

REGISTRATION

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

UNDERTAKING:

Microbrewery

LOCATION:

92 West Street, Corner Brook, Newfoundland

SUBMITTED BY:

Matt Tilley and Morgan Turner, on behalf of

Bootleg Brew Co. LTD.

SUBMISSION DATE:

June 21, 2017

NAME OF UNDERTAKING:

Bootleg Brew Co.

PROPONENT:

(i) Name of Corporate Body:

Bootleg Brew Co Ltd.

(ii) Address:

92 West Street, Corner Brook, Newfoundland, a2h 2y6

(iii) Chief Executive Officer:

Name: Matt Tilley

Official Title: Owner/Brewer

Address: 17 Bugden Place, Corner Brook, Newfoundland, a2h7j1

Telephone No.: (709) 638-3235

(iv) Principal Contact Person for purposes of environmental assessment:

Name: Morgan Turner

Official Title: Owner/Brewer

Address: 15 Rosedale Avenue, Corner Brook, Newfoundland, a2h 4n9

Telephone No.: (709) 215-1372

THE UNDERTAKING:

(i) Nature of the Undertaking:

Matt Tilley and Morgan Turner, founders of Bootleg Brew Co. Ltd., are presently seeking approval to re-adapt a building, located at 92 West Street in Corner Brook, previously used as a restaurant into a small microbrewery (square footage added). The brewery will be using a 3 barrel 4-in-1 brew system, capable of producing up to 561.3 hectolitres of beer per year. A separate portion of the building (square footage enter) will also be renovated into a lounge area for tasting beer, filling growlers and selling branded merchandise. The beer will be produced with all natural ingredients (water, malted barley, hops, yeast and local produce such as berries) with no added preservatives or pasteurization.

A microbrewery is a small brewery, often defined as producing less than 15,000 hectolitres per year. In our case, we will be a very, very small microbrewery, producing less than 600 hectolitres per year. This is pale in comparison to the major breweries, such as Labatt which produces 10 million hectolitres annually. We will only be 1/10th of the size that Quidi Vidi Brewing was when they opened their doors in 1994.

In addition to producing beer, visitors to our facility will be able to tour the brewery equipment to learn about and experience how beer is made as well as to meet and chat with the brewer. They will also have the opportunity to sample and drink our beer as well as purchase souvenir merchandise.

(ii) Purpose/Rationale/Need for the Undertaking:

Both founders, Matt Tilley and Morgan Turner, have been working in restaurants across Canada for the last 5+ years and have noticed a significant increase in desire for local products, whether it be food or drink. After moving back to Newfoundland in 2015 and 2016, respectively, we both realised that Newfoundland is lacking the craft beer community that is present across the rest of Canada. Taking knowledge from working in kitchens and around breweries around Canada, Matt and Morgan worked to develop beer recipes to both compliment food made by local chefs, and to show off the great products that can be found across Newfoundland such as blueberries, partridgeberries, spruce tips, etc.

Craft beer and the microbrewery industry has grown exponentially across the country with many microbreweries opening in rural locations and experiencing unprecedented successes. For example, Nova Scotia currently has over 30 microbreweries with many of these succeeding in rural locations. Newfoundland, however, has only three in the province with all three located in the St. John's area.

A local brewery where people can come drink and purchase merchandise on site will also be an attraction for tourists. The total estimate of non-resident parties visiting Newfoundland and Labrador during the May to October period is 158,456, with 38% reporting they had an overnight visit to the Western Region. It is estimated that between May and October 2011 approximately 60,816 travel parties or 133,300 non-residents reported an overnight visit to the Western Region. We are in talks with local tourism business to add our proposed brewery to the list of stops on bus tours for cruise ships, in which tourists can taste locally crafted beer and have the chance to see how the beer is made during tours of the brewery.

Therefore, there is a great opportunity in the tourism destination of Corner Brook to make craft beer on a small “artisan” level so as to offer a craft product to tourists as well as to provide them with a unique visitor experience of touring the brewery, learning about the process and meeting the brewer who made the product.

In order for us to offer this tourism business, we need to purchase the necessary equipment and carryout renovation work to a portion of an existing building that will accommodate the brewery.

DESCRIPTION OF THE UNDERTAKING:

(i) Geographic Location:

The building we are leasing is located at 92 West Street, Corner Brook, Newfoundland. The building has a main floor with 1965 square feet. The building also includes a partial basement, 250-300 square feet, and a second floor with 1034 square feet. The top floor will not be open to the public, only housing offices for Matt and Morgan, with all brewing equipment, storage and lounge area all occupying the main level. The building is located in the heart of downtown Corner Brook, attached on one side to a strip of buildings.

The property for the Undertaking is zoned commercially and we are waiting approval by the Town of Corner Brook. A meeting to discuss this will be scheduled soon. We do have assurances from several council members that it will not be a problem and they are excited about our business plans.

Attached at the end of this document is a topographic map and several different scale aerial photos are attached showing the vicinity in Corner Brook and location of our project. Blueprints for the interior of the building are also attached, with proposed locations of equipment and changes to the interior which we need in order to operate.

(ii) Physical Features:

As mentioned above, the building we are leasing was previously run as a restaurant so very little work will be needed for ventilation, electrical or plumbing, if any. The building itself is attached on one side to a strip of buildings in the downtown area. The only area that we will be altering is the main floor, 1995 square feet. As it was initially designed as a restaurant, there will be minimal construction to the interior, mainly a wall to separate the brewing area from the customer lounge, and a bar with fridges will be installed in the lounge.

There will be no new buildings, pipelines, transmission lines, roads, etc. constructed for the microbrewery as the microbrewery will use all existing structures.

There has been no industrial use of the property (nor any in the area) and no kerosene or oil tanks on the property, the affected area or underground. The building is currently heated by electricity only.

(iii) Construction:

Very little construction will be necessary to bring the building up to code. We will be taking the existing tile floor up and installing a vinyl floor, for ease of cleaning, and in the brewing area, we will be putting fibreglass around the walls, again for the ease of cleaning. We will be installing a fridge for carbonation of our brite tanks as well as storage for hops and yeast. As well, we will be installing a bar, with bar fridges, a 4 tap system, sinks and a glass washer. Dates for the commencement of these renovations is pending on the approval of this application. Very few potential sources of pollution will be present during construction other than dust from taking up the existing floor and sawdust from building our walls.

We will require confirmation from all contractors that they are following provincial occupational health, safety and environmental standards and guidelines throughout the construction work.

(iv) Operations:

Microbrewery Operations:

The operation of the microbrewery will consist of: (a), milling grain (b) the brewing process, which is carried out three times a week with stages taking place over a 2-3 week period and (c) cleaning and (d) kegging.

(a) Milling Grain:

We will be milling small amounts of grains prior to brewing and we will be doing so in an enclosed room with proper ventilation.

(b) The Brewing Process

A schematic of the brewing process is as follows:

The brewing process typically runs over an 8-hour period and the steps shown above can be described as follows:

- Heating, via electrical elements, approximately 477 L of water in our brewha 4-in-1 system to a temperature of 75 C.
- Grains are then added to this water and stirred to ensure even distribution of water throughout. The grains are “steeped” in the hot water (63 C) for approximately 1 hour. Additional water (approximately another 100 – 150 L, depending on the recipe) is added to sparge the grain, rinse all of the sugar from the grain into our wort.
- The liquid (now called “wort”) is then brought up to a boil. The wort is heated to 100 C and boils for approximately 1 hour. During the boil, hops (the female flower of the hop plant, *Humulus lupulus*) are added giving the beer its bitterness along with further flavour and aroma.
- The wort is then chilled in the tank with cold water circulating through the insulated jacket. Yeast is then added to the cool wort to begin fermentation.
- The temperature of the tank is controlled to hold the wort at a consistent 18 degrees Celsius for 14 days, give or take. The temperature is maintained with an electrical system within the tank.
- After fermentation is complete, the liquid (now alcohol beer) is cooled in the same tank over a 12-24 hour period to reach a temperature of 4 degrees Celsius.
- The temperature of the carbonating/conditioning tank is held at 4 C during which is carbonated via the addition of CO₂. The carbonated beer is then transferred into kegs.

Mash +
Lauter +
Boil +
Ferment =

THE BIAC.™
A COMPLETE ONE
VESSEL BREWING
SYSTEM. THE
SIMPLEST
WAY TO
BREW THE
BEST BEER!



BREWHA™
equipment co

For the love of brewing.

1. MASH

Water for mashing is added to the 3-in-1 and heated. The Mash Colander is inserted into the 3-in-1 and grain is added. Mash temperature is precisely regulated by the temperature controller and heating element.



2. LAUTER

When mashing is complete, the grain is removed by raising the Mash Colander. The wort filters through the spent grain and into the 3-in-1. Sparge water can be added to rinse the grain as the Mash Colander is raised.



3. BOIL

Boiling in the 3-in-1 provides perfect, chemical-free sanitation. Once boiling is complete, the wort is chilled by passing cold water through the 3-in-1 jacket.



4. FERMENT

When the wort reaches yeast-pitching temperature, protein is removed out of the bottom and the wort is aerated. Fermentation temperature is precisely regulated with the temperature controller and jacket.



For more information and
how to order, visit our website
brewhaequipment.com

(c) Cleaning:

As we are using an all in one system, our equipment is constantly sanitizing itself via heat during the boil. Therefore we are able to limit our chemical use to the bare minimum, using Star San when necessary on pieces of equipment that are not sanitized via heat. Specs for Star San included at the end. Cleaning of the equipment will mainly be done with hot water reserved from chilling the beer, to remove any hop or grain residue from the inside of our tanks.

(d) Kegging:

Kegging will occur at the end of the fermentation process, forced out of the tank into keg via CO2.

Other Operations

We will also be operating a walk-in cooler in the premises for keg and hop storage. We will also run a tasting area, which will be a licensed lounge area, where we will have a small draft system to offer our beer on tap to the public in pint and sample-sized glasses. We will also have a small retail area where we will offer souvenir merchandise and our packaged beer for off-site consumption.

Water Demand/Usage

During our entire operations, our water demand will fluctuate daily. Despite a baseline demand for regular washroom use of visitors, the only times water will be required will be: 1) on a brew day and 2) during cleaning. On a brew day, our water demand is approximately 400 litres for the brewing process. During the cleaning process (which follows a brew day), approximately 100 litres (40 gallons) is used.

We will reuse water wherever we can. The water we use for chilling our wort will be collected for cleaning or reheating to start our next brew, minimizing the waste of any water. And as we are using an all in one system, rather than the usual 3 tank system most breweries use, we only have one tank to clean after each brew, again minimizing water usage and wastage.

Solid Waste:

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 and with the very small scale of our operations, we believe a fully sustainable operation is attainable. Bootleg Brew Co. 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. We are currently speaking with farmers, both in animal husbandry and the growing of hops, to take our spent grains to use as feed or compost to use in growing crops. There is a small amount of chemical cleaner required to clean and sanitize equipment. There are no direct discharges to water bodies.

Spent grains (200-250 lb): the grain leftover after the liquid extraction from the mashtun. This is a food-grade by-product acceptable for reuse. We are in talks with local farmers to use this as cattle feed or as 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.

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 1 hour and hops (a natural plant grown in the North-west of the U.S. and throughout Europe) 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 team from this boil emits only a slight odour, as mentioned consisting only of barley and hops. We will be venting such steam outside of our building and due to the very small production capacity of our brewing equipment, the smell would be very minor (if at all) and only detected if you were standing very close (almost next to) the exterior vent on our roof as our brewery system is simply too small to create any significant air emission or obnoxious smell. We confirm that there are no chemicals or toxic substances that will be emitted.

There will also be a very small amount of airborne grain dust when we mill the grains. To deal with this we will be milling the grain in a small fully-enclosed room with an exterior wall with direct ventilation to the outside to vent out the dust. We will also use explosion-proof fixtures and motor for the mill as well. We confirm that the emission of grain dust will be very small in nature, all-natural (non-toxic and no chemicals of any nature) and will dissipate in the air within a meter or two from the exterior vent.

Operations:

We are starting with the two owners of the company being the sole full time employees to run the business, along with contracting out an accountant for payroll and keeping of our books, as well as a CPA for year end taxes. We are looking at hiring a part time employee to help with brewing and running our front counter while one owner is making deliveries. We will depend on independent contract workers to forage for local produce when necessary, paid based on amount of product they bring us. When hiring employees, we will not discriminate on age or gender, as long as the applicant is over the age of 19 and is legally allowed to serve alcohol. Any maintenance or repair work will be contracted out to local business or independent workers.

APPROVAL OF THE UNDERTAKING:

The following is a list of permits, licences and approvals required for this microbrewery:

Municipal

Municipal Approval – Town of Corner Brook

Provincial

Food Establishment Licence - Department of Health

Environmental Assessment Approval & Registration – Department of Environment and Conservation

Building Accessibility & Fire and Life Safety Approval – Service NL

Manufacturer's Licence (Brewery) – Newfoundland Liquor Corporation

Lounge Licence – Newfoundland Liquor Corporation

Brewer's Agent Licence – Newfoundland Liquor Corporation

Federal

Excise Duty Licence - Canada Revenue Agency

Schedule

Bootleg Brew Co. hopes to be in production by the summer of 2017. Renovations are pending the approval of this application.

Funding

Along with investments from both owners, independent investors and an Indiegogo campaign, funding will be found through small business loans.

June 21, 2017 Matt Tilley

Date Signature of Chief Executive Officer

The completed Registration and the digital and paper copies should be sent, together with a covering letter, to:

Minister of Environment and Climate Change PO Box 8700 St. John's NL A1B 4J6 Attention: Director of Environmental Assessment

Registration
Microbrewery
Bootleg Brew Co.

MATERIAL SAFETY DATA SHEET

Manufactured By:
Five Star Affiliates, Inc.
6731 E. 50th Ave.
Commerce City, CO 80022

Phone: 303-287-0186
MSDS Date: 8-12-03
Replaces: 5-19-98

IDENTIFICATION

PRODUCT NAME: STAR SAN
COMPOSITION: Solution of Phosphoric Acid and Dodecylbenzene sulfonic acid.

HAZARDOUS INGREDIENTS:	%	ACGIH TLV	OSHA/PEL
Phosphoric Acid (75%) (CAS# 7664-38-2)	50.0	1 mg/ m 1 mg/M3(TWA)	
Dodecylbenzene Sulfonic Acid (CAS# 27176-87-0)	15.0	N/A	
Isopropyl Alcohol	10.0	983 mg/M3	1230 mg/M3

(Other compositional information is considered a trade secret).

PHYSICAL DATA

APPEARANCE: Dark, amber liquid	SOLUBILITY IN WATER: Complete
ODOR: Slight	SPECIFIC GRAVITY: 1.326
pH OF CONCENTRATE: 1	FLASH POINT: NONE
EVAPORATION RATE: .9 (water=1)	

FIRE AND EXPLOSION DATA

FLASH POINT:	121 deg. F
FLAMMABILITY:	Non - combustible, substance itself does not burn but may decompose to produce corrosive and/or toxic fumes.
EXTINGUISHING MEDIA:	Water, Carbon Dioxide, Foam
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Contact with chlorine will evolve chlorine gas.
NFPA HAZARD RATING:	Health 3; Flammability 0; Reactivity 1

HEALTH HAZARD DATA

- EYE CONTACT: Corrosive to the eyes may cause severe damage.
- INHALATION: Irritating to the nose , throat, and respiratory tract.
- INGESTION: Harmful if swallowed. Swallowing product can cause sever burns to lining of throat and stomach
- SKIN CONTACT: Substance is corrosive. Causes severe skin burns.
- SIGNS AND SYMPTOMS OF EXPOSURE: Destruction to skin and eye tissue
- SUPPLEMENTAL HEALTH INFORMATION: NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, reparatory depression and convulsions may be needed.

EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT:	Flush with cool running water for at least 15 minutes. For eye exposure irrigate with saline solution Get medical attention as soon as possible.
SKIN CONTACT:	Flush with cool running water. If irritation develops get medical attention.

INGESTION: If conscious, give several glasses of milk, water, egg whites or gelatin solution. Get medical attention immediately. DO NOT induce vomiting.

INHALATION: Move victim to fresh air. Call emergency medical care. Apply artificial respiration if victim is not breathing.

Page 2
Star San

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure limits Listed in Hazardous Ingredients by using engineering controls. If not feasible, Use approved full face piece air-purifying respirator.

VENTILATION SYSTEM: Provide general and/or local exhaust ventilation to maintain airborne levels below the exposure limits in Hazardous Ingredients. Refer to "Industrial Ventilation" by ACGIH for a manual of recommended practices.

SKIN PROTECTION: If skin or contamination of clothing is likely, protective clothing should be worn.

EYE PROTECTION: Chemical goggles are required.

PROTECTIVE GLOVES: Wear chemical resistant gloves.

REACTIVITY DATA

INCOMPATIBLE MATERIALS: Alkalis, chlorinated products, and soft metals.

STABILITY: Product is stable.

POLYMERIZATION: Will not occur.

DECOMPOSITION PRODUCTS: May give off phosphorous oxide at high heat (fire conditions).

SPILL OR LEAK PROCEDURES

SPILL: See Emergency/ First Aid Procedures and Special Protection Information for hazards and exposure controls. Dike with sand or earth to contain spill. Avoid ignition sources. Absorb with sand to other non-flammable material and transfer to approve DOT drum for recovery or disposal.

DISPOSAL: Dispose of in accordance with local, state and federal regulations.

GENERAL: CERCLA/SARA requires notification to the appropriate Federal state and local authorities of releases of hazardous or extremely hazardous quantities equal to or greater than the Reportable Quantities (RQs) in 50 CFR 302.4 and 40 CFR 355. SARA Title 313 requires submissions of annual reports of releases of toxic chemicals that appear in 40 CFR 372. Components present in this product at a level which could require reporting under statute are listed under identification.

TRANSPORTATION

DOT HAZARD CLASSIFICATION: Flammable Liquid, corrosive N.O.S.
(Contains Isopropyl Alcohol, Phosphoric Acid)
3, UN2924, PG III

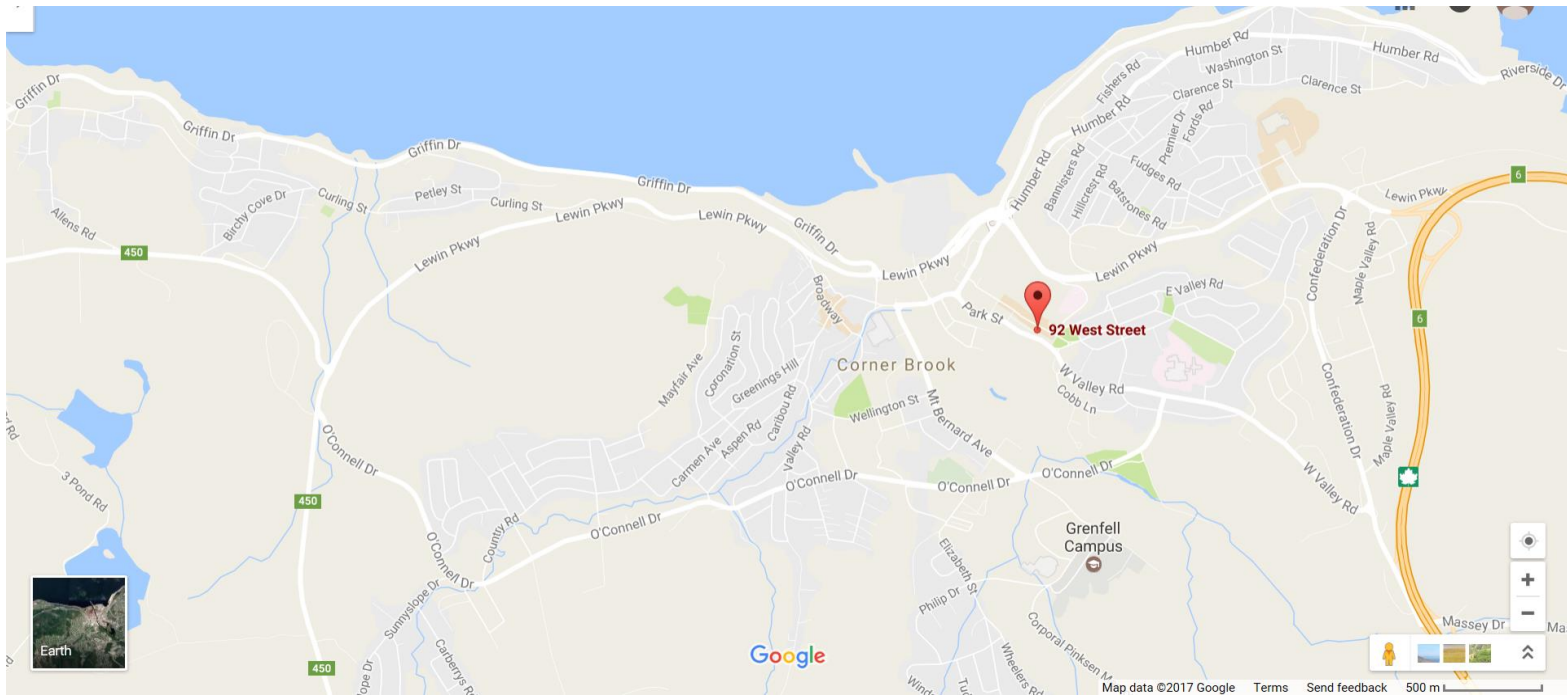
US DOT LABEL: Flammable Liquid, UN 2924, Class 3

LABEL REQUIRED: Flammable Liquid, Class 3 Label as required by OSHA Hazard Communication Standard, and any applicable state and local regulations.

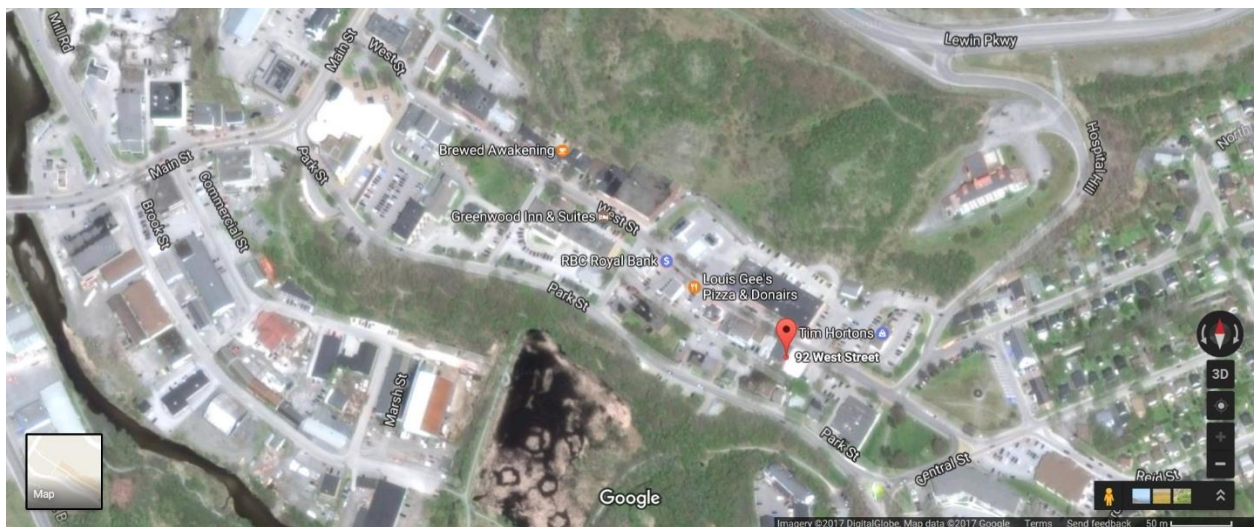
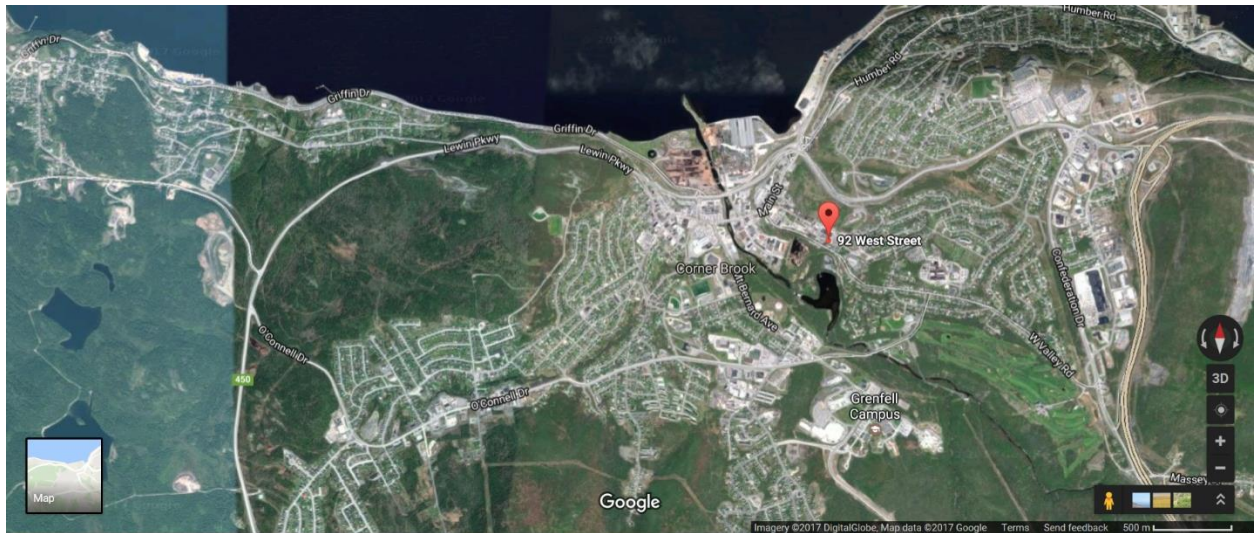
Prepared by: _____

EMERGENCY TELEPHONE: INFOTRAC 800-535-5053

Registration
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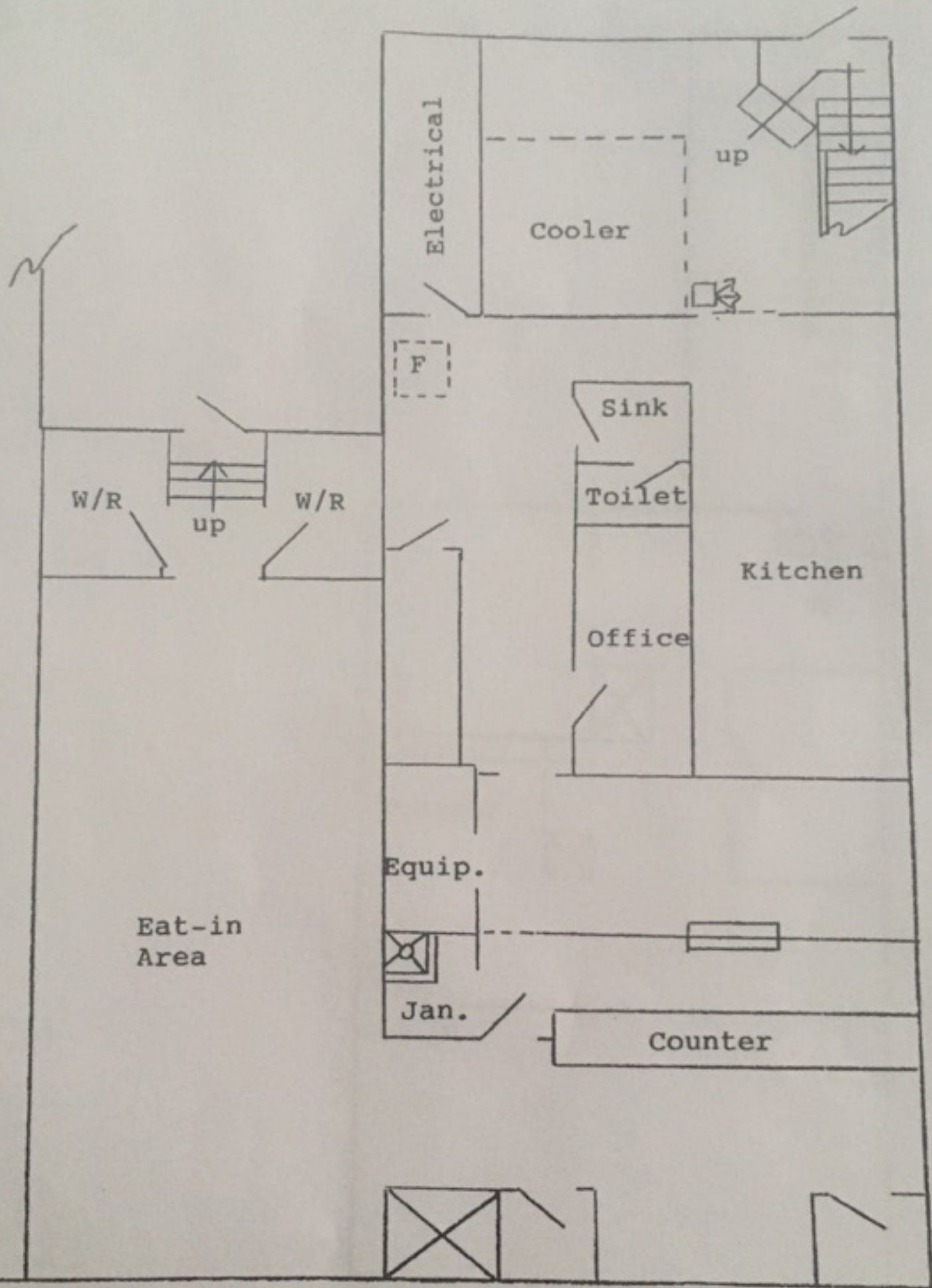


Registration
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Floor Plan

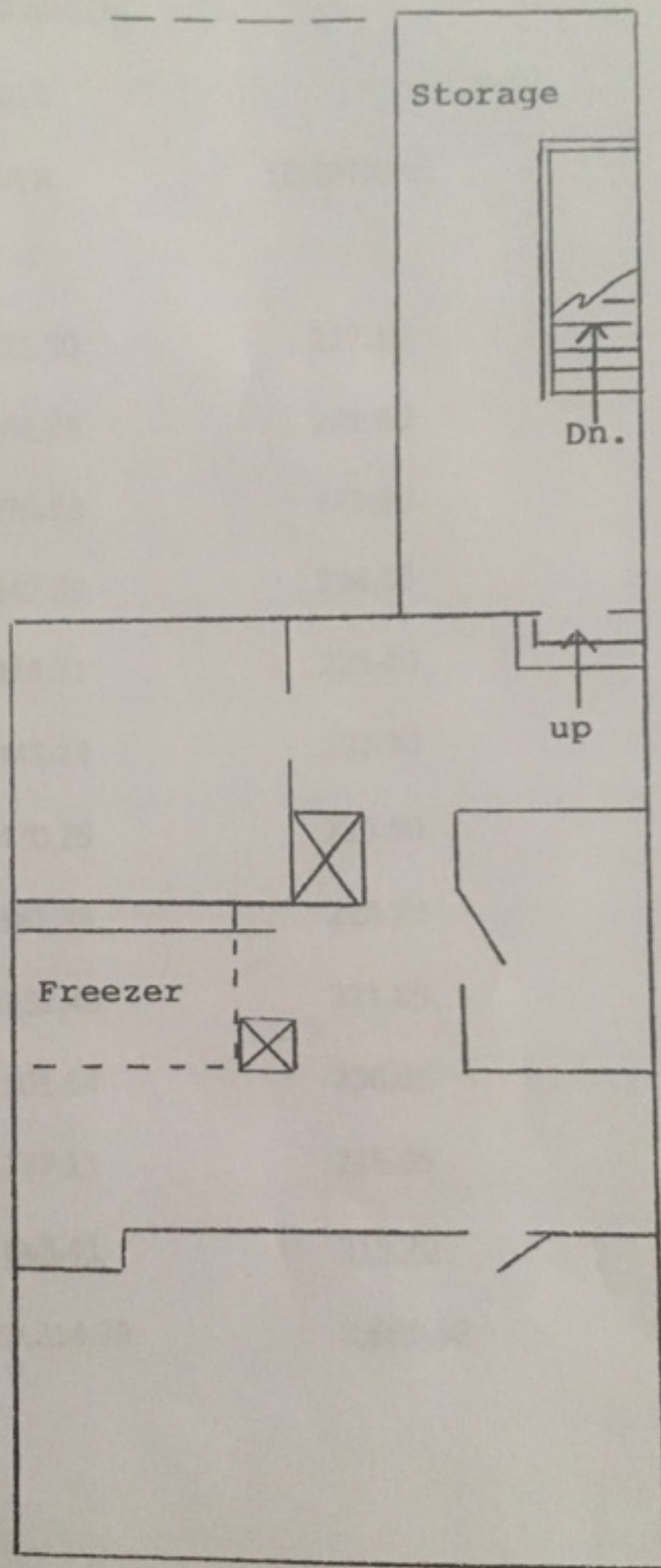
APPENDIX "D"



1ST. FLOOR

Floor Plan

APPENDIX "D"



2ND. FLOOR