

**Registration Pursuant to Section 49,
Part 10, Environmental Assessment of the
Environmental Protection Act**

PROPONENT:

- i) Discovery Compost Limited
- ii) P. O. Box 119
Musgravetown, NL AOC 1ZO
- iii) Chief Executive Officer
and contact person:

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THE UNDERTAKING:

- i) Nature of the Undertaking:

The establishment of an organic compost facility.

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

There are a number of different purposes for the proposed undertaking. To gain an insight into the purpose we must first look at the proponents. One of the owners has a large scale dairy farm operating at Musgravetown. Currently this farm must expend a considerable effort in removing manure. While some manure can be utilized on hay fields there is a surplus available for other uses. The second proponent currently has a contract to dispose of all fish and other related offal generated by a major fish producer on the Bonavista Peninsula. Consequently, one of the major purposes of the project is to provide an outlet for the waste material. Secondly, it is felt that, once established, this venture will have a positive economic impact for the proponents and the area. Currently most of the province's composting needs are satisfied through imports from mainland sources. A local source of bulk compost will be valuable to the farmers, horticultural businesses and landscapers currently operating on the Bonavista Peninsula, and potentially the eastern Newfoundland region. Compost is an excellent organic soil amendment for enhancing soil quality and productivity. Also, compost is more stable and easier to handle than raw manure with the added advantage that, when properly managed, it does not have odour problems associated with it.

DESCRIPTION OF THE UNDERTAKING:

i) Geographical Location:

The proposed site as outlined in the attached maps and drawings is located approximately 5.9 km. off the gravel Forestry Access Road at Lethbridge, Bonavista Bay. The site is on a small section of an existing piece of granted agricultural land owned by Ivan Greening. The site is inside the Musgravetown - Lethbridge Agricultural Development Area (ADA) which is specifically zoned for agricultural development. The site is not inside any municipal boundaries and the closest residential development is a farm residence approximately 6.0 km. from the site.

This site is ideal for the proposed use as it is on an existing agricultural grant in the middle of an Agricultural Development Area, with a buffer zone of compatible land use activity for approximately 6.0 km. in all directions.

ii) Physical Features:

The project initially will not require any buildings or similar structures. Rather, a small section of the existing agricultural grant approximately 10,000 m² (1 hectare) will be grubbed, levelled and then graded to a 1 to 2 degree slope. The gradient of the land is such that it slopes away from any water body. The nearest water body, which is a very small pond (300 - 500 m²), is in excess of 150 metres from the edge of the site, with good vegetative cover in between.

iii) Construction:

The construction will be completed in one stage and will require seven working days. The site will be grubbed, levelled and then graded to a 1 to 2 degree slope. Once graded and levelled, it will be compacted with an eight ton land roller. The perimeter of the site will be ditched and all site drainage intercepted and routed to a vegetated area with no direct route towards any water body.

The sources of pollution during the construction phase are typical of any construction project in Newfoundland. Equipment will be inspected to ensure there are no hydrocarbon leaks and appropriate clean-up action will be taken in the event of a spill. Construction will be carried out so as to minimize the risks of erosion and every effort will be made to maximize the buffering potential of the surrounding vegetated area. There are no land use conflicts anticipated during construction as this area is not being utilized or frequented by any other parties.

iv) Operation:

The proposed operation is a standard windrow composting system with windrows approximately 4m to 7m wide and 2m to 4m high. Windrows will be configured in parallel with sufficient room between (ie. 3m to 4m) for the equipment used to turn the compost and handle it once composting is completed. The site will have up to ten windrows ranging in length from 75m to 100m. Peak activity will be during the late spring to early fall period. The proposed operation will rely entirely on natural micro-organisms and the natural properties of the feedstock ingredients, and there are no plans for any types of additives (chemical or micro-organisms) to enhance the natural process.

Once site preparation is completed, the area will be ready to accept the components necessary for composting. The major feedstock ingredients will be cow manure; fish, crab and shrimp offal;

and sawdust. Initial windrows will be built using a front end loader placing layers of feedstock into windrows. Each new windrow will be covered in sawdust to help control odours from the fresh material as well insects and other pests. It should be noted that it is impossible to eliminate completely all insect and rodent pests from a windrow composting area and the goal of good management is to minimize pest levels rather than eliminate them completely. If pest levels are not adequately controlled by covering fresh and freshly turned compost with sawdust, it may be necessary to consider using other standard pest control measures.

During the initial year of operation it is estimated that a total volume of approximately 4500 m³ of material will be composted. The estimated ratio of rich feedstock (manure and offal) to sawdust is approximately 2 to 1. This ratio will be varied as required to ensure proper moisture content and carbon to nitrogen ratios are maintained to optimize composting and handling efficiency. An adequate volume of fresh sawdust will be stockpiled on site and be readily available for application as required.

Normal composting will require approximately 6 to 8 weeks during the Spring, Summer and Fall and slightly longer during winter months. The normal turning period will be weekly when the compost is fresh and actively decomposing. Turning is done using specialized windrow turning equipment mounted on the rear of a farm tractor. Once the active composting phase is completed the compost will stay in the windrows for approximately 6 - 8 weeks for curing when less frequent turning can be used if necessary. After this, the compost should be quite stable, odour free and easy to handle for transportation to market.

A successful composting operation is governed by a favourable carbon/nitrogen ratio (C:N Ratio), acceptable moisture content and adequate oxygen. All three of these are obtained through good management practices which ensure a suitable feedstock mixture, regular turning of windrows, adjustments of moisture levels if necessary, and regular laboratory analysis of compost material to ensure adequate C:N ratios. The main means to control odours is to ensure that the composting process remains aerobic at all times. When moisture content goes too high there is a risk of anaerobic composting and associated bad odours. This is easy to prevent through regular qualitative analysis and the addition of fresh sawdust and/or additional turning to improve aeration and reduce moisture.

A windrow composting operation is exposed to natural precipitation and percolation of water through the composting material. There is some leaching of dissolved and suspended material as water percolates through the windrows, however concentrations are relatively low, especially after dilution with other site runoff. The site will be graded for adequate drainage without the risk of erosion. All drainage will be routed through ditches to vegetated areas with adequate natural buffering capacity to assimilate any nutrients and sediment in site drainage runoff. In addition, as the ditches become revegetated they will have some buffering capacity as well.

As the proponent will make every reasonable effort to optimize composting efficiency through good site preparation and management, there are no pollution or odour problems anticipated as a result of the operational phase of this project. In addition, this area is not utilized or frequented by other parties who might have aesthetic objections or other conflicts with this project.

Finished compost will be transported off site in bulk by tandem dump truck load (23 m²) as well as smaller truck loads as determined by the clients needs. The market for the initial year is primarily existing agricultural operations in the immediate area of the composting operation. Compost will be used as an organic soil amendment for the production of forage and other field crops. Compost will also be marketed in bulk to the horticultural and landscaping industries. It

is anticipated that the finished compost product will be an excellent bulk ingredient for the development of horticultural quality topsoil. Market research and development will push bulk sales out in the eastern Newfoundland region as a whole and will also include exploring potential markets for bagged retail grade compost.

v) Occupations:

During peak seasonal operations this project, once established, will require three employees. All operations will be managed and supervised by Mr. Ivan Greening. Staff of the Agrifoods Branch will assist Mr. Greening with technical support and assistance with reviewing operations, quality control and marketing opportunities. In the initial development phase (1 to 3 years) compost quality will be monitored on a regular basis with samples being collected for analysis at the Soil and Land Management Division Lab. Sample analysis will help ensure optimal composting conditions are maintained to maximize nutrient retention and minimize nutrient loss and odours. Sample analysis will also help ensure consistent quality of the finished product and provide customers with accurate information on its nutrient value.

vi) Project-Related Documents:

A report on the preliminary site investigation is being prepared and will be submitted to the GSC as a part of the application process for a Certificate of Approval for a Waste Management System. This application will require soil survey analysis for determining the suitability of the soil at the site (percolation, hydrology, runoff, etc.)

APPROVAL OF THE UNDERTAKING:

The site is on granted agricultural land inside the Musgravetown - Lethbridge ADA and is very compatible with the planned use of the area. The site is not inside any municipal or other planning boundaries other than the ADA. Therefore, the only approval required for this undertaking is a Certificate of Approval for a Waste Management System issued by the Dept. of Government Services and Lands under the Environmental Protection Act.

SCHEDULE:

The project will be started when all necessary approvals are obtained and site conditions are suitable for construction. It is anticipated that the earliest date to start construction will be in April or May of 2003.

FUNDING:

Funding for this project has been sought under the Agri-Adopt Council Inc. The estimated capital cost for this project is \$ 8,000.

Date

Signature of Chief Executive Officer