

Atlantic BioCorp Ltd.

215 Water St, Suite 900

St. John's, Newfoundland and Labrador

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January 12, 2026

Environmental Assessment Registration

For

Project: St. Anthony Bioprocessing Operation.

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THE UNDERTAKING

(i) Name of the Undertaking

Project: St. Anthony Bioprocessing Operation.

(ii) Purpose, Rationale, and Need for the Undertaking

The purpose of the undertaking is to establish a pilot-scale, 1,000-tonne marine biomaterials upcycling facility in St. Anthony, Newfoundland and Labrador, capable of converting shrimp shell waste from the Northern Peninsula into high-value, low-carbon products, including protein hydrolysate, chitin, and calcium-based coproducts. The St. Anthony facility constitutes the sole physical undertaking subject to this Environmental Assessment registration.

Processing at the St. Anthony site will include material receiving, preprocessing, and primary bioconversion steps required to produce intermediate and finished biomaterial outputs. Some chitin produced at the St. Anthony facility will be transported off-site to the Marine Institute in St. John's for further conversion to chitosan under a third party contract manufacturing service agreement. These downstream activities will occur entirely within the Marine Institute's existing, fully permitted ISO Class 5 laboratory facilities and do not involve new construction, expansion, or modification of existing operations. As such, Marine Institute activities are not part of the undertaking being registered under this Environmental Assessment but are mentioned solely to provide context.

The undertaking provides an environmentally responsible alternative to current disposal practices for shellfish processing by-products and directly advances the Province's Waste Management Strategy¹ by increasing waste diversion, deploying modern processing technology, and supporting regional economic development. The project builds upon +25 years of research in the area of marine byproducts valorization.² It will reduce pressure on local landfills, mitigate risks associated with unmanaged marine disposal, and enable the production of biomaterials that can substitute for petro-derived inputs in downstream applications.

The undertaking aligns with provincial and federal environmental priorities, including the Zero Plastic Waste Strategy³ and the Newfoundland and Labrador Climate Change Mitigation Plan.⁴ Additionally, Atlantic BioCorp is the lead industrial partner in the Marine Institute and ACOA-supported public-private partnership *“From Ocean to Opportunity: Circular Economy Models for*

¹ Government of Newfoundland and Labrador, Department of Environment. *Newfoundland and Labrador Waste Management Strategy*. St. John's, NL: Government of Newfoundland and Labrador, April 2002.

² See for instance: Manuel, H. (2017). Innovations in Crustacean Processing: Bioproduction of Chitin and Its Derivatives. In Fuels, Chemicals and Materials from the Oceans and Aquatic Sources, 113–149; Prakash, D., Nawani, N.N. and Kapadnis, B.P. (2012). Microbial mining of value added products from seafood waste and their applications. In Satyanarayana et al. (Eds.), *Microorganisms in Environmental Management: Microbes and Environment* (pp. 315-333). Springer Science + Business Media B.V.

³ Canadian Council of Ministers of the Environment. *Strategy on Zero Plastic Waste*. Winnipeg: Canadian Council of Ministers of the Environment, 2018. This undertaking aligns with the objectives of Canada's *Strategy on Zero Plastic Waste*. Chitosan produced through the project serves as a renewable, non-petrochemical polymer that can replace conventional plastics in applications such as packaging and coatings.

⁴ Government of Newfoundland and Labrador. *Climate Change Mitigation Action Plan 2025–2030*. St. John's, NL: Government of Newfoundland and Labrador, June 2025.

Newfoundland and Labrador's Fisheries Resources” with the St. Anthony facility serving as the primary demonstration hub for this initiative.

Approximately 90% of the province’s shrimp processing waste is generated within a two-hour radius of St. Anthony, making the location well suited as a scalable node within a broader hub-and-spoke model for provincial resource recovery.⁵ The 1,000-tonne pilot facility is designed to validate logistics, processing efficiency, and environmental performance in support of a planned expansion toward full provincial processing capacity of approximately 28,000 tonnes per year within five years. The undertaking therefore represents both an immediate environmental improvement measure and a foundational step in establishing a province-wide circular marine bioeconomy.

DESCRIPTION OF THE UNDERTAKING

(i) Geographical Location

The undertaking is located in St. Anthony, Newfoundland and Labrador, within an existing, fully constructed, and previously permitted industrial facility. No new buildings, land development, or exterior infrastructure are proposed as part of this Environmental Assessment. The St. Anthony facility constitutes the sole physical location of the undertaking being registered.

The facility is situated approximately 80 feet from one of the province’s largest shrimp processing plants, allowing direct transfer of raw material from the adjacent processing operation. This proximity places the undertaking at the center of the primary shrimp shell waste stream it is designed to manage and significantly reduces transportation requirements.

The site lies within an established industrial zone and maintains clear buffers from nearby residential areas. It has direct access to the regional road network and port infrastructure associated with existing fisheries operations. The surrounding environment includes an active working harbour and coastal marine setting that has historically supported industrial and fishing-related activities. No new marine works, shoreline alterations, or harbour infrastructure are proposed as part of the undertaking.

Based on a review of publicly available provincial and federal environmental datasets,⁶ including wetlands mapping, protected areas registries, and aquatic species-at-risk information, no sensitive habitats, wetlands, protected areas, or known species-at-risk occurrences have been identified within the operational footprint. The surrounding biophysical environment is characteristic of previously developed coastal industrial land, with limited potential for ecological interaction or conflict.

⁵ Buke, H. and Gnanavel, G. P. (2025). NL Seafood Organic Waste: Inventory Assessment. The Harris Centre Memorial University of Newfoundland.

⁶ Fisheries and Oceans Canada. *Aquatic Species at Risk Maps and Data*. Government of Canada; Environment and Climate Change Canada. *Canadian National Wetland Inventory*. Government of Canada; Town of St. Anthony. *Municipal Plan and Development Regulations*. St. Anthony, NL; Government of Newfoundland and Labrador. *Conservation Areas of Newfoundland and Labrador*. Department of Fisheries, Forestry and Agriculture.

Certain downstream processing steps associated with the project will occur at the Marine Institute in St. John's through a third party contract manufacturing service arrangement. These activities will take place entirely within existing, fully permitted laboratory facilities and do not involve new construction, land use change, or operational expansion. Marine Institute activities are not part of the undertaking subject to this Environmental Assessment registration and are referenced solely for contextual completeness.

The environmental assessment submission will include as appendix:

- A 1:12,500 National Topographic Survey map identifying the St. Anthony site boundary;
- Site survey demarking building boundaries;
- A regional map illustrating transportation corridors and nearby communities;
- Recent aerial imagery showing the facility location and separation distances.

The St. Anthony location was selected to maximize environmental and operational efficiency by co-locating processing capacity immediately adjacent to the primary source of shrimp shell waste.⁷ This approach minimizes transportation emissions, avoids greenfield disturbance, supports the Province's circular economy objectives, and delivers direct economic benefit to the local region.

(ii) Physical Features

The undertaking will occupy an approximately 7,500 square foot footprint entirely within an existing, fully constructed industrial building in St. Anthony, Newfoundland and Labrador. No new buildings, exterior expansions, land alteration, or ground disturbance are proposed. The area affected by the undertaking is limited to the interior of the existing facility.

The interior of the building will be configured to accommodate processing equipment required for the conversion of shrimp shell waste into biomaterials. No new roads, pipelines, marine facilities, transmission lines, or other linear infrastructure are required beyond existing utility connections servicing the building. All physical components of the undertaking are contained within the existing industrial footprint.

The surrounding physical and biological environment reflects a previously developed coastal industrial setting. The site is located adjacent to an active working harbour that supports commercial fishing and seafood processing activities.⁸ Surrounding land uses include industrial and port-related infrastructure, with residential areas located at a clear separation distance. Topography in the immediate area is generally level and consistent with long-established industrial development.

⁷ Buke, H. and Gnanavel, G. P. (2025). NL Seafood Organic Waste: Inventory Assessment.

⁸ Town of St. Anthony. *Municipal Plan and Development Regulations*. St. Anthony, NL

Vegetation in the vicinity is characteristic of boreal coastal environments typical of the Northern Peninsula, interspersed with areas of long-established industrial disturbance. Based on published ecological classifications for Newfoundland and Labrador,⁹ publicly available wetlands and protected-areas mapping, and aquatic species-at-risk screening, no wetlands, protected areas, or known occurrences of threatened or endangered species have been identified within or immediately adjacent to the project footprint. Marine waters associated with the nearby harbour have historically supported commercial fisheries and vessel traffic;¹⁰ however, the undertaking does not involve in-water works, shoreline alteration, or marine construction.

Human receptors potentially affected by the undertaking are limited to nearby industrial operations and harbour users. Given the existing land use context and the indoor nature of the facility, interaction with wildlife is expected to be minimal.

The environmental assessment submission will include general arrangement drawings, a site plan, and aerial imagery or conceptual renderings to illustrate the facility layout, building footprint, and surrounding land uses.

(iii) Construction

Construction activities associated with the undertaking are limited in scope and will occur exclusively within the existing industrial building in St. Anthony, which constitutes the sole location subject to this Environmental Assessment registration.

Construction work at the St. Anthony site will consist primarily of installing processing equipment and erecting light prefabricated interior partitions to define operational areas. No exterior earthworks, land alteration, shoreline modification, or new infrastructure are proposed. All work will take place within the existing building envelope, and no ground disturbance or environmental effects typically associated with conventional construction projects are anticipated.

The total construction period is expected to span approximately 2 to 3 months, subject to equipment delivery schedules. Construction is planned to begin in February 2026, and no later than March 2026, to allow the facility to be operational prior to the start of the shrimp processing season in May 2026. The staged construction schedule includes approximately one month for interior building upgrades and retrofits, one to two months for equipment installation, and up to one month for commissioning. The first physical construction-related activity on site is anticipated during the second half of Q1 2026, following receipt of all required approvals.

⁹ Rowe, J. S. and Robin, G., Biogeography and Ecology of the Island of Newfoundland., *Bulletin of the Torrey Botanical Club*, vol. 110, no. 4, p. 542, October 1, 1983; Meades, W.J. and B.A. Roberts. "Review of Forest Site Classification Activities in Newfoundland and Labrador." *Forestry Chronicle* 68, no. 1 (1992): 25–33; Geological Survey of Canada. *Report of Activities, Part A: April to October 1972*. Geological Survey of Canada Paper 73-1A. Ottawa: Department of Energy, Mines and Resources, 1973.

¹⁰ Forbes, Donald L., ed. *State of the Atlantic Coast of Canada*. Ottawa: Natural Resources Canada, Geological Survey of Canada, 2011.

Potential sources of pollutants during construction are minimal and limited to solid construction waste generated during interior retrofits and temporary wastewater from contractor facilities. No significant airborne emissions are anticipated beyond typical short-duration dust associated with indoor installation activities. All waste materials will be managed and disposed of by licensed contractors in accordance with applicable provincial regulations.

Given that the undertaking is located within an established industrial area and does not involve land use change or new infrastructure, the potential for resource conflicts or disturbance to surrounding land uses is considered low. Mitigation measures during construction will include restricted work hours where appropriate, segregation and recycling of construction waste in accordance with Multi-Materials Stewardship Board practices, and clearly defined traffic routing to minimize disruption to adjacent industrial and harbour activities.

Engagement with the Town of St. Anthony, the St. Anthony Basin Resources Inc. (SABRI), and other regional stakeholders have commenced to support transparency and coordination during the construction phase.

(iv) Operation

The St. Anthony facility is intended to operate as a permanent node within a province-wide circular bioeconomy network. The undertaking will operate year-round and process approximately 1,000 tonnes of shrimp shell waste annually at the St. Anthony facility, which constitutes the sole operational site subject to this Environmental Assessment registration. The facility represents a pilot-scale demonstration operation, designed to validate the Mechano-Chemo-Enzymatic (MCE) processing model, environmental performance, and logistics required to support a planned expansion toward full provincial processing capacity of approximately 28,000 tonnes per year within five years.¹¹ All operational activities at the St. Anthony site will occur indoors within the existing industrial building.

Major physical features within the facility will include a dedicated preprocessing area for receiving, grinding, and washing raw material; 3,000-litre stainless steel tanks; filtration and centrifuge systems; and product drying equipment. The operation incorporates a closed-loop water recirculation system, developed in collaboration with Fleming College's water and wastewater innovation program,¹² to minimize water consumption and effluent volume. An enclosed loading and unloading area is incorporated within the building to contain material handling activities.

At the St. Anthony facility, shrimp shell material will be received, preprocessed, and subjected to primary bioconversion steps as designed in the proprietary MCE cascade using low-toxicity inputs, including citric acid and food-grade enzymes. These steps will produce protein hydrolysate, chitin, and a calcium-based coproduct. Protein hydrolysate and calcium coproducts will be finalized on-site.

¹¹ Buke, H. and Gnanavel, G. P. (2025). NL Seafood Organic Waste: Inventory Assessment.

¹² Letter of support from Fleming College attached as appendix.

Chitin produced at the St. Anthony facility will be transported off-site to the Marine Institute in St. John's for conversion to chitosan when necessary under a third party contract manufacturing service arrangement. Outbound shipments will occur on a periodic, consolidated basis (low frequency and volume), using existing commercial freight routes and carriers, and will be coordinated where practical with established fisheries-sector logistics to reduce trip counts and associated emissions, consistent with the proponent's zero-waste standard operating procedures and overall waste-diversion objectives. Intermediate chitin will be staged and loaded indoors and transported in sealed, secure packaging suitable for industrial biomaterials handling to prevent material loss during transit. Finished chitosan (or chitosan samples) will then be distributed for marketing or sale via routine outbound shipping (e.g., consolidated pallet freight or courier, depending on batch size), and these transfers do not require any dedicated transport infrastructure beyond existing logistics systems.

Operational pollutant sources at the St. Anthony site are expected to be limited due to the undertaking's contained indoor layout, its reliance on low-toxicity processing inputs, and the fact that the primary conversion steps are based on food-grade organic acid demineralization and enzymatic deproteination rather than mineral acids, chlorinated oxidants, or solvent-intensive extraction pathways. Consistent with the published technical approach for *Pandalus borealis* shell processing,¹³ demineralization is conducted using citric acid and deproteination using commercial food grade proteases enzymes, which reduces the generation of persistent or hazardous by-products and produces wastewater that is predominantly organic and biodegradable in character (e.g., dissolved proteins, residual salts, and organic acid species). Process water volumes are minimized through the project's closed-loop recirculation and treatment design, which reduces total discharge volume and enables consistent effluent conditioning prior to release. Air emissions are limited to standard HVAC exhaust associated with indoor operations; the undertaking includes no combustion sources, no process stacks, and no solvent handling, which substantially limits volatile emissions. Liquid effluent will consist of low-strength organic wastewater generated during processing and equipment cleaning and will be treated on-site prior to discharge in accordance with applicable approvals administered by Service NL. Solid waste generation is expected to be minimal because incoming shell material is fully converted into product streams (protein hydrolysate, chitin, and calcium coproducts), with residuals limited to routine maintenance materials (e.g., spent filter media) managed through standard industrial waste procedures.

No resource conflicts are anticipated during operations. The undertaking supports the Provincial Waste Management Strategy¹⁴ by diverting shellfish waste that would otherwise require disposal and does not compete with existing land or resource uses. Mitigation measures at the St. Anthony pilot facility will include routine effluent monitoring conducted in accordance with wastewater approval requirements administered by Service NL. Effluent monitoring will focus on standard performance

¹³ For further information see: Pohling et al. "Two-Step Demineralization of Shrimp (*Pandalus borealis*) Shells Using Citric Acid: An Environmentally Friendly, Safe, and Cost-Effective Alternative to the Traditional Approach." *Green Chemistry* 24, no. 3 (2022): 1141–1151; Pohling et al. "Optimization of Enzymatic Deproteination of Northern Shrimp (*Pandalus borealis*) Shell Chitin Using Commercial Proteases." *Marine Drugs* 22, no. 10 (2024): 445; Routray et al. "Biorefinery Approach and Environment-Friendly Extraction for Sustainable Production of Astaxanthin from Marine Wastes." *Critical Reviews in Biotechnology* 39, no. 4 (2019): 469–488; Dave et al. "Astaxanthin Recovery from Atlantic Shrimp (*Pandalus borealis*) Processing Materials." *Bioresource Technology Reports* 11 (2020).

¹⁴ Government of Newfoundland and Labrador, Department of Environment. *Newfoundland and Labrador Waste Management Strategy*. St. John's, NL: Government of Newfoundland and Labrador, April 2002.

indicators appropriate for food-grade, organic biomaterials processing, including pH, biochemical oxygen demand (BOD₅), chemical oxygen demand (COD), total suspended solids (TSS), and total nitrogen. Monitoring frequency, sampling locations, and discharge thresholds will be finalized during the permitting phase. As a design objective, on-site treatment systems are intended to maintain effluent conditions consistent with low-strength organic wastewater, with pH adjusted to neutral ranges prior to discharge and suspended solids reduced through filtration and settling processes.

Air and odour impacts at the St. Anthony site will be mitigated through full enclosure of all processing operations. Operational odour-control protocol will include the absence of detectable off-site odours at the property boundary and response-based tracking of any odour-related complaints, with corrective actions implemented if required. No open-air material handling, untreated waste storage, or outdoor processing will occur.

Transportation-related impacts will be minimized through facility co-location with the adjacent shrimp processing plant. Approximately 100% of raw shrimp shell feedstock will be transferred over a distance of approximately 80 feet using forklift transport along existing dock infrastructure, eliminating the need for truck-based feedstock delivery. Finished product shipments will be consolidated to reduce trip frequency and scheduled to minimize interaction with peak harbour activity.

Public engagement will continue throughout the operational period. The proponent will maintain ongoing communication with the Town of St. Anthony and regional stakeholders, prioritize local hiring, and voluntarily report on key environmental performance indicators such as waste diversion and emissions avoided.

(v) Occupations

Construction activities associated with the undertaking will require approximately 5 to 10 workers on a temporary basis (NOC 75110). These positions will be limited to interior building retrofits, equipment installation, and commissioning activities within the existing industrial facility in St. Anthony.

During operations, the facility is expected to employ approximately 10 to 15 full-time staff, distributed across technical, operational, and administrative roles. The anticipated employment range reflects staffing requirements across the following occupational categories, as defined by the National Occupational Classification (NOC) 2021:

- **Bioprocess Technicians** (NOC 92100): approximately 2 full-time positions, responsible for operation and monitoring of bioconversion systems;
- **Industrial Facility Operators** (NOC 95109): approximately 4 full-time positions, supporting day-to-day plant operations and material handling;

- **Quality Assurance and Quality Control Personnel** (NOC 2211 series): approximately 2 full-time positions, overseeing product quality, process controls, and compliance;
- **Maintenance Technicians** (NOC 7311): approximately 3 full-time positions, responsible for equipment upkeep and facility maintenance;
- **Logistics and Receiving Personnel** (NOC 7511): approximately 3 full-time positions, managing inbound materials and outbound product handling;
- **Administrative and Operations Staff** (NOC 12010): approximately 1 full-time positions, supporting management, scheduling, and regulatory coordination.

Employment equity considerations will form part of the proponent's hiring approach. Atlantic BioCorp will actively recruit from Northern Peninsula communities, conduct outreach to women in STEM through programs supported by the Office for the Status of Women and Gender Equality, and explore opportunities to establish Indigenous hiring pathways where feasible. The undertaking is expected to provide stable, skilled employment in a rural region while contributing to the development of local technical capacity within the emerging circular bioeconomy sector.

(vi) Project-Related Documents

Several documents have been developed in support of the undertaking and will accompany this submission. These include mass balance sheets for the Mechano-Chemo-Enzymatic (MCE) processing pathway, as well as process flow diagrams and general arrangement drawings illustrating the facility layout and operational sequence. The proponent's Strategic Plan for Phase 2 and Phase 3—covering scale up from the 1,000-tonne pilot implementation to full provincial coverage—provides additional context regarding the project's intended scaling pathway.

Documentation relating to the proponent's collaboration with the Marine Institute, including technical integration plans for downstream chitosan processing and associated research activities, will also be included. Any environmental bench-scale testing completed to date, particularly relating to effluent characteristics and process optimization, will be appended where relevant. These materials collectively establish the technical basis, environmental performance expectations, and operational feasibility of the undertaking.

APPROVAL OF THE UNDERTAKING

The undertaking will require several provincial, federal, and municipal authorizations prior to construction and operation. The following permits and approvals are anticipated, subject to confirmation with the relevant regulatory authorities:

Provincial Approvals

- **Environmental Assessment Registration** under the Environmental Assessment Regulations, Department of Environment, Conservation, and Climate Change.
- **Industrial Processing Permit** from Service NL for operation of a food-grade biomaterials facility.
- **Water-use, intake, and effluent-discharge approvals** administered by Service NL and the Department of Environment, Conservation, and Climate Change.
- **Workplace Health and Safety compliance** under the Occupational Health and Safety Act.
- **Building, development, and occupancy permits** issued by the Town of St. Anthony.
- **Fire and life safety approvals** from the Office of the Fire Commissioner.
- **Food processing or nutraceutical-related licenses**, where applicable under Health Canada or provincial regulations.

Municipal and Harbour Approvals

- Municipal development and occupancy permits for interior retrofits and operational use of the premises.
- Harbour Authority approvals, if required, for water intake or discharge infrastructure associated with process water management.

Federal Considerations

Federal regulatory triggers for this project are expected to be limited.

- No authorization under the Fisheries Act is anticipated, as the undertaking does not involve alteration of fish habitat or work in or near water.
- The facility does not meet criteria for designation under the Impact Assessment Act.

- Standard federal compliance requirements for workplace safety, food processing, and product handling will apply as relevant, though citric acid is not classified as a dangerous good, and therefore no Transportation of Dangerous Goods registration is expected.

General Compliance Requirements

The proponent will comply with all applicable laws and regulations governing the use and operation of the premises, including:

- Health Canada regulations relevant to food-grade and nutraceutical processing;
- Environmental regulations administered by Service NL and federal authorities;
- Municipal by-laws of the Town of St. Anthony;
- Provincial workplace health and safety legislation;
- Applicable building codes and fire safety standards.

All required permits, licenses, and approvals will be obtained and maintained for the duration of the undertaking.

SCHEDULE

Construction and installation activities for the undertaking are planned to begin as early as Q1 2026, following completion of the environmental assessment registration process and receipt of all necessary permits and approvals. The latest feasible start date is Q2 2026, which will ensure the facility is fully operational in time to receive and process material during the upcoming shrimp harvesting and processing season.

The proposed timeline aligns with the project's broader build-out schedule and the Province's objective to expand circular economy capacity in the fisheries sector. Initiating work within this window enables coordinated delivery of equipment, availability of contractors, and efficient integration with existing processing operations in St. Anthony.

CAPITAL COST AND FUNDING

The estimated capital cost for the 1,000-tonne pilot facility is \$1.5–\$2.0 million, covering equipment procurement, installation, interior retrofits, process utilities, and commissioning within the existing industrial building.

To support this investment, the proponent has requested funding and program support from several federal and provincial agencies, including:

- **Energy and Mines – Green Transition Fund**
Natural Resources Building
50 Elizabeth Avenue
St. John's, A1B 4J6
- **National Research Council Canada – Industrial Research Assistance Program (NRC IRAP)**
30 Arctic Avenue
St. John's, NL A1B 3V6
- **Multi-Materials Stewardship Board (MMSB) – Solid Waste Innovation Fund**
21 Kings Bridge Road
St. John's, NL A1C 3K4
- **Atlantic Canada Opportunities Agency (ACOA) – Regional Economic Growth Through Innovation (REGI) Program**
John Cabot Building
10 Barters Hill
St. John's, NL A1C 6M1
- **Canada's Ocean Supercluster**
97 Queen Street, Suite 600
Charlottetown, PE C1A 4A9
- **Business Development Bank of Canada (BDC)**
215 Water Street, Suite 602
St. John's, NL A1C 6C9

The undertaking's capital plan leverages a combination of public funding programs and private investment to support the deployment of pilot-scale circular bioeconomy infrastructure in Newfoundland and Labrador. These funding sources are aligned with provincial and federal objectives related to waste diversion, clean growth, blue economy development, and regional economic resilience.



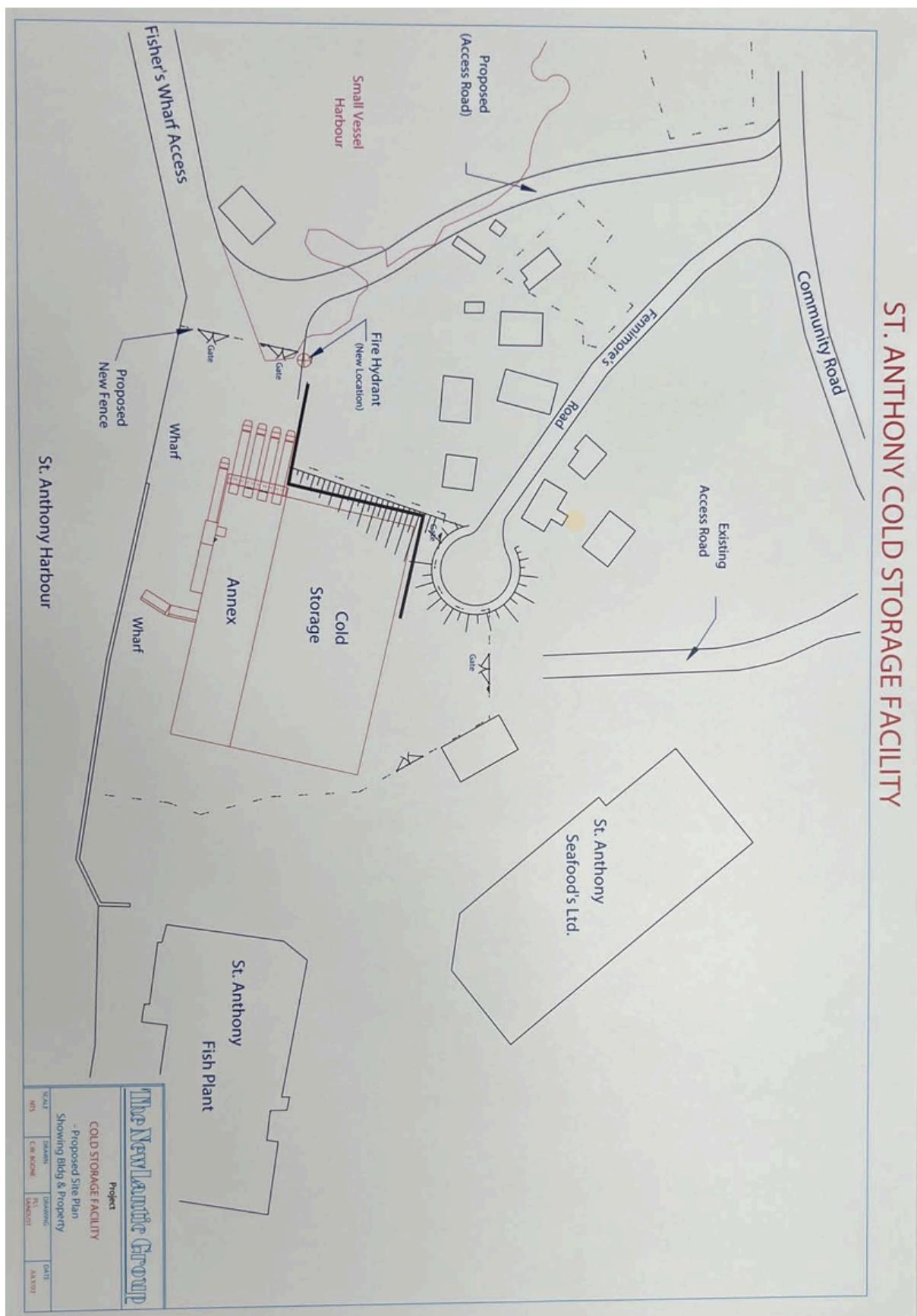
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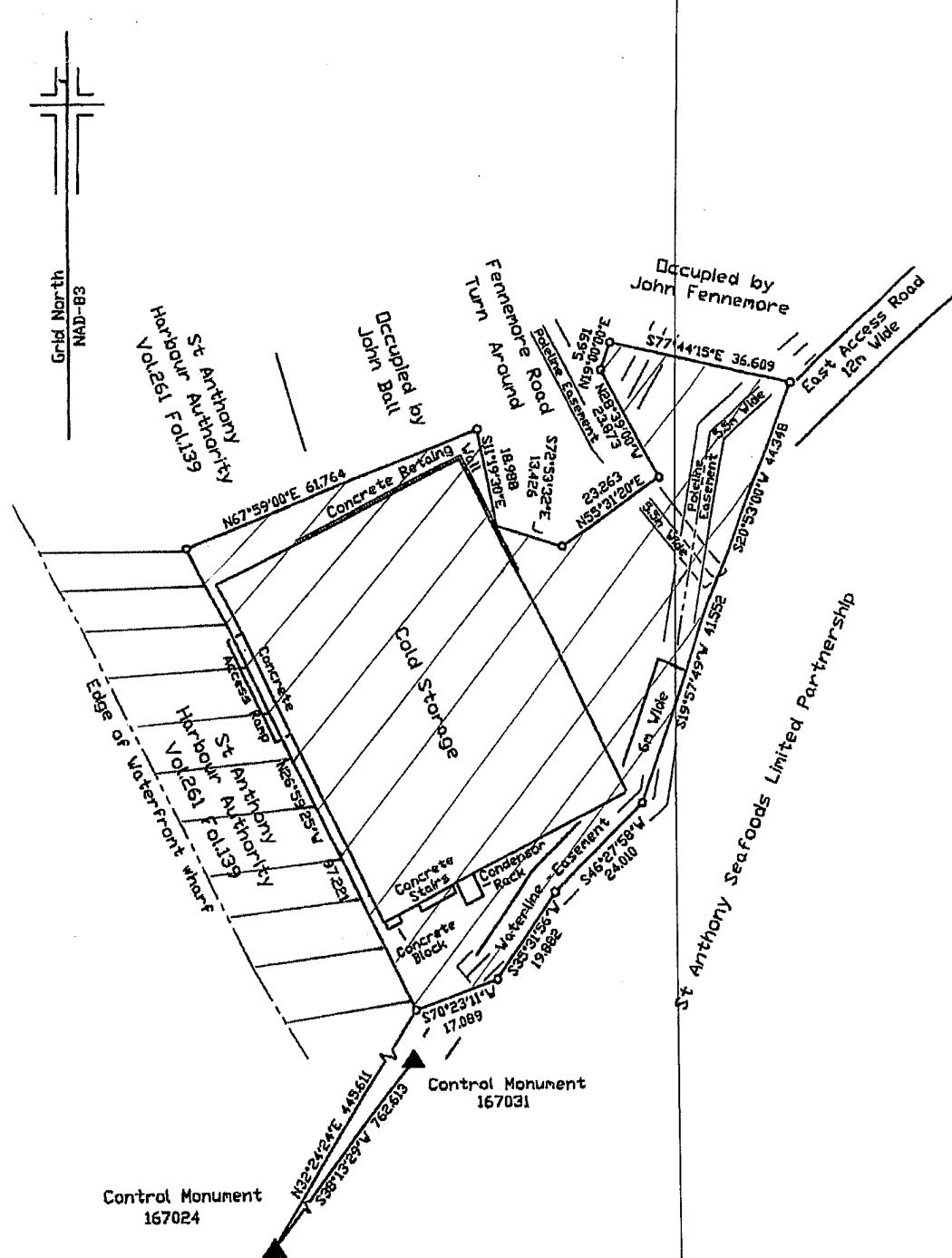
Date

Signature of Proponent

Dante Enewold - CEO

ST. ANTHONY COLD STORAGE FACILITY





Laporte

Control Monument
Iron Bar
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Pole
Power & Telephone Lines
Escarpments

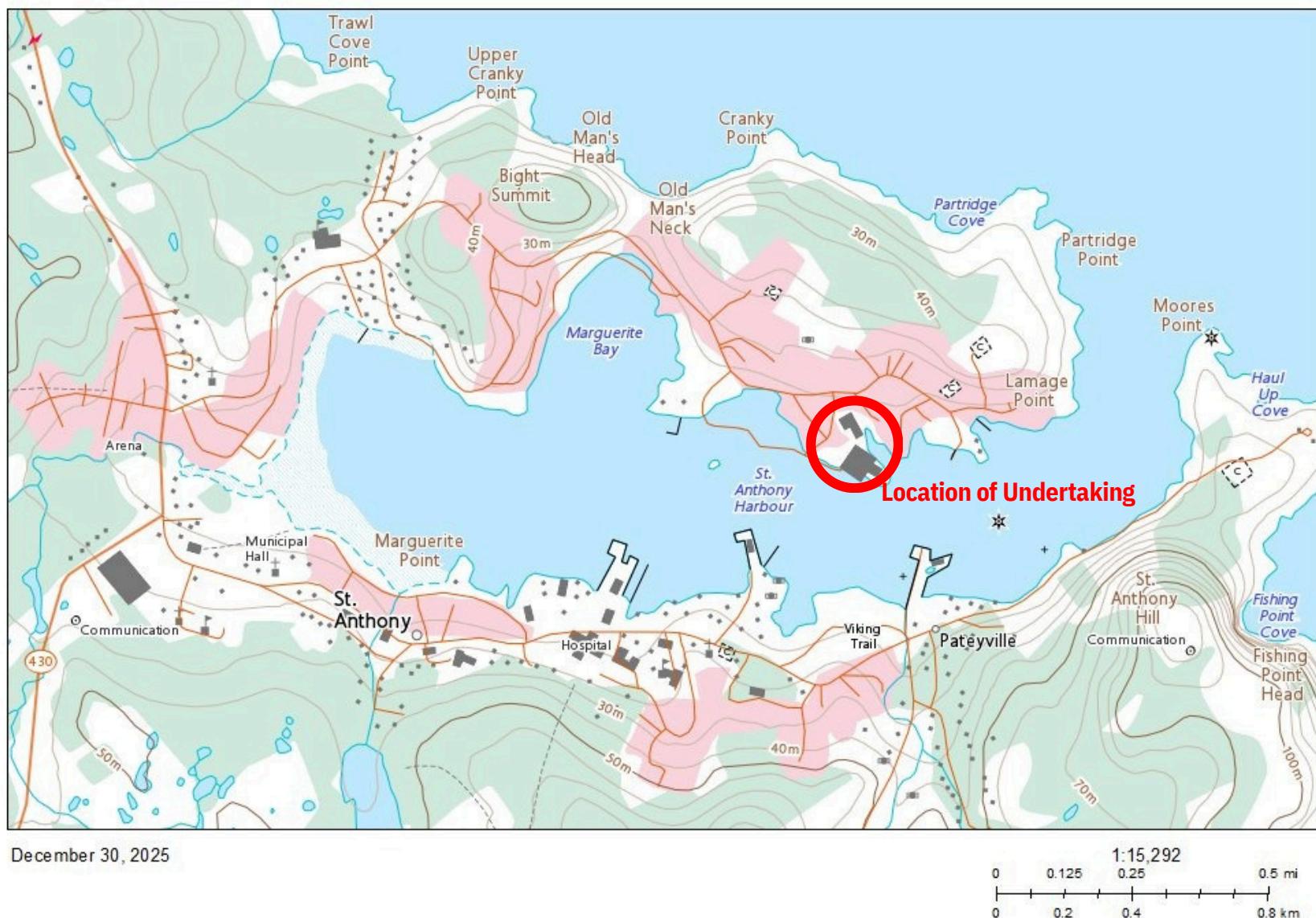
Notes

This plan certifies the information shown
as of September 1, 2004 and only as of that date

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Toporama



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January 09, 2026

Wastewater Reuse, Resource Recovery, and Environmental Stewardship – Mitigation Commitment

Fleming College, through the Centre for Advancement of Water and Wastewater Technologies (CAWT), is supporting Atlantic BioCorp in the planning and evaluation of mitigation measures associated with an integrated wastewater reuse and resource recovery approach for its proposed operations in St. Anthony, Newfoundland and Labrador. The CAWT brings applied research expertise in water and wastewater treatment, industrial by-product management, and environmental performance evaluation.

The proposed approach is intended to reduce potential adverse environmental effects by decreasing freshwater demand, lowering total wastewater discharge volumes, and reducing organic loading to the receiving environment. A key mitigation measure under consideration is the reuse of appropriately treated process water from the adjacent fish processing facility for use within Atlantic BioCorp's nearby production facility, located in the existing cold storage building, rather than discharging this water following conventional treatment.

In addition, the system is being designed to remove residual proteins, fine suspended solids, minerals, and dissolved organic matter that would otherwise contribute to nearshore nutrient enrichment and observable seasonal effects. While recovery of these materials is not central to Atlantic BioCorp's primary manufacturing activities, their removal is being incorporated as a mitigation measure consistent with environmental stewardship objectives.

The CAWT's role includes supporting planning, applied testing, and performance verification to assess the effectiveness of proposed mitigation measures under cold-climate operating conditions, and to support monitoring and adaptive management, as appropriate. The approach emphasizes practicable solutions compatible with existing fisheries infrastructure and is intended to be scalable to other facilities where similar conditions exist. Where future phases of work may benefit from additional expertise, Fleming College may also explore collaboration with other applied research centres, including the Centre for Innovative Aquaculture Production (CIAP) and the Centre for Advanced Manufacturing and Industrial Innovation Technology (CAMIIT), particularly in areas related to aquaculture systems integration and automation of treatment processes.

These mitigation measures are being developed in alignment with the intent of Newfoundland and Labrador's *Environmental Protection Act* and *Environmental Assessment Regulations*, applying best practicable mitigation principles to avoid, reduce, and manage potential adverse environmental effects.

Sincerely,

Mary Lou McLean
Executive Director, Applied Research & Innovation, Fleming College

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