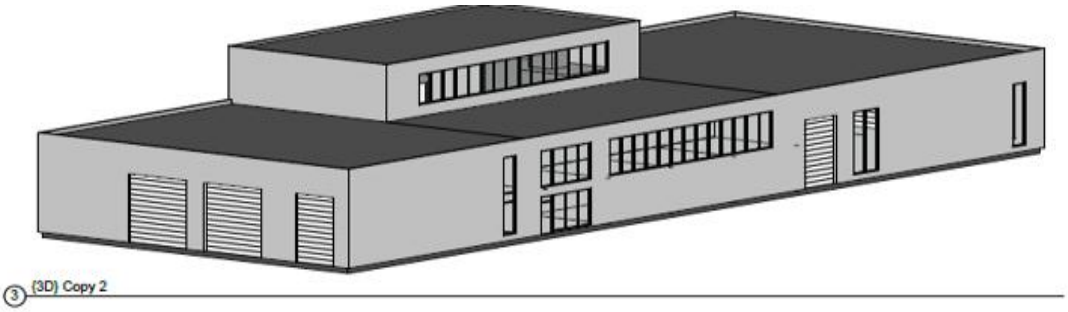
Environmental Assessment Registration

Marine Residual Material Processing Facility for Human & Animal Feed



Quinlan Brothers
Bay de Verde
NL, Ca

Date: January 14, 2026

Contents

The Proponent

Name of Corporate Body: Quinlan Brothers Ltd.
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Official Title: CEO
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The Undertaking

Name of the Undertaking:

Marine Residual Material Processing Facility for Human & Animal Feed

Purpose\Rationale/Need for the Undertaking:

The total snow crab allowable catch for 2025 in Newfoundland and Labrador was 62,883 MT. This live weight equates to approximately 19,000MT of Residual Material. Currently, much of this residual material is being disposed of at sea, with smaller amounts going to landfills. Both current disposal alternatives are costly for the processors and can harm the environment. The primary purpose of this project is to develop an alternative to the disposal of crab and finfish residual materials at sea or in landfills. In 2025, Quinlan, Bay de Verde location, disposed of approximately 1,500 tons of crab shell waste (Residual Materials). Most crab processors in Newfoundland and Labrador dispose of crab shell waste at Sea under a federal permit. In 2025, approximately 30,000 MT (1/2) of the NL crab quota was processed on or near the Avalon Peninsula. 30000 MT of live crab will generate approximately 9000 MT or ~19.8 million lbs. of crab residual material. Quinlan, Bay de Verde, is at various stages of design and development of the facility and equipment, with a capacity to process up 100% of crab residual material generated on or near the Avalon Peninsula. It is anticipated that construction will begin in August 2026 and production of the crab product will begin in the spring of 2027. The success of this undertaking will reduce Crab shell disposal at sea and land by up to100% on the Avalon Peninsula, with an overall province-wide reduction of up to 50%.

In addition to the Quinlan crab operation, during the fall and winter months, Quinlan generates ~1250Mt of salmon residual material. This undertaking will also allow Quinlan to fully utilize 100% of the salmon residual materials and convert them into human and animal food. Quinlan is also well-positioned to utilize other residual materials from its sister finfish operations. Quinlan has estimated that it will be able to secure another 200Mt of residual material from its fin-fish operation. This entire undertaking will potentially create 8-10 full-time positions, generate revenue for Quinlan, and significantly reduce marine waste currently being disposed of at sea and in landfills in the province of Newfoundland and Labrador.

Markets

Quinlan has partnered with a Norwegian company, NutriShell, for marketing, product development and commissioning. For a complete list and description of products to be produced, for both Human and Animal feed, please visit https://www.nutrishell.com/. NutriShell (Norway) have been in business since 2021. The primary market for the finished products will be for Aquaculture feed, with smaller amounts as pet feed and human consumption. As the aquaculture industry is growing, so will the demand for fish feed. The NutriShell facility in Norway is located adjacent to the largest crab processing facility in the EU. NutriShell utilizes all the crab residual materials from this adjacent facility, and due to high market demand for product in the aquaculture feed industry, NutriShell imports crab residual materials from locations throughout Norway, France, Denmark and several other EU countries. All products that NutriShell produce are sold, and the company is actively seeking new procurement options to supply both the EU and North American markets.

Description of the Undertaking

Geographical Location:

Proposed Site

The proposed site is located adjacent to the current 6 Wharf Road, Bay de Verde facility. This location is important to the undertaking, as Quinlan crab and salmon residual materials(~1500-1600MT) will be vacuumed or transported in closed containers directly into the new processing facility, and this location will be only meters away from both the crab and the salmon operations. The feasibility of the undertaking depends heavily on the facility being located adjacent to the primary source of residual materials and close to the ocean, as seawater (if required) will be used to remove odour from any steam generated in the drying process. Please see Figures 1.0a, 1.0b, 1.0c, 1.0d and 1.0e: Proposed Site Location below.

Figures 1.0a, 1.0b: Proposes Site Location

Figure 1.0a

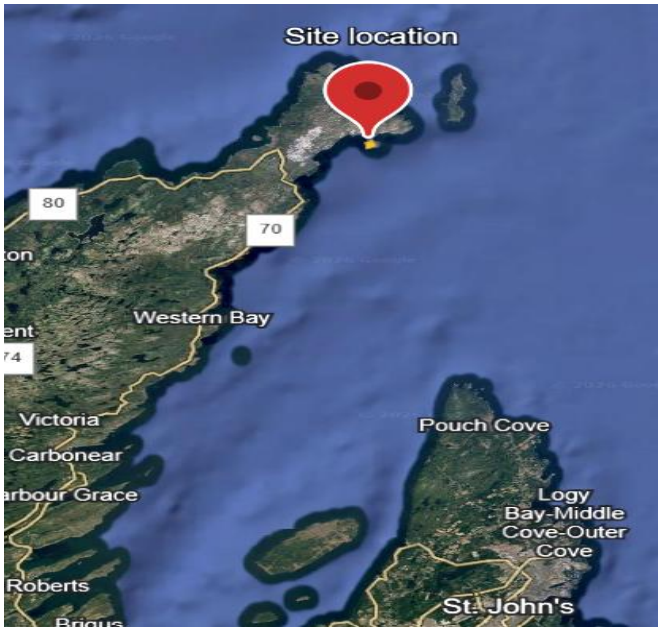


Figure 1.0b

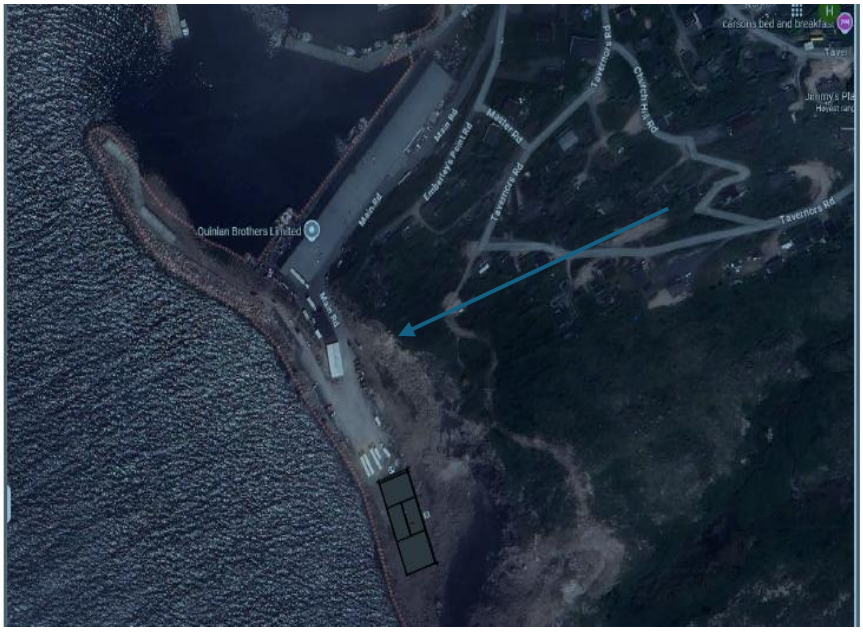
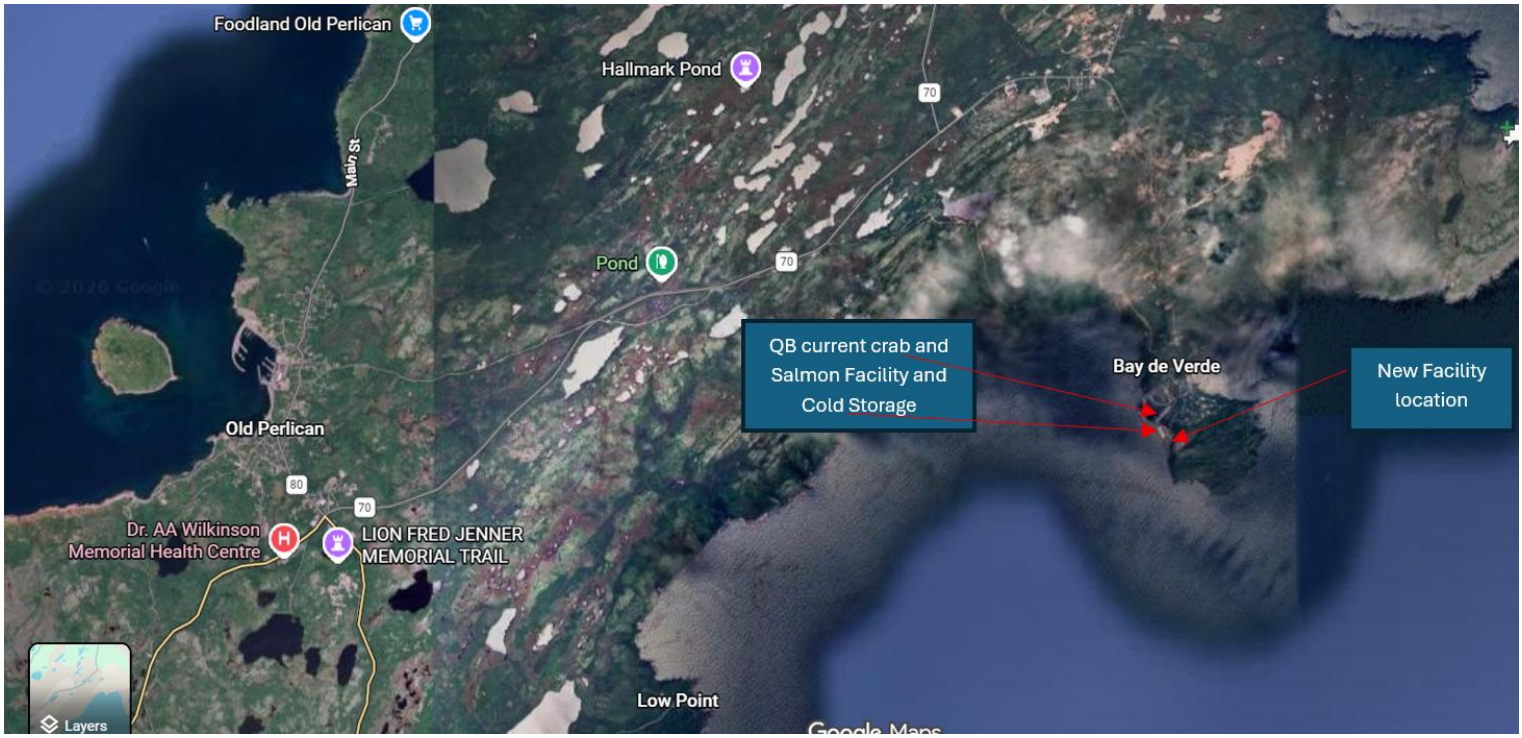


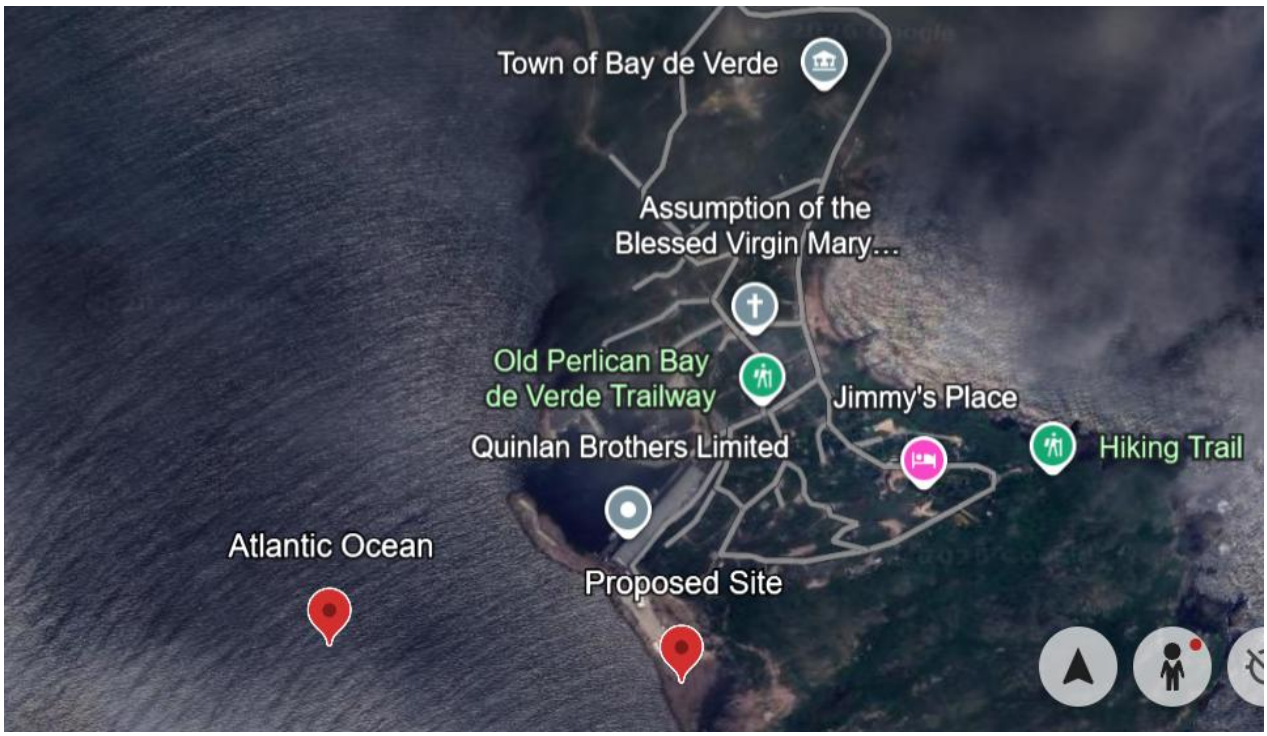
Figure 1.0c



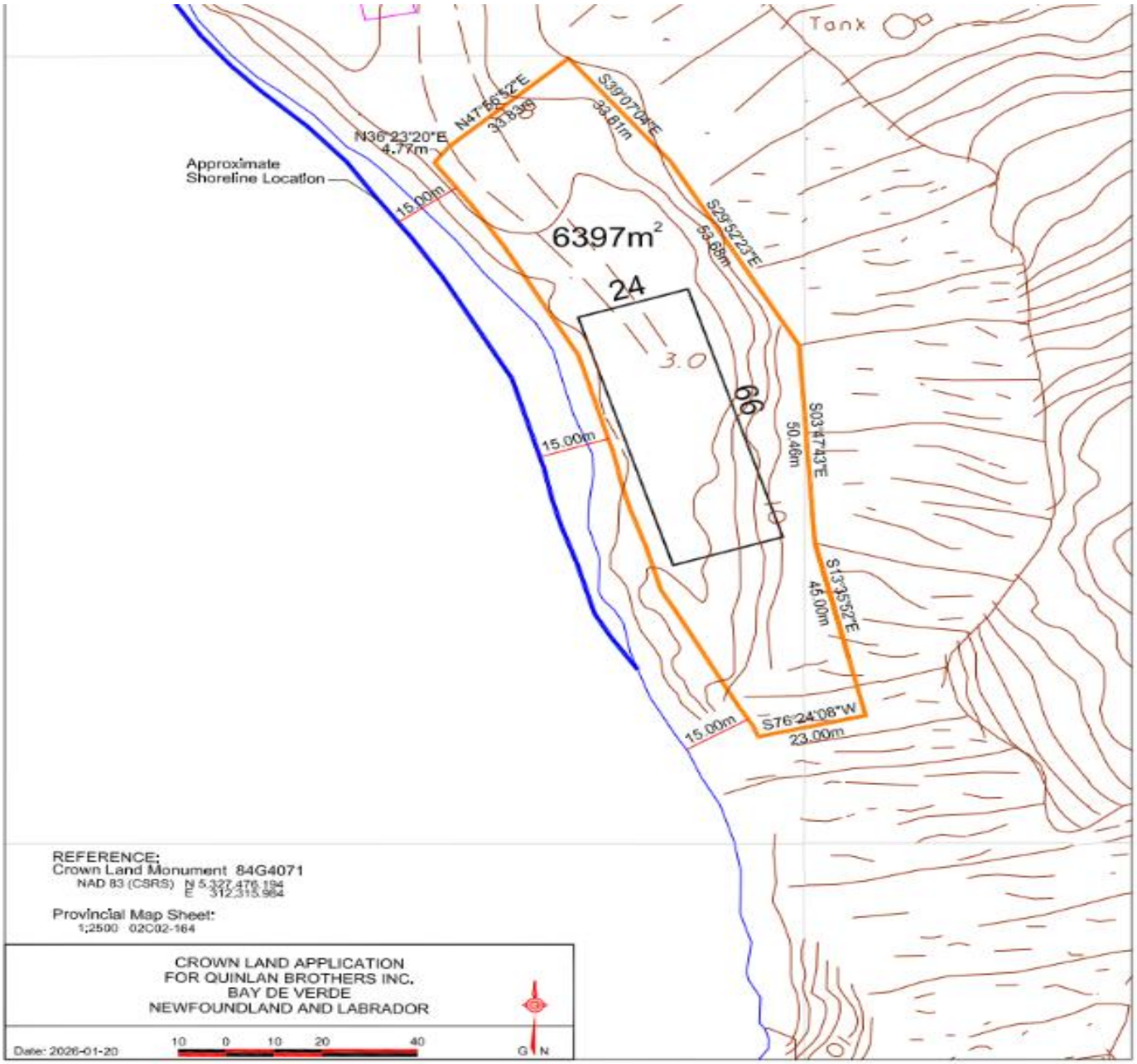
Land Use Overview

Figure 1.0d below illustrates the relative distances to residential areas, roadway, bodies of water and other land uses. Adjacent land uses include harbour facilities and the Quinlan Crab and salmon processing facility. This is a no-exit roadway that is utilized by and for the Quinlan business, having a clear demarcation from residential areas. As can be seen from Figure 1.0c below, the grey rectangle shape is the current Quinlan Crab and Salmon processing facility. This is primarily an industrial area used by Quinlan's, and fishermen offloading and would not be suitable for residential land use. The Town of BDV have been contacted and asked to provide documentation indicating that this location is commercial Zoning (non-residential area). No bodies of water other than those that have been identified in Figure 1.0c (Atlantic Ocean) are adjacent to the area. No wells have been identified in this area. This is a no-exit road that is used by the Quinlan business and fishermen. No wildlife species are known or expected to be negatively impacted by this undertaking.

Figures 1.0d: Proposed Site Location Topical Overview



Figures 1.0e: Proposed Site Location Map-Crown Land Application



Physical Features:

The construction of the building will adhere to all Canadian Food Inspection Agency (CFIA), municipal, provincial and federal codes.

-No major physical undertakings other than the construction of the building outlined in the previous section are anticipated for this undertaking. Road access and transmission lines are already in place or in proximity to the construction site. The sewage system will be tied into the current Bay de Verde Crab plant system, which is a municipal system for the town of Bay de Verde. This is a single-story building with one raised ceiling section to allow for processing equipment. Please refer to the diagrams and drawing below. The size of the land area involved is approximately 6397 m^2. The proposed building dimensions are 66m x 24m.

The structure will be positioned to allow for the 15 m required reservation from the high tide mark as per provincial legislation requirements. No adverse effects have been identified for adjacent water bodies, biological environments, vegetation, wildlife, fish, endangered species, protected areas, residential/public/ commercial/industrial/recreational infrastructure, or human receptors of potential adverse environmental effects have been identified from the operation of this undertaking. This parcel of land has no vegetation and is not used by the public, nor is it in proximity to any designated public land use.

Please see **Figure 2.0: Concept Drawing of Building** and **Figure 2.1: Facility Dimensions below**

Figure 2.0: Concept Drawing of Building

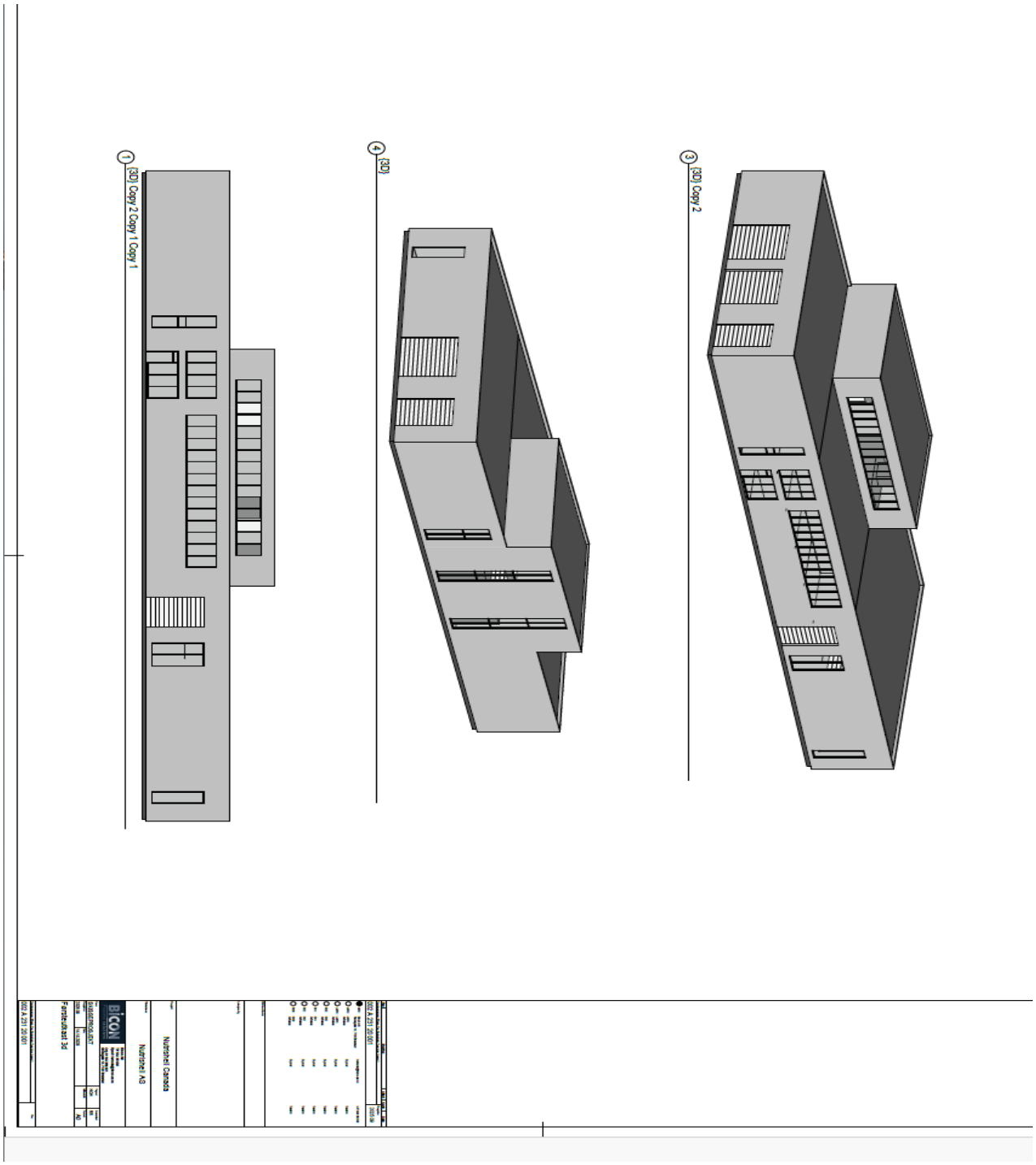
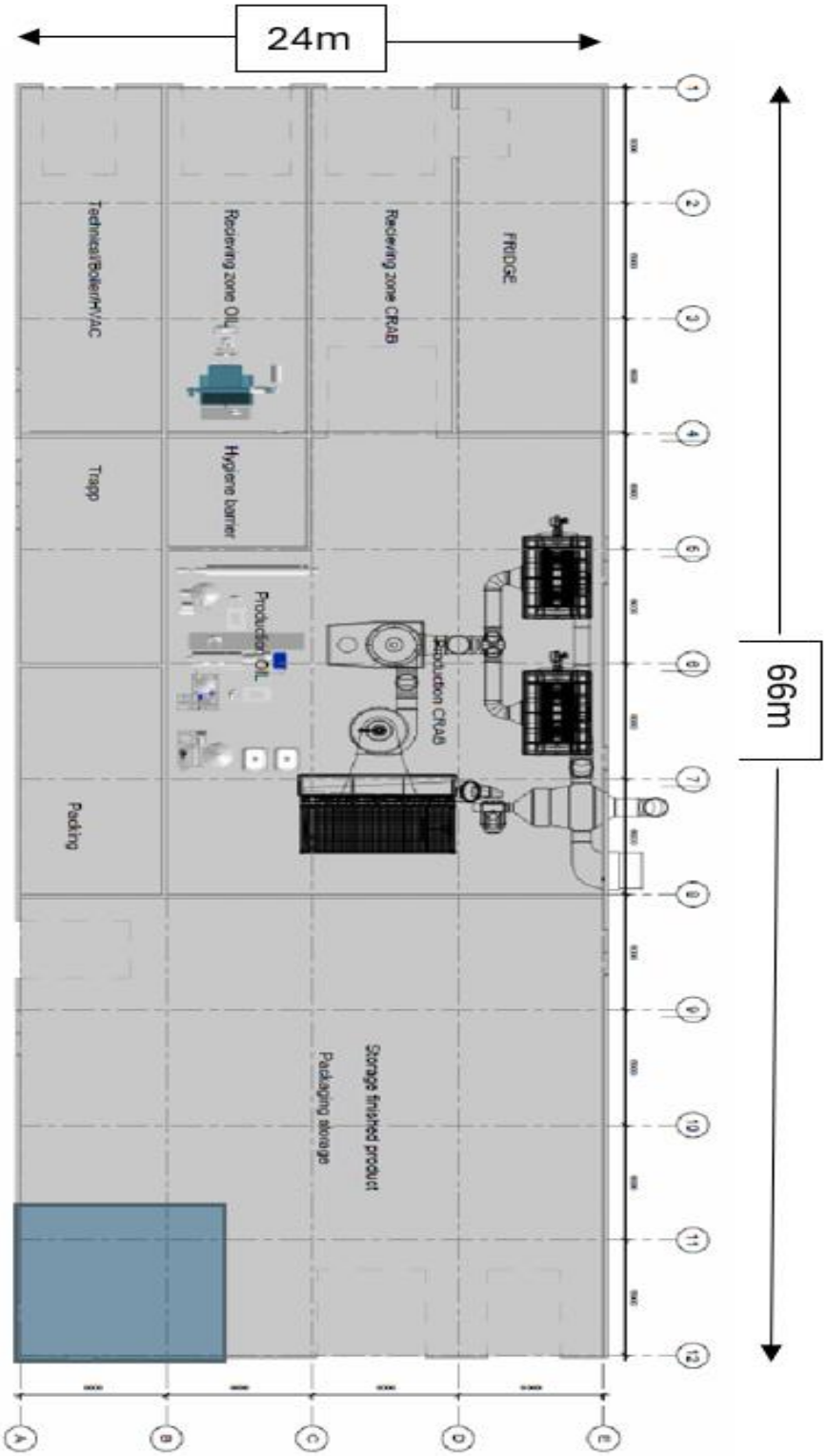


Figure 2.1: Facility Dimensions



Construction:

Construction of the new building is anticipated to begin in August of 2026 and be completed before the start of the April 2027 crab season. The new facility will contain an internal storage area for access to raw materials. Please see Figure 1.2: Facility Dimensions

However, salmon oil production will begin in the fall of 2026 and continue during the winter of 2027. During the 2026-winter 2027 period, the oil processing equipment will be housed in our current crab processing facility until the completion of the new facility in spring 2027. No additional construction or modifications are required to operate the oil extraction equipment within the existing crab processing facility during the 2026 fall and 2027 winter salmon processing season. No major potential sources of pollution have been identified during the construction phase. The construction site is semi-prepared (flat), and very little excavation will be required. The construction site is isolated from any residential dwellings, and therefore, noise and dust during the construction phase will be minimal. While from time to time there may be a slight increase in traffic, this will likely only be encountered during the delivery of building materials and equipment. To minimize inconvenience for residents, delivery personnel will be instructed to only use the main roadway for delivery. Solid and liquid waste, such as construction material waste, fuel (for equipment), will be disposed of according to provincial law and regulations. Zoning confirmation will be obtained from the town before the start of construction.

No potential causes of resource conflicts have been identified.

No potential adverse environmental effects on receptors and resource or land use conflicts have been identified.

Consultation of Intent:

- Notification of intent will be posted in the Bay de Verde post office for 2 consecutive weeks
- Indigenous leaders of the province will receive notification of intent and will be allowed 2 weeks for comments and feedback before construction

- The Town of Bay de Verde will be provided with notification of intent, and approval/permit from the town will be granted before construction

Operation:

Crab Residual Material Processing:

By creating high-quality products from marine residual raw materials that have so far been dumped at sea and landfills, Quinlan will create employment, increase utilization and create value. All production takes place in a closed system, where all pipes are insulated to avoid heat loss. Excess heat from the dryer will be redirected and used for heating the production facility. The periods of Operation can be divided into two distinct operational seasons: 1. The crab processing season, from April until August and 2. The salmon processing season runs from October to April.

The Crab residual material production will operate on two 10hr shifts from Mid- April to Mid-August. The oil extraction processing will operate from October to the end of March, with one 10-hour shift; a second shift may be added from time to time if required.

When fully operational and at maximum processing capacity, this undertaking, in its totality, is estimated to create between 8 and 10 full-time positions. The crab residual material will be delivered from the existing Quinlan crab plant operation via a closed vacuum piping system in real time or by forklift in closed containers. In other words, as the crab residual material is generated in the existing crab processing facility, it will be vacuumed directly or transported in closed containers to the new facility, dried, milled, bagged, and shipped to market.

A portion of the crab residual materials (from other processing facilities on the Avalon) will be delivered to the plant via truck in closed Containers (fish tubs) and fed into the processing line via the same vacuum system located in the existing crab plant, or by feeding it into the drying system via a hopper and screw auger located inside the new facility. Both the Quinlan crab and other sources of crab residual material may be combined while being fed via a screw conveyor, feeding the dryer and onward to a mill, where the product will be milled into a fine or semi-fine powder. This milled product will feed directly from the milling equipment into a 1-ton bag. The Bag will be sealed and stored until ready for shipping to market.

The dryer design is in progress; it is anticipated to operate on hot air with an operating temperature between 80-100 °C and have a capacity to match our calculated maximum available marine residual materials of 3 t/hour or 30t/10hr shift. Using the available tonnage available, solely from the Quinlan Bay de Verde operation, annual production is estimated to be 1300-1600mt, with an estimated maximum annual processing capacity of 3000mt/Year, when other sources of raw material are included.

Due to the low temp heat process, high airflow rates, and ultra-fine mesh of filter bags, additional Odour treatment is unlikely to be required. During initial start-up, feedback on odour will be solicited from the community, and if required, scrubbers will be installed. The factory will be designed and prepared to easily add a seawater scrubber if required. Equipment will operate using steam and power from the existing crab plant. Steam will be generated from the heating of the raw crab material and subsequent moisture removal.

If a scrubber is required, the steam from the heating process will enter the scrubber, where it will come in direct contact with the salt water. Saltwater fed into the scrubber will come in direct contact with this steam to reduce odour. No chemical will be added to the saltwater used in the scrubber (unchlorinated). This saltwater will then be redirected back into the ocean or to the current Quinlan effluent water discharge system. During the commissioning of the operation, this discharge water will be tested to ensure regulatory compliance before discharge. The salt water will remove odour from the steam before it is released into the environment. This same technology is being used by Quinlan's partner in Norway, NutriShell, and it has passed the EU emission standards and has shown no negative impact on the environment. Please see the report from NutriShell Norway, Appendix A.

If it is determined that treatment is required, the water will be treated before discharge. Quinlan has an abundance of capacity within its current effluent disposal/treatment system to handle all effluent from this undertaking.

Once dried, the product will be conveyed in a closed system directed to the miller, where it is crushed into a fine or semi-fine powder. The milled product will then be fed into a 1tonne bag.

The bag will be sealed around the exit of the miller to prevent dust accumulation within the operation. The 1tonne bag finished product will next be sealed and stored until shipping.

The capacity of the equipment has been designed to process all raw materials as they enter the processing line, as they are being generated at our existing crab and salmon facility. For this reason, we do not anticipate the requirement for raw material storage for an extended period. In the unlikely event of product spoilage, the product will either be disposed of at sea under our current disposal permit or, in the case of salmon product, it will be disposed of at the Sunnyside disposal site.

A minimal amount of municipal freshwater will be used for cleaning and personal use. As with all municipal water, its quality parameters will align with the Canadian Drinking Water Guidelines, which are unlikely to pose a negative impact on the environment.
Please see Figure 3.0: Crab Flow Diagram for operational steps in the process

Salmon/Fin Fish Residual Materials:

The Oil extraction will be primarily from the salmon residual materials that are generated from the Quinlan salmon processing operation. The oil extraction processing consists of a single self-contained extraction unit. Expected production based on the amount of salmon residual material generated at the Quinlan facility is expected to be somewhere in the vicinity of 476Mt/ year. Salmon residual material will be delivered from the existing Quinlan operation, at 6 Wharf Road, Bay de Verde, to the new oil extraction equipment via closed containers (fish tubs), where it will be fed into the oil extraction equipment. The oil will be extracted, and the remaining solid residual materials will be directed to the drying equipment, dried, milled and packaged for human or animal feed. Stick water generated from the oil processing will be directed back to our existing salmon wastewater treatment plant, where solids will be collected using a drum screening device, and the remaining water effluent will be tested for compliance and treated before discharge if required.

Quinlan will also investigate the feasibility of utilizing other sources of marine residual (finfish) materials. Quinan has estimated that an additional 200Mt of cod residual material may be available from its sister operations. Cod oil processing, if it is decided to be a feasible operation, will occur during the cod season and will not interfere with salmon oil processing. If it is determined that there is an overlap of species, Cod oil processing and salmon oil processing will occur on two different shifts. Because cod oil will be produced as the raw material is generated, the need for long-term storage will be eliminated. If there are delays in processing, raw materials will be frozen. Any raw materials unsuitable for processing will be either disposed of at the Sunnyside, NL landfill or disposed of at sea under the Quinlan's disposal at sea permit. All solid material generated in the oil extraction will be directed to the crab dryer and milling processes. This 200 Mt of cod residual material will yield approximately 100Mt of cod oil annually and up to 20Mt solids, which can be used in the drying process.

Before the construction of the new facility, in the fall of 2026 and winter 2027, the oil operation will take place at the existing Quinlan crab plant, 6 Wharf Road, Bay de Verde, using the power and steam currently available for snow crab operations. During the 2026 fall/2027 winter oil operation, the solid residual materials will be disposed of at a provincially registered disposal

site at Sunny Side, NL, or they may be collected and frozen and later processed in the new facility. Any remaining water will be directed to the Quinlan wastewater treatment plant and tested for compliance before discharge.

Please see Table 1.0: Estimated Power Consumption, Table 2.0: Estimated Water Consumption, Figure 3.0: Crab Processing and Figure 3.1: Oil Processing Flow Diagram below for further detail on the operational steps in the process

Table 1.0: Estimated Power Consumption

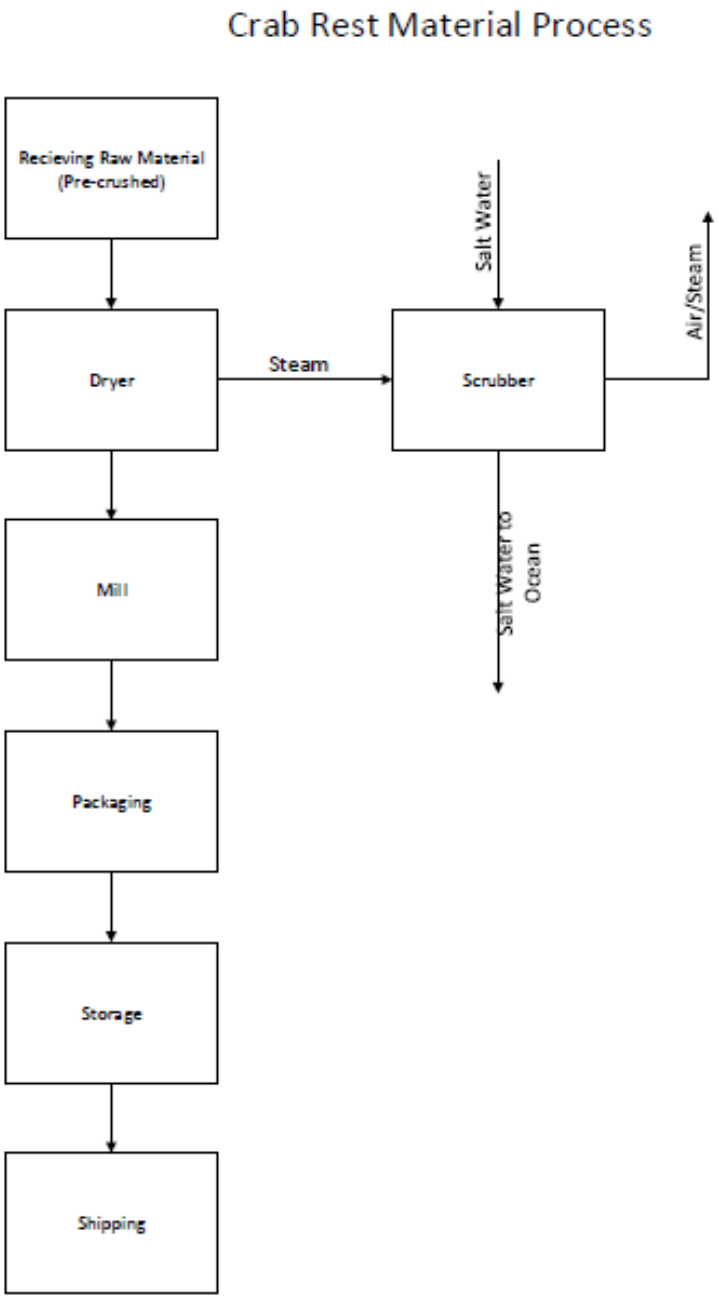
Process	Power Requirement (kWh)
Crab	~800
Salmon	~600

Table 2.0: Estimated Water Consumption*

Type of Water	Consumer	Consumption (with scrubber/h)	Consumption (with Scrubber/yr)	Consumption (without scrubber/h)	Consumption (without scrubber/yr)
Fresh	Cleaning and Personal Use	0.5 [m^3/h]	2000 [m3/yr	0.5 [m^3/h]	2000 [m3/yr]
Salt	Scrubbers	25 [m^3/h]	40000	N/A	N/A
Total Water Consumption*		**25.5 [m^3/h]**	**50000-60000 [m^3/yr]**	**0.5 [m^3/h]**	**2000[m^3/yr**

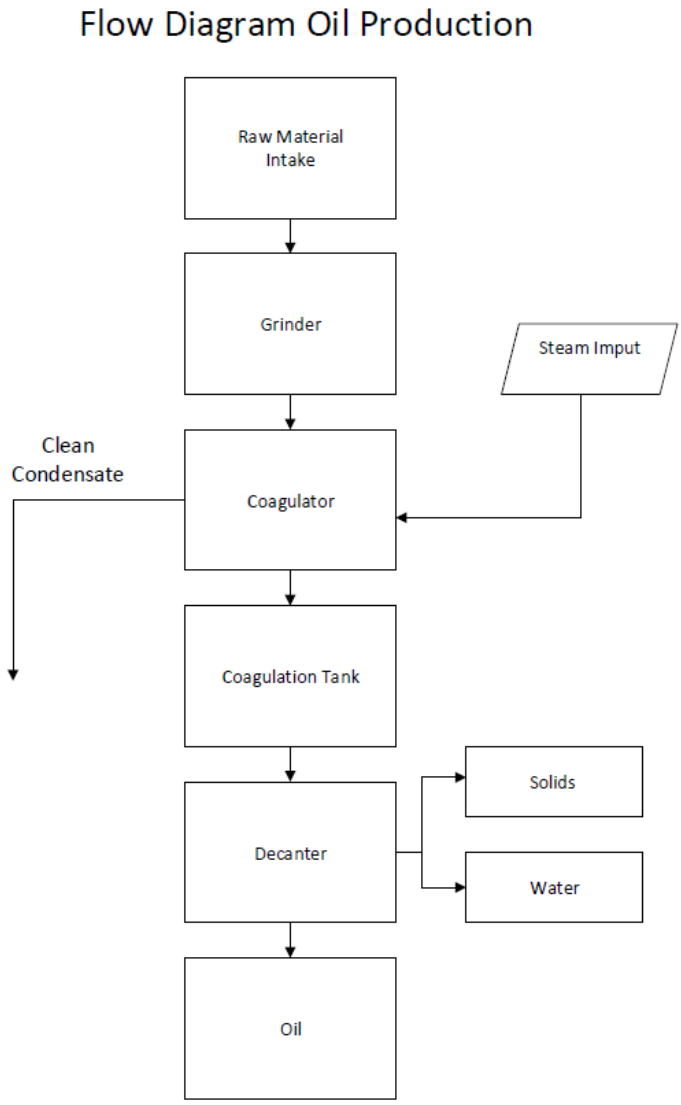
**Based on 8 months of operation, two 10-hour shifts for crab and one shift 30/week for oil production. Consumption may vary pending hours of operation*

Figure 3.0: Flow Diagram Crab Process



NOTE: *Due to the low temp heat process, high flow rate of air, and ultra-fine mesh of filter bags, we think that no more Odour treatment is necessary. During initial start-up, feedback on odour will be solicited from the community, and if required, scrubbers will be installed. The factory will be designed and prepared to easily add a seawater scrubber if required*

Figure 3.1: Flow Diagram Oil Production



Potential sources of pollutants:

Solid waste:

Negligible solid processing waste will be generated from this undertaking, as all solid materials will be collected and used in the crab drying line to produce milled powder. The low number of employees involved in this operation will generate minimal waste from the lunchroom areas and the washroom facilities. An insignificant amount of miscellaneous waste, such as packaging waste and wood from pallets, etc., will also result from this undertaking. These types of waste will be disposed of through the regular municipal channels that are in place for the current Quinlan operations. No solid waste from the finfish or crab residual material processes will be generated once the new facility is fully operational. Any raw materials unsuitable for processing will be either disposed of at the Sunnyside, NL landfill or disposed of at sea under the Quinlan's disposal of fisheries products at sea permit.

Oil processing: Fall 2026 and Winter 2027 Operation

- Processing will occur in our existing snow cab facility.
- Solid waste will be frozen and later processed into a dry product in 2027 when the new facility opens, using the same equipment and process used for crab.

Crab Processing: Fall 2026 and Winter 2027 Operation

- N/A (No Processing)

Oil processing: Spring/Summer 2027 Onward

- Processing will occur at the new facility
- Solid waste will be directed to the drying equipment and milled into a finished product for the animal feed market
- Solid waste being generated from our current salmon operation will be reduced by 100%. The remaining solids from the salmon oil extraction will be dried and milled using the same process and equipment that will be used for the crab and will be sold for human food or used as animal feed.
- Please ***Figure 4.0: Simplified Mass Balance Oil Processing***

Crab Processing: Spring/Summer 2027 Onward Operation

- No solid waste is generated
- Please see ***Figure 4.1: Simplified Mass Balance Crab Residual Material Processing.***

Figure 4.0: Simplified Mass Balance Oil Processing

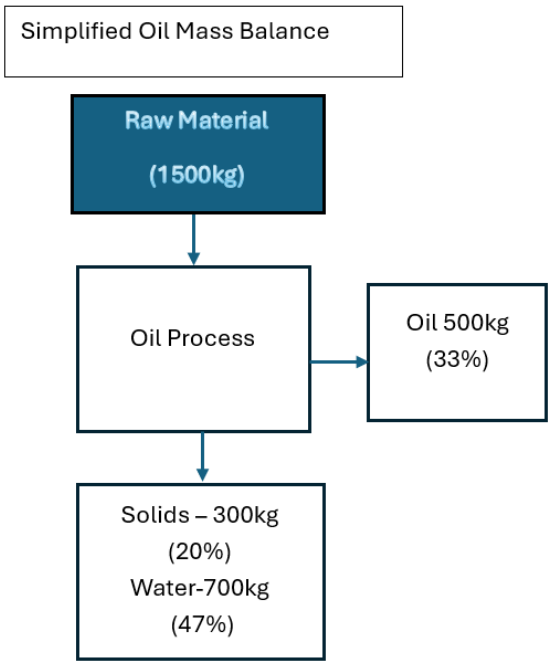
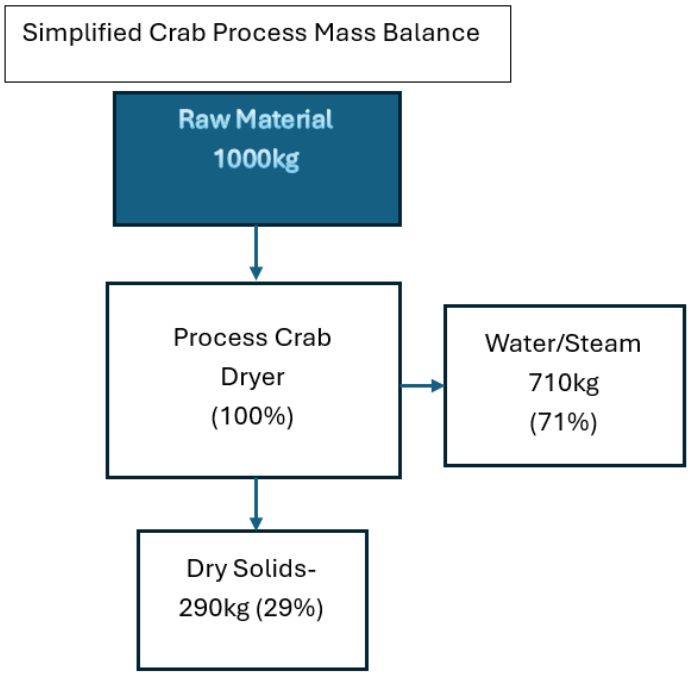


Figure 4.1: Simplified Mass Balance Crab Process



Effluent Wastewater:

The majority (25m^3/h) of effluent wastewater will be untreated (unchlorinated) saltwater from the ocean. The annual volume of water use for the scrubber is estimated to be 50000-60,000m^3, assuming two 10-hour shifts at full capacity for the 4-month crab season. This spent water will not likely contain any significant amount of particulate, as it will only encounter air/steam generated from the drying process for crab residual materials to remove odour. There is little or no environmental impact expected from scrubber water, as it will only encounter steam generated from the water entrapped in the raw materials. Therefore, it is not anticipated that there will be any change in the pH of spent scrubber water effluent; however, we will monitor effluent water to ensure that basic water quality parameters, such as pH, biological and chemical oxygen demand, and total suspended solids, are achieved in accordance with regulatory requirements. Scrubber discharge seawater will either be tied into the Quinlan existing crab discharge system or it may have its own direct discharge system; in any case, all effluent water will be monitored to ensure regulatory compliance before discharge.

A minimal amount of wash water effluent (0.5m3/h max) or *8*00-1*0*00m^3/year. Effluent water for personal use will be tied into the municipal system (maximum 5 persons/shift).

During the fall 2026/winter 2027 oil production effluent water (stick water-oil processing only) will be directed to the Quinlan existing salmon wastewater treatment plant, where solids will be separated using our existing drum screening equipment, and the remaining effluent water will be treated*, if required,* to meet regulatory *compliance before discharge*. The solid material collected from the salmon operation during this time frame will be frozen and later processed into dry powder once the new facility is complete in the spring/summer of 2027. The discharge of water from this undertaking is almost exclusively non-chlorinated seawater with no other chemical addition. Because of this, it is unlikely that effluent water will lead to any negative impact on the environment. All cleaning and washing discharge water will pass through a screen to remove large, suspended solids.

No chemicals (acids or bases) are added to the process of crab and oil residue material. Therefore, the pH of effluent water will likely remain the same as the pH of the intake water. All effluent water will be monitored to ensure compliance. A food-grade antioxidant such as

vitamin C may be added to the finished oil product. Since this antioxidant will be added to the finished product below the Max Level permitted for human consumption, it will not be a constituent of the water effluent and will not be of concern.

Air:

Discharge from this undertaking to the air will mainly consist of steam from the moisture in the crab or other material during the drying process. Due to the low temp heat process, high airflow rate of air, and ultra-fine mesh of filter bags, we think that no more Odour treatment is necessary. The facility will be designed to easily facilitate the installation of scrubbers later. During initial start-up, feedback on odour will be solicited from the community, and if required, scrubbers will be installed. The factory will be designed and prepared to easily add a seawater scrubber if required. During initial start-up, feedback on odour will be solicited from the community, and if required, scrubbers will be installed. If scrubbers are required to further clean the discharged air/steam from the dryer, extraction from the point of suction on machines will lead to the bottom of the scrubber, where air/steam meets seawater. Discharges to air after scrubbers occur over the roof from the room where the scrubbers are placed

Noise:

The chosen technology for this undertaking will produce minimal noise during production. It is believed that the noise generation will be less than what is currently generated in the existing crab plant. The building location is such that a large rock cliff separates the operation from any residential dwellings and public use areas, further protecting the community from any potential noise that may be generated.

Schedule:

Oil processing: Fall 2026 and Winter 2027 Operation

- The oil processing will occur in our existing snow crab facility.
- All effluent processing water will be directed to our salmon wastewater treatment plant
- Clean up as per the regular crab plant system

Oil processing: Spring and Winter 2027

- Processing will occur at the new facility
- All effluent processing water will be directed to our salmon wastewater treatment plant
- Cleanup water tied into the existing crab plant system

Crab Processing: Spring 2027 Onward Operation

- Processing will occur at the new facility
- Steam generated from the drying process will pass through a scrubber before being released into the environment
- Cleanup of water tied into the existing crab plant system

Resource Conflicts:

No resource conflicts have been identified

Propose measures to mitigate potential adverse environmental effects:

No potential adverse environmental effects have been identified during the operation of this undertaking. No chemicals will be used during the processing of crab or salmon residual materials. Cleaning agents approved for use in food processing plants will be used in accordance with manufacturer recommendations. In the case of an accidental spill of product, written clean-up procedures (SOPs) will be developed to ensure proper recovery and disposed of in a manner that would limit environmental impact and in accordance with regulatory requirements.

Indigenous consultation:

Indigenous leaders of the province will be given notification of intent during the permitting process

Occupations:

During the construction phase, it is anticipated that approximately 5-8 people, depending on the phase of construction, from the National Occupation classification, 2021, 75110 (TEER 5), one to two positions 72201 (TEER 2) electrician and one 21301 (TEER 1), mechanical engineer. With one construction manager, classification 70010 (TEER 0). 8-10 full-time positions from classification 94142 (TEER 4), Food production worker positions will also be created during production. Quinlan's current Occupational and Health Coordinator responsibilities, as well as the existing OHS program, will be extended to encompass this new undertaking. No new

position will be created for OHS. No positions within this operation are hazardous occupations, according to the National Occupational Classification 2021.

Table 3.0: Occupations

Classification	Number of Positions	Job tittle
2021, 75110 (TEER 5),	4-5	Construction workers
72201 (TEER 2)	1	Electrical
21301 (TEER 1)	1	Mechanical engineer
70010 (TEER 0).	1	Construction manager
94142 (TEER 4	8-10	Food production worker

Employment Equity:

Quinlan is committed to affirmative and equal employment opportunities. We recognize diversity in our workplace, and we promote equal employment opportunities.
At Quinlan, all employees shall be treated equally, with dignity and respect. Discrimination against an employee or applicants based on their race, religion, colour, sex, national origin, parental status, pregnancy, age, disability, sexual orientation, marital status, political affiliation, or gender identity will not be tolerated. Quinlan's social responsibility manual outlines both anonymous and normal grievance procedures. Quinlan is also audited annually by third-party certification bodies under BAP-SPS, BSCGS and MSC standards. All of which contain standards for employment equity.

Project Related Documents:

- Water use permit (if scrubbers are used)
- Building permit
- CFIA Processing licence
- Provincial Fish processing license

Approval Of The Undertaking:

1. A town building permit will be acquired before construction
2. Crownland Application has been submitted

Required Permits/Approvals	Issuing Body
Building Permit	Municipal
EAR	Provincial (ECC)
Crownland	Provincial

Construction Schedule:

Process	Date	Reason
Construction Start	Fall 2026	These have been selected to ensure the entire undertaking is complete before the start of the 2027 processing season. And to allow for the timely delivery and commissioning of equipment and facility.
Construction Completion	Late Winter/Early Spring 2027	
Equipment Delivery	Spring 2027	
Commissioning	Spring 2027	
Production Start	Late Spring/Early Summer 2027	

Capital Cost And Funding

- The capital cost of this undertaking will be more than 5 million CAD
- Quinlan will be seeking funding in the form of grants and interesidual-free loans from available provincial and federal funding agencies
- Quinlan and Nutrishell (Norway) will also be providing capital funding

Appendix A: Letter of Environment Compliance- NutriShell Norway

Nutrishell AS

Knarrlagsundsveien 325

7241 Ansnes

Norway

17.03.2026

Quinlan Brothers

St. Johns

Newfoundland

NutriShell will, with this letter, clarify some issues regarding effluent from the processing of shell by-products.

Nutrishell has produced crab powder since 2021, using raw materials from byproducts. We are established in the same location as Europe's biggest crab processing plant, but also import frozen by-products from the rest of Europe.

We are approved by all official authorities in Norway. All production equipment, quality systems and test samples meet the required standard. Our process is customized fish meal technology. For the production in Newfoundland, we will use slightly different technology – this is due to several reasons, where reduced heat stress is one of them.

Production technology is basically removing water through evaporation, with a gentle heat treatment. The reduced heat treatment is better for protein quality, lower production cost and less smell from effluent air.

This technology is already used in Canada, Quebec, where Les Poudre's Marines du St-Laurent produce Shrimp powder from Shrimp by products.

Due to the low temp heat process, high volumes of hot air, and ultra-fine mesh of filter bags, we think that no more Odour treatment is necessary. A pipe, 10 meters high, will lead and spread the effluent air into a safe area. Secondary effects is cooling and dissolution of the effluent.

The factory will be designed and prepared to easily add a seawater scrubber if analyses show that we don't meet the requirements.

Appendix B: NutriShell Air Discharge Study

Project Summary

Project: P1896
Document no: DOC-P1896-A-1
Description: Odour measurements and dispersion calculations for Nutrishell Hitra
Sampling: 17 September 2025
Responsible: Arnfinn Røe (ar@purenviro.com)
Author: Arnfinn Røe (ar@purenviro.com)
Scope of delivery: Sampling • Analyses • Dispersion modelling • Report

Odour measurements and dispersion calculations were performed in accordance with the Norwegian Environment Agency guidance TA-3019. Emissions were measured by dynamic olfactometry according to an internal method based on NS-EN 13725. Analyses were performed by SINTEF / MOLAB.

Revision	Date	Description	Prepared by	Checked by
A-1	18.09.25	First draft	AR	

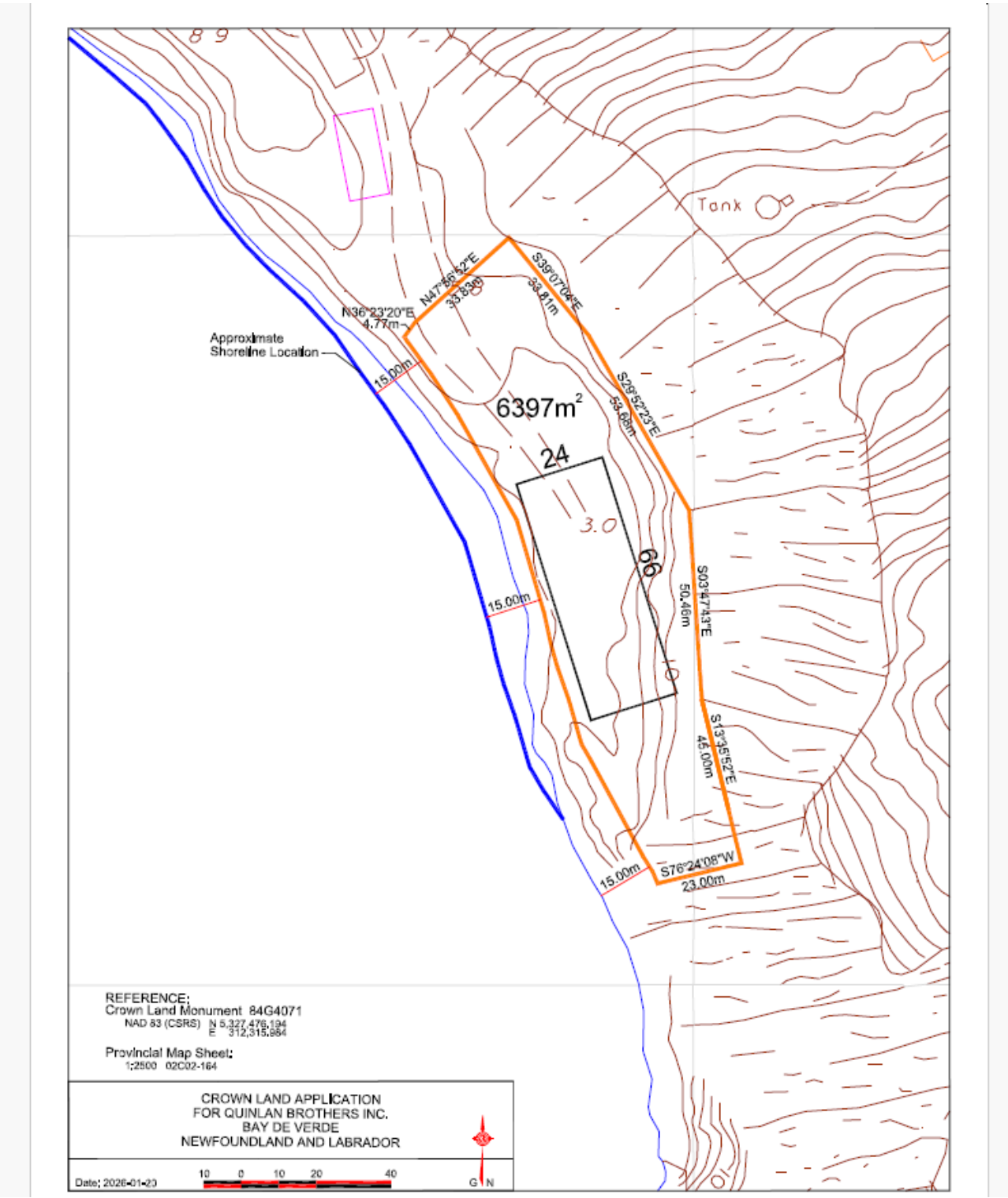
About the Assignment:

Purenviro was commissioned by Nutrishell Hitra to verify odour emissions at the facility. The purpose is to document emissions internally and to the County Governor. Sampling and assessment follow the Environment Agency guidance TA-3019. Samples were analysed by an independent third-party laboratory in accordance with NS-EN 13725:2003. Note: The odour analysis is not accredited because no Norwegian laboratories are currently accredited for olfactometry to NS-EN 13725, and the 30-hour holding time introduces significant logistics challenges for shipping to an accredited foreign lab. The analysis was nevertheless performed to high technical standards and best practice (third-party analyses at Nemko Norlab).

Conclusions:

Odour measurement and dispersion modelling were performed in accordance with TA-3019. Emissions from the stack after the scrubber account for 98.6% of total odour. The modelling indicates compliance with the facility's odour permit conditions, with no receptors exceeding 1 ouE/m^3.

Appendix C: Crown Land Application Submission Map



Appendix D: Air Filters Specifications Without Scrubbers

Hi,

Regarding the filter system:

Calculation of Expected Emissions Particulate emissions (dust emission rate) are calculated as: Emission rate (kg/hour) = Concentration (mg/m^3) × Air volume flow (m^3/hour) / 1,000,000

At 2 mg/m^3: 2 mg/m^3 × 40,000 m^3/h = 80,000 mg/h = 80 g/h = 0.08 kg/hour
At 5 mg/m^3 (upper value): 5 mg/m^3 × 40,000 m^3/h = 200,000 mg/h = 200 g/h = 0.20 kg/hour
The expected emissions from this filter system are therefore in the range of 0.08–0.20 kg of particulates per hour under normal operation.

In the context of the NutriShell Newfoundland development project in Bay de Verde, Newfoundland, Canada — where the factory will produce crab meal and fish oil from waste raw material streams (including crab shell milling as per the Mahltechnik Görgens G200 setup and associated Haarslev cod liver/viscera line layouts) — this emission level from the Product Receiving Filter FSD-S 2,6-5-2,0 remains very low. It aligns well with typical environmental requirements for similar fish/seafood processing facilities in Newfoundland and Labrador, where particulate matter limits (e.g., under the Air Pollution Control Regulations, 2022) are generally higher than these calculated rates, especially for controlled point sources like baghouse filters. This supports efficient compliance during permitting and operations, with minimal impact on local air quality in the coastal area.

Best regards

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