Environmental Assessment Registration: Freshwater Kennedy Farm Abattoir

Submitted by

Kennedy Farm Inc.

July 2023

Location of the Abattoir:

Ridge Road, Freshwater, NL

Chief Executive Officer:

David Kennedy

Principal Contact Concerning the Environmental Assessment:

Name: David Kennedy
Official Title: Owner

June 28, 2023

To Whom it may concern,

Please accept this Environmental Assessment Application prepared for Freshwater Kennedy Farm Abattoir in Freshwater, NL.

As seen within this application, the composting pad planned for the Freshwater Kennedy Farm Abattoir is paramount to the success of my Turkey Farm Operation. I am aware of the risk involved in such an undertaking and I am fully committed to avoid any risk to the environment as well as ensuring the building will be situated away from any water source, households and human presence and the composting pad will not attract rodents or pests.

I will ensure that best practices and methods will be used to minimize any harmful effects. The composting pad will be located approximately 100 m from the abattoir on the current farm.

Construction will take place once the application is approved and used during the next applicable harvest in late July – early August.

If you have any additional questions or comments, please feel free to contact me.

Yours in Farming
Owner/Operator

David Kennedy

1.0 Proponent

Name	Kennedy Farm Inc.
Address	Ridge Road, Freshwater Conception Bay North

2.0 The Undertaking

Purpose:

Our purpose is to construct a composting pad so the turkey offal from Kennedy's Turkey Farm can be disposed of in a safe and applicable manner.

Kennedy's Turkey Farm has a Service NL Certificate of Approval ***(Appendix A)*** and an onsite White Meat Abattoir license *(**Appendix B**)* and in 2022 was disposing of the offal at the Viking Fur Mink Farm in Trinity Bay.

Kennedy's Turkey Farm had a good 2022 but expenses incurred disposing of the offal properly made a financial impact on the business as the vats were shipped the 95 km return trip 25 times in 2022.

2.1 Name of the Undertaking: Freshwater Kennedy Farm Abattoir

Kennedy's Turkey Farm took ownership of Noel's Turkey Farm which operated at the same location since 1991 and other previous properties since 1972.

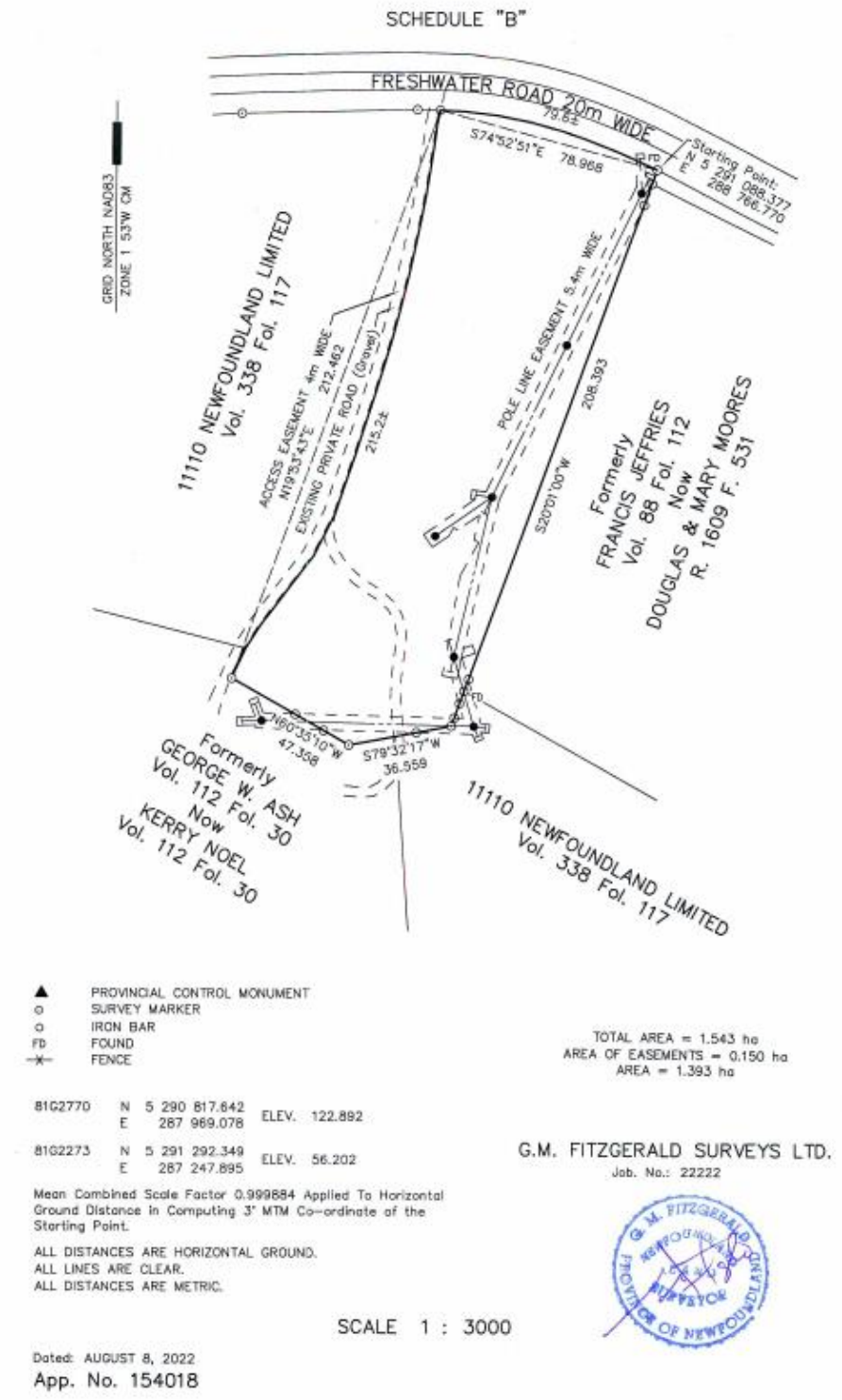
Kennedy's Turkey Farm is on private land which has a secured titled, and/or purchased by the previous owners, Mr. Kerry Noel. The Farm raises imported day old poults from Ontario so that quality local white breasted turkeys enter the NL Food Supply.

(**Appendix C – Kennedy Farm Survey)**

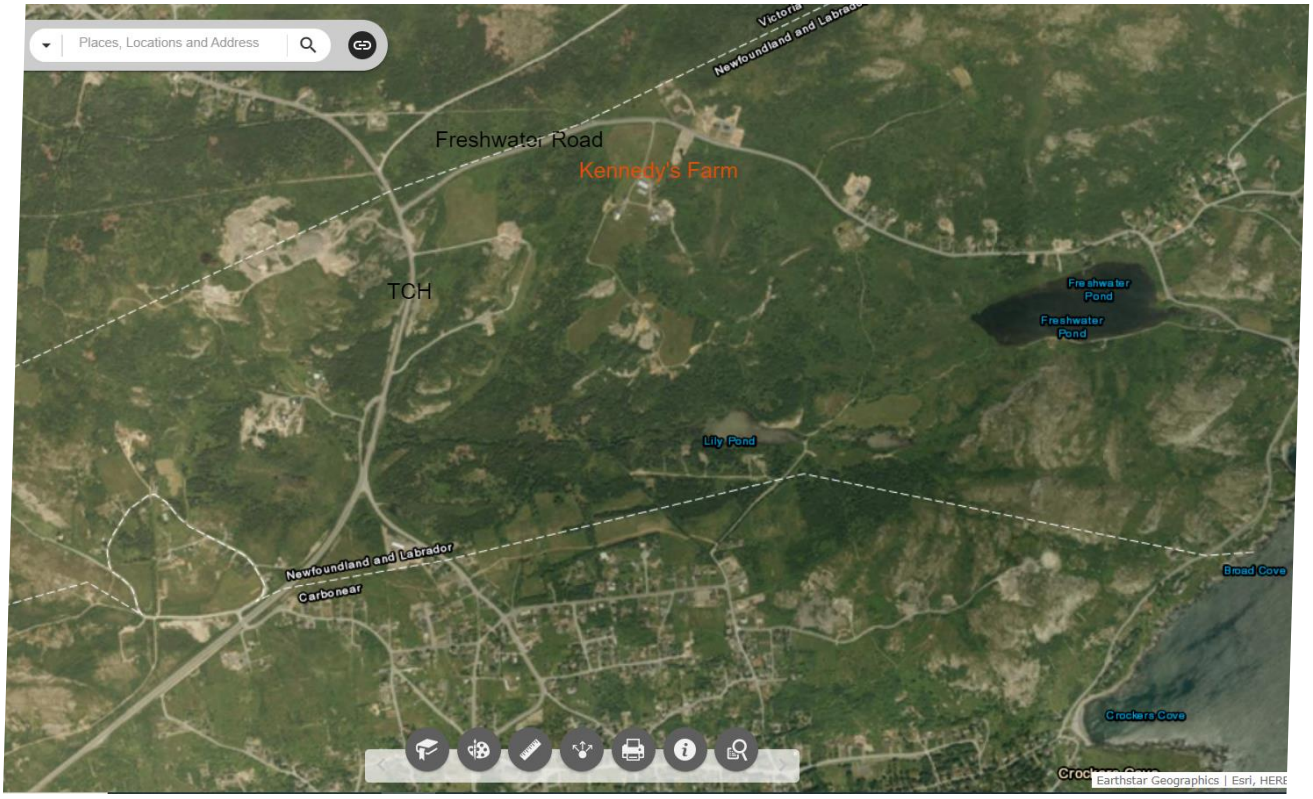
Kennedy's Farm Land was purchased from Noels (11110 Newfoundland Limited),
Crown Land Title: 154018
Volume Number: 338
Folio Number: 117

Geographic Location

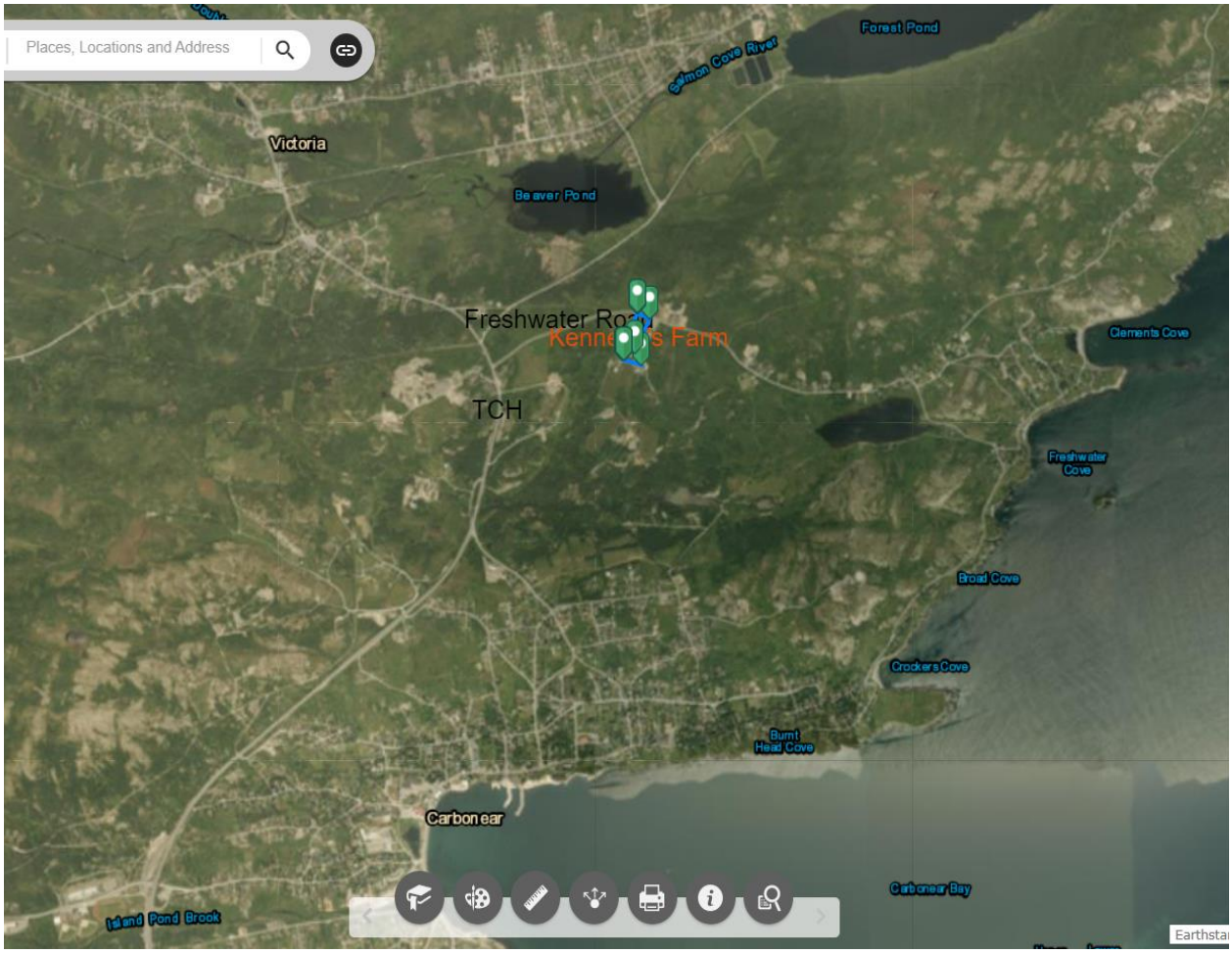
Kennedy's Turkey Farm Survey



Map - Location of Kennedy's Farm Abattoir



Map - Surrounding Communities:
Town of Victoria - boundaries to the North/West
Town of Carbonear - boundaries to the South/West
Local Service District – boundaries to the East



3.0 Description of the Undertaking

Kennedy's Turkey Farm Abattoir includes a 30' x 60' abattoir. The abattoir has a holding tank for poultry, a scalder, a poultry plucker, an evisceration table, holding tanks. The birds are shocked, then hung before being scald. Once scald the birds are plucked and eviscerated and placed in the holding tank for 4-6 hours in cold water.

The other section of the Abattoir is a packaging section where turkeys are packaged and weighed. Once bird are chilled they are dried and cleaned for packaging and weighing.

The final section of the Abattoir has a small 12-16 glass freezer that freezes the birds before they are shipped the company freezer off site.

The Composting Pad

The windrow type composting:

- Requires no electricity in the composting process which be on a concrete slab situated on the Farm, located at Ridge Road, Freshwater, CBN, NL. The parallel windrows will be sufficiently spaced where the material will be periodically turned mechanically with a tractor.
- All material will be dumped and rotated on the composting pad with a tractor.
- Requires no water use as the material does not require water in the composting process.
- The pad will be constructed on farm land and will be used for the proper composting of the slaughterhouse offal, carcasses, dead birds and poultry feathers from all poultry processed on the Farm. The organic waste will be properly mixed with wood chips, chafe and/or saw dust to achieve optimal mix for best particle size distribution, pore size for best aerobic activity, initial water content, and optimal windrow special dimensions.
- All material is collected in the Abattoir during the harvest:
    - All feathers collected from the plucker and placed in a vat outside the Abattoir door.
    - All material from the gut is collected at table side and placed in a plastic bucket. The buckets are also dumped in the fish vat outside the door.
    - At the end of each day, the fish vat of material is dumped onto the carbon base and covered on the composting pad by a tractor
    - Any deceased poultry removed from the barns will be placed directly onto the carbon base on pad and covered with the carbon material.

Use of Composted Material: All material which has been completely composted through the composting process will be spread on the hay fields via the manure spreader.

- Any poultry brought onto Kennedy Farm from any other NL Farm will follow a strict procedure. No people or outside poultry can enter any other building on the property. Outside animals will only be slaughter and harvested at specific times, outside the times utilized by Kennedy Farm staff for our turkeys.
- Outside farmers will only be able to drive their poultry to the abattoir with the poultry in a safe applicable holding container.
- Outside poultry will not at any time be in contact with any live Kennedy Farm animals.
- *The acceptance of outside poultry will only be done when poultry diseases/infection level are at an acceptable within NL and the Avalon Peninsula.*

Construction of the Pad:

- Land which is currently level will have shale and crush stone added then tampered before the footings are constructed.
- Once the footings are complete, a 24” knee wall will be created on the footing.
- Once the knee wall is set, a gasket will be placed around the perimeter before the floor is poured.
- The pad will be completely enclosed, each door closed or a steel screen covering the doors to prevent birds and rodents from entering the site.
- There will be rodent traps on the outside and inside perimeter of the pad to capture any smaller rodents around the facility.
- Any odors from the facility will be controlled by adding extra carbon base and coverings on the material. Odors will not be present unless extra moisture persists.
- Any issue flies will result in fly traps being used.
- Any material which spills outside the pad will be collected and placed onto the pad.
- Runoff/Leachate will not be an issue as all vats will be dumped onto the carbon base and covered with additional carbon material. Additional carbon base will be on in case extra liquid is present.

Figure 3.0 Compost layout.

- Three windrows (24’ long x 5’ width – separate 3’ each)

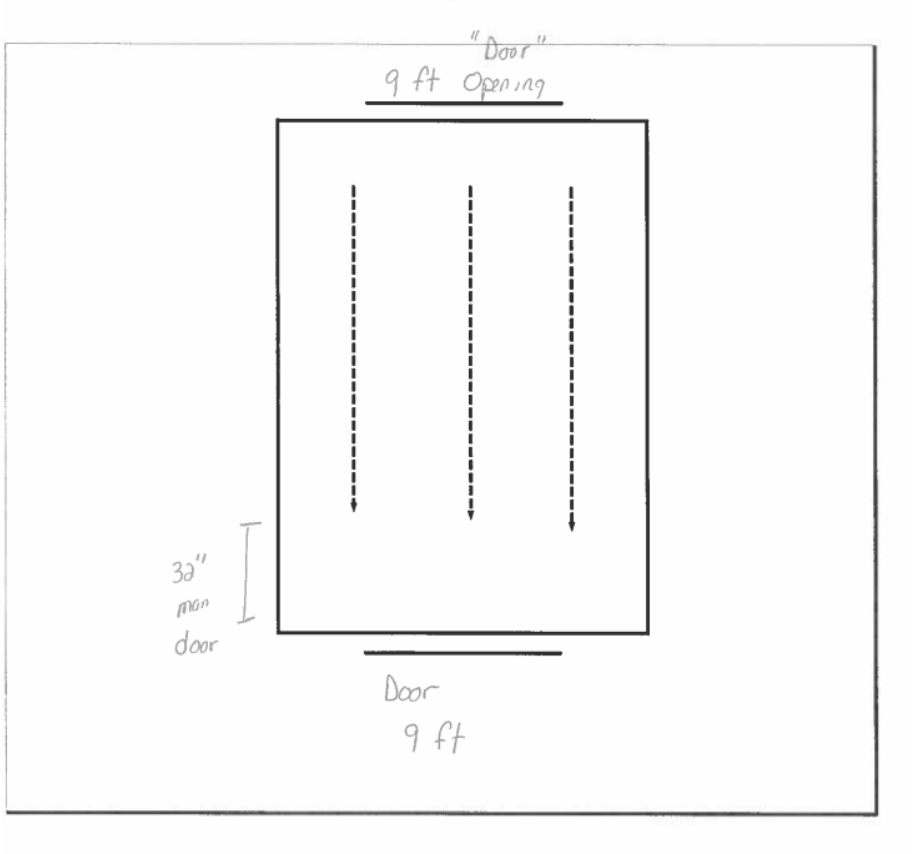
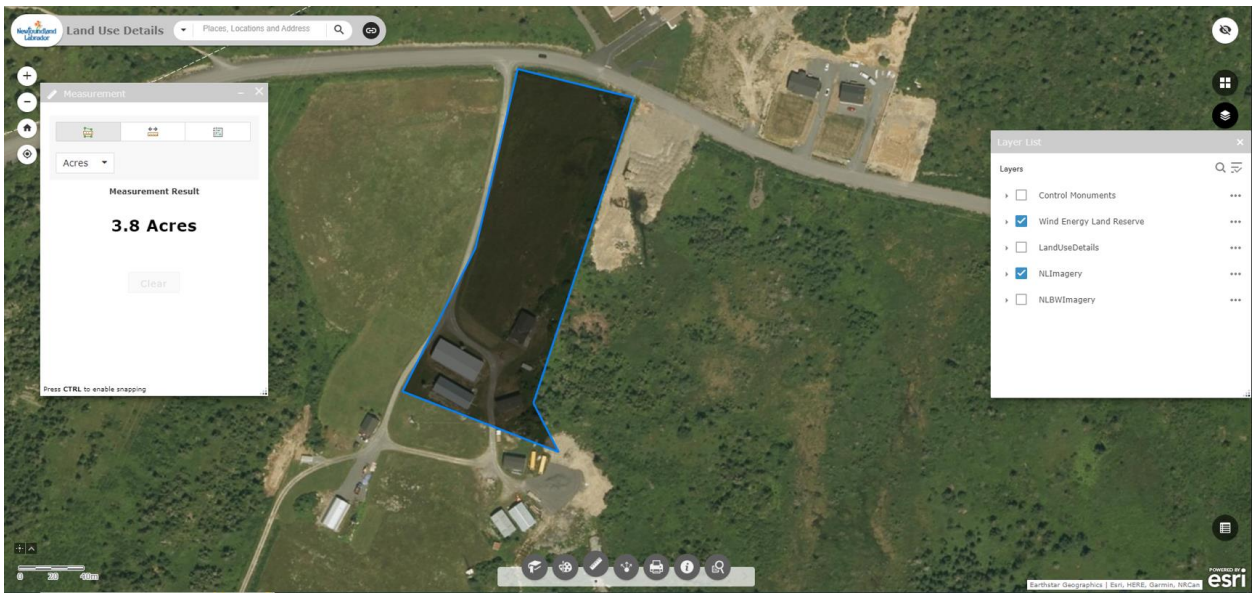


Figure 3.0 Gov NL GIS Picture of the Site.



Planned Expansion of Animals:
Kennedy's Turkey Farm imported 4500-day old poults in 2022. The business plan is to import additional birds as the local market is established in NL to final count of 8000 turkeys by 2025.
Kennedy's Farm does hope to add goats, sheep and some cattle to its farm in the future as a means to providing the different red meats to meet the local supply demand.

- No red meat animals, when added to the farm with be butchered on the Farm. Any animals processed for meat will be in a local licensed red meat abattoir and butcher shop. Kennedy Farm Inc. only has a white meat slaughter license from Service NL.

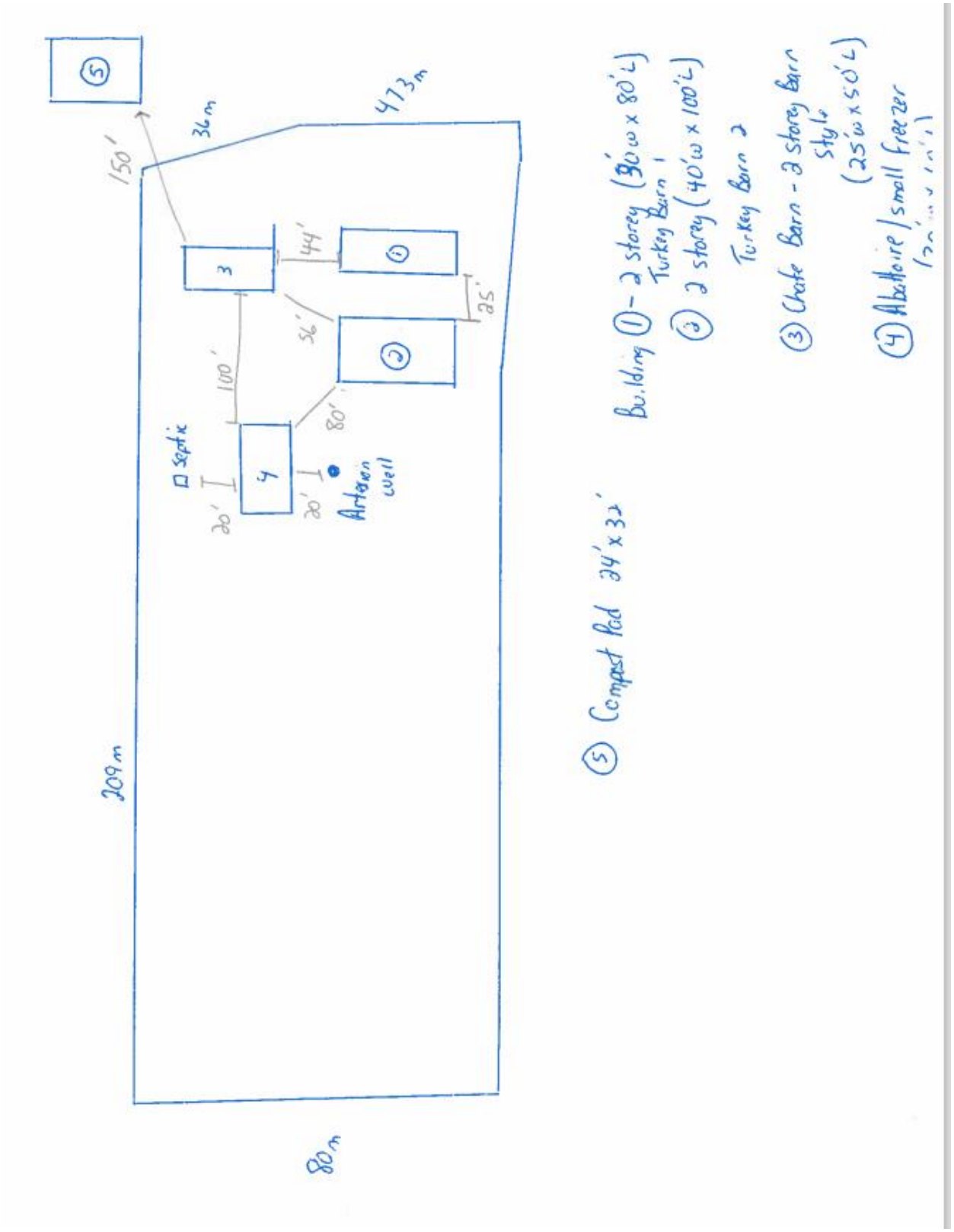
3.1 Physical Features:

The Abattoir is divided into three section.

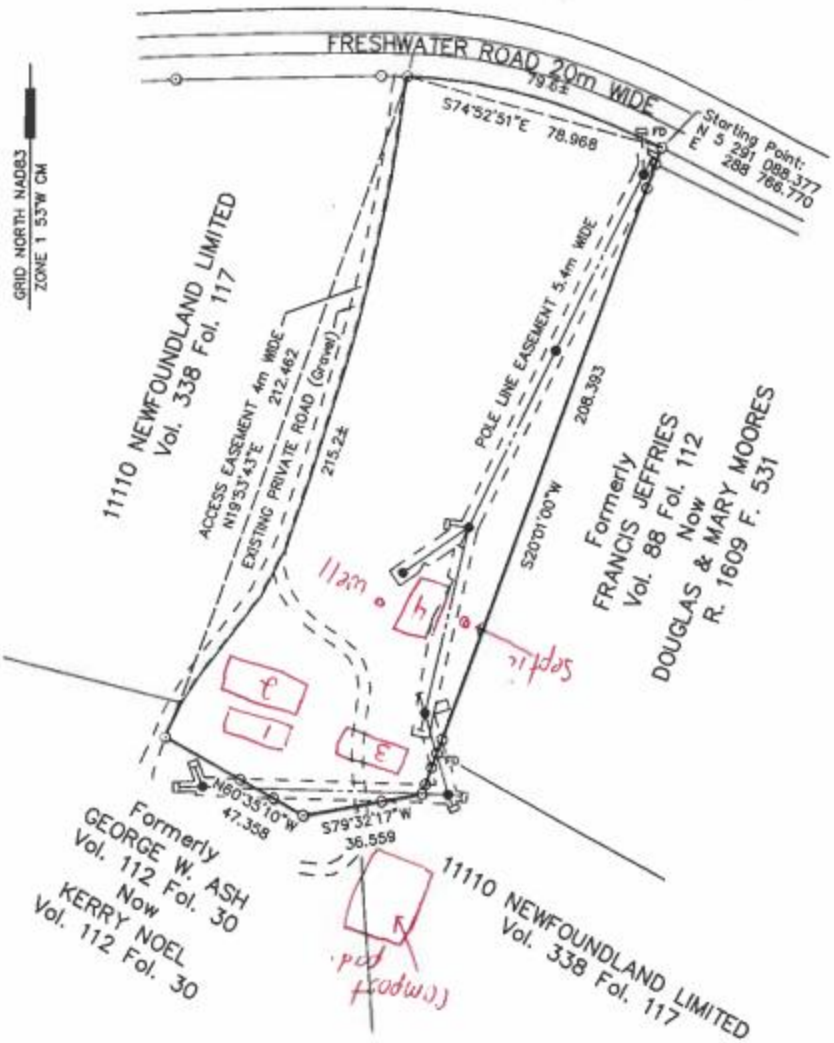
Section A - Poultry shackle area, scalding tank, poultry plucker, evisceration table, and water holding tanks.
Section B - The packaging/weighing area.
Section C - Electrical – freezer area.

The Composting Pad:
The area of the composting pad will be on ground which has been back-filled, is surrounded on the east, and north by a treed area. The west and south opens to the current landed owned by Kennedy's Farm.
Kennedy's Turkey Farm currently occupies 3 acres of land: and is currently occupies Turkey Barn A: two-storey 40' x 100', Turkey Barn B: two-storey 30' x 80', Chafe Barn 25' x 50' and Abattoir.

Kennedy Farm – Building Lay Out



SCHEDULE "B"



▲ PROVINCIAL CONTROL MONUMENT
o SURVEY MARKER
o IRON BAR
FD FOUND
FENCE

TOTAL AREA = 1.543 ha
AREA OF EASEMENTS = 0.150 ha
AREA = 1.393 ha

81G2770 N 5 290 817.642 E 287 969.078 ELEV. 122.892

81G2273 N 5 291 292.349 E 287 247.895 ELEV. 56.202

Mean Combined Scale Factor 0.999884 Applied To Horizontal Ground Distance in Computing 3° MTM Co-ordinate of the Starting Point.

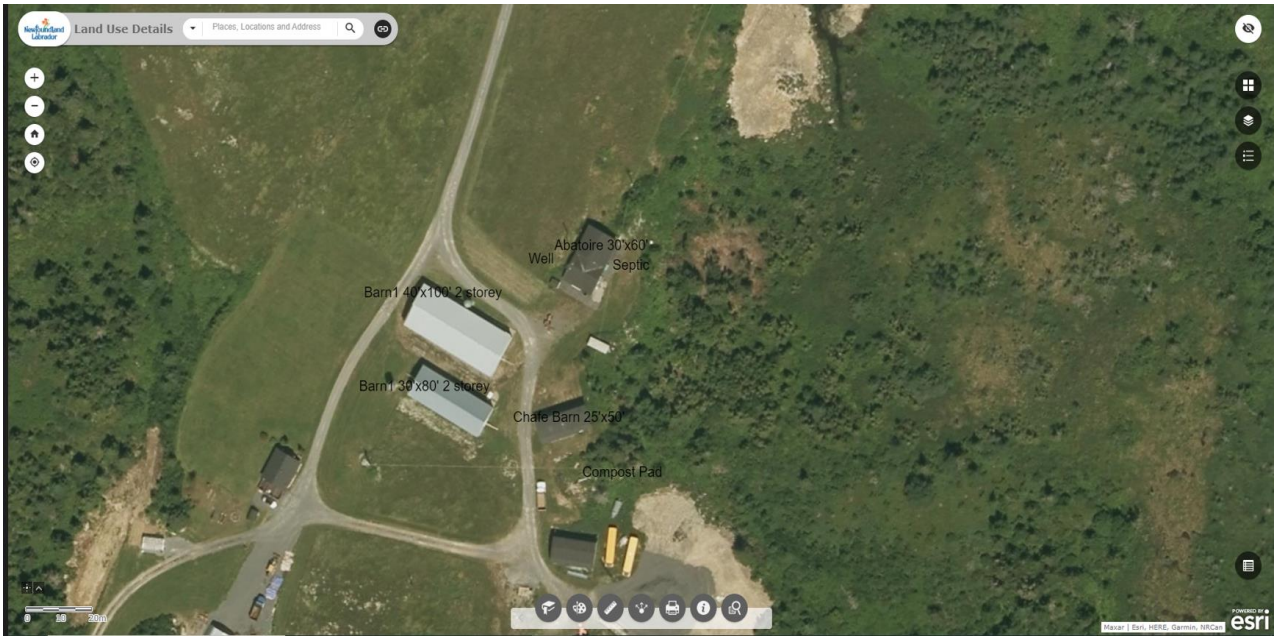
ALL DISTANCES ARE HORIZONTAL GROUND.
ALL LINES ARE CLEAR.
ALL DISTANCES ARE METRIC.

G.M. FITZGERALD SURVEYS LTD.
Job. No.: 22222

G. M. FITZGERALD NEWFOUNDLAND AND LABRADOR LAND SURVEYOR PROVINCE OF NEWFOUNDLAND

SCALE 1 : 3000

Dated: AUGUST 8, 2022
App. No. 154018



3.2 **Electricity**

The Abattoir has an inspected electrical panel with a generator back to be used during electrical failures.

Although no electricity is needed for operation of the composting pad, power can be hooked up with an underground cable from the existing chafe barn. The Abattoir, turkeys' barns and chafe barn currently have a power supply.

3.3 **Septic System**

There is a certified septic system to the Abattoir yet a septic system is not needed for the composting pad.

3.4 **Water Supply**

There is an artesian well which supplies water to the abattoir and turkey barns. Although no water is required for the composting pad, a hose and high-pressure washer can be connected and supplied from the turkey's barns if and when required.

- It is estimated that the farm will utilize $400\ ft^3$ per day processing 140 turkeys.

- Processing requires approximately 60 days for a total use of $24{,}000\ ft^3$.

- Processing requires 10 day sin August, 30 days from mid-September to mid-October, and 20 days in December.

- Bird consumption varies as well as regular consumption for regular cleaning.

** Kenney's Farm plans to install as water meter for late 2023, one for the farm and one to monitor the water consumption in the Turkey Barns only. Thus a better meter reading will be possible in late December 2023.

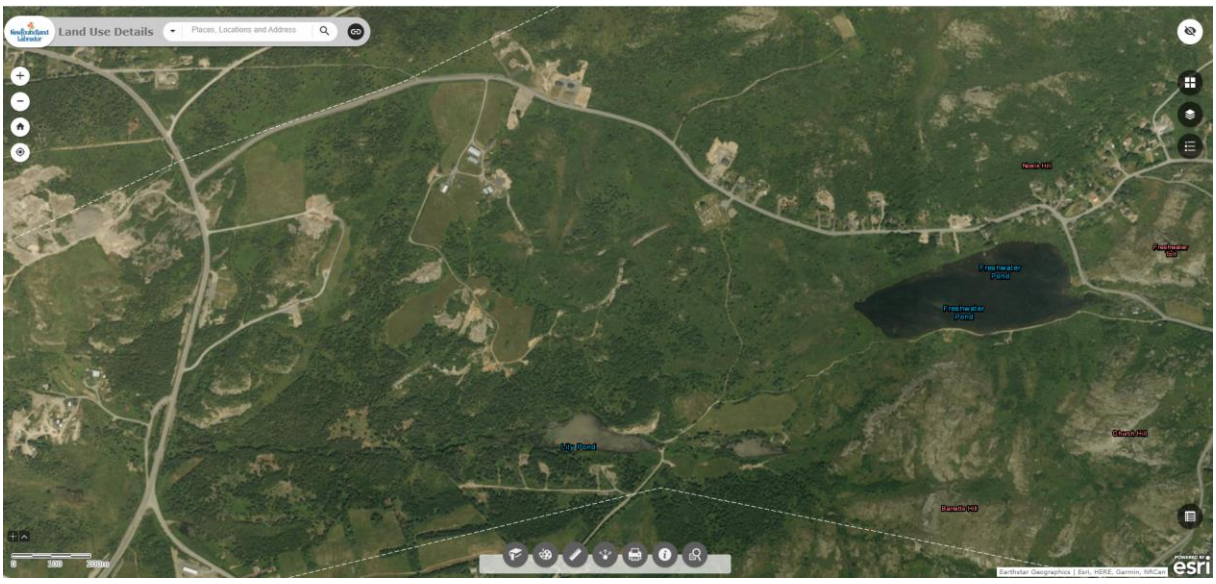
- If any time on farm water contamination is an issue, the pad will not be used until a solution suitable to Service NL is found.
- The knee wall and door thread will prevent any leachate from exiting the compost pad once the material is placed there.

3.5 **Nearby Bodies of Water**

There are no standing local bodies of water near the composting location.

- Lilly Pond is 634 m from the composting pad.

- Freshwater Pond is 1011 m from the Composting Pad



3.6 **Surrounding Properties**

The proposed site will be within the farm. The nearest house in approximately 250 m on the opposite side of Ridge Road.

Adjacent Property Boundaries:

- Southern Property: Ridge Road leading to Freshwater, NL: land granted to Francis Jeffries (currently owned by Garrett Pilgrim)
- Eastern Property: Land granted to Willis Noel
- Northern Property: Noel's Farm (Granted to George W Ash, Crown Titles 154182)
- Western Property: Noel's Farm (Granted to George W. Ash, Crown Titles 154182)

4.0 **Target Start Date**:

The proposed date of construction is spring/summer of 2023; however, this is dependent on the approval of this application.

The first turkey harvest in 2023 will be late-July, so it is hoped that the pad will be operational by then.

4.1 **Employees:** in 2023 Kennedy's Farm had 3 paid staff. Some contractors were used for electrical and propane services.

The employees are as follows:

Title	Number of Positions	National Occupation Classification Code
Lead-Hand	1	80020
Labourers	2	84120

5.0 **Consumer Need**:

The NL consumer have an appetite for quality, locally raised animal by product free, non-medicated and hormone free turkeys. The household turkey required is in the 12-20 lbs. range while commercial establishments require 25+ lbs. due to higher meat yield and ease of hassle involved when cooking smaller birds.

As the cultures of NL expand the need to meet the dietary requests has resulted in a bigger market for local goat and sheep products. Kennedy's Farm is hoping to add goats and sheep as a means to providing additional food to the NL Supply Chain.

5.1 **Secondary Processing** – Kennedy's Farm plan to expand operation for secondary processing in 2026.

6.0 Environment Considerations:

There will be no potential threats to the environment, and perhaps even less considered the travel required to get the offal to the composting pad. By utilizing an onsite composting pad, the need to truck two fish vats full of offal and feathers 45 km (90 km return) to Viking Farm is not required. Thus, reducing the chance of a spillage of material

Waste

All processing follows the guidelines as set out by the Government of NL.

The waste will be collected during the butchering process and stored in vats until the end of each day. The vats will then be dumped onto a carbon base layer (ex: chafe, sawdust, wood chippings) and rotated accordingly to ensure composting.

All disposals will follow the guidelines as set by the Pollution Prevention Division as well as the Waste Management Division of the Department of Environment and Climate Change.
**PLEASE SEE THE ATTACHED ABBATOIR OFFAL COMPOSTING PROCDEUCRES in Appendix D.

Specific Risk Material (SRM):

During the butchering of poultry there is no SRM that would prevent the waste from being composted as poultry does not have SRM. If any issues arise, all rules and regulations as set by the Pollution Prevention Division of the Department of Environment and Climate Change.

Animal Waste Amounts:

In 2022 approximately 4250 turkeys were harvested. It is hoped that the total yearly harvest will expand to 8000 turkeys by 2025.
All waste was trucked to Viking Fur Farm in 2022 with no issues. The same compliance is expected in 2023 and beyond. Yet the cost in fuel, employee hours and vehicle maintenance as well as the carbon foot print of transporting the material is not financially prudent.

Waste Management Plan: Please see Appendix D

Composting Procedures.

Offal, feathers and deceased birds will be removed from farm and abattoir daily and placed on a carbon base lase with additional carbon material used as needed to reduce odors or dry up any dampness.
The entire pad will have a knee wall which will prevent water run-off.
The concrete pad will be surrounded by walls and covered with a roof to prevent rain and snow from dampening the compost.
All waste which is spilt in transition to the composting pad will be collected immediately and placed on the pad on the applicable carbon base.

Impact and Control of Pests:

All usual precautions will be taken daily to ensure that pests are controlled. A pest control program which includes regular checks to bait traps for rodents and fly traps for insects.
Pest control services will be contracted to check the farm regularly for rodents and pests and initiate immediate responses.
All waste will be added to the compost daily and covered with a carbon base.

Off Farm Poultry:

Kennedy's Farm will process poultry from neighboring properties, if the properties are inspected and do not appear to have any diseases etc. All machinery will be properly sanitized once the outside poultry is complete.

- The Outside poultry harvested will depend with all consideration to Bird Flu/diseases advisories from Government Agencies with all necessary precautions taking place.

7.0 Construction Process:

Construct a 32' x 40' concrete pad, with 1.5' knee wall around the building, 8' foot walls on the knee wall, gable trusses, shingled roof.
The pad will be one big open pad and compost will be laid in windrows where it can be rotated every few days.
August 1, 2023 – prepare ground work, with concrete slab and remaining construction to take place in a timely fashion by August 15, 2023.

8.0 Funding:

The total projected cost is $60,000.

Sources of Funding:

- Farm Credit Canada, NL 103-6 Mount Carson Avenue, Mount Pearl, NL A1N 3K4.
  (709)772-4635, email: jason.codner@fcc-fac.ca

- Canadian Agriculture Partnership Program Development of Fisheries and Land Resources
  Agriculture Business Development Division, P.O. Box 2006, Corner Brook, NL, A2H 6J8
  Fax: (709)637-2589, email: CAP@gov.nl.ca

9.0 Decommissioning:

If the abattoir is decommissioned and has to be eliminated from the farm:

- An environmental consultant will be contracted to implement a plan to ensure that the land is remediated to its original state with no contaminants remaining.

Appendix A:

Service NL Turkey Farm Certificate of Approval

Newfoundland Labrador

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
DIGITAL GOVERNMENT AND SERVICE NL

CERTIFICATE OF APPROVAL

Pursuant to *the Environmental Protection Act* SNL 2002 cE-14.2, Section 78

Issued: **September 29, 2022** Approval No.: HG-WMS22-10-001A

Expiration: **September 29, 2023**

Proponent: Kennedy Farm

Attention: David Kennedy

Re: **Waste Management System –Turkey Farm – Freshwater Road, Carbonear**

Approval is hereby given for the operation of a waste management system for Kennedy Farm located at Freshwater, NL as per the September 23, 2022 application.

This Certificate of Approval does not release the holder from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies. Approval from Digital Government and Service NL (the Department) shall be obtained prior to any significant change in the design, construction, installation or operation of the facility, including any future expansion of the works. This Certificate of Approval shall not be sold, assigned, transferred, leased, mortgaged, sublet or otherwise alienated by the proponent without obtaining written prior approval from the Department.

This Certificate of Approval is subject to the terms and conditions as contained in Appendix 'A' attached hereto, and may be revised from time to time by the Department. Appendix 'A' forms part and parcel of this Certificate of Approval. Failure to comply with any of the terms and conditions may render this Certificate of Approval null and void, may require the proponent to cease all activities associated with this Certificate of Approval, may place the proponent and its agent(s) in violation of the *Environmental Protection Act*, SNL., 2002, c. E-14-2, and will make the proponent responsible for taking such remedial measures as may be prescribed by the Department. The Department reserves the right to add, delete or modify the terms and conditions to correct errors in this or revoke this Certificate of Approval or to address significant environmental or health concerns.

D Shute for

MINISTER

Appendix B – White Meat Slaughter License

Government of Newfoundland and Labrador
Department of Fisheries, Forestry and Agriculture

MEAT INSPECTION ACT (NEWFOUNDLAND AND LABRADOR)
LICENCE FOR THE OPERATION OF A MEAT PLANT

WHITE MEAT LICENCE #22-025

Under the *Meat Inspection Act (Newfoundland and Labrador)* and the Regulations, and subject to the limitations thereof, this licence is issued to:

David Kennedy

carrying on the business as

Kennedy Farm Inc.

to engage in the business of operating a Meat Plant at

Freshwater Road, Freshwater, CBN, NL

This licence continues in force until it is suspended or revoked in accordance with the regulations. This licence is not transferable and withdrawal from the program will require 30 days advance notice to the Director.

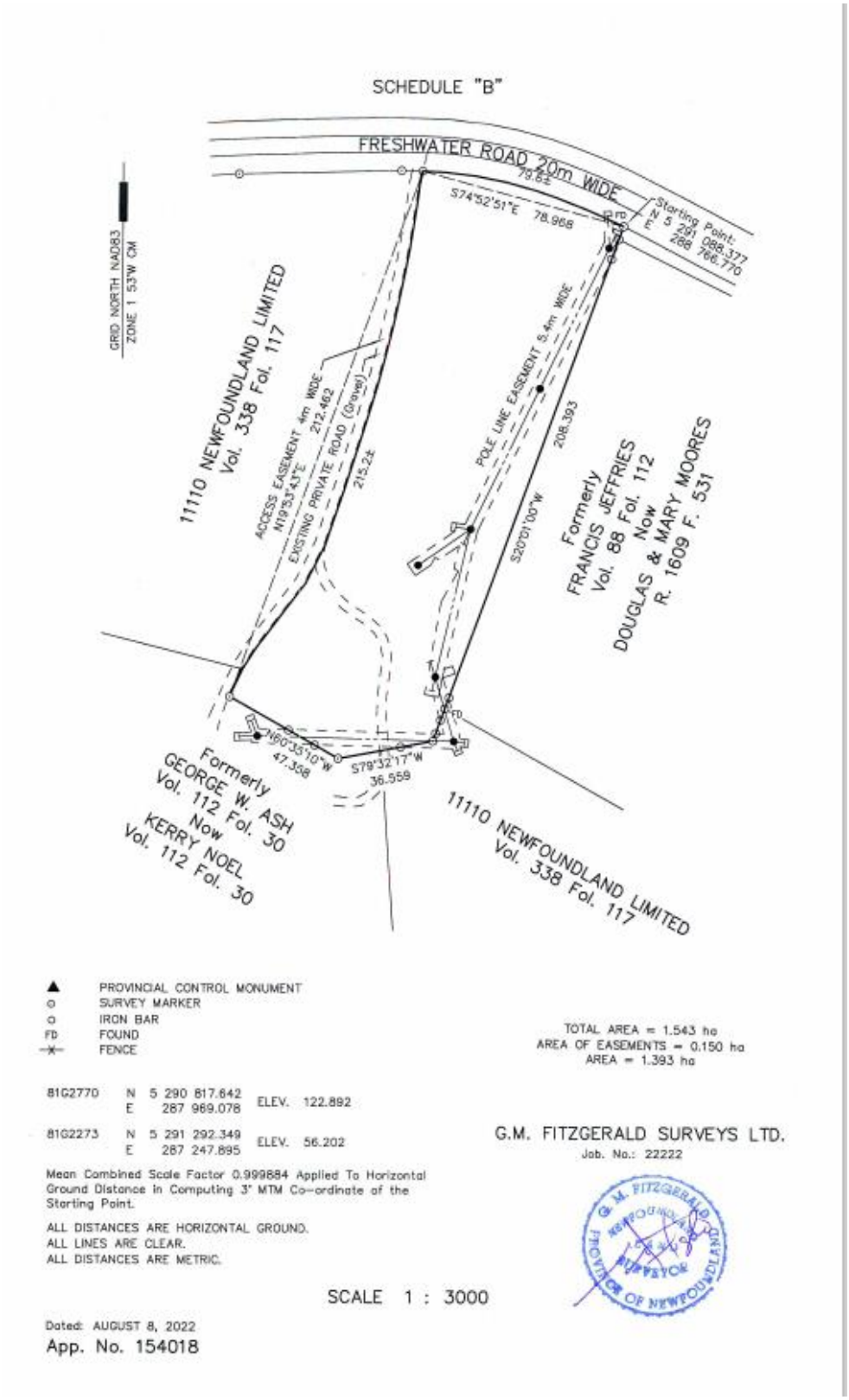
Plant number 25 is assigned to this Plant.

Issued at St. John's, NL this 15th day of September, 2022

Beverly Dawe
Digitally signed by Beverly Dawe
Date: 2022.09.16 09:15:28 -02'30'

Director, Animal Health Division

Appendix C – Kennedy Farm Land Survey



Appendix D:

Abattoir Offal Composting Procedure

The composting of abattoir offal, animal mortalities and butcher waste is common practice in the livestock and related industries throughout North America. Composting is often the choice for waste disposal for farms, abattoirs and butcher shops because it is cost effective and has a low environmental risk, when done properly. The result of the process is that the waste is disposed of in a safe, environmentally friendly manner and as a bonus, the resulting compost is a great soil amendment and an excellent source of fertilizer. It is high in nitrogen, phosphorous, potassium and micronutrients. The compost is safe to use for forage production and potentially for many other crops.

This document will discuss on-site collection of, composting of and use of the organic waste proposed to be created at the Kennedy's Farm Abattoir in Freshwater.

Waste generated from the proposed facility, which will involve processing of 5500 turkeys and 200 geese/ducks on an annual basis. A total weight of 40,000 lbs. of Non-SRM and is estimated to be produced annually. The offal will be composted as per *Environmental Standards for Compost Facilities Guidance Document (GD-PPD-048.6)*.

The Kennedy's Farm Abattoir proposes that it would dispose of the Non-SRM by composting it. According to the Cornell Waste Management Institute, it typically takes approximately 15 yards of carbon (sawdust) to compost 1 Imperial ton or 16.5 yards per Metric Tonne of offal. Supply of sawdust does not seem to be an issue at this time, however, if supply becomes an issue, the finished compost or another carbon sources can be used in building of the new piles. Sources for carbon, such as shredded cardboard, waste hay, waste silage, manure pack, wood chips, peat, etc. have also proven to be acceptable.

Separation of Abattoir Waste:

At the Kennedy's Farm Abattoir, the solid waste will be Non-SRM Offal – The Non-SRM material will be collected and stored on site prior to transport to a designated area on the farm where it will be composted.

Composting Process:

The Kennedy's Farm Abattoir will compost its offal in a building with 2 windrows. The Non-SRM offal will be composted separately using the process outlined below.

Non SRM Offal Composting Process:

The building where the offal is composted will have 2 windrows within it. These will be 1 primary windrow and 2 secondary windrows. Composting will be carried out using the following process:

1) A layer of sawdust or course wood chips 60 cm (24”) deep by be laid out across the bottom of one of the primary windrows.
2) A layer of offal 30 – 37.5 cm (12-15”) deep will be spread on top of the sawdust. The offal should not be placed less than 30 cm (12”) from edge of the building.
3) Cover offal with a layer of sawdust/wood chips 30-45 cm (12-18”) deep as soon as possible on the same day.
4) Add a second layer of offal in the same manner as the first and cover this with a layer of sawdust/wood chips 30 - 45 cm (12-18”) deep as soon as possible on the same day. Repeat this process until the windrow is full.
5) The final layer of sawdust should measure 60 cm (24”) deep to prevent any odors from being emitted. The windrow should reach a temperature of 40-65^{o}C at this stage.
6) After filling the first primary windrow repeat steps 1 through 5 in the second primary bin. This windrow will be filled while the first windrow composts.
7) Once the first primary windrow has reached a temperature of 40^{o}C for seven (7) consecutive days and then begins to drop the pile is ready to be moved to the secondary bin. At this point the pile should contain bones and minimal soft tissue. This should take approximately 3 months.
8) Once the composting process is complete in the first primary windrow, the second primary windrow is close to being used, transfer the material to the secondary windrow turning and mixing it in the process.
9) At this point the second primary windrow should be filled and going through the initial composting process. The first primary windrow can be filled again using the first 5 steps of the process.
10) The compost in the secondary windrow will take approximately three (3) months to finish composting. Monitor the pile regularly, when the pile has reached a temperature of greater than 55^{o}C for more than 7 days and then drops, it has most likely finished composting. Check the pile to ensure there are no signs of soft tissue left. If there are no signs of soft tissue the bin can be emptied and the compost stored on a pad outside these building or spread on the field like manure. Large bones should be separated from the pile prior to spreading, the bones can be used for the base of new piles to aid in aeration.
11) The Process above will be repeated as more offal is produced.

Notes:

- If any liquid seeps out of the pile, scrape it up and put back in the pile.
- Residuals must be well covered to ensure that odors are reduced, heat is trapped in the pile and vermin/unwanted animals are not attracted to the windrow.
- The pile should not be turned too early as this can release odors and attract vermin if the offal is not sufficiently broken down. Generally, a pile can be turned after 3 months. Turning will speed up the compost process. Timing of the first turning may vary as composting times may be affected by things such as air temperature.

Monitoring the Piles:

The following actions will be taken to monitor the piles to ensure that they are composting correctly:

1) The temperature will be checked at each visit with a minimum or 2 visits weekly. After three (3) days the pile should have reached a temperature of 49-77 ^{o}C (120-170 ^{o}F) which will cook and decompose the offal as well as reduce harmful pathogens in the pile.
2) A log that records of the weight of offal added to the pile, temperature of the pile, any odor, presence of leachate, presence of scavengers and any unexpected event that occurs will be filled out at each visit. This allows the operator to ensure that sufficient temperature has been reached, acts as a record to deal with any complaints that arise and assists in adjusting the process, if necessary. These logs will be kept with the Kennedy's Farm Abattoir's records.
3) Monitoring the pile temperature regularly is essential to ensuring that the compost process is happening correctly. Temperature is an indicator of the rate of decomposition within the pile and is essential for the destruction of pathogenic bacteria. Optimum temperature is between 40-60oC (104-140oF). Temperature will be checked and recorded at each visit.
4) A sample of the finished compost will be collected from each pile and will be sent to the Provincial Soil, Plant and Feed Laboratory on Brookfield Road in St. John's when the composting process is completed. The samples will be analyzed for nutrient content, PH, Organic matter, etc. Additionally, samples of the finished, static compost pile will be sent to A&L Canada laboratories in London Ontario or another comparable accredited lab., to ensure that the finished products meets CCME standards for compost quality. The results of the analysis will be kept with the Abattoir records.

Use of Non-SRM Compost:

After the composting process is complete, the compost will be handled and used in the following ways:

1) After the composting process is complete, any large bones should be separated from the pile and used as part of the base for the next compost pile. These will add structure and help aerate the pile. The bones will eventually will break down.
2) The finished compost may be used as part of the carbon source in construction of the new piles. There should be no more than 50% compost in the carbon mix. Doing this will help establish the microbial community in the new pile which will speed up the composting process.
3) The finished compost will be spread on the farm forage fields at appropriate times of the year. The application rate will be determined with the assistance by the Provincial Soil Specialist.
4) Ideally, the compost will be spread immediately after it is finished. This may not be practical or even an option depending on the time of year that a pile finishes. If the compost cannot be spread immediately after it is finished, it can be stored at either the compost facility on a storage pad or for a short time on the field in which it is to be spread.
5) I will have the compost tested for Salmonella and to ensure it is safe for proper use and will ensure that no compost is applied 120 days before they harvest any vegetable crops.

Pathogen Control:

Harmful pathogens will be killed when the temperature throughout the pile reaches 55^{o}C (131^{o}F) for three (3) consecutive days. This is monitored 15-20 cm (6”-8”) from the top of the pile. Turning the pile when the temperature drops below 38^{o}C (100^{o}F) is recommended to stimulate the composting process and raise the temperature again. Repeated cycles over 55^{o}C (131^{o}F) will further reduce the presence of harmful pathogens.

Composting Times:

The windrow will require 4-6 months to ensure it is properly degraded. This may be change based on environmental conditions such as air temperature.

General Notes:

The following are some general practices and notes related to composting offal**:**

- Previously finished compost can be added to pile to speed up establishment of microbial community thereby speeding up the compost process.
- Ensure the site is kept clean to deter scavengers, keep odors to a minimum and ensure good neighbor relations.
- If sawdust supply becomes limited other sources of carbon that can be used to build the pile/windrow are spoiled silage, dry bedded pack manure, shredded cardboard, finished compost, leaves and other high carbon organic material.

Troubleshooting Table:

Symptom	Problem	Recommendation
Pile fails to reach temperature	Material is dense. Not enough air circulation.	Rebuild pile with more chunky carbon. *If it is an odor sensitive area and cannot move pile, let process run its course and turn in 4-6 months.
	Pile too small.	To heat pile needs to be greater than 4'x4'x4'
	In winter, too much ice on pile.	Keep ice out of pile. Add warm manure and cover.
Insect and animal attracted to pile.	Meat waste not covered well.	Cover carcass or residual well with carbon.
	Leachate puddling on pad surface.	Pad should have a 1-2% slope and fill holes in to avoid standing water.
High pathogens.	Need to ensure biosecurity at facility.	After 4-6 months of composting turn pile for 2-3 weeks make sure temperatures are between 40-60 ^{o}C (104^{o}-140 ^{o}F)
Carcass uncovered.	May not have lanced rumen or other large organs resulting in carbon being thrown off the pile.	Lance large organs before animal is put into pile.
Standing water/surface ponding.	Inadequate slope.	Establish a 1-2% slope with proper grading.
	Improper windrow/pile alignment.	Improve drainage, add absorbent. Run windrows/piles downslope not across.
	Depression in high traffic areas.	Fill and grade

Taken from: *Natural Rendering: Composting Livestock Mortality and Butchering Waste*, Cornell Waste Management Institute

References:

Anonymous, 2002, *Composting of Slaughterhouse Waste Material and Dead Stock*, Meat Technology Update Newsletter 02/5, Food Science Australia meat Industry Services Section, Brisbane, Australia

Anonymous, 2002, *Natural Rendering: Composting Livestock Mortality and Butcher Waste*, Cornell Waste Management Institute, Ithaca, NY, USA

Anonymous, 2011, *Factsheet 4 Compost Solid or Semi-Solid or Semi- Solid Waste-Code of Practice for the Slaughter and Poultry Processing Industries*, British Columbia Ministry of Environment, BC

Anonymous, 2014, *Abattoir Waste and Carcass Disposal Guidelines*, New Brunswick Department of Agriculture and Aquiculture, NB

Anonymous, 2019, *Guidelines for the Site Selection, Operation and Approval of Composting Facilities in New Brunswick*, Department of Environment and local Government, NB

Anonymous, No Date, *Factsheet, Poultry Waste Disposal Methods*, Massachusetts Department of Agriculture resources, Massachusetts, USA

Anonymous, No Date, *Natural Rendering: Composting Livestock Mortality, Key Points of Static Pile Carcass Composting*, Cornell Waste Management Institute, Ithaca, NY, USA

Bass, T, No Date, L*ivestock Mortality Composting For Large and Small Operations in the Semi-Arid West*, Montana State University Extension, Bozeman, MT, USA

Hutchinson, M, Seekins, Dr. B, King, M and MacDonald, G, 2010, *Sustainable Carcass and Offal Management,* The University of Maine, Cooperative Extension, Orono ME, USA

Nelson, V, 2011, *Large Animal Mortality Composting*, Alberta Agriculture and Rural Development, Government of Alberta, AB

Schwarz, M, Bonhotal, J. and Rozeboom, Dr. D., 2010, *The Space It Takes, Footprint Calculator for Composting Butcher waste*, Cornell Waste Management Institute, Ithaca, NY, USA