

REGISTRATION

Pursuant to s. 37(1)(e) of the Environmental Protection Act, SNL 2002, cE-14.2

UNDERTAKING:

Nano Brewery : (A Nano brewery produces beer on a 4 barrel brewing system or less.)

LOCATION:

23 Stentaford Ave, Unit 8, Pasadena, Newfoundland

SUBMITTED BY:

Norm MacDonald for Western Newfoundland Brewing Company Ltd.

SUBMISSION DATE:

August 16, 2016



NAME OF UNDERTAKING:

Nano Brewery: Western Newfoundland Brewing Company Ltd.

PROPOSER:

- (i) Name of Corporate Body: Western Newfoundland Brewing Company Limited
- (ii) Address: 23 Stentaford Ave, Unit 8, Pasadena, Newfoundland A0L 1K0
- (iii) Chief Executive Officer: James MacDonald
- (iv) Official Title: President
- (v) Address: 23 Stentaford Ave, Unit 8, Pasadena, Newfoundland A0L 1K0
- (vi) Telephone No: (709) 630-0119
- (vii) Principal Contact Person for purposes of environmental assessment:
- (viii) Name: Norm MacDonald
- (ix) Official Title: Director
- (x) Address: 197 Josie Lane, Deep River, Ontario K0J 1P0
- (xi) Telephone No.: (613) 602-3174

THE UNDERTAKING:

- (i) Name of the Undertaking: Western Newfoundland Brewing Company Limited
- (ii) Purpose/Rationale/Need for the Undertaking:

DESCRIPTION OF THE UNDERTAKING:

Market Overview:

In 2014 Canadians consumed more than 220,000,000 litres of beer, a quantity that superseded any other alcoholic beverage. Of this quantity, 84% was Canadian produced. More than 520 breweries now exist in Canada and this number continues to grow yearly. Newfoundland and Labrador has lagged behind this trend somewhat. To date there exist four independent breweries on the island, three of which do not distribute province wide, and all four are situated on the Avalon Peninsula. Western Newfoundland boasts no independent breweries at this time.

The Western Newfoundland region is home to a population of more than 100,000 individuals and sees more than 300,000 visitors each year. The region is primed for establishment of an independent brewer.

It is the Western Newfoundland Brewing Company's intent to capitalize fully on this market potential.

For the past two years we have worked diligently to develop products that will be pleasing and unique to palettes both local and visiting. We have developed processes and protocols that allow us to maximize our production potential while following best practices to ensure our delivery lines are open and consistent.

With the strengths and experiences of our executive team, we are confident that we have developed the blueprint for an independent brewing company that will serve and grow steadily within Western Newfoundland.

2. Business Description

The Western Newfoundland Brewing Company LTD is a new brewery venture currently under development in Western Newfoundland. We intend to commence with a pilot brewing project in the Pasadena Venture Centre in Pasadena, NL. Here we will be able to fine-tune our production systems and delivery logistics. Within three years of commencing operation, the Western Newfoundland Brewing Company hopes to acquire or construct a building that is suited to serving and entertaining a high volume of seasonal visitors. The company has been registered since October 21st 2014 and is made up of three equal partners, Jennifer Galliott, James MacDonald and Norm MacDonald.

Ownership/Management/affiliated companies

The owners of the Western Newfoundland Brewing Company are Jennifer Galliott, James MacDonald, and Norm MacDonald.
Each stakeholder below is an equal owner in the venture.

Jennifer Galliott

Director: Marketing, Community Engagement

Background: Small business ownership, freelance artist, apprentice Electrician.

Experience: Seven years owner and manager of art gallery and coffee bar establishment, board member of a nationally known writers festival.

Ownership: Proprietor Galliott Studios

James MacDonald

Company President

Director: Product Development, Creative Development

Background: Small business ownership, Technical logistics and creative direction of broadcast television projects.

Experience: Eight years freelance television professional

Company Ownership: Sole shareholder and director of 1914410 Ontario Ltd. (Television Production).

Norm MacDonald

Director: Licensing, Operations, Engineering

Background: Chemical Engineer, Licensed Professional Engineer in the Province of Ontario, Certified Management Accounting

Experience: Over Thirty years in the Nuclear and Pulp and Paper Industry in various engineering and managerial roles. The last 15 years were as a Senior Manager for Nuclear Operations.

Products

The Western Newfoundland Brewing Company will be producing well-crafted and traditionally brewed beer. We are starting with two signature ales with plans on introducing seasonal and special event ales.

Services

Initially our beer will be sold on tap in locations within Gros Morne National Park, Corner Brook region. Our future plans are to make "Growlers" (1 to 2 litre refillable glass containers) available for purchase on-site at the Pasadena brewing location.

In subsequent years we hope to expand our serving into a building that is well suited to entertaining dozens of customers at any one time. During this growth period we also hope to expand our tap service to bars across the island, and sell from licensed retail vendors in as many locations as is feasible.

In the taproom section of the future brewery, we will provide a selection of full time and seasonal beer selections as well as non-alcoholic alternatives such as soft drinks, and locally roasted coffee, both made in house.

In regards to the brewery side our operation, there are no other existing micro/nano breweries in the western region of Newfoundland. As of 2015 there exist three independent beer producers in the province of Newfoundland and Labrador: Quidi Vidi Brewing, Yellowbelly Brewery and Public House, and Storm Brewing and the

newest microbrewery – Port Rexton . All four are established on the Avalon Peninsula, on the east side of the island. The Gros Morne Region is situated over 700 km from St. John's proper and is host to a variety of well attended cultural festivals and events and boasts yearly visitors of over 200,000 individuals. The Gros Morne region holds a small population - only about 5000 residents - however the Humber Valley region alone is home to approximately 40 000 individuals, while Western Newfoundland as a whole (South Coast, St. George's, Humber District, Northern Peninsula) is home to close to 100 000 individuals (Stats Canada -

http://www.stats.gov.nl.ca/statistics/population/PDF/Population_Estimates_CDCMA.pdf)

. We view Western Newfoundland as an interconnected regional entity and intend to market and sell our product in a way that captures the cultural identity of the region from Port Aux Basques all the way to St. Anthony. There are currently no beer production facilities west of the Avalon Peninsula.

(i) Geographical Location:

Pasadena is located in the Humber Valley, the region stretching from the headwaters of the Humber River, just south of White Bay, along Deer Lake, and out to the Bay of Islands on the province's west coast (Exhibit 1). Historically, the region was integrated as an economic unit based on the forest industry.

Corner Brook, at the mouth of the Humber River, has been the location of a paper mill since 1915. The Town of Deer Lake, fifteen miles east of Pasadena, grew around a hydroelectric plant constructed to power the mill. Most other communities in the valley were based on logging, although those, on the coast took part in the fishery like virtually all of coastal Newfoundland communities.

Pasadena benefited from its easily developed land and location midway between Corner Brook and the region's airport in Deer Lake. From 450 residents in 1955, the year it was incorporated, Pasadena's population grew to some 3,500 people by 1989 as a result of immigration and amalgamation with a neighbouring community. Pasadena also benefited from its proximity to Corner Brook, which expanded from a single industry mill town, to a regional service centre.

ii) Physical Features and iii) Construction

The Venture Centre consists of an 'L'-shaped building of 40,000 square feet, sub-divided into twelve business areas incorporating workshop space and office space (Exhibit 2 to 4). Three sizes of unit were available: 2,000, 2,500 and 4,000 square feet each, although flexibility was designed into the structure to allow varying sizes according to individual business needs. A central office core area provided space for common administration and promotional activities, including a board room available to business tenants. Common office services included secretarial support, computing assistance and telefax and photocopier access, available on a cost-shared basis.

The Venture Centre assist tenants and prospective clients with business plans, funding applications and technical problems.

The Venture Centre explicitly adopted the incubating concept, The expectation is that during the time the business is in the Venture Centre, with lower rentals, support, and common user services, the business will develop to the stage where it can leave and move into a multi-user industrial building or a building of its own.'

Tenants meet one or more of the following conditions:

1. Manufacture products not currently made in Newfoundland;
2. Use new technology in manufacturing or provide a service not already available in Newfoundland;
3. Experiment with and develop new Product lines by existing manufacturers,
4. Expand a 'cottage' industry to commercial production;
5. Establish any potentially viable business in the secondary manufacturing or processing sector which may need special incentives or assistance.

The Western Newfoundland Brewing Company Ltd fit the requirements for items 3 to 5. The Pardy's Venture Centre was perfect for a start-up Brewing Company since all services were already in existence. No changes were required to the Pardy's Venture Centre with respect to the electrical, structural, drainage.

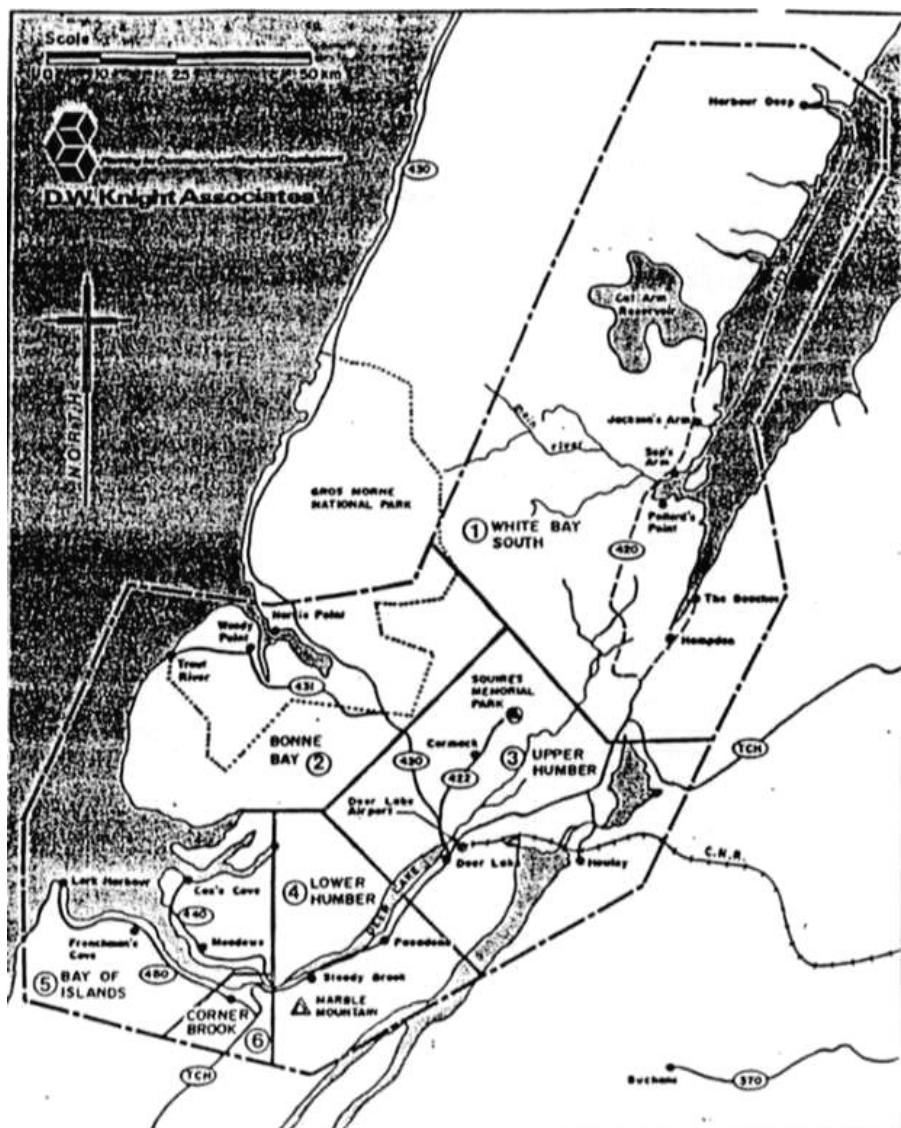
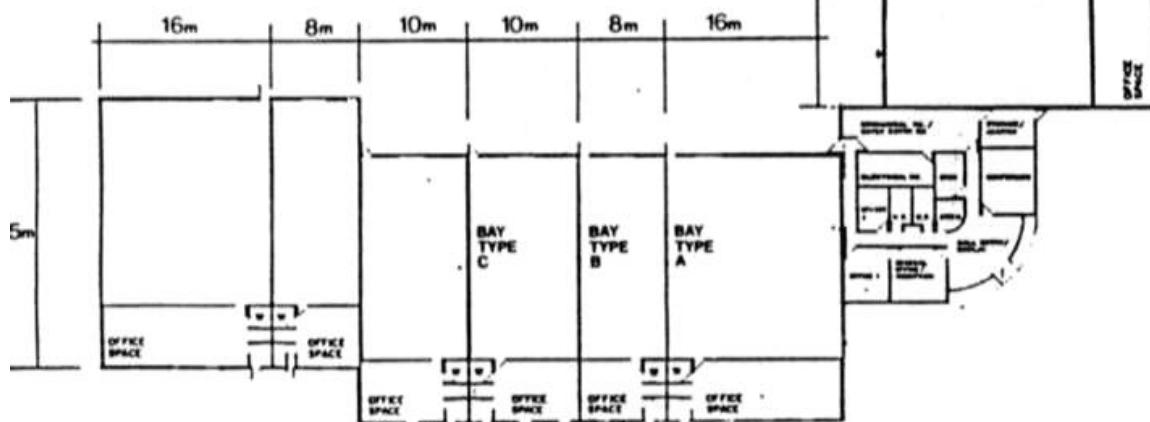


Exhibit 1 – The Humber Valley

The Venture Centre



An Industrial Incubator



- Exhibit 2 – Pardy's Venture Centre



Exhibit 3 – Aerial view of Pardy's Venture Centre



Exhibit 4 – Street View of Pardy's Venture Centre

iv) Nano Brewery Operations:

The Brewing process is essentially the same for a brewery, a microbrewery or a nanobrewery. The differentiation between the breweries is on volume of production, breweries are over 6 million barrels per year, microbreweries are less than 15 thousand barrels per year, and of course a nanobrewery is less than the microbrewery but is identified as a brewery with a brewhouse capacity of less than 4 barrels.

Process Description:

The start of the brewing process begins with grain; multiple grain types are used depending on the final product – a stout, cream ale, pale ale...

Milling Grain

Typically a small amount (<15kg) of grain is cracked (not pulverized to dust) in a grain mill into a closed container. The closed container minimizes the amount of dust that can become airborne. For the small amount of grain and the relatively large cracking size, dust is a very small amount. The amount is too small to be a fire or explosion hazard that would be a concern on larger operations. During beer production spent grain will be left over and unusable to the brewery. However, these grains still hold valuable nutrients as well as flavour. Spent grains from brewing can be used as feed for livestock, dog treats, and compost. Our plan is to donate spent grains to local farms.

Mashtun

The cracked grain is placed into the mashtun where heated water is used extract the various sugar and starch from the grain. The conversion process uses natural enzymes in the malt to break the malt's starch down into sugars. As the sweet liquid separates from the grain, the grain bed is used as a natural filter to remove solid grain matter, leaving a clear liquid for the next step in the process.

Wort tank - the Boil

The liquid from the mashtun is then collected in a vessel called a wort tank or kettle, where it is brought to a controlled boil before the hops are added. This is not dissimilar to the production of maple syrup, where sap is boiled to drive off water in the form of vapour to concentrate the sugars. The wort liquid is processed through a whirlpool to separate the liquid from any solid products formed in the boil process. In the boil process, approximately 12 litres of water is boiled off. The cleared liquid wort is then cooled in a heat exchanger to a temperature favourable to the yeast for fermentation.

Fermentation

To start the fermentation, yeast is added during the filling of the vessel. Yeast converts the sugary wort into beer by producing alcohol, a multitude of flavours, and carbon dioxide.

Conditioning

After fermentation, the young “green” beer needs to be matured in order to allow both a full development of flavours and a smooth finish.

Cold conditioning/Bright tank

After reaching its full potential, the beer is cold conditioned, carbonated, and transferred to the bright beer tank, where it goes through a further maturing process. When the beer is complete it is sent to the kegging station to be kegged and shipped to a Restaurant or Pub for distribution.

Exhibit 5 depicts a flowchart of the brewing process.

Solid Waste & Liquid effluents:

Western Newfoundland Brewing Company Ltd will operate within environmental regulations and strive to exceed these requirements by adopting an environmentally friendly operating philosophy. Almost all of the waste material is either water or grain/hops. These materials can be reused, recycled or reduced. There is a small amount of chemical cleaner required to clean and sanitize equipment. There are no direct discharges to water bodies. All liquid discharges go to a Pardy's Venture Centre drain, which are mixed with waste from 11 other units in the Centre and this drain leads to the Town of Pasadena municipal sewer. Discharges to the Pardy's drain will not exceed a temperature of 65 C and will be within a pH range of 5.5 to 9. The 8 litres of evaporate produced from the open wort kettle dissipates into the 1020 cu metre (36000 sq ft) operating area and is evacuated through a 0.4 sq metre (4 sq ft) area by a large fan at the rear of the building.

In a typical brewing cycle the following material will be reused, recycled, reduced or if no other option sent to waste:

Spent grains (15 Kgs): the grain leftover after the liquid extraction from the mashtun. This is a food-grade by-product acceptable for reuse. Potential reuse will be farm animal feed, baked treat products for pets or for compost.

Wort Kettle Trub (approx.1litre): a slurry left after the kettle boil and whirlpool on separation of the wort through the chiller to the fermenter. It is a food grade by product that will be reused in composting.

Fermentation Trub (approx. 2 litre): layer of sediment, left at the bottom of the fermenter after the yeast has completed the bulk of the fermentation. It is composed mainly of lipids, proteins, and inactive yeast. A portion of this product (1 litre) will be used for yeast propagation; the rest will be used in composting.

Cleaning Chemicals (small amounts) – Our primary use chemicals will be environmentally friendly. Cleaners like Powdered Brewery wash (PBW) (carbonate based cleaners), and peracetic acid will be used to clean and disinfect the equipment.

Occasionally we will need to use a caustic or acid cleaner. These will not be used in every cleaning cycle and their use will be minimized. These cleaners will be isolated and saved for reuse or if spent, will be saved in a waste container and neutralized prior to discharge into Pardy's drain system.

Water (variable – 50 to 200 litres) – Primary uses of water are the cooling of the wort

and flushing the system. We intend to recycle the cooling water for re-use in process as well as reuse in the cleaning cycle. When used as a rinse in the cleaning cycle the water will become an effluent. The effluent will be discharge to the drain at Pardy's Venture centre where it will mix with waste from the other 11 units and will be discharged to the municipal drains of the Town of Pasadena.

Waste beer (target of zero) – this will be accidental spillage.

The number of brewing cycles in a year could range from 150 to 300, hence the accumulative yearly waste would be as follows:

Spent Grain: 2250 to 4500 Kgs

Wort Kettle Trub: 150 to 300 litres

Fermentation Trub: 150 to 300 litres

Cleaning Chemicals: 10 to 30 litres

Water: 7500 to 15000 litres

Brewing Process

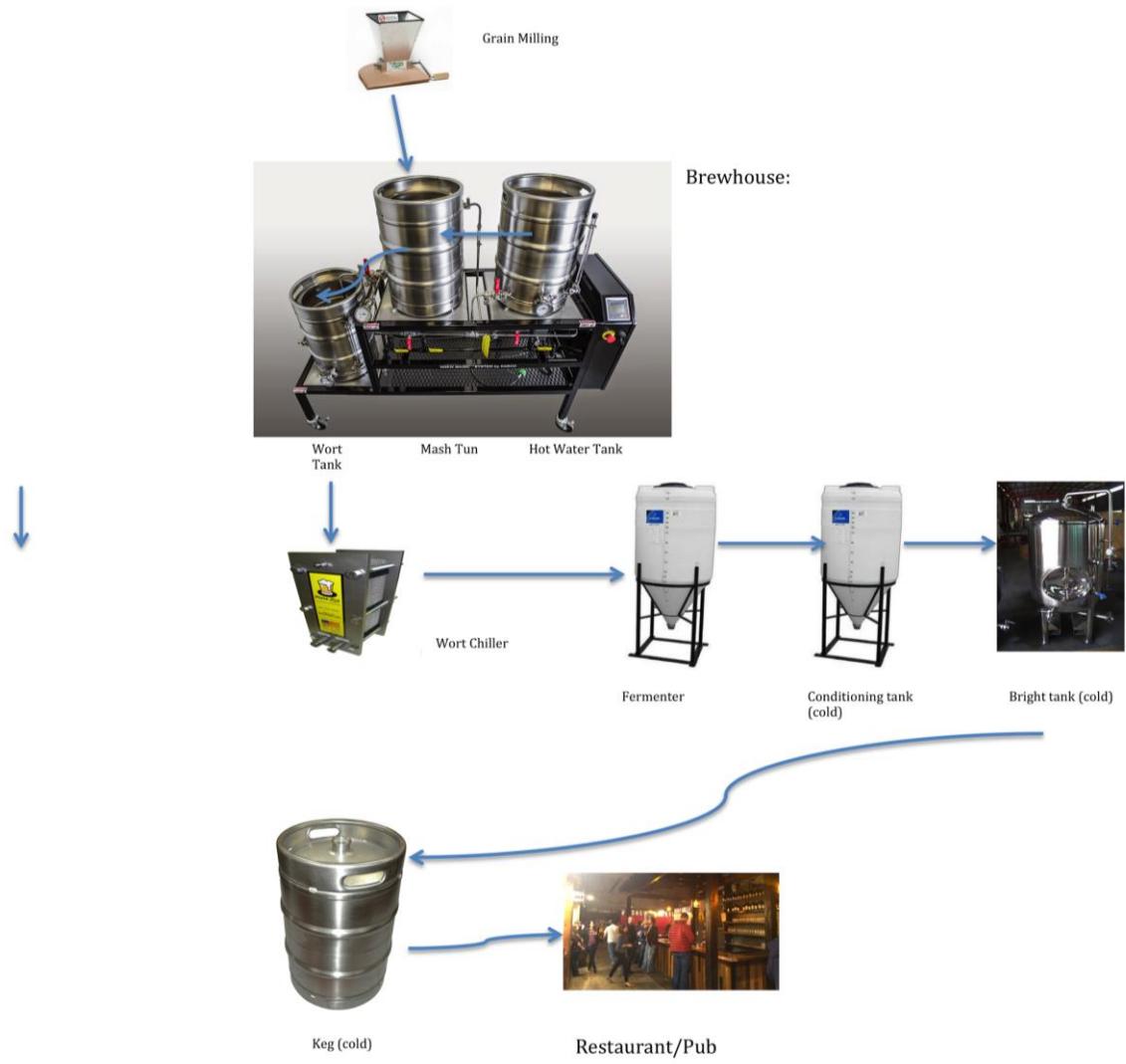


Exhibit 5 – The Brewing Process

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(v) **Occupations:**

The brewery is primarily operated by the three business owners.

Since the three owners all have jobs outside the brewery, it will be necessary to hire at least two additional part time Operating personnel to cover the normal day operations and at least three part time hires to provide Administrative, Financial, Logistics, and Delivery functions. None of the preceding jobs will be contracted out. In the high tourist season, depending on demand for the product, an additional 4 to 6 employees may be required for operations and sales.

The Business Plan includes expansion in about a 2 year period. The expansion will require a relicensing process. At least one year prior to the expansion, up to 10 more part time operating personnel will be brought on and trained to make them ready to run the expanded operations. The expanded plant will require 10 to 15 full time personnel expanding to an additional 20 part time personnel in the high season.

Employment equity rules will be followed, there will be no discrimination based on gender, race or age

APPROVAL OF THE UNDERTAKING:

The following is a list of permits, licenses and approvals required for this Nano brewery:

Municipal

- Municipal Approval – Pasadena

Provincial

- Provincial Building Accessibility & Fire and Life Safety Approval – Service NL
- Food Establishment License - Department of Health
- Environmental Assessment Approval & Registration – Department of Environment and Conservation
- Manufacturer's License (Brewery) – Newfoundland Liquor Corporation
- Excise Duty License - Canada Revenue Agency

SCHEDULE: The start up for Operations of the Western Newfoundland Brewing Company Ltd is scheduled for the end of September 2016. (Within Pardy's Venture Centre built in mid 1980's)

The completed Registration and the digital and paper copies should be sent, together with a covering letter, to: Minister of Environment and Conservation PO Box 8700 St. John's NL A1B 4J6 Attention: Director of Environmental Assessment