

REGISTRATION

Pursuant to s. 49 of the Environmental Protection Act, SNL 2002, c. E-14.2

UNDERTAKING:

Microbrewery

LOCATION:

9 Maverick Place, Paradise

SUBMITTED BY:

Craig Farewell, on behalf of
Banished Brewing Ltd.

SUBMISSION DATE:

Sept 8th, 2021

NAME OF UNDERTAKING:

Banished Microbrewery

PROPONENT:

i. Name of Corporate Body:

Banished Brewing Ltd.

ii. Address:

9 Maverick Place, Paradise, NL

iii. Chief Executive Officer:

Name: Thomas Williamson
Official Title: CEO/Director
Address: 10B Panther Place
Mt. Pearl, NL
A1N 5B1
Telephone: (709)-682-8028

iv. Principal Contact Person for Purposes of Environmental Assessment:

Name: Craig Farewell
Official Title: Head Brewer/Director
Address: 60 Galway Blvd.
St. John's, NL
A1H 0N3
Telephone: (709)-699-4332

THE UNDERTAKING:

i. Nature of the Undertaking:

Craig Farewell, Jamie Clarke and Thomas Williamson, the owners of Banished Brewing Ltd., are presently renovating an approximately 10,000 square foot building located at 9 Maverick Place in Paradise to operate a 30-barrel capacity production only, with the possibility of a small retail footprint to be added within 6-12 months. The beer will be made using all-natural ingredients including water, malted barley, hops and yeast, with no preservatives or pasteurization.

A microbrewery is defined as a small-scale brewery, often producing less than 15,0000 hectolitres per year. Banished Brewing intends to begin brewing approximately 1,500 hectolitres in the first year and will ramp up production to 2,800 hectolitres by year five. Comparatively, large scale brewers such as

Molson Coors or Labatt produce upwards up 10 million hectolitres annually. On a local scale, the six largest brewers in the province produce between 1,250 hectolitres and 14,000 hectolitres annually.

ii. Purpose/Rational/Need for the Undertaking:

The Town of Paradise borders both the metro St. John's area (St. John's/Mt. Pearl), as well as Conception Bay Area (CBS, PC-SP and Holyrood). The metro St. John's area is the largest population centre and service area in the province. The Conception Bay Area is a significant service and tourist destination within the province as well. A recent municipal traffic study shows that Route 60 sees an average volume of 60,000 passenger vehicles daily, with peak tourism running from June to August annually.

The main tourism drivers in the province remain the natural beauty, friendliness of the locals, cultural experiences and accessing locally-made products. Government statistics demonstrate that 77% of visitors to the area are over the age of 45, 78% hold post-secondary education, 53% travel as couples with no children and 47% have a household income in excess of \$100,000.

The microbrewery industry has been rapidly expanding across the country, with many opening in rural locations and providing unique experiences. Nova Scotia has long been a major contributor with over 65 microbreweries, more recently Newfoundland & Labrador has begun to close the gap with 18 existing breweries and many more in the planning stages.

The business community in Paradise is rapidly expanding, with locals and tourists alike seeking artisanal products and unique experiences. A microbrewery fits seamlessly with this shift, providing locals with a fantastic new amenity to enjoy and giving tourists the ability to indulge in a uniquely Newfoundland experience.

In order for Banished Brewing to provide its offerings to locals and tourist alike, the company must purchase the requisite equipment and renovate the facility that can accommodate the microbrewery.

DESCRIPTION OF THE UNDERTAKING:

i. Geographic Location:

The site is located within the Town of Paradise, at 9 Maverick Place. The entire property is 5,338 square meters or 57,458 square feet, with a 10,000 square foot facility currently built. The area is located within the Paradise Industrial Park (McNamara Dr) and fronts onto Maverick Place. This area is considered to be underutilized and underdeveloped.

The property for the Undertaking is zoned as Industrial General (IG), which includes microbreweries on this site as an allowable use. The Paradise Town Council have indicated their support for the business and are excited for such a business to come to their community.

Included at the end of this document are topographic maps and several aerial photos of the site. A site survey is also attached, along with a plot plan indicating the location of the facility. The facility will be on town infrastructure, including water and sewer. Banished Brewing has confirmed that there are no wells in the area.

ii. Physical Features:

The site is currently an underutilized portion of the Paradise Industrial Park, and the Town of Paradise has designed this area a priority for development, with the goal of improving the usage of facilities in the area, as well as augmenting the amenities available to year-round residents.

The site will be connected to municipal water and sewer services. There will be no pipelines, transmission lines or roads constructed for the microbrewery.

The microbrewery will include 10,000 square feet of production space and the total affected area of the site will be under 57,458 square feet.

There has been no prior use of the property, it has been vacant since construction in 2020 and there are no kerosene or oil tanks on the property, the affected area or underground.

The affected area is similar to all other properties on Maverick Place. The site is flat, with an existing 10,000 square foot building, asphalt parking and gravel at the rear of the building. The lands surrounding/abutting the property include grass/treed area to the West/South West which will be unaffected, a large level gravel site to the East/South East (Adesa Corp), Score Canada Ltd's office complex to the North West, Maverick Place to the North and 7-11 Maverick Place Building A to the North East.

The site was cleared many years ago and construction of the current 10,000 square foot building was completed in 2020. The only wildlife in the area would be birds and rodents. The nearest body of water is 163.24 meters away, being the Rocky Pond which is freshwater.

iii. Construction

The facility is new construction, which will be a commercial facility. As previously mentioned, the microbrewery will total 10,000 square feet for production. Banished may explore adding a small retail footprint in the facility in the future, subject to proper government approvals and permits.

Banished Brewing is registered with Workplace NL and therefore will require all contractors to ensure they are following provincial occupational health, safety and environmental standards and guidelines throughout the construction process.

The renovation of the facility will be carried out over 3-6 months as follows;

- Floor preparation and sloping
- Plumbing drainage added to floor (trench drain)
- Electrical upgrades and installation of building systems
- Mechanical upgrades and installation of building systems

The only potential source of pollutants during the renovation period would be related to any use of machinery, such as a spill of any diesel or lubricants. The use of such equipment would be minimal, as the site is relatively flat and level, and the contractor will be required to have a spill kit on site.

Banished Brewing will not be sharing any resources during the renovation period, nor in the future.

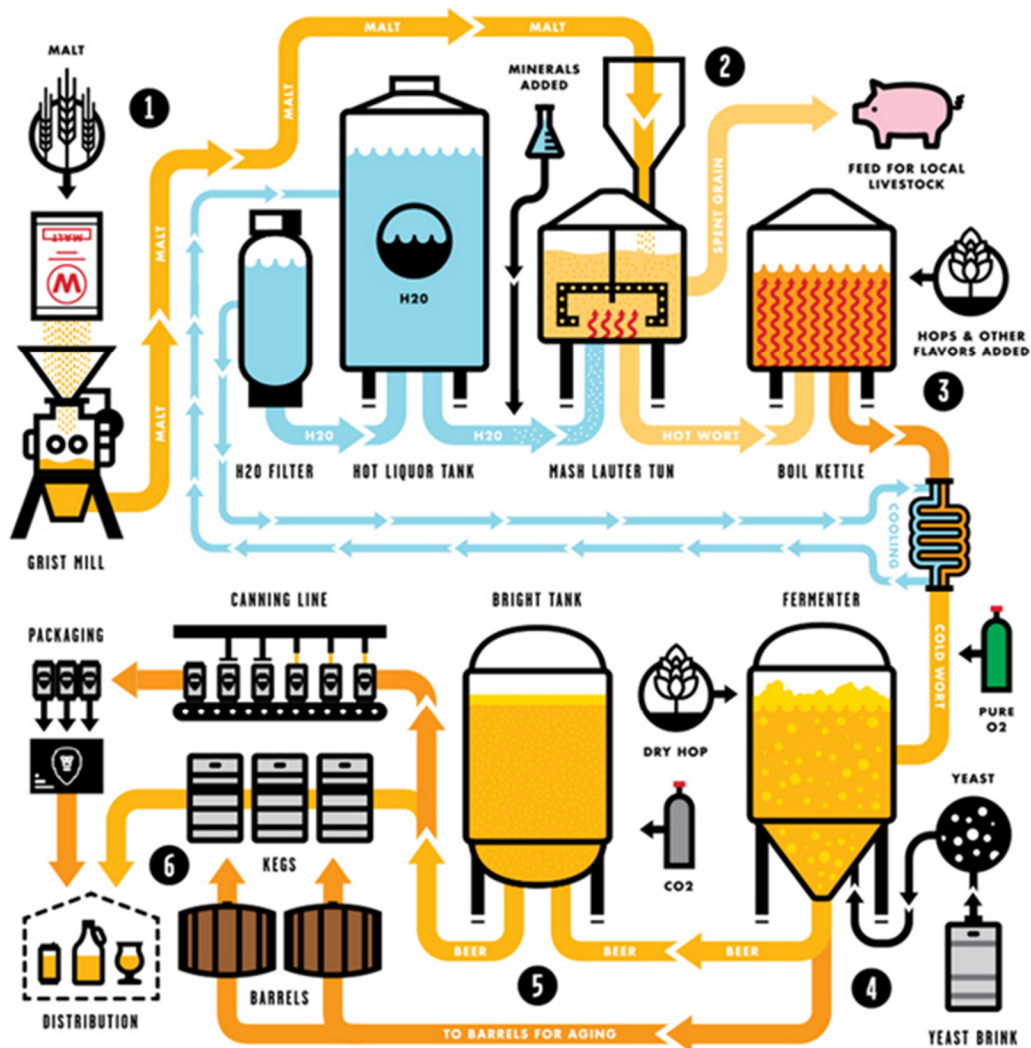
iv. Operations:

Microbrewery Operations:

The operation of the microbrewery will consist of:

- (a) Brewing Operations (mash-in, boil)
- (b) Cleaning tanks
- (c) Packaging (cans, bottles, kegs)
- (d) Other Operations

(a) The Brewing Process A schematic of the brewing process is as follows:



The brewing process typically runs over for 7-10 hours and the steps shown above can be described as follows:

- Heating, via steam, approximately 2,000 L of water in a large stainless steel tank to a temperature of 75C.
- The heated water is transferred via pump and hose to a second stainless steel insulated tank where malted barley/grain is added. The grains are “steeped” in the hot water (63 C) for approximately one hour. Additional water (approximately another 2,250 – 3,000 L, depending on the recipe) is added to sprinkle over the grains to draw off more starches where possible.
- The liquid (now called “wort”) is then drawn off the tank via pump and hose and transferred into the boil kettle that is heated via steam. The wort is heated to 100 C and boils for approximately one hour. During the boil, hops are added giving the beer its bitterness, flavor, and imparting aromatics.

- The wort is then drawn off the tank via pump and hose and passes through a plate chiller (heat exchanger, marked as “cooling” on the above schematic) that runs on cold water. In the plate chiller, the wort passes alongside cold running water to cool it down to room temperature.
- The wort then leaves the plate chiller and enters a fermentation tank that contains a glycol jacket. Dry or liquid yeast is added to the wort in this tank. The temperature of the tank is controlled to hold the wort at a consistent 18 degrees C for 5-30 days. Glycol circulates throughout the outside of the tank (via the “jacket”) to keep the temperature consistent. The glycol is kept cool via the operation of a small glycol chiller.
- After fermentation is complete, the liquid (now beer) is left in the same tank to cool over a 12-24 hour period to reach a temperature of 4 degrees Celsius. The beer is then transferred via pump and hose to a carbonating/conditioning tank that is also glycol-jacketed.
- The temperature of the carbonating/conditioning tank is held at 1-4 C during which it is carbonated via the addition of CO₂. The carbonated beer is then transferred into kegs.
- During the brewing process, we will be operating two 2.5 HP mobile variable frequency drive pumps that will perform all of the above transfers of liquid via hose.

(b) Cleaning Tanks

- The tanks and equipment are cleaned and sanitized after every use utilizing a clean-in-place (CIP) system with non-caustic (alkaline) cleaner and sanitizer. Less frequently on an as-needed basis, diluted caustic cleaners are used to remove scale and stone from inside the tanks.

(c) Packaging (cans, bottles, kegs)

All of our product will be packaged into cans and kegs. Finished beer will be transferred via pump from the brite tank to cans or kegs. The canner, supplied by CIMEC canning, has a six head filler. The kegging unit supplied by DME has a four head filler. Both machines operate via electricity.

(d) Other Operations:

We will also be operating a walk-in cooler on the premises for finished product and input storage (hops, yeast, etc.). We potentially may have a small retail area where we will offer souvenir merchandise and our packaged beer for off-site consumption added at a later date.

Water Demand/Usage:

Below is a summary of production facility activities with associated water consumption (in liters):

• Brewing (per batch)	6,000L	2x per week	12,000L
• Cooling Hot Wort	2,000L	2x per week	4,000L
• Uni/Brite Tank Cleaning	300L per tank	4x per week	1,200L
• Canning Line Sanitization	300L per cleaning	2x per week	600L
• Washing floors, tank exterior	400L per cleaning	4x per week	1,600L

Total water requirements for the above activities is 19,400L per week. Of this total usage, 14,000L is utilized for brewing activities. Banished Brewing has invested in an oversized water storage tank that will

be filled during off-peak hours (overnight) and used for brewing activities to help reduce strain on the town's peak day-to-day operations.

Potential Sources of Pollutants:

Airborne emissions: There are only two very small opportunities for airborne emissions during our operations: 1) vented steam during the brewing and 2) vented grain dust during the milling process. We confirm that both will result in very little to no actual air emissions and all are 100% natural and will contain no chemicals or toxic substances.

The vented steam occurs during the brewing process. Water that has steeped in malted barley/wheat is drawn off and put into a boil kettle. It is boiled for approximately one hour and hops are added at various stages of the boil to give the beer a more distinct flavour. At this point, the liquid only contains starches from the grains and flavours drawn off of the hops, which are all-natural and contain no chemicals or toxic substances. The steam from this boil emits only a slight odor, as mentioned consisting only of barley and hops.

Solid Waste & Liquid effluents:

Fortunately, all waste produced during the brewing process is organic material, which therefore has the potential to be recycled, reused or composted. It is our goal to operate as environmentally-friendly as possible. The wastes produced during the brewing process of a single batch of 3,500 liters of beer and subsequent cleaning of the equipment, consist of:

- Water (varies, around 500 liters)—though most of the water used makes up the beer product, a smaller amount of water will also be used to cool the beer through our plate chiller and used in cleaning the equipment. We intend to recapture the water used in the plate chiller for our cleaning process to dilute and rinse our cleaners. Upon completion of the cleaning process, it will become an effluent discharge.
- Waste beer (variable) —this will be a minimal liquid effluent that will result from any accidental spillage.
- Spent grains (approx. 2,000-2,500 lbs) —this is the “steeped” grains leftover once the liquid has been drawn off from the tank. Since this is a food-grade by-product, it will be reused for a subsequent brew, as ingredients for baking or animal feed for a local farmer. We can also compost the grains if we cannot reuse them.
- Spent hops/Kettle Trub (approx. 50 –100 liters) – This is the precipitate left in the boil kettle upon completion of the boil and removal of the liquid. It has a “slurry” consistency since this is a food-grade by-product.
- Yeast/Fermentation Trub (approx. 50 –100 liters) – This is the biomass left at the bottom of the fermentation tank upon removal of the liquid (beer). It is composed of mainly heavy fats, proteins, and inactive yeast.
- Cleaning products (small amounts) – Fortunately there are environmentally-friendly products available for the cleaning needs of the brewery. The cleaning product most used, particularly for every cleaning session after every brew, will be PBW (powdered brewery wash). This is a low alkaline, non-caustic, environmentally and user-friendly clean-in-place cleaner. At times a peroxide-based acid cleaner will be used to dissolve scale and beerstone from inside the tanks. This would be highly diluted (2000:1 ratio of water to cleaner) and will not be used during every

cleaning session. When required with our system, 20mL of caustic is used and diluted with 40L of water. All “slurry” and liquid effluents will be disposed via municipal systems.

v. Occupations:

The microbrewery will operate as a year-round business and will employ 5-8 staff.

All construction is to be completed by local suppliers, with Paradise suppliers being given preference. Once the microbrewery is operating, any maintenance or repair work will be contracted out to local businesses.

All hiring will abide by proper labour standards and there will be no gender, race or age discrimination.

APPROVAL OF THE UNDERTAKING:

The following is a list of permits, licenses and approvals required;

Municipal

- Municipal Approval – Town of Paradise - **COMPLETED**

Provincial

- Environmental Assessment Approval & Registration – Department of Environment, Climate Change and Municipalities
- Building Accessibility & Fire and Life Safety Approval – Department of Digital Government and Service NL - **COMPLETED**
- Manufacturers License (Brewery) – Newfoundland Liquor Corporation
- Brewer’s Agent License – Newfoundland Liquor Corporation

Federal

- Excise Duty License – Canada Revenue Agency
- Labelling Requirements – Canadian Food Inspection Agency

SCHEDULE:

The renovation completion date depends upon final approval of this application. Renovation can otherwise begin prior to the remaining licenses and approvals as such will not be granted until final inspections of the facility can be conducted.

FUNDING:

Loans have been secured from:

Royal Bank of Canada
226 Water Street
St. John's, NL
A1C 1A9

Business Development Bank of Canada
215 Water Street
St. John's, NL
A1C 6C9

Cabot Business Development Corporation
1694 Topsail Road, Unit 105
Paradise, NL
A1L 1V5

Estimated capital cost of the project: \$1,333,000 facility and \$150,000 for renovations.

PROJECT-RELATED DOCUMENTS ATTACHED:

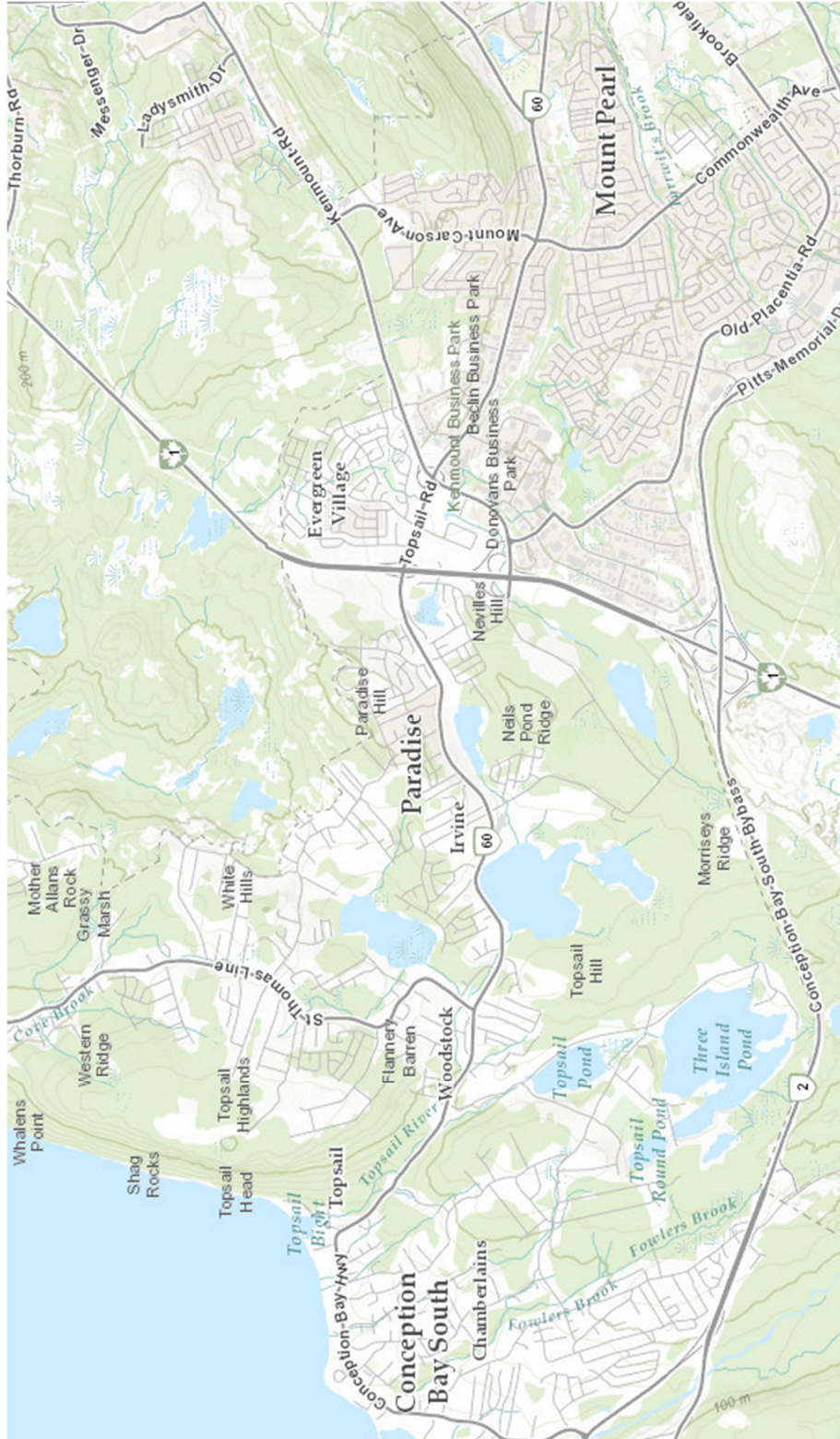
- Topographic maps
- Aerial photos
- Site survey
- Site plot plan

Sept 8th, 2021

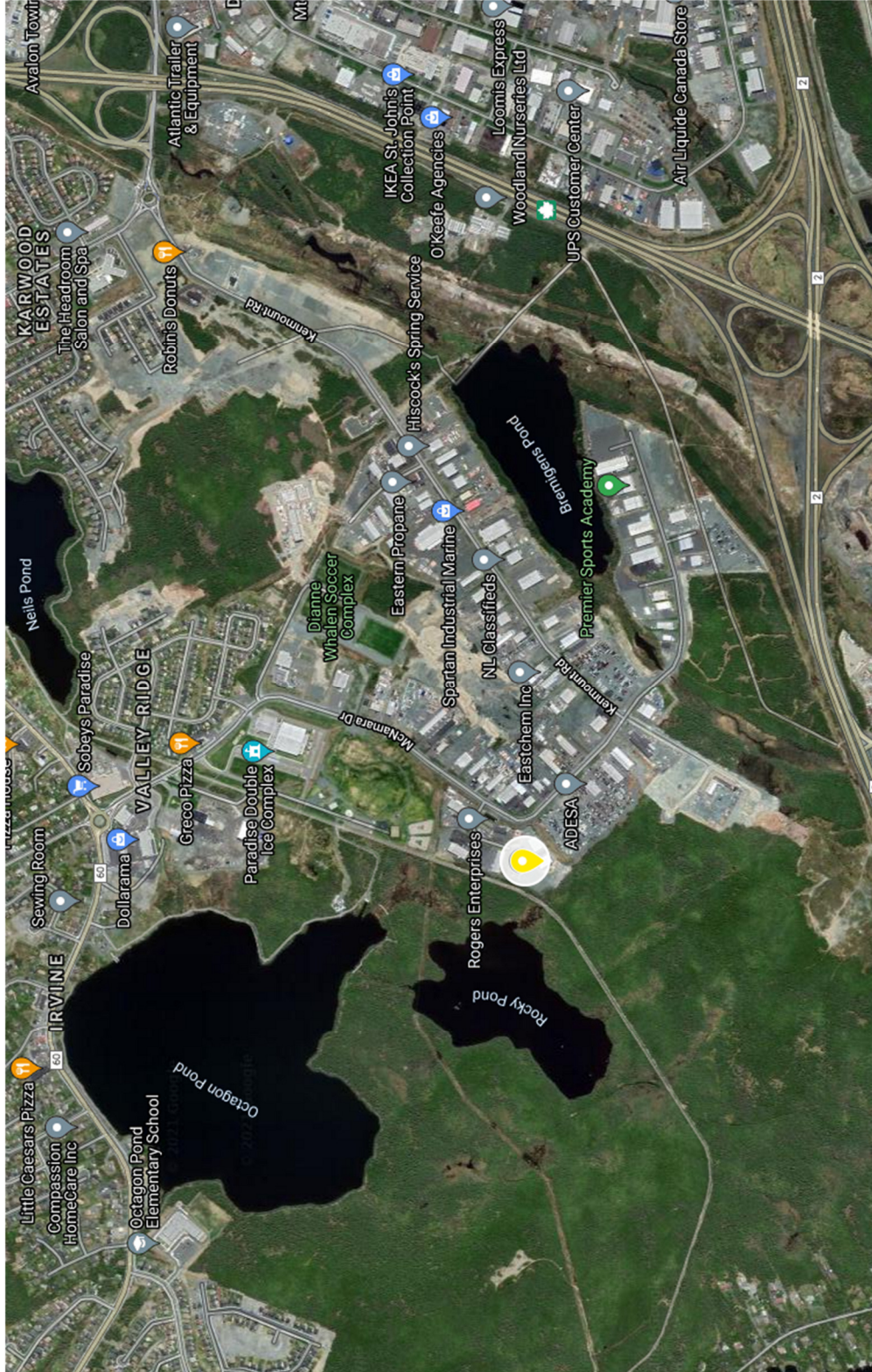
Date



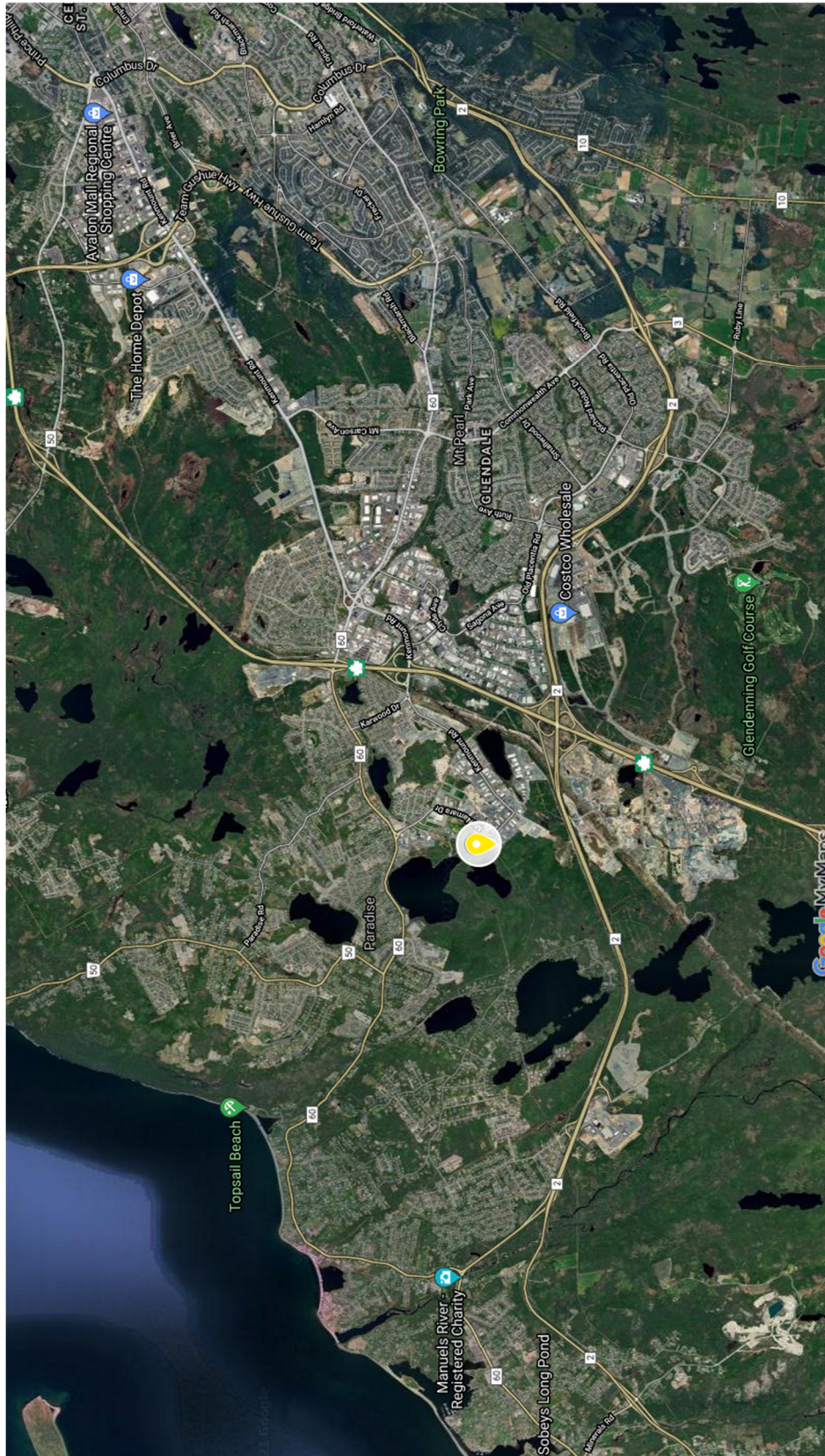
Signature of Chief Executive Officer

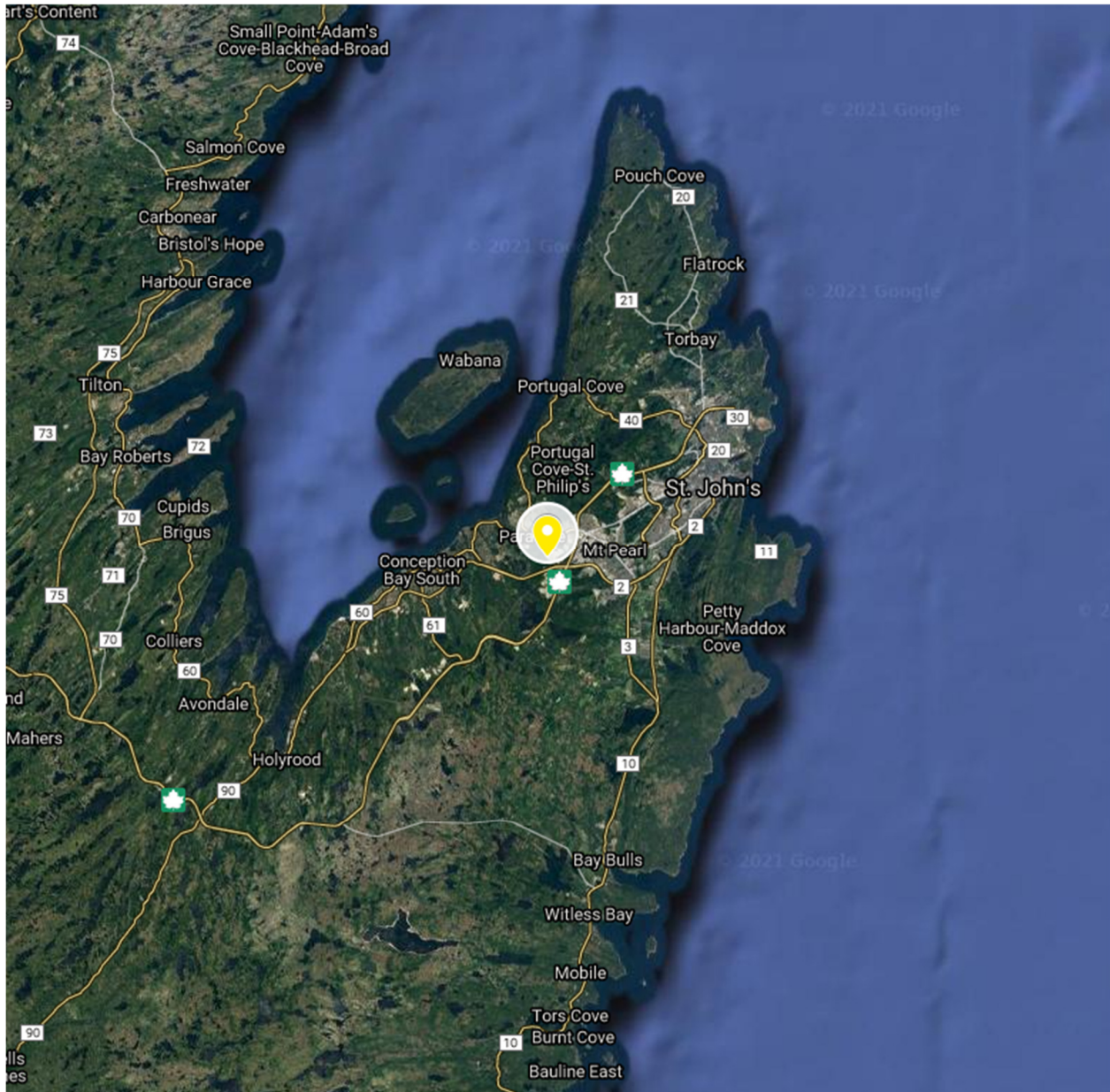


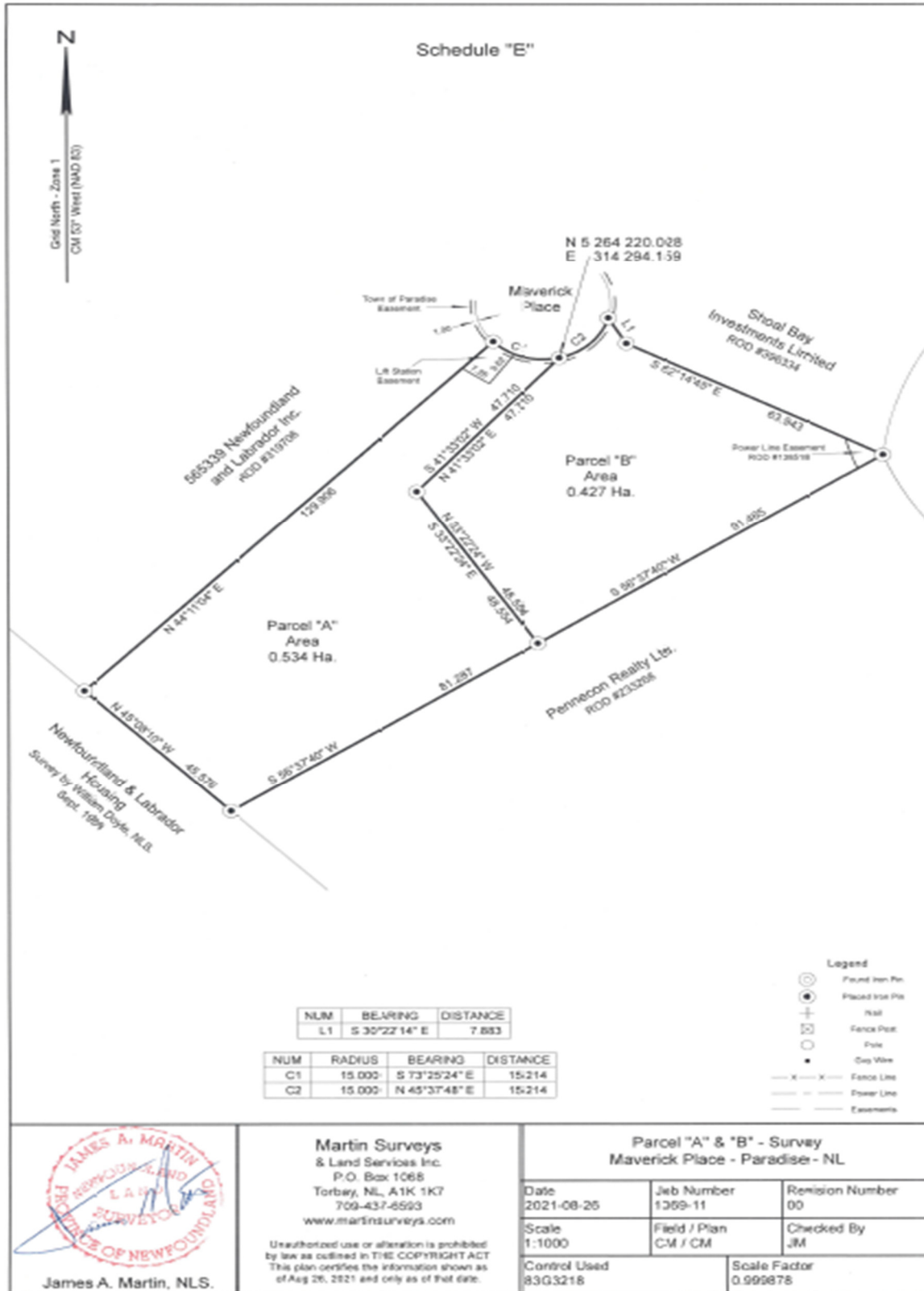
Registration
Microbrewery
Banished Brewing Ltd.



Registration
Microbrewery
Banished Brewing Ltd.







Registration

Microbrewery
Banished Brewing Ltd.



THIS PLAN IS A PRELIMINARY PLAN AND IS NOT TO BE USED FOR CONSTRUCTION. THE INFORMATION CONTAINED HEREIN IS FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT CONSTITUTE AN OFFER OF ANY FINANCIAL PRODUCT OR SERVICE. THE INFORMATION CONTAINED HEREIN IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS INTENDED. THE INFORMATION CONTAINED HEREIN IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS INTENDED.

DATE	DESCRIPTION	BY	CHKD BY



PROGRESSIVE ENGINEERING & CONSULTING INC.
10000 148th Street, Surrey, BC V4N 1C4
Tel: 604-591-1111
www.progressive-engineering.com

PROJECT NO.	
DATE	

PROJECT TITLE	BEACH HEAD BREWERY
CLIENT	BEACH HEAD BREWERY
LOCATION	BEACH HEAD BREWERY PRODUCTION FACILITY
DATE	

DATE			

DATE			

DATE			

DATE: 2021.014
SCALE: 1:1000
C1 | A