilled, an offering of tobacco is placed within the unit to honour the land that has been disturbed during the archaeological testing programme. If Mi'kmaw material culture is recovered, it is immediately wrapped in red cloth and sprinkled with tobacco in honour of the sacred nature of the Ancestor's belongings and the spirit that is contained therein.

Boreas Heritage is committed to using methods that respect and honor the values of the communities within which we work.

4.0 RESULTS

4.1 Desktop Component

The following sections outline the results of the desktop component of the Assessment, with focus on the environmental context, the archaeological context, and the historical context of the Assessment Area. The desktop component assists in the identification and delineation of areas considered to exhibit elevated archaeological potential and provides a foundation for the initial interpretation of any archaeological resources that may be encountered during subsequent field components of the Assessment.

4.1.1 Results – Environmental Context

It is important to understand the physiographic attributes and environmental characteristics of the land in order to effectively interpret patterns of human settlement over thousands of years. Geological, topographic, hydrographic, and ecological factors have influenced the land use patterns of precontact and historic period Indigenous peoples, as well as later historic period settlers. These factors are key to identifying and evaluating the archaeological potential of the Assessment Area. Specific considerations for determining archaeological potential applied during the desktop and field components of the Assessment include the slope and drainage of landforms, available mineral resources, soil types and agricultural value, access to potable water, access to travel corridors (networks of footpaths and roadways, navigable coastline, and inland waterways), and the accessibility, seasonal variation and diversity of targeted flora and fauna species. The following paragraphs describe the environmental attributes specific to the Assessment Area.

At the end of the Last Glacial Maximum (LGM), *ca.* 20,000 BP, much of the northern hemisphere was covered in a vast glacier complex made up of three coalescent ice masses, collectively known as the Laurentide Ice Sheet. The ice, which depressed the earth's crust by at least 300 metres and stored a sea-level equivalent of approximately 50 metres, covered much of Canada and the northern United States until it began to retreat approximately 15,000 years ago (Stokes 2017). Initial glacial retreat coincided with the Allerød interstadial, a warm period that occurred between 16,000 and 12,800 years ago and ended with the onset of the Younger Dryas stadial, a cold period that occurred between 12,900 and 12,000 years ago.

During the Allerød interstadial, climatic warming reduced most of the ice sheets over present-day Nova Scotia and New Brunswick, except those which lingered in the Cobequid, Antigonish and Cape Breton Highlands. As the ice began to melt and retreat, land areas gradually became exposed and vegetation developed, attracting late Ice Age fauna, such as mastodon. At the same time, deglaciation created a complex interplay between emerging land (local isostatic effects) and relative sea levels (global eustatic effects). The Younger Dryas stadial saw a substantial drop in temperature and a localized re-advancement of remnant ice in Atlantic Canada. Any extant glaciers were reformed, and tundra vegetation was rejuvenated. Although the ice was an important constraint on the migration and dispersal of flora and faunal during this period, plant and animal life soon returned as the onset of warming ended the Younger

Dryas. Vegetation gradually colonized the newly exposed ground, facilitating the migration of caribou and other fauna, which were, in turn, followed by the earliest known human presence in the region (Pielou 1991:2; Stea 2011:55). Deglaciation of what is now known as Nova Scotia appears to have been virtually complete by 11,000 BP (Stea & Mott 1988:184).

Relative sea level rose rapidly during the early Holocene period at a rate of approximately 1.2 metres per century (or approximately 12 millimetres per year) until about 6,000 years ago, at which time it diminished to approximately 1.8 millimetres per year (Force 2013:34). Another notable climate variation occurred approximately 8,200 cal BP (***Plate 3***), representing a global cooling of 4°C thought to be associated with a large influx of freshwater into the North Atlantic during the collapse of the Laurentide Ice Sheet (Neil & Gajewski 2019:23). Indeed, shifts in climate coincide with culturally significant periods of human occupation in Mi'kma'ki and those dependent on coastal ecosystems would have been vulnerable to sea level changes (Neil & Gajewski 2019:21). As a result, it is important to understand the changing coastline in regions where precontact occupation was tied to the coast.

[Shaw et al. 2006]

Plate 3: ***The Maritime region ca. 8,000 BP.***

The sea level curve indicates that relative sea level rose by approximately 20 metres in Nova Scotia between 7,000 and 3,500 cal BP. At approximately 1,750 cal BP, sea level was approximately 1.3 metres lower than the present day, suggesting a stabilization of coastal submergence, which has facilitated the preservation of archaeological sites from this time period (Neil & Gajewski 2019:24). Between 100 CE and 1800 sea level rose at 17 centimetres per century, and between 1900 and 1920 sea level rise increased to 3.2 millimetres per year (Gehrels et al. 2005).

The eustatic rise in Atlantic Canada was complicated by post-glacial crustal rebound and these and other factors, such as storm events and erosion, have led to the reconfiguration and/or submergence of coastal areas and, in many cases, the entire disappearance of coastal landforms, including potential evidence of early occupations and archaeological sites. According to Shaw, who studied the impacts of rising sea level during the Holocene and Late Holocene, fragmentary evidence of coastline environments has been found offshore (Shaw et al. 1993). At about 10,000 radiocarbon years BP, the average position of the coastline was 10 kilometres seaward of its present location and by 5,000 years BP the shores were at 1.5 kilometres (Bundy et al. 2014:20). Thus, the coastline has evolved significantly through time and the coastal orientation of precontact archaeological sites must be considered in light of the changing configuration and position of the coastline since the last glaciation (Neil & Gajewski 2019:21).

Higher ground and elevated positions, surrounded by low or level topography, often indicate past settlement and land use. Other geographic features, such as eskers, drumlins, sizable knolls, plateaus, and distinctive land formations (e.g., rock outcrops, caverns, mounds) are also strong indications of archaeological potential. The Assessment Area is located within the greater terrestrial region of the Atlantic Coast – Quartzite Headlands – Capes and Bays (841). The bedrock geology is dominated by greywacke into which several bodies of granite have intruded, creating hummocky terrain with limited relief. The coastline is indented with well developed capes and long narrow bays, which represent drowned river estuaries, and the sediment along the coast is generally composed of local sand, carried landward from offshore and deposited during the post-glacial marine transgression (Davis & Browne 1996:204). The glacial till deposits are variable in thickness but are generally less than 3 metres deep and bedrock is exposed in areas along the coastline. The soils in the area of Liverpool are dominated by *Danesville* sandy loam, described as a dark grayish brown sandy loam over dark yellowish brown sandy loam, often mottled, with an olive gray sandy loam till, also generally mottled (Cann et al. 1959:20-29). These soils are generally undulating to gently rolling, and typically make good farmland.

Most of the nearshore zone is generally characterized by rugged and hard bedrock outcrop terrain, commonly covered with a variety of sediment types that reflect the geologic evolution of the area (Bundy et al. 2014:4). Glaciation has left isolated but locally expansive glacial deposits (till) overlying proglacial deposits (poorly sorted sediment). The transgression by the sea during sea-level rise, which is still active in headland areas, eroded much of the glacial sediment, leaving an abundance of gravel with cobbles and boulders overlying the till, bedrock, or both (Bundy et al. 2014:4). The inner shelf region, including Liverpool Bay, was largely mapped, albeit conceptually, as undifferentiated sand and gravel deposits

(Sable Island Sand and Gravel), formed when washed in a paleo-coastal environment during the post-glacial rise in sea-level noted above (Bundy et al. 2014:4).

Proximity to water, for drinking, resource exploitation and transportation, is a key factor in identifying precontact and historic Mi'kmaw, as well as early Euro-Canadian and African Canadian, archaeological potential. Partially sheltered by Coffin Island, Liverpool Bay measures approximately 6 kilometres long and 2 kilometres wide and has a maximum depth of 40 metres (Howarth et al. 2019:673-674). The Mersey River discharges into the northwest of Liverpool Bay and has the largest out-flow and watershed of all Nova Scotian rivers, draining more than 3,000 km^2 of forest, bogs, barrens, wetlands, streams, and lakes. The Mersey River, extending approximately 146 kilometres, flows through generally uniform terrain with occasional low ridges and drumlins. The river follows a series of slow flowing chain-lakes and stillwaters, interrupted by shallow boulder-filled rapids and low waterfalls where the river cuts across slate ledges and the harder bedrock (Davis & Browne 1996:47). The Mersey River provided a corridor for transportation, including access to the Bay of Fundy, which allowed the Mi'kmaq to unlock the interior of the province as a vast resource base.

Resource areas, including food or medicinal plants, and migratory routes and spawning areas, are also considered characteristics that indicate archaeological potential. The section of rocky shore along the Liverpool coastline is on the route for migratory waterfowl and shorebirds (Davis & Browne 1996:205). Black Ducks, scaups, Common Goldeneye, Canada Goose, Oldsquaw, Common Eider, loons, scoters, Red-breasted Merganser, Harlequin Duck, Piping Plover, gulls, cormorants, Black Guillemot, Arctic and Common terns, Leach's Storm-petrel, Osprey and Great Blue Heron all either occupy, winter or breed within the greater region (Davis & Browne 1996:205). The forest is largely comprised of White Spruce and Balsam Fir, with maples, birch, and poplars (Davis & Browne 1996:204). Recent research, including analysis of a high-resolution pollen record from Path Lake, located approximately 600 metres from the north-western shoreline of Port Joli Harbour, has demonstrated that a post-glacial forest dominated by a mixed-forest canopy of *Pinus* (pine), *Tsuga* (hemlock), *Betula* (birch) and *Quercus* (oak) characterized the early to mid-Holocene. Shallow water aquatic and wetland taxa subsequently increased after 3,400 BP, including a growth in boreal species (spruce and fir) around 900 BP, in response to a gradual transition towards wetter climactic conditions (Neil et al. 2014:207).

In the interior, along the Mersey River, the undulating terrain south of the Lake Rossignol Reservoir supports Eastern Hemlock and Red Spruce, with some shade-tolerant hardwoods on well-drained sites, including Yellow Birch. Areas with deeper organic soils are characterized by the growth of Red Maple and Ash, while areas with shallower organic deposits support mostly larch and Interrupted Fern (Davis & Browne 1996:54). Snowshoe Hare and bobcat are relatively common, while Black Bear occur where berry bushes are abundant, particularly upon the barrens. There are also large concentrations of Whitetail Deer. The rivers and lakes of the region are generally acidic, with low oxygen levels, which results in a low productively (Davis & Browne 1996:54). Brook Trout are still common throughout the Mersey River, although the introduction of Smallmouth Bass and particularly Chain Pickerel are a threat to this species.

Historically, the Mersey River was a popular destination for fishing Atlantic salmon but, according to the Mi'kmaw guide Henry Peters, "they built fish ladders" and "very few of the salmon would go up these" (Parker 1990:101). The Mersey and Lake Rossignol area also "accounted for close to 50 percent of the moose kills reported from 1908 to 1937" (Parker 1990:6). With the flooding of Lake Rossignol in the 20th century, the habitat on which the moose depended around Lake Rossignol was lost --- particularly ground hemlock. The loss of this food source meant malnutrition for the moose that lived within the landscape of the Mersey, and a sudden decline in their numbers (Parker 1990:101).

4.1.2 Results – Prehistory of the Maritime Provinces

There is a general consensus regarding the broad patterns of regional cultural history in north-eastern North America, and recognized terminology has been established for precontact development periods based on current archaeological knowledge (***Table 1***). Although our understanding of the prehistoric archaeology of the Maritimes is fragmented, available archaeological data reveals evidence of Indigenous occupation spanning most of the time period from the retreat of the last glacier to European contact and beyond. The prehistory of the region is thus discussed within the parameters of the existing cultural history framework. Prehistoric cultures are defined by a shared technology, settlement and subsistence patterns, and social systems, including political and religious beliefs, existing during a specific time period (Deal 2016:28). It is important to note, however, that the cultural history sequence and terminology presented below has been imposed exclusively by archaeologists and does not reflect Mi'kmaw perceptions of the past. Although an historical timeline has been developed for Nova Scotia (Lewis 2006; ***Table 1***) that is more attuned to Mi'kmaw awareness and culture, it cannot be presumed to fully accommodate all Mi'kmaq within the Maritimes.

Table 1: ***Archaeological Periods for the Maritime Provinces***

Archaeological Period	Date Range (BP = before present)	Mi'kmaq
Precontact Period	ca. 13,000 – 500 BP	*Sa'qiwe'k L'nu'k* The Ancient People
Palaeo Period	ca. 13,000 – 9,000 BP	
Early	ca. 13,000 – 10,000 BP	
Late	ca. 10,000 – 9,000 BP	
Archaic Period	ca. 9,000 – 3,000 BP	*Mu Awsami Kejikawe'k L'nu'k* The Not So Recent People
Early	ca. 9,000 – 7,000 BP	
Middle	ca. 7,000 – 5,000 BP	
Late	ca. 5,000 – 3,000 BP	
Terminal	ca. 4,000 – 3,000 BP	
Woodland Period	ca. 3,000 – 500 BP	*Kejikawe'k L'nu'k* The Recent People
Early	ca. 3,000 – 2,000 BP	
Middle	ca. 2,000 – 1,000 BP	
Late	ca. 1,000 – 500 BP	
Historic Period	ca. 1500 – Present (AD)	*Kiskukewe'k L'nu'k*
Contact Period	ca. 1500 – 1600 AD	
Early	ca. 1600 – 1750 AD	
Late	ca. 1750 – 1900 AD	
20th Century / Recent	ca. 1900 – Present	

Sa'qiwe'k L'nu'k

In north-eastern North America, the Sa'qiwe'k L'nu'k or Palaeo-Indian period generally begins approximately13,000 years ago. Based upon the established sequence of diagnostic projectile point styles, the period can be divided into Early and Late subperiods, and several regional phases have also been identified (Deal 2016:35). Artifacts associated with the Sa'qiwe'k L'nu'k have been recovered throughout the Maritimes, however, the region's acidic soil chemistry dissolves perishable materials, such as wood and bone, thus preventing the preservation of a complete Palaeo-Indian toolkit. Indeed, relatively few Sa'qiwe'k L'nu'k sites have been excavated in the northeast.

The movement and melting of the glaciers changed sea levels, temperature, and precipitation, and greatly influenced the animals and plants that could survive in the region. Climatic changes associated with the Younger Dryas dramatically altered floral and faunal colonization patterns, which undoubtedly influenced human resource procurement strategies and migration patterns. Tundra vegetation, characterized by sedges, willows, grasses, sage, alders, and birch, developed behind retreating ice and was well-suited to the emerging peri-glacial landscape. This new environment attracted migrating caribou herds, followed by people of the north-eastern Palaeo-Indian tradition.

Although the early human occupation of the Maritimes coincides with the Younger Dryas stadial, it is possible that humans followed late Ice Age fauna into the region at the end of the Allerød (Stea 2011:58). In any case, the earliest evidence of human presence in what is now Nova Scotia is the Debert-Belmont complex, representing one of the largest and most intact Sa'qiwe'k L'nu'k sites in North America and the oldest sites of human habitation in Eastern Canada (Rosenmeier et al. 2012:113). The inhabitants of Debert and other Palaeo-Indian sites in the region are generally described as mobile hunter-gatherers dependent upon migrating caribou herds, however there is evidence to suggest the presence of a biologically rich habitat that supported diverse subsistence patterns (Deal 2016:40).

The diagnostic artifact of the Sa'qiwe'k L'nu'k is the fluted projectile point, which has a central channel, or flute, running up both faces of the point from the base. This distinctive flute likely facilitated hafting onto a spear or lance (Bourque 2001:20). It is interesting to note that points recovered from Debert are considered a distinct variant of the classic Early Palaeo-Indian form (Tuck 1984). In addition to fluted projectile points and manufacturing debris, other tool forms from the period are known, including gravers, bifacial knives, and spurred scrapers, suggesting a range of living activities, including hunting and processing. Isolated finds with characteristics of Palaeo tool assemblages have been recovered from across the Maritimes and, although lacking temporal control, illustrate widespread distribution of Sa'qiwe'k L'nu'k throughout the region (***Plate 4***).

[Boreas Heritage]

Plate 4: ***Sa'qiwe'k L'nu'k point.***

With the gradual onset of warmer temperatures at the end of the Younger Dryas, the tundra-like vegetation was replaced by wide- spread closed forests, including temperate conifer and deciduous populations, more suitable to solitary cervids like moose and deer. The Sa'qiwe'k L'nu'k had to respond and adapt to this changing environment and develop new procurement strategies, including changes to their lithic tool kit (Deal 2016:43). The most significant and discernible change is the replacement of the fluted projectile points with non-fluted forms, generally used to signify the beginning of the Late Palaeo-Indian period (Deal 2016:43). Based on this changing technology, two distinct groups have been tentatively identified in the Maritime region; one manufacturing parallel-flaked, lanceolate, unfluted projectile points and the other using small triangular projectile points (Deal 2016:49). Although isolated artifacts have been recovered from coastal locations suggesting seasonal use of coastal resources, acidic soils and sea-level rise have prevented a broader understanding about the nature and associated lifeways of Sa'qiwe'k L'nu'k culture. Indeed, the margins between the Late Palaeo-Indian period and the Early Archaic period are poorly defined.

[redacted]k L'nu'k

Our understanding of the Mu Awsami Kejikawe'k L'nu'k or Archaic period is also somewhat limited. The period has been divided into Early, Middle, and Late subperiods, representing a mosaic of cultures spanning the millennia between the Late Palaeo-Indian period and the appearance of ceramics. Evidence related to Mu Awsami Kejikawe'k L'nu'k in the Maritimes is poorly represented in the archaeological record before the appearance of Late Archaic cultures around 5,000 BP, although there is some evidence for continuous occupation in coastal areas (Tuck 1991). A rapid climatic warming around 8,000 years ago, known as the Hypsithermal interval, led to an increasingly diverse forest. Boreal species began to decline while pine, birch, and oak spread throughout the region, attracting a variety of fauna, including moose, deer, bear, and other smaller mammals. Site locations in the Maritimes suggest an interior lacustrine and riverine settlement pattern, along with coastal adaptation and occupation; however, sea levels for the region at 7,000 years ago were approximately 30 metres below present level and virtually all Early Archaic coastal sites have been eroded by sea-level rise and attendant shoreline erosion (Deal 2016:54; Bourque 2001:39). Evidence also suggests a variable subsistence pattern based on terrestrial mammals, anadromous, and catadromous fish species and sea mammals (Deal 2016:58).

[Boreas Heritage]

Plate 5: ***Rhyolite flake.***

Early and Middle Mu Awsami Kejikawe'k L'nu'k preferred manufacturing stone tools from raw materials such as quartz and rhyolite (***Plate 5***), and an abundance of

quartz-flaking debris is one of the hallmarks of Early Archaic sites. The period is also characterized by the development of ground stone tools, such as full-channelled gouges and rods used, at least in part, for woodworking, adzes, hand spears, atlatls, and specialized mortuary artifacts (Deal 2016:58). Furthermore, a high degree of specialization is apparent, including tools and ornaments made of ground slate, bone, and ivory, as well as evidence of increased trading activity. Mortuary practices also become evident in the archaeological record of the Maritime Peninsula in the Early Archaic period (Bourque 2001:42). Diagnostic projectile point styles include stemmed and bifurcate-base points.

During the Late Archaic period, a hemlock and oak forest developed in Nova Scotia and New Brunswick, followed by a spruce, birch and beech forest, which is associated with a decrease in temperature around 4,000 BP (Deal 2016:54). At the same time, there appears to be a rapid re-emergence of evidence for the presence of Indigenous people in the Maritime region, although it is important to note that the modern shoreline was established approximately 3,000 years ago, thus providing more opportunity for encountering Late Archaic period material culture. The Late Archaic period includes two distinctive cultural traditions; one that is primarily a coastal marine adaptation, sometimes referred to as the Maritime Archaic tradition, and one that is interior adapted, known as the Laurentian Archaic tradition. Similar tool forms associated with both traditions suggest a shared technology and interlocking trade networks. Site assemblages include adzes, gouges, plummets, and ulus but the main diagnostic tool form of this period is the slate bayonet, which is often associated with burials (Deal 2016:60-65).

The final Archaic tradition in the Maritimes is often referred to as the Terminal Archaic period. Between 4,000 and 3,000 years ago, a distinct tradition with markedly different technology, subsistence practices and mortuary rituals, known as the Susquehanna tradition, emerged across the Northeast. The mechanism by which these characteristic features reached the Maritimes, whether by migration or cultural diffusion, has yet to be determined. Nevertheless, artifacts associated with the Susquehanna tradition have been identified throughout Nova Scotia and New Brunswick. A settlement-subsistence system that made seasonal use of both coastal and interior resources is evident and interior Susquehanna sites were generally located where fish were plentiful and especially where the seasonal capture of anadromous fish was relatively easy (Tuck 1991; Bourque 2001:62). These sites are characterized by a distinctive tool making tradition, including broad-bladed, broad-stemmed projectile points (***Plate 6***), drills, polished stone atlatl weights and grooved axes.

[Parks Canada]

Plate 6: ***Susquehanna point.***

[redacted]k L'nu'k

The Kejikawe'k L'nu'k or Maritime Woodland period is the last major cultural episode in the Maritimes prior to European contact and has been divided into Early, Middle, and Late subperiods. Although cooking containers made of wood or bark were used during earlier periods, the Maritime Woodland period is defined by the introduction and full-scale adoption of pottery by Indigenous peoples in the region. The Early Maritime Woodland period is characterized by cylindrically shaped, pointed based vessels, which were textured with fabric impressions. The appearance of this early pottery may be associated with large seasonal gatherings, more complex mixtures of food sources and the preparation of aquatic resources (Deal 2016:84). Over the next two millennia, pottery style underwent a series of changes and more numerous and larger vessels appeared during the Middle and Late Maritime Woodland periods (***Plate 7***). The salient characteristics of the Middle period are thin-walled, grit-tempered vessels decorated with pseudo-scallop or fine dentate stamping techniques, while the quality of Late period pottery declined with vessels becoming thicker, courser and less well fired (Davis 1991a). Later vessels feature a more spheroidal shape, and the last major decorative form is known as cord-wrapped stick, which remained the dominant decorative technique until ceramic usage terminated shortly before sustained European contact (Rutherford 1991). Indeed, decoration and temper are considered temporal indicators.

[Millbrook Cultural Centre]

Plate 7: ***Mi'kmaw ceramic vessel fragment.***

The archaeological record suggests significant population growth during the period with the highest concentration of known occupation sites found along the coasts, perhaps representing locations of long-term occupation. Interior sites may represent more specialized locations associated with the procurement of single resources, such as anadromous fish and eels, and residue analysis indicates a predominately marine diet in traditional Mi'kmaw territory (Davis 1991a). The Maritime Woodland period lithic industry is defined by regional variation and characterized by changes in flint-knapping and raw materials. Distinctive projectile point styles have been associated with the appearance of bow-and-arrow technology, which had replaced the use of the spear-thrower by the time of European contact (Bourque 2001:91). Shellfish exploitation also emerged as an important socio-economic activity and coastal shell middens were common features associated with Kejikawe'k L'nu'k occupation in the region.

Elaborate mortuary rituals flourished during the Early Maritime Woodland period and both Meadowood- and Adena-related burial sites have been discovered in the region. Meadowood burials, which resemble those of the same tradition in New York State, include side-notched projectile points, cache blade, slate

gorgets, and bird stones, and are often located near habitation sites or on the coast (Deal 2016:87). Adena-related burials, also referred to as the Middlesex Phase, are often, although not exclusively, identified by the presence of burial mounds and include various exotic grave offerings, such as stemmed points, gorgets, block-ended tubular pipes, celts and copper beads. Stemming from the Ohio Valley, numerous Adena burial sites have been identified throughout the region, including the Augustine burial mound in New Brunswick; however, there is limited evidence to suggest these burial practices reflect a physical movement of people into the region. The absence of habitation sites associated with a peripheral culture suggests this cultural manifestation represents a diffusion of Adena ritual elements into the region, which were adopted by local peoples (Deal 2016:93). This scenario also implies contact, direct or otherwise, with extra-regional groups and external influences (Rutherford 1991). Nevertheless, these elaborate burial practices did not survive into the Middle Maritime Woodland period and were replaced by simple primary burials with limited grave inclusions (Deal 2016:102). The later period is also characterized by the exploitation of a wider range of local resources and inter-regional trade (Deal 2016:103).

Protohistoric Period

The Middle and Late Maritime Woodland periods represent a pattern of settlement and subsistence that persisted until European contact. The initial period of contact, heavily influenced by European fishermen and traders, is often referred to as the Protohistoric period, generally held to begin in the 16th century. Our understanding of Mi'kmaw lifeways during this period is enhanced by available ethnographic sources, as well as archaeological evidence, often in the form of "copper kettle burials". Single component Protohistoric period sites are rare in the archaeological record, as local Indigenous populations continued to occupy Late Maritime Woodland period sites; however, subsistence patterns were dramatically altered by the mid-16th century. By this time, "Mi'kmaw groups who normally wintered on the coast, were spending the late winter and early spring inland to harvest furs and moving to the coast in the late spring and summer to trade with the Europeans" (Deal 2001).

Although this period is often represented in the archaeological record by the presence of trade beads and copper tinkling cones, the most distinct sites are associated with the Copper Kettle Burial tradition, dating from around 1500 to the late 1600s (Deal 2001). This tradition has been associated primarily with the Mi'kmaq, who occupied most of the region's coastal areas and were heavily involved in the fur trade. Copper Kettle Burial sites are marked by overturned kettles and caches of European manufactured trade goods, including glass beads, iron swords, knives, and daggers (Deal 2001). By the end of the 17th century, contact has resulted in the introduction of European goods, a destabilized human-ecosystem and a wave of epidemics that devastated Indigenous populations.

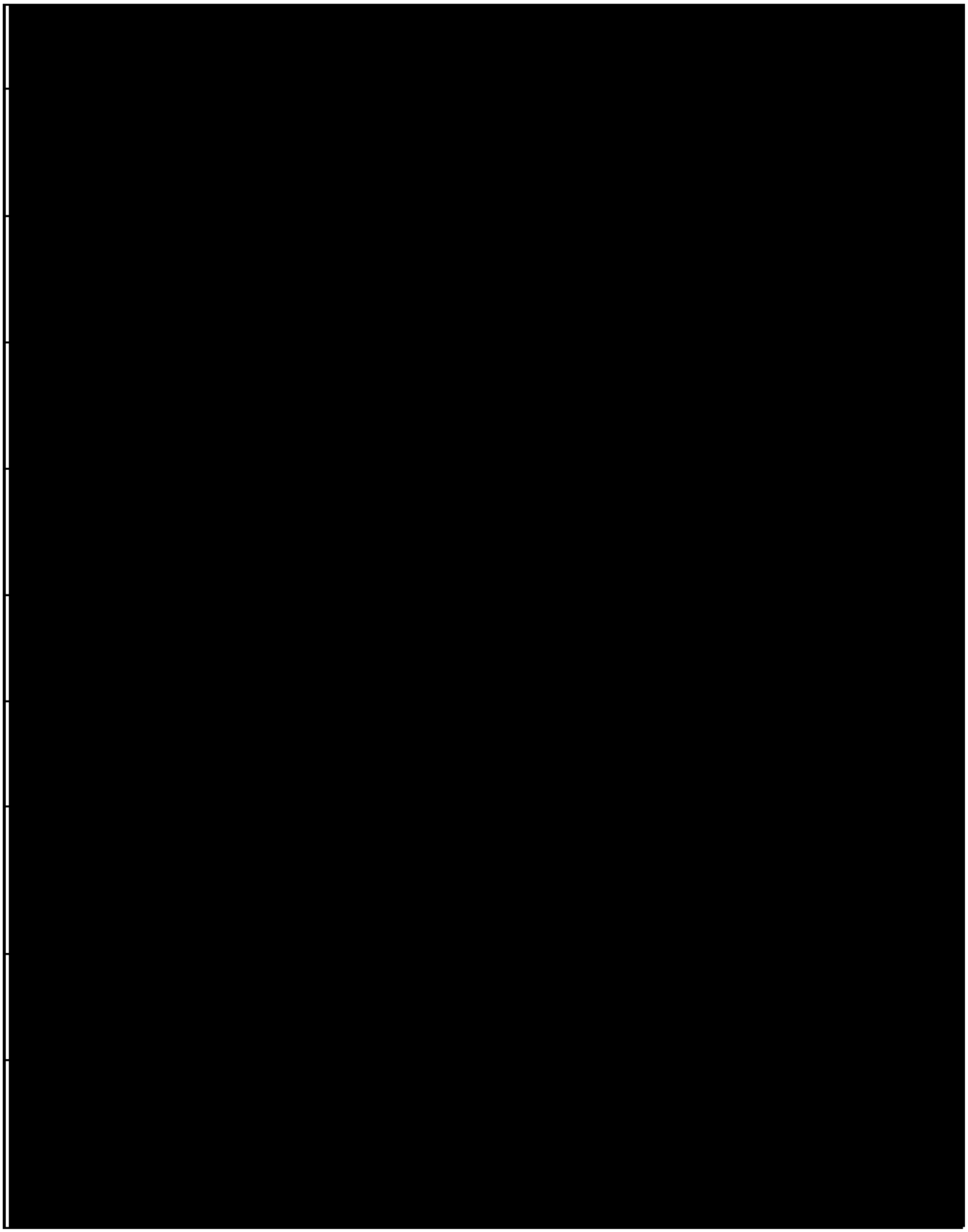
4.1.3 Results – Archaeological Context

[redacted]

[redacted]

Table 2: ***Previously registered MARI sites within 10 km of the Assessment Area***

Site Name	Approximate Location	Permit	Archaeology Period	Description
[redacted]				



[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

4.1.4 Results – Historical Context – Indigenous

The Assessment Area is located within the traditional Mi'kmaw territory of [redacted] meaning 'lands' end'. The area of Liverpool was called Oqomkikiaq, which has a number of translations, including 'a dry sandy place', which aptly describes the mouth of the river at Sandy Cove. Sources indicate that at least five summer villages were located in the territory, including LaHave River, Liverpool, Port Mouton, Cape Sable, and Port Royal. Historic Mi'kmaw occupation is also documented at St. Mary's Bay, near Cape Forchu/Yarmouth, at Bear River, and at Indian Point (near LaHave) (Hoffman 1955:522). The region represented a productive and diverse ecosystem, providing a resource base for the Mi'kmaq and their Ancestors for millennia prior to the arrival of European settlers. The network of navigable rivers, streams, coastal routes, portage routes, and footpaths facilitated travel, and allowed fluid movement and access to

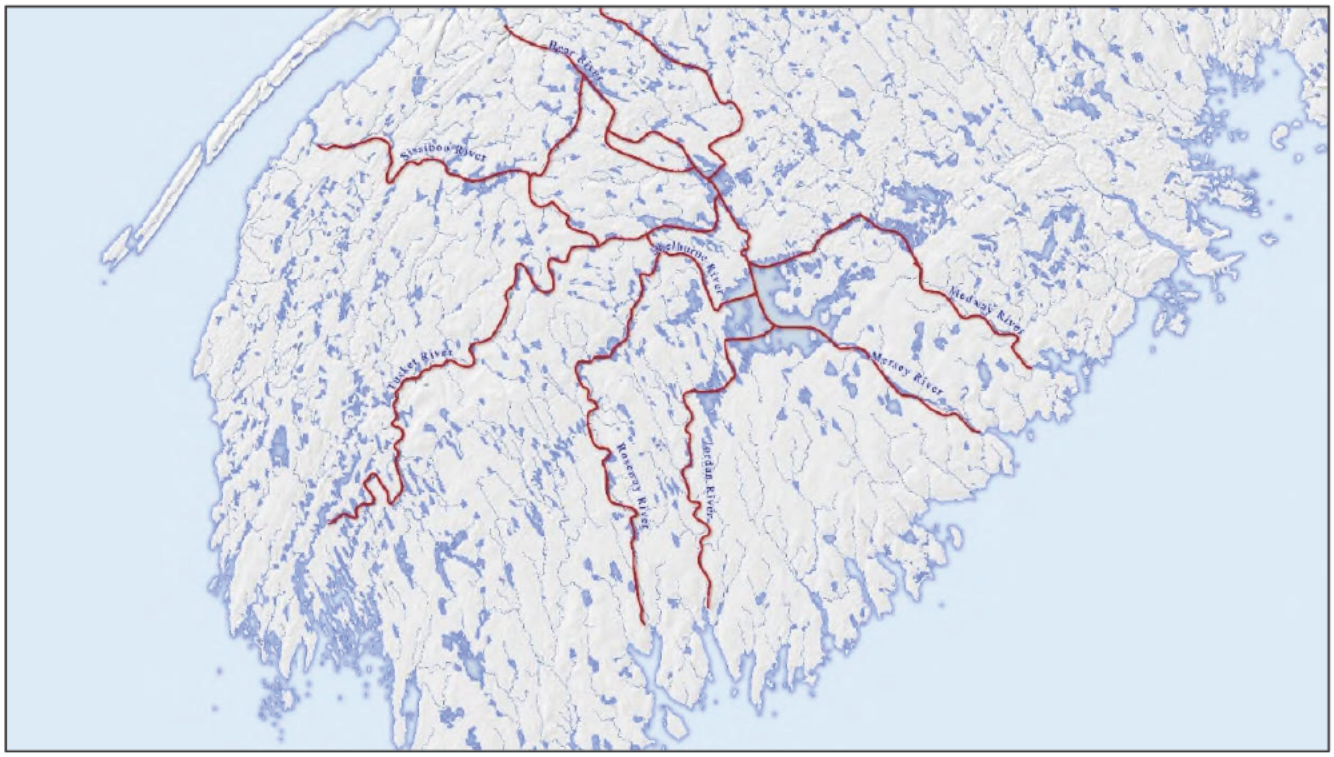


Plate 8: ***Transportation and portage routes throughout Kespukwitk.***

overlapping resource areas throughout Mi'kma'ki (***Plate 8***). These conduits also facilitated interaction and trade with neighbouring groups. The Mi'kmaq seasonally moved throughout the greater region between areas where shelter and resources, including food and medicinal plants, were available and annually migrated between hunting and fishing grounds (Chute 1999).

Mi'kmaw placenames, those which have survived the influx of European travellers and settlers, demonstrate the Mi'kmaq had a significant understanding of the local landscape and resources. Mi'kmaq placenames are known for at least 14 landmarks within a 20 kilometre radius of the Assessment Area (***Table 3***), including descriptions of the landscape (large gap, at the rapids, at the narrows, a dry sandy place, barren place, at the dip, at the deep hole in the river, sandy river, flow red, at the clearing), reference specific human experience on the land (at St. Andrews), and indicate local species and resources (the place of the caribou calves, at the little hemlock river, mushroom). It is also interesting to note that a Glooskap legend, recorded by Charles Leland in 1884, references the Liverpool Bay area: "When Glooskap came to the camp, which was at Ogumkegeak, now called Liverpool, he found no one" (Leland 1884:37). The legend goes on to describe how toads originated at Ogumkegeak, having been picked off the head of an old sorceress by Glooskap.

Before European disruptions, Mi'kmaw lifeways involved maritime adaptations and seasonal mobility oriented to intercept available marine and freshwater aquatic resources (Lewis 2007). The Mi'kmaq followed a general seasonal pattern, living on the coasts during the spring and summer, moving upriver

Table 3: ***Mi'kmaw placenames within 20 km of the Assessment Area***

Modern Placename	Mi'kmaq Placename	Translation	Source
Mersey River	*Ogômgigiag*	Large gap	Pacifique 1934:296
Mersey Rapids	*Kesu'skuk*	At the rapids	MPN 2019, Pacifique 1934:296
Milton	*Kepe'k* *Gepeg gisna Goipegeg*	At the narrows ***or*** Narrows (at the falls)	MPN 2019, Pacifique 1934:296
Liverpool	*Oqomkikiaq* *Ogomkigeak*	A dry sandy place	MPN 2019, Rand 1875:91
Brooklyn	*Qamaku'jk* *Gatgotjg*	Across the small waterway ***or*** Barren place	MPN 2019, Pacifique 1934:296
Herring Cove Brook	*Qalipu'jue'katik* *Glipotjoegatig*	The place of the caribou calves ***or*** Little caribou place	MPN 2019, Pacifique 1934:296
Jones Creek	*Waloqomkejk* *Oalôgômgetjg*	At the dip ***or*** *Unknown*	MPN 2019, Pacifique 1934:297
Port Mouton	*Waloqmkuk* *Oalgamgog*	At the deep hole in the river ***or*** Sand holes	MPN 2019, Pacifique 1934:297
Broad River	*Oalogomgeg*	Sandy river	Pacifique 1934:297
Little Hemlock River	*Ksu'skipukwasi'sk*	At the little hemlock river	MPNDA 2019
Mill Village	*Antele'katik* *Antlegatig*	At St. Andrews	MPN 2019, Pacifique 1902:23
Port Medway River	*Mekwamkipukwek*	Flow red (due to red sand bottom)	MPNDA 2019
Port Medway	*L'ketuk*	Mushroom	Pacifique 1934:295, MPNDA 2019
Broad Cove	*Memwaske'katik*	At the clearing	MPNDA 2019

and inland during the fall and winter, though this pattern varied by geographic region. In 1611, Father Biard indicates the Mi'kmaq hunted calving seals in January, not only for their flesh and fur, but for fat to sustain them throughout the year (Whitehead 1991:34). Black Bear and Moose were also hunted in late autumn and winter and valued for their fur, flesh, and fat. Emphasis was placed on a sustainable form of living, to ensure food for future generations (Whitehead 1991:10).

It is possible that a French merchant by the name of Etienne Bellanger encountered the Mi'kmaq at Indian Gardens in 1583 (Quinn 1962). It is recorded that while exploring the coastline of what is now Nova Scotia, intending to establish trade with the Mi'kmaq, Bellanger entered a river "not far from Cape Sable" and encountered a Mi'kmaw village consisting of 80 houses covered in bark. Raddall has suggested this was most likely the Mersey River and the village of Indian Gardens (Raddall). If this is, indeed, the case it represents some of the earliest known European contact with the Mi'kmaq in Nova Scotia. What is known is that Samuel de Champlain and Pierre Dugua de Mons arrived in Ogumkegeak in 1604 and later mapped the location of a Mi'kmaw encampment on Coffin Island (***Plate 9***). This site may correspond to BaDd-01, which Erskine identified, suggesting use of the island by the Mi'kmaq for millennia.

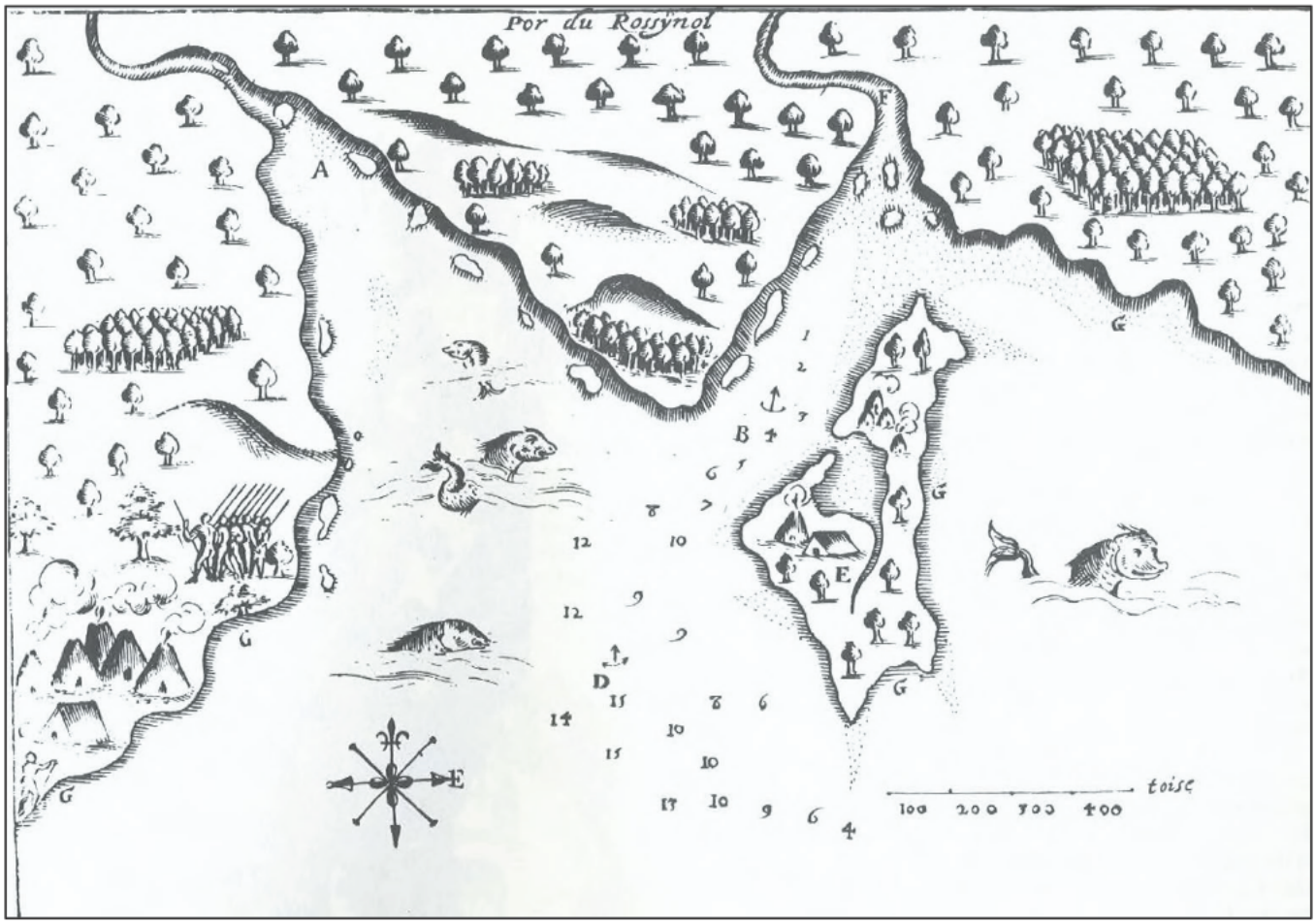


Plate 9: ***Champlain's 1613 map of 'Por du Rossignol' showing location of Mi'kmaw encampment on Coffin Island.***

Following intermittent and later sustained European contact (ca. 1500 – 1650 AD), the Mi'kmaq shifted from long-established and sustainable food harvesting practices to subsistence patterns based on trading furs for European commodities. Whether the shift was by choice or necessity, the consequences were significant as overhunting lead to stress within Mi'kmaw society. By the mid-17th century, and throughout the 18th century, the fur trade had evolved from opportunistic exchanges with fishermen-entrepreneurs on the beach or at anchor.

The Mersey River was an important transportation and trade route during the colonial period and played a role in early fur-trading in the region. Evidence of travel along the interior waterways of southwestern Nova Scotia during the early 17th century is found in historic documents (Biggar et al. 1971:237; Grant & Biggar 1911:229, Morse 1935). In the early 17th century, Champlain describes sailing into Liverpool Bay, which they called Port du Rossignol, and arresting the ship of a Frenchman named Captain Rossignol for illegally trading fur with the Mi'kmaq (Biggar et al. 1971:237; Grant & Biggar 1911:229). According to Mi'kmaw oral history, several local family names point to interactions with French traders in the early 17th

century (Parker 1990:95). The reference to Captain Rossignol and his crew travelling up the Mersey River to trade with the Mi'kmaq may represent the first record of an expedition into the interior of Kespukwitk by Europeans. More impressively, it seems to represent a strand of Mi'kmaw oral history that has been passed on and retold for 400 years (Pentz 2008:164). A number of European trade items dating to the Kiskukewe'k L'nuk (*ca.* 1500 - 1763), have been recovered from archaeological sites on the Mersey River, including a series of glass trade beads from Indian Gardens, which appear to have been brought into the area between 1580 and 1620. These and other early trade beads found within KNPHS and by collectors on Lake Rossignol (BaDh-02), provide evidence of early trans-Atlantic trade (Myers 1973: Christianson 1985a:9, Pentz 2013 Appendix C – BaDh-02:4).

It appears that the Brooklyn area, known as Katqu'jk, meaning 'across the small waterway' (often referred to as Kat Kootch by settlers and later called Herring Cove), was a major place for trade. It is recorded that a Mi'kmaw encampment was located at Fish Point in 1635, "where they assembled to dispose of their furs to French and Spanish traders" (More 1873:58). This trade continued into the 18th century, as noted in 1715 when Gov. Caulfeild instructed "make diligent inquiry as to what provocation the Indians had, especially in the ports of "Pugmagoe [Pubnico], Cape Sables, Port Rossway [Port Rossignol/Liverpool], Lahave, Merligeesh [Lunenburg] and Shebuctoe [Halifax]," as these would be the "most likely places for Meeting with ye Said Indians" (MacMechan 1900:21). It is believed that Fish Point is now the location of the wharf and breakwater in Brooklyn (***Plate 10***), and there are references to trading activity continuing here into the 19th century (Dexter 1934:2). According to Dexter, "The Indians had their camping ground nearby the point and the boats came to get from the Indians what they alone were the makers of" (Dexter 1934:2). It is also assumed this, and the surrounding area, were occupied by the Mi'kmaq during the precontact period. It is also worth noting the presence of rock carvings in the bedrock outcrop adjacent to the breakwater. Although the existing etchings represent names and carvings from the early 20th century, they may be a continuation of earlier activity, as demonstrated at the petroglyph site at Fairy Bay.

Early French entrepreneurs were familiar with the interior river systems of Kespukwitk including the Mersey River, and used local Mi'kmaq as guides. Such was the case in 1686 when Jacques de Meulles, the Intendant of New France, made the first documented journey through the interior of Nova Scotia from Port Royal to Port Rossignol (Liverpool), by way of the Mersey, with two Mi'kmaw guides (Morse 1935:110-111; Morrison & Friend 1981:8, Pentz 2008:26-28). According to Pentz,

> *The Mersey/Allains Corridor ... represents one of several major canoe routes that formed a network of water highways in southwest Nova Scotia used by the Mi'kmaq during the post-contact period. Historic evidence of interior fur-trading and guiding by the Mi'kmaq, as well as early cartographic representations of interior river systems based to a large extent on local traditional knowledge, indicate the Mi'kmaq were fully familiar with and utilized the interior waterways of southwest Nova Scotia during the seventeenth century* (Pentz 2008:33-34).

Plate 10: ***View north of existing Brooklyn breakwater and former location of trading post at Fish Point.***

With the establishment of coastal areas by the British, trade with the interior declined, as did the Indigenous population, and by the time Liverpool was settled in 1759, only a few Mi'kmaw families remained (Rand 1875:91; Deal et al. 1987:151; Morrison & Friend 1981:100). Indeed, excavation at Indian Gardens revealed an absence of cultural material from the 18th century and some researchers have suggested the settlement was abandoned in 1759 following an outbreak of typhus. According to Raddall, Mi'kmaw families had encountered soldiers from Duc d'Anville's expedition at a summer camp along the shores of the Bedford Basin in 1746. The expedition had been sent from France to recapture Louisbourg, and many of the troops being transported fell ill before the reaching Kjipuktuk (Chebucto Bay). The Mi'kmaq carried provisions infected with typhus back to the interior, and to Indian Gardens, which devastated the population (Christianson 1985b; Raddall 1959). When Simeon Perkins recorded the first exploration of the Mersey River by a party of settlers from Liverpool in 1798, there was no mention of Indian Gardens, although there is reference to small groups of Mi'kmaq gathered along the coast (Raddall). Ponhook Lake (IR 10) was established in 1843 and the first official resident arrived in 1981.

By the mid-18th century, "[the] Mi'kmaq were suffering both the indifference and political machinations of their French co-religionists and the campaigns of the English, who loosed their Mohawk allies against them" (Whitehead 1991:77). In 1761, the Mi'kmaq negotiated a truce with the English and, though a measure of peace was formed, the erosion of the traditional Mi'kmaw way of life continued, with devastating effect to the people:

> *By 1761.... the great numbers of Loyalist settlers, fleeing the American Revolution, made vast inroads on traditional Mi'kmaw lands. Game was no longer plentiful; salmon rivers were blocked by dams and choked with sawdust. The fur-trade was in decline, and smallpox epidemics swept the Maritimes. The Mi'kmaq, their seventeenth-century population already reduced by approximately 90 percent, were particularly hard hit....a change which had begun in 1500.* (Whitehead 1991:77)

By the turn of the 19th century, the Mi'kmaq in Nova Scotia were in dire conditions. Despite earlier guarantees to access traditional hunting territories, the expansion of European settlements and destruction of the natural environment denied Mi'kmaw access to important resources (Wynn 2005:23). The colonial government of the time did little to alleviate the worsening conditions, and policies generally focused on the assimilation of the Mi'kmaq into settler society. An annual relief fund was set aside in 1786, however the sum was small, and was never enough to address the problem of food scarcity, clothing, and lack of medical services (Paul 2008:197). The land set aside was largely isolated and/or ill-suited for agriculture or commercial purposes. Joseph Howe, who was then Commissioner for Indian Affairs, established Ponhook Lake Indian Reserve #10, located in the vicinity of the Indian Gardens Complex, in 1843, and declared that 1,015 acres around Kejimkujik Lake were also to be set aside as Reserve lands (Kejimkujik Lake / Maitland IR 7).

Annual reports from the Department of Indian Affairs for the years 1898 to 1904, 1909 and 1912 indicate the "Maitland" community (IR 7) was unoccupied. Indeed, portions of IR 7 were surrendered to the Kedgemakogee Rod & Gun Club in 1917, while other portions were leased for logging in 1908 and 1917. According to John Francis, there were a number of Mi'kmaw families living in the immediate vicinity of Milton in the late 19th century (Morrison & Friend 1981:84). Areas along the eastern and western shoreline of what is now Lake Rossignol were also part of the traditional hunting territory of Joe Maltai and his father, Old Joe Maltai, while Peter, Jack and Jim Glode, and Frank Charles, traditionally used lands farther up the river between Kejimkujik and Milford (Speck 1922:100-101; Morrison & Friend 1981:14).

The Mi'kmaq continued to live in the Liverpool area and archival documents indicate there was a village "back of Cobb's barn, on the hill west of Campbell's field, by the Cunningham Clear road" (Smith). A review of the 1888 A.F. Church map places the location of this village where the Queens Place Emera Centre now stands. Indeed, the remains of the "Old Cobbs Barn Road" still exists adjacent to the Emera facility. According to William Henry Smith (1867-1955), "they occupied themselves in making baskets and axe handles, but they also would make bows and arrows for the boys, and, most important, they were adept at adding to the good uppers of an old pair of long leather boots a moccasin bottom". Smith went on to say that "A generation earlier, the camp was reported to have been much larger" (Smith). It is likely that this location, now known as Sandy Cove, was an extension of the Fish Point trading post and was undoubtedly occupied during the precontact period as well.

Smith also records the continuing practice of procuring medicinal plants by the local Mi'kmaq, noting that "for some time had been observing Indian, of perhaps fifty-five or sixty … Coming slowly around Henderson's shore … and appear to be digging for something … I noticed that he had a goodly-sized bottle filled with roots, and that they were white. He told us that his wife had rheumatics, that he had been digging roots which he was going to steep in rum, to make a liniment for her ailment" (Smith).

Another area of interest noted by Smith was an "Indian camp site" located "where the late Philip Yarn built his new house, the one presently occupied by Fred Braine, the Freemans used a road leading to what is known as Freemans Cove, where John and Joseph Freeman kept their boats". Here, Smith was told of a site that the "Indians once used, camping there when fishing down the harbour" (Smith). This area was still being used by at least one local Mi'kmaq, known as "Scaby Lou", whom Smith described as "perhaps the best known of our old Indians" (His real name was likely Louis Gload). Evidently, he "made himself a small wigwam, and fished for a few days" and "used this site for short periods only; when he really went fishing for an extended period, with other Indians he would camp at Frellick's Point, and fish out of that cove" (Smith). Furthermore, Smith recorded that "At least one quartz arrowhead has been found near a spring at the head of Frellicks Cove, and it may be that Scaby Lou, in going there, was but following in the footsteps of his forefathers". Indeed, this cove, now known as Fralick Cove, is located on the shoreline adjacent to the proposed Brooklyn Aquaculture Assessment Area (***Plate 11***).

In 1883, T. Butler, Agent for District 3 (Queens Co) reported that "the Mi'kmaq of Queens Co. have been "fairly successful in salmon fishing during the past summer getting 40 to 50 cents per pound for their fish" (Canada 1884). More also notes that the census of 1861 stated the presence of 84 Mi'kmaq in Queens County. Despite the hardship and suffering endured during the 19th and 20th centuries, many Mi'kmaw communities persisted in a migratory lifestyle, and maintained a distinctive identity against the threat of cultural erosion.

4.1.5 Results – Historical Context – Non-Indigenous

Interpreting early European contact with the Indigenous people in eastern Canada is restricted by a lack of accurate, unbiased, and detailed historic records from this influential period (Quinn 1981:1-9). Whether or not John Cabot set foot on Cape Breton in 1497, the shores of eastern Canada were well known to large numbers of European fisherman and whalers who made annual voyages across the Atlantic Ocean by the early 1500s (Johnston 2004:24-25; Quinn 1981:2). An account from 1578 indicates that off the coast of Newfoundland there were generally 100 Spanish vessels taking cod, another 20-30 Spanish vessels hunting whales, 50 Portuguese vessels, 150 sail of French and Bretons and 50 English (Brown 1869:34; Johnston 2004:25). Certainly, vessels traversed the Northumberland Strait, including Basque fisherman, who established seasonal cod and whaling camps in Cape Breton in the 15th and 16th centuries. Heavy competition, storms and imprecise navigation would lead some vessels to explore and exploit other areas. Without a doubt, the seamen would have come ashore occasionally for equipment repairs, to obtain fresh

Plate 11: ***View north of Fralick Cove.***

water, to hunt game, or to trade with the Mi'kmaq (Johnston 2004:25; Quinn 1981; Whitehead 1991:17-18).

In 1534, the Mi'kmaq of the Gaspe peninsula, waving furs for trade, met Jacques Cartier, indicating they were already familiar with Europeans who wanted furs and were willing to exchange manufactured goods to obtain them (Johnston 2004:27; Quinn 1981:18). In the early 1500s, trade between European fishermen and Indigenous people in Atlantic Canada existed as a secondary enterprise, conducted on the beach or while at anchor, but, by the 1540s, these exchanges were being pursued independently as commercial ventures (Johnston 2004:28; Turgeon 1990:84). Some of these interactions between Europeans and Indigenous people resulted in mutually beneficial exchanges, while others failed miserably through misunderstanding and mistrust, quickly escalating to violence (Whitehead 1991:17-18).

Liverpool played an important role in early fur-trading in the region, prompting permanent European settlement in the mid-18th century. In 1759, settlers from Massachusetts arrived and took to fishing, lumbering and shipbuilding to make their livelihoods. Charles Lawrence, Governor of Nova Scotia, granted the township 10,000 acres, extending fourteen miles inland. A year after it's settling, Liverpool was being described as a boom town within North America (Sheppard 2001:x). Like Halifax, the land around Liverpool, with its poor soil and cool, moist summers, was generally unfavorable for farming (Bird 1955:397). Thus, rather than developing into an agricultural settlement, like the Planter settlements within

the Annapolis Valley, Liverpool became home to those who sought a life at sea. In 1761, two years after its official settlement, Charles Morris noted the presence of 90 families, stating:

> *The present inhabitants [...] subsist chiefly by the Fishery and by the Lumber Trade, They have built Seventy Houses, have employed Seventeen Schooners in the Fishery and made about eight thousand Quintals of Fish beside which they have made a considerable quantity of Shingles, Clapboards, Staves and erected a Saw mill for Sawing Boards.* (Morris 1761:292)

Due to its fine harbour and a port home to many Captains, Liverpool early on became a haven for privateering (Sheppard 2001:xi). Privateers were vessels that received letters of marque from their governing authorities (in this case, Britain), which granted them the ability to arm their vessels and protect their home coastlines, as well as harass enemy shipping. Sylvanus Cobb, for example, a relatively famous early privateer, built a home in Liverpool (Sheppard 2001:xi). Following the American Revolution, the newly formed American privateers began raiding the coastline of Nova Scotia, pillaging communities, and capturing ships. In response to this, Liverpool commissioned a schooner, the Enterprise, to protect its all-important shipping lanes. The Enterprise was captained by one Joseph Barss (senior), and within its first 12 days on the sea, it returned having captured 12 enemy vessels (Sheppard 2001:xi). Liverpool became home to even more storied privateer vessels, such as the Lord Nelson, the Lord Spencer, the Rover, and the Charles Mary Wentworth. The crews of these vessels were made up largely of volunteer fishermen, who were paid based on a share system per vessels captured, rather than a steady wage (Mullins 1934:193-194). The success of these privateering ventures was often determined by the experience and skill of the fishermen, who were expected to be familiar with and use naval weapons.

Privateering would ramp up in Liverpool again with the resumption of hostilities between Britain and the United States with the War of 1812. During the war, Liverpool, at its peak, was home to up to 50 privateering vessels, all which represented privately owned warships. Mullins, writing in 1934, described the Liverpool Packet, captained by Joseph Barss (junior), as "the greatest privateer of all time". By the time she was done, the Liverpool Packet revolutionized the way sea traffic was conducted along the Atlantic coasts, being "credited with [...] 100 to 200 captures, some of which were released, some lost, some recaptured by the Americans. Their value is variously estimated from $262,000 to $1,000,000." (Mullins 1934:201). Mullins contends that the Liverpool Packet, and vessels like it, caused such excessive fear in American ports during this time that serious thought was put into constructing the Cape Cod Canal, the costs of which would have been covered by the "losses inflicted in two of her cruises alone" (Mullins 1934:202).

Following the end of the War of 1812, and with it the end of privateering, the fishing, lumbering, and ship building industries within Liverpool began to grow. Timber floated down the Mersey River from the inland forests of the Lake Rossignol watershed provided much of the timber for these burgeoning industries, and by 1853 shipbuilding within Liverpool began to be one of the town's most important businesses (More 1873:87). Seventeen shipyards were in operation at various time within Liverpool, with

as many as seven or eight vessels being constructed at one time. These ship building activities continued into the early 20th century, and up until 1925, when wooden ship building generally ceased. Liverpool at this time was engaged in the illicit rum-running trade, shipping alcohol to the United States during the prohibition years.

Liverpool remains a vibrant community today, although it was disincorporated as a town and merged with the Municipality of the County of Queens to form the Region of Queens Municipality in 1996.

4.1.6 Results – Archaeological Potential Modelling

The results of the APM developed by Boreas Heritage suggests that coastal areas around Liverpool have high potential for encountering archaeological resources due to the proximity of Liverpool Bay and the mouth of the Mersey River. It is noted that potential is diminished on the southern coast of the bay due to significant slope in the area (***Figure 3***).

In addition to the terrestrial APM, Boreas Heritage created an approximate shoreline reconstruction map based on available and conceptual data regarding sea level rise during the Holocene and Late Holocene (***Figure 4***). The coastline has evolved significantly through time and the coastal orientation of precontact archaeological sites must be considered in light of the changing configuration. As mentioned above, the average position of the coastline was 10 kilometres seaward of its present location at 10,000 radiocarbon years BP, and by 5,000 years BP the shores were at 1.5 kilometres, which corresponds to the Mu Awsami Kejikawe'k L'nu'k period. At approximately 1,750 cal BP, sea level was approximately 1.3 metres lower than the present day, suggesting a stabilization of coastal submergence during Kejikawe'k L'nu'k.

4.1.7 Results – Archaeological Potential

Based on the results of the desk-based assessment, **two (2)** areas are considered to exhibit high potential for encountering submerged archaeological resources (HPA-01 & HPA-02). The remaining portions of the Assessment Area are considered to exhibit low potential for encountering archaeological resources.

<u>Brooklyn Site</u>

The proposed new Brooklyn aquaculture site is situated southwest of Eastern Head (***Figure 2***). The proposed lease has dimensions of approximately 405 metres x 1005 metres, comprising a total area of approximately 40.7 hectares. An analysis of bathymetric data, generated by Sweeney International Marine Corp., revealed the presence of a relatively level terrace in the western portion of the Assessment Area (***Plate 12***). This landform attribute is conducive to supporting past occupation and/or use of this location by Indigenous people. The potential for encountering submerged archaeological resources along this terrace, designated HPA-01, is considered to be high (***Figure 5***).


N
Figure 4 - Approximate Shoreline Reconstruction
Cooke Aquaculture Sites
Archaeological Resource Impact Assessment
Queens County
Mersey Location
Brooklyn Location
Liverpool Location
Shoreline @ 5,000 BP
Shoreline @ 10,000 BP
Notes:
NAD 83 UTM Zone 20
Base Map: SNSMR
0 1,250 2,500 m
1:125,000
BOREAS
HERITAGE

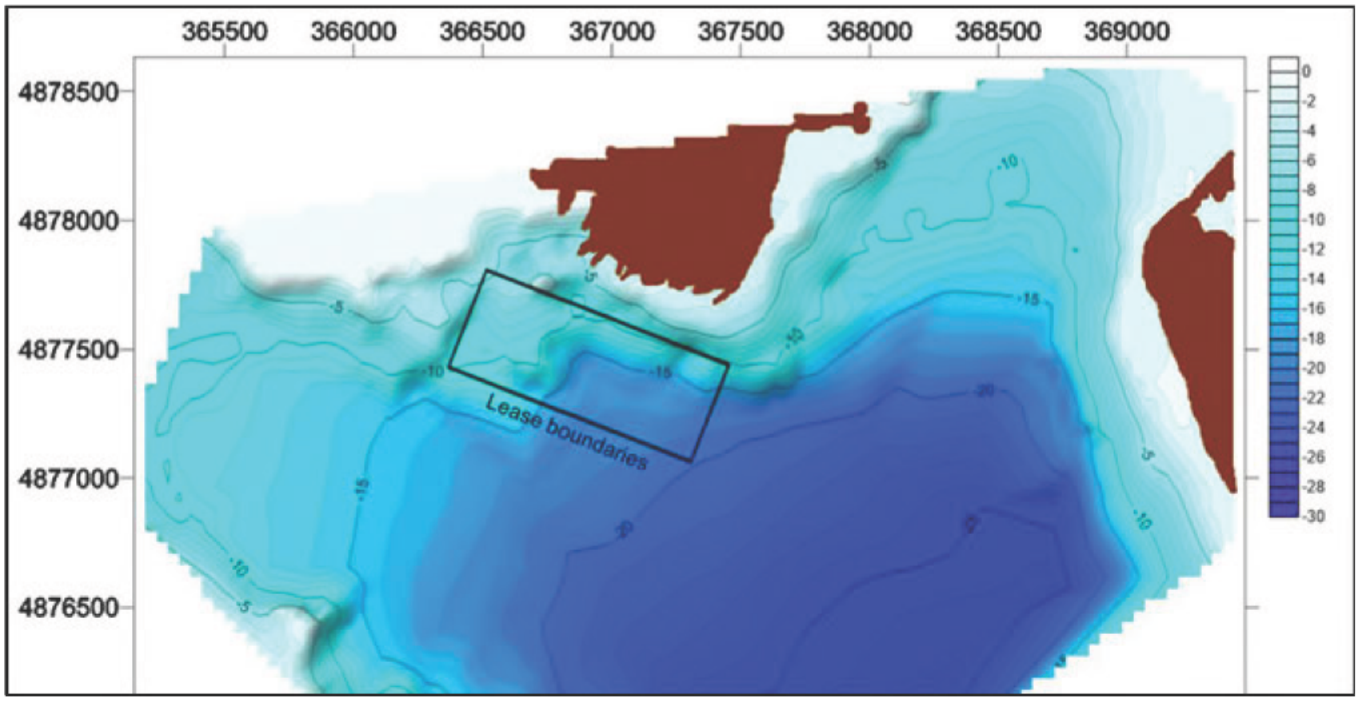


Plate 12: ***Interpolated 3-D surface map of proposed Brooklyn site*** *[Baseline Assessment Report, Sweeney International Marine Corp.].*

It is therefore recommended that HPA-01 be avoided during any proposed development and/or ground disturbance activities associated with the proposed Project. If HPA-01, or parts thereof, cannot be avoided, it is recommended these areas be subjected to subsurface archaeological sampling probes in order to confirm the presence or absence of archaeological resources. Any potential need for further archaeological assessment or mitigation will be based on the results of this subsurface investigation.

Liverpool Site

The Liverpool marine aquaculture site #1205 is situated on the western side of Coffin Island (***Figure 2***). The current lease has dimensions of approximately 200 metres x 200 metres, comprising a total area of approximately 4 hectares. The proposed boundary amendment extends the lease boundaries to add six additional cages south of the existing grid and to accommodate all below surface gear. An analysis of bathymetric data, generated by Sweeney International Marine Corp., revealed the presence of a relatively level terrace in the northern portion of the Assessment Area, extending along the eastern boundary (***Plate 13***). This landform attribute is conducive to supporting past occupation and/or use of this location by Indigenous people. The potential for encountering submerged archaeological resources along this terrace, designated HPA-02, is considered to be high (***Figure 5***).

It is therefore recommended that HPA-02 be avoided during any proposed development and/or ground disturbance activities associated with the proposed Project. If HPA-02, or parts thereof, cannot be avoided, it is recommended these areas be subjected to subsurface archaeological sampling probes in order to confirm the presence or absence of archaeological resources. Any potential need for further archaeological assessment or mitigation will be based on the results of this subsurface investigation.

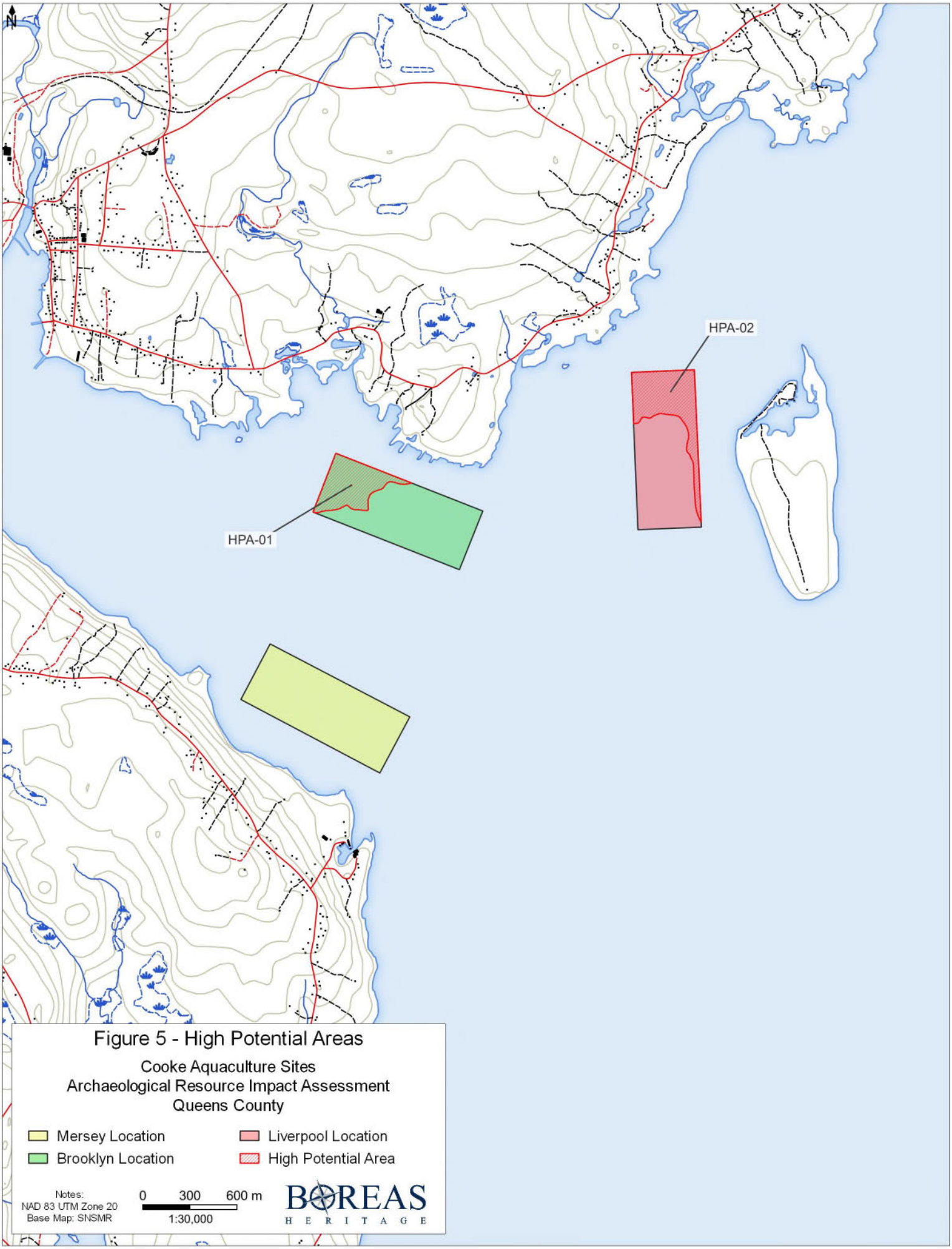


Figure 5 - High Potential Areas

Cooke Aquaculture Sites
Archaeological Resource Impact Assessment
Queens County

Mersey Location
Liverpool Location
Brooklyn Location
High Potential Area

Notes:
NAD 83 UTM Zone 20
Base Map: SNSMR

0 300 600 m
1:30,000

BOREAS HERITAGE

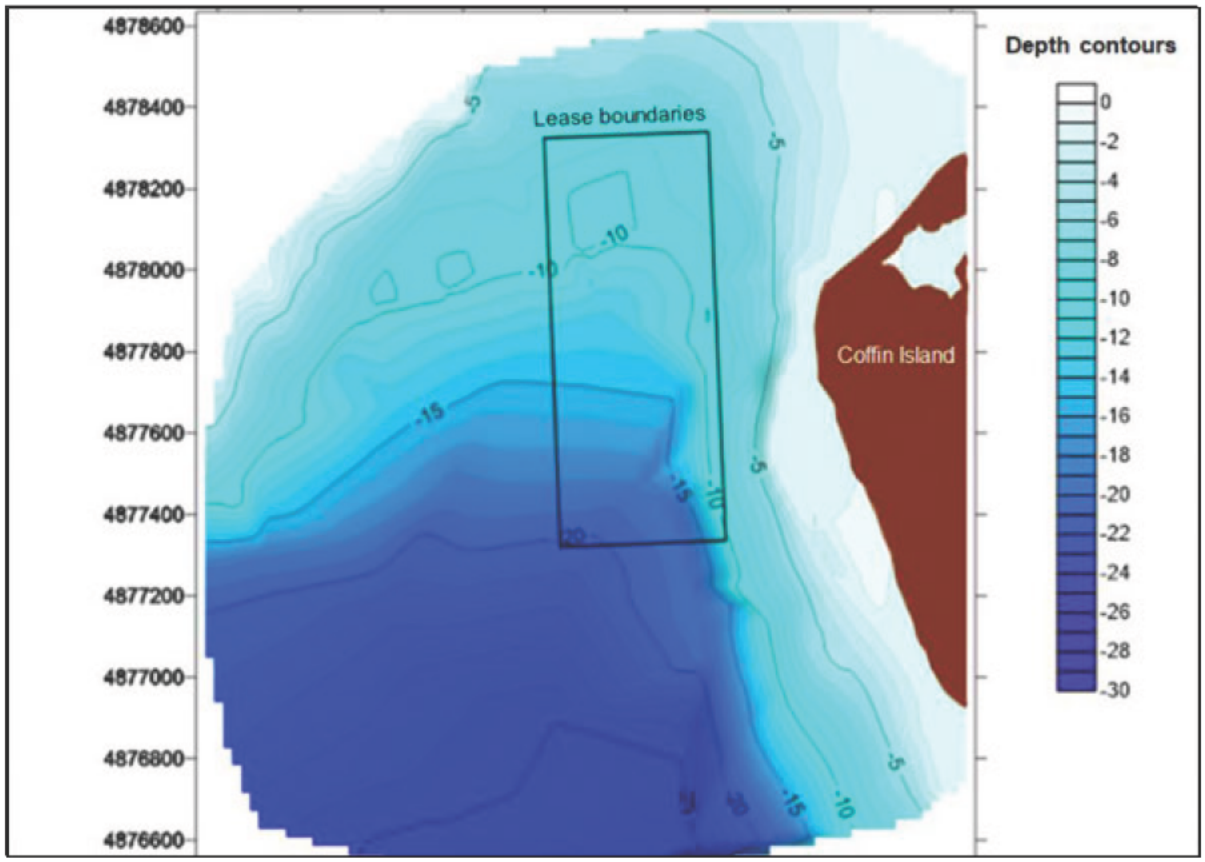


Plate 13: ***Interpolated 3-D surface map of Liverpool site*** *[Baseline Assessment Report, Sweeney International Marine Corp.].*

Mersey Point Site

The proposed new Mersey Point aquaculture site is situated between Black Point and Moose Harbour (***Figure 2***). The proposed lease has dimensions of approximately 405 metres x 1005 metres, comprising a total area of approximately 40.7 hectares. An analysis of bathymetric data, generated by Sweeney International Marine Corp., revealed the presence of steeply sloped terrain throughout the Assessment Area (***Plate 14***). This landform attribute is not conducive to supporting past occupation and/or use of this location by Indigenous people. The potential for encountering submerged archaeological resources within the Mersey Point Assessment Area is considered to be low (***Figure 5***).

The ARIA resulted in the identification of two areas considered to exhibit high potential for encountering submerged archaeological resources (HPA-01& HPA-02). It is therefore recommended that the areas of high archaeological potential be avoided during any proposed development and/or ground disturbance activities associated with the proposed Project. If the areas of high archaeological potential, or parts thereof, cannot be avoided during development activities related to the proposed Project, it is recommended these areas be subjected to subsurface archaeological sampling probes in order to confirm the presence or absence of archaeological resources. Any potential need for further archaeological assessment or mitigation will be based on the results of this subsurface investigation.

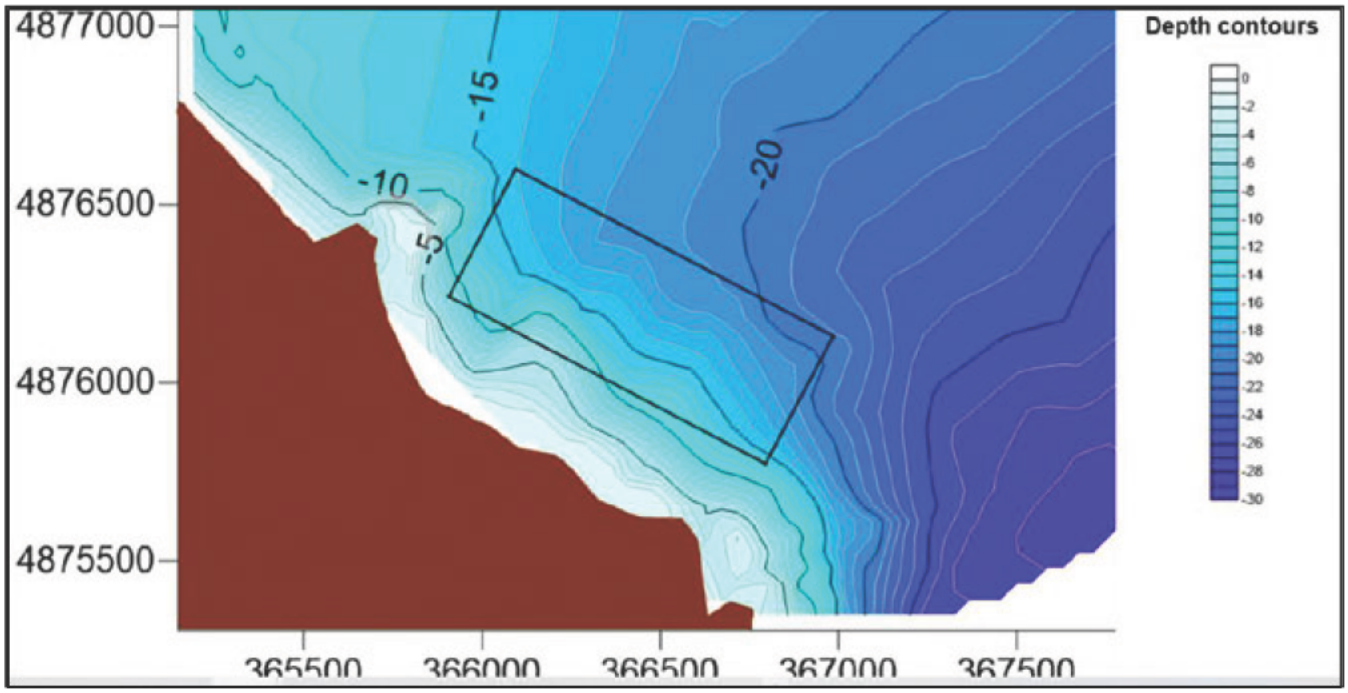


Plate 14: ***Interpolated 3-D surface map of Mersey Point site*** *[Baseline Assessment Report, Sweeney International Marine Corp.].*

5.0 CONCLUSIONS AND RECOMMENDATIONS

The 2022 ARIA for the Liverpool Bay Aquaculture project involved a desk-based assessment only, which examined the environmental context, the archaeological context, and the historical context of the Assessment Area. Based on the results of the ARIA, Boreas Heritage identified **two (2)** areas considered to exhibit high potential for encountering submerged archaeological resources (**HPA-01 & HPA-02**). The remaining portions of the Assessment Area are considered to exhibit low potential for encountering archaeological resources. As a result, Boreas Heritage offers the following archaeological resource management recommendations:

1. It is recommended that the two (2) areas of high archaeological potential (HPA-01 & HPA-02), as described in this report, be avoided during any proposed development and/or ground disturbance activities associated with the proposed Project, to prevent accidental impacts to areas ascribed high archaeological potential;

2. If areas of high archaeological potential, or parts thereof, cannot be avoided during development activities related to the proposed Project, it is recommended these areas be subjected to subsurface archaeological sampling probes in order to confirm the presence or absence of archaeological resources;

3. If any changes or deviations from the original plans relating to the proposed Project, as provided to Boreas Heritage for this Survey, are necessary, and are found to impact areas outside the Assessment Area described in this report, then additional archaeological resource impact assessment(s) may be warranted for these amended portions of the proposed Project;

4. It is recommended that the remainder of the Assessment Area, as described in the report, be cleared of any requirement for further archaeological investigation and that development within these areas may proceed as planned;

5. In the event archaeological resources and/or human remains are encountered, from disturbed or undisturbed contexts, during construction or disturbance activities associated with the proposed Project, works must immediately cease until contact is made with, and direction(s) on how to proceed has been received from the Coordinator of Special Places, Nova Scotia Department of Communities, Culture, Tourism and Heritage.

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APPENDIX A

Heritage Research Permit

NOVA SCOTIA

Heritage Research Permit (Archaeology)

Special Places Protection Act 1989

(Original becomes Permit when approved by Communities, Culture and Heritage)

Office Use Only
Permit Number:

A2022NS130

Greyed out fields will be made publically available. Please choose your project name accordingly

Surname Beanlands	First Name Sara

Project Name: Liverpool Bay Aquaculture

Name of Organization: Boreas Heritage Consulting Inc.

Representing (if applicable)

Permit Start Date August 5, 2022	Permit End Date December 31, 2022

General Location: The proposed Liverpool Bay Assessment Areas are located in Liverpool Bay, Queens County.

Specific Location: *(cite Borden numbers and UTM designations where appropriate and as described separately in accordance with the attached Project Description. Please refer to the appropriate Archaeological Heritage Research Permit Guidelines for the appropriate Project Description format)*

Permit Category:
Please choose one

- ☐ Category A – Archaeological Reconnaissance
- ☐ Category B – Archaeological Research
- ☑ Category C – Archaeological Resource Impact Assessment
- ☑ I certify that I am familiar with the provisions of the *Special Places Protection Act* of Nova Scotia and that I have read, understand and will abide by the terms and conditions listed in the Heritage Research Permit Guidelines for the above noted category.

Signature of applicant [redacted]	Date 07/26/2022
Approved by Executive Director	Date

TAB R

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit R referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

From: Jennifer Hewitt
Sent: Wednesday, November 2, 2022 10:17 AM
To: Charmaine Stevens <charmainestevens@acadiaband.ca>
Cc: Jeff Nickerson <jnickerson@cookeaqua.com>
Subject: RE: ARIA Report Liverpool Bay

Hi Charmaine,
We sent the document to you and the province.
You have full permission to send to KMKNO, we were not sure if the province does this, the band or us. It is still a grey area.
You should also note that we are still in communications with Sara Beanlands and will be proceeding ahead with the retrieval of core samples in the high potential areas she noted in the document.
If you have any concerns or questions please reach out,
Jennifer

Jennifer Hewitt
Kelly Cove Salmon Ltd.
Division of Cooke Aquaculture INC
Compliance Manager, NS
[redacted]
134 North Street
Bridgewater, NS
B4V 2V6

From: Charmaine Stevens <charmainestevens@acadiaband.ca>
Sent: Wednesday, November 2, 2022 7:22 AM
To: Jennifer Hewitt <Jennifer.Hewitt@cookeaqua.com>
Cc: Jeff Nickerson <jnickerson@cookeaqua.com>
Subject: Re: ARIA Report Liverpool Bay

Jennifer.
Just want to confirm if we have permission to share this document ? I have not shared with the team at KMKNO. The province is also looking for another consultation meeting with us and I'm wondering if you have provided to them ?

Charmaine

Sent from my iPhone

> On Oct 19, 2022, at 4:22 PM, Jennifer Hewitt <Jennifer.Hewitt@cookeaqua.com> wrote:
>
> Good day Charmaine,
> I've attached the ARIA report completed by Boreas Heritage on Liverpool Bay.
> We are hoping to discuss the next steps with you and your fellow band members once you had an opportunity to review the findings.
> Take Care & hope to hear from you soon,
> Jennifer
>
> Jennifer Hewitt
> Kelly Cove Salmon Ltd.
> Division of Cooke Aquaculture INC
> Compliance Manager, NS
> Cell (902) 521-8604
> 134 North Street
> Bridgewater, NS
> B4V 2V6

TAB S

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit S referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

From: Jennifer Hewitt
Sent: Wednesday, March 15, 2023 10:05 AM
To: charmainestevens@acadiaband.ca
Cc: Tamara Young <tyoung@mikmaqrights.com>; tgaudet@mikmaqrights.com; Jeff Nickerson <jnickerson@cookeaqua.com>
Subject: Final Aria Report Liverpool Bay

Charmaine,
Attached is the Aria report we received this morning from Boreas Heritage.
The report has yet to be reviewed by CCTH and the recommendations have not yet been accepted, our consultant is submitting it to CCHT today.
I will follow up when they accept the recommendations.
KMKNO have been copied.
Regards Jennifer

Jennifer Hewitt
Kelly Cove Salmon Ltd.
Division of Cooke Aquaculture INC
Compliance Manager, NS
[redacted]
134 North Street
Bridgewater, NS
B4V 2V6

LIVERPOOL BAY AQUACULTURE
ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT
CORE SAMPLING
QUEENS COUNTY

Submitted to:
Cooke Aquaculture
and the
Special Places Program

Submitted by:
Boreas Heritage Consulting Inc.

Heritage Research Permit:
A2023NS016

March 2023

BOREAS
HERITAGE

PROJECT PERSONNEL

PRINCIPAL INVESTIGATOR:	Sara J. Beanlands, M.A.
PROJECT MANAGEMENT:	Sara J. Beanlands, M.A.
DESKTOP COMPONENT:	Sara J. Beanlands, M.A.
REPORT PREPARATION:	Sara J. Beanlands, M.A.
GIS / FIGURE DRAFTING:	Stephen G. Garcin, M.A.

EXECUTIVE SUMMARY

Kelly Cove Salmon Ltd., the Canadian salmon farming division of Cooke Aquaculture Inc., has applied for two new aquaculture sites (Mersey & Brooklyn) and the expansion of an existing site (Liverpool) in Liverpool Bay, located within the greater Mi'kmaw territory of Kespukwitk, Queens County, Nova Scotia. In order to evaluate the potential for impacting archaeological resources during this work, Cooke Aquaculture retained Boreas Heritage Consulting Inc. (Boreas Heritage) to conduct an Archaeological Resource Impact Assessment (ARIA) of the proposed Project development areas (A2022NS130). The purpose of the Survey was to highlight areas of potential archaeological sensitivity associated with the proposed Project. As the proposed development footprints are currently submerged, the first phase of the ARIA involved a desk-based assessment only, so that an appropriate field component strategy could be devised.

Based on the results of the desk-based assessment, which examined the environmental context, the archaeological context, and the historical context of the Assessment Area, Boreas Heritage identified **two (2)** areas (Brooklyn & Liverpool) considered to exhibit high potential for encountering submerged archaeological resources (HPA-01 & HPA-02). Boreas Heritage subsequently recommended the **two (2)** areas of high archaeological potential be avoided during any proposed development and/or ground disturbance activities associated with the proposed Project. If areas of high archaeological potential, or parts thereof, could not be avoided, it was recommended these areas be subjected to subsurface archaeological sampling probes in order to confirm the presence or absence of archaeological resources.

As development plans progressed, Kelly Cove Salmon Ltd. determined that HPA-1 & HPA-2 may be impacted by the proposed development and subsequently retained Boreas Heritage to oversee and analyse the recommended core sampling programme. The objective is to collect sediment core samples at 18 anchor positions for site #1432 (Brooklyn) and 21 anchor positions for site #1205 (Liverpool) to confirm the presence or absence of archaeological resources. The archaeological assessment was conducted in accordance with the terms of Heritage Research Permit A2023NS016, issued by the Nova Scotia Department of Communities, Culture, Tourism, and Heritage (CCTH) – Special Places Program (SPP), and was directed by Sara Beanlands. The archaeological core sampling programme was carried out in January and February of 2023.

A total of 39 core samples was extracted from proposed anchor locations across the high potential areas. No core samples were recorded as positive for cultural material. Based on the results of the archaeological core sampling programme, Boreas Heritage recommends the Assessment Area be cleared of any requirement for further archaeological investigation and that development within these areas may proceed as planned. Furthermore, if any changes or deviations from the original plans relating to the proposed Project, as provided to Boreas Heritage, are necessary, and are found to impact areas outside the Assessment Area described in this report, then additional archaeological resource impact assessment(s) may be warranted for amended portions of the proposed Project.

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1.0 INTRODUCTION

Kelly Cove Salmon Ltd., the Canadian salmon farming division of Cooke Aquaculture Inc., has applied for two new aquaculture sites (Mersey & Brooklyn) and the expansion of an existing site (Liverpool) in Liverpool Bay, located within the greater Mi'kmaw territory of Kespukwitk, Queens County, Nova Scotia. In order to evaluate the potential for impacting archaeological resources during this work, Cooke Aquaculture retained Boreas Heritage Consulting Inc. (Boreas Heritage) to conduct an Archaeological Resource Impact Assessment (ARIA) of the proposed Project development areas (A2022NS130). The purpose of the Survey was to highlight areas of potential archaeological sensitivity associated with the proposed Project. As the proposed development footprints are currently submerged, the first phase of the ARIA involved a desk-based assessment only, so that an appropriate field component strategy could be devised.

Based on the results of the desk-based assessment, which examined the environmental context, the archaeological context, and the historical context of the Assessment Area, Boreas Heritage identified two (2) areas (Brooklyn & Liverpool) considered to exhibit high potential for encountering submerged archaeological resources (HPA-01 & HPA-02). Boreas Heritage subsequently recommended the two (2) areas of high archaeological potential be avoided during any proposed development and/or ground disturbance activities associated with the proposed Project. If areas of high archaeological potential, or parts thereof, could not be avoided, it was recommended these areas be subjected to subsurface archaeological sampling probes in order to confirm the presence or absence of archaeological resources.

As development plans progressed, Kelly Cove Salmon Ltd. determined that HPA-1 & HPA-2 may be impacted by the proposed development and subsequently retained Boreas Heritage to oversee and analyse the recommended core sampling programme. The objective is to collect sediment core samples at 18 anchor positions for site #1432 (Brooklyn) and 21 anchor positions for site #1205 (Liverpool) to confirm the presence or absence of archaeological resources. The archaeological assessment was conducted in accordance with the terms of Heritage Research Permit A2023NS016 (***Appendix A***), issued by the Nova Scotia Department of Communities, Culture, Tourism, and Heritage (CCTH) – Special Places Program (SPP), and was directed by Sara Beanlands. The archaeological core sampling programme was carried out in January and February of 2023.

This report includes an overview of the methods applied during the archaeological core sampling programme, a summary of the results of the Survey, and archaeological resource management recommendations for the proposed Project.

2.0 ASSESSMENT AREA

The Assessment Area includes two previously identified high potential areas: HPA-1, located within the proposed Brooklyn aquaculture site (#1432), and HPA-2, located within the proposed expansion of the Liverpool aquaculture site (#1205), both of which are situated in Liverpool Bay, within the greater Mi'kmaw territory of Kespukwitk (***Figures 1 & 2***). Landform attributes associated with the high potential areas are conducive to supporting past occupation and/or use of these locations by Indigenous peoples and the proposed development activities may generate subsurface disturbances associated with the anchoring system for the cage-culture grids.

The proposed new Brooklyn aquaculture site #1432 is situated in Liverpool Bay, southwest of Eastern Head. The proposed lease has dimensions of approximately 405 metres x 1005 metres, comprising a total area of approximately 40.7 hectares. If approved, the proposed lease would have a 2 x 10 cage grid configuration. The Liverpool marine aquaculture site #1205 is situated in Liverpool Bay, on the western side of Coffin Island. The current lease has dimensions of approximately 200 metres x 200 metres, comprising a total area of approximately 4 hectares (***Plate 1***). The proposed boundary amendment extends the lease boundaries to add six additional cages south of the existing grid and to accommodate all below surface gear. The dimensions of the proposed lease are approximately 405 metres x 1005 metres, comprising a total area of approximately 40.7 hectares.

Plate 1: ***View southeast of existing Liverpool aquaculture site.***

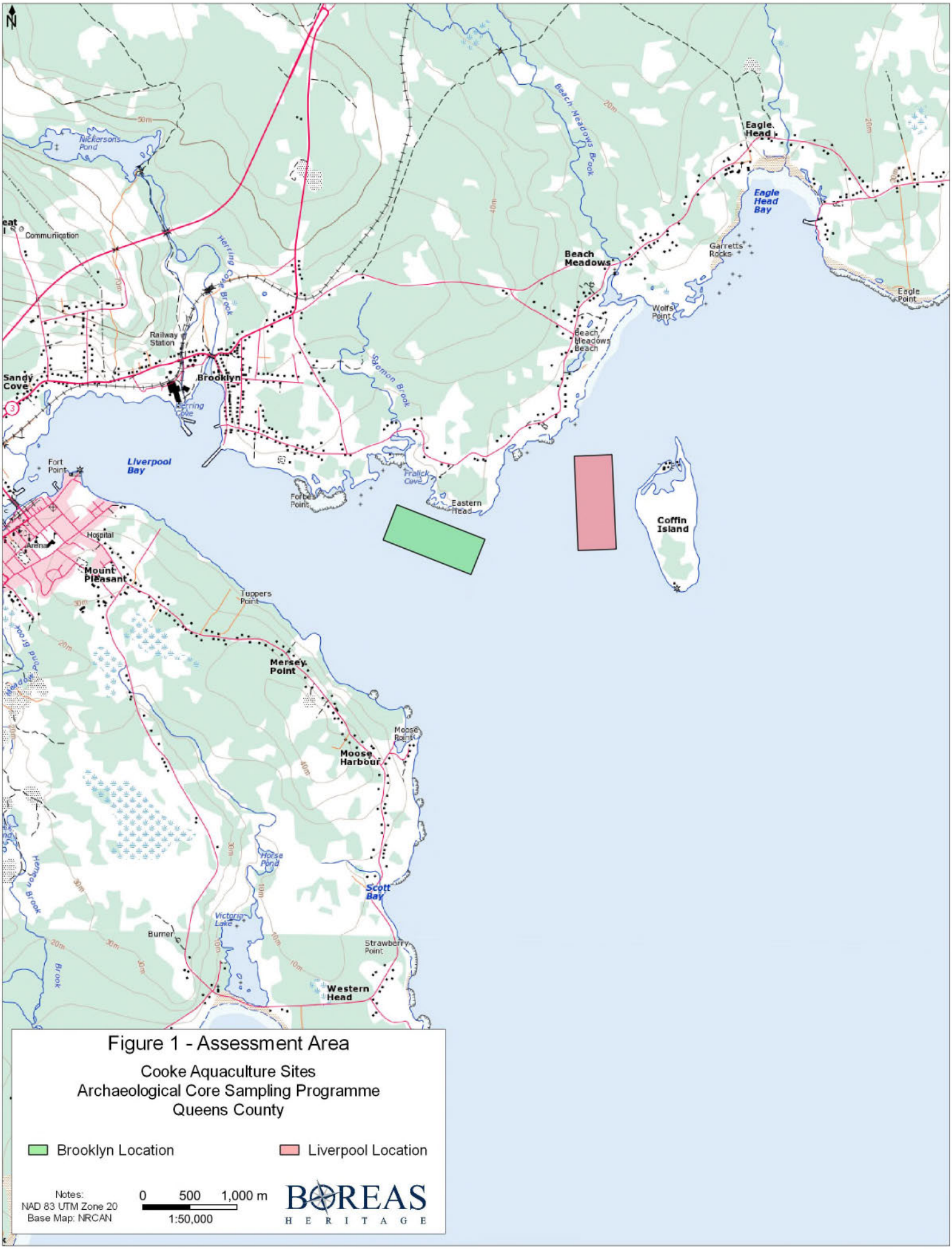

Figure 1 - Assessment Area

Cooke Aquaculture Sites
Archaeological Core Sampling Programme
Queens County

Brooklyn Location

Liverpool Location

Notes:
NAD 83 UTM Zone 20
Base Map: NRCAN

0 500 1,000 m
1:50,000

BOREAS HERITAGE

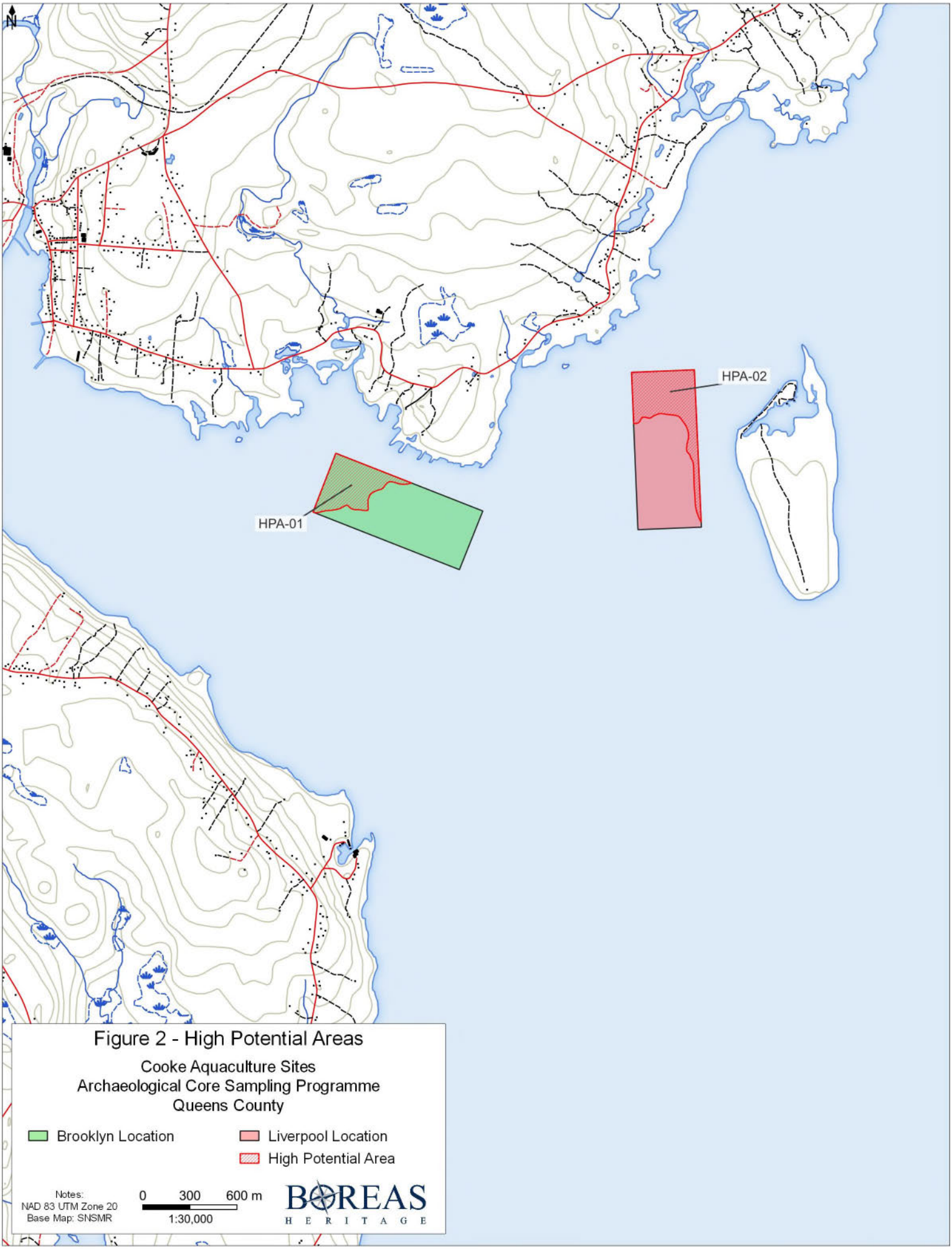

Figure 2 - High Potential Areas

Cooke Aquaculture Sites
Archaeological Core Sampling Programme
Queens County

Brooklyn Location

Liverpool Location

High Potential Area

Notes:
NAD 83 UTM Zone 20
Base Map: SNSMR

0 300 600 m

1:30,000

BOREAS HERITAGE

3.0 METHODS

The objectives of the Survey are to collect sediment core samples at 18 anchor positions for site #1432 (Brooklyn) and 21 anchor positions for site #1205 (Liverpool) to confirm the presence or absence of archaeological resources and to offer comprehensive recommendations so that appropriate archaeological resource management strategies can be devised. It is also noted that, as per Heritage Research Permit requirements, the Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO) was advised of the proposed Project.

3.1 Sample Collection – Methods

The collection of sediment cores for archaeological analysis was undertaken by Sweeney International Marine Corp (SIMCorp). Samples were collected by SCUBA diver, and efforts were made to remain within 1 m^2 of the target coordinates. The position of the sampling location was marked from the surface with a drop line, with an anchor at one end and a float at the other. Coordinates of the anchor drop were recorded in the field book. Sediment samples were collected with Wildco hand-corer liners and caps. Each 20-inch liner was composed of clear cellulose acetate butyrate and took a sediment core 2 inches in diameter. Cores were inserted into the sediment at an angle as close to vertical as possible. Due to the hardness of the seafloor, some cores were inserted on a slight angle in order to achieve penetration. A depth of at least 15 centimetres was targeted. Before removing the sample from the sea floor, the divers dug around the core to access the bottom end and fitted the bottom cap in place. Upon reaching the vessel, the upper end of the core was capped, and the sediment samples photographed and visually inspected for level of disturbance, sediment depth, and other qualitative observations. For very coarse sediment samples, the upper cap was fitted before removing the core from the sediment, to prevent sample loss.

Video footage was recorded using a GoPro Hero 5 or Hero 3. Illumination was provided by Hydra 2500 (Lumens) V2 lights by Kraken Sports. Video recording of each sampling station started at the surface with the viewing of a whiteboard showing collection location information, and then the underwater footage followed. During sampling, the divers presented each core tube to the camera to show which sample was being collected. The recording continued uninterrupted for the duration of the underwater surveillance and was concluded only after the camera was returned to the vessel at the surface. Visibility during the sampling was poor, which is reflected in the video quality. Video files are available upon request.

3.2 Sediment Analysis – Methods

All core sediment samples recovered from the test locations are sifted through 3-millimetre wire mesh and analysed for the presence of micro-debitage or other material culture. Each sample is recorded, photographed, and analysed at close range (up to 200x) using a Dino-Lite Premier AM4113ZT handheld digital microscope with adjustable polarization.

4.0 RESULTS

4.1 Core Sampling Programme and Analysis

A total of 39 core samples was extracted from the proposed anchor locations across the high potential areas, including 18 anchor positions for site #1432 and 21 anchor positions for site #1205. Each site is discussed separately below.

Brooklyn Site #1432

The proposed new Brooklyn aquaculture site #1432 is situated southwest of Eastern Head (***Figure 1***). The proposed lease has dimensions of approximately 405 metres x 1005 metres, comprising a total area of approximately 40.7 hectares. An analysis of bathymetric data, generated by SIM Corp., revealed the presence of a relatively level terrace in the western portion of the Assessment Area. This landform attribute is conducive to supporting past occupation and/or use of this location by Indigenous people and was designated HPA-01 (***Figure 2***). A total of 18 sediment samples was collected from HPA-01 (***Table 1; Figure 3***). The typical core sample contained coarse-grained sand with inclusions of shell debris and gravel (***Table 2; Plates 2-9***). No core samples were recorded as positive for cultural material.

Table 1: ***Target coordinates of sample locations for #1432***

Anchor ID	Latitude	Longitude
28	44° 2.3612'	64° 39.6791'
29	44° 2.3727'	64° 39.7224'
30	44° 2.3837'	64° 39.7645'
31	44° 2.3951'	64° 39.8077'
32	44° 2.3938'	64° 39.8460'
33	44° 2.3737'	64° 39.8714'
34	44° 2.3429'	64° 39.8870'
35	44° 2.3365'	64° 39.8894'
36	44° 2.3121'	64° 39.9028'
37	44° 2.2846'	64° 39.9010'
B1	44° 2.3124'	64° 39.8813'
B2	44° 2.3332'	64° 39.8452'
B3	44° 2.3456'	64° 39.8372'
B4	44° 2.3611'	64° 39.8326'
B5	44° 2.4140'	64° 39.9351'
B6	44° 2.3943'	64° 39.9717'
B7	44° 2.3740'	64° 39.9839'
B8	44° 2.3414'	64° 39.9785'

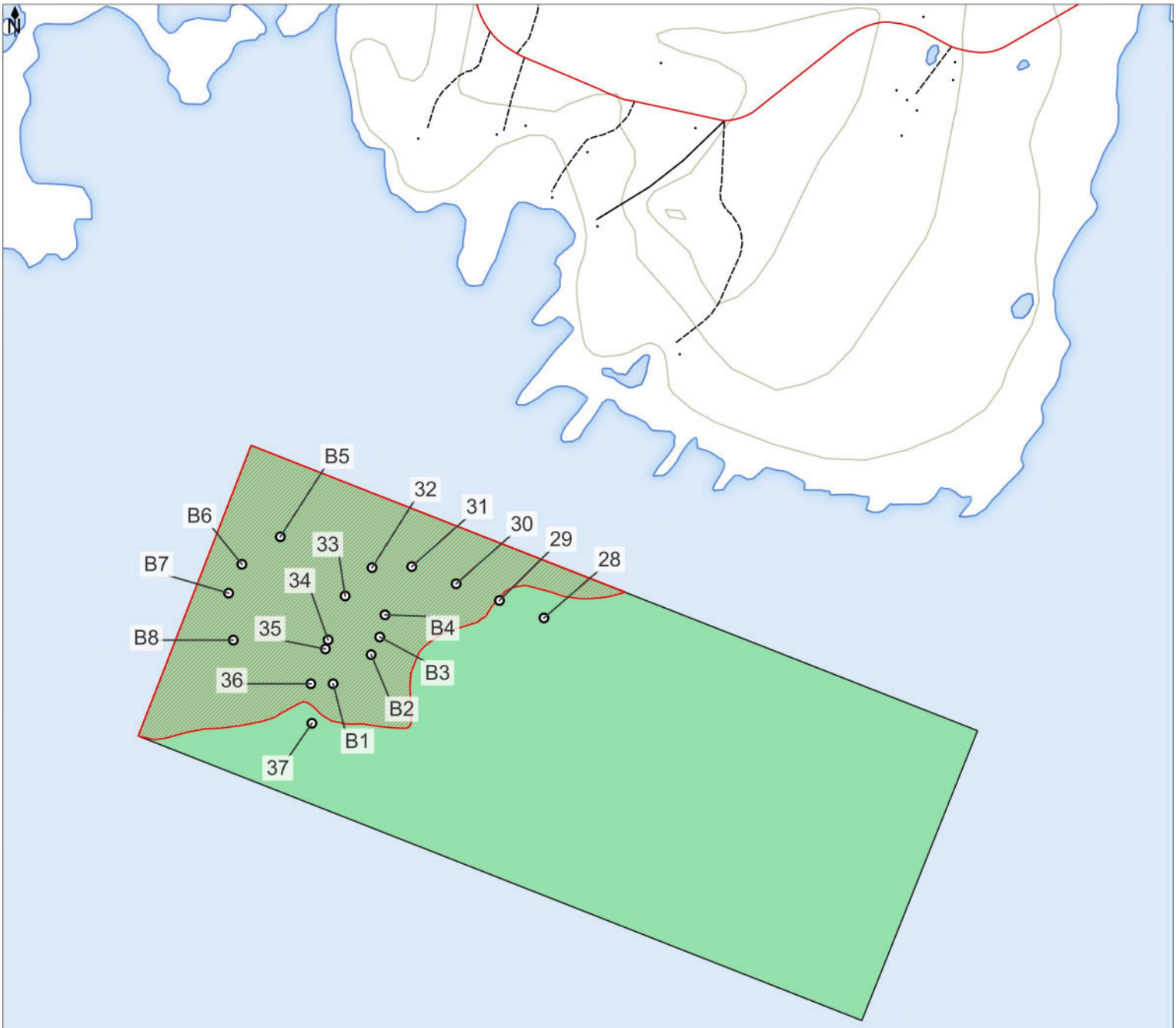

Figure 3 - Brooklyn Core Locations

Cooke Aquaculture Sites
Archaeological Core Sampling Programme
Queens County

Brooklyn Location
Core Location
High Potential Area

Notes:
NAD 83 UTM Zone 20
Base Map: SNSMR

0 75 150 m
1:7,500

BOREAS HERITAGE

Table 2: ***Sample Observations for #1432***

ID #	Attempt	Colour	Soil/Sediment Description	Inclusions	Compaction	Depth(cm)
28	1	Brown - Black	Coarse sand, shell debris, gravel	Small pebbles, shell debris	Hard	18
30	1	Brown	Sand, crushed shell debris	Shell debris	Hard	11
31	3		Shell debris	Shell debris	Hard	6
32	1	Grey	Medium grained silty sand	Micro shell debris	Hard	23
33	1	Dark grey - Black	Medium-grained sand, shell debris	Shell debris	Hard	27
34		Grey	Fine-medium grained silty sand	Micro shell debris	Hard	28
35	1	Dark grey - Black	Medium-grained silty sand	Shell debris	Hard	18
36	1	Brown	Sand, crushed shell debris, gravel	Crushed shell debris, gravel	Hard	18
37	1	Brown	Coarse sand, shell debris, gravel	Shell debris, gravel	Hard	19
B1	1		Crushed shell debris, gravel	Shell debris, gravel	Hard	17
B2	3		Water-worn black pebbles		Hard	3
B3	1		Sand, gravel, shell debris	Water-worn black pebbles, crushed shell debris	Hard	6
B4	1		Ledge – only traces of sediment			0
B5	1	Dark brown - black	Ledge – only traces of coarse-grained sand	Shell debris		1
B6	1	Brown	Coarse-grained sand, shell debris, gravel	Gravel, shell debris	Hard	15
B8	1	Brown	Coarse sand, micro-shell debris, gravel	Shell debris, gravel	Hard	13

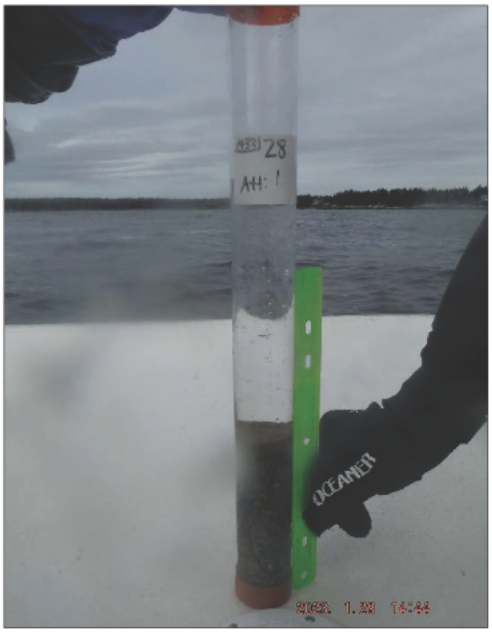

Plate 2: ***Core Sample 28.***

Plate 3: ***Core Sample 28 under microscope.***

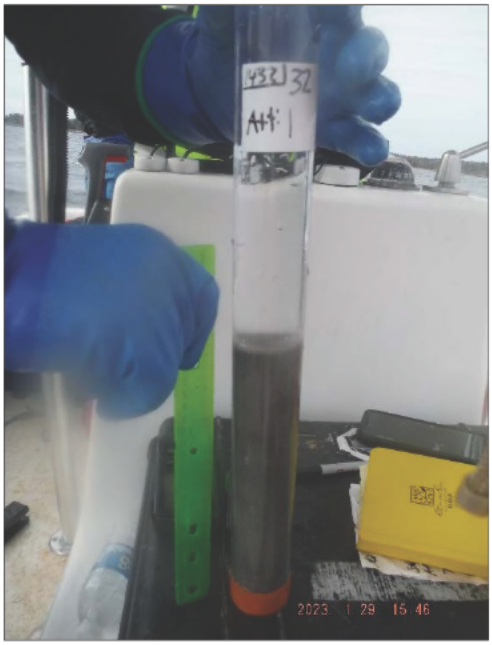

Plate 4: ***Core Sample 32.***

Plate 5: ***Core Sample 32 under microscope.***

Plate 6: ***Core Sample 36.***

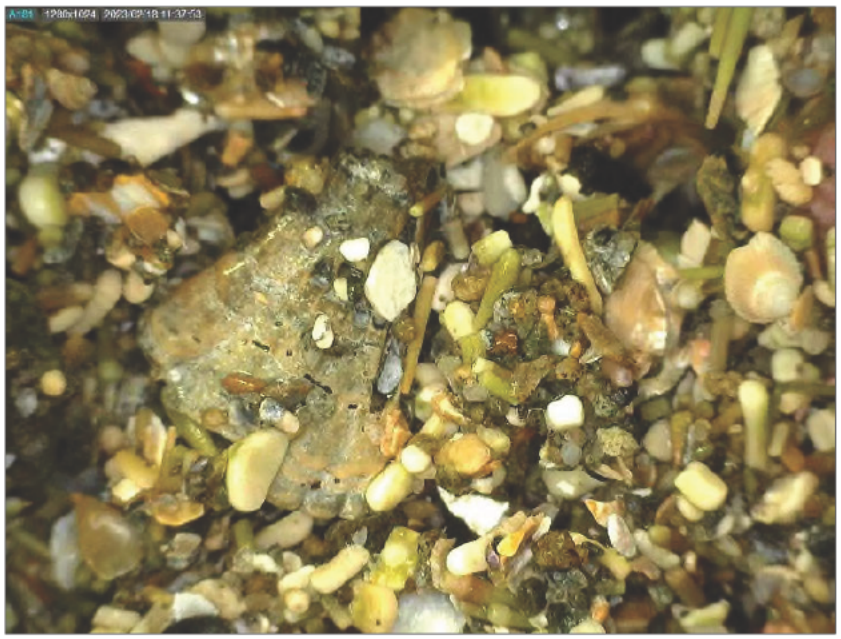

Plate 7: ***Core Sample 36 under microscope.***

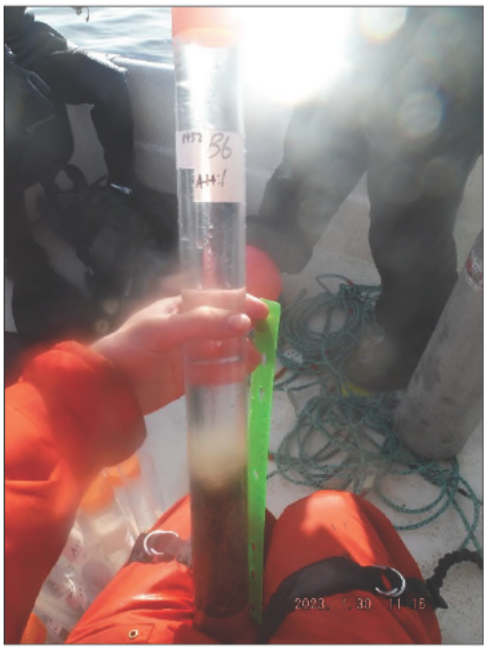

Plate 8: ***Core Sample B6.***

Plate 9: ***Core Sample B6 under microscope.***

Liverpool Site

The Liverpool marine aquaculture site #1205 is situated on the western side of Coffin Island (***Figure 1***). The current lease has dimensions of approximately 200 metres x 200 metres, comprising a total area of approximately 4 hectares. The proposed boundary amendment extends the lease boundaries to add six additional cages south of the existing grid and to accommodate all below surface gear. An analysis of bathymetric data, generated by SIM Corp., revealed the presence of a relatively level terrace in the northern portion of the Assessment Area, extending along the eastern boundary. This landform attribute is conducive to supporting past occupation and/or use of this location by Indigenous people and was designated HPA-02 (***Figure 2***). A total of 21 sediment samples was collected from HPA-02 (***Table 3; Figure 4***). The typical core sample contained sand with inclusions of shell debris (***Table 4; Plates 11-17***). No core samples were recorded as positive for cultural material.

Table 3: ***Target coordinates of sample locations for #1205***

Anchor ID	Latitude	Longitude
1	44° 2.6497'	64° 38.5050'
2	44° 2.6168'	64° 38.5050'
27	44° 2.5254'	64° 38.2934'
28	44° 2.5582'	64° 38.2958'
29	44° 2.5911'	64° 38.2983'
30	44° 2.6241'	64° 38.3007'
31	44° 2.6569'	64° 38.3032'
32	44° 2.6817'	64° 38.3194'
33	44° 2.6910'	64° 38.3558'
34	44° 2.6891'	64° 38.3930'
35	44° 2.6883'	64° 38.4103'
36	44° 2.6875'	64° 38.4470'
37	44° 2.6756'	64° 38.4811'
B1	44° 2.6570'	64° 38.4189'
B2	44° 2.6630'	64° 38.4397'
B3	44° 2.7464'	64° 38.4582'
B4	44° 2.7638'	64° 38.4196'
B5	44° 2.7645'	64° 38.3888'
B6	44° 2.7491'	64° 38.3484'
B7	44° 2.6655'	64° 38.3578'
B8	44° 2.6574'	64° 38.3824'

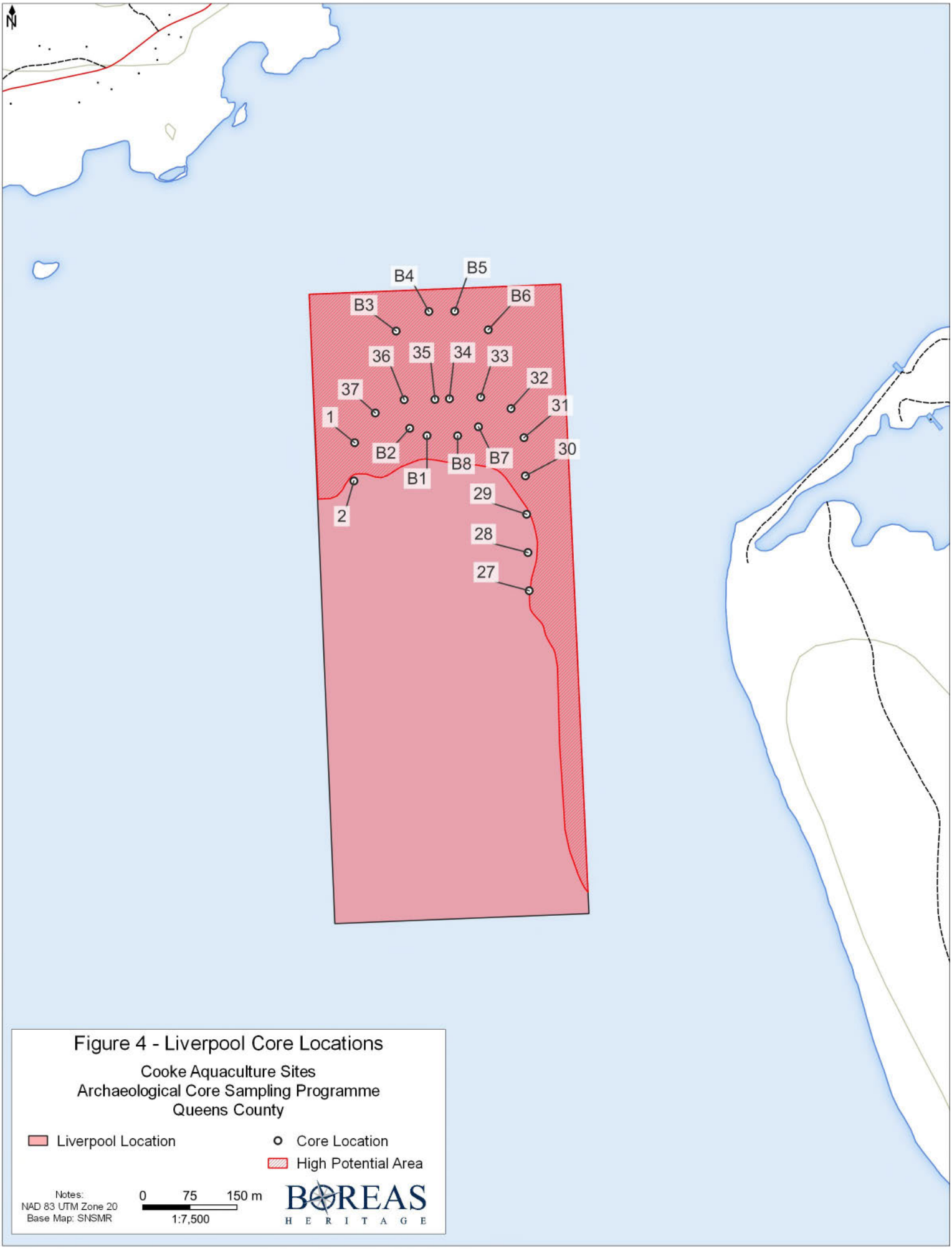

Figure 4 - Liverpool Core Locations

Cooke Aquaculture Sites
Archaeological Core Sampling Programme
Queens County

Liverpool Location

Core Location

High Potential Area

Notes:
NAD 83 UTM Zone 20
Base Map: SNSMR

0 75 150 m
1:7,500

BOREAS HERITAGE

Table 4: ***Sample Observations for #1205***

ID #	Attempt	Colour	Soil/Sediment Description	Inclusions	Compaction	Depth(cm)
1	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	30
2	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	29
27	2	Brown	Sand, shell debris	Shell debris	Hard	21
28	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	30
29	1	Brown	Sand, shell debris	Shell debris	Hard	29
30	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	30
31	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	24
32	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	32
33	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	32
34	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	29
35	1	Grey/Brown	Silty sand, shell debris	Shell debris	Hard	32
36	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	26
37	1	Grey/Brown	Silty sand, shell debris	Shell debris	Hard	30
B1	1	Grey/Brown	Silty sand, shell debris	Shell debris	Hard	30
B2	1	Grey/Brown	Silty sand, shell debris	Shell debris	Hard	30
B3	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	26
B4	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	21
B5	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	27

B6	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	33
B7	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	30
B8	1	Grey/Brown	Sand, shell debris	Shell debris	Hard	29

Plate 10: *Core Sample 1.*

Plate 11: *Core Sample 1 under microscope.*

Plate 12: *Core Sample 27.*

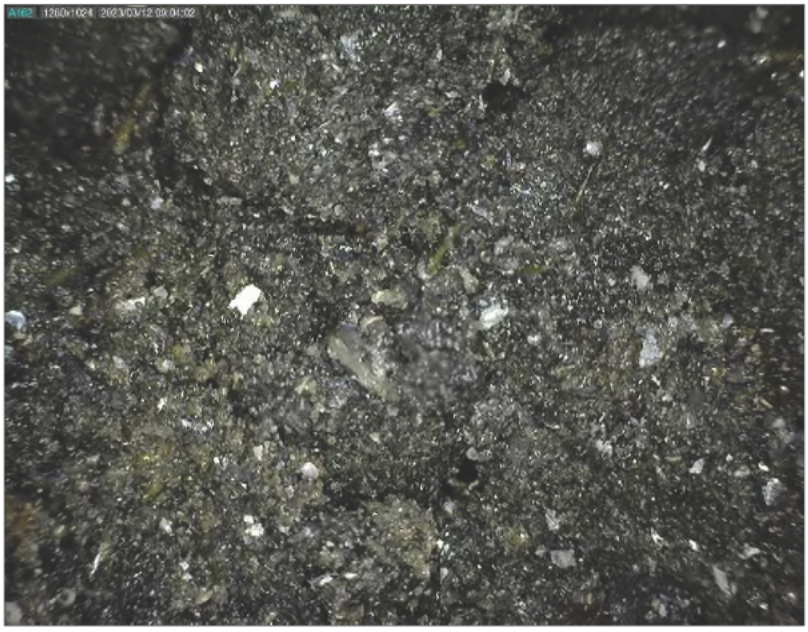

Plate 13: *Core Sample 27 under microscope.*

Plate 14: ***Core Sample 36.***

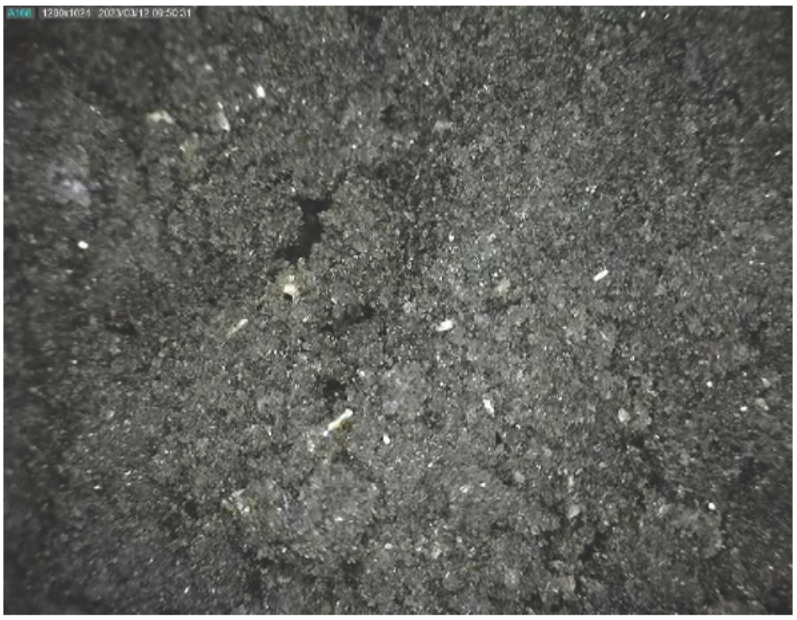

Plate 15: ***Core Sample 36 under microscope.***

Plate 16: ***Core Sample B6.***

Plate 17: ***Core Sample B6 under microscope.***

4.2 Archaeological Potential

A total of 39 core samples was extracted from proposed anchor locations across the high potential areas (HPA-01 & HPA-02). All sediment samples were sifted and analysed. No core samples were recorded as positive for cultural material. Based on the results of the archaeological core sampling programme, Boreas Heritage recommends the Assessment Area be cleared of any requirement for further archaeological investigation and that development within these areas may proceed as planned. Furthermore, if any changes or deviations from the original plans relating to the proposed Project, as provided to Boreas Heritage, are necessary, and are found to impact areas outside the Assessment Area described in this report, then additional archaeological resource impact assessment(s) may be warranted for amended portions of the proposed Project.

5.0 CONCLUSIONS AND RECOMMENDATIONS

A total of 39 core samples was extracted from proposed anchor locations across the high potential areas (HPA-01 & HPA-02). All sediment samples were sifted and analysed. No core samples were recorded as positive for cultural material. Based on the results of the core sampling programme, Boreas Heritage offers the following archaeological resource management recommendations:

1. It is recommended the Assessment Area (HPA-01 & HPA-02), as described in the report, be cleared of any requirement for further archaeological investigation and that development within these areas may proceed as planned;

2. If any changes or deviations from the original plans relating to the proposed Project, as provided to Boreas Heritage for this Survey, are necessary, and are found to impact areas outside the Assessment Area described in this report, then additional archaeological resource impact assessment(s) may be warranted for these amended portions of the proposed Project;

3. In the event archaeological resources and/or human remains are encountered, from disturbed or undisturbed contexts, during construction or disturbance activities associated with the proposed Project, works must immediately cease until contact is made with, and direction(s) on how to proceed has been received from the Coordinator of Special Places, Nova Scotia Department of Communities, Culture, Tourism and Heritage.

APPENDIX A

Heritage Research Permit

NOVA SCOTIA

Heritage Research Permit (Archaeology)

Special Places Protection Act 1989

(Original becomes Permit when approved by Communities, Culture and Heritage)

Office Use Only
Permit Number:

A2023NS016

Greyed out fields will be made publically available. Please choose your project name accordingly

Surname Beanlands	First Name Sara

Project Name: Liverpool Bay Aquaculture - Core Sampling

Name of Organization: Boreas Heritage Consulting Inc.

Representing (if applicable)

Permit Start Date January 18, 2023	Permit End Date December 31, 2023

General Location: The proposed Liverpool Bay Assessment Areas are located in Liverpool Bay, Queens County.

Specific Location: *(cite Borden numbers and UTM designations where appropriate and as described separately in accordance with the attached Project Description. Please refer to the appropriate Archaeological Heritage Research Permit Guidelines for the appropriate Project Description format)*

Permit Category:
Please choose one

- ☐ Category A – Archaeological Reconnaissance
- ☐ Category B – Archaeological Research
- ☑ Category C – Archaeological Resource Impact Assessment
- ☑ I certify that I am familiar with the provisions of the *Special Places Protection Act* of Nova Scotia and that I have read, understand and will abide by the terms and conditions listed in the Heritage Research Permit Guidelines for the above noted category.

Signature of applicant [redacted]	Date 01/06/2023
Approved by Executive Director	Date 1/16/23

TAB T

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit T referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

From: Jennifer Hewitt
Sent: Thursday, March 30, 2023 3:28 PM
To: tgaudet@mikmaqrights.com; Tamara Young <tyoung@mikmaqrights.com>; charmainestevens@acadiaband.ca
Cc: Jeff Nickerson <jnickerson@cookeaqua.com>
Subject: A2023NS016 – Liverpool Bay Aquaculture – Core Sampling

Please see attached final letter from Communities, Cultural & Heritage regarding Liverpool Bay Archeology Assessment.
Best regards,
Jennifer

Jennifer Hewitt
Kelly Cove Salmon Ltd.
Division of Cooke Aquaculture INC
Compliance Manager, NS
Cell (902) 521-8604
134 North Street
Bridgewater, NS
B4V 2V6

NOVA SCOTIA
Communities, Culture and Heritage
Culture and Heritage Development

1741 Brunswick Street, 3rd Floor
PO Box 456, STN Central
Halifax, NS B3J 2R5
902-424-8443

March 22, 2023

Sara Beanlands
46 Arlington Ave,
Halifax, Nova Scotia
B3T 2A1

Dear Sara Beanlands:

RE: Heritage Research Permit Report
A2023NS016 – Liverpool Bay Aquaculture – Core Sampling

We have received and reviewed the report on work conducted under the terms of Heritage Research Permit A2023NS016 – Liverpool Bay Aquaculture – Core Sampling project in Queens County, Nova Scotia.

Kelly Cove Salmon Ltd., the Canadian salmon farming division of Cooke Aquaculture Inc., plans to create two new aquaculture sites (Mersey & Brooklyn) and to expand the existing aquaculture site in Liverpool Bay in Queens County, Kespukwitk Territory, Nova Scotia. Boreas Heritage Consulting Inc. (Boreas Heritage) was contracted to conduct an archaeological resource impact assessment (ARIA) - desktop only - for the proposed development areas in 2022, under HRP A2022NS130. Two areas were identified as having high potential for encountering archaeological resources. Avoidance or core sampling were recommended, and Kelly Cove Salmon Ltd. determined that HPA-1 & HPA-2 may be impacted by proposed development activities. Boreas Heritage was again retained to oversee and analyse the recommended core sampling program.

Thirty-nine (39) core samples were extracted from proposed anchor locations within high potential areas HPA-01 & HPA-02. All core samples were negative for cultural materials.

Based on the above, Boreas Heritage offered the following recommendations:

1. It is recommended the Assessment Area (HPA-01 & HPA-02), as described in the report, be cleared of any requirement for further archaeological investigation and that development within these areas may proceed as planned.

2. If any changes or deviations from the original plans relating to the proposed Project, as provided to Boreas Heritage for this Survey, are necessary, and are found to impact areas outside the Assessment Area described in this report, then additional archaeological resource impact assessment(s) may be warranted for these amended portions of the proposed Project.

3. In the event archaeological resources and/or human remains are encountered, from disturbed or undisturbed contexts, during construction or disturbance activities associated with the proposed Project, works must immediately cease until contact is made with, and direction(s) on how to proceed has been

received from the Coordinator of Special Places, Nova Scotia Department of Communities, Culture, Tourism and Heritage.

CCH Staff have reviewed the report and find it acceptable as submitted. Please do not hesitate to contact me with any questions or concerns.

Sincerely,

[redacted]

John Cormier
Coordinator, Special Places

TAB U

KCS Application re AQ#1205X, AQ#1432, AQ#1433 in Liverpool Bay, Queens County

This is Exhibit U referred to in the Affidavit of Jeffery Nickerson, virtually affirmed before me on January 22, 2024.

A Barrister of the Nova Scotia Supreme Court

Maritime Aboriginal Peoples Council

The Maritime Regional Aboriginal Leaders
Intergovernmental Council of Aboriginal Peoples
Continuing to Reside on Traditional Ancestral Homelands

Forums

- ☐ Leaders Congress
- ☐ MAPC Commissions/Projects
- ☐ MAARS Secretariate
- ☐ IKANAWTIKET SARA
- ☑ MAPC Administration

MAPC Regional
Administrative Office
172 Truro Heights Road
Truro Heights, Nova Scotia
B6L 1X1

Tel: 902-895-2982
Fax: 902-895-3844
Toll Free: 1-855-859-7240
Email: [illegible]@mapcorp.ca

Governmental
APRO Councils

Native Council of
Nova Scotia
P.O. Box 1320
Truro, Nova Scotia
B2N 5N2

Tel: 902-895-1523
Fax: 902-895-0024
Email: chiefaugustine@ncns.ca

New Brunswick Aboriginal
Peoples Council
320 St. Mary's Street
Fredericton, New Brunswick
E3A 2S4

Tel: 506-458-8422
Fax: 506-451-6130
Email: [illegible]@nbapc.org

Native Council of
Prince Edward Island
B.F.J. McAuley Court
Charlottetown
Prince Edward Island
C1A 9M7

Tel: 902-892-5314
Fax: 902-368-7484
Email: chief@nepei.com

April 5th, 2019

Jeffrey Nickerson
Andrew Lively
Jennifer Hewitt
134 North St.
Bridgewater, NS, B4V 2V6

Dear Mr. Nickerson, Ms. Hewitt, and Mr. Lively,

On behalf of Roger Hunka, Kathryn Townsend, Zack Burrows, and myself with the Maritime Aboriginal Peoples Council and Mr. Arthur Anthony, Zone 9 (Queens County) Board Director for the Native Council of Nova Scotia, I would like to thank you for taking the time to come out to Truro and discuss Cooke Aquaculture's proposed expansion in Liverpool Bay. We were pleased to receive and encouraged by your detailed presentation describing Cooke's past, current, and future projects.

We thank you for responding to our questions, comments, and concerns and look forward to reviewing your synopsis and detailed map(s) of the Liverpool Bay expansion project and the management plan guidelines required by the Province. As Roger mentioned in our meeting, we would be interested in further developing our relationship and potentially partnering with Cooke through our projects, research, and events and look forward to more discussion in the future.

Advancing Aboriginal Fisheries & Oceans Entities
Best Practices, Management and Decision-Making

[redacted]

Vanessa Mitchell
Aquatic Resources Manager, MAARS

CC: Lorraine Augustine, Chief & President, NCNS
Roger Hunka, Director, MAPC
Joshua McNeely, Director, IKANAWTIKET
Tim Martin, President, Mime'j Fisheries, NCNS
Kathryn Townsend, Salmon Egg Basket Project Manager, MAPC
Zach Burrows, Salmon Egg Basket Project Lead, MAPC
Arthur Anthony, Zone 9 Director, NCNS