

H Environmental Impacts and Mitigation Measures

H.1 Air

The composting of biodegradable organic wastes is a process that has the potential to be a source of offensive odours if the process is not properly equipped and managed. A problem with odours is potentially the main negative impact that a composting facility can have on the environment.

Shannon Vermicomposting is conscious of the potential problems that can arise from the mismanagement of the composting process. The measures that the company will adopt to ensure that there are no odour emissions from the site include:

- The composting of all biodegradable organic wastes commences as soon as the waste is tipped in the reception area. This ensures that no waste is left to decay and emit odours.
- The liquid fraction of the waste will be separated from the solid fraction by a fan separator. The liquid fraction will be pasteurized and this will further reduce the potential for odours from a liquid fraction within the solid waste.
- The initial composting of the solid fraction will be done in some of the tunnels by a forced aeration system. The air from these tunnels is circulated to the adjoining vermicomposting tunnels. The air that is extracted from the worm tunnels is circulated back to the aeration tunnels. Each tunnel is also fitted with an ozone disinfection defuser that air emitted to the atmosphere passes through to ensure the total elimination of odours.

There are no direct emissions to the atmosphere of particulates from the composting process but there is potential for fugitive dust emissions, primarily from on-site traffic. This issue has been addressed by providing a concrete surface road from the entrance gate to the reception area to minimize dust emissions from delivery trucks and other vehicles going to and from the reception area. In the event of dry weather, this road will be watered to suppress any dust. The only other possible source of fugitive dust would be from the screening plant. There are operational measures in place to mitigate this potential emission source. These include the direct loading of compost to the hopper at the start of the trommel and the direct loading of the screened material into trailers. This material is then moved directly to the vermicomposting tunnels or to the reception building. Finally, all machinery and plant will be regularly maintained by experienced mechanics to ensure that they are operating efficiently and with minimum emissions.

H.2 Climate

The composting facility will have no impact on the local climate in the area.

H.3 Cultural Heritage

The facility will have no impact on the cultural heritage of the area. The site is not visible from any of the recorded cultural sites in the Rathcabbin area.

H.4 Ecology

The site has been operating as a composting facility on a small scale since 1998 and as a permitted facility for the past two years. The original grassed surface has been covered with hard core and concrete. No additional areas of grass within the current site will be removed. The original hedgerows have largely been retained and these form a natural boundary and screening for the facility. It is planned that additional trees will be planted in places around the perimeter to augment the hedgerows (See Planning Application Drawing No. 1208/A/PI/101). The additional trees will comprise alder, yew, holly, rowan, silver birch and willow. The facility for which the waste licence is being sought will therefore not have any additional impact on the ecology of the area and the proposed additional planting will be a positive contribution to the ecology.

The Coolross area lies within the Little Brosna catchment area. There is however, no direct discharge of process water to surface drains in the area nor is there a discharge of surface run-off water from the operational part of the site to drains that flow to the Little Brosna River. The composting facility will therefore have no impact on watercourses or fisheries.

H.5 Human Beings

The site is located in Coolross, 1.8 km north of the village of Rathcabbin. It is located on a quiet country road with a very low density of population. The area is primarily an agricultural area with most of the land being used as pastureland. There is also an IPC Licensed pig farm within the Rathcabbin area. There has been no significant increase in the Rathcabbin population based on the last two census figures and the village of Rathcabbin was identified in the North Tipperary Development Plan as an area within which there are opportunities for consolidation. A number of new houses are currently being built in the village.

The site is small and will have no significant impact on land use in the area. The Rathcabbin area is a rural area with few employment opportunities other than agriculture. When fully operational, the

vermicomposting operation at Coolross will employ up to 15 people. These will live in the Rathcabbin–Birr area and the facility will contribute to increased employment in the area.

There are a number of impacts of a facility like this on a rural area that may affect the human beings. These would include air quality, visual intrusion, noise and transport. The composting of biodegradable organic wastes has the potential to be a source of odours, if mis-managed. The current, small scale composting at Coolross is done outdoors and the current practices and procedures limit the emission of any significant odours. This was confirmed by an odour survey that was completed by Bord na Mona in 2004. When the facility is operating to its full potential, all the composting operations will be completed indoors and the equipment to control odours will include aeration systems, biofilters and ozone disinfection defusers. This equipment when combined with good working practices will ensure that there are no adverse odours emitted from the site. In the event of the failure of the equipment in one or a number of tunnels, there are a number of measures that could be taken. These include the movement of material to other operational tunnels and stopping the in-take of new wastes. In the event of a power cut, there are three generators on-site to supply power.

The site will cause no significant visual intrusion on the landscape in the Rathcabbin area and thus will not impact on human beings. Likewise, the noise levels from the site are below the levels that are normally set for daytime and night time activities in a rural environment and thus will not impact on human beings.

The operation of the facility will result in a minor increase in the traffic through the village of Rathcabbin. When fully operational, there will be up to eight trucks delivering to the site each day. This would be an increase of approximately 5% in the level of general traffic through the village daily and would represent a significant daily increase in the number of truck movements through the village. The busiest traffic times in the village are between 8.30-9.30 in the morning and between 14.00-15.00 in the afternoon. These times coincide with the start and finish of the school day. Shannon Vermicomposting will ensure that there are no deliveries of organic wastes through the village during these hours.

H.6 Hydrogeology

There will be no direct discharge from the site's composting facilities to the groundwater. Each of the tunnels is equipped with an underground leachate collection tank and the waste reception

building is also equipped with leachate collection tanks. Any leachate that is produced will be contained in the leachate tanks, then sprinkled on the compost and consumed by the worms.

The expansion of the scale of operation at the site will require the construction of an office, canteen and staff toilets. A Puroflo proprietary mechanical aeration system plus percolation trenches will be installed to treat the effluent from these buildings and thus protect the groundwater.

H.7 Landscape

The facility occupies a small area of land in a flat lying rural environment and a public road runs along the eastern side. The site was formerly grassland in a field behind a small farm. The farmhouse and yard buildings are currently the domestic residence of the owner and family of Shannon Vermicomposting and hence are retained and occupy part of road frontage of the facility. The site is bounded by mature hedgerows and trees and these have also been retained (see the accompanying photographs).

The majority of the new buildings on the site are the tunnels and these are only 3m high. Hence they are totally screened from the surrounding area by the hedgerows, trees and former farmyard. The largest building on the site will be the reception building. This will have a maximum height of 8.9m. It will have a concrete base and dark green, zinc coated, metal cladding sides and corrugated roof. The top of the building will be higher than the hedgerow boundary but will be a typical agriculture building and thus not intrusive in the landscape of a rural agricultural area.

H.8 Noise

Composting is a natural process of decomposition that is undertaken by worms and it is not a noise generating process. The noise levels produced from the facility will be emitted primarily from the plant machinery that will be operating on the site as part of the composting process. This machinery is typical agriculture-type machinery comprising tractors / trailers and front-end loaders. A screening unit will periodically be used and there will be a limited number of truck deliveries to the site each day. The noise monitoring survey has indicated that the noise levels recorded at the site boundaries are in compliance with the EPA noise guidelines. The site is located in a rural agricultural area and the noise levels from the site are similar to those that would be emitted from a large farm.

The noise levels from the site will become even lower when the additional facilities that are listed in the planning application that is currently with the North Tipperary County Council are constructed.

Included in this is a plan to enclose the waste reception area within a building. This will mean that the delivery and mixing of the organic waste will be undertaken indoors and this will contain and reduce the noise from this part of the operation.

In addition, Shannon Vermicomposting operates a programme of vehicle maintenance by experienced mechanics to ensure that all the plant on site is in good condition and operating well. This programme will ensure that there is no increase in noise from machinery that is poorly maintained.

H.9 Discharge to surface water

There will be no direct discharge to surface waters from the operations at the Shannon Vermicomposting site. The run-off of surface water from the concreted surfaces will be directed to three interceptor tanks. Any oil run-off from the bunded fuel storage area and the wheelwash will be gathered in one tank and disposed off by Atlas Oil. Run-off from the concrete roadway will be gathered in another of the underground tanks and the sediment allowed to settle. The water will periodically be pumped out and used to moisten the compost. The sediment be removed and stored in sealed plastic containers and removed by a licensed contractor to landfill.

H.10 Discharge to Sewer

There will be no discharge to sewers.

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I Management Plans

Shannon Vermicomposting Ltd has been composting organic biodegradable wastes at the site in Coolross since 2002. This has been a small-scale operation using standard windrow methods. Construction of the tunnels and other related infrastructure in which the vermicomposting and some mushroom growing will be undertaken is progressing at the site. A second planning application has been lodged with North Tipperary County Council to relocate 11 of the tunnels and provide additional and this will improve the operational and environmental protection facilities at the site.

It is planned to have the first nine of the tunnels that are currently being constructed, operational by the end of September 2004. There are currently 5 completed tunnels on the site. The construction of the other 11 tunnels and the other items listed in the second planning application will commence as soon as planning permission is obtained.

When the first nine tunnels are complete and the vermicomposting of the organic wastes is being undertaken, procedural and operation plans will be prepared. These will form part of an Environmental Management System (EMS) for the facility. The EMS will comprise a schedule of environmental objectives and targets, an environmental Management plan (EMP), corrective action procedures and an awareness and training programme. The EMS will be submitted to the EPA within six calendar months of the date of the approval of the waste licence.