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Minister of Environment and Conservation

P.O Box 8700
St. John's, NL
A1B 4J6

**RE: Environmental Assessment for
Crow Brook Orchard Development**

October 20th, 2014

To the Director of Environmental Assessment:

As per the *Environmental Protection Act*, SNL 2002 cE-14.2 and the *Environmental Assessment Regulations, 2003*, I wish to submit an Environmental Assessment for the development of farming land near the North Shore of the Corner Brook Area, on the Old Man's Pond wood road. Currently an application to the office of Crown Land has been submitted to acquire an agricultural lease for this property.

Used for the purposes of developing a fruit orchard, vegetable crops, and a small off-grid salad greenhouse, the currently forested area will be cleared as per the Department of Forest Resources and Agrifood's 2003 guidelines entitled "Newfoundland and Labrador Guidelines for Clearing Land on Mineral Soils for Cultivation and Pasture" to responsibly develop the arable soil at the site. As a Professional Engineer with a personal mandate to maximize food security while utilizing environmentally sustainable practices, it is intended to both develop and operate Crow Brook Orchard in an environmentally and socially responsible manner.

Enclosed in this application are ten hardcopies of the Environmental Assessment in addition to one digital copy and associated fees. If you require clarification on any details please do not hesitate to contact me.

Best Regards,



Annette A. George, P.Eng

**ENVIRONMENTAL ASSESSMENT
REGISTRATION**

NAME OF UNDERTAKING: Crown Land Application No. 146629

PROPOSER:

(i) Name of Body: Crow Brook Orchard

(ii) Address: 102 Main Street (Civic) Box: 2925 RR#3 (Mailing)
Irish Town, NL Corner Brook, NL
A2H 4A1 A2H 4A1

(iii) Chief Executive Officer:

Name: Annette Arlene George

Official Title: Owner/Operator

Address: Box: 2925 RR#3
Corner Brook, NL
A2H 4A1

Telephone No: (709) 783-2161

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

Name: Annette Arlene George

Official Title: Owner/Operator

Address: Box: 2925 RR#3
Corner Brook, NL
A2H 4A1

Telephone No: (709) 783-2161

THE UNDERTAKING:

(i) Name of the Undertaking:

Crow Brook Orchard Land Development

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

With food security issues in the province of Newfoundland becoming more apparent due to the remote nature of the island, the need for development of arable farm land for food production has come to the forefront. With significant developments in cold crop cultivars of fruit trees in addition to a prototype of a year round solar greenhouse developed by the Owner/Operator, it is possible to market locally grown food to the Corner Brook and surrounding areas. Since the orchard will be used as a u-pick operation until returns allow for a larger labor force, the facility will provide a unique country experience and education on food security to patrons. The use of the land is intended to not only provide fresh food to the local community, but knowledge on the development of viable farming in the area.

DESCRIPTION OF THE UNDERTAKING:

(i) Geographical Location:

- The parcel of land is located on the Old Man's Pond wood truck gravel road, with access to this road off the North Shore Highway, approximately 750 meters East of the entrance to the Community of Hughes Brook. Approximately 15.5 acres of land is applied for under the Crown Lands application. This land was selected due to the suitability of the soil for growing and the close proximity to the home town of the Owner/Operator.

- Land is bounded on the north by forested crown land, on the south by Hammond Farm (title #54626), the Old Man's Pond wood road to the West, and the undisturbed crown land next to the Hughes Brook waterway to the East. A 30 meter buffer of undisturbed forest is maintained between the property and the Hughes Brook water way and a small neighboring stream. This is to reduce the possibility of any adverse effects of surface water runoff from the operation.

- Map of the location is included in Appendix A.

(ii) Physical Features:

- Primarily consisting of mineral soils, the site is currently occupied by forest that consists of alder, tamarack (larch), birch, and spruce. There are currently no man-made structures on the site.

-The proposed use of the land is to clear arable areas for planting of fruit trees and some vegetable crops. A small off-grid 15'x20' (approximate) solar greenhouse prototype will be erected for growing salad vegetables for local sales and the study of extending the growing season in the cool climate. The greenhouse will be of wood construction with polycarbonate glazing.

-As a facility with a mandate based on environmental stewardship, any use of pesticides and fertilizer will be strictly managed in order to provide safe food for consumption and for the environment. While organic certification is not anticipated to be sought at this point in time, the facility will take advantage of organic and natural practices whenever possible.

(iii) Construction:

-The gradual clearing and preparation of land for fruit trees, berries, and vegetable crops is anticipated to commence in the spring of 2015. Then for a period of five years, approximately 1/3 of the arable land will be developed and cultivated. The remainder of the arable land is expected to be then developed within a ten year period. The expected land development over a five year period is illustrated in Appendix B, with one acre being cleared at a time per year.

-Land will be cleared by methods outlined in the Department of Forest Resources and Agrifood's 2003 guidelines entitled "Newfoundland and Labrador Guidelines for Clearing Land on Mineral Soils for Cultivation and Pasture". This includes first removing all merchantable timber, then the removal of remaining stumps and brush by heavy equipment. Any permits required for harvesting of timber or burning of windrows (if required) will be first obtained prior to the start of work. Mandatory natural vegetation buffers between surface water and cleared land will be adhered to as per the guidelines.

-In the spring of 2016, it is anticipated that a small 15'x20' off-grid solar greenhouse be constructed for growing salad vegetables and testing of year-round growth. The structure would be located on land that is less desirable for crops in order to maximize the utility of the soil resources on the property. This building will be of wood frame construction, concrete base, and polycarbonate glazing. The greenhouse would be expected to be in operation for the summer/fall of 2016.

-During clearing of the land and construction of the greenhouse, heavy and mechanical equipment will be monitored for any possible leaks to avoid sources of contamination of soil and surface water runoff. Spill response equipment such as temporary berms and adsorbents will be on site in case emergency response to any spills is required.

-With the mandate of environmentally friendly and fiscally responsible construction, the possibility of solid waste materials will be reduced as much as possible through the design process of the greenhouse. However, any unavoidable solid waste will be properly

disposed of at the Wild Cove Landfill site. Divertible materials such as corrugated cardboard will be sent to Scotia Recycling Depot for processing.

(iv) Operation:

-Crow Brook Orchard will be a family owned farm operated by the owner with assistance from friends and family. When the facility is able to generate enough income to hire additional employees, extra assistance will be obtained to help promote further growth and efficiency on the land.

-The project is expected to be a permanent operation as the crown land provisions allow. Developing the land over a number of years, the orchard and vegetable beds will be gradually added to each year in order to minimize risk and to provide a holistic approach to selecting hardy cultivars and developing environmentally friendly methods of pest control and fertilization. This way the development of each specific product in the conditions available can be closely monitored and improved upon each year. As a result of this holistic and strategically paced approach, there would be minimal losses and more efficient use of resources.

-Disease resistant cultivars of fruit with root stocks suitable for the conditions of the site will be selected in order to minimize use of any external inputs. While the farm will not be seeking organic certification at this point in time, every effort will be made to grow the product in an environmentally and socially responsible manner. This will also reduce any negative impacts from Crow Brook Orchard agriculture on this particular ecosystem.

-Since fruit trees take an average of 4-5 years before bearing commercially viable amounts of product, the facility will be used for growing farm-gate and community market sales until the site can be fully open to the public for u-pick sales.

-Since the salad vegetable greenhouse will be a small off-grid unit, there would be a minimal amount of inputs to maintain growth. The very design of the greenhouse provides energy efficient extension of the growing season. It is anticipated that solar panels will provide enough wattage for supplemental light/heat, however building and testing the unit will provide additional details on the design and its requirements. The minimal amount of water used will be collected by rain water until a more suitable source is found and approved by government agencies. Since inputs to the greenhouse will be minimal, waste such as effluent will be minimal. Any green waste coming from the unit will be composted. Technology such as batteries used for temperature probes and solar energy storage will be properly handled, used, stored, and recycled/disposed to provide minimal waste.

(v) Occupations:

Occupation	NOC	Type	Duration	Number
Farm Manager (Owner)	0821	Internal	Part Time/Permanent	1
General Farm Worker	8431	Internal	Part Time/Seasonal	2
Pesticide Applicator (if Required)	8431	Internal	Part Time/Seasonal	1
Heavy Equipment Operator	7521	Contractor	Construction Only	1
Electrician	7241	Contractor	Construction Only	1
Carpenter	7271	Contractor	Construction Only	1
Laborer	7611	Contractor	Construction Only	1

Crow Brook Orchard will practice employment equity.

(vi) Project Related Documents:

- Crown Land Application #146629, Appendix C
- Topographical map of site location, Appendix D

APPROVAL OF THE UNDERTAKING:

- Crown Land Approval by the Department of Environment and Conservation, Crown Lands Division.
- Agriculture Crown Land Report (Farm Plan) approval by the Department of Natural Resources, Agrifoods Development Branch.
- Environmental Assessment Approval by the Department of Environment and Conservation, Environmental Assessment Division.
- Permit for harvesting timber, Department of Natural Resources, Newfoundland Forest Service.
- Pesticide Operator and Applicator License (only if use is required), Department of Environment and Conservation, Pollution Prevention Division.

SCHEDULE:

Depending on receipt of approvals, clearing of a portion of the land as outlined in Appendix B is expected to begin in the Spring of 2015 with cultivation of this cleared land soon after. Construction of the small greenhouse is expected to commence in the spring of 2016 along with continued development and cultivation of arable land. The land is expected to be developed over a number of years rather than at once due to the main source of funding for the project

coming from the Owner/Operator's personal finances. This is to minimize risk to the venture by bringing a holistic approach to management which will allow better response to unknowns.

FUNDING

The start of this project will be funded by the Owner/Operator's personal finances with the possibility of agricultural grants. While work will commence without grants, it is anticipated that funding from sources such as "Growing Forward 2" can assist with further development.

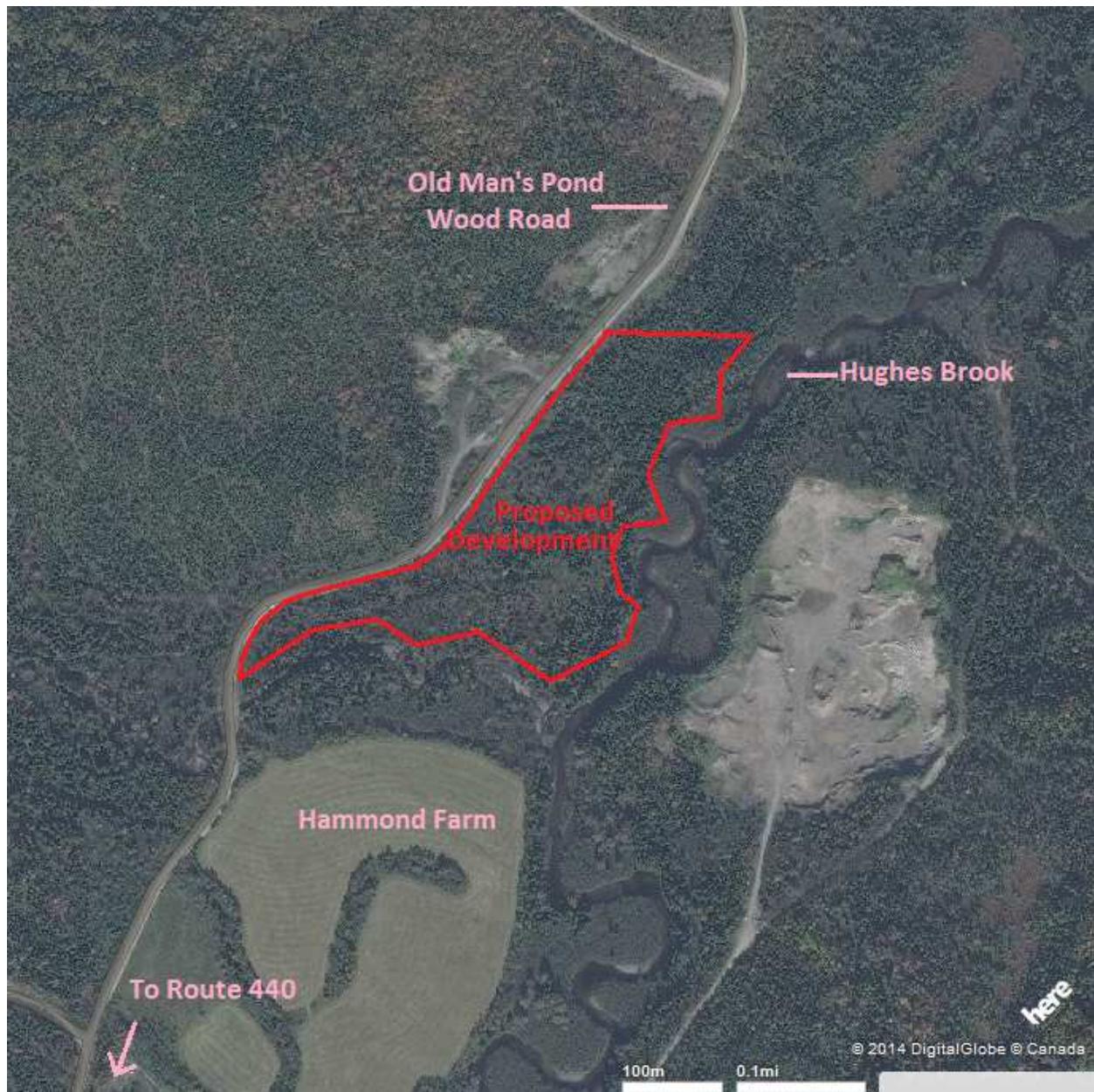
October 20th, 2014

Date



Annette George, Owner/Operator

APPENDIX A



General Location of Area to be Developed
(This is for a general description of the location and layout only, not exact dimensions)

APPENDIX B

5 Year Development Plan

(Area to be developed indicated in Green)



Year 1



Year 2



Year 3



Year 4



Year 5

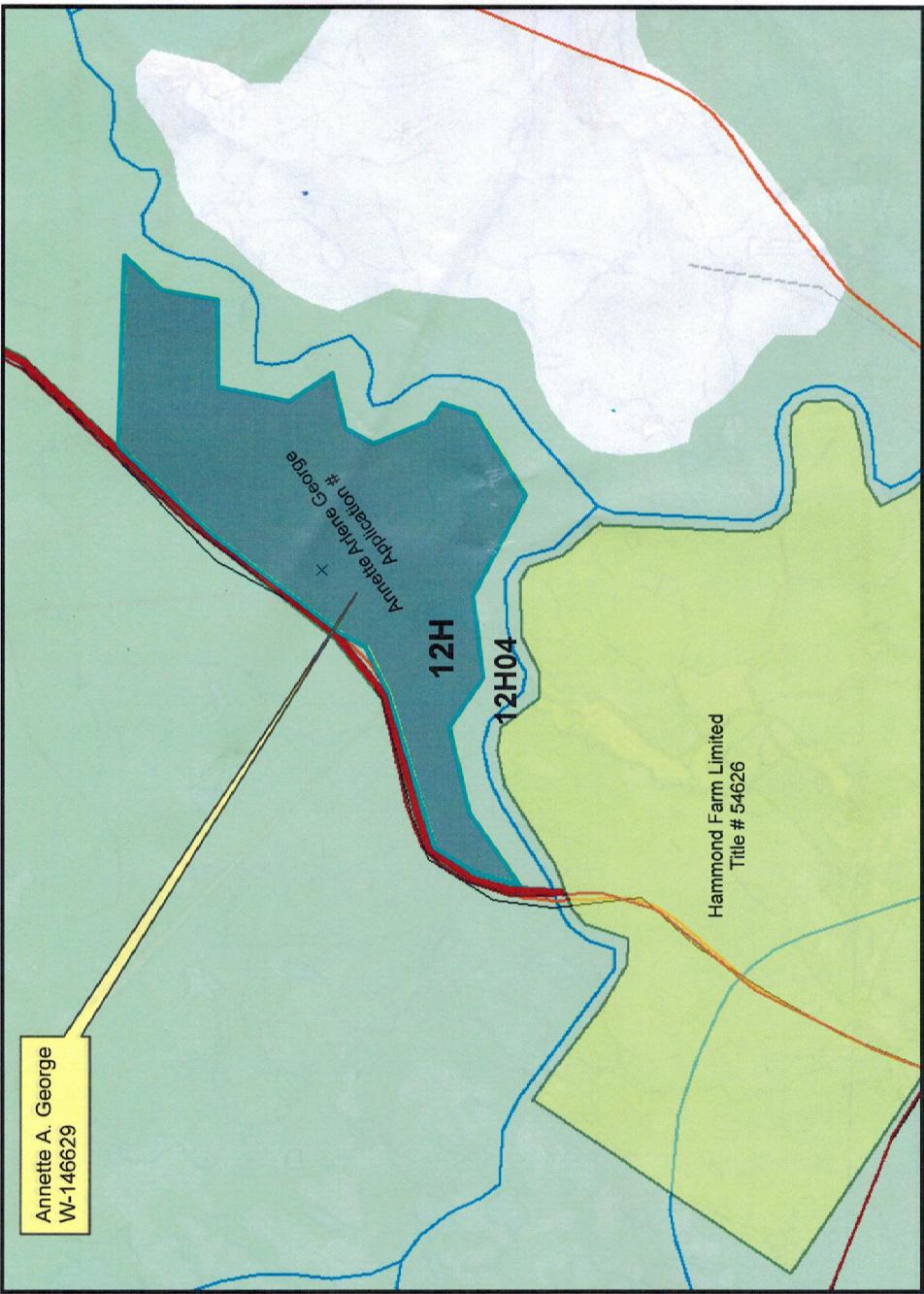
APPENDIX C

Government of Newfoundland & Labrador

Department of Environment & Conservation



Crown Lands Division



NOTE TO USERS

The information on this map was compiled from land surveys registered in the Crown Lands Registry.

Since the Registry does not contain information on all land ownership within the Province, the information depicted cannot be considered complete.

The boundary lines shown are intended to be used as an index to land titles issued by the Crown. The accuracy of the plot is not sufficient for measurement purposes and does not guarantee title.

Users finding any errors or omissions on this map sheet are asked to contact the Crown Titles Mapping Section, Howley Building, Higgins Line, St. John's, Newfoundland.

Users finding errors or omissions can contact the Crown Titles Mapping Section by telephone at 729-2061. Some titles may not be plotted due to Crown Lands volumes missing from the Crown Lands registry or not plotted due to insufficient survey information.

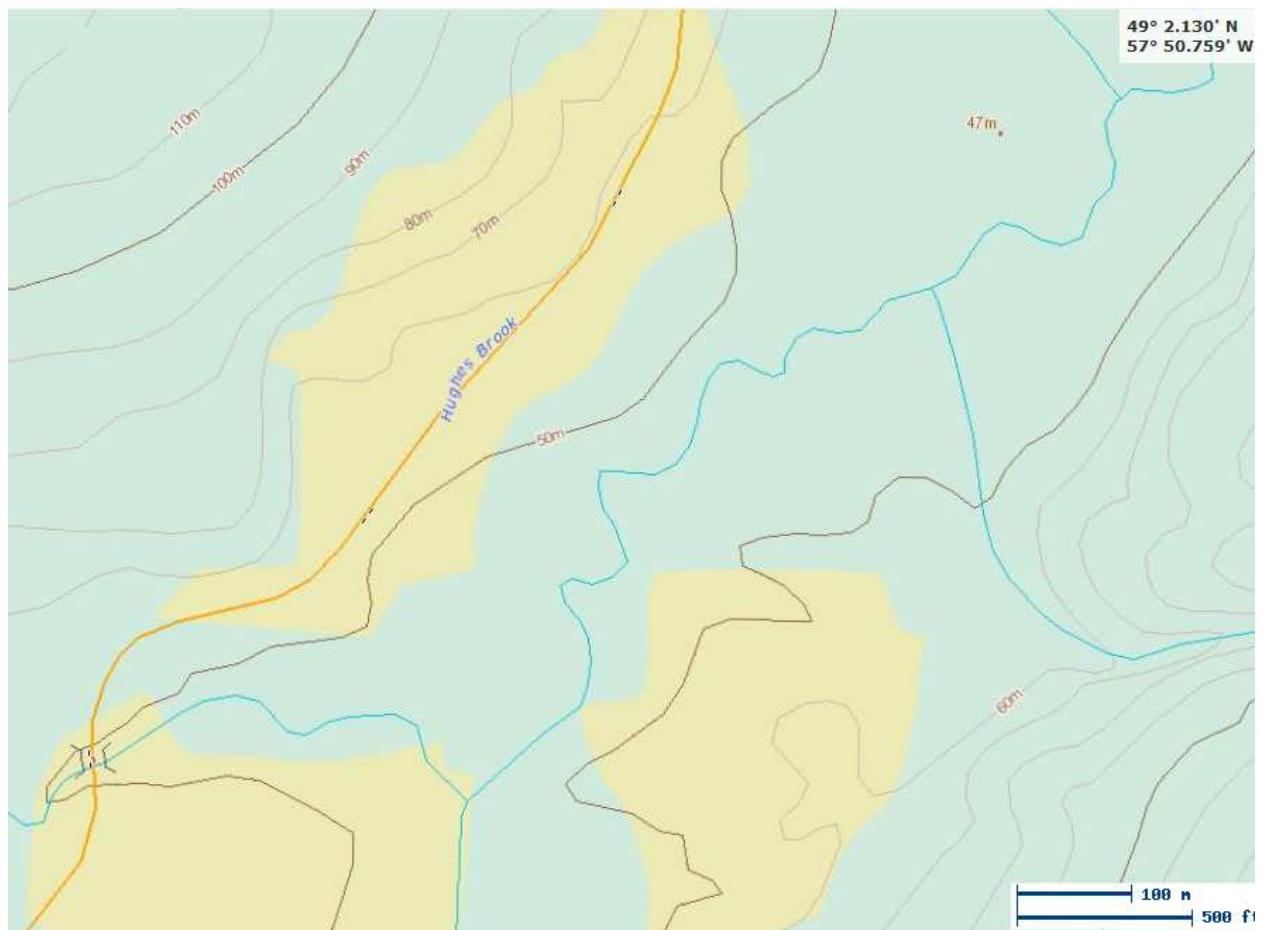
The User hereby indemnifies and saves harmless the Minister, his officers, employees and agents from and against all claims, demands, liabilities, actions, or cause of actions, alleging any loss, injury, damages and/or damage (including claims or demands for any violation of copyright, or intellectual property) arising out of any missing or incomplete Crown Land titles, and the Minister, his or her officers, employees and agents shall not be liable for any loss of profits or contracts or any other loss of any kind as a result.

For inquiries please contact
a Regional Lands Office.
Corner Brook - 637-2390
Gander - 256-1400
Clarenville - 466-4074
St. John's - 729-2654
Goose Bay - 896-2488

Crown Lands Division



APPENDIX D



Topographic Map of Area