
ENVIRONMENTAL ASSESSMENT REGISTRATION

BONAVISTA NORTH GOLF COURSE

Submitted to:

Department of Environment
Environmental Assessment Division

April 2003

ENVIRONMENTAL ASSESSMENT REGISTRATION

BONAVISTA NORTH GOLF COURSE

Prepared for:

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April, 2003

**Environmental Assessment Registration
Bonavista North Golf Course**

Project No.: 721850

Title: ENVIRONMENTAL ASSESSMENT REGISTRATION, BONAVIDA NORTH
GOLF COURSE

Client: Towns of Lumsden and New-Wes-Valley

A	03/04/11		Environmental Registration	PH	WM	WM
Rev.	Date yyyy/mm/dd	Page No.	Description	Prepared By	Reviewed By	Approved By

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1.0 NAME OF THE UNDERTAKING

Bonavista North Golf Course

2.0 PROPONENT

2.1 Name of Corporate Body

Towns of Lumsden and Town of New-Wes-Valley

2.2 Address

Town of Lumsden	Town of New-Wes-Valley
P.O. Box 100	P.O. Box 64
Lumsden, NF	Badger's Quay, NF
A0G 3E0	A0G 1B0

2.3 Contact

Name: Edison Goodyear
Official Title: Town Clerk (Town of Lumsden)
Telephone #: (709) 530-2309
Fax #: (709) 530-2144

2.4 Principal Contact Person for Purposes of Environmental Registration

Wayne Manuel, P. Eng.
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Mount Pearl, NF
A1N 5G2
Telephone #: (709) 368-0118
Fax : (709) 368-3541

3.0 THE UNDERTAKING

3.1 Nature of the Undertaking

It is proposed to develop a golf course at Lumsden North, which is located in Lumsden, Newfoundland and Labrador. The development will consist of eighteen holes, an irrigation system with automated pumping, combined maintenance and golf cart storage building, as well as a clubhouse. Access to the site will require construction of an access road and a gravel parking lot. General location and a layout of the golf course is provided in the Appendix A, Figures 1 and 2. The current undertaking will develop holes 1-18.

3.2 Need for the Undertaking

The provincial average number of rounds in 1994 was 7.6 while the Central Region (which includes Lumsden North) had the lowest number at three. This gap represents an opportunity for Windmill Bight to bring annual average rounds into line with the Provincial average.

Also, in comparison to other provinces in Atlantic Canada, golf is an underserved market in Newfoundland. The 1995 Strategic Direction Report concluded the absence of golf courses has created a latent demand that cannot be met by existing courses. Construction of a golf course at Lumsden North will alleviate some of this demand.

Since 1994 the Central Region has added an additional 9 holes at Gander Golf Club. This addition is not expected to significantly affect the opportunity for a golf course in Lumsden North.

In a feasibility study conducted in 1998 entitled "Windmill Bight Golf Course and/or Corporate Retreat Feasibility Study", the conclusion reached is that by the year 2006, 6 additional 18 hole golf courses could be supported provincially. This would mean 23 eighteen hole courses by 2006. Furthermore, the study shows, Newfoundland should have 31 courses based on Atlantic Canada's population, (1996 census). Also, the study (1998) states, "Within the Glovertown and Lumsden to Gander area, (which includes Lumsden North) there is a population of 29,285. Based upon this data and the Atlantic Canada average, the local area could support two courses with one located at Lumsden North.

4.0 DESCRIPTION OF THE UNDERTAKING

4.1 *Geographic Location*

The proposed development will be located in the vicinity of the Town of Lumsden, on the northeast coast of Newfoundland in the Provincial Electoral District of Bonavista North. The Bonavista North Golf Course will be located directly North and East of the Town of Lumsden.

4.2 *Major Physical Features of the Undertaking*

The proposed development consists of an access road, utilities, clubhouse, combined maintenance and golf cart storage building, 18 hole golf course, shallow bury irrigation system, internal drainage system for greens and tees, parking lot for 100 cars and cart paths.

a) Access

Access to the golf course will require the construction of a new access road. The access road will run in a northeasterly direction off of the existing gravel road that grants access to the Town of Lumsden water reservoir. The access road will be approximately 250 m in length and 6.7 m wide.

The access road will be constructed to a gravel standard. A gravel parking lot (100 vehicles) will also be constructed.

b) *Utilities*

1. Electrical: Three phase electrical power will be required to operate the booster irrigation pumps for the course. Newfoundland Power will be contracted to install the required electrical extension.
2. Sewer: The Sewer system will be connected to the existing Town of Lumsden sewage system.

c) *Clubhouse*

A clubhouse of approximately 220 m² will be constructed. Please refer to concept plan for location.

d) *Combined Maintenance and Golf Cart Storage Area*

A combined maintenance and golf cart storage building will be constructed as part of the undertaking. The building will be used to store golf carts as well as other maintenance equipment. Part of the building will be utilized as an equipment maintenance garage. The size of the building will be approximately 280 m².

e) *18 Hole Golf Course*

An approximate 83.1 ha, area will be required to construct the 18 hole championship course. Course features will include green construction 18 + 1 practice, tee construction, 18 fairways, as well as bunker construction. The course will also include an automated irrigation system as well as drainage works.

f) *Shallow Bury Irrigation System*

A shallow bury irrigation system will be constructed. The source of irrigation water will be from the Town of Lumsden water supply. A small pumphouse will be required to house the booster pumps.

g) *Internal Drainage for Greens and Tees*

Tile drainage systems will be constructed for the greens and tees. The outlets will be in low elevation areas immediately adjacent the greens and tees.

h) *Parking Lot*

A parking lot for 100 cars will be constructed near the clubhouse and hole number one. The surface will be Class A road gravel.

i) *Cart Path*

A cart path system will be constructed throughout the course to facilitate maintenance equipment travel as well as motorized golf carts. This will be mostly Class A road gravel construction however in erosion sensitive areas the cart paths

may be paved. A minimum of one small bridge for will be constructed as part of the cart path system.

j) *Physical Features*

Upon review of the aerial mapping of the area, several physical environments were observed to be located within the project area. These include:

- Forested area with rock outcrops and a shallow overburden cover. Along the coast, trees consist of typical windswept spruce trees, locally called tuckamore. Further inland towards the Town of Lumsden, the forest is less exposed and a more typical softwood forest exists. The clubhouse, access road, parking lot, as well as holes 1-4, 17, and 18 will be constructed in this area;
- Beach – Beach consist of sand with only small portions of holes 9, 17, and 18 infringing on this area. It is not anticipated that the beach area will be impacted by construction of the golf course;
- Elevated Back Beach – Area consist of sandy soil with grass cover - The remaining holes will be constructed in this area;
- Two freshwater ponds were identified in the construction area. These include Goose Pond as well as an Unnamed Pond.

k) *Drainage and Stormwater Management*

The golf course will be maintained in such a way as to maximize the infiltration of rainwater. Infiltration treats runoff, controls stream bank erosion and recharges the water table.

In the southerly portion of the course (forested area), as much tree cover and natural vegetation as possible will be maintained. Tree canopies intercept raindrops and direct water flow down the trunks, thus dissipating the energy of raindrops and reducing the risk of erosion.

The remainder of the course is located on the lower elevation with a grass cover and sandy soil. Due to the gentle elevation changes and sandy soil conditions the drainage direction of storm water will be internal. It is expected the water will infiltrate the sandy soil before runoff begins and go through a filtering process as it passes through the sandy soil. Eventually this filtered water will find its way to the ocean. Because of exceptional drainage properties of this site the amount of erosion due to water runoff is expected to be minimal. Water is expected to infiltrate the soil before causing erosion through surface runoff.

In areas where drainage may be a concern, precautionary measures will be implemented in the design process to promote infiltration and reduce or eliminate the effects by the construction of settling ponds and the erection of filter fabric fencing, hard landscaping, etc.

4.3 CONSTRUCTION

4.3.1 Construction Period

It is expected that construction and commissioning of all facilities will take in the order of 30 months.

The proposed construction start date is Fall 2003 and is scheduled to be completed Spring 2006.

4.3.2 Construction Activities Affecting Physical Environment

Construction of the golf course will involve the removal of vegetation, grubbing, and grading of soil material within the tee, fairways and greens areas of each hole, at the building locations, at car parking area and along the internal road network. The proponent realizes the exceptional value the natural areas have on the overall aesthetic value of the course and is intent on preserving and enhancing them. Realizing some impact is likely on certain areas the proponent is committed to keeping those impacts to a minimum. During the construction and operation of the golf course all efforts will be made to preserve and conserve the natural environment. Vegetation will be maintained to provide natural buffer zones and any exposed slopes will be stabilized with natural vegetation where possible.

Vegetation Clearing

Potential concerns associated with vegetation clearing include loss of habitat as well as sedimentation of watercourses. All vegetation clearing and associated activities will adhere to all applicable acts, regulations, and permits. Also, mitigation measures will be implemented to reduce the potential effects of vegetation removal. A cutting permit will be obtained prior to the start of any site clearing. Clearing and removal of trees will be restricted to the minimum areas needed for the site requirements and will not be outside of the permitted limits. Limits of clearing will be shown on all drawings "Issued for Construction".

Disposal of cleared timber and slash will be in compliance with the Forest Fire Regulations, Environmental Code of Practice for Open Burning, and the permit to Burn.

Grubbing and Disposal of Related Debris

Grubbing activities will be limited to the upper part of the golf course. The principal concerns associated with grubbing are the potential effects of erosion on Marine and Freshwater ecosystems as well as water quality. All grubbing and disposal of related debris near watercourses will adhere to relevant regulatory requirements, including permits from the Department of Environment and the formal "Letters of Advise" and Authorizations for Works and undertakings Affecting Fish Habitat from the Department of Fisheries and Oceans. Grubbing activities shall be minimized where possible and limits of stripping shall be placed on all drawings "Issued for Construction".

Measures will be implemented to minimize and control runoff of sediment-laden water during grubbing, and the re-spreading of the grubbed material. Erosion control measures will be implemented in areas prone to soil loss.

Grubbed materials will be stockpiled for use in other areas of the project. Areas used for stockpiling will not be adjacent to any water bodies.

Filling, Excavation, Embankments, and Grading

Excavation, embankment, and grading will only be completed upon completion of grubbing and stripping. Where engineering requirements do not require grubbing and stripping, filling shall occur without any disturbance to the vegetation mat or upper soil horizons. Excavation, embankment, and grading in the vicinity of a waterbody shall be done in a manner, which ensures that erosion, and sedimentation of watercourses and water bodies is minimized.

Bridge Construction

The environmental concerns associated with stream crossings and bridge constructions include direct disturbances to or mortality of fish, disturbance of waterfowl, loss of fish habitat resulting from sedimentation and removal of substrate and stream bank vegetation. The stream crossing/bridge construction will be in compliance with the required Environmental Approval for Bridges from the Department of Environment and the Letter of Advise for Works and Undertaking Affecting Fish Habitat from the Department of Fisheries and Oceans. Also, construction of the bridge will be completed as per the Department of Environment, Water Resources Division, Environmental Guidelines For Bridges.

4.3.3 Potential Source of Pollutants During Construction

The potential sources of pollutants are generally those associated with golf course construction. Adherence to permit conditions and application of sound construction practices will protect against the release of pollutants into the surrounding environment.

Strict monitoring and sound construction practices will control activities to minimize risks associated with:

- Silt and sediment
- Dust
- Construction debris,
- Fertilizers,
- Pesticides
- Sewage
- Risk of fuel, lubricant and hydraulic fluid release
- Airborne emissions from construction equipment
- Noise pollution from construction activities

4.3.4 Mitigation Measures

Mitigation measures to reduce the environmental concerns associated with construction activities include:

- Silt laden runoff from construction areas will not be permitted to discharge directly into any body of water or water course. Runoff will be diverted to settling basins to ensure silt is settled out prior to release into the water. Silt fence construction of filter fabric will be used where necessary to preclude release of construction water directly into any body of water. The measures will include natural vegetation buffer, stone rip rap, wire mesh, settling ponds, and drainage channels.
- Efforts will be made to minimize dust generation during the construction phase of the project. Dust from construction activities will be controlled using the frequent application of water. Any application of calcium chloride will be in accordance with applicable guidelines from the Department of Works, Services, and Transportation.
- Solid waste disposal practices will be in compliance with the *Environmental Protection Act* and associated regulations. Construction debris will not be permitted to be disposed of on site. It will be contained on site in steel boxes for disposal at a municipal solid waste disposal facility.
- The application of limestone and fertilizers will only be applied as necessary. Samples of soil will be analyzed to determine application rates for limestone and fertilizer necessary for turfgrass production. This will ensure that over fertilization does not occur and will minimize the nutrient loading of water bodies.
- Pesticides will be applied when necessary in localized areas, except for fungicides which are generally applied to entire areas to be effective. An integrated Pest Management Program will be implemented with acceptable levels of pests being tolerated before spray programs are initiated. Spot treatments will be employed where satisfactory results can be expected.
- Only pesticides approved by the Pesticide Control Division of the Department of Environment and Lands will be used and applicators will be licensed with the Pesticides Section of the Department of Environment.
- The sewage generated during the construction phase will be collected using portable toilets, which will be cleaned out by a licensed operator on a regular basis. This practice will control any release of fecal matter into the local ecosystem.
- All fuel handling and storage will be in compliance with *The Storage and Handling of Gasoline and Associated Products Regulations*. Also, to minimize the risk of fuel, lubricant or hydrocarbon release, construction equipment will not be permitted to be re-fueled within 100 m of any water body. If it is necessary for fuel storage then it will be stored only in approved containers with all necessary permits in place.
- Equipment exhaust systems will be maintained to provide emissions to the standard designed for by the equipment manufacturer.
- Exhaust systems will be maintained to ensure noise levels are within the design specifications of the machinery.

- During the construction period equipment will not be permitted to operate outside of the construction area in order to prevent damaging the surrounding area.

4.3.5 Potential Resource Conflicts

Fish and Fish Habitat

Construction activities will be conducted in such a manner to prevent the release of sediment or other deleterious materials into water bodies. These measures are discussed in previous sections.

Wildlife

Due to the close proximity of the site to the "Town of Lumsden" as well as the fact that these areas are used frequently for recreational purposes, construction activities are not expected to cause any significant wildlife conflict.

However, in the event that raptor nest or other bird nest are discovered, construction activity will be postponed in the immediate area and appropriate government departments will be notified.

Forestry

No commercial cutting activities are ongoing in the proposed project area.

The project area consists mainly of grass with some forest cover. Construction activities will be such as to minimize the clearing of the forested areas.

Construction Equipment

During construction operations, equipment will not be permitted to operate outside the construction zone in order to prevent environmentally damaging the adjacent area.

Human Activities

During construction of the project there will be extra demands placed on the services provided in the local area. The projected work force will not negatively impact these resources but will provide positive economic benefits.

4.4 Operation

The Bonavista North Golf Course will be an 18 hole regulation golf course. The golf course will operate between the end of May and the end of October each year. During this period it will be open from daylight to dusk on a daily basis.

4.4.1 Potential Sources of Pollutants During Operation

- Silt and sediment from gravel surfaces

- Dust
- Fertilizers
- Sewage
- Airborne Emissions
- Solid Waste
- Noise Pollution

4.4.2 Mitigation Measures During Operation

Mitigation measures to reduce the environmental concerns associated with construction activities include:

- Due to the limited amount of gravel surfaces, during operation of the golf course, silt and sediment from gravel surfaces are not anticipated to be a problem on this site. Runoff water will be directed into vegetated grass areas where silt and sediment will be filtered out. Where necessary filter fabric fences will be established to aid in storm runoff situations.
- The access road will be gravel initially and paved as funds become available in future years. Dust created from gravel cart paths on the actual course will be minimal.
- Limestone and fertilizer will be applied at rates recommended by soil test results from the Provincial Department of Agrifood or specialized laboratories.
- Pesticides will only be applied when necessary in localized areas as a defense against weed, disease or insect infestations that threaten vegetated areas. Only pesticides approved by the Pesticide Control Division of the Department of Environment and Labour will be used. Maintenance workers will be licensed with the Pesticide Control Division of the Department of Environment and Labour. Pesticides will be stored in containers recommended by the manufacturer and in a storage facility approved by the Department. Pesticides will be used only where they are permitted to be used under applicable regulations.
- Sewage from the course will be disposed as part of the "Town of Lumsden" sewage system.
- Exhaust systems of golf course maintenance equipment will be maintained to provide emission standards designed for by the equipment manufacturer.
- Solid waste will be collected on a regular basis by the "Town of Lumsden".
- Limited noise pollution will be generated during the operation of the golf course, therefore noise pollution is not considered a concern.

4.4.3 POTENTIAL CAUSES OF RESOURCE CONFLICTS

Procedures will be established and monitored to minimize the following potential resource conflicts

Fish & Fish Habitat

Application of pesticides and fertilizers will be made according to manufacturers guidelines and the Pesticide Control Division of the Department of Environment which virtually eliminates those products from entering ground water and surface water bodies.

Wildlife

Operations of the golf course are not expected to cause any direct wildlife conflict.

Forestry

Operation of the golf course is not expected to cause resource conflicts with forest resources.

Adjacent Areas

During operations maintenance equipment will be confined to the areas of the golf course and will not be permitted in adjacent areas in order to conserve their natural state.

Human Activities

Human activities will place extra demand on the local services available. These activities are expected to have a positive economic impact.

There is no expected conflict with the surrounding natural environment as golfing activities will be conducted within the boundaries of the golf course. Activities such as searching for lost balls will be controlled through the establishment of protected areas as is common in the golfing industry.

5.0 OCCUPATIONS

5.1 *Construction Phase*

It is expected there will be approximately thirty people employed during the construction phase of the project. Bonavista North Golf Course Association offers equal employment opportunity free of gender specific qualifications.

Occupational NOL Unit Group Title Code	Positions # Anticipated	Description
0711	1	Construction Managers
2152	1	Landscape Architects
2154	2	Land Surveyors
2225	4	Landscape & Horticultural Technicians & Specialists

Occupational NOL Unit Group Title Code	Positions # Anticipated	Description
7217	2	Contractors & Supervisors, Heavy Construction Equipment Crews
7219	2	Contractors and Supervisors, Other Construction Trades, Installers, Repairs and Services
72141	1	Electricians
7244	2	Electrical Power Lines & Cable Workers
7411	4	Truck Drivers
7421	4	Heavy Equipment Operators
7444	1	Pest Controllers and Fumigators
7611	4	Construction Trades Helpers & Labourers
7612	2	Other Trades Helpers and Labourers

5.2 Operational Phase

It is expected that approximately 15 people will be employed during the operation phase of the development. Bonavista North Golf Course offer equal employment opportunity free of gender specific qualifications.

NOL	Number	Description
0114	1	Other Administrations Services manager
111	1	Financial Auditors and Accountants
1131	1	Bookkeepers
1241	1	Secretaries
2225	4	Landscape and Horticultural Technicians and Specialists
5254	1	Program leaders and Instructors in Recreation and Sport
6453	2	Food and Beverage Servers
6661	2	Light Duty Cleaners
7444	1	Pest Controllers and Fumigators
6212	1	Other Trades Helpers and Labourers

6.0 APPROVAL REQUIRED FOR THE UNDERTAKING

The permits, approvals and authorizations which may be necessary for the undertaking include:

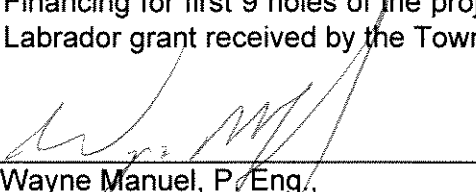
PERMIT, APPROVAL OR AUTHORIZATION	ISSUING AGENCY
<ul style="list-style-type: none"> ● Approval for the Undertaking 	Minister of Environment
<ul style="list-style-type: none"> ● Water Course Alterations, Certificate of Environmental Approval to Alter a Body of Water ● Application for Water Use Authorization ● Water Course Crossings, Certificate of Environmental Approval ● Construction (Site Drainage) Certificate of a Approval ● Culvert Installation, Certificate of Approval ● Bridges, Certificate of Approval ● Certificate of Approval – Water and Sewer Distribution System. 	Water Resources Division, Department of Environment and Labour
<ul style="list-style-type: none"> ● Approval under the National Building Code of Canada ● Approval under the National Fire Code of Canada ● Certificate of Approval for any Water Supply >4,500 L/day 	Engineering Services, Department of Government Services and Land
<ul style="list-style-type: none"> ● Building Accessibility Design Registration ● Fuel Storage and handling-Temporary Storage/Remote Locations ● Food Establishment License 	Operations Division, Department of Government Services and Lands
<ul style="list-style-type: none"> ● Crown Lands Applications/Licenses ● Develop Land – Protected Road zoning and Development Control Regulations – Preliminary Application to Develop Land ● Electrical Permit 	Customer Services, Department of Government Services and Lands
<ul style="list-style-type: none"> ● Permit to Burn 	Forest Fire Protection Specialist, Forest Resources and Agrifoods
<ul style="list-style-type: none"> ● Pesticides 	Pollution & Prevention Division, Environment & Labour
<ul style="list-style-type: none"> ● Authorization for Works or Undertakings Affecting Fish Habitat 	Fisheries and Oceans Canada
<ul style="list-style-type: none"> ● Permit to Cut Crown Timber ● Operating Permit/Fire Season 	Newfoundland Forest Service, Forest Resources & Agrifoods
<ul style="list-style-type: none"> ● Liquor Establishment License 	Licensing Services

7.0 SCHEDULE FOR RELEASE FROM ENVIRONMENTAL ASSESSMENT

Construction of this project is scheduled to begin in Fall 2003 with an operations date of early Summer 2006. In order to meet this proposed scheduling, the requirement of the Environmental Assessment Act must be completed as soon as possible.

8.0 FUNDING

Financing for first 9 holes of the project will be from a Government of Newfoundland and Labrador grant received by the Town of Lumsden and the Town of New-Wes-Valley.



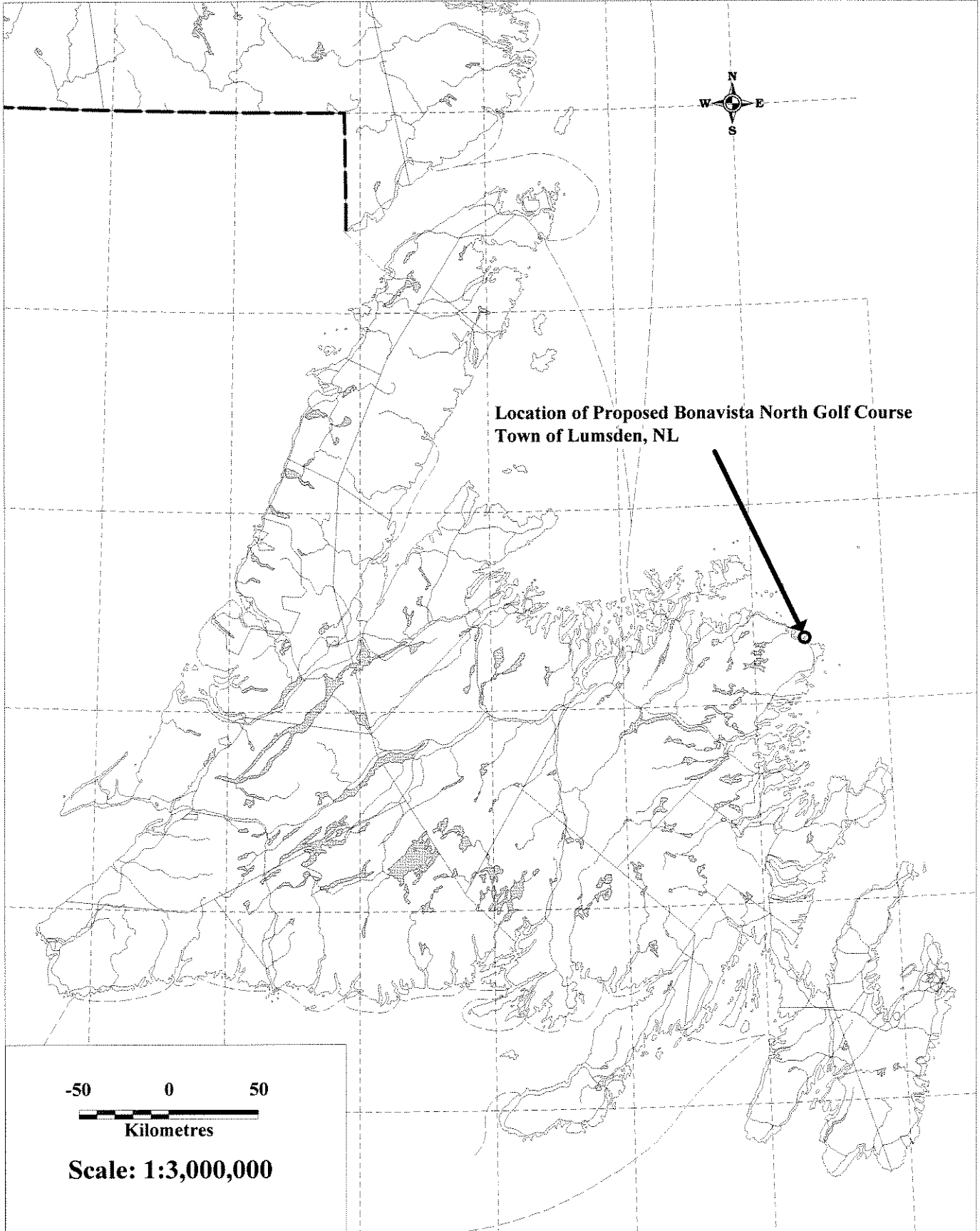
Wayne Manuel, P. Eng.,
BAE-Newplan Group Ltd.

03/04/11

Date

APPENDIX A


DRAWINGS



CLIENT
Town of Lumsden and Town of New-Wes-Valley

PROJECT
Bonavista North Golf Course

DRAWING TITLE
Figure 1. Lumsden, Newfoundland


1133 TOPSAIL ROAD
MOUNT PEARL, NF A1N 5G2
 TEL: (709) 368-0118
 FAX: (709) 368-5410

DESIGNED PSH	DATE: 11/04/03	CHECKED:	DATE:
DRAWN: PSH	DATE: 11/04/03	APPROVED:	DATE:
SCALE: AS NOTED	PROJECT NO. 721850		
FILENAME: Lumsden Figure 1.WOR			



REV.	REVISIONS	BY	APP.	DATE

BAE • NEWPLAN GROUP

BAE • NEWPLAN GROUP LIMITED
1133 TOPSAIL RD., MOUNT PEARL, NF, A1N 5G2
TEL: (709) 368-0118, FAX: 368-3541

CLIENT: THE TOWNS OF LUMSDEN AND NEW-WES-VALLEY

PROJECT: BONAVISTA NORTH GOLF COURSE

DRAWING TITLE: SITE PLAN
FIGURE 2

DRAWN: D.J.M.	APPROVED: W.G.M.	DATE:
CLIENT PROJ. NO.	BNG PROJ. NO.	721850
DRAWING NO. DW1-XX-EN-01-001	REV.	A