

## J Environment Monitoring

### J.1 Dust

Monitoring for dust emissions will be monitored at the site boundary at two locations. These locations will be (i) the northern corner of the site close to the nearest house, (ii) the eastern boundary close to the entrance gate.

The monitoring will be by two Bergerhoff jars for 30-day periods and dust emissions will be maintained less than 350 mg/m<sup>2</sup>/day.

Post closure of the facility, there will be no dust emissions from the site.

### J.2 Ecology

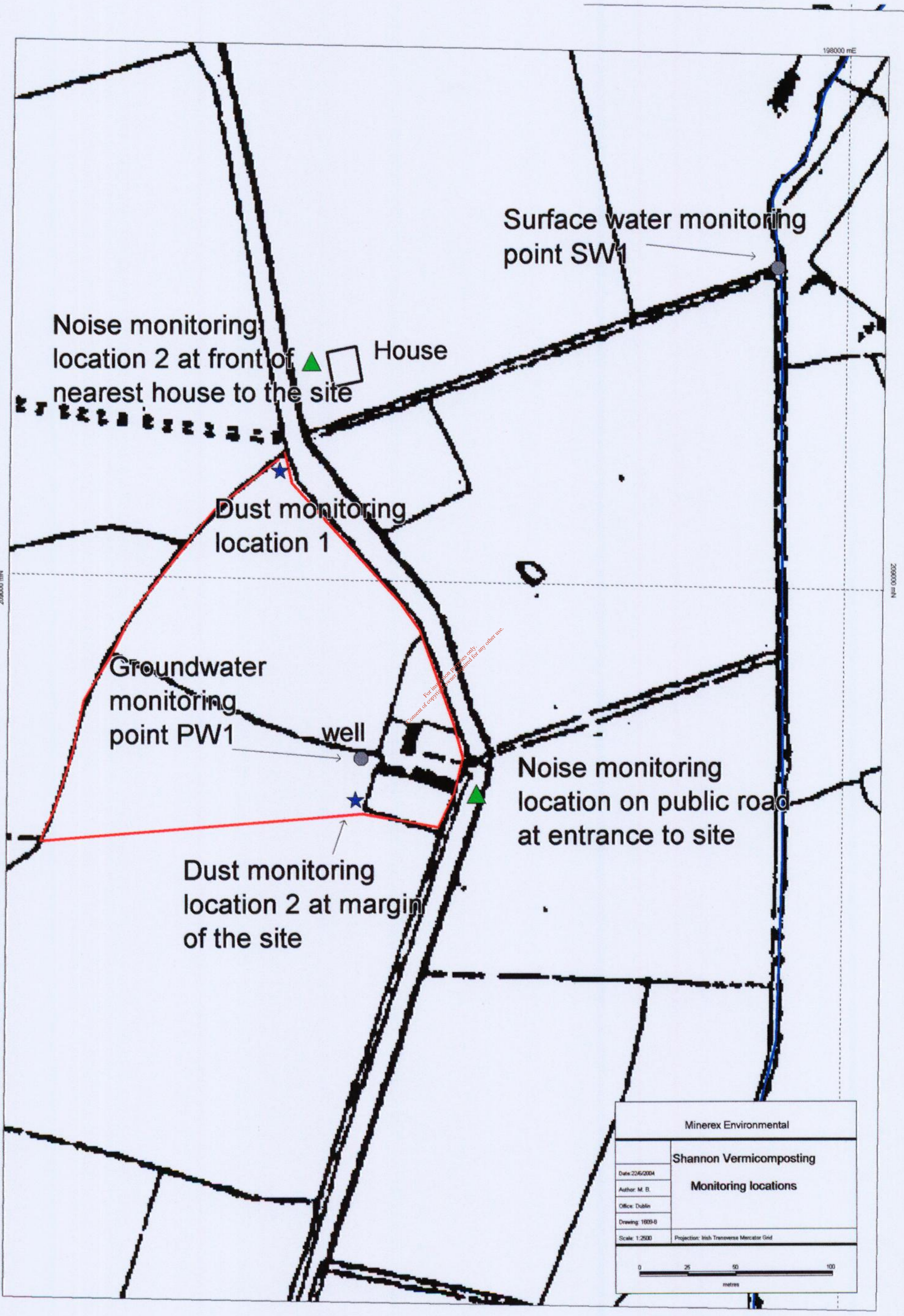
The composting facility will not have a negative impact on the ecology in Coolross. A programme of additional landscaping has been included in a revised planning application that has been submitted to North Tipperary County Council. Monitoring of the progress and impact of this plan will be completed on an annual basis.

Post closure of the facility, there is no plan to monitor the ecology of the site.

### J.3 Groundwater

The composting operation at Coolross is undertaken within enclosed concrete floored tunnels with underground leachate and a re-cycling system to use the leachate in the composting process. There is thus no discharge from the process to groundwater. Surface water run-off from the concrete surfaces of the site will pass through an interceptor. Water for the site is supplied by an on-site borehole and an on-site mechanical aeration system followed by a percolation trenches will treat waste water from the planned office and staff facility that will be built at the site. It is planned to analyse the water from the borehole annually as a means of ensuring that the operation of the facility is not having a negative impact on the groundwater. The water will be analysed for:

Parameter	Monitoring Frequency	Detection method
Coliforms (total, faecal)	Annually	Membrane filtration
Ammoniacal Nitrogen	Annually	ISE / colorimetry
Sulphate	Annually	KONE
Iron	Annually	ICP USN
pH	Annually	Electrometry
Electrical conductivity	Annually	Electrometry



Surface water monitoring point SW1

Noise monitoring location 2 at front of nearest house to the site



House

Dust monitoring location 1



Groundwater monitoring point PW1

well



Noise monitoring location on public road at entrance to site

Dust monitoring location 2 at margin of the site

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Minerex Environmental	
Shannon Vermicomposting	
Monitoring locations	
Date: 22/5/2004	
Author: M. B.	
Office: Dublin	
Drawing: 1609-8	
Scale: 1:2500	Projection: Irish Transverse Mercator Grid

198700 mE

209000 mN

198000 mE

209000 mN

Post closure of the facility, it is planned that the groundwater would be monitored for two years to ensure that there is no impact from the site on groundwater quality.

#### **J.4 Air**

An air survey to assess the quality of the air emitted to the atmosphere from the biofiltration system will be completed annually at a location and by a method to be agreed with the EPA.

#### **J.5 Sewer Discharge**

There will be no sewer discharge and thus no monitoring is required.

#### **J.6 Meteorological Data**

Shannon Vermicomposting will install equipment to record climatic conditions at the site. This will comprise the recording of rainfall on a weekly basis and the recording of wind direction and temperature on a daily basis.

#### **J.7 Noise**

A noise survey was completed at the facility during the on-going composting of the biodegradable wastes and the construction of the tunnels and associated infrastructure. The results of the survey indicate the noise levels from the site are considerably less than the daily permitted levels of  $L_{Aeq} 55$  dB(A). A further survey will be undertaken when the construction is completed and the facility is operating to its full capacity. The noise levels will be recorded at two noise sensitive locations, i.e. the public road at the entrance to the site and at the nearest house to the site, 70m to the north of the site. Thereafter, a noise survey will be completed once each year to demonstrate compliance with the daytime and night-time noise levels. The survey will be completed using standard methods.

Post closure of the facility, there will be no need to monitor noise from the site.

#### **J.8 Odours**

An odour survey, similar to the survey completed by Bord na Mona in March 2004, will be completed once a year or more frequently if written complaints of odours are reported to Shannon Vermicomposting. The monitoring for odours will consist of a trained member of the staff completing an odour assessment of the facility on a daily basis and checking the condition of the

biofiltration and ozone disinfection diffusers. The results will be recorded in a daily monitoring log. An internal and external odour survey will be completed at the facility by competent consultants on an annual basis. The planned regular recording of meteorological data will assist in the appraisal or investigation of any reported complaints.

Post closure of the facility, monitoring for odours will be undertaken for a period to be agreed with the EPA.

### J.9 Surface Water

There will be no direct discharge of any process water or site surface run-off to surface water drains. At the eastern side of the site, surface water run-off from the public road / entrance to the site runs in a roadside drain along the margin of the site. This drain then runs in an easterly direction to a large drain (located 150m east of the site) that flows in a northern direction to the Little Brosna River. A sample of the water from this drain was analysed for this application to determine the background levels. Shannon Vermicomposting will sample this drain on an annual basis and will analyse for:

Parameter	Monitoring Frequency	Detection method
Coliforms (total, faecal)	Annually	Membrane filtration
Ammoniacal Nitrogen	Annually	ISE / colorimetry
BOD	Annually	Electrometry /Titrimetry
Total suspended solids	Annually	Gravimetry
pH	Annually	Electrometry
Electrical conductivity	Annually	Electrometry

Post closure of the facility, there will be no need to monitor for the surface water to the east of the site.

## K Contingency Arrangements

A second planning application has been submitted by Shannon Vermicomposting to North Tipperary County Council. The purpose of the revised planning application is to provide additional infrastructure that is necessary for the on-going development and continuing operation of the composting facility. The improved infrastructure that will result from this planning application will not increase the capacity of what was originally applied for when permission was granted for 20 tunnels to be constructed at the site. The new infrastructure will improve the environmental and safety features of the facility.

These features include the provision of improved fire fighting facilities. Two 2000 gallon tanks will be installed as part of the new planning application. These tanks will be used solely as a supply of fire fighting water. There will also be an adequate supply of fire extinguishers spread throughout the site and the installation of a fire alarm system. A slurry tanker will be provided on site as a mobile fire-fighting appliance.

Other contingency arrangements that are in place or will be in place when the construction at the site is complete include:

- Three diesel generators to provide back-up power in the event of a power failure.
- Abundant machinery with no one specific task restricted to one piece of machinery.
- Extra capacity within the tunnels on site that could be used in the event of a breakdown or damage to one or more of the tunnels that will be used for the vermicomposting process.
- The arrangement of the site facilities is such that the composting system can be operated in several different ways to cater for any problems that may arise.

The protection of the environment, in particular the protection of air, surface water and groundwater qualities is provided by the characteristics of the layout of the site, the provision of leachate tanks, biofiltration and ozone disinfection defusers, and drains / interceptors. These facilities will ensure that there will be no contamination of the environment as a result of the operation of this composting process. In the event of a serious incident at the facility, no additional organic waste materials will be accepted until such time as all the required environmental protection measures are operational and any damaged material is removed from the site. The facility is however, operated with maintenance and contingency requirements very much to the fore. The staff at the site includes three mechanics and fitters and thus any breakdowns will be quickly repaired and all machinery will be regularly maintained.

The owner and managing director of Shannon Vermicomposting lives at the site and thus outside of the normal working hours the site is still manned. The site is also monitored by a CCTV system and a fire alarm system will be installed to the buildings and tunnels when the construction is complete.

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