

8 AIR QUALITY, NOISE AND CLIMATE

8.1 Introduction

Byrne Environmental Consulting Ltd. was commissioned to prepare an Air Quality, Climate and Noise Impact Assessment on behalf of Greenport Environmental Ltd. for the proposed in-vessel composting and biogas facility within the Shannon Foynes Port Area at Durnish, Foynes, Co. Limerick.

This Impact Assessment identifies and presents the potential air quality, climatic and noise impacts associated with the proposed development. It also presents the proposed mitigation measures that shall be implemented at the development site to ensure that all site activities are controlled and managed according to Industry Best Practices to minimise the impact on the local receiving environment.

The proposed facility shall be designed to generate up to one Mega Watt (MW) of electricity from the harnessing of methane gas produced during the anaerobic digestion process. This positive impact associated with the development will serve to enhance the sustainability of the project, as less fossil fuel-generated electricity will be required to power the facility, thereby resulting in a reduction in carbon dioxide emissions to atmosphere. Any excess electricity generated will be fed into the national grid and will displace electricity generated using fossil fuels, further reducing carbon dioxide emissions to atmosphere from power stations.

The proposed development site is located within the Shannon Foynes Port Area in a location that is well removed from residential development. The closest residential receptors are located approximately 450 metres south of the closest site boundary and approximately 580 metres south of the main process building, in the village of Foynes. The proposed development site location is shown in Figure 8.1. The site location is particularly significant with reference to the prevailing wind direction of the area, which is dominated by southwesterly winds, as also shown on Figure 8.1. This will ensure that for the majority of the time the site will be located in a downwind location relative to the location of residential receptors. The dominant wind directions are also shown in Figure 8.1. This will ensure that the potential for adverse impacts of potential odours and emissions from the facility will be naturally minimised as a result of local climatological conditions.

The proposed facility has been designed to include state of the art air quality abatement technologies including an air scrubbing system, humidifier and biofilter system, and enclosure of all processes within the plant building. In order to ensure that the potential for odour nuisance is minimised, the facility has been designed to operate under negative pressure whereby all air within the facility building and processing areas shall be vented through the scrubber, humidifier and biofilter system. A negative pressure building is kept at a lower air pressure than the outside atmosphere. This ensures that air does not escape the building, except through the scrubbers, humidifiers and biofilter systems, each of which are described in Chapter 3 of this EIS. Due to the negative air pressure that the building is maintained at, air is drawn in through any other openings to the external atmosphere, such as doors used by staff or loading bay doors used by machinery.

Guidelines from the UK Environment Agency and Cré - The Composting Association of Ireland specify that the minimum distance that composting facilities should be situated relative to receptors to ensure the potential impacts of bioaerosols such as *Aspergillus fumigatus* are minimised is 250 metres. This minimum distance is significantly exceeded at

the proposed facility, with the closest receptors located approximately 450 metres upwind of the facility.

Noise generated by the operation of the facility will be attenuated as all processing activities will occur within the plant building, and any external plant including fans and duct shall be enclosed and include silencer systems.

A programme of routine air quality monitoring including bioaerosol sampling for *Aspergillus fumigatus* using the Anderson Sampling Technique, dust monitoring using *German Standard Method for determination of dust deposition rate (VDI 2129)*, odour monitoring utilising olfactometric analysis and environmental noise monitoring at baseline monitoring locations has been designed to verify that the proposed air quality and noise mitigation measures are effective in ensuring that the potential impacts on the receiving environment and local residential receptors in the Foynes area are minimised.

8.2 Air in the Existing Environment

This assessment includes a review of the baseline dust deposition monitoring which was conducted at Foynes Port site boundary locations in the vicinity of the closest receptors to the site, and baseline environmental noise monitoring which was conducted in the vicinity of the closest Noise Sensitive Receptors to the site. The dust deposition and environmental noise monitoring location maps are included in this section of the EIS. A comprehensive review of National Air Quality data has also been carried out to further evaluate the existing ambient air quality in the vicinity of the existing site.

8.2.1 Existing Air Quality

The existing ambient air quality in the vicinity of the subject development site at Foynes is typical of a small urban/industrial environment that is located in a predominantly rural setting. There are no major population centres in the vicinity of the site with the exception of the village of Foynes, which includes a number of one-off housing, ribbon development and a number of small residential estates. The subject site is located in an industrial area within the Shannon Foynes Port Area, which includes outdoor coal/clinker storage facilities, wastewater treatment facilities, warehousing, engineering companies and truck parking facilities. The most significant industrial site within the local region is the Aughinish Alumina site, which is located approximately 2.4 kilometres northeast of the subject site. This facility is located downwind of the proposed development site.

There are a number of potential local sources of air emissions, which may currently influence the air quality in the vicinity of the subject development site. These include fugitive dust emissions from existing Port activities such as coal handling and the movement of HGVs within the Port Area. As Aughinish Alumina is located downwind of the site, it was considered unnecessary to discuss potential dust emissions from this facility as emissions from this facility are unlikely to impact on ambient air quality at Foynes. The Money Point and Tarbert Power Stations are located approximately 22 kilometres and 18 kilometres west of the proposed development site respectively. Due to their distance from the site however, the impact of emissions from these facilities on local ambient air quality within the Foynes area is negligible.

The emissions from local agricultural activities in the greater Foynes area will include methane from ruminants as well as wind blown dust generated by agricultural activities. There will be no emissions of methane, carbon dioxide or dust that will be of environmental significance from the proposed facility, due to the design and control measures in place, as discussed in this chapter of the EIS. The proposed development will

therefore have no significant impact on the atmospheric budget of these substances in the area.

Without mitigation, substances which are expected to be present in the potential emissions released from the composting/biogas process are odours, bioaerosols, hydrogen sulphide, ammonia and mercaptans, sulphur dioxide, carbon dioxide and nitrogen oxides, which will originate from fossil fuel combustion sources, and dust from the waste handling and processing operations and traffic movements associated with the facility. A description of existing levels, where available, of these substances in ambient air is required to allow the evaluation of all potential air quality impacts associated with the proposed development. Other potential pollutants will also be discussed in brief but it is the potential pollutants from the proposed development that will be discussed in greatest detail.

The EU Air Quality Framework Directive 96/62/EC required Member States to divide their territory into zones for the assessment and management of air quality. The Environmental Protection Agency (EPA) published in 2001 a *'Preliminary Assessment Under Article 5 of Council Directive 1996/62/EC'* to meet the requirements of the Directive. This report presented the results of the assessment of air quality throughout the country and defined four air quality zones: A, B, C and D. The four Air Quality Zones are listed in Table 8.1 and shown in Figure 8.2. The site of the proposed development lies with Zone D.

Table 8.1 Air Quality Zones in Ireland

| View Number | Description |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | Dublin Conurbation |
| B | Cork Conurbation |
| C | Other cities and large towns comprising Galway, Limerick, Waterford, Clonmel, Kilkenny, Sligo, Drogheda, Wexford, Athlone, Ennis, Bray, Naas, Carlow, Tralee and Dundalk |
| D | Rural Ireland, i.e. the remainder of the State excluding Zones A, B and C |

The Air Quality Framework Directive lists sulphur dioxide, nitrogen oxides (NO_x), particulate matter and lead as the priority pollutants to be covered by the initial phases of the management approach. The air quality in each zone is assessed and classified with respect to upper and lower assessment thresholds based on the measurements over the previous five years. Upper and lower assessment thresholds are prescribed in the Regulations for each pollutant. The number of monitoring locations required is dependent on population size and whether ambient air-quality concentrations exceed the upper assessment threshold, are between the upper and lower assessment thresholds, or are below the lower assessment threshold as defined in Schedule 9 of the 2002 Air Quality Regulations (Department of the Environment and Local Government, 2002).

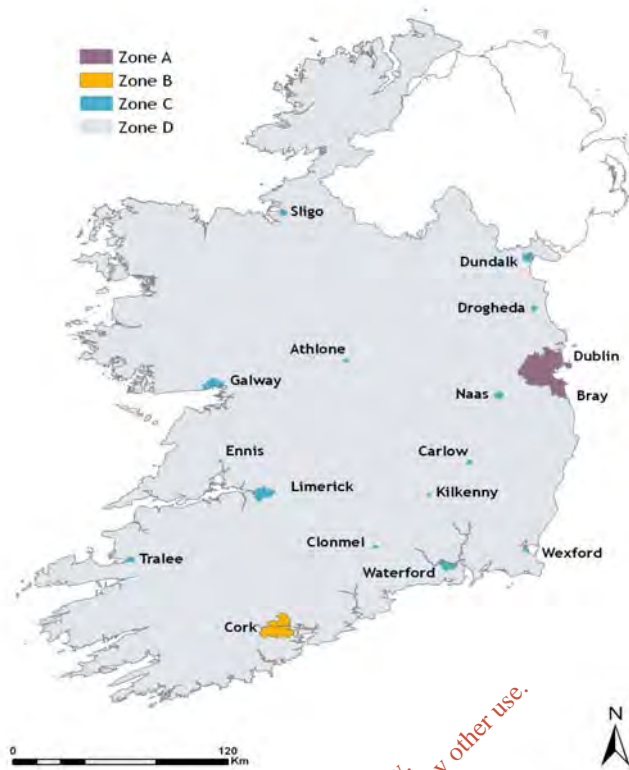


Figure 8.2 Air Quality Zones in Ireland (Source: Air Quality in Ireland 2007, EPA 2008)

8.2.2 Existing Air Quality Assessment

In order to assess and characterise the existing ambient air quality in the vicinity of the subject site and at local receptors it is necessary to review available air quality monitoring data from published sources such as the most recent Environmental Protection Agency (EPA) annual report, entitled 'Air Quality in Ireland 2007' (EPA, 2008). This EPA report provides detailed air quality monitoring data collected from a number of monitoring locations throughout Ireland. There is no long-term data available specifically for the subject site. However, relevant data for rural areas (specified as Zone D by EPA) is described as being representative of that which would be expected for the subject area.

It is noted that the EPA does not monitor bioaerosols, odours or dust deposition as part of their annual air quality surveys, however site-specific dust deposition monitoring has been carried out as part of this assessment. Air quality data is compared against National Air Quality standards as detailed in Table 8.2.

Table 8.2 Assessment criteria for air quality impact assessment

| Parameter and Standard | Averaging Period | Concentration (µg/m3) | Basis of application of limit value |
|-----------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------|--------------------------------------------------------------------------|
| Particulate Matter (PM₁₀) Irish AQS SI No. 271 ¹ Council Directive 1999/30/EC ² | Annual: Stage 1 | 40 | PROTECTION OF HUMAN HEALTH Annual mean (Calendar Year) |
| | Stage 2 | 20 | Annual mean (Calendar Year) |
| | 24-hour: Stage 1 | 50 | Not to be exceeded more than 35 times in a calendar year (i.e. 90.4%ile) |
| | Stage 2 | 50 | Not to be exceeded more than 7 times in a calendar year (i.e. 98.1%ile) |
| NO₂ WHO Guideline ³ | 1-hour | 200 | PROTECTION OF HUMAN HEALTH Maximum of one-hour means |
| | Annual | 40 - 50 | Annual mean |
| Irish AQS SI No. 271 ¹ Council Directive 1999/30/EC | 1-hour | 200 | Not to be exceeded more than 18 times in a calendar year (i.e. 99.8%ile) |
| | Calendar year | 40 | Annual mean |
| Irish AQS SI No. 271 ¹ Council Directive 1999/30/EC | Annual mean | 30 | PROTECTION OF VEGETATION Calendar Year |
| SO₂ WHO Guideline | Annual | 50 | PROTECTION OF HUMAN HEALTH Annual mean |
| | 1-hour | 350 | Maximum 1 hour mean |
| Irish AQS SI No. 271 ¹ Council Directive 1999/30/EC | 1-hour | 350 | Not to be exceeded more than 24 times in a calendar year (i.e. 99.7%ile) |
| | 24-hour | 125 | Not to be exceeded more than 3 times in a calendar year (i.e. 99.2%ile) |

¹ Irish Air Quality Standard Regulations, SI No. 271 of 2002

² Stage 1 - to be attained by January 2005; Stage 2 - to be attained by January 2010. There are various dates from 2001 to 2010 specified in the Directive for attainment of air quality standards

³ Guidelines for Air Quality, WHO, Geneva, 2000

| Parameter and Standard | Averaging Period | Concentration ($\mu\text{g}/\text{m}^3$) | Basis of application of limit value |
|------------------------------|-------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------|
| | Calendar year | 20 | Annual mean |
| Council Directive 1999/30/EC | Annual 6-month | 20 20 | PROTECTION OF ECOSYSTEMS Calendar Year 1 st October to 31 st March |

8.2.2.1 Nitrogen Oxides

Data for rural areas is limited but the available data suggests that the annual mean concentrations of NO_x in rural areas is 6 to 10 $\mu\text{g}/\text{m}^3$ with NO_2 accounting for approximately 5 to 8 $\mu\text{g}/\text{m}^3$. The Preliminary Assessment under Directive 1996/62/EC projects a maximum annual mean background concentration of NO_2 of <20 $\mu\text{g}/\text{m}^3$ for rural areas. The recorded value at the Kilkitt monitoring station, in 2007 was 3 $\mu\text{g}/\text{m}^3$, which may be considered as indicative of the subject site in Co. Limerick. Kilkitt is located in County Monaghan, and is considered to be typical of rural environments (Zone D) in Ireland with regards to air quality.

The World Health Organisation (WHO) Air Quality Guidelines for Europe 2000 suggest that ambient NO_2 levels in rural areas are generally in the range <1 $\mu\text{g}/\text{m}^3$ to 9 $\mu\text{g}/\text{m}^3$ NO_2 . Data from the UK Monitoring Network for Rural Areas was also reviewed for the purpose of the assessment.

Given the absence of any significant industrial developments that have the potential to release significant emissions of nitrogen oxides to air within one kilometre of the proposed development site, or high concentrations of residential housing developments in the vicinity of the site, it is reasonable to predict that ambient concentrations of nitrogen dioxide would be well within the expected range for a rural environment. There are no significant industrial sources of nitrogen oxides within the Foynes Port area and the existing industrial uses such as coal storage, engineering facilities and bulk storage facilities are not of a nature or scale that would generate high concentrations of nitrogen oxides. The Aughinish Alumina site, which is located approximately 2.4 kilometres northeast of the subject site would be a significant downwind source of regional nitrogen oxide emissions.

8.2.2.2 Sulphur Dioxide

Annual mean concentrations of sulphur dioxide in 'rural' areas are expected to be in the range 3 - 6 $\mu\text{g}/\text{m}^3$ and 25 - 100 $\mu\text{g}/\text{m}^3$ in 'urban' locations (*WHO Guidelines for Air Quality, May 2000*.) The overall air quality in the subject area is expected to be characteristic of other similar rural locations, with low levels of air contaminants. Given the absence of any significant industrial developments that have the potential to release significant emissions of sulphur dioxides to air within one kilometre of the site or high concentrations of residential housing developments in the vicinity of the site, it is reasonable to predict that ambient concentrations of sulphur dioxide would be well within the expected range for an unpolluted rural environment. The Aughinish Alumina site, which is located approximately 2.4 kilometres northeast of the subject site would be a significant downwind source of regional sulphur dioxide emissions.

It is also noted that the Money Point and Tarbert power stations are located approximately 22 kilometres and 18 kilometres west of the Foynes Port respectively. However, given the extended distance between these power stations and the subject site, the impact of emissions of sulphur dioxide from these facilities at Foynes is negligible.

The recorded value for sulphur dioxide at the Kilkitt, Co. Monaghan rural monitoring station in 2007 was 2 µg/m³, which may be considered as indicative of the subject site at Foynes.

8.2.2.3 Carbon Monoxide

The Air Quality Standards Regulations 2002 specify a limit value of 10 mg/m³ for carbon monoxide (CO), which is applied to the maximum daily eight-hour mean concentration. The standard, taken from Daughter Directive 2000/69/EC, came into force in 2005. It is the first standard to be adopted for CO in Ireland and is used as the reference for CO assessment here.

CO monitoring is very limited in Ireland and the available data relates mainly to urban locations with high levels of transport-related CO emissions. Data on CO levels for 2007 for Zone D areas are presented from Ferbane, Co. Offaly with the annual mean concentration for 2006 being 0.2 mg/m³ (expressed as the annual mean of 8-hour running means) indicating that CO levels are well below the limit of 10 mg/m³, therefore it is reasonable to conclude that ambient levels of CO at the application site will be even lower given its rural type location (Zone D). It is also noted that the Money Point and Tarbert power stations are located approximately 22 kilometres and 18 kilometres west of the Foynes Port respectively. However, given the extended distance between these power stations and the subject site, the impact of emissions of CO from these facilities at Foynes is negligible.

8.2.2.4 Particulate Matter PM₁₀

PM₁₀ is particulate matter less than 10 µm aerodynamic diameter (or, more strictly, particles which pass through a size selective inlet with a 50% efficiency cut-off at 10 µm aerodynamic diameter). Airborne particles originate from a wide variety of sources. Significant natural sources of PM₁₀ particles include re-suspension of soil material in rural areas, sea spray and reactions between natural gaseous emissions. Particles are classified into two categories: they may be primary (emitted directly from primary sources such as industrial sources, power stations, cement factories combustion process and motor vehicles) or they may be formed from secondary sources (particles formed within the atmosphere from condensation of vapors, or as a result of chemical reaction processes).

PM₁₀ monitoring in Ireland is limited to continuous monitoring stations operated by the Local Authorities and EPA, mainly in urban areas. The most recent PM₁₀ measurements made are reported in the Environmental Protection Agency's *Air Quality in Ireland Report 2007*. The recorded annual mean value at the Kilkitt monitoring station in 2007 was 10 µg/m³, which may be considered as indicative of the subject site in Foynes.

Council Directive 1999/30/EC and as transposed into Irish Law (June 2002) as Statutory Instrument S.I No. 271 specifies a limit value of 50 µg/m³ for the 24-hour average concentration of PM₁₀, not to be exceeded more than 35 times in a calendar year (90.4 percentile).

8.2.2.5 Dust Deposition

Dust levels in rural atmospheres can be influenced by local activities such as land cultivation and vehicle movements on unsealed access-ways. There are no national or European Union air quality standards with which these levels of dust deposition can be compared. However, a figure of 240 mg/m² per day (as measured using Bergerhoff type dust deposit gauges as per *German Standard Method for determination of dust deposition rate, VDI 2129*) is commonly applied to ensure that no nuisance effects will result from specified waste management activities.

Dust Deposition Rate is normally measured by gravimetrically determining the mass of particulates and dust deposited over a specified surface area over a period of one month (30 days +/- 2 days). The results are expressed as dust deposition rate in mass per unit area per day (mg/m²-day). For the purposes of assessing the potential for unacceptable soiling of property arising from dust emissions, a figure of 350 mg/m² per day (as measured using Bergerhoff type dust deposit gauges as per German Standard Method for determination of dust deposition rate, VDI 2119) is considered to be an appropriate limit value.

The *VDI 2119* standard specifies that the dust deposition measurement period should be of one month's duration (30 days +/- 2 days). This guideline limit value of 350 mg/m² per day is obtained from the commonly applied *German TA Luft Air Quality Standard* emission limit value, which was established to protect against damage or impairments to property or amenities, and it is to this standard that the results of this survey have been assessed.

Byrne Environmental Consulting Ltd. carried out a measurement of baseline dust deposition at the receptors closest to the site during November and December 2008. The dust deposition measurement results for this period are presented in Table 8.3, and monitoring locations are shown in Figure 8.3.

Table 8.3 Baseline Dust Deposition Monitoring Results: November to December 2008

| Reference | D1 North of Site | D2 South of Port Area | D3 Port Site Entrance |
|-----------------------------------------------|---------------------|--------------------------|--------------------------|
| Recorded value (mg/m ² per day) | 572 | 356 | 147 |

The range of measured baseline dust deposition values in the vicinity of the closest receptors to the site and at a location north of the subject composting facility range between 147 to 572 mg/m² per day and indicate that there are relatively high levels of dust existing in the ambient environment. Typical levels of dust deposition encountered in different environments are presented in Table 8.4 and indicate that the existing baseline dust deposition levels at the site are more typical of an industrial area. The elevated dust-deposition values may be attributed to large volumes of traffic within the Port Area as well as from the outdoor coal/clinker storage areas located adjacent the subject site. There were no apparent dust mitigation systems such as sprinklers or wheel washes observed at any facility or on roadways within the Port Area.

Table 8.4 Typical Dust Deposition Levels

| Setting | Deposition Level (mg/m ² per day) |
|----------------------------------------|-------------------------------------------------|
| City/Industrialised Area | 1,040 |
| Large Urban Area | 520 |
| Urban Area surrounded by Rural Setting | 260 |
| Partially Developed Area | 180 |
| Rural Area | 130 |

8.2.2.6 Odours

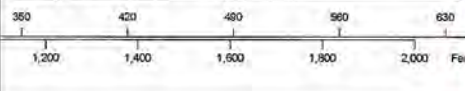
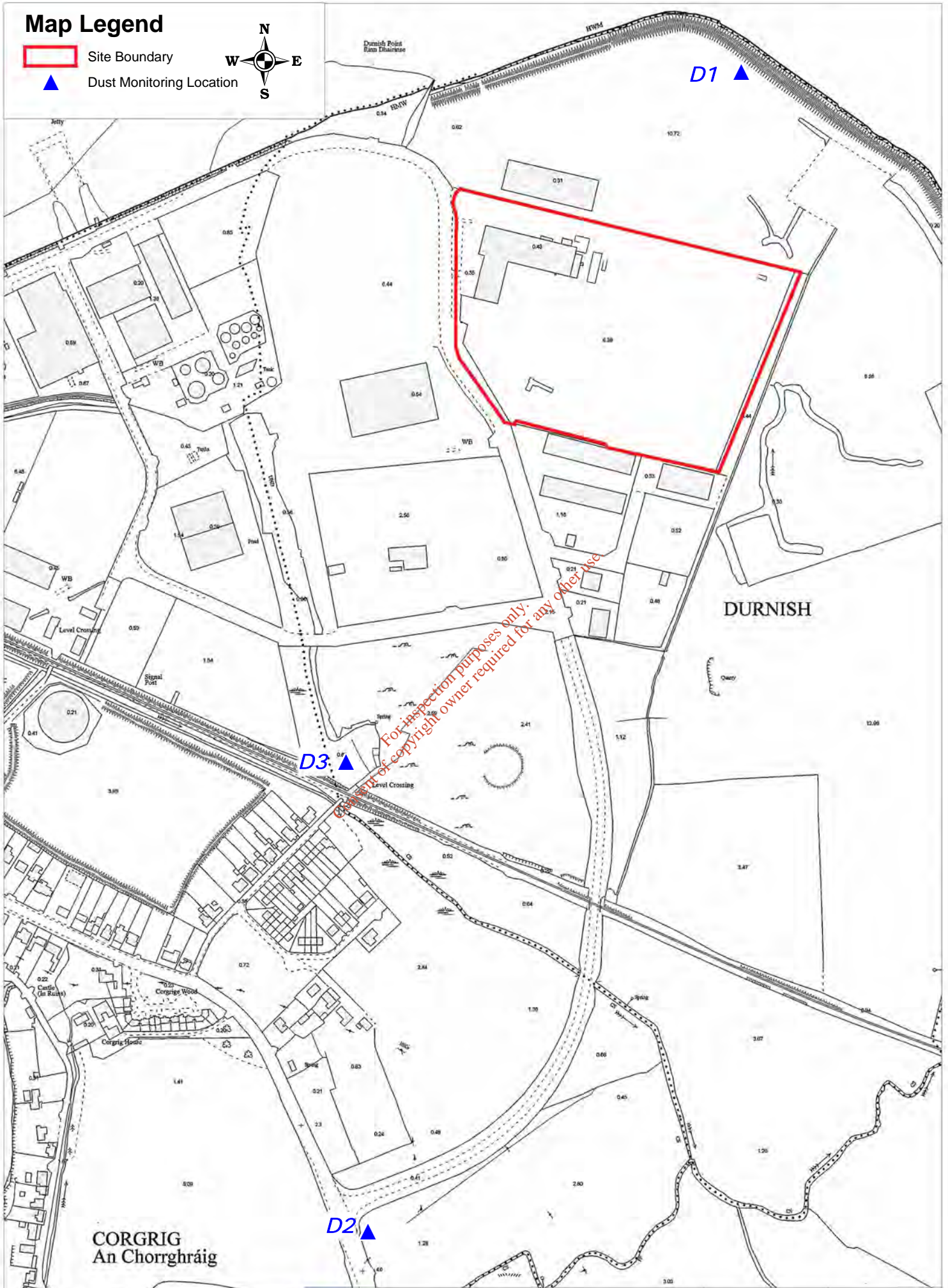
There is no national odour-monitoring programme in place in Ireland conducted by the EPA or Local Authorities, however observations were made as part of this impact assessment to provide information on the existing baseline environment.

The proposed facility is to be located in the industrial area of the Shannon Foynes Port Area, which includes a number of warehousing, engineering and bulk storage units. In

Map Legend

 Site Boundary

 Dust Monitoring Location



| | | |
|-------------------------------------------------------------------------|-----------------------|-------------------------|
| MAP TITLE: Dust Monitoring Locations | MAP NO.: 8.3 | SCALE: 1:5,000 |
| PROJECT TITLE: 080907 - Greenport Foynes Composting Facility EIS | ISSUE NO.: D01 | |
| MAP DRAWN/MODIFIED BY: Lorraine Meehan | CHECKED BY: | DATE: 20-01-2009 |



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addition, there is a small industrial wastewater treatment facility located to the south of the industrial area. During a number of site visits it was noted that there was a very faint odour emanating from this facility, however it was not observed to be unpleasant or unacceptable. Other odours observed at the Port Area included diesel fumes from HGV movements. It is significant to note that these odours were not perceptible at the closest receptors located to the south and southwest of the Port Area.

8.2.2.7 Bioaerosols

Composting is a microbiological process and during mechanical agitation of composting material, biological agents are aerosolised (i.e. become airborne), giving rise to the term 'bioaerosol'. Bioaerosols are not exclusive to composting facilities. They include bacteria, fungi and organic constituents of microbial and plant origin (CRE, 2004). There is currently no published data on baseline bioaerosol monitoring in Ireland for *Aspergillus fumigatus* (a fungal bioaerosol), dust, fungi or total bacteria. It is noted that bioaerosols are constantly present in the ambient atmosphere as a consequence of dust and soil and the natural breakdown of vegetation.

8.2.2.8 Ambient Air Quality Overview

Air quality standards and guidelines are available from a number of sources. The guidelines and standards referenced in this report include those from the European Union, Ireland and World Health Organisation (WHO) and on-site observations. Air quality standards are developed at different levels for different purposes. European legislation on air quality has been framed in terms of two categories: limit values and guide values. Limit values are concentrations that cannot be exceeded and are based on WHO guidelines for the protection of human health. Guide values are set as a long-term precautionary measure for the protection of human health and the environment. The existing ambient air quality meets the requirements of all relevant legislation.

8.3 Noise in the Existing Environment

This section of the report presents a description of the existing ambient noise levels at the closest Noise Sensitive Receptors in the vicinity of the proposed development site.

8.3.1 Noise Sensitive Receptors

The proposed development is to be located within the existing Foynes Port area in a location that is well removed from residential development, with the closest residential receptors located approximately 450 metres south of the closest site boundary and approximately 580 metres south from the facility building.

There are a number of private residences located set back from the N69 National Secondary Road between the village of Foynes and Limerick City. Baseline noise measurements were conducted in proximity to the closest receptors (N1, N3 & N4) and at a location (N2) on the southern boundary of the subject site. The noise monitoring locations are shown in Figure 8.4.

8.3.2 Existing Baseline Noise Levels

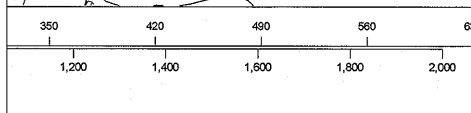
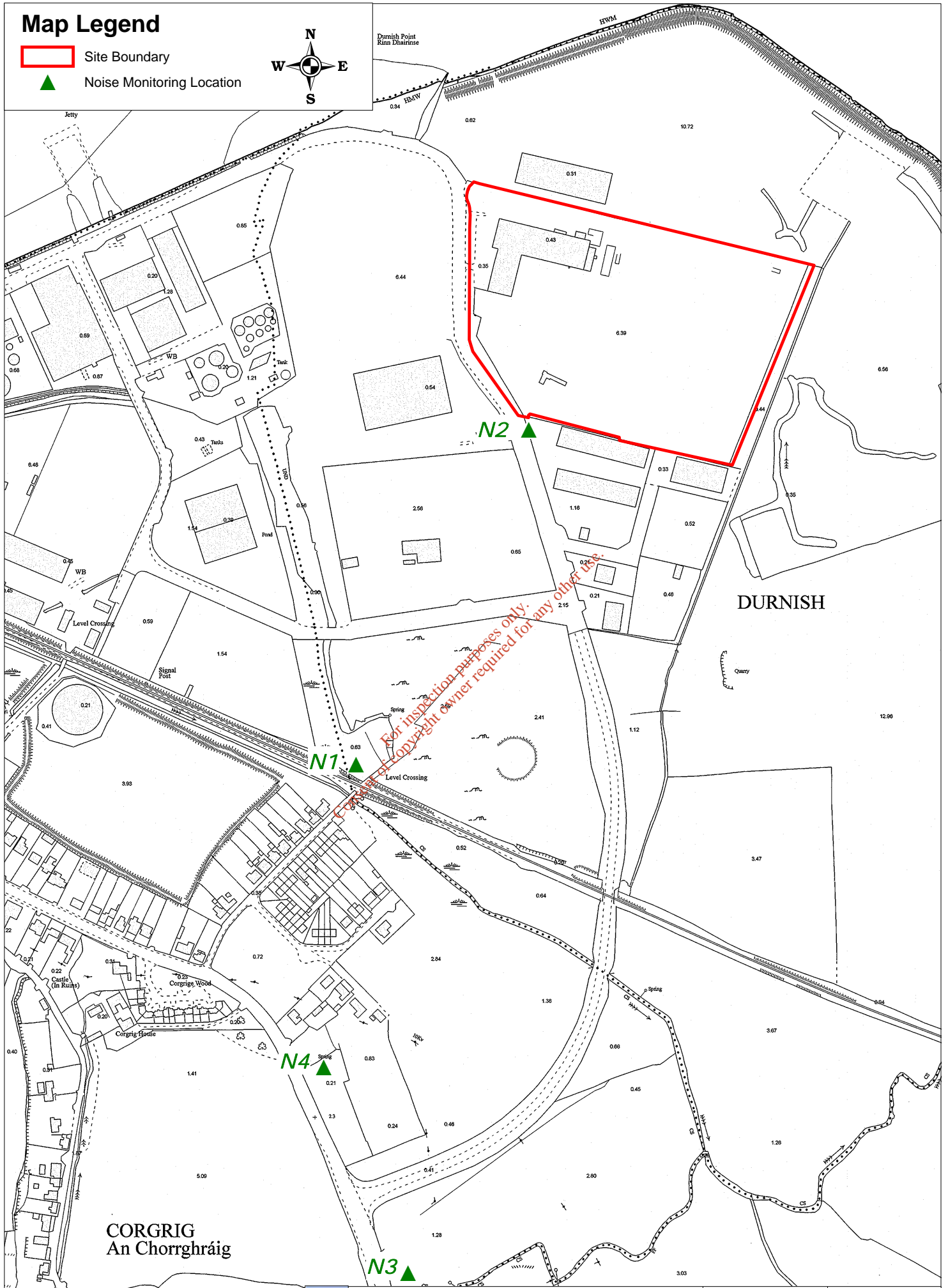
Baseline noise measurements were conducted at the closest Noise Sensitive Receptors to the subject site and at the subject site to characterise the existing noise climate in the vicinity of the Shannon Foynes Port Area. The baseline results are summarised in Table 8.5.

Map Legend

- Site Boundary
- ▲ Noise Monitoring Location



Dunish Point
Rinn Dhuairne



| | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------|
| MAP TITLE: Noise Monitoring Locations | MAP NO.: Figure 8.4 | SCALE: 1:5,000 |
| PROJECT TITLE: 080907 - Greenport Foynes EIS | ISSUE NO.: 080907 - 2009.01.20 - F | |
| MAP DRAWN/MODIFIED BY: Lorraine Meehan | CHECKED BY: Brian Keville | DATE: 20-01-2009 |
| McCarthy Keville O'Sullivan McCarthy Keville O'Sullivan Ltd., Block 1, G.F.S.C., Moneenageisha Road, Galway, Ireland. EMail: info@mccarthykos.ie Tel: +353 (0)91 735611 Fax +353 (0)91 771279 | | |

Table 8.5 Baseline Noise Monitoring Results December 2008

| Reference | LAeq,60min ⁴ dB (A) | LA90,60min ⁵ dB (A) | LA10,60min ⁶ dB (A) | LAmx,60min ⁷ dB (A) |
|-----------------------------------------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| N1 Residential estate adjacent to southern boundary of Port | 63 | 44 | 68 | 88 |
| N2 Southern boundary of subject site | 62 | 45 | 62 | 84 |
| N3 Private house east of Port entrance | 70 | 51 | 75 | 87 |
| N4 Private house east of Port entrance | 68 | 54 | 72 | 86 |

Information on identified noise sources during each measurement interval are summarised as follows:

- N1** Dominant noise is passing HGV traffic in Port Area
- N2** Dominant noise is passing HGV traffic in Port Area
- N3** Dominant noise is traffic along N69 Road
- N4** Dominant noise is traffic along N69 Road

The noise climates in the vicinity of the closest Noise Sensitive Receptors to the subject site are characterised as being dominated by passing road traffic noise associated with the Port Area and from traffic movements along the N69 Road. Higher baseline noise levels were recorded at receptors closest to the N69 Road.

8.3.3 Vibration

The nature of the proposed Greenport Environmental Ltd. development will not have the potential to cause groundborne vibrations, and therefore an assessment of vibrational impacts was not required to be addressed as part of this impact assessment study. Items of plant will be secured and fitted with shock absorber cushions to ensure they remain fixed to the floor of the building. In the absence of these measures, the operation of the plant would not generate groundborne vibrations that would extend beyond the site.

⁴ LAeq,T: the equivalent continuous sound level measured over a specified period of time

⁵ LA90,T: the sound level exceeded for 90% of the measurement time. This is commonly used to estimate background noise levels

⁶ LA10,T: the sound level exceeded for 10% of the time. This is commonly used to describe high energy, short duration noise events such as road traffic noise

⁷ LAmx,T: the maximum time-weighted sound level measured. It is the highest level of environmental noise occurring during the measurement time. It is commonly used in conjunction with the LAeq, T value to ensure a single noise event does not exceed a limit.

8.4 Climate and Weather in the Existing Environment

8.4.1 Description of Existing Climate

Climate can refer to both the long-term weather (macro-climate) patterns in an area and also to the more localised atmospheric conditions, referred to as the microclimate. Climate has implications for many aspects of the environment from soils to biodiversity and land-use practices. This section deals with the existing climate in the area and how the proposed development may impact on the microclimate.

The closest synoptic meteorological station to the subject site at Foynes is at Shannon Airport which is located approximately 15 kilometres northeast of the site and as such, long-term measurements of wind speed/direction and air temperature for this location are directly representative of prevailing conditions experienced at the subject site in Foynes. The most recent (2007) meteorological data sets for Shannon Airport were obtained from Met Eireann for the purposes of this assessment study. This information is presented in Table 8.6.

Table 8.6 Meteorological Data for Shannon Airport 2007 (Data supplied by Met Eireann)

| Month | Rainfall (mm) | Max. Temp. (°C) | Min. Temp. (°C) | Mean Temp. (°C) |
|-------|---------------|-----------------|-----------------|-----------------|
| 1 | 93.5 | 10.0 | 4.5 | 7.3 |
| 2 | 65.2 | 9.8 | 3.0 | 6.4 |
| 3 | 63 | 11.3 | 6.7 | 7.5 |
| 4 | 11.2 | 16.5 | 6.7 | 11.6 |
| 5 | 66.3 | 15.8 | 7.9 | 11.9 |
| 6 | 103.6 | 18.9 | 11.4 | 15.1 |
| 7 | 97 | 18.7 | 11.9 | 15.1 |
| 8 | 100.6 | 18.7 | 12.0 | 15.4 |
| 9 | 51.6 | 17.8 | 9.9 | 13.8 |
| 10 | 44.3 | 16.0 | 9.3 | 12.7 |
| 11 | 52.9 | 12.3 | 6.7 | 9.5 |
| 12 | 166.3 | 10.5 | 5.2 | 7.9 |
| | Mean = 76 mm | | | |

8.4.1.1 Wind

The windfield characteristics of the area are important climatological elements in examining the potential for the generation of fugitive dust emissions from the site. Fugitive dust emissions from a surface occur if the winds are sufficiently strong and turbulent and the surface is dry and loose, together causing re-suspension of particulate matter from the ground. A wind speed at ground level in excess of about five metres per second is considered to be the threshold above which re-suspension of fine sized material from an exposed surface may occur. The mean annual wind speed in the Shannon area is approximately 4.6 metres per second. The surface needs to have a relatively low moisture content for this type of dust emission to take place. The entire proposed facility will be contained indoors, in covered structures. All incoming material will be moist, and trailers will be covered. The delivery area will be designed to ensure that vehicle wheels are not contaminated with feedstock and a steam cleaning system will be available on standby to ensure feedstock is not carried out of the building on the wheels of vehicles. Delivery, processing and export of all material will be completed within the fully enclosed building, which will operate under negative pressure. Composting will be conducted within sealed tunnels with scrubbers, humidifiers and biofilters treating the air extracted from the tunnels/building.

The location of the proposed development site in relation to Shannon Airport is shown in Figure 8.5. The windrose for Shannon as presented in Figure 8.6 indicates that the prevailing wind direction in the Shannon area is from the southwest and blows northeast across the proposed development site. This fundamental description of local prevailing winds is very significant and with reference to the dominant wind directions clearly demonstrates that the proposed facility is located in a downwind location relative to any receptor in the vicinity of the Port Area.

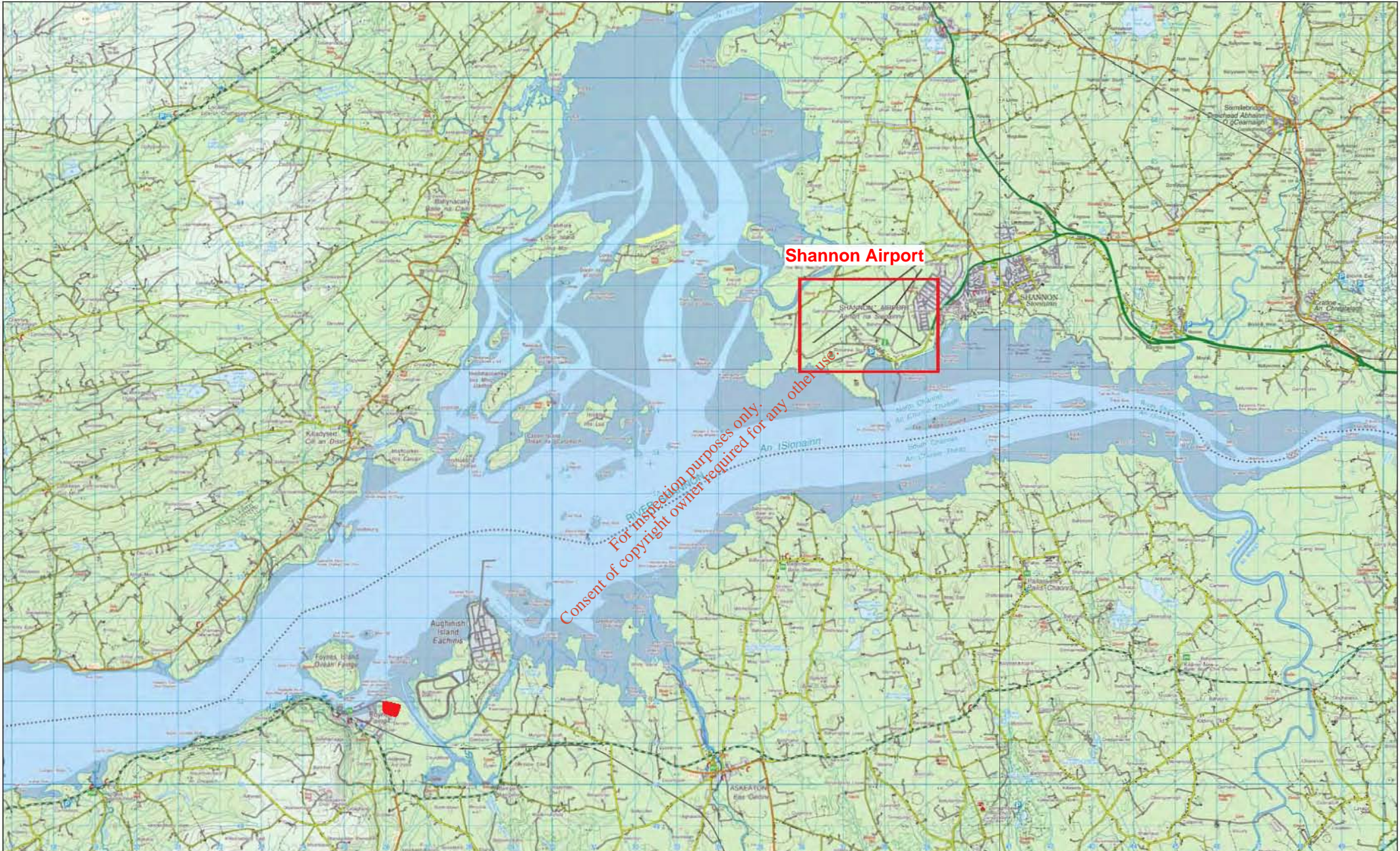
8.4.1.2 Rainfall

Precipitation data from the Shannon meteorological station for the period 2007 indicates a mean annual total of about 915 mm. This is within the expected range for most of the western half of the Ireland, which has between 750 mm and 1000 mm of rainfall in the year.

8.4.1.3 Temperature

The annual mean temperature at Shannon (2007) is 11°C with a mean maximum of 19°C and a mean minimum of 3°C. Given the relative close proximity of this meteorological station to the proposed development, similar conditions would be observed here.

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Shannon Airport

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Map Legend

 Site of Proposed Development




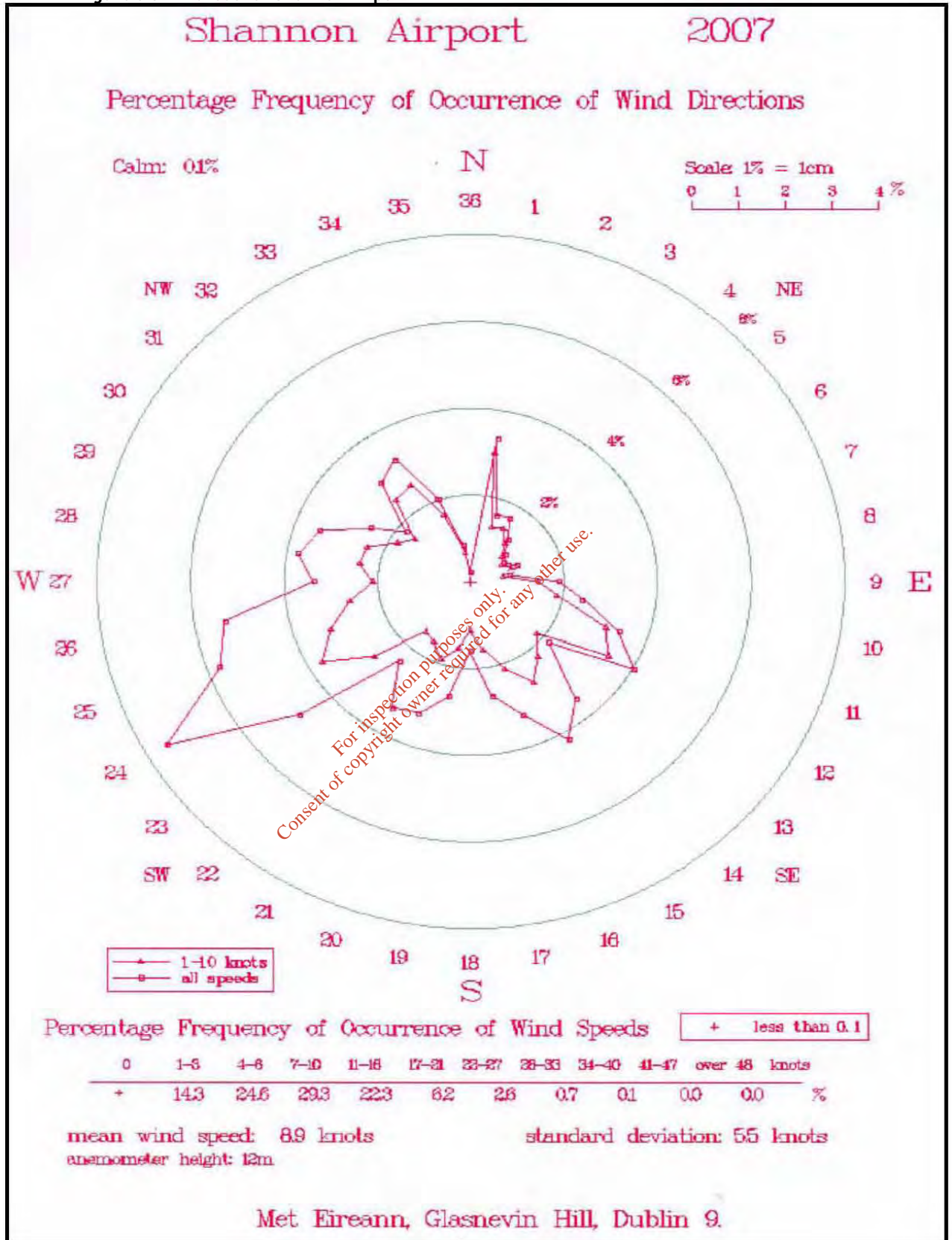
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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------|
| MAP TITLE: Location of Site in relation to Shannon Airport | Figure 8.5 | SCALE: 1:120,000 |
| PROJECT TITLE: 080907 - Greenport Foynes EIS | ISSUE NO.: 080907-2009.01.29-F | |
| MAP DRAWN/MODIFIED BY: Lorraine Meehan | CHECKED BY: Brian Keville | DATE: 29-01-2009 |
|  McCarthy Keville O'Sullivan Ltd., Block 1, G.F.S.C. Moneenageisha Road, Galway, Ireland. Email: info@mccarthykos.ie Tel: +353 (0)91 735611 Fax: +353 (0)91 771279 Ordnance Survey Ireland Licence No. EN0021303 © Ordnance Survey Ireland, Government of Ireland | | |

Figure 8.6 Windrose for Shannon Airport



Data supplied by Met Eireann

8.5 Likely and Significant Impacts on Air, Noise and Climate & Associated Mitigation

The technical specification details for the equipment and processes to be utilised within the proposed composting and biogas facility are presented in Chapter 3 of this EIS, Description of the Proposed Development. The composting activities to be conducted at the proposed development are summarised as follows:

- Delivery of waste material suitable for composting via covered HGV to the site.
- Unloading of material within the facility building.
- Homogenisation of material for process optimization.
- Loading of material into the Anaerobic Digestion tunnels.
- Mixing of material exiting the Anaerobic Digestion process.
- Transfer of digested material into Aerobic Tunnels in which the composting process occurs.
- Transfer of material to the hygienisation and compost refining process area.
- Temporary storage of final compost products.
- Export of compost off site in covered HGVs.

All activities shall take place within the facility building, which shall be operated under negative pressure to minimise the potential for air emissions from the composting processes. All external doors of the building shall include air curtains to maintain the negative pressure within the building to ensure that air is contained within the building. All process air and ambient air within the process building shall be extracted through a Central Air System that shall include the following items of abatement plant, each of which are described in Chapter 3:

- Air Scrubber.
- Air Humidifier to optimise performance of Biofilter.
- Biofilter consisting of a saturated woodchip filter material.
- Dust collection and filter system. (Specific dust extraction for screening area only. Scrubber, humidifier and biofilter will also effectively remove any particulates for all other air extracted.)

The potential impacts to air quality as a result of the proposed development, including from fugitive emissions and traffic, are addressed in the following section.

8.5.1 Impacts on Air Quality

8.5.1.1 Air Quality Impacts During Construction Phase

The construction phase of the proposed development site will not have an adverse impact on local air quality within the Foynes Port area or in the wider Foynes area given the relatively small scale nature of the composting facility development, together with the proposed mitigation measures that shall be implemented to ensure that the primary air pollutant that is dust, is controlled and managed effectively at the site.

Contractors delivering fine aggregate materials in open top delivery trucks to the site shall be instructed to use a suitable cover so as to minimise the potential for wind to generate airborne dusts on transit to the site and to minimise the impacts on local air quality on the greater environment over the transport route from source to delivery point.

Drivers delivering materials to the site shall be instructed by site management to turn off idling vehicle engines when the vehicles are on site for extended periods.

Dedicated delivery areas will provide for the orderly management of delivery vehicles and the containment of spilled materials should they arise, the concentration of specific site activities in a dedicated area away from the closest receptors and the ability to better manage and control potential noise and dust impacts.

It is proposed that all plant, materials and operative vehicles shall be stored in dedicated compound areas in order to minimise the interaction that each element may have on the other. That is, the separation of operative vehicles from aggregate material stockpiles will minimise the potential for vehicle movements to generate dust.

All plant shall be stored in a dedicated area following the cessation of site activities at the end of each working day or during periods when the plant is not being utilised. It is recommended that a specific area on site shall be delineated.

Construction site activities have the potential to generate fugitive emissions of dust levels as a result of vehicle movement on unsealed site surfaces, windblown dusts from aggregate/fine material stockpiles, angle grinding of concrete and stone, crushing activities if required and the movement and deposition of aggregates, soils/clay and other materials at the site.

It shall be the responsibility of the site manager to ensure that dust emissions generated by construction site activities are controlled and minimised.

It is recommended that a road sweeper vehicle shall be made available to clean soiled roads in the vicinity of the site. This will also ensure that the potential for elevated concentrations of particulate matter entering any surface water drain will be minimised.

8.5.1.2 Air Quality Impacts During Operational Phase

8.5.1.2.1 Potential Emissions

The proposed composting process will have the potential to generate emissions of the following substances from specific process activities:

Material Transport via HGV

- Fugitive dust emissions from road and yard areas.
- Odour emissions from waste material in HGVs.
- Diesel Engine Emissions.

Initial Material Intake in Process Building:

- Bioaerosol including *Aspergillus* fumigates, Bacteria and Fungi release from material transfer and processing.
- Odours and dust from exposed feed stock materials deposited in internal Tipping Area.
- Odours and dust from initial mixing process prior to transfer into Anaerobic Digestion Tunnels.

Anaerobic Digestion (AD) Process

- Bioaerosol including *Aspergillus* fumigates, Bacteria and Fungi release from material transfer and processing.
- Anaerobic odorous gases produced by the AD process include Methane, Ammonia, Amines, Hydrogen Sulphide, Dimethyl Disulphide and Mercaptans.

Mixing Process

- Bioaerosol including *Aspergillus fumigates*, Bacteria and Fungi release from material transfer and processing.
- Dust generated by mechanical mixing.
- Odours from material transfer to Composting and Drying Tunnels.

Composting and Drying

- Bioaerosol including *Aspergillus fumigates*, Bacteria and Fungi release from material transfer and processing.
- Odours from composted material.

Leachate and Condensate Collection System

- Odours arising from leachate and condensate generated by the composting process.

Compost Refining and Hygienisation

- Dust generated by material transfer and mechanical screening process.
- Bioaerosol including *Aspergillus fumigates*, Bacteria and Fungi release from material transfer and processing.

8.5.1.2.2 Odours

Odours are generated by a number of different potential components, the most significant being Ammonia, Amines, Hydrogen Sulphide, Dimethyl Disulphide and Mercaptans. Concentrations and mixtures of these compounds can intensify or reduce odour threshold concentration, determined as synergism and antagonism respectively. Odours are a potential nuisance from any facility that involves waste storage, processing and transfer. Fugitive odours (i.e. not through stacks or vents) from landfills, waste transfer stations, and baling stations arise mainly from the uncontrolled anaerobic biodegradation of waste to produce unstable intermediates. However, the operation of the proposed composting facility will ensure that all potential odorous air will be controlled and diverted to the scrubbing and biofilter systems.

As there will be no waste deposited on the site or held in storage at the site, there is no potential for the uncontrolled build up of odorous gases. Consequently, the odours and emissions that are associated with a landfill site will not be generated at the subject composting facility. A series of design features, work practices and mitigation measures for the control and reduction of potential odour emissions are specified in Section 8.5.2.3 of this EIS.

The proposed composting facility has been designed to include state of the art process air abatement technologies including biofilter units, an acid scrubbing system and on site enclosure of the main composting/biogas process in sealed vessels (tunnels) within the plant building. In order to further ensure that the potential for odour nuisance is minimised, the facility has been designed to operate under negative pressure whereby all air within the facility building and processing areas shall be vented through the scrubber, humidifier and biofilter system. An air dispersion modelling study has been conducted by Byrne Environmental Consulting Ltd. to assess the potential impact of odorous air emissions from the proposed facility to further demonstrate that the operation of the facility will not cause unacceptable odour incidences at local residential receptors. The results of the study are presented in the following section.

8.5.1.3 Air Dispersion Modelling Study

8.5.1.3.1 Introduction

The air dispersion modeling study carried out by Byrne Environmental Consulting assesses the potential impact of odorous air emissions from the proposed composting facility at Foynes Port, Co. Limerick.

The potential for off-site odour nuisance associated with the operation of the facility was determined with respect to the predicted maximum concentration of odour units (OUE/m³) that may be emitted from the exhaust air from the two biofilter units. A comprehensive study of the emissions to atmosphere from the Biofilter units at the facility has been carried out based on a typical emissions scenario in which the Biofilters are operating continually 24-hours a day, 365 days a year.

The proposed composting facility has been designed to include state of the art process air abatement technologies including biofilter units, an acid scrubbing system and onsite enclosure of the main composting/biogas process in sealed vessels within the plant building. The entire proposed facility will be contained in covered structures. All incoming material will be moist, and trailers will be covered. Delivery, processing and export of all material will be completed within the fully enclosed building, which will operate under negative pressure. Composting will be conducted within sealed tunnels with scrubbers, humidifiers and biofilters treating the air extracted from the tunnels/building.

8.5.1.3.2 Odour Assessment Criteria

The odour assessment study has been prepared based on odour annoyance criteria commonly implemented in Ireland by the Environmental Protection Agency (EPA). Odour concentrations expressed as OUE/m³ are normally limited to a maximum value of <3 OUE/m³ expressed as a 98th percentile one-hour value to ensure that odour emission events do not cause offence or nuisance to persons residing or working in the vicinity of a facility.

The 98 percentile (98thile) one-hour value is normally used in odour assessments as the principal averaging criteria. This study has assessed odour predictions based on the 98thile analysis of one-hour concentrations obtained from maximum measured odour emission rates, and also the maximum one-hour ground level odour concentration. The 98thile represents the odour concentration exceeded for 98 percent of the time or for 175 hours in a calendar year at a specific receptor location.

8.5.1.3.3 Odour Sources

Potential odours at the proposed composting facility are expected to be minor with regard to the 'enclosed' nature of the entire process and provided that all process air-handling plant operates efficiently.

With respect to the design of the facility which shall operate as a closed vessel composting process contained within a building that operates under negative pressure with no point or area sources of odorous emissions, the only potential emission from will principally arise from exhaust air from the biofiltration units which have been designed to scrub odorous process air generated by the composting process.

The scrubber/biofilter systems shall effectively reduce the odorous nature of the process exhaust air exiting the biofilter units. Pending commissioning and operation of the composting facility a series of olfactometric surveys shall be conducted at the inlet and outlet points of the biofilter to assess the performance of the biofilter.

8.5.1.3.4 Receptors

The proposed composting facility is to be located within the existing Shannon Foynes Port Area in a location that is well removed from residential development with the closest residential receptors located approximately 450 metres south of the closest site boundary and approximately 580 metres south of the facility building. There are also a number of private residences further removed from the facility located set back from the N69 National Secondary Road between the village of Foynes and Limerick City.

In addition, this modelling study has been conducted to ensure that the facility does not negatively impact the existing ambient air quality within the Foynes Port area which includes a number of industrial and commercial premises which are similarly considered as potential receptors that may be affected by odorous emissions.

8.5.1.3.5 Odour Characteristics

The key input data from an odour impact assessment perspective is the odour emission rate in odour units per second. Odour is measured in odour units per cubic metre where one odour unit per cubic metre is the odour concentration that can be detected by a panel of observers in accordance with defined measuring methodologies.

In order to determine the odour emission rate (O_{UE}/sec), the source odour concentration (O_{UE}/m^3) is multiplied by the volumetric emission rate (m^3/sec). The volumetric emission rate from area sources is determined from the area of the emitting surface (m^2) multiplied by the exit flow rate (m/sec). Odour emissions from the biofilter units are assumed to be continuous to assess the worst-case scenario. The characteristics of the only external point sources of potential odorous emissions are presented in Table 8.7. Odour emission rates expressed as O_{UE}/sec have been derived from an assumed biofilter performance of $1000 O_{UE}/m^3$. This value has been assumed based on a typical operating scenario for a biofilter system operating within a composting facility.

Table 8.7 Characteristics of Biofilter Unit

| Design Parameter | Measurement |
|-----------------------|-------------------------------|
| Exit mass flow rate | 55,000 m^3/hr |
| Biofilter area | 450 m^2 |
| Exit flow temperature | Ambient |
| Bed Height | 1.8 m |
| Bed Volume | 1,620 m^3 |
| Odour Emission Value | 108 O_{UE}/m^3 ⁸ |
| Odour Emission Rate | 1,650 O_{UE}/sec |
| Filter Material | Woodchip |

⁸ The odour emission value has been assumed based on a typical operating scenario for a biofilter system operating within a composting facility.

8.5.1.3.6 Dispersion Modelling Study

Scope

The scope of the modelling study included prediction of the impact on ambient air quality of odorous emissions from the proposed Greenport Environmental Ltd. composting facility during normal plant operation. This involved computation of predicted incremental contributions to ground level concentrations of odorous emissions over defined averaging intervals as a result of emissions from the facility. The principal aim of this study is to determine the maximum emission of odour units that may be emitted from the facility to ensure compliance with the specified 3 O_uE/m³ limit value and thus prevent odour complaints occurring.

Model Selection

Computerised mathematical dispersion models are used to predict the incremental additions to ground level concentrations of relevant criteria pollutants as a result of emissions from a given development. The model chosen for this study was the most up to date EPA approved *BREEZE* AERMOD GIS Pro Version 6.2.2. The model is a gaussian plume dispersion model, which computes average ground-level concentrations of pollutants such as odorous emissions emitted from either elevated or ground-level emission sources. Separate utilities associated with the dispersion modelling software allow computation of ground-level concentrations of pollutants over defined statistical averaging periods, and additional features permit suitable consideration to be given to building downwash effects and the effects of elevated terrain in the vicinity of the source facility and receptor locations.

Model Input

Evaluation of the impact of a proposed development on air quality using dispersion modelling requires information on the following:

- Emissions characteristics
- Site layout and topography
- Climatological data
- Averaging intervals
- Receptor locations

The detailed consideration of each of these elements of data are considered in the following sections of this report.

8.5.1.3.7 Emissions Characteristics

Information the characteristics of the emission sources (Biofilter Units) were obtained from the technology providers (Waste Treatment Technologies) and from scaled drawings of the facility; emission characteristics used as input data for the modelling study are presented in Table 8.7.

The odour emission rate from the biofilters was determined in a 'reverse' mode in which the maximum odour emissions from the biofilters were determined based on the maximum odour limit (3 O_uE/m³) that must not be exceeded beyond the site boundaries.

Modelling output data shows that the 98th percentile hourly odour concentrations are below the nuisance criteria of 3 O_uE/m³ at the closest receptors to the site by a factor of approximately 92% and furthermore by a factor of approximately 44% within the industrial Foynes Port Area within which the proposed composting facility is to be located.

8.5.1.3.8 Site Layout and Topography

The layout and area of the site and the dimensions of the various plant buildings were obtained from architectural scaled drawings. Topographical information was obtained from a site survey and from Ordnance Survey of Ireland maps. Building downwash effects might be expected as a result of the scale and location of buildings and plant on the site. These effects were modelled using the modeling facility, BPIP, which is part of the *BREEZE* AERMOD modelling programme.

8.5.1.3.9 Climatological data

The magnitude of potential impacts of emissions from the facility will be substantially influenced by the local meteorological conditions, in particular by wind speed and direction and also by precipitation rates. The dispersion of pollutants from emission sources is also affected by atmospheric stability. The six categories of atmospheric stability normally used for this type of study range from very unstable (A) to stable (F). The percentage occurrence of the various atmospheric stability classes was determined for the five-year period 2003 – 2007 for Shannon Airport. The most common type of stability category encountered in the area is neutral (D) stability which is representative of the conditions normally encountered in Ireland and is associated with cloudy, rainy or windy weather. Dispersion of pollutants is poorest under stable atmospheric conditions (categories E and F are normally experienced during the night).

Hourly meteorological wind direction data for the period 2003-2007 from the Shannon Airport Station (Ref. EINN) has been utilised to verify the prevailing wind directions of the Foynes area as shown in Figure 8.7. The proposed development is located north of the closest residential development in the village of Foynes. This is particularly significant with reference to the prevailing wind direction of the area which is shown in Figure 8.7 to be dominated by southwesterly winds which will ensure that for the majority of the time the site will be located in a downwind location relative to the location of residential receptors. This will ensure that the potential for adverse impacts of odors and emissions from the facility will be naturally minimised as a result of local climatological conditions.

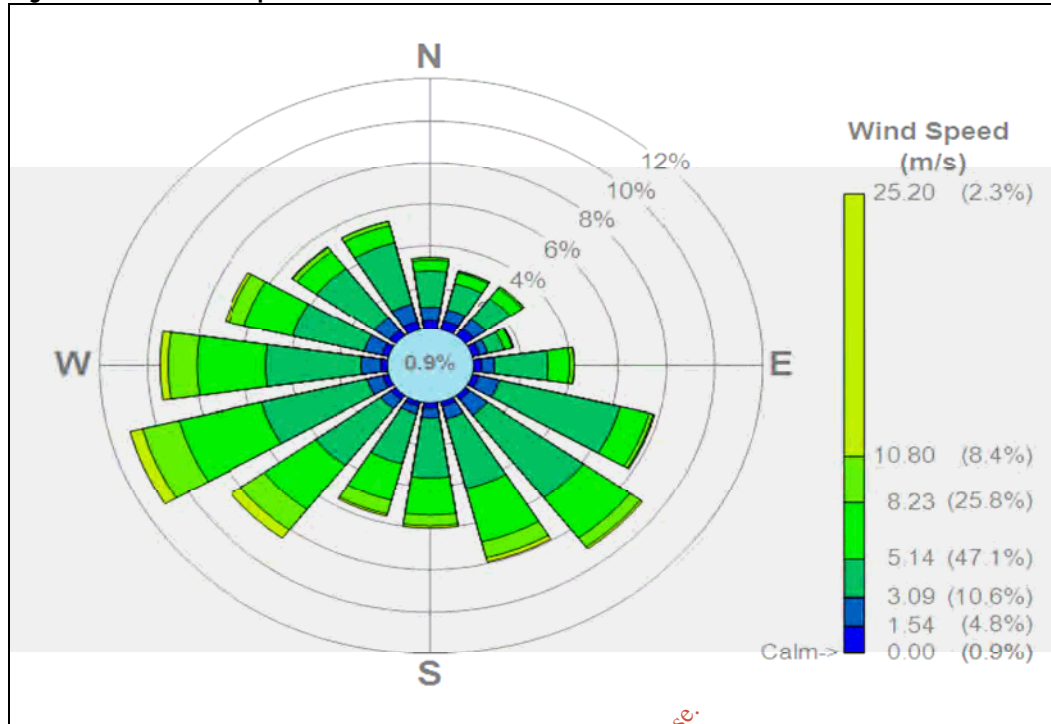
8.5.1.3.10 Averaging intervals

The dispersion model was used to predict the incremental additions to ground level concentrations of odours emitted from the identified odour sources (biofilters) over defined one-hour averaging periods. The 98%iles of one-hour values have also been assessed as part of this study.

8.5.1.3.11 Receptor locations

Since the impact of the emissions can be observed at considerable distances from the emission sources, a fine grid, two kilometres x two kilometres centred on the emission source, the facility, was constructed with receptors located at 100 metre intervals. In line with expectations, the highest predicted ground level concentrations occur at the receptors closer to the source. The closest residential receptors to the proposed facility are located approximately 450 metres south from the closest subject site boundary and approximately 580 metres south from the facility building as shown above in Figure 8.1. There are also a number of private residences further removed (approximately 750 metres southwest) from the facility located set back from the N69 National Secondary Road between the village of Foynes and Limerick City.

Figure 8.7 Shannon Airport Windrose 2003-2007



8.5.1.3.12 Dispersion Modelling Predictions

The 98th percentiles of predicted hourly odour concentrations at the identified receptors are presented in Table 8.8.

Table 8.8 98th percentile hourly odour concentration Ou_E/m^3

| Receptor | Type | Ou_E/m^3 |
|-----------------------------------------------------------|-------------|------------|
| Residential Development 450 metres south of facility | Residential | 0.25 |
| Residential Developments 750 metres southwest of facility | Residential | 0.11 |
| Foynes Port Area adjoining site boundary | Industrial | 1.72 |

8.5.1.3.13 Evaluation of Impact

This dispersion modelling study was conducted using odour values that reflect a typical operation of a biofilter system. The report describes and evaluates the odour impacts of the proposed composting facility. The assessment has involved the use of an air dispersion model (BREEZE AERMOD), which is approved by the Environment Agency, to predict the prevailing odour situation across the site and the surrounding area caused by emissions from the operational facility.

All site data such as the site layout, flow rate and odour concentration were based on the plant design and description provided by the technology provider, WTT. The assessment assumed that flow rates and odour emissions would be at the maximum expected levels. Modelling output data shows that the 98th percentile hourly odour concentrations are below the nuisance criteria of $3 Ou_E/m^3$ at the closest receptors to the site and furthermore within the industrial Foynes Port Area within which the proposed composting facility is to be located. It is concluded that potential odour impacts from the proposed composting plant on the receiving environment are not anticipated to be of significance and

that odour nuisance incidents are unlikely. To verify the results of the dispersion modelling study, it is recommended that routine olfactometric monitoring should be conducted during the operational phase of the proposed composting facility.

8.5.1.4 Bioaerosols

Composting is a microbiological process and during mechanical agitation of composting material, biological agents are aerosolised (i.e. become airborne), giving rise to the term 'bioaerosol'. Bioaerosols of concern during composting consist of a range of micro-organisms (Actinomycetes, bacteria, fungi) and organic constituents of microbial and plant origin.

Focus to date has been on *Aspergillus fumigatus (AF)* fungus and bacteria. Currently there is no specific methodology defined by the EPA in Ireland for the sampling and analysis of bioaerosols. In the absence of a specific national methodology, the most appropriate methodology is that of the UK Composting Association's – *Standardised Protocol for the Sampling and Enumeration of Airborne Micro-organisms at Composting Facilities*. The Protocol is intended to assess the environmental impact of a composting facility on the airborne concentrations of micro-organisms. Following the Protocol will enable compost facilities to assess if there is any difference between the concentrations of selected culturable micro-organisms upwind and downwind of the site at pre-determined distances. The most appropriate bioaerosol sampling device is the Anderson Sampler, which is depicted in Figure 8.8.

Figure 8.8 Image of Anderson Sampler



8.5.1.4.1 Bioaerosol Impact Assessment

The proposed facility incorporates a closed vessel composting process within an enclosed facility building and therefore by design, the composting process may be classified as an "enclosed composting facility". Research on bioaerosol impacts conducted at various enclosed composting sites in both Europe and the United States indicate that typical

recorded concentrations of bioaerosol *Aspergillus fumigates* range between 1.2×10^2 – 2×10^3 CFU (Colony Forming Units).

Table 8.9 Bioaerosol *Aspergillus fumigates* Concentrations for other Industries/Activities

| Activity | Recorded Concentration (CFU/m ³) |
|----------------------------------|----------------------------------------------|
| Mulched Lawn | 6.9×10^2 |
| Compost Site (Quiescent) | $0-2.4 \times 10^1$ |
| Hay barn | 5.5×10^3 |
| Poultry House (in spring) | 2.1×10^3 |
| Mushroom House (stationary beds) | 3.3×10^2 (90% non mould spores) |
| Timber Processing | $1 \times 10^2-1 \times 10^4$ |
| Composted Wood Chips | 1.4×10^6 (Includes all fungi) |

Research on bioaerosol impacts conducted at various enclosed composting sites in both Europe and the United States indicate that typical recorded concentrations of bioaerosol *Fungi* range between 1.4×10^3 – 1.5×10^3 CFU (Colony Forming Units).

The following table relating to fungi concentrations in ambient air published by CRE, August 2004 indicates that there are many other activities that are a source of bioaerosol fungi

Table 8.9 Bioaerosol Fungi Concentrations for other Industries/Activities

| Activity | Recorded Concentration (CFU/m ³) |
|-------------------------------------|----------------------------------------------|
| Animal Facilities | $10^2 - 10^3$ |
| Composting | $10^2 - 10^7$ |
| Agricultural Harvesting and Storage | $10^3 - 10^9$ |
| Sawmill | $10^4 - 10^8$ |
| Manufacturing Technology | $10^2 - 10^6$ |
| Water Treatment (Activated Sludge) | $10^1 - 10^3$ |

From published data it is clear that composting facilities and in particular enclosed composting facilities do not generate concentrations of bioaerosols or fungi that are without precedent in the existing environment due to industrial or agricultural activities.

The potential impacts of bioaerosols on persons working within the Port area and on residents residing in the vicinity of the port area is considered to be negligible with respect to the enclosed nature of the composting process and the location of the facility which is located downwind of all local residential areas and other facilities within the Foynes Port area. The control measures detailed below in section 8.5.2.4 which represent Best Technology within the Composting Industry will further ensure that the potential for bioaerosol formation is minimized and secondly that bioaerosols are managed and controlled on site.

In order to verify that the operation of the facility does not have an adverse impact on baseline bioaerosol concentrations, it is proposed that a programme of ambient bioaerosol monitoring shall be conducted at both upwind and downwind monitoring locations to be agreed with the Environmental Protection Agency.

8.5.1.5 Dust

There is potential impact from unscheduled fugitive emissions of dust from HGV movements on the site surfaces and access roadways. This impact is directly related to the working practices on the site. A robust dust control and minimisation plan as implemented

(i.e. truck washes, road sweepers, etc), will reduce the potential impacts of fugitive dust. The entire proposed facility will be contained indoors, in covered structures. Vehicles will only be driven on hard-standing areas and will be cleaned prior to delivery to the facility and prior to departing the dispatch area. The design of the delivery area will ensure that the wheels of the vehicles will not be contaminated with material, thereby maintaining clean external surface areas. Vehicles will be checked to ensure that covers are in place prior to delivery to and departure from the facility. The delivery area will have a backup steam-cleaning system in place, as will the dispatch area.

Process generated dusts shall be controlled as a result of the Central Air System, which shall vent all process building air into the proposed scrubbing, humidification and biofilter system. The nature of the process requires the material to be moist, and the biogas/composting/maturation steps will all take place within sealed tunnels inside the building, thereby minimising dust generation. While other composting facilities often mature the compost in open bays outdoors, all proposed operations for this site will be contained indoors, in covered structures. In addition, a dust collection and filtration system shall also operate to control dusts from the final compost refining process to minimise dust within this area of the building.

It is significant to note that the proposed facility will not be a significant source of fugitive dust and that the nature of the processes and the design of the facility building will further minimize the potential for uncontrolled emissions to occur. Other industrial activities occurring within the Foynes Port area such as the coal clinker storage facility is a significant source of potential fugitive and uncontrolled dust emissions in the area.

8.5.1.6 Road Traffic

Emissions of pollutants from road traffic can be minimised by either controlling the number of road users or by controlling the flow of traffic. For the majority of vehicle-generated pollutants, emissions rise as speed drops, although the opposite is true for oxides of nitrogen. Emissions are also higher under stop-start conditions when compared with steady speed driving. The free flow of the traffic as a result of the scheme is desirable in order to minimise the generation of traffic-generated pollutants.

Detailed traffic flow information has been used to assess whether any significant impact on sensitive receptors may occur. This examined daily traffic counts for the traffic in the area of the proposed development. The percentage HGVs (Heavy Goods Vehicles) in the traffic volumes for each road is detailed as this has a direct bearing on emissions. Traffic flow predictions have been presented under two scenarios:

A Traffic and Transport Assessment of the proposed development has been carried out, and the results included in Chapter 11 of this EIS. The operation of the facility, which shall process up to 50,000 tonnes of material per annum will result in an estimated 30 daily HGV movements associated with the delivery of feed material to the site and the export of compost product from the site. This equates to an average of four HGV movements per hour during a typical working day.

With respect to the industrial nature of the Foynes Port area which is accessed off the heavily trafficked N69 National Secondary Road and the relatively low volumes of HGV traffic movements that will be associated with the operation of the proposed facility it is predicted that the operation of the composting facility will not have an adverse impact on local ambient air quality. Continued developments in fuel technologies will further offer to minimise emissions of combustion gases and particulate matter from HGV diesel engines in the future and over the operational lifetime of the facility.

In summary, concentrations of combustion gas and particulate emissions from HGV diesel engines in the immediate vicinity of the site will not be adversely affected by the operation of the facility. In terms of both long-term pollution and regional pollution, the potential impact to air quality as a result of the proposed development is not considered significant. In addition, the subsequent impacts to climate as a result of the development are considered minimal.

8.5.2 Air Quality Mitigation Measures

The following mitigation measures have been incorporated into the state of the art design of the facility and shall be implemented to ensure that the impact of all site activities are controlled and that the potential impact on local air quality is minimised.

Routine daily visual inspections and a daily odour diary will be conducted and recorded to assess the effectiveness of mitigation measures and to record the potential for complaint by local residential receptors. A programme of periodic air quality monitoring will also be conducted which will include the sampling and monitoring of bioaerosols, dust deposition rates, odorous gases and odours. The frequency and extent of environmental monitoring and sampling will be specified by the Environmental Protection Agency (EPA), subject to the granting of a Waste Licence by the EPA for the proposed development.

8.5.2.1 Traffic Movements

Emissions of pollutants from road traffic can be controlled by either controlling the number of road users or by controlling the flow of traffic. For the majority of vehicle-generated pollutants, emissions rise as speed drops, although the opposite is true for oxides of nitrogen. Emissions are also higher under stop-start conditions when compared with steady speed driving. The free flow of the traffic is essential in order to minimise the generation of traffic related pollutants.

- The practice of leaving vehicle engines idling unnecessarily or for prolonged periods will be discouraged and appropriate signage shall be clearly posted at the facility.
- Local roads and site yard areas shall be swept and cleaned as necessary if it is observed that roads are being soiled by vehicles entering or exiting the site.
- The indoor delivery area is designed with a physical barrier to ensure the wheels of the delivery vehicles are not contaminated by the feedstock material, thereby preventing feedstock material from leaving the building. A steam cleaning system will be in place as a back-up.
- The traffic management system for the site includes a one-way system with separate incoming and outgoing weighbridges which will minimise HGV time onsite.

8.5.2.2 Dust Control

Dust emissions from the facility shall be controlled and minimised by implementing the following measures:

- Vehicles will be cleaned prior to delivery to the facility.
- All material deliveries to the site shall be contained in covered HGVs. Material will be moistened prior to delivery.

- All steps including deliveries, processing and temporary compost storage shall be conducted indoors within the site building, which will serve to contain dusts generated by material handling and processing. In addition all biogas, composting and maturation steps will be conducted in sealed tunnels within the building.
- The indoor delivery area is designed with a physical barrier to ensure the wheels of the delivery vehicles are not contaminated by the feedstock material, thereby preventing feedstock material from leaving the building. A steam cleaning system will be in place as a back-up.
- The proposed facility building will be designed and built as a negative pressure building which will prevent dust from leaving the building.
- External doors of the site building shall be fitted with air curtains to maintain negative pressure within the building.
- All air within the facility building and composting process air shall be vented to the scrubber, humidifier and biofilter systems.
- The compost refining system shall include an internal dust collection and filtering unit to collect dust from the screen, ballistic separator and destoner units of the refining system.
- Regular cleaning and maintenance of internal building floors, site roads and yard areas will be implemented.
- A speed restriction (ten kilometres per hour) shall be applied to site roads.
- Installation of Bergerhoff dust deposit gauges according to German Standard Method for determination of dust deposition rate (VDI 2129) at site boundary positions to monitor dust deposition levels.
- A windsock shall be installed on the roof the facility building, which shall provide instant information on the direction of the prevailing winds, particularly when northerly and northeasterly winds are blowing from the facility to receptors.
- All environmental monitoring as required by the EPA under the conditions of any Waste Licence issued to the facility will be carried out.
- Maintenance of a complaint log to ensure that any complaints made by members of the public are recorded and investigated.
- All waste vehicles exiting the facility will use the wheel-cleaning facilities on the site (including steam-cleaning facilities), which will ensure that they do not soil roadways within the Port Area.

8.5.2.3 Odour Control

The potential for odour emissions shall be minimised by a series of design features, work practices and mitigation measures. Guidance on odour control has been sourced from 'The Composting Association – An industry guide for the prevention and control of odours at biowaste processing facilities 2007'. Each of these measures is outlined below:

All feedstock will be "fresh" as the source separated feedstock is sourced from material collected at least every two weeks and the mechanically separated feedstock is sourced

from material collected weekly. These materials will be delivered to the facility on a daily basis to ensure continuity of supply.

- All feedstock entering the facility and products leaving the facility will be in covered vehicles and an inspection programme will be implemented to ensure all trailer coverings are in place.
- All composting activities from material delivery and processing through to the loading of the final compost product shall occur within the facility building, which shall operate under negative pressure.
- External doors of the site building shall be fitted with air curtains to maintain negative pressure within the building.
- All air within the facility building and composting process air shall be vented to the scrubber, humidifier and biofilter systems, which are designed for purpose and are best available technology.
 - Regular cleaning of all work surfaces and floors.
 - The process will not involve the discharge off-site of leachate or condensate liquids. All process liquids shall be diverted to a storage tank and subsequently reused in the composting/biogas process.
 - The facility is located approximately 530 metres downwind of the closest receptor. This distance significantly exceeds the recommended 250 metres stand-off distance.
- A windsock shall be installed on the roof of the facility building, which shall provide instant information on the direction of the prevailing winds, particularly when northerly and northeasterly winds are blowing from the facility to receptors.
- Olfactometric odour monitoring shall be conducted to assess the effectiveness of odour controls at local receptors according to the Olfactometry Standard EN13725:2003 or other standards to be specified by the EPA in any Waste Licence issued to the facility.
- Regular odour patrols at the site boundary will be conducted as part of the Environmental Management System.
- Maintenance cover shall be available 24 hours per day to minimise equipment breakdown times.
- All plant and machinery shall be regularly maintained as part of a Preventative Maintenance Programme.
- All vehicles entering the facility with feed material and exiting the facility with the compost product shall be checked at the incoming and outgoing weighbridges respectively to ensure that trailer coverings are in place.

8.5.2.4 Bioaerosol Control

The proposed Bioaerosol control measures shall be implemented at the facility as part of the Greenport Environmental Ltd.'s Bioaerosol Control Plan to ensure that the potential risks to site employees, local residents and other employees of the Foynes Port are

minimised and that the operation of the facility does not pose an unacceptable threat to human health.

- All feedstock will be “fresh” as the source separated feedstock is sourced from material collected at least every two weeks and the mechanically separated feedstock is sourced from material collected weekly. These materials will be delivered to the facility on a daily basis to ensure continuity of supply. This will minimise the generation of bioaerosols prior to delivery
- All feedstock entering the facility and products leaving the facility will be in covered vehicles and an inspection programme will be implemented to ensure all trailer coverings are in place.
- The delivery area is designed with a physical barrier to ensure the wheels of the vehicles are not contaminated with feedstock during the delivery process, thereby preventing residual feedstock leaving the building.
- All material handling activities will occur only within the facility building, which will minimise the potential for the release of bioaerosol emissions to the outside environment.
- The facility building shall operate under negative pressure, which will minimise the potential for uncontrolled bioaerosol emissions.
- All air within the facility building and composting process air shall be treated in the acid scrubber, humidifier and biofilter systems.
- Pending commencement of site activities, annual Bioaerosol sampling shall be conducted at upwind and downwind locations relative to the location of the facility according to the *UK Composting Association's – Standardised Protocol for the Sampling and Enumeration of Airborne Micro-organisms at Composting Facilities*, or other protocol to be specified by the EPA in any Waste Licence that is issued for the operation of the facility.
- All external site surfaces and internal facility floors shall be cleaned and swept regularly.
- All site staff shall be provided with training, which will include the control of emissions from the facility.
- A minimum 250 metre set back from the facility to the closest domestic receptors shall be achieved.

8.5.3 Impacts on Noise Levels

8.5.3.1 Noise Impacts During Construction Phase

There are no national mandatory limits for construction noise in Ireland. Criteria for daytime construction noise are often set at a level higher than for other permanent intrusive noise sources because it is recognised that it is a short-term activity. In setting criteria for construction noise, account has to be taken of the technical feasibility of the proposed criterion, and also the trade-off between the noise level, and the duration of the noise exposure. Excessively strict construction noise criteria may require a reduction in the intensity of the work. This could prolong a project, and result in more noise nuisance.

For prolonged external exposures above 70 dB(A), the level of noise intrusion into houses may however prove unacceptable. A level of 70 dB(A) is the daytime construction noise limit proposed in the National Roads Authority guidelines for road construction projects (*'Guidelines for the Treatment of Noise and Vibration in National Roads Schemes'*).

The construction noise limits represent a reasonable compromise between the practical limitations in a construction project, and the need to ensure an acceptable ambient noise level for the nearby residents. In addition to the standard workday criterion of 70 dB(A), the guidelines specify a reduced limit of 65 dB(A) for work on Saturdays, and 60 dB(A) for evening periods, and Sundays and Bank holidays. While these criteria were developed for roads projects, they are also applicable to general construction projects. The limits are similar to limits which have previously been specified by Local Authorities for construction projects in Ireland.

Construction noise at any given noise sensitive location will be variable throughout the construction project, depending on the activities underway and the distance from the main construction activities to the receiving properties. The distance of construction activities which will be limited to the existing site area from the nearest noise sensitive receptors is a minimum of 450 metres which will ensure that there will be no adverse noise impact from construction activities on the closest residential receptors to the site.

Construction traffic will be comprised of Heavy Goods Vehicle (HGV) and Light Goods Vehicles (LGV) movements to and from the site involved in the delivery of construction materials to the site and the export of excavated materials and construction and demolition waste materials from the site. HGVs will normally only deliver to the main site compound storage areas which will be located away from the closest receptors. It is predicted that there will be approximately 10-20 HGV vehicle movements associated with the construction phase on average occurring predominantly during the daytime periods.

Site vehicles will predominantly generate noise associated with the operation of the reverse warning beacons which are a mandatory safety requirement for all construction vehicles.

Given the existing volumes of HGV traffic that currently operate within the Port area, the relatively small scale nature of the development, and the extended distances between the site and the closest receptors, it is not expected that the predicted short-term increase in HGV movements associated with the construction phase of the development will have an adverse impact on the existing noise climate of the wider area or on local receptors.

8.5.3.2 Noise Impact During Operational Phase

Once operational, the main sources of noise impact associated with the Greenport Environmental Ltd. facility will be additional vehicles on the existing road system, vehicle movements within the site and noise from the operation of the facility. However, it is noted that the proposed facility is to be located at the site of a vacant but previously occupied business which would have had associated traffic movements associated with its past operation. It is therefore apparent that HGV movements associated with the proposed composting facility do not constitute a significant increase in HGV traffic volumes based on the subject site's previous operation.

8.5.3.2.1 Road Traffic

Increased traffic, particularly from heavy goods vehicles (HGV) during the operational phase of the proposed development, has the potential to increase noise levels at noise sensitive locations along the routes surrounding the Foynes Port site. A traffic assessment has been conducted of current and predicated flows at the Greenport Environmental Ltd.

site assuming a worse case scenario of the site operating at full capacity. In general the number of HGVs on surrounding routes is predicated to increase based on existing traffic movements.

An assessment of the predicated noise impact of traffic generated from the proposed development has been carried out with reference to the UK's Department of Transport (Welsh Office) document entitled 'Calculation of Road Traffic Noise' using the predicated traffic flow information supplied of AM and PM peak hour flows. The results of this assessment are shown in Table 8.11. The significance of change in noise levels is summarised in Table 8.12.

Table 8.11 Predicted traffic noise values for AM and PM peak hour flows along surrounding routes

| Peak hour flow at Facility Access Road | Without development (dB LA10-i-hour) | With development (dB LA10-i-hour) | Difference in dB |
|----------------------------------------|--------------------------------------|-----------------------------------|------------------|
| AM Peak hour flow | 70 | 70 | 0 |
| PM Peak hour flow | 70 | 70 | 0 |

Table 8.12 Classification of predicated noise impacts (EPA 7 DMRB)

| Change in Sound Level | Subjective Reaction | Impact |
|-----------------------|------------------------------|-------------------------------|
| <3 | Imperceptible | Not significant/Imperceptible |
| 3-5 | Perceptible | Minor/Slight |
| 6-10 | Up to a doubling of loudness | Moderate/Significant (Minor) |
| 11-15 | Over a doubling of loudness | Major/Significant (Major) |
| >15 | - | Severe/Profound |

Traffic noise levels on the N69 National Secondary Road between do something (i.e. the proposed development proceeds) and do nothing (i.e. the proposed development does not proceed) scenarios are not predicted to increase during AM and PM peak hour flows along the site access road. The predicted HGV movements (four per hour) associated with the subject facility will result in a negligible increase in the existing baseline noise levels at the closest Noise Sensitive Receptors to the facility. In subjective terms, this increase is considered to be Not Significant/Imperceptible.

8.5.3.2.2 Composting/Biogas Facility

The operation of the composting and biogas facility will involve the delivery of feed material to the facility, the on-site processing of the material and the subsequent export of the compost product off-site. Each on-site activity and process have the potential to generate noise depending on the type of plant and machinery involved. The combined noise level from all sources operating within the facility has been assessed assuming all machinery is operating simultaneously for 100% of the time.

In terms of noise control at the proposed facility, the most significant aspect of the operation of the site will be that all process activities shall take place within the building structure, which shall provide very significant attenuation of noise. In summary it has been predicted that the operation of the facility shall be inaudible at the closest receptor to the main facility building, which is located approximately 580 metres from the closest Noise Sensitive Receptor. The proposed noise minimisation techniques have been specified below in Section 8.5.4 to ensure that noise control at source is implemented at the site for all activities.

In order to ensure that noise levels from the operation of the facility do not significantly impact the nearest residential properties, reference has been made to British Standard document *BS4142 1997 'Method for rating industrial noise affecting mixed residential and industrial areas'*. It is proposed that the specific noise from the facility does not increase existing background noise levels at the nearest noise sensitive locations by more than 5 dB(A). It is proposed that to demonstrate the effectiveness of all noise control and minimisation techniques, a programme of noise monitoring and assessment shall be implemented at the site and that all future noise surveys shall include an assessment according to *BS4142 1997 'Method for rating industrial noise affecting mixed residential and industrial areas'*, or other methods to be specified by the EPA in any Waste Licence issued for the operation of the facility.

8.5.4 Noise Mitigation Measures

The operation phase of the proposed composting facility has been designed to not adversely affect the existing ambient noise climate during both day and night time periods. The equivalent continuous sound level (L_{Aeq}) of noise generated by all site activities at the nearest noise sensitive premises shall be limited to 55 dB(A) during the daytime period (08:00 to 22:00 hours) and 45 dB(A) during the night time period (22:00 to 08:00 hours) which will ensure that the impact of noise from the Greenport Environmental Ltd. facility will be negligible.

It is predicted that with noise attenuation provided by the facility building and distance attenuation between the site boundary and the nearest residential properties, these guidance noise limit values will be achieved.

The following noise mitigation measures shall be implemented at the site.

- Where practicable, principal external plant, including the Biofilter, with the potential to generate noise levels shall be located on the northern façade of the facility building which shall result in the screening of the noise from the closest receptors to the facility which are located to the south of the facility at a distance of approximately 580 metres.
- All composting activities from material delivery through to the production of the final compost product shall occur within the facility building.
- The design of the facility will require that external doors remain closed when not in use.
- The use of vehicle horns will be discouraged during the daytime period and will be banned during the early morning periods before 09:00hrs.
- A ten kilometre per hour speed limit will apply on site.
- All site machinery will be shut down when not in use.
- A Noise Complaint Log will be maintained at the facility.
- Low noise level reverse warning alarms consistent with site safety requirements will be utilised.
- It is proposed that an annual noise monitoring survey is conducted at the site to assess compliance with recommended daytime and noise limit values and to assess the impact of the development according to BS4142 to ensure that site

operations do not cause nuisance at the closest Noise Sensitive Receptors. Noise monitoring will be conducted to the requirements of the EPA, as specified in any Waste Licence granted to the facility.

8.5.5 Impacts on Climate

Greenhouse gases occur naturally in the atmosphere (e.g. carbon dioxide, water vapour, methane, nitrous oxide and ozone) and in the correct balance, are responsible for keeping the lower part of the atmosphere warmer than it would otherwise be. These gases permit incoming solar radiation to pass through the Earth's atmosphere, but prevent most of the outgoing infrared radiation from escaping from the surface and lower atmosphere into the upper levels. However, human activities are now contributing to an upward trend in the levels of these gases, along with other pollutants with the net result of an increase in temperature near the surface.

Motor vehicles are a major source of atmospheric emissions thought to contribute to climate change however vehicle exhaust emissions generated from site related vehicles will have a negligible impact on the micro or macro climate and significantly carbon dioxide emissions from HGV movements will be off-set against the proposal to generate up to one Mega Watt of electricity on-site from the harnessing of methane generated by the anaerobic stage of the composting process.

8.5.6 Impacts on Micro Climate

The proposed development will be located partly within an existing vacant warehouse building and in a proposed extension to this building. This proposal does not relate to the construction of any major new structures which may impact on the local micro climate, therefore the proposed development will not to have an adverse impact on shading or temperature profiles at the nearest residential properties or on the local receiving environment in the vicinity of the site boundaries.

8.5.7 Climatic Mitigation Measures

The proposed composting and biogas facility at Foynes will have no impact on the climate or microclimate at the site and therefore no mitigation measures are proposed.

9 LANDSCAPE

This section of the Environmental Impact Statement (EIS) addresses the landscape and visual impacts of the proposed development. It includes a description of Limerick County Council landscape policy, with specific reference to the area within which the proposed development site is located. Landscape values and sensitivity are also examined. The landscape of the area is described in terms of its character, which includes a description of the physical, visual and image units.

The only available, quasi-official document providing guidance on landscape at a national level is *'Outstanding Landscapes'*, published by An Foras Forbartha in 1976. In 2000, the then Department of the Environment and Local Government built on this document by producing *'Landscape and Landscape Assessment – Consultation Draft of Guidelines for Planning Authorities'*, which recommended all local authorities adopt a standardised approach to landscape assessment for incorporation into Development Plans and consideration as part of the planning process. This section of the EIS has been broadly based on these guidelines. The *'Guidelines for Landscape and Visual Impact Assessment'* published by The Landscape Institute as part of the Institute of Environmental Management & Assessment (Britain) in 2003 were also an important source of information.

9.1 Landscape Policy

9.1.1 Landscape and Visual Amenity

The importance of landscape and visual amenity in relation to planning is described in the Planning and Development Act 2000, which requires that County Development Plans include objectives for the preservation of landscape views and prospects. Section 7 of the Limerick County Council Development Plan 2005 – 2011 presents the policies of the Planning Authority with regards to environment and heritage within the county. Policies ENV 5 to ENV 18, as listed in Section 7.2 of the Plan and presented below, relate specifically to the protection of landscape and visual amenity. Policies ENV 9 to ENV 18 relate to the ten individual Landscape Character Areas within the county, as described in Section 9.1.2 of this EIS.

- *Policy ENV 5 - Enhancing Tree Cover: It is the policy of the Council to preserve and enhance the general level of tree cover within the county, both in the countryside at large and also in the county's towns. The Council strongly encourages the establishment of native species, in particular broadleaf species.*
- *Policy ENV 6 - Landscaping and Development: It is the policy of the Council to ensure the adequate integration of development into the landscape by retention of trees and landscape features and/or encouraging suitable planting.*
- *Policy ENV 7 - Landscape Character Areas: It is the policy of the Council to promote the distinctiveness and where necessary the sensitivity of Limerick's landscape types, through the landscape characterisation process and also, where possible, to develop means to successfully and sustainably integrate differing kinds of development within them.*
- *Policy ENV8 - Scenic Views and Prospects: It is the policy of the Council to safeguard the scenic views and prospects by integrating them into Landscape Character Areas, which will ensure a more balanced approach towards landscape issues within the county. In areas where views and prospects are listed in Map 7.6 of the Plan, there will be a presumption against development except that which is*

required in relation to farming and appropriate tourism and related activities, or a dwelling required by a long term land owner or his/her family that can be appropriately designed so that it can be integrated into the landscape. The Planning Authority will exercise a high level of control (layout design, siting, materials used, landscaping) on developments in these areas. In such areas, site-specific designs are required. It should be noted that in areas outside these delineated areas, high standards will also be required.

9.1.2 Landscape Character Assessment

The Planning and Development Act 2000 requires the assessment of landscape character, a process in which Limerick County Council has been proactive, in line with Policy ENV 7 of the County Development Plan. The landscape character assessment of County Limerick was carried out according to the Department of the Environment 2000 guidelines and stresses the distinctiveness of differing kinds of landscape and how different types of development can best be integrated within them. The results of the assessment are set out in the County Development Plan 2005 – 2011.

The Landscape Character Assessment of County Limerick divides the county into ten distinct Landscape Character Areas (LCAs), as illustrated in Figure 9.1. The proposed development site is located within Landscape Character Area 2, referred to as the Shannon Integrated Coastal Management Zone (ICMZ) or the Shannon Coastal Zone, which comprises a large area of northern County Limerick. This LCA is bound to the north by the Shannon Estuary, while its southern boundary is defined by the gradually rising terrain that leads to the Agricultural Zone (LCA 6) and the Western Uplands (LCA 3). The Shannon Coastal Zone LCA is described in the Limerick County Development Plan as follows:

“One of the main features of the area is the presence of the estuary, which is perhaps the defining characteristic of the region. The landscape itself is generally that of an enclosed farm type, essentially that of a hedgerow-dominant landscape. This differs from the other agricultural landscapes of the county in that the field patterns, particularly close to the estuary, tend to be less regular than those elsewhere in the county.”

Policy ENV 14, as presented in Section 7.2 of the Development Plan, relates to the Shannon Coastal Zone LCA:

“Policy ENV 14 – Shannon Coastal Zone LCA:

(a) Where housing is permitted single storey developments, coupled with sensitive site location and landscaping to be encouraged.

(b) The protection of the scenic route along the N69 is a priority for the Planning Authority. Only in exceptional circumstances (e.g. domestic extensions) will development be allowed between the road and the estuary.

(c) The use of site-specific designs with careful attention to landscaping is encouraged. Finishes such as plaster finish and in some situations stone, which will assist in integrating the development into the landscape, are encouraged.

(d) Holiday homes will be encouraged only within the boundaries of existing settlements.

(e) Given the proximity of the Shannon and the importance of water-based habitats in the area, rigid adherence to best practice in the installation and use of



Foynes



- | | |
|---------------------|------------------------------|
| 1. Slieve Felim | 6. Agricultural Lowlands |
| 2. Shannon ICZM | 7. Ballyhoura / Slieve Reagh |
| 3. Western Uplands | 8. Galtee Uplands |
| 4. Southern Uplands | 9. Lough Gur |
| 5. Knockfierna | 10. Tory Hill |

| | | |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| | MAP TITLE: Landscape Character Map of Co. Limerick | MAP NO.: Figure 9.1 |
| | PROJECT TITLE: 080907 - Greenport Foynes EIS | ISSUE NO.: 080907-2008.11.24-D1 |
| | MAP REQUESTED BY: Lorraine Meehan | CHECKED BY: Brian Keville DATE: 24-11-2008 |
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wastewater treatment systems would contribute to ensuring that no deterioration in water quality takes place.

(f) This area is considered as being unsuitable for wind energy except for the townlands indicated on Map 12.1 of the Plan.

(g) It is recommended that single lines of equally spaced turbines be considered in proposed windfarm developments to limit the visual and landscape impact.”

Chapter 9 of the County Development Plan 2005 – 2011 relates to development within the Shannon Estuary. Section 9.4 of the Plan describes the estuarine landscape as follows, and states the need to conserve the character of this landscape:

“The landscape of the estuary has a dual character in that it possesses both agricultural and maritime characteristics. While this dual character adds greatly to the charm of the estuary, it also adds to its vulnerability to inappropriate development. While there are many coastal areas of scenic beauty in Ireland, there are few with the type of landscape provided by the estuary. This makes the landscape type important on a national and not just a county level.”

The site of the proposed development is located within the Shannon Foynes Port Area, in the townland of Durnish, on the southern side of the Shannon Estuary. The Port Area is located approximately 30 kilometres downstream of Limerick City and is controlled by the Shannon Foynes Port Company, Ireland’s second largest port operation. The town centre of Foynes is located approximately one kilometre southwest of the proposed development site. The site is accessed via the internal roadways of the Port Area, which is in turn accessed from two separate, security-controlled entrances on the N69 Limerick to Tralee National Secondary Route.

The Port Area is a highly developed industrial location, with land-uses that include dusty coal/clinker storage (outdoors), engineering, manufacturing and other warehousing. The site to the west of the proposed development site is currently being developed as commercial fuel storage facility. Aughinish Alumina Refinery is located approximately 2.4 kilometres northeast of the proposed development site, on Aughinish Island.




9.1.3 Scenic Views and Prospects

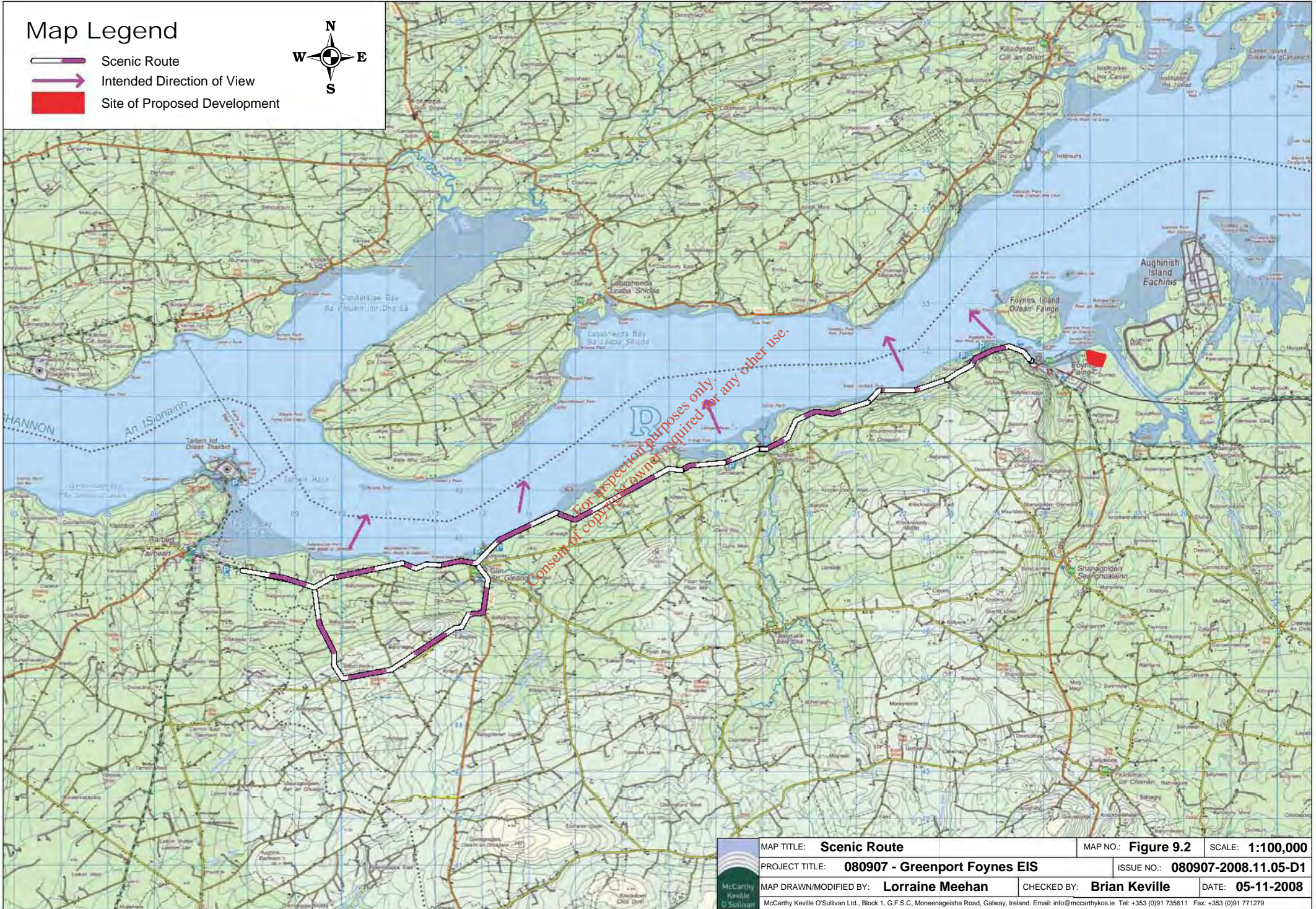
The Landscape Character Areas described in the Limerick County Development Plan 2005 – 2011 incorporate the scenic views and prospects of earlier County Development Plans in order to ensure continuity between, and further development of, landscape policies for the county. Policy ENV 8 of Limerick County Council in relation to scenic views and prospects is listed in Section 9.1.1. There is one designated Scenic Route located within a five-kilometre radius of the proposed development site. Views of the Shannon estuary from the N69 National Secondary Road between Foynes and Glin, as shown on Figure 9.2, are designated for protection by the Limerick County Development Plan 2005 – 2011. The protection of this Scenic Route is a priority for the Planning Authority, as stated in the Plan.


9.2 Landscape Character

Landscape character refers to the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how people perceive this. It reflects particular combinations of geology, landform, soils, vegetation, land-use and human settlement, and creates the particular sense of place found in different areas. The identification of landscape character comprises the identification of the physical, visual and image units.

Map Legend

-  Scenic Route
-  Intended Direction of View
-  Site of Proposed Development



| | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------|-------------------------|
|  | MAP TITLE: Scenic Route | MAP NO.: Figure 9.2 | SCALE: 1:100,000 |
| | PROJECT TITLE: 080907 - Greenport Foynes EIS | ISSUE NO.: 080907-2008.11.05-D1 | |
| | MAP DRAWN/MODIFIED BY: Lorraine Meehan | CHECKED BY: Brian Keville | DATE: 05-11-2008 |
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9.2.1 Physical Unit

The topography, vegetation and anthropological features on the land surface in an area combine to set limits on the amount of the landscape that can be seen at any one time. These physical restrictions form individual areas or units, known as physical units, whose character can be defined by aspect, slope, scale and size. A physical unit is generally delineated by topographical boundaries and is defined by landform and land-cover.

The physical landscape unit in which the proposed development site is located is shown on Figure 9.3. The Shannon Estuary is the defining feature of this unit, which extends from Limerick City in the east to the mouth of the Shannon in the west. It also extends northwards to take in the mouth of the River Fergus. This physical unit encompasses an area of approximately 935 square kilometres and corresponds generally with the region described in the Limerick County Development Plan 2005 – 2011 as the Shannon Coastal Zone Landscape Character Area. The physical landscape unit takes in much of north County Limerick, north County Kerry and southwest County Clare. The settlements of Carrigaholt, Kilrush, Killadysert, Newmarket-on-Fergus, Shannon, Cratloe, Pallaskenry, Askeaton, Foynes, Loughill, Glin, Tarbert and Ballylongford all lie within this area. Agriculture has traditionally been the dominant land-use within the lowlands on either side of the estuary.



9.2.1.1 Landform

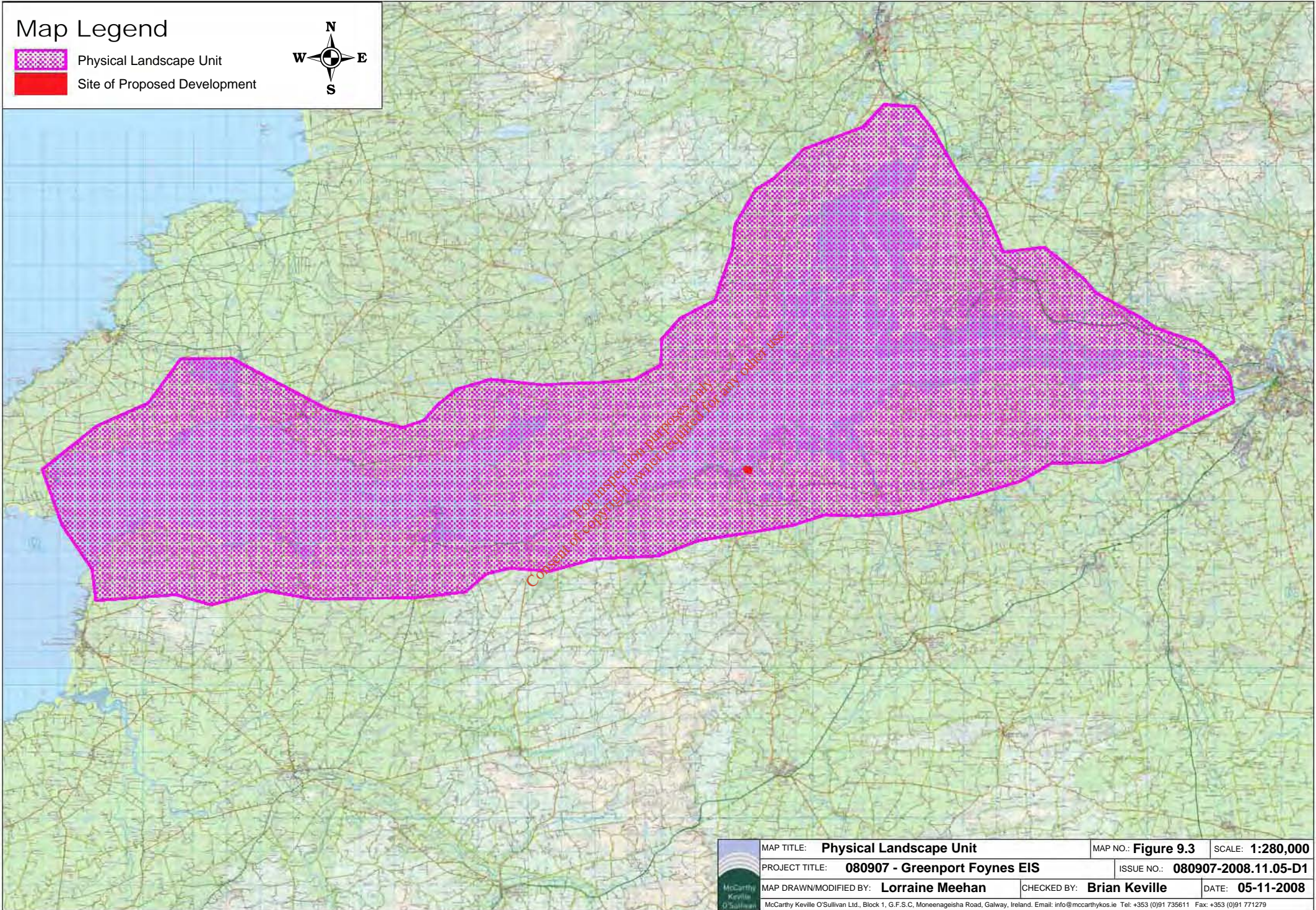
Landform is the term used to describe the spatial and formal arrangement of landscape components as a natural product of geological and geomorphologic processes in the past, and refers primarily to topography and drainage:

The Foynes area is underlain by Carboniferous limestones. The topography of the land in the vicinity of the proposed development site ranges from flat to hilly, with many low hills interspersed throughout the wider landscape. In general, the lands to the east of the site are relatively flat, while more hilly topography is found to the west and the south. The site itself is flat. The topography of the area in the townland of Ballynacragga to the southwest of Foynes rises sharply to approximately 130 metres O.D., as shown in Plate 9.1. Knockpatrick hill, the peak of which reaches an elevation of 172 metres O.D., is located approximately 2.4 kilometres southwest of the proposed development site.

The River Shannon flows from east to west directly north of the proposed development site. Foynes Island lies approximately 750 metres northwest of the site. This small wooded island occupies approximately 1.2 square kilometres and rises to an elevation of 50 metres O.D. Upstream of Foynes Island, the estuary basin is generally shallow with extensive tidal flats. Reclaimed and improved land is widespread here, with individual pockets of such land often associated with embayments, river and stream outlets and tidal channels. Extensive land reclamation works have been carried out within the Shannon estuary lowlands over several centuries, with lands being reclaimed primarily for agricultural purposes (Healy & Hickey, 2002). Additional man-made changes to landform in the vicinity of the proposed development site include the spoil heap at Aughinish Alumina, as described in Section 9.2.1.2 of the EIS.

Map Legend

-  Physical Landscape Unit
-  Site of Proposed Development



| | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------|
| MAP TITLE: Physical Landscape Unit | MAP NO.: Figure 9.3 | SCALE: 1:280,000 |
| PROJECT TITLE: 080907 - Greenport Foynes EIS | ISSUE NO.: 080907-2008.11.05-D1 | |
| MAP DRAWN/MODIFIED BY: Lorraine Meehan | CHECKED BY: Brian Keville | DATE: 05-11-2008 |
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Plate 9.1 Hilly topography in Ballynacragga area to the southwest of the proposed development site

The Robertstown River flows from south to north towards the Shannon, to the east of the proposed site. This river separates Aughinish Island from Foynes. A narrow drainage ditch runs parallel to the western bank of the Robertstown River.

9.2.1.2 Land-cover

Land-cover is the term used to describe the combinations of vegetation and land-use that cover the land surface. It comprises the more detailed constituent parts of the landscape and encompasses both natural and man-made features. The site of the proposed development currently comprises a vacant warehouse and external concrete surfaced yard. Office space and a reception area occupy the front of the warehouse. Ornamental shrubbery is planted around the warehouse entrance.

Land-use in the vicinity of the proposed development site is primarily industrial. Foynes Port, a view of which is shown in Plate 9.2, is the principle general-purpose terminal on the Shannon estuary and caters for dry bulk, break bulk, liquid and project cargoes. The land to the east and southeast of the site, adjacent to the Robertstown River, is owned by Irish Cement but to date has not been developed for industrial purposes.

The site is accessed via the internal roadways of the Shannon Foynes Port Area, which is in turn accessed from two separate junctions with the N69 Limerick to Tralee National Secondary Route. The N69 travels from east to west, approximately 630 metres south of the proposed development site at its nearest point. There are two Regional Road within a five-kilometre radius of the site. The R521 lies 1.9 kilometres south of the site at its nearest point, and travels southwards from the N69 towards Newcastle West. The second Regional Road, the R473, is located in County Clare and travels in an east-west direction between Clarecastle and Kilrush. This road is located on the northern side of the estuary and therefore would not be used in accessing the proposed development site. The

Limerick to Foynes railway line, which is not currently operational, passes within 400 metres of the site.



Plate 9.2 View of Foynes Port and the Shannon Estuary from the Port Area. Foynes Island is visible to the left.

Land-cover to the south of Foynes is primarily agricultural, although areas of broad-leaf and coniferous forest are also a common element. Pockets of peat bog are found further southwest, particularly around the Ballyhahill area.

The Shannon Estuary region is home to important industrial and transport infrastructure, such as Shannon Airport and the Shannon Industrial Complex, which are located approximately 15 kilometres northeast of the proposed development site. The Money Point coal-fired electricity generating station is also located on the northern shore of the estuary, approximately 22.4 kilometres west of the site. Aughinish Alumina Refinery, which is located on Aughinish Island to the northeast of Foynes, is one of the largest alumina refineries in Europe. It produces 1.8 million tonnes of alumina per annum from the treatment of approximately four million tonnes of imported bauxite, and exports this to smelters throughout Europe. The waste ore or bauxite residue, which is a reddish-brown colour, is spread on the western part of Aughinish Island, on an area of approximately 200 acres adjacent to the refinery, as shown on Plate 9.3.



Plate 9.3 View of Aughinish Island from the eastern boundary of proposed development site



Plate 9.4 View of Aughinish Alumina Refinery from the eastern boundary of proposed development site

9.2.2 Visual Unit

A visual landscape unit is defined by spatial enclosure and pattern, i.e. by landform and land-cover. The limits of the views that are available from one particular site are therefore determined by the physical landscape, such as topographical and vegetation boundaries, and particularly in this case buildings and other man-made structures.

Figure 9.4 depicts the visual landscape unit as perceived from within the site of the proposed development. The visual unit is dominated by the industrial developments associated with the Shannon Foynes Port Area and the nearby Aughinish Alumina plant. To the south and southwest, the boundaries of the visual unit are marked by the hilly topography of Ballynacragga, while those to the east are marked by Aughinish Island. Looking towards the southeast, the boundaries of the visual unit extend to the hilly topography of the Barrigone and Craggs area, as shown in Plate 9.5.





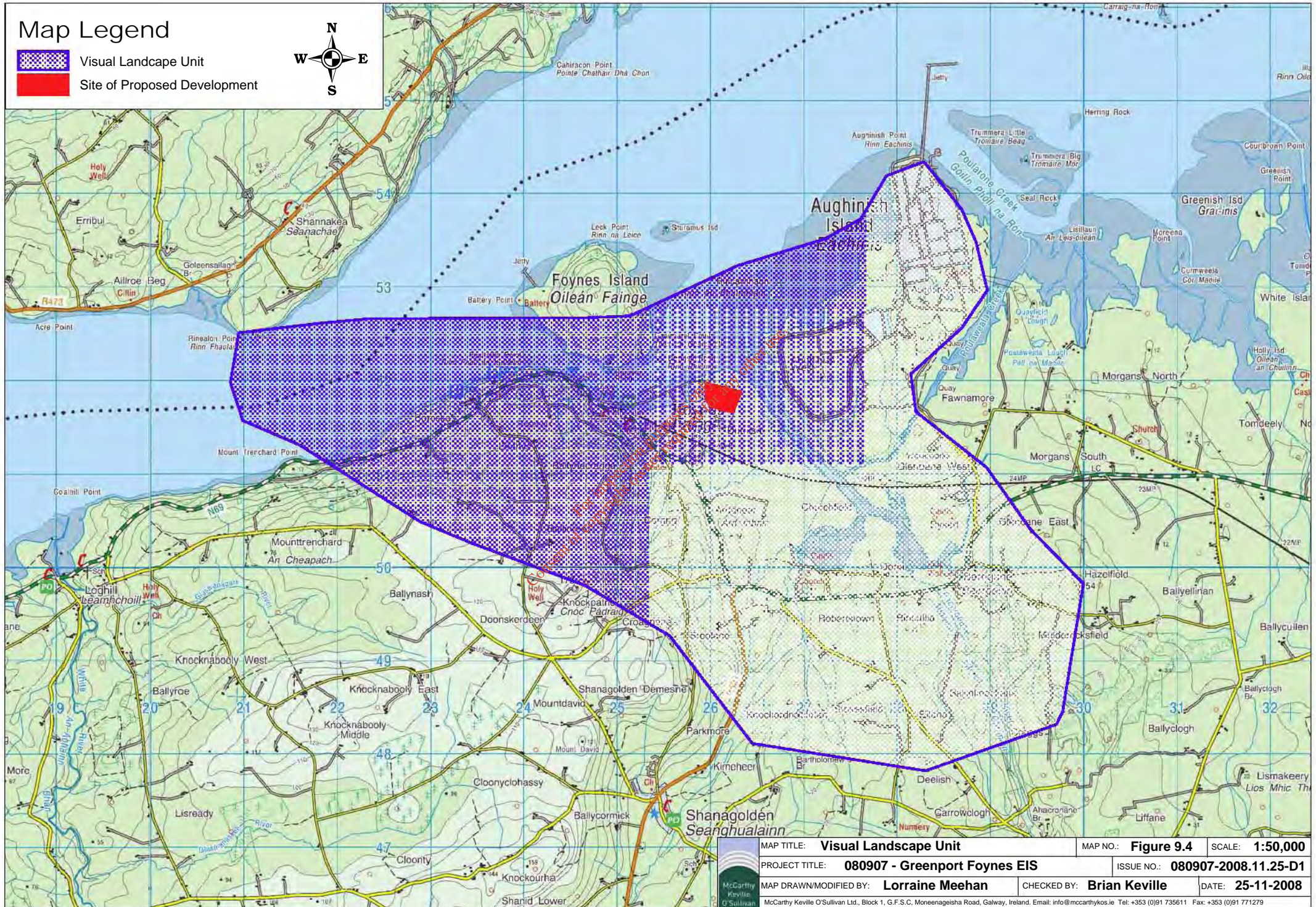
Plate 9.5 View to the southeast from the eastern boundary of the proposed development site

9.2.3 Image Unit

An image unit is a feature of such dominance that it acts as a major focal point within the landscape. Such features contribute significantly to the creation of a strong identity or sense of place. The low hill on Aughinish Island, on which the reddish-brown waste ore from Aughinish Alumina Refinery is spread, forms the most distinctive feature in the local landscape. The unique coloration of this hill makes it easily identifiable as part of this industrial premises. This part of Aughinish Island is visible only from a limited area in the vicinity of the site. At a regional level there is no one single feature in the wider landscape that contributes significantly to the identity of the area.

Map Legend

-  Visual Landscape Unit
-  Site of Proposed Development



MAP TITLE: **Visual Landscape Unit** MAP NO.: **Figure 9.4** SCALE: **1:50,000**

PROJECT TITLE: **080907 - Greenport Foynes EIS** ISSUE NO.: **080907-2008.11.25-D1**

MAP DRAWN/MODIFIED BY: **Lorraine Meehan** CHECKED BY: **Brian Keville** DATE: **25-11-2008**

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9.3 Landscape Sensitivity

The sensitivity of a landscape to development and therefore to change varies according to its character and to the importance that is attached to any combination of landscape values. The sensitivity of a landscape is derived from consideration of designations such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Natural Heritage Areas (NHAs), National Parks, from information such as tourist maps, guidebooks and brochures, and from the evaluation of indicators such as uniqueness, popularity, distinctiveness, and quality of the elements of the area.

An assessment of landscape sensitivity in the vicinity of the proposed development site was carried out during a site visit by McCarthy Keville & O’Sullivan Ltd. personnel in November 2008. The methodology for this assessment was based on that set out in the Department of the Environment and Local Government (DoELG) guidance document *‘Landscape and Landscape Assessment – Consultation Draft of Guidelines for Planning Authorities’* (2000). This document recommends an assessment of landscape sensitivity based on an evaluation of individual features, such as the quality, integrity, etc. The results of the assessment are presented in Table 9.1.

Table 9.1 Features of Landscape Sensitivity

| Feature | Description |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Quality | The quality of the landscape in the area surrounding the proposed development site can be described as modified, with few features not having been affected by some anthropogenic influence. The site itself has previously been used for industrial purposes and is of low landscape value. The Shannon Foynes Port Area is highly industrialised and the quality of the landscape within this location is also low. An exception to this is considered however when viewing the estuary from the edge of the river, with the Port Area behind the viewer, out of sight. |
| Integrity | The interaction of man with the natural environment has modified the local landscape significantly. The landscape in the vicinity of the proposed development site therefore displays a low level of integrity. Similar to the description of landscape quality however, a higher level of integrity is observed when viewing the estuary from the edge of the river, with the Port Area behind the viewer, out of sight. |
| Distinctiveness | The Shannon Estuary is the most distinctive feature in the local landscape. The Shannon is the longest river in Ireland and Britain, and is recognised as an important national feature. The estuary is not visible from the site of the proposed development. |
| Popularity | The Shannon Foynes Port Area is occupied by industrial and commercial premises and is not used for recreational purposes. Access to members of the public is strictly restricted. Within the wider area, the amenity value of the Shannon estuary is appreciated by locals and visitors alike. There are two picnic areas located at Poutallin Point, approximately 2.2 and 2.5 kilometres west of the site respectively. The scenic views of the Shannon Estuary from the N69 between Foynes and Glin are designated for protection by the Limerick County Development Plan 2005 – 2011. |
| Rarity | The industrial character of the proposed development site is not considered to be rare. In the context of the wider landscape however, the nearby River Shannon is valued at both a regional |

| Feature | Description |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | and national level, with much of the river and associated flood plains being designated a Natural Heritage Area (NHA). It is also recognised internationally as an important wildlife habitat, with many parts of the river and estuary designated as Special Areas of Conservation (SACs) and/or Special Protection Areas (SPAs). |
| Cultural Meaning | There are no previously Recorded Monuments or Protected Structures located within, or in the immediate environs of, the proposed development site. The nearest Recorded Monument is an enclosure, located approximately 450 metres to the south, as described in Chapter 10 of this EIS. Historic Ordnance Survey maps indicate the presence of a probable residential farm (Durnish Cottage) located in the general area of the development site. A flying-boat station was in operation in Foynes during the 1930's and early 1940's. The station closed in 1946, and is now the site of the Foynes Flying Boat Museum. |
| Sense of Public Ownership | A sense of public ownership arises due to ease of accessibility, visibility or a widely shared meaning. The site of the proposed development is located within the Shannon Foynes Port Area however and is therefore not accessible to the general public. Strict security measures are in operation at both entrances to the port. The site is located towards the rear of the Port Area and is therefore not visible from the N69 National Secondary Route. |
| Social Importance | The River Shannon is considered to be an important regional and national asset due to its recreational and tourism value. With regards to the proposed development site itself however, there are no recreational or tourist values pertaining to this area. The Shannon Foynes Port Area is a highly industrialised location of high economic value. |

9.4 Landscape & Site Context

This section of the EIS describes the views that are available from within the site of the proposed development. It also describes the existing views towards the site from the surrounding area, with particular reference to views available from roads, houses and facilities or areas of amenity value.

9.4.1 Views Within the Site

Plate 9.6 shows the existing warehouse on the site of the proposed development, as viewed from the southeast. The building is L-shaped, as shown in this photograph. The warehouse has been vacant in recent years and has begun to fall into a state of disrepair, giving it a neglected appearance. The proposed composting facility will be constructed within this existing warehouse and in a proposed extension to this building on part of the external concrete surfaced yard.

The line of conifer trees that marks the northern boundary of the proposed development site is partially visible behind the warehouse when viewed from this photo location. These trees screen a similar industrial warehouse and yard, which lie directly north of the subject site, from view from within the site. The Shannon estuary lies to the north of this second site. Construction works associated with the National Fuel Reserve facility within the Foynes Port Area are partially visible in the left-hand-side of the photograph.



Plate 9.6 View of the existing warehouse from the southeast

Plate 9.7 shows the view to the east from within the proposed development site. This photograph shows the northern facade of the existing warehouse and the conifer trees that mark the northern boundary of the site, thereby screening the neighbouring site from view. The open-ended lean to, as visible on side of the building, will be removed as part of the change of use planning application, for which planning permission has been granted to Greenport Environmental Ltd. by Limerick County Council (Planning Reference No. 08/1633).

Plate 9.8 presents the view to the south from the site of the proposed development. The adjoining site that is shown in this photograph is also occupied by warehouses, which screen the landscape further south from view. The view towards the southwest from this same area of the proposed development site is shown in Plate 9.9. This view encompasses additional warehousing and the construction works that are currently taking place on an adjacent site, and extends towards the hilly topography of the Ballynacragga and Knockpatrick areas. The corner of the existing warehouse on the site of the proposed development is visible in the right-hand side of the photograph.



Plate 9.7 View to the east from the proposed development site. The line of trees marks the northern boundary of the site.



Plate 9.8 View of adjacent warehouses to the south of the proposed development site



Plate 9.9 View to the southwest from the proposed development site

9.4.2 Other Views

9.4.2.1 Views From the Surrounding Road Network

There is one National and two Regional Routes located within a five-kilometre radius of the proposed development site, as described in Section 9.2.1.2 of this EIS. However, the proposed development site is located in the north-eastern corner of the Shannon Foynes Port Area and as such is visible only from the internal roadways of the Port Area. These roadways are used by port employees and commercial traffic operating within the Port Area and are not open to members of the general public. Entry to the Port Area from the N69 is controlled by security barriers. The site of the proposed development is not visible from any National, Regional or local routes in the Foynes area.

Plate 9.10 presents the view towards the proposed development site entrance from the internal Port Area roadway via which the site is accessed. This roadway joins the N69 at a junction located approximately 830 metres south of the site. A second junction with the N69 is located closer to Foynes town centre, approximately 1.16 kilometres west of the site. The existing warehouse on the site of the proposed development is afforded some visual screening from the roadway by the trees that have been planted in front of the building. The external surfaced yard area, which lies to the east of the warehouse, is screened from view from this photo location.

Plate 9.11 presents the view westwards from the entrance to the proposed development site. This view encompasses the construction works that are taking place on an adjacent site within the Shannon Foynes Port Area. The Shannon estuary, which lies to the northwest, is not visible from this photo location.



Plate 9.10 View of site entrance and front façade of the existing warehouse



Plate 9.11 View of construction works within the Shannon Foynes Port Area from the site entrance

9.4.2.2 Views From Houses

There are no houses located in the area surrounding the proposed development site. The photograph in Plate 9.12 presents the view towards Foynes from within the Port Area and shows a high level of residential development within the town itself. Many of these houses face towards the port, and thus the occupants have a view or partial view of the industrialised Port Area. Given that the proposed development site is located in the northeastern corner of the Port Area however, it is screened from the view of the occupants of these houses by the industrial and commercial buildings that lie in the intervening lands between these houses and the site.

9.4.2.3 Views From Areas of Amenity Value

Views of the Shannon estuary from the N69 National Secondary Route between Foynes and Glin are designated for protection by the Limerick County Development Plan 2005 – 2011. This Scenic Route begins to the west of the Shannon Foynes Port Area, approximately 1.3 kilometres west of the proposed development site. There are no available views of the Shannon estuary from the N69 to the east of this point due to the screening provided by the industrialised Port Area, which occupies the intervening land between the road and the river. Views of the estuary from within the Port Area itself are also limited, as shown in Plates 9.13 and 9.14.

There are no available views of the proposed development site from any hotels or other amenities in the Foynes area such as golf courses, walking routes, parks, nature areas or sports fields. The picnic areas at Poultallin Point are located over two kilometres west of the site and are not visible from this location.



Plate 9.12 View towards Foynes town from within the Port Area (The large number of birds on the Port Road was due to a spillage of grain during transportation from the dock to warehousing.)



Plate 9.13 Limited views of Foynes Island and the Shannon Estuary are available from the Shannon Foynes Port Area



Plate 9.14 View along internal roadway within the Shannon Foynes Port Area

9.5 Impacts and Mitigation Measures

9.5.1 'Do-Nothing' Scenario

Greenport Environmental Ltd. submitted a planning application to Limerick Co. Council in August 2008 for permission for change of use of the existing warehouse on the site of the proposed development to a 10,000 tonne per annum in-vessel composting facility and the removal of an existing open-ended lean-to (Planning Reference No. 08/1633). Planning permission was granted to Greenport Environmental Ltd. for this change of use in March 2009. If the proposed development were not to proceed, this change of use will go ahead.

If no development were to proceed on the site of the proposed development, the existing warehouse would continue to fall into an increasing state of disrepair. There would be no changes to land-use within the foreseeable future.

9.5.2 Predicted Impacts

9.5.2.1 Impacts During Construction Phase

9.5.2.1.1 *Slight Temporary Negative Visual Impact*

The construction phase of the proposed development will involve the movement of construction vehicles into and out of the site, and the storage of machinery, other equipment, temporary site buildings and building materials onsite. These activities will have a slight temporary visual impact on the surrounding area. The Shannon Foynes Port Area is a busy industrial premises however and construction works are also currently taking place on the site located directly west of the proposed development site. As such, the activities associated with the construction phase of the proposed development will assimilate well into their receiving environment. There are no residential properties, schools or areas of amenity value from which the construction activities will be visible.

9.5.2.1.2 *No Impact*

The construction phase of the proposed development will be temporary in nature and will have no impact on landscape character in the vicinity of the proposed development site. The existing character of the site is industrial, which will not be altered construction activities on the site.

9.5.2.2 Impacts During Operational Phase

9.5.2.2.1 *No Impact*

The proposed development site currently comprises an empty warehouse and vacant external yard. The proposed composting facility will be constructed within the existing warehouse and in an extension to this building to be constructed within the yard. This change in land-cover will have no impact on the industrial character of the surrounding landscape. There will be no significant increase in the visibility of the site within the wider area.

9.5.2.2.2 *Slight Temporary Negative Visual Impact*

There will be no significant changes to current views of the proposed development site from the internal roadways of the Shannon Foynes Port Area. The proposed composting facility will occupy the existing warehouse, in addition to part of the external yard. While a large extension to the existing building is proposed, it will 'square-off' the existing L-shaped building, and will therefore not give rise to any significant visual impact. This yard lies to the east of the warehouse, and is visible only from within the proposed development site. Visibility of the site within the surrounding area will not increase as a result of the

proposed development. The site is screened to the north, south and west by warehouses and other industrial buildings. Part of the concrete surfaced yard will be lost with the construction of the proposed facility.

9.5.2.2.3 No Impact

The proposed development will have no impact on the designated Scenic Views of the Shannon Estuary that are available from the N69 National Secondary Route between Foynes and Glin. The site is not currently visible from any part of this road, and this will not change with the construction of the proposed composting facility.

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10 CULTURAL HERITAGE

Local History, Archaeology and Architectural Heritage

10.1 Introduction

Cultural Heritage (Physical) in respect of a project is assumed to include all humanly created features on the landscape, including portable artefacts, which might reflect the prehistoric, historic, architectural, engineering and/or social history of the area. The Cultural Heritage of the subject development area and environs was examined through an Archaeological, Architectural and Historical study. The Archaeological and Architectural studies involved a documentary/cartographic search and field inspection of the area, while the Historical study involved documentary research.

The Heritage and Planning Division of the Department of the Environment, Heritage and Local Government (DoEHLG) were consulted as part of the scoping exercise undertaken by McCarthy Keville O'Sullivan. Two replies were issued by the Development Applications Unit, DoEHLG (Ref: G2008/916) on 5th and 8th December 2008 relating respectively to Archaeology and Architectural Heritage. These responses are included in Appendix I of the EIS. The format of this chapter is based on these responses.

10.1.1 Methodology

The Archaeological, Architectural and Cultural Heritage Assessment components of the study comprise the results of a survey and evaluation of selected sites of archaeological, architectural and historical potential within, and in the immediate environs of, the proposed development area. The work consists of the results of a desk survey and field inspection of the site and immediate surrounds – up to a distance of approximately 500 metres surrounding the boundaries to the site (Study Area).

10.1.1.1 Paper Survey

As part of a documentary cartographic search, the following principal sources were examined from which a list of sites and areas of Cultural Heritage interest/potential was compiled:

- Record of Monuments and Places – Co. Limerick (RMP).
- Archives of the Archaeological Survey of Ireland.
- Records of the National Museum of Ireland.
- Cartographic Archive of the Ordnance Survey of Ireland.
- Stereoscopic photographic coverage carried out by the Geological Survey of Ireland.
- Documentary and cartographic sources in Limerick County Library.
- Limerick County Development Plan 2005-2011 (LCDP).
- Architectural Heritage Protection: Guidelines for Planning Authorities. (DoEHLG, 2004).

10.1.1.2 Field Inspection

From the preceding paper survey, a list of cultural heritage sites/sites of cultural heritage potential was compiled for inspection. The subject development lands and an area of up to approximately 500 metres surrounding the boundaries of such assessed for the presence of archaeological monuments by reference to map and aerial photographic sources. A field inspection of the development lands and environs, was subsequently undertaken in late November 2008.

An attempt was also made to identify previously unrecorded sites of cultural heritage potential within, and in the immediate environs of, the proposed development area.

Sites of cultural heritage potential identified on the basis of the paper survey were inspected, where possible, in an attempt to confirm their locations on the ground and to determine, if possible, their likely extent.

10.1.2 Assessment of Impacts

Table 10.1 provides the baseline criteria used to describe the impacts that the proposed development will have on Cultural Heritage Sites.

Table 10.1 Criteria for Assessing Impacts

| Type of Impact | Direct | Indirect |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Severe | Cultural Heritage site is within a proposed development area. Construction work will entail the removal of part or the entire cultural heritage site. | Cultural Heritage site is within a proposed development area. Construction works will entail the destruction of the visual context of the site or isolate it from associated groups or features. |
| Potentially Severe | Cultural Heritage site is adjacent to a proposed development area. There is potential for related remains being affected by development works. | Cultural Heritage site is adjacent to a proposed development area. Construction works will greatly injure the visual context of the site or isolate it from associated groups or features. |
| Moderate | Existing access to a cultural heritage site will be severed. Development works will affect the context of a cultural heritage site. | N/A |
| None Predicted | The proposed development will have no predicted impact. | N/A |

10.1.3 General Receiving Environment

The subject development site is located in the townland of Durnish, towards the eastern extent of the Foynes Port Area, and immediately east of an internal access road. It measures a total area of 17.24 acres and comprises an existing warehouse and office structure, associated car park and large surfaced external yard area. The surface of the site is slightly higher than that of the adjacent road and is substantially higher (1-2 metres) than that of the existing agricultural lands to the east.

The lands to the immediate north and south comprise existing commercial plots and structures, with those to the west of the access road presently being developed. The northern boundary comprises a line of evergreen trees, and there is some planting along the western boundary, with concrete wall to the southwest. The remaining boundaries are formed by fencing.

10.2 Receiving Environment

10.2.1 Local History

The subject development area is located in the townland of Durnish, in the civil parish of Robertstown and in the barony of Shanid (O.S. 6" Map: Limerick Sheet 10). The townland

name derives from the Irish *dairinis* – ‘oak island’ and the barony name derives from *seanaid* – a ‘place where meetings are held’ (Burnell, 2006, 147 & 347). In addition, the name Foynes originates from the Irish *faing* – a ‘raven’ or the ‘western boundary’ (Burnell, 2006, 170) with the village deriving its name from nearby Foynes Island (Spellissy & O’Brien, 1989, 167).

The lands of Shanid were granted to Thomas Fitzgerald in 1197 by the justiciar, Hamo de Valaognes. Thomas, who was a son of Maurice Fitzgerald, one of the original Anglo-Norman invasion force, was the founder of the great Munster Geraldine family of Desmond, which took for its motto ‘Seanad Abú’ – Shanids to Victory. The grant was confirmed by John when he became king in 1199. Shanid had been the territory of the eoganach Coilen Ó Coiléin who, in defending his patrimony, was killed by the Geraldines in that year (Barrington, 1976, 51).

In 1587, William Trenchard, with £1000 to his name, was given a grant of 14,000 acres in West Limerick. He retained 1,500 acres for himself and allotted the rest of his holdings to other Englishmen (Spellissy & O’Brien, 1989, 167). Trenchard constructed Corcrig Castle as his residence. This structure, located approximately 800 metres, to the southwest of the subject development lands, was described in Elizabethan times as belonging to ‘Master Trenchard, the undertaker, and of strength sufficient to hold out against any force except cannon’. The Trenchard family continued to live in Corcrig until Georgian times when they moved to a new mansion at Cappa, now Mount Trenchard.

A review of military defences across the county was undertaken in 1793. At this time Britain was at war with the French Republic and it was feared that an invasion by the French might be undertaken, in support of the cause of the United Irishmen – who wished to achieve an independent Ireland. One of the areas considered likely for an invasion was the Shannon Estuary. A battery of eight 24-pounders had been constructed in 1783 at Tarbert Island to defend shipping in the estuary but appears to have been subsequently abandoned. Following the military review, the battery at Tarbert Island was reinstated and augmented with additional defensive batteries at Kilcredaun Point, Doonaha, Scatterry Island and Kilkerin Point, all on the northern (Co. Clare) side of the estuary. In addition, an earthwork battery for six 24-pounders was constructed on the western point of Foynes Island. This battery, the remains of which still survive, would have been capable of commanding the full width of the river (Kerrigan, 1995, 204-211).

Lewis (1837, 517) described the civil parish of Robertstown or Castle-Robert as containing, with Foynes Island, 1794 inhabitants, and was in a ‘level and fertile district’. He described the land as being “*in general good, though in some places interspersed with detached masses of stone; the greater portion is under tillage, producing favourable crops, and there are good tracts of pasture*”. He further describes the system of agriculture as being “*in a backward state; large portions of land are cultivated with the spade, and manure is carried to the fields on the shoulders of women*”. The principal seats of the parish, at that time, were Old Abbey, the residence of W. Morgan Esq.; Fort Anne, of S.E. Johnson, Esq.; Congreiff of Mrs. Griffin and “*at no distance Mount Trenchard, the seat of the Rt. Hon. Thos. Spring Rice*”. Lewis also notes that rock had been deeply excavated at Lehys Point in forming a ‘new line of road’. He further notes that the “*living is a vicarage, in the diocese of Limerick, united to the vicarage of Dunmoylan, together forming the union of Robertstown, or Dunmoylan, in the patronage of the Earl of Cork, in whom the rectory is inappropriate: the tithes amount to £367. 12. 10½...In the R.C. divisions the parish forms part of the union of Shanagolden...*”.

In 1837 the *Commissioners for the Improvement of the River Shannon* presented a report to both Houses of Parliament. The report stated that the “*harbour of Foynes, on the south*

side of the river...affords excellent shelter from all winds, being protected from the south and west by high lands adjoining the river banks, and from the north and northeast by Foynes Island ...well situated as a converging point for the traffic of the north-western portion of the county...". The Commissioners then submitted plans and estimates of £8,500 to complete the necessary works. Works commenced soon afterwards, with the West Pier constructed as part of a Famine Relief Scheme in 1847. The Royal Navy used Foynes as a temporary Naval Base in the early twentieth century and a new pier capable of accommodating larger vessels was opened in March 1936. The port is now operated by the Shannon Foynes Port Company, an amalgamation under the Harbours (Amendment) Act 2000 of the agencies operating the ports of Limerick and Foynes.

A railway line from Ballingrane Junction (formerly Rathkeale Junction) on the Limerick – Tralee railway line to Foynes Pier was opened in 1858 by the Limerick and Foynes Railway/Great Southern and Western Railway Company. The main street of the village was moved from the edge of the Shannon at this time to accommodate the construction of the railway line. The line was closed to passenger traffic in February 1963 (Johnson, 1997, 80).

The estuary at Foynes was surveyed in 1933 by Colonel Charles Lindberg, who had actually landed in Galway Bay. In December 1935, the Irish Times announced that Foynes would be the site for the European Terminal for trans-Atlantic air services and dredging for a lagoon for experimental trans-Atlantic sea planes was scheduled for 1937. A flying-boat station was commenced in 1935, with the former Mount Eagle Arms Hotel, constructed in the 1860s and incorporating the first public bar and shop in the village, was converted for use as a terminus, with a flying-boat arriving from Southampton to commence test flights in February 1937. The first trans-Atlantic proving flights were operated on July 5th 1937 with the first west-bound flight and on July 6th with the first east-bound flight. The first non-stop flight to New York operated on June 22nd, 1942. The air-terminus building was used extensively during the Second World War by Pan American Airlines (Pan-Am), British Overseas Airway Corporation (BOAC) and American Export Airlines. However, the opening of a new airport at Rineanna later to become Shannon International Airport on the northern shores of the Shannon Estuary, as well as the end of World War II and developments in aviation technology, led to the ending of the fly-boat era, and the final scheduled flight from Foynes took place towards the end on 1945. The flying-boat station closed in 1946 and a college for the learning of the Irish language was opened in the former terminal in 1954, at which time it was renamed Áras Íde. The Port Trustees subsequently purchased the building in 1980 and it now houses the *Foynes Flying Boat Museum*.

Historic Ordnance Survey maps of the site (Figures 10.1 & 10.2) and immediate environs indicate the presence of a probable residential farm – Durnish Cottage – located in the general area of the subject development site. This complex of buildings, together with associated agricultural field systems, is at least of early nineteenth century date and was removed when the port lands were extended eastwards. In addition, there is evidence from the maps that the bay to the immediate east of Durnish Point, to the north of the subject development area, were subjected to reclamation works in the late nineteenth century. Additional reclamation works were undertaken to the estuary edge to the west of the subject lands in more recent times.

10.2.2 Archaeological Heritage

The area under assessment is part of a landscape that is rich in historical and archaeological material. The general region has attracted settlement from early times as evidenced by the presence of monuments dating back to the prehistoric period. Continuity of settlement is illustrated by artefacts dating to the Bronze Age and by identified monuments ranging from Neolithic to Medieval and Post-Medieval remains.

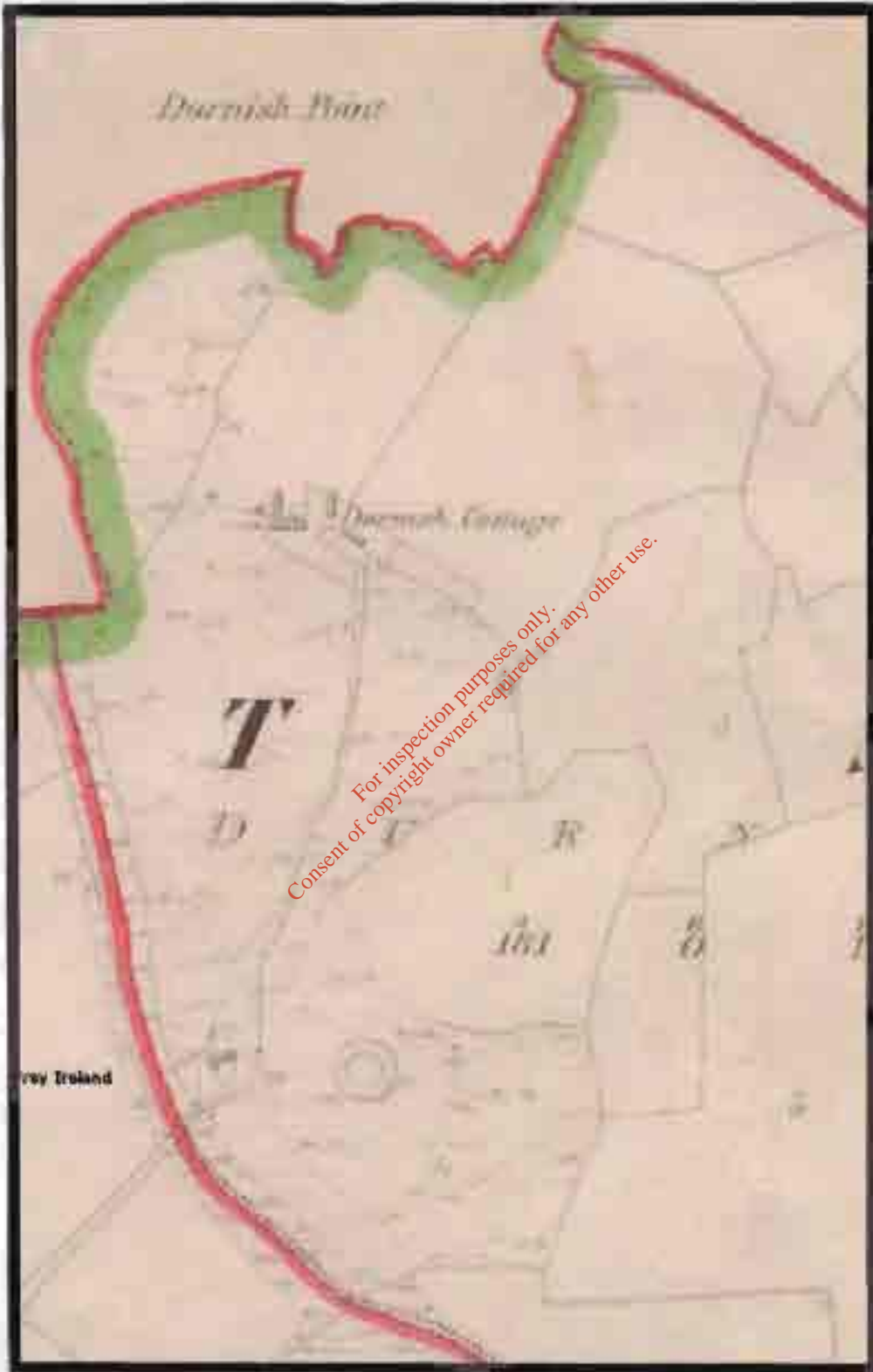


Fig. 10.1 EXTRACT FROM O.S. MAP OF 1844 (LIMERICK SHEET 10)

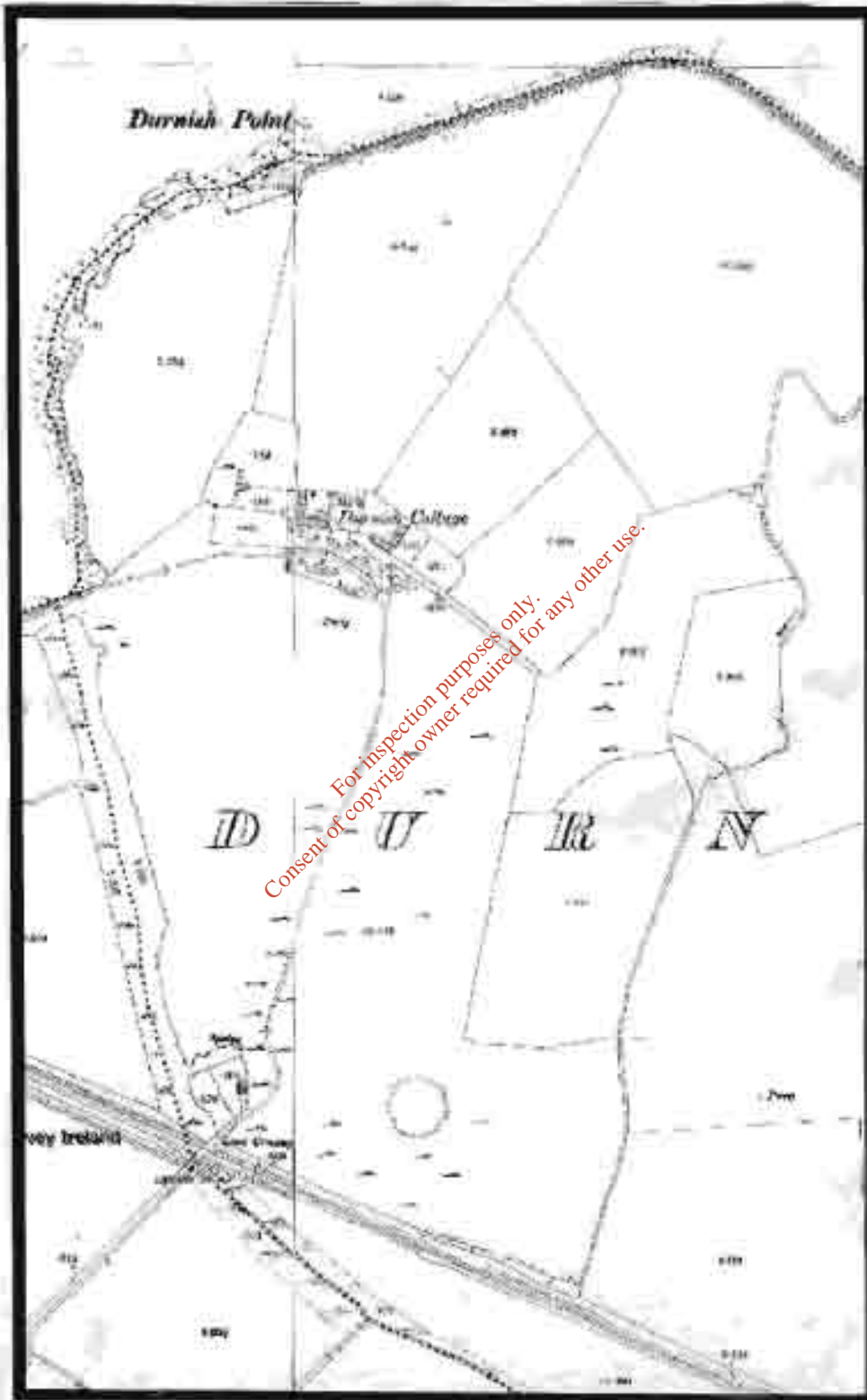


Fig. 10.2 EXTRACT FROM O.S. MAP OF 1900 (LIMERICK SHEETS 10-9 & 10-10)

The siting preferences of particular monument types are well documented. Broadly speaking, the general landscape of the proposed development area offers a potential setting for the discovery of archaeological sites and remains, as follows:

- The landscape offers many opportunities for the location of Fulachta Fiadh (prehistoric cooking sites). These sites are location specific, generally located close to rivers and streams or in wet marshy areas, and sometimes occur in groups.
- The general rolling nature of the landscape is a favoured position for the location of pre-historic burial sites and ringforts in the general region, particularly the crests of slopes with respect to the former and on south-facing slopes with respect to the latter.

There are no previously Recorded Monuments located within, or in the immediate environs of, the subject development lands. In addition, cartographic and aerial photographic research did not indicate the presence of any features of archaeological potential within such areas. Likewise, the site inspection/surface reconnaissance survey did not reveal any surface traces of archaeological potential within, or in the immediate environs of, the subject development lands. Furthermore, the raising of the levels across the site has probably resulted in extensive ground disturbance/reductions to the original site surface.

The nearest Recorded Monument to the subject lands is an Enclosure, situated approximately 450 metres to the south. The location of this monument, with respect to the subject development lands, is illustrated in Figure 10.3 and is described as follows:

Townland: Durnish

Classification: Enclosure

SMR No.: LI010:009

N.G.R. No.: 126007 151353

Protection: RMP.

Description

This monument is indicated on all editions of the O.S. Maps series (e.g. Figure 10.1) as a Circular Enclosure, except for more recent editions, which indicate that a section of the west-facing arc has been levelled. The site is now heavily overgrown, as illustrated in Plate 10.1, and its exact extent is difficult to determine, although its internal diameter appears to be approximately 50 metres. It is situated on a low hillock, immediately surrounded by partially overgrown undeveloped agricultural lands to the north of the railway line and to the west of the eastern port access road.

10.2.3 Architectural Heritage

There are no Protected Structures, within the meaning of the Planning and Development Act 2000, situated either within the boundaries of the subject development lands or within the defined study area of approximately 500 metres surrounding such lands. There is a modern office/warehouse structure contained within the subject site boundaries and a number of modern warehouses located to the south, north and west of the subject site. Field inspections of the site and environs indicate that none of these structures are of architectural heritage potential/interest.



Plate 10.1 Recorded Monument LI010:009 (from east)

10.3 Likely And Significant Impacts

A detailed description of the scheme, as proposed, is contained in Chapter 3 of this EIS. This section considers the impacts, if any, that such proposed development will have on items, areas and structures of Cultural Heritage interest located within the defined study area.

10.3.1 Potential Impacts

10.3.1.1 Local History

There are no previously documented events of historical significance associated with the subject area that have the ability to be impacted upon. Consequently, it is not envisaged that any impacts will occur with respect to historical events.

10.3.1.2 Archaeology

The subject development area does not contain any previously recorded archaeological monuments. Likewise, no surface traces of archaeological interest/potential were noted during a surface reconnaissance survey undertaken of the site and environs. The nearest Recorded Monument to the site is an Enclosure (Ref: LI010:009) situated approximately 450 metres to the south of the subject development lands and it is not considered likely that the subject development has the ability to have any negative direct impacts or indirect/visual impacts on this or any other features/monuments of archaeological interest/potential.

10.3.1.3 Architectural Heritage

There are no Protected Structures or any other structures of architectural heritage interest/potential located within the site or defined study area of approximately 500 metres surrounding the site. Consequently, no impacts with respect to Architectural Heritage will occur as a result of the subject development.

10.3.2 Predicted Impacts

It is not considered that the development, as proposed, will cause any negative direct impacts to any sites or structures of historical, archaeological or architectural heritage interest. Likewise, the development will not cause any indirect or visual impacts on the views or settings of any structures or features of historical, archaeological or architectural heritage interest.

10.3.3 ‘Do Nothing’ Scenario

In terms of Cultural Heritage, the subject site will remain as it is.

10.3.4 ‘Worst-Case’ Scenario

In terms of the present proposals, no ‘worst-case scenario’ is envisaged.

10.4 Mitigation Measures

The impacts of the proposed development on items of Cultural Heritage interest have been outlined above in Section 10.3. In summary, it is not considered that the development, as proposed, will cause any direct or indirect/visual impacts on any features or structures of historical, archaeological or architectural heritage interest. Consequently, it is not envisaged that any mitigation measures are required.

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11 MATERIAL ASSETS

Material Assets are defined in the Environmental Protection Agency (EPA) *'Advice Notes on Current Practice (in the preparation of Environmental Impact Statements)'* (2003) as *'resources that are valued and that are intrinsic to specific places'*. Cultural assets are discussed in Chapter 10 of this Environmental Impact Statement (EIS). Economic assets of natural heritage include non-renewable resources such as minerals or soils, and renewable resources such as wind and water. These assets are dealt with in previous sections of the EIS such as Chapter 6 Soils & Geology, Chapter 7 Hydrology and Hydrogeology, and Chapter 8 Air, Climate and Noise. Economic assets of human origin, which include major utilities such as water supply, sewage and power systems, transportation infrastructure and traffic, are discussed in this chapter of the EIS.

11.1 Traffic and Roads

11.1.1 Introduction

This section of the EIS considers the traffic and transportation assessment for the proposed composting and biogas facility at Durnish, Foynes, Co Limerick. The assessment has been carried out in accordance with the National Road Authority (NRA)'s *'Traffic and Transportation Assessment Guidelines'* (2007) and makes reference to the *Guidelines for Traffic Impact Assessment* published by the Institution of Highways and Transportation (1994). Correspondence was received from the National Roads Authority in December 2008 in relation to the scope of the EIA.

The purpose of this section is to assess the potential impact of the proposed development on the existing junction with the National Road network and to ensure that the site access will have adequate capacity to carry the development traffic and the future growth in existing road traffic to the design year and beyond.

11.1.2 Description of Project and Road Network

The site of the proposed development is located within the Foynes Port Area, in the townland of Durnish, on the southern side of the Shannon Estuary, Co Limerick. The site of the proposed development is accessed via the internal roadways of the Shannon Foynes Port Area, which is in turn accessed from the N69 Limerick to Tralee National Secondary Route. The town centre of Foynes is located approximately one kilometre southwest of the proposed development site. The National Road is of typical good standard with a right-turn lane for the Foynes Port Area and ample junction visibility. A map of the road network in the vicinity of Foynes has been reproduced in Figures 11.1 and 11.2.

11.1.2.1 Existing Traffic

Manual classified traffic turning count surveys were carried out by Michael Punch & Partners on Wednesday and Thursday 26th and 27th November 2008 at the junction between the N69 and the Foynes Port Area. The junction analysis to follow is based on this count. The survey was conducted between the hours of 8.00am to 10.00am and 3.00pm to 6.30pm. The results of the survey have been reproduced in full as Appendix 18 of the EIS. The AM peak hour was 9.00am to 10.00am and the PM peak 4.30pm to 5.30pm. Figures 11.1 and 11.2 detail the AM and PM peak hour flows on which the following PICADY analysis is based.

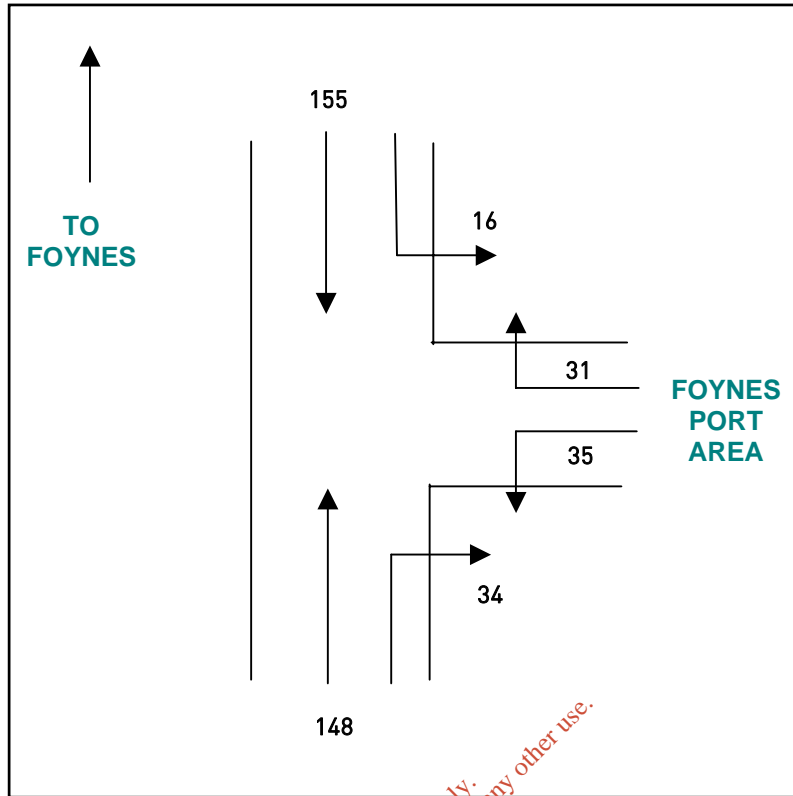


Figure 11.1 – 2008 AM Peak Hour Survey Flows

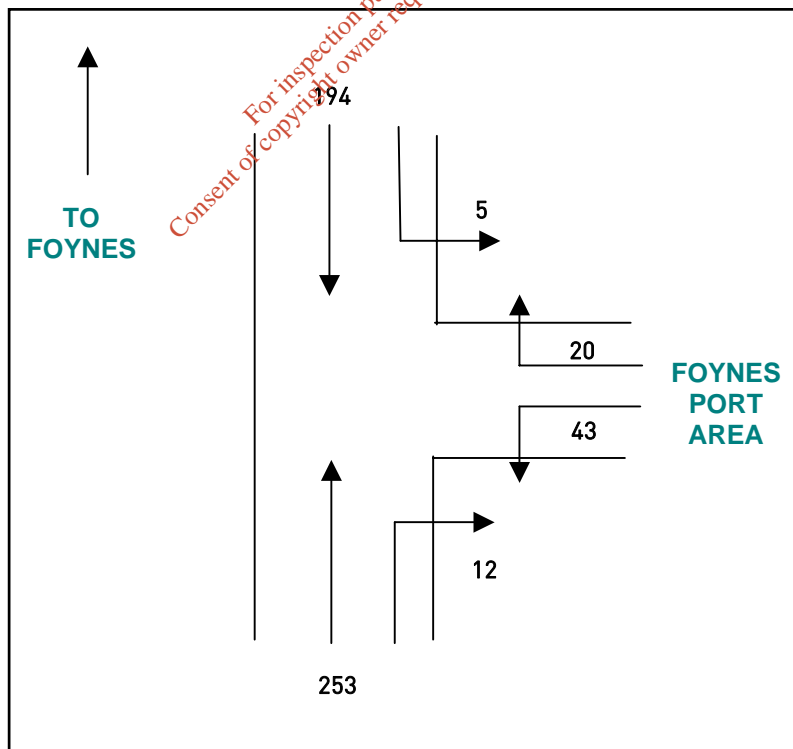


Figure 11.2 – 2008 PM Peak Hour Survey Flows

The traffic count was converted to Passenger Car Units (PCUs) for use in the modelling software. As a worst case motorcycles and bicycles were considered equivalent to cars and all trucks and buses were factored by 2.2. Figures 11.3 and 11.4 show the AM and PM peak hour flows in PCUs.

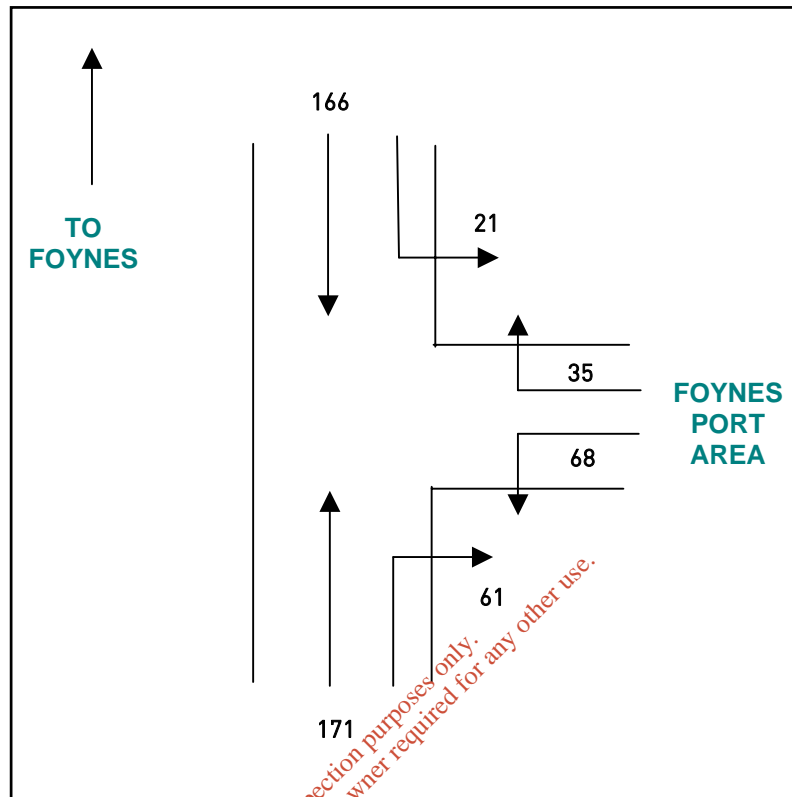


Figure 11.3 – 2008 AM Peak Hour Survey Flows (in PCUs)

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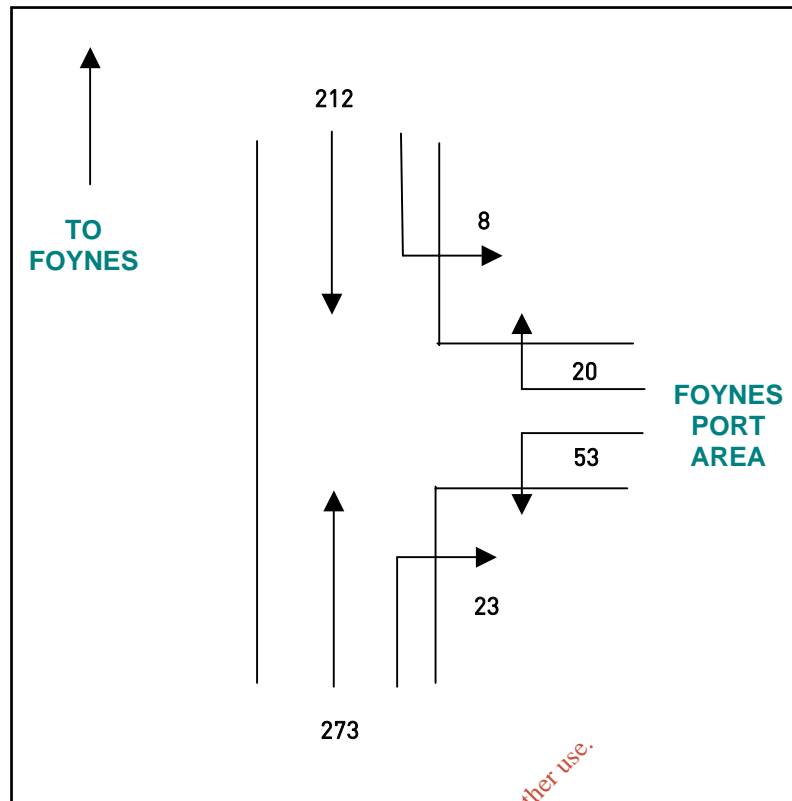


Figure 11.4 – 2008 PM Peak Hour Survey Flows (in PCUs)

11.1.3 Generation of Development Traffic and Trip Distribution

11.1.3.1 Future Baseline Traffic Growth

In the absence of any specific local traffic growth information it was assumed that baseline traffic will continue to grow at the levels recommended by the NRA in their 'Future Traffic Forecasts 2002-2040' document. The year of opening of the new access was assumed to be 2010. A 15-year analysis period for the scheme would give a design year of 2025. The growth factor used in the analysis is detailed below:

NRA National Route Growth Factor for 2008-2025 = 1.39

In order to simplify the junction analysis the highest growth factors for national roads (for either cars or heavy goods vehicles) were applied to surveyed values of total vehicles. This simplified analysis will be slightly more conservative than the application of two separate growth factors for cars and LGVs and HGVs.

Estimated future baseline traffic flows on the National Road in the vicinity of the Foynes Port Area and in the Port were calculated by applying these factors to the 2008 surveyed flows. The forecast 2025 AM and PM Peak Hour Flows at the access are detailed in Figures 11.5 and 11.6.

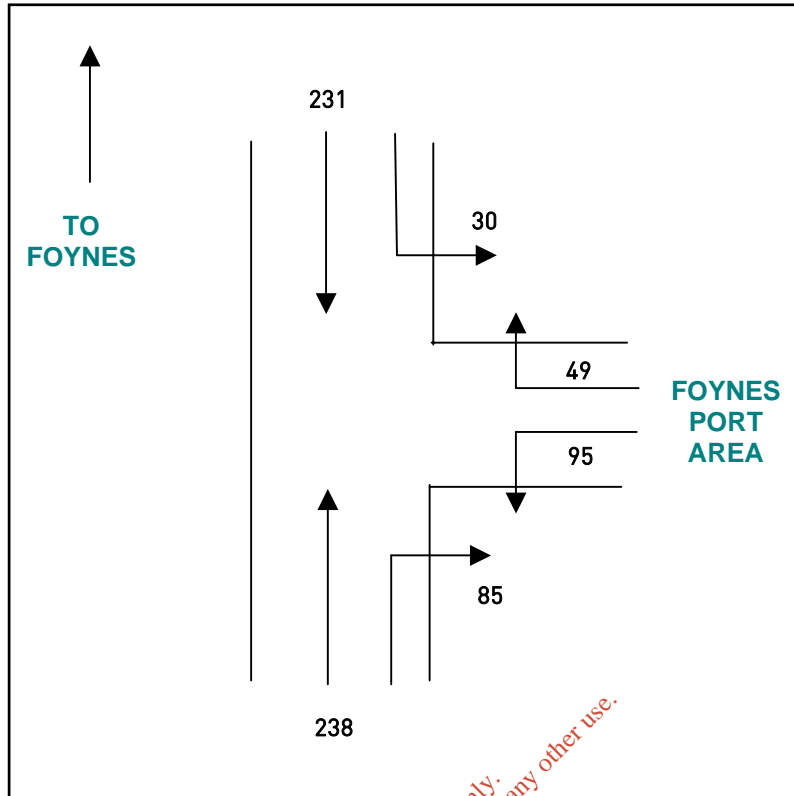


Figure 11.5 – Forecast 2025 AM Peak Hour Baseflows (PCUs)

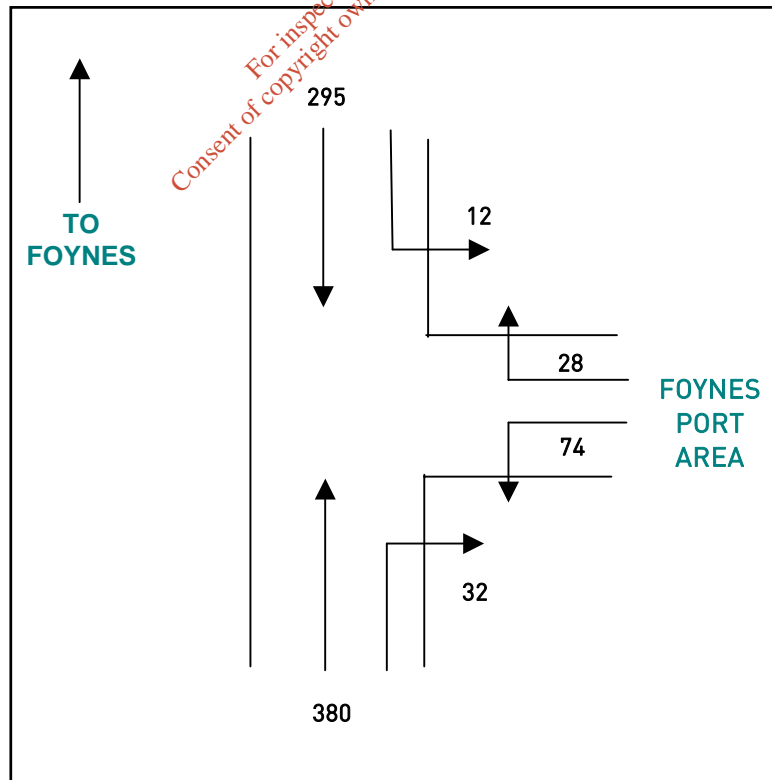


Figure 11.6 – Forecast 2025 PM Peak Hour Baseflows (PCUs)

11.1.3.2 Traffic Generated by the Proposed Development

The proposed annual tonnage for the facility is up to 50,000 tonnes. This tonnage is based on 40,000 tonnes per annum for anaerobic composting. This 40,000 tonnes is removed after three weeks from the anaerobic tunnels and transferred into the aerobic tunnels for a further five weeks. In addition to this the aerobic tunnels will be capable of handling a further 10,000 tonnes.

The majority of incoming feedstock material will be sourced from the Mr. Binman Ltd. waste transfer station and recycling centre in Luddenmore, Grange, County Limerick, and from source-separated collections. The Mr. Binman facility is located approximately 38 kilometres southwest of the proposed development site. All material will be transferred to the proposed composting facility in enclosed trailers. The average weight of a trailer is 20-22 tonnes.

Over a five-day week, there will be nine loads of material delivered to the facility a day. These trailers will leave the facility empty. There will be three articulated vehicles drawing this material, each doing three loads. In addition to this there will be approximately five to six loads of material going out of the facility on a daily basis. These will be removed by a further two articulated vehicles. This is a maximum of 15 trucks in/out per day.

For the purposes of this analysis it has been assumed that 1 truck is equivalent to 2.2 PCUs (passenger car units). The resultant PCU is 33. In order to model an onerous condition the analysis assumes that all of the trucks enter and leave the site during the AM peak hour and also during the PM peak hour in order to robustly test the two peak periods. The proposed facility will employ 10 – 15 people. In addition to the generated HGV traffic it has been assumed that fifteen staff cars (one per staff) enter the site during the AM peak hour and depart the site during the PM peak period.

11.1.3.3 Distribution of Generated Traffic

As a worst-case scenario it is assumed that the additional traffic generated at the junction with the National Road due to the facility will turn right off the National Road (in fact most of it will) and turn right onto the National Road (in fact little of it will). If under these worst case assumptions the access is found to have sufficient capacity in the PICADY model it can safely be assumed that the access will have sufficient operating capacity at all times of the day.

11.1.3.4 Increased Traffic

The Foynes Port access junction has been modelled using the TRL junction analysis software package PICADY version 5. The following scenario has been analysed:

2025 Design Year AM and PM Peak Hour Flows with Composting/Biogas Facility Fully Operational.

Estimated turning movements for the 2025 AM and PM peak hour scenario with the development fully operational were calculated by summing the predicted generated flows and the forecast baseflows. The peak total traffic turning movements (based on the worst case scenario assumptions outlined above) are detailed in the Figures 11.7 and 11.8.

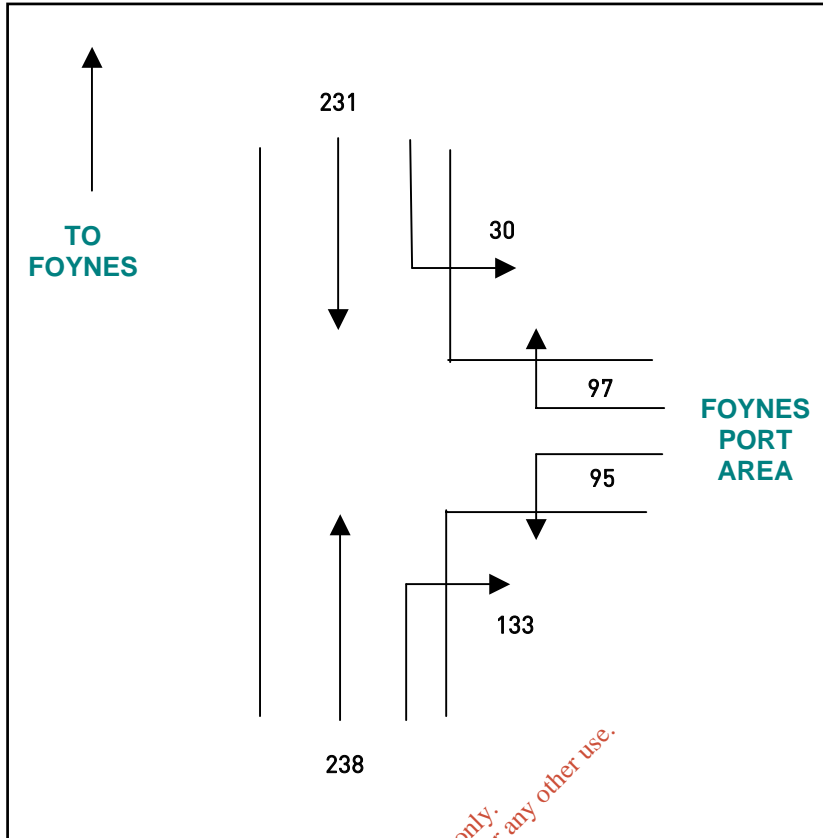


Figure 11.7 – 2025 AM Peak Hour Turning Movements – Development Operational

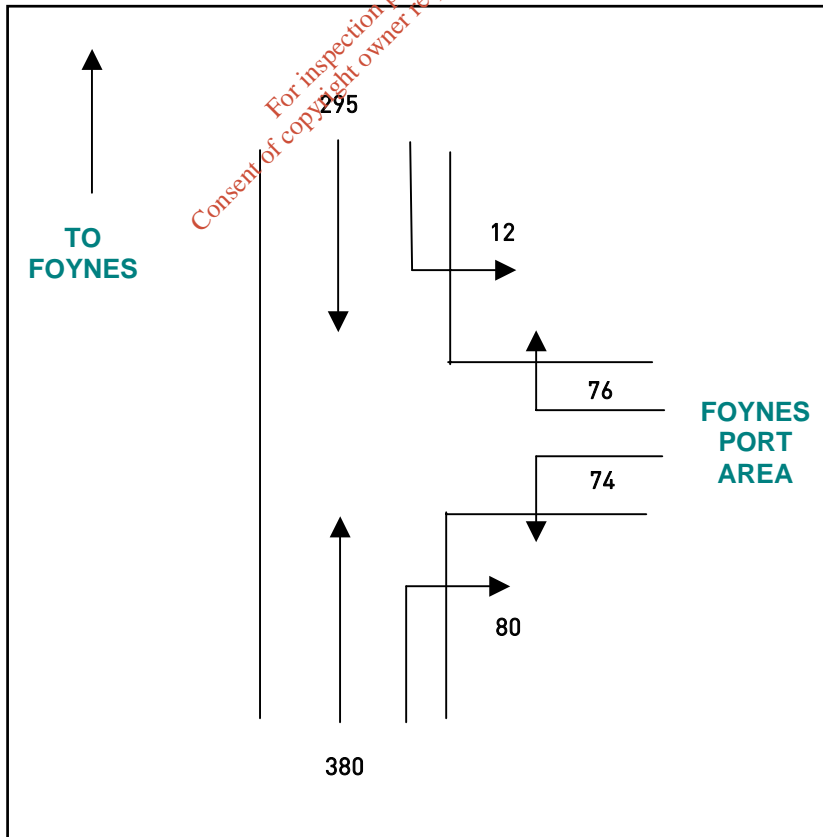


Figure 11.8 – 2025 PM Peak Hour Turning Movements – Development Operational

The PICADY analysis shows that the Foynes Port access junction would be well within practical reserve capacity by the design year 2025 even under the onerous assumptions made throughout the analysis in relation to existing traffic flows and future traffic generation. PICADY predicts that the junction would be at 40.1% capacity during the 2025 AM peak hour and 32.6% capacity during the PM peak hour for vehicles exiting the development with much lesser percentages for vehicles right-turning into the development. The results of the PICADY analysis have been reproduced in full as Appendix 19.

11.1.4 Construction Traffic

The volumes of traffic that will be generated during the construction phase of the development will be small in comparison to the traffic volumes *modelled* for the operation of the development during the peak periods. A quantitative analysis for the construction stage would yield lower ratio of flow to capacity results than the worst-case scenario analysed in the report, which is the 2025 peak hour. The construction stage therefore does not require traffic analysis.

11.1.5 Conclusions

The additional traffic generated by the proposed 50,000 annual tonnage to the composting/biogas facility can easily be accommodated at the existing junction with the National Road when combined with the predicted increased background flows on the National Road to the year 2025 and beyond. It should be noted that the analysis contained in this report is based on an extremely onerous permutation of the maximum traffic flows as the anticipated daily flows are assumed to occur in each peak hour.

11.1.5.1 Other Road Users

As described above the depot is not located near any urban centre, hence staff typically arrive by car. No dedicated cycle facilities are in the area but the carriageways are wide enough to allow cyclists to share safely. Footpaths are provided for pedestrians.

11.2 Services

11.2.1 Water Supply

The existing water supply to the site is via the Foynes Harbour Water Supply Scheme. The fire water supply is taken from the Foynes Harbour Fire Supply. The potable water supply is taken from the Limerick County Council Foynes water supply scheme, which is supplied from the Shannon Estuary Water Supply scheme whose source is the River Deel at Askeaton. From consultation with Limerick County Council, it is understood that improvements are being addressed and an upgrade of the Shannon Estuary Water Supply Treatment Plant is listed in the Water Services Investment Programme for 2007-2009. Further details regarding water supply to the site are presented in Chapter 7 of this EIS, Hydrology and Hydrogeology.

Significant quantities of additional water will not be required during the operational phase of the proposed development, as a roof water storage tank will be installed, which will provide supplementary process water, when required.

11.2.2 Surface Water Drainage

A drainage model was prepared to establish the surface water drainage volumes generated from the proposed development. In addition, an assessment of the existing run-off from the facility was calculated. It is proposed to limit the surface water run-off from the facility to the current discharge rate of 209 litres per second. This will be provided by installing rainwater harvesting/attenuation cells and a hydrobrake discharge control

device. It is calculated that 310 cubic metres of storage is required to provide 30 year storage for the site. Detailed calculations are included in Appendix 17 of the EIS.

Surface water run-off from external surfaced areas within the site will discharge via a Class 1 hydrocarbon interceptor to the small watercourse on the eastern boundary of the site. The Shannon Estuary will be the final receiving water for external surface water run-off from the site during the construction and operational phases of the development. Class 1 interceptors achieve a concentration of 5 mg/litre of oil under test conditions. The hydrocarbon interceptor will be installed at the start of the project to prevent any impacts on surface water during the construction or the operational phase. During the construction phase all vehicles will be inspected for leaks prior to entering the site. Further details regarding surface water drainage from the site are presented in Chapter 7 of this EIS, Hydrology and Hydrogeology.

11.2.3 Foul Water Drainage

All process operations associated with the proposed composting and biogas facility will take place indoors on an impermeable surface. All process wastewater generated will be contained in bunded storage tanks and re-used within the process. There will therefore be no process discharges off-site to ground or surface water.

Toilets are available onsite within the existing warehouse building, from which wastewater currently discharges to an onsite septic tank. A 'Puraflo' mechanical treatment unit or equivalent will be installed onsite to replace this septic tank. This upgrade will be completed at the beginning of the construction works to ensure there is no impact on emissions to the sewer during the construction phase. Emission limits for the discharge of treated effluent from the onsite wastewater treatment unit will be assigned by the EPA as part of the waste licencing process for the facility. Following discussions between Greenport Environmental Ltd. and the Shannon Foynes Port Authority, the connection from the onsite treatment unit will be made to a sewer that is currently under construction on the Port Road. This sewer will be taking treated effluent from an adjacent site and the outfall to the estuary is currently under construction. Further details regarding foul water drainage from the site are presented in Chapter 7 of this EIS, Hydrology and Hydrogeology.

11.2.4 Electricity

The proposed development site is supplied by the ESB network. The site layout drawing shown in Figure 3.4 in Chapter 3 of this EIS shows the connection to the electricity network.

The design, construction and installation of the electrical system equipment within the proposed facility will be in accordance with International Electro-technical Commission (IEC) regulations and shall comply to all applicable Community and national regulations. Further details regarding the electrical system within the facility are presented in Chapter 3 of this EIS, Description of the Proposed Development.

11.2.5 Lighting

A lighting plan for the proposed development site has been prepared, and is shown in Figure 3.14. 19 No. AKTRA 600w High Pressure Sodium (HPS) floodlights will light the interior of the site. The lux levels shown on Figure 3.14 show that there will be no light spill outside the proposed development site.

12 INTERACTION OF THE FOREGOING

All of the reasonably predictable significant impacts of the proposed development and the measures proposed to mitigate them have been outlined in this report. However, for any development with the potential for significant environmental impact there is also the potential for interaction amongst these impacts. The result of these interactions may either exacerbate the magnitude of the impact or ameliorate it. The interaction of impacts on the surrounding environment needs to be addressed as part of the Environmental Impact Assessment process.

While the work for all parts of the EIA were not carried out by McCarthy Keville O'Sullivan Ltd., this Environmental Impact Statement was edited and collated by McCarthy Keville O'Sullivan Ltd as an integrated document, rather than a collection of separate reports. The impacts that arise as a result of the interaction between several aspects of the development have therefore been addressed in the main body of the report. Examples of this include the description of air quality, noise and traffic impacts in the Human Beings chapter of the EIS (Chapter 4). The detailed hydrological and geotechnical investigations that were carried out are described in both the Soils and Geology (Chapter 6) and the Hydrology and Hydrogeology (Chapter 7) chapters of the EIS, which also make reference to interacting impacts. The Air Quality, Climate and Noise chapter (Chapter 8) makes reference to traffic impacts and impacts on human beings.

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Cartographic Sources Consulted for Cultural Heritage Impact Assessment

| Origin | Scale | Sheet Ref. | Publication Date |
|-----------------|---------------|------------------------|------------------|
| Ordnance Survey | 1:10,560 (6") | Limerick 10 | 1844 |
| Ordnance Survey | 1:2,500 | Limerick 10-09 & 10-10 | 1900 |
| Ordnance Survey | 1:10,560 (6") | Limerick 10 | 1923 |
| Ordnance Survey | 1:50,000 | Discovery Series 64 | 2001 |

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Appendix 1

Scoping Responses

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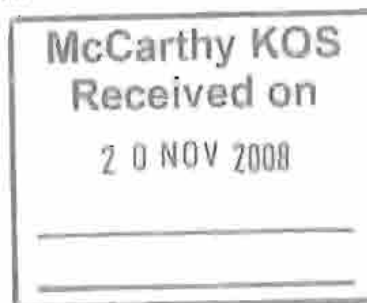


An Taisce – The National Trust for Ireland
Tailor's Hall, Back Lane, Dublin 8

20081119-13-Durnish

Lorrain Meehan BSc (Env)
McCarthy Keville O'Sullivan
Block 1, GFSC
Moneenageisha Road
Galway

19th November 2008



REF: Scoping Document for Environmental Impact Assessment of Greenport Environmental Ltd. Proposed Composting Facility at Durnish, Foynes, Co Limerick

Dear Ms Meehan,

Thank you for your letter of 14th November 2008 on the proposed 40,000 tonne composting facility. We would appreciate information on the type of material proposed for composting and the catchment area of material in order to assess transport generation.

Yours sincerely,

IAN LUMLEY
Heritage Officer

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Lorraine Meehan

From: McCarthyKOS [info@mccarthykos.ie]
Sent: 25 November 2008 18:16
To: Lorraine Meehan
Subject: FW: Scoping for Greenport Environmental Foynes-attn L Meehan

-----Original Message-----

From: O'Neill Tom [mailto:toneill@limerickcoco.ie]
Sent: 25 November 2008 17:01
To: McCarthyKOS
Cc: O'Keeffe Grainne; O'Gorman Kieran
Subject: Scoping for Greenport Environmental Foynes-attn L Meehan

Lorraine, in addition to other items below attention should be given to the eventual disposal of the composted material, what its final use will be and its nutrient content if any.

Tom.

Dear Lorraine,

Further to your scoping query received on 17th November I hope the following comments are of use:

- 1 The development proposal should take into account the presence of the nearby SAC site in terms of pollution mitigation measures both during the construction phase and operational phases of the development.
- 2 Full details of the potential compost materials to be imported on site to be provided and the sources of such material to be indicated. The traffic implications of the development as a whole both during construction and subsequent operations to be detailed.
- 3 The lighting associated with the development to be designed and oriented so as to prevent excessive light spill onto the estuary, in order to minimise disturbance to any wildfowl that might be using the estuary.
- 4 More complete details including diagrammatic and photographic representations of the "in-vessel composting facility" to be provided as part of the application in order to assist planning staff in assessing the application. Where and how will the material be stored prior to composting?
- 5 On p.2 of the scoping document it says that "there will be no discharges to water sewer or ground from the composting process" and that all leachate generated from the process will be reused within the process. Full details of these processes to be provided.
- 6 I notice that there has been an earlier application on site 08/1633 and that an FI request has issued. The file currently indicates that no response has yet been received. Some of that information requested might well be relevant to the current query such as traffic issues.

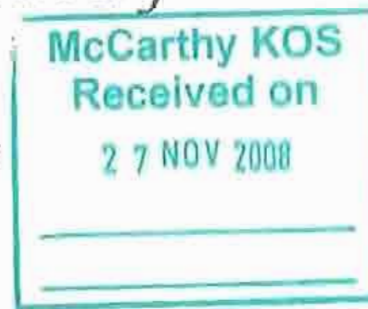
I hope the above is helpful, should you have any further queries please do not hesitate to contact me.

Tom .

Mid-West Regional Authority

Údarás Réigiúnach an Mhéan-Iarthair

Friar Court, Abbey Street, Nenagh, Co. Tipperary
Tel: (067) 33197 Fax: (067) 34401
Email: info@mwra.ie
Web: www.mwra.ie



21st November 2008

Re: Scoping Document for Environmental Impact Assessment of Greenport Environmental Ltd.
Proposed Composting Facility at Durnish, Foynes, Co. Limerick

Dear Ms. Meehan,

I would like to acknowledge receipt of your letter dated 14th November 2008 regarding the Scoping Document for Environmental Impact Assessment of Greenport Environmental Ltd.

The proposed development is located within Zone 5 of the Mid-West Regional Planning Guidelines i.e. Page 51 of the Mid-West Region Regional Strategy & Regional Planning Guidelines refers.

Your attention is also drawn to Page 85 of the Regional Planning Guidelines document and I would specifically highlight that it is not the function of the Mid-West Regional Authority or the Regional Planning Guidelines to set precise requirements for the provision of such facilities, however the Regional Planning Guidelines give more strategic guidance as is outlined in the Regional Planning Guidelines document.

The Regional Planning Guidelines document is available on the MWRA website, www.mwra.ie.

I trust that the above response to your Scoping Document for Environmental Impact Assessment of Greenport Environmental Ltd and query is sufficient.

Yours Sincerely,

Liam Conneally,
Director.

Ms. Lorraine Meehan,
McCarthy Keville O'Sullivan Ltd,
Block 1, G.F.S.C.,
Moneenageisha Road,
Galway.



Bain Triail As Beann Gaelige





Cornhshaoil, Oidhreacht agus Riannas Áitiúil
Environment, Heritage and Local Government



5 December 2008.

Our Ref: G2008/916

Ms Lorraine Meehan
McCarthy Keville O Sullivan
Block 1 GFSC
Moncenageisha
Galway

Re: **Scoping Document for Environmental Impact Assessment for Greenport Environmental Ltd. Proposed Composting Facility at Durnish, Foynes, Co Limerick.**

A Chara,

We refer to your notification of the 17th November in relation to above proposed development. Outlined below are the archaeological and the archaeological recommendations of the Department of the Environment, Heritage and Local Government.

As part of an environmental review of the project this Department will require a full archaeological impact assessment to be carried out and the results of the same to be forwarded to us.

In assessing impacts on the archaeological heritage regard must be had to the following:

The area's monuments can be identified from the Record of Monuments and Places, County Limerick. Those monuments that are National Monuments in State ownership or guardianship and monuments subject to Preservation Orders should be identified and zones of visual amenity defined for them. It should be noted that any direct impact on national monuments in State or Local Authority care or subject to a preservation order will require the consent of the Minister for the Environment, Heritage and Local Government under section 14 of the National Monuments Act 1930 as amended by Section 5 of the National Monuments (Amendment) Act 2004. Areas of high archaeological potential including subsurface archaeological structures should be identified. A pointer to the potential for the occurrence of subsurface archaeology is the annual Excavations Bulletin which contains brief accounts of excavations conducted in Ireland each year, these reports are also at www.excavations.ie. Information on



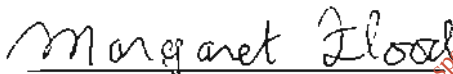
occurrences of chance finds of archaeological objects is also a useful indicator of archaeological potential – information may be obtained from the National Museum and local museums. Any potential impacts on archaeological heritage should be subject to full archaeological assessment.

Should you require any further assistance please do not hesitate to contact us at the following address.

The Manager,
Development Applications Unit,
Department of the Environment, Heritage and Local Government,
Harcourt Lane,
Dún Scéine,
Dublin 2

In addition, this application is been assessed from a nature conservation and an architectural heritage perspective and our comments if any will issue in due course.

Mise le meas,

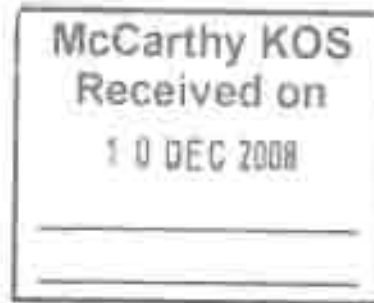

Margaret Flood
Development Applications Unit

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Comhshool, Oidhreacht agus Rialtas Áitiúil
Environment, Heritage and Local Government

8 December 2008



Our Ref: G2008/916

Ms Lorraine Meehan
McCarthy Keville O'Sullivan
Block 1 GFSC
Moneenageisha
Galway

Re: Scoping Document for Environmental Impact Assessment for Greenport Environmental Ltd. Proposed Composting Facility at Durnish, Foynes, Co Limerick.

A Chara,

We refer to your notification of the 17th November in relation to above proposed development. Outlined below are the architectural heritage recommendations of the Department of the Environment, Heritage and Local Government.

Architectural Heritage

It is noted that in Section 16, Cultural Heritage, of the EIA Scoping Document that reference is exclusively made to consideration of archaeological heritage. As stipulated in statutory regulations, environmental impact assessment for the proposed development should take into account the effect of the proposal on the architectural heritage of the locality.

In that regard the Advice Notes in the attached Appendix 1 is put forward as an aid to making that assessment.

As pointed out in the advice notes,

"1.4 Given the location of the proposed development, it may well be that there is little of architectural heritage merit in the vicinity or in the area generally. However, it is recommended that this should be specifically investigated. Where no structures of architectural heritage merit exist in the vicinity of or on the site of the proposed development, this should be clearly stated in the documentation in order to establish the 'technical' completeness of the environmental impact assessment or an EIS."

It is recommended that assessment of the architectural heritage merit of structures deemed to be of architectural heritage merit is carried out by someone with a competence to make that assessment.



It is recommended that the Advice Notes are forwarded to the person who is to make an assessment of structures of architectural heritage merit which might be affected by the proposed development.

It may also be useful to consult with the Cork Limerick Conservation Officer about any undue impact on structures of architectural heritage merit which might occur on foot of any proposed development.

Appendix I

Proposed Composting Facility, Foynes

Advice Notes – Scoping for Environmental Impact Assessment in relation to Architectural Heritage

The following comments and recommendations are put forward as an aid to making an Environmental Impact Assessment of the impact on architectural heritage and is not an indication of the view of Heritage and Planning Division of the Department of the Environment, Heritage and Local Government on the merits of the proposed development.

It may be that there will be little or no impact on the architectural heritage in the vicinity or on the site of the proposed development. However it should be noted that, as set out below, 'architectural heritage' is a material asset which must be taken into account where an environmental impact statement is to be prepared. In that context the following may be of assistance in ensuring that the issue of 'architectural heritage' is properly addressed and the content of the environmental impact statement is not subject to unwarranted challenge on that account.

1. Environmental Impact Assessment Background

1.1 An Environmental Impact Statement (EIS) relating to the proposed development requires a description of aspects of the environment likely to be significantly affected by that proposal, including in particular -
"material assets, including the architectural and archaeological heritage, and the cultural heritage".

1.2 Since the adoption of the European Communities (Environmental Impact Assessment)(Amendment) Regulations 1999, S.I. 93 of 1999, which came into effect on the 1st May 1999, the matter of 'architectural heritage' is now an integral part of the EIS process. As such it is important that it documented in its own right within the EIS. It should not overlooked or only addressed as an adjunct to considerations of an archaeological or cultural heritage nature.

1.3 It should be noted that, as set out in Section 3 below, "*Defining Architectural Heritage*", it is not correct to equate 'architectural heritage' with a sub-set of structures taken from the architectural heritage of an area which are included by a planning authority in the Record of Protected Structures. In addition, as also set out in Section 3 below, reliance merely on a 'desk top study' in order to identify the impact on structures of architectural heritage merit within the vicinity of a proposed development is not likely to be sufficiently comprehensive.

1.4 Given the location of the proposed development, it may well be that there is little of architectural heritage merit in the vicinity or in the area generally. However, it is recommended that this should be specifically investigated. Where no structures of architectural heritage merit exist in the vicinity of or on the site of the proposed development, this should be clearly stated in the documentation in order to establish the 'technical' completeness of the environmental impact assessment or an EIS.

1.5 Where structures of architectural heritage merit are encountered, it is recommended that they be treated in the environmental impact statement as set out in Section 4 below.

2. Content of EIS Documentation Dealing with Architectural Heritage

2.1 It is recommended that a chapter or section titled "*Architectural and Archaeological Heritage, and the Cultural Heritage*" is included in any documentation prepared for the purpose of an EIS or an environmental impact assessment..

2.2 It is also recommended that the content of the chapter or section should be laid out, in part, to specifically set out the work of identification and assessment in relation to 'architectural heritage'.

For example, it might read

*"The impact of the development will be assessed with reference to
Architectural Heritage ...
Archaeological Heritage ...
Cultural Heritage ..."*

3. Defining Architectural Heritage

3.1 The term "architectural heritage" is defined in the Architectural Heritage (National Inventory) & Historic Monuments Act, 1999, as meaning "all
(a) structures and buildings together with their settings and attendant grounds, fixtures and fittings,
(b) groups of such structures and buildings, and
(c) sites,

which are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest”.

3.2 For guidance on what is encompassed by the term “architectural heritage”, it is recommended that reference is made to Section 2.5 of the “*Architectural Heritage Protection, Guidelines for Planning Authorities, 2004*” issued by the Department of the Environment, Heritage and Local Government. While this section relates to protected structures, it illustrates the range of structures which should be taken into account when assessing architectural heritage.

3.3 Many structures which could be considered to constitute the architectural heritage of an area are not likely to be documented. This may leave shortcomings either in a “desk-top” study of known sources of information or in bibliographical reference material presented as a review of the architectural heritage of an area.

3.4 It should also be noted that reference to the content of the Record of Protected Structures (RPS) in the County Development Plan for information on structures of architectural heritage merit in a locality is likely to prove insufficient. The definition of structures to be included in the Record of Protected Structures in a development plan is set out in Section 51(1) of the Planning and Development Act of 2000. This section states that

“For the purpose of protecting structures, or parts of structures, which form part of the architectural heritage and which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, every development plan shall include a record of protected structures, and shall include in that record every structure which is, in the opinion of the planning authority, of such interest within its functional area.”

In effect the RPS is a subset of the architectural heritage of a locality which the planning authority considers specifically to be of special interest under specific headings. As such, the RPS does not necessarily represent the architectural heritage of a locality. It follows that exclusive reliance on the content of the RPS, or a proposed RPS, is likely to give consideration only to part of the architectural heritage that may be found in the vicinity of a development.

3.5 It should be noted that structures of particular architectural heritage merit in a locality may not have been considered for inclusion in the RPS because they have simply not come to the attention of the planning authority.

This usually means that a primary survey of the area in the vicinity of a proposed development has to be carried out in order to establish what existing elements of architectural heritage will be affected, if at all, by the proposed works.

3.6 It should be noted that a comprehensive site survey at project planning stage will identify most of the significant elements of the built environment in the vicinity of a proposed development. Given the nature of the proposed development the ‘site survey’ may take in for wider planning consideration a greater area than simply that of the location of the site itself. If a competent architectural heritage assessment is made of that information, it will identify those elements of architectural heritage merit upon which it is preferable not have an adverse impact.

3.7 It is emphasised that competent architectural heritage expertise will be required to make an assessment of survey information. It is customary to recommend that this particular expertise is engaged early in the planning of the project in order that relevant input is available in good time.

3.8 In effect most issues relating to impact on architectural heritage can be "*designed out*" at planning and design stage of the proposed development simply by identifying and avoiding significant elements of that heritage. In consequence, it can be expected that adverse impact on architectural heritage in the vicinity of a proposed development is much reduced.

4. Identifying and Assessing Architectural Heritage

4.1 As stated in Section 3.6 above, a comprehensive site survey at project planning and design stage will identify most of the significant elements of the built environment in the vicinity of a proposed development. Most of this built environment is upstanding and self-evident. It should be the norm that all structures of architectural heritage merit which may be impacted upon by a proposed development should be identified at project planning and design stage, evaluated as to architectural heritage significance, and the perceived amount of disturbance or intrusion upon them by the proposed development is assessed as part of planning and design stage of the project.

4.2 As stated in Section 3.8, if addressed in an appropriate fashion it is likely that any adverse impact on architectural heritage and any conflicts are largely "*designed out*" of the proposed development at planning and design stage.

4.3 As stated in Section 3.3, many structures which could be considered to constitute the architectural heritage of the area are not likely to be documented for the purpose of "*a desk-top study*". In the absence of readily available and comprehensive documentation, it is customary to recommend that all structures encountered on the ground in the vicinity of a proposed development are documented and an architectural heritage assessment of them set down.

4.4 Where an evaluation of the impact of the proposed development on structures of architectural heritage merit is carried out early in the planning and design process it will be evident what level of documentation regarding each structure should be provided for the purpose of an environmental impact statement. This information will indicate the consequent degree of recording or documentation which is warranted in each case.

4.5 It should be noted that the process is no more than the identification and assessment of the architectural heritage merits of any or all structures which are encountered in proximity to the proposed development, and stating the perceived effect on them.

It should also be noted that extensive paper research in relation architectural heritage is not required in advance of examining the actual reality in the vicinity of a proposed development.

A comprehensive survey carried out for the purpose of normal planning consideration for the proposed development will indicate most structures in a locality which are likely to be affected by a proposed development. Making an assessment of the architectural heritage value of just those structures will confine the work to manageable proportions. Aerial photographs can be of assistance for the purpose of identification. However, smaller structures or items of architectural heritage merit which are not evident on maps or aerial photographs should also be taken into account in the course of a site survey.

In assessing impact on structures of architectural heritage merit placing an initial emphasis on documenting structures in a paper-search of historical maps or papers, and then confirming their existence by field work is a questionable approach. Apart from being time-consuming, it also risks overlooking structures on the ground which are not documented in research sources.

4.6 It should be noted that some information may overlap in part with material gathered for other parts of the environmental impact assessment or for the basic design of the scheme. To that end all structures should be documented for the purpose of architectural heritage assessment early in the design process.

4.7 At a minimum, the term '*documented*' means -
an accurate and succinct description of the structure;
an assessment by competent expertise of its architectural heritage merit ;
the extent of the structure set out on a map of sufficient scale;
a sufficient number of photographs which illustrate, particularly to someone not in a position to visit the location on their own account, the built form and architectural heritage significance of the structure under consideration;
an assessment of the impact which the proposed development is likely to have on the structure; and
supporting information, where applicable and appropriate, such as any research documents or, perhaps, sketch plans of each floor level of structures which are directly impacted.

4.8 It is important that the matter of '*architectural heritage*' is explicitly documented and assessed in its own right within an environmental impact statement. It should not simply be addressed as an adjunct to considerations of an archaeological nature.

In this regard information concerning architectural heritage will need to be assessed by competent expertise in order to set down a proper assessment of the value of structures of architectural heritage merit.

5. Presentation of Architectural Heritage Information in an Environmental Impact Statement and Associated Record Documentation

Content Relating to Architectural Heritage

5.1 Few development proposals will not have some impact on their surroundings. The environmental impact statement process is intended to establish if the extent of impact is such that it is, or is not, acceptable in terms of the wider value or benefit that the proposed development will bring with it.

Within this context there may be, on occasion, a direct impact in architectural heritage terms on one or more structures if a proposed development is to proceed. However, in a situation where the issue of architectural heritage is addressed early in the project planning and design process, it is customary to find that relatively few structures are likely to be affected.

5.2 As it is also the purpose of the environmental impact statement procedure to establish what the actual impact of proposed development will be, the reality of the situation should be clearly set out in the environmental impact statement. It is for the regulatory authorities to determine if the outcome of any impact is acceptable within the overall context of the proposed development. Therefore all statements in respect of the assessment of architectural heritage merit and the perceived impact upon it should be factual and without bias.

5.3 The section setting out the list of structures of architectural heritage merit which may be affected by a proposed development should be set out in tabular form, for example, in the following format -

- reference number which cross-references to the site survey or location maps in order to locate the structure;
- brief description of the structure;
- assessment of its architectural heritage merit;
- proximity of the structure to the proposed development in metres;
- brief assessment of the impact which the proposed development is likely to have on the structure; and
- a representative 'thumbnail' photograph showing the general configuration and architectural heritage significance of the structure.

5.4 It should be noted that merely transcribing measures appropriate to the protection of the archaeological heritage is usually inappropriate in relation to structures of architectural heritage merit. For instance,

5.4.1 Structures of architectural heritage merit are generally self-evident and can be identified early in the site selection or design stage of a proposed development. It should not be the case that previously unknown structures are encountered at construction stage.

Therefore it is inappropriate to specify in an environmental impact statement that baseline survey work of architectural heritage will be required after either the completion of the environmental impact statement or in the course of site or construction work.

Equally, it is inappropriate to specify that appropriate corrective measures relating to structures of architectural heritage merit will be decided upon at construction stage, with or without the approval of the Minister for the Environment, Heritage and Local Government. To do so is, in effect, an admission that due consideration of the impact

on architectural heritage has not been made in setting out the environmental impact statement.

Only where there is a direct and unavoidable impact should further documentation be required as set out in Section 5.10 below.

5.4.2 Putting forward "mitigation measures" has limited relevance to structures of architectural heritage merit which are either to be partially or fully demolished. Instances may occur where a particular structure, for example, a set of entrance gates or boundary wall, can be moved back or relocated to facilitate a proposed development.

However, generally structures which have to be dismantled or demolished to facilitate construction work, or perhaps allow a safer site access to the construction works, cannot be reinstated as they originally were. In such circumstances there is no physical mitigation which can be offered if a structure of architectural heritage merit is to be destroyed. Clearly the only mitigation is avoidance, where avoidance is possible.

5.4.3 Similarly, the siting of new development in close proximity to a structure of architectural merit may compromise the setting of that structure or have an adverse visual impact upon it. The practical reality is likely to be that there is little mitigation which can be offered which ameliorates adverse impact other than amending the layout of the proposed development as appropriate, if it is possible to do so.

5.4.4 In the context of archaeological heritage, it is customary to record in some detail archaeological artefacts which are encountered in the vicinity of a development. In the case of structures of architectural heritage merit, unless there is an actual physical impact such as partial or total demolition, or close proximity to the proposed works, there is little point in making detailed records for their own sake of those structures beyond the basic documentation specified in Section 4.7 above.

To do so would in effect be an unwarranted imposition in relation to a proposed development, and would not be sought in other forms of development where an environmental impact statement does not apply.

If a structure is adjacent to but largely unaffected by a proposed development, then it remains as an artefact of architectural heritage merit which can be used, visited or examined on a continuing basis. Making or presenting superfluous documentation relating to architectural heritage as part of the environmental impact statement process is likely to serve little practical purpose.

5.4.5 The procedure of "preservation by record" in relation to the removal of structures of architectural heritage merit should only be used as a last resort. In the case of archaeological sites it is generally recommended that there should always be a presumption in favour of avoiding adverse impact, and that 'preservation in-situ' should always be the first option to be considered. This has a parallel in relation to architectural heritage whereby avoidance in the first instance is the best option. Where

impact on particular archaeological sites is unavoidable it is said that the process, consequent to excavation and the recovery of artefacts and/or associated information, is one of '*preservation by record*'.

Where it is proposed to demolish structures of architectural heritage merit, the physical artefact is not preserved if the structure is actually removed. As there is likely to be no physical remains when the structure is destroyed, it is only associated information that is protected or preserved through making record documents. The procedure of "*preservation by record*" is a limited form of mitigation that can be offered. If the structure is of sufficient merit as to warrant protection, then the best "*mitigation*" which can be offered is avoidance, if avoidance is possible.

5.4.6 Where it is proposed in an environmental impact statement that structures of architectural heritage merit will be "*monitored*" as "*mitigation*" during construction work, for instance by the use of tell-tales for vibration monitoring or the like, it is in effect a tacit admission that the impact of the proposed works on the structure is unknown. The offer of "*monitoring*" is a concession that, in effect, damage consequent on the works will be rectified. However, this remains no different from the situation in respect of any other structure within the vicinity of a proposed development. Again, if the structure is of sufficient merit as to warrant protection and there is a belief that damage may occur consequent on the proposed development, then the best "*mitigation*" which can be offered is avoidance, if avoidance is possible.

5.5 Where structures of architectural heritage merit come within the land take of a proposed development an opportunity may exist to incorporate such structures into new plan layouts. This could assist in giving an immediate sense of identity to the new development, and may also help establish a sense of place. Conversely, it may have a positive impact on the architectural heritage of the locality in giving a new lease of life to redundant or under-utilised structures.

Records of the Past

5.6 Where it is necessary to demolish structures of architectural heritage merit in order to carry out a particular development proposal, these cases should be highlighted as such in the environmental impact statement. These structures should be documented as appropriate to their significance and, in addition to the original survey photographs, record photographs should be taken before demolition. This combined documentation should be treated as a "*record of the past*". It is recommended that it is specified in the environmental impact statement that these records are deposited with an appropriate archive, e.g. the County Library Archive.

5.7 It should be noted that the purpose of documenting structures which are to be either demolished, partly demolished, or significantly impacted upon is to set down a record of the situation as it existed at a particular point in time, that is, just before removal. This information may be cross-related at a future time by others to, for instance, historical maps as part of research work for historical purposes or social study.

Few structures which are removed as part of a proposed development are ever likely to be reconstructed. Therefore carrying out extensive measured work and making

detailed drawings will rarely be required. Documentation relating to most structures to be removed need only give a reasonable representation of the structure as it existed prior to removal. Photographs which illustrate the basic form and relevant detail of a particular structure may reduce the requirement of measured work to a minimum. Following removal, the information associated with the structure simply becomes a "record of the past".

5.8 It should be noted that, where a structure is to be demolished and its associated site cleared, archaeological investigation may be justified. This should be highlighted in the chapter in the environmental impact statement dealing with archaeological heritage.

5.9 Where a structure or feature of architectural heritage merit is to be dismantled and relocated as part of a proposed development, the authenticity of the original should be maintained.

This will mean, for instance, that the structure is documented in sufficient detail both before and in the course of being dismantled in order to allow it to be accurately rebuilt to its original form; it is carefully dismantled in order to avoid undue damage to its constituent parts; it is reconstructed using, in so far as is practicable, its original materials; it is reconstructed using, in so far as is practicable, the original construction techniques. For instance, lime mortar is used for in cut-stone or coursed random rubble work rather than sand/cement based mortars; it is reassembled as an accurate representation of the original, maintaining the same profiles, surface finish, and faithful detailing rather than a pastiche reproduction. For instance, where an original wall is of solid masonry, its reinstatement should not be of a concrete block core with masonry facing to one or both sides; any replacement parts are faithful in style, material, and size to the original. For instance, any individual parts of a cast-iron railing, or segments of replacement railing should replicate the original.

Content of Records of the Past

5.10 The documentary information specified in Section 4.7 above is of a general nature sufficient to establish the basic architectural heritage merits of a particular structure and the perceived impact upon it. As set out in Section 5.6 above, a "record of the past" should be made for particular structures which are either to demolished or significantly impacted upon. Depending on their particular architectural heritage merit, it is recommended that such structures are documented to the following levels:

5.10.1 Structures of relatively minor architectural heritage merit or significance:
the original survey documentation as set out in Section 4.7 above, viz.
an accurate and succinct written description of the structure;
an assessment of its architectural heritage merit ;
the extent of the structure set out on a map of sufficient scale;
a sufficient number of record photographs which illustrate the built form and architectural heritage significance of the structure;
any additional information such as any research documents; and, in addition,

record photographs taken before demolition, and which include a clear indication of scale such as calibrated ranging rods.

5.10.2 Structures of greater architectural heritage merit or significance; as for Section 5.10.1 above, but including sketch floor plans and sections drawn on squared paper which gives an indication of a recognisable scale. Architectural and constructional details should be documented by photographs which include a clear indication of scale.

5.10.3 Structures of specific architectural heritage significance; as for Section 5.10.2 above, but including measured drawings to an appropriate scale showing the general site layout and general floor plans, sections and elevations.

5.10.4 Structures of particular architectural heritage significance; as for Section 5.10.3 above, but including a full set of measured drawings and rectified photographs. The measured drawings should also include constructional details to an appropriate scale. It should be noted that this specification will only be required in exceptional circumstances. It is more likely that such structures will have been identified at planning and design stage, and will have been avoided by the proposed development in the first instance.

Should you require any further assistance please do not hesitate to contact us at the following address.

The Manager,
Development Applications Unit,
Department of the Environment, Heritage and Local Government,
Harcourt Lane,
Dún Scéine,
Dublin 2

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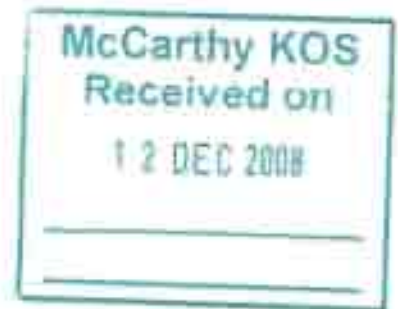
In addition, this application is been assessed from a nature conservation and an architectural heritage perspective and our comments if any will issue in due course.

Mise le meas,



Margaret Flood
Development Applications Unit

Lorraine Meehan
McCarthy Keville O'Sullivan Ltd
Block 1
GFSC
Moneenageisha Road
Galway



St. Martin's House / Waterloo Road / Dublin 4
Tel: + 353 1 660 2511 / Fax: + 353 1 668 0009

Date:

10th December 2008 Our Ref:

Your Ref:

Re: EIS Scoping for proposed composting facility, Durnish, Foynes

Dear Ms. Meehan

The Authority wishes to advise that it is not in a position to engage directly with planning applicants in respect to proposed developments. The Authority will endeavour to consider and respond to planning applications referred to it given its status and duties as a statutory consultee under the Planning Acts. The approach to be adopted by the Authority in making such submissions or comments will seek to uphold official policy and guidelines as outlined in our Circular 6/2006 "Policy Statement on Development Management and Access to National Roads" and other relevant circulars, which are available at www.nra.ie.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice the NRA's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred.

With respect to EIS scoping issues, the recommendations indicated below provide only general guidance for the preparation of EIS, which may affect the National Roads Network. However, we wish to advise that no new access should be provided to the national road network outside where a 50kph speed limit applies, in line with official policy.

The developer should have regard, *inter alia*, to the following:

- Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to locations of existing and future national road schemes.
- The Authority would be specifically concerned as to potential significant impacts the development would have on any national roads. In particular the Authority would be keen that the EIS consider the proximity of the proposed development to the N69.
- The developer should assess visual impacts from the existing national road.

- The developer should have regard to any Environmental Impact Statement and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should in particular have regard to any potential cumulative impacts.
- The developer, in conducting Environmental Impact Assessment, should have regard to the NRA DMRB and the NRA Manual of Contract Documents for Road Works.
- The developer, in conducting Environmental Impact Assessment, should have regard to the NRA's Environmental Assessment and Construction Guidelines, including the *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes* (National Roads Authority, 2006).
- The EIS should consider the Environmental Noise Regulations 2006 (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see *Guidelines for the Treatment of Noise and Vibration in National Road Schemes* (1st Rev., National Roads Authority, 2004)).
- It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria, a Traffic and Transport Assessment be carried out in accordance with relevant guidelines and best practice, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. The Authority's Traffic and Transport Assessment Guidelines (2007) should be referred to in this regard.
- The designers are asked to consult the National Roads Authority's *Road Safety Audit Guidelines* (NRA HA 42/04) and *Road Safety Audit* (NRA HD 19/04) to determine whether a Road Safety Audit is required.

Notwithstanding any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practise

I hope that the above comments are of use in your scoping process.

Yours sincerely

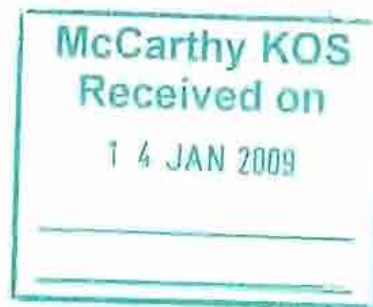
Michael McCormack
Planning



Limerick/Clare/Kerry
Regional Waste Management Office
Lissanalta House
Dooradoyle Road, Dooradoyle, Co. Limerick
E: rwmo@limerickcoco.ie
W: www.managewaste.ie
T: 061-496596
F: 061-583955

5th January 2009

Mc Carthy Keville O' Sullivan Ltd,
Block 1, G.F.S.C,
Mooneenageisha Road,
Galway.



Attention of: **Ms Lorraine Meehan**

Re: Proposed Compositing Facility at Durnish, Foynes, Co. Limerick

Dear Ms Meehan,

We acknowledge receipt of the information regarding the proposed facility by Greenport Environmental Ltd at Durnish, Foynes Port, Co. Limerick.

The Regional Waste Management Office have examined the information provided for a 40,000 tonne per annum composting and biogas plant and the current planning application and further information lodged with Limerick County Council for a 10,000 tonne per annum composting plant for this site and our comments are outlined below.

The Replacement Waste Management Plan for the Limerick/Clare/Kerry Region 2006-2011 addresses a range of issues including biological treatment and organic waste

Biological Treatment

Section 15.5.1

Policy

To reduce the quantities of biodegradable waste landfilled in accordance with the EU landfill Directive.

Objective

To facilitate the development of biological Treatment in the Region

An overall objective of the Replacement Waste Management Plan is to reduce the quantities of waste landfilled and by 2013 the region will endeavour to reach a land fill target of 14%. The development of compost/biogas plant will assist in reaching this target by diverting biodegradable Municipal Waste from Landfill



Limerick/Clare/Kerry

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and therefore this type of development does not contravene the Biological Treatment policies and objectives of the Regional Waste Management Plan for the Limerick/Clare/Kerry Region 2006-2011

Organic Waste

Section 15.5

Policy

The Local Authorities shall endeavour to meet the targets outlined in the National Strategy in Biodegradable Waste.

Objectives

To achieve the 2010 target as set out in the National Strategy on Biodegradable Waste through a combination of source separated collection and appropriate Mechanical Biological Treatment, home composting and green waste recycling centres.

The quantities detailed in the further information supplied as part of Greenport's planning application for the composting plant at Foynes Port suggest that the breakdown between organic fines and separately collected organic waste for the 10,000 tonnes per annum does not reflect the introduction of the National Strategy on biodegradable Waste targets for organic waste and hence does contravene the policy and objectives of the current Replacement Waste Management Plan for the Limerick/Clare/Kerry Region 2006-2011.

These targets are now included in all the Municipal Waste collectors permits including your sister company Mr Binman therefore the quantities of feedstocks included in any future planning and waste permit applications should take account of this situation and the balance of feedstocks to this plant should reflect the introduction of the source separated bin for both commercial and household waste producers.

We suggest that a detailed breakdown of Organic Waste feedstocks be provided with any further applications submitted and may be submitted the Regional Waste Management Office for further comment.

This office will not be commenting on other issues related to planning or zoning as this will be dealt with by Limerick County Council or referred to An Bord Pleanala and all environmental issues will be dealt with by Limerick County Council under the Waste Permit Application.



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Queries in relation to this submission can be addressed to Philippa King at 061 496842 or email pking@limerickcoco.ie.

Yours Sincerely

Philippa King
Regional Waste Co-ordinator,
Limerick/Clare/Kerry Region.

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Our Ref: 1713-2008
10th February, 2009

Ms. Lorraine Meehan, B.Sc. (Env.),
McCarthy Keville O'Sullivan Ltd.,
Block 1, G.F.S.C.,
Moneenageisha Road,
Galway.

**Re: Scoping Document for Environmental Impact Assessment of
Greenport Environmental Ltd -Proposed Composting Facility at Durnish,
Foynes, Co. Limerick**

Dear Ms. Meehan,

I refer to your correspondence dated 14th November, 2008 seeking observations on the above and wish to apologise for the delay in responding to you. I would like to make the following comments on the proposal from a flood risk perspective:

a) Lands adjoining the site are low-lying and are protected to a limited degree by OPW maintained embankments along the adjacent Robertstown River. These embankments are designed for protection appropriate to agricultural lands which may not be of sufficient protection standards for development purposes. It is recommended that the flood risk management aspect to the development be considered. Further more site-specific information on OPW drainage operations can be obtained from the South Western Regional Drainage Maintenance Office, Templemungret House, Mungret, Co. Limerick.

b) Planning Guidelines for Flood Risk Management are currently published at draft stage on the web site of the Department of Environment, Heritage & Local Government. It is recommended that an approach in accordance with these guidelines be used to assess the flood risk of the proposed development.

Yours sincerely,

Kevin Byrne
Engineering Services Administration Unit



Cornhshool, Oidhreachí agus Rialtas Áitiúil
Environment, Heritage and Local Government



23rd March 2009

Our Ref: G2008/916



Lorraine Meehan,
McCarthy Keville O'Sullivan Ltd.,
Block 1, G.F.S.C.
Moneenageisba Road,
Galway.

Re: Scoping Document for Environmental Impact Assessment of Greenport Environmental Ltd. Proposed Composting Facility at Durnish, Foynes, Co. Limerick

A Chara,

We refer to your recent notification in relation to the above proposed development. Outlined below are the nature conservation recommendations of the Department of the Environment, Heritage and Local Government.

The proposed location of this development is in close proximity to the Lower River Shannon Special Area of Conservation (SAC site code 2165) and the River Shannon and River Fergus Estuaries Special Protection Area (SPA site code 4077). An appropriate assessment of the potential impact on the water quality of the SAC and disturbance to birds in the SPA would be required. The Department of the Environment, Heritage and Local Government recommends that the applicant ensures that no light should shine on the shore line.

Is mise le meas,

Yvonne Nolan,
Development Applications Unit.
Ph.: (01) 888 3122
email: yvonne.nolan@environ.ie



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Appendix 2

Product Brochures

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MASHMASTER General-purpose mixing shredder

TREATMENT

Technical specifications

| | |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Drive | 2 x 75 kW electric |
| Dimensions | <p>Length: 6740 mm</p> <p>Width: 2200 mm (without conveyor belt), 6135 mm (with conveyor belt)</p> <p>Height: 3265 mm</p> <p>Weight: 13700 kg</p> |
| Container capacity | 15 m ³ |
| Mixing unit | 4 screws / mechanical drive |
| Throughput (dependent on material) | to 55 m ³ /h |

Wet organic waste, woody structure material and various aggregates (residue waste and sewage sludge) are treated by the general-purpose MASHMASTER mixing shredder into an output mixture ideal for the rotting process.

Four electrically driven screw shafts keep the material in an intensive mixing motion. Rugged tools on the screws disentangle the material and provide shredding and homogenisation.

- Shredding-mixing-homogenisation in one machine
- accurate definition of the mixing ratio and automation with conveyor belt feed possible with electronic weighing
- prolonged service life by using wear-resistant tools and tray with exchangeable base

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MULTISTAR 2-SE Star screen machine

SCREENING

Technical specifications

| | | | | | | | | | | | | | |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------|--------|------------|----|------------|----|------------|----|-------------|-------------------------------------|--|
| Power input (dependent on configuration) | 4 - 16 kW | | | | | | | | | | | | |
| Screen segments fine or coarse Length x width: | 2000 x 600 mm to 12000 x 1250 mm | | | | | | | | | | | | |
| Feed hopper (option) | 4 ... 30 m³ | | | | | | | | | | | | |
| Screen sections (standard) | <table border="0"> <tr> <td>Star type</td> <td>Separation range</td> </tr> <tr> <td>166/12</td> <td>10...25 mm</td> </tr> <tr> <td>or</td> <td>30...50 mm</td> </tr> <tr> <td>or</td> <td>60...80 mm</td> </tr> <tr> <td>or</td> <td>80...150 mm</td> </tr> <tr> <td colspan="2">or according to customer preference</td> </tr> </table> | Star type | Separation range | 166/12 | 10...25 mm | or | 30...50 mm | or | 60...80 mm | or | 80...150 mm | or according to customer preference | |
| Star type | Separation range | | | | | | | | | | | | |
| 166/12 | 10...25 mm | | | | | | | | | | | | |
| or | 30...50 mm | | | | | | | | | | | | |
| or | 60...80 mm | | | | | | | | | | | | |
| or | 80...150 mm | | | | | | | | | | | | |
| or according to customer preference | | | | | | | | | | | | | |
| Throughput (dependent on material) | to 400 m³/h | | | | | | | | | | | | |

Star screen technology from Komptech is regarded as one of the most effective separation methods for organic waste. Precise separation selectivity irrespective of material moisture and adjustment of the particle size at the press of a button are particular features of the MULTISTAR star screen.

Its compact design makes the MULTISTAR 2-SE star screen system simple to integrate. Its modular design and options such as chassis type, feed metering container with feed and discharge belts, wind sifting, etc. ensure customer requirements can be met perfectly.

- high throughput with precise selectivity – even with moist materials
- simple speed control at the screen deck to change particle size in seconds

flexibly tailored solutions for specialist customer applications

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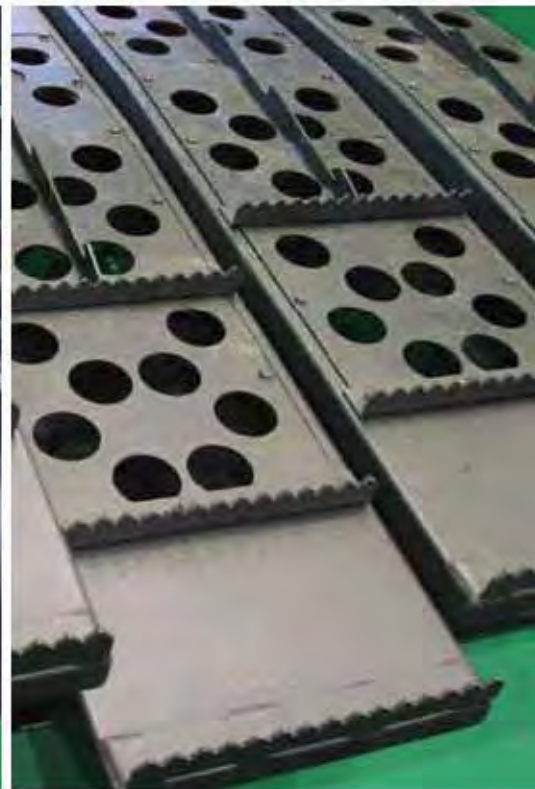
KOMPTECH[®]

Technology for a better environment

BRINI MK

Ballistic separator

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BRINI MK



THE CONCEPT

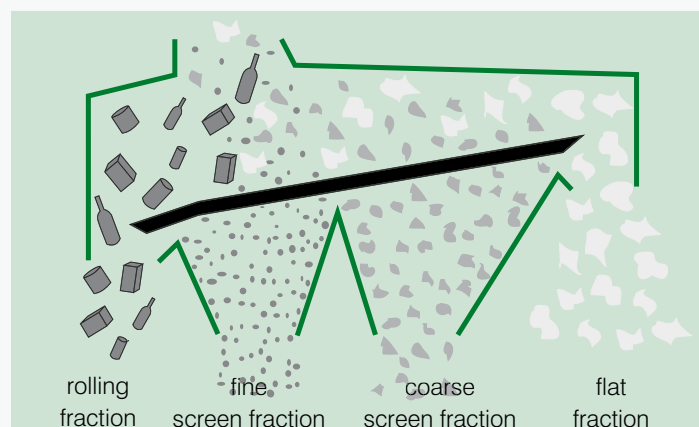
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BRINI separators are used to separate out the usable fractions and potential recyclables from waste. By combining ballistic separation with screening, separation into three or four fractions is performed in one operation give two- or three-dimensional, rolling, cubic and rigid, flat, soft and narrow, or undersized/oversized particles. With a choice of five sizes together with integrated design options, the BRINI separator can be configured to suit the individual application.

- wide range of applications – from municipal waste (household waste, commercial waste) to potential recyclables (packaging waste, waste paper) and construction & demolition waste
- High degree of selectivity with adjustment of separation angle
- proven, efficient drive design with low power requirement
- rugged design with long service life and low operating costs

Range of applications

- Household waste, residual waste, compost
- Bulky waste, commercial waste
- Potentially recyclable mixtures
- Paper and cardboard waste



TECHNICAL SPECIFICATIONS

| BRINI MK | MK 41 | MK 61 | MK 81 | MK 101 | MK 121 |
|----------------------------------------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Motor rating | 5,5 kW | 5,5 kW | 2 x 5,5 kW | 2 x 5,5 kW | 2 x 5,5 kW |
| Machine dimensions | | | | | |
| Length 3 fraction machine: | 7475 mm | 7475 mm | 7475 mm | 7475 mm | 7475 mm |
| Length 4 fraction machine: | 8675 mm | 8675 mm | 8675 mm | 8675 mm | 8675 mm |
| Width 3 and 4 fraction machine: | 2400 mm | 3240 mm | 4480 mm | 5366 mm | 6220 mm |
| Height: (machine only) | 1930 mm | 1930 mm | 1930 mm | 2010 mm | 2010 mm |
| Weight 3 fraction machine: | 4200 kg | 5000 kg | 6000 kg | 6800 kg | 7900 kg |
| Weight 4 fraction machine: | 4700 kg | 5600 kg | 6700 kg | 7500 kg | 8700 kg |
| Screen | | | | | |
| Screen elements: | 4 | 6 | 8 | 10 | 12 |
| Screen elements L x W 3 fraction machine: | 5600 x 422 mm | 5600 x 422 mm | 5600 x 422 mm | 5600 x 422 mm | 5600 x 422 mm |
| Screen elements L x W 4 fraction machine: | 6800 x 422 mm | 6800 x 422 mm | 6800 x 422 mm | 6800 x 422 mm | 6800 x 422 mm |
| Screening area 3 fraction machine: | 9,7 m ² | 14,5 m ² | 19,2 m ² | 24,0 m ² | 28,8 m ² |
| Screening area 4 fraction machine: | 11,8 m ² | 17,6 m ² | 23,4 m ² | 29,2 m ² | 35,0 m ² |
| Throughput (dependent on material) | to 80 m ³ /h | to 120 m ³ /h | to 160 m ³ /h | to 200 m ³ /h | to 240 m ³ /h |

Function in detail

The BRINI separator from Komptech works according to the ballistic principle and separates the feed material according to its physical properties.

Using an optional material distributor, the material mixture in the feed area falls onto rigid screen elements which are arranged lengthwise and slope upwards. The elements are mounted onto a crankshaft at each end and when rotated, the elements oscillate. The two-dimensional fraction comprises of smooth, flat, slender fragments which are cleansed of contaminants by the shaking and rotation as they are transported upwards by the screen elements.

The three-dimensional fraction comprises rigid, hard/heavy and cubic fragments which are not separated off by the screen holes selected. The movement causes this fraction to roll and drops it downwards, in addition the ascending material flow is separated into oversized and undersized fractions according to the selected screen holes.

Product characteristics

Selectivity

The rigid screen elements are arranged lengthwise and facilitate excellent turning of the material and hence a high degree of sorting. The separation threshold between the light and heavy fraction can be tailored to the material.

Sturdy design

The steel screen elements, with abrasion protection in the loading zone and at the side walls for extra wear protection, allow sharp and heavy materials to be handled easily. The sturdy drive mechanism comprises of an electronic motor, gearbox and robust, maintenance-friendly crankshafts. Doors/flaps for all machine areas provide easy access and simplify servicing and maintenance.

Low operating costs

The low power requirement of the simple yet efficient mechanics means energy costs are low – power consumption is in the range 3 - 7 kWh. Servicing costs are kept low thanks to well-proven technology, reinforcement in places subject to heavy loading and the fact that the number of moving parts has been reduced to a minimum.



Technology for a better environment

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HAMATEC

sieving, sifting, sorting, separating



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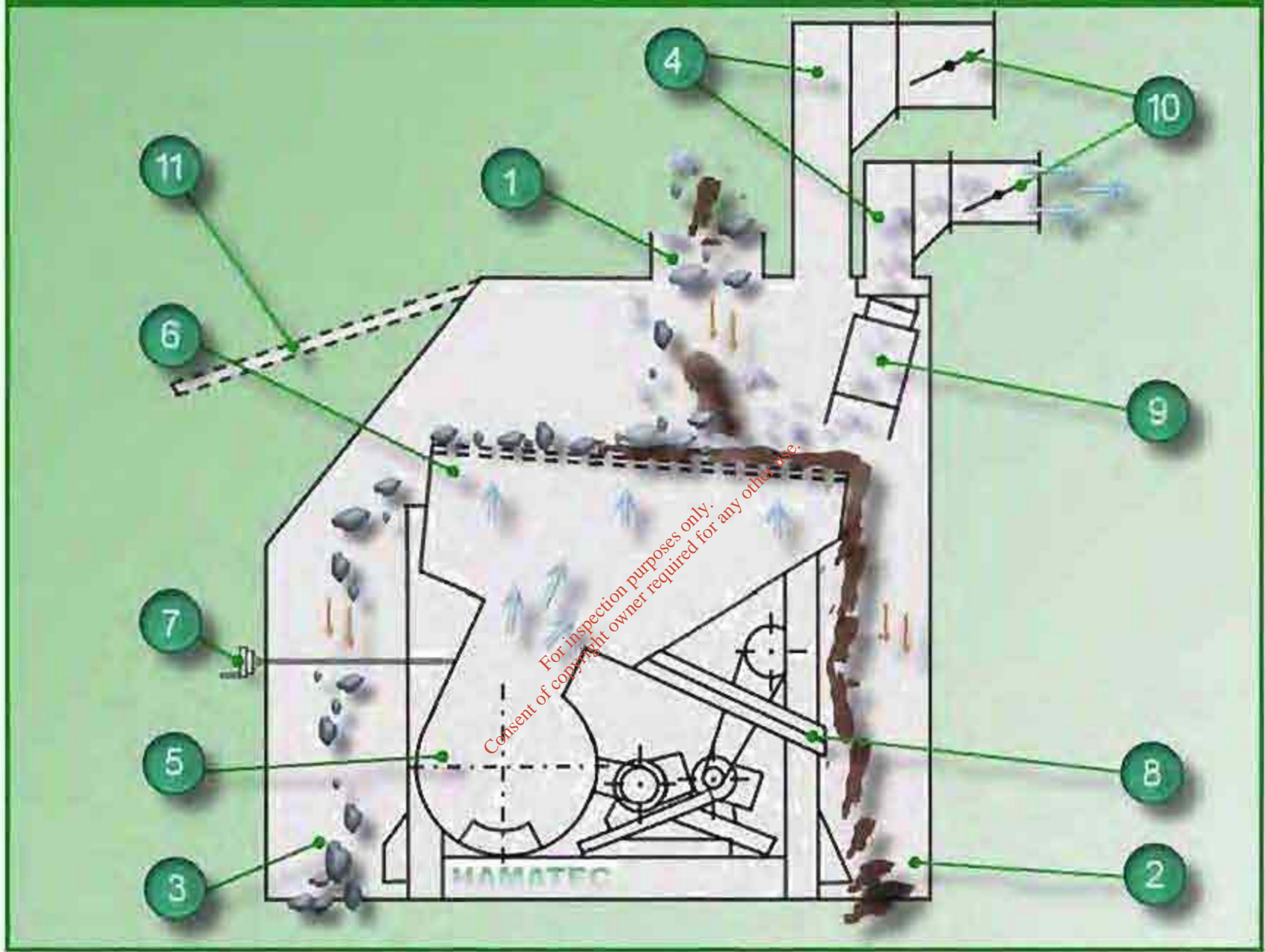
Compost separator

Type KA

The compost separator, type KA, by **HAMATEC** has been developed for the specific separation of heavy and light parts. This type of separator is firmly established in many successfully working processing plants. Our separator sees to the reliable separation of foreign parts like stones, glass and metal parts and is therefore a guarantee for an optimally refined compost or residual waste. As an option, the separator is also available with an additional aspiration in the fine outlet in order to remove even the last remaining light parts like paper and foils. The industrial, sturdy design is the key for a long service life and a low-maintenance operation.

Specification

- unsurpassed separating capacity
- low maintenance and high operational reliability
- easy access
- sturdy industrial design
- stable and sturdy drive
- quick and simple sieve exchange
- as an option also available with separately adjustable aspiration
- compact design due to double table
- little space required
- closed and dust-tight design
- available in three sizes
- as an option also available with central lubricating point
- as an option also available with machine control on the spot
- as an option also available with screw feeding or mechanical swing-spout distributor

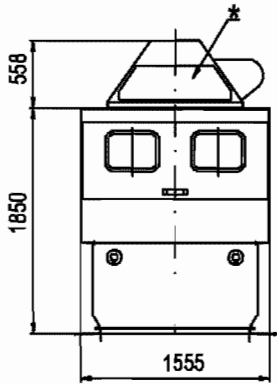


Compost separator H/F

- | | | |
|--------------------------|-------------------------------|---------------------------------------------|
| 1. product inlet | 5. ventilator | 9. suction of light parts, optional |
| 2. product outlet | 6. sieve, adjustable | 10. throttle valve, optional |
| 3. outlet heavy fraction | 7. air regulation | 11. bonnet with gas pressure shock-absorber |
| 4. exhaust air | 8. outlet throughs - eduction | |

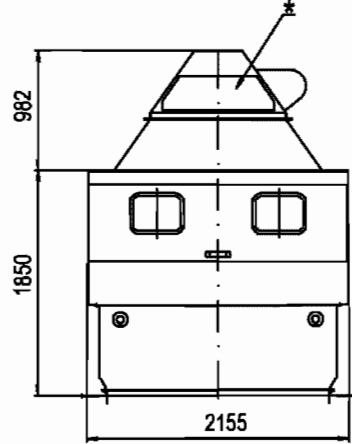
Kompostausleser Typ "KA" Compost separator type "KA"

KA 6



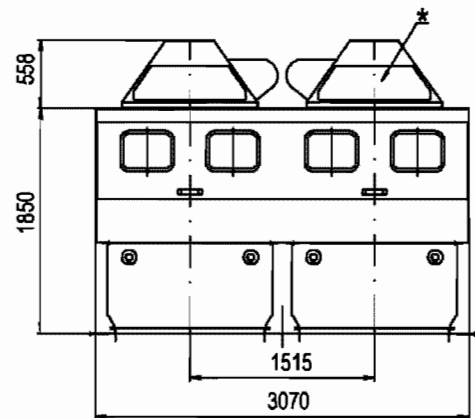
* Pendelverteiler (Option)

KA 9



* Distributing box (Option)

KA 12

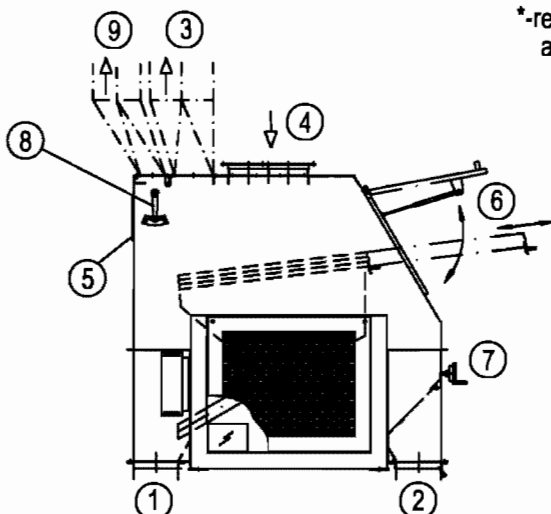


| Typ | Leistung m3/h* | Antrieb Kw | Ventilator Kw m3/h | | Abluft m3/h | Maschinengewicht kg unverb. |
|---------|-------------------|---------------|-------------------------|--------|----------------|--------------------------------|
| KA6-H | 18 | 1.5 | 2x4 | 2x6655 | 14000 | 1600 |
| KA6-HF | 18 | 1.5 | 2x4 | 2x6655 | 22000 | 1650 |
| KA9-H | 27 | 1.5 | 2x5.5 | 2x8925 | 21000 | 1700 |
| KA9-HF | 27 | 1.5 | 2x5.5 | 2x8925 | 33000 | 1775 |
| KA12-H | 36 | 1.5 | 4x4 | 4x6655 | 28000 | 3000 |
| KA12-HF | 36 | 1.5 | 4x4 | 4x6655 | 44000 | 3100 |

*-Bezogen auf eine Produktfeuchte
von 35% und eine Korngrösse 15mm

| type | capacity m3/h* | drive kW | fan kW m3/h | | exhaust air m3/h | machine weight kg unpacked |
|---------|-------------------|-------------|------------------|--------|---------------------|-------------------------------|
| KA6-H | 18 | 1.5 | 2x4 | 2x6655 | 14000 | 1600 |
| KA6-HF | 18 | 1.5 | 2x4 | 2x6655 | 22000 | 1650 |
| KA9-H | 27 | 1.5 | 2x5.5 | 2x8925 | 21000 | 1700 |
| KA9-HF | 27 | 1.5 | 2x5.5 | 2x8925 | 33000 | 1775 |
| KA12-H | 36 | 1.5 | 4x4 | 4x6655 | 28000 | 3000 |
| KA12-HF | 36 | 1.5 | 4x4 | 4x6655 | 44000 | 3100 |

*-related to a product humidity of 35%
and a granulation of 15mm



- | | |
|-----------------------------------------------------|-------------------------------------------------------|
| 1 Leichtteilauslauf | 1 Outlet for light particles |
| 2 Schwerteilauslauf | 2 Outlet for heavy particles |
| 3 Abluft | 3 Exhaust air |
| 4 Einlauf | 4 Inlet |
| 5 Sichtfenster | 5 Window |
| 6 Servicetür | 6 Service door |
| 7 Luftverstellung (Option: mit Frequenzumformer) | 7 Air regulator (Option: with frequency converter) |
| 8 Verstellung Folienabsaugung (Option) | 8 Regulator for foil suction (Option) |
| 9 Abluft für Folien (Option) | 9 Exhaust air for foils (Option) |

- Änderungen vorbehalten -
- subject to alterations -

Appendix 3

End-product Classification

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APPENDIX : END PRODUCT CLASSIFICATION

1. **Compost quality**

Compost shall be deemed unsatisfactory if more than 25% of samples fail the criteria set out in the tables below. No sample shall exceed 1.2 times the quality limit set.

The following criteria (where they apply to compost) are deemed a quality standard for the use of compost as a soil improver and should not be deemed as criteria for fertilizer. In addition N, P, K, NH₄-N, NO₃-N,pH and dry matter content should be measured.

1.1. Maturity (compost)

The state of the curing pile must be conducive to anaerobic activity.

Compost shall be deemed to be mature if it meets two of the following groups of requirements:

- Respiration activity after four days AT₄ is $\leq 10\text{mg/O}_2/\text{g}$ dry matter or Dynamic Respiration Index is $\leq 1,000\text{mg O}_2/\text{kg VS/h}$
- Germination of cress (*lepidium sativum*) seeds and of radish (*Raphanus sativus*) seeds in compost must be greater than 90% of the germination rate of the control sample, and the growth rate of plants grown in a mixture of compost and soil must not differ more than 50% in comparison with the control sample.
- Compost must be cured for at least 21 days; and, Compost will not reheat upon standing to greater than 20°C above ambient temperature.
- If no other determination of maturity is made, the compost must be cured for a six month period. In addition, offensive odours from the compost shall be minimal for the compost to be deemed mature.
- Or other maturity tests as may be agreed with the Agency.

1.2 Trace Elements (compost)

Maximum trace elements concentration limits.

| Parameter (mg/kg,dry mass) | Compost Quality standard | | Stabilised Biowaste |
|------------------------------------------|--------------------------|---------|---------------------|
| | Class 1 | Class 2 | |
| Cadmium (Cd) | 0.7 | 1.5 | 5 |
| Chromium (Cr) | 100 | 150 | 600 |
| Copper (Cu) | 100 | 150 | 600 |
| Mercury (Hg) | 0.5 | 1 | 5 |
| Nickel (Ni) | 50 | 75 | 150 |
| Lead (Pb) | 100 | 150 | 500 |
| Zinc (Zn) | 200 | 400 | 1500 |
| PolyChlorinated Biphenyls (PCB's) | | | 0.4 |
| Polycyclic Aromatic Hydrocarbons (PAH's) | | | 3 |
| Impurities > 2mm | <0.5% | <0.5% | <3% |
| Gravel and Stones | <5% | <5% | - |

1.3 Pathogens (compost)

Pathogenic organism content must not exceed the following limits:

| | | |
|------------------|-------------------------------------------|-----|
| Salmonella | Absent in 50g | N=5 |
| Faecal Coliforms | <1000 Most Probable number (MPN) in 1 g | N=5 |

Appendix 4

Mr. Binman Ltd. Health and Safety Plan

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MR Binman

Safety Statement July 2008

Raymond Mulcahy
HR and H&S Manager

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Safety, Health and Welfare Statement

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Revision: 0003
Date: July 2008
Issued by: Ray Mulcahy
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| 21. | |

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Safety, Health and Welfare Statement

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1. Introduction

Mr. Binman Limited, in accordance with current safety legislation, in particular the Safety Health & Welfare at Work Act 2005, is required to ensure, as far as is reasonably practicable, the health, safety and welfare while at work of all employees, contractors, visitors and customers.

It is important that safety precautions are observed by everyone. The prevention of accidents or incidents in the workplace is the responsibility of every individual at work. It is only when each person takes responsibility for their own area of responsibility that safety will be managed effectively.

Ensuring the safety of others at work is equally as important as the avoidance of personal injury. Safety precautions are in place, not only for the prevention of accidents, but also for the reduction of injury in the event of an accident.

This Safety Statement will provide a framework for the management of safety throughout the organisation. It contains guidelines for those personnel who are delegated to manage Safety, health and Welfare and by their actions, encourage others to ensure that the company continues to be a safe place in which to work.

1.1. Scope

The objectives of this assessment were to:

- Consider the adequacy of existing safeguarding and systems of work.
- Prepare a list of actions required to bring existing safety shortfalls up to the requirements of current legislation and standards.
- Identify any alterations to existing systems of work or any additional systems of work required.
- The risk assessment considered the adequacy of safeguarding and systems of work taking account of the requirements of the Safety Health & Welfare at Work Act 2005 and any current legislative requirements.



Safety, Health and Welfare Statement

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2. Declaration of company policy

Section 8 and 12 of the Safety, Health and Welfare at Work Act 2005 outlines the duties to ensure that as far as is reasonably practicable, the safety, health and welfare at work of our employees, visitors, contractors and customers.

Whilst the overall responsibility for Safety, Health & Welfare of employees rests at highest management level, the company regards employee's safety as being an essential responsibility of management at all levels of the organisation. All managers are expected to identify and control risks, implement safe systems of work, devise and apply safe working methods and establish good housekeeping programmes.

Employees are reminded that they have a legal duty under section 13 of the Safety, Health and Welfare at work Act 2005, to take reasonable care to protect his or her safety, health and welfare and the safety, health and welfare of any other person who may be affected by the employee's acts or omissions at work. All employees have a specific duty to report to your supervisor any defects in plant, equipment or systems of work which might endanger safety, health and welfare.

It is our policy to:

- Ensure, so far as it is reasonably practicable, the health, safety and welfare at work of all employees and other persons affected by our actions;
- Provide and maintain a safe working environment which has adequate facilities and arrangements for the health, safety and welfare of employees;
- Provide such health, safety and welfare training, information, instruction and supervision as may be necessary for personnel at all levels;
- Have in place a designated person responsible for safety in the company who is competent to ensure arrangements specified in the safety statement are in place;
- Provide means for consultation on health, safety and welfare matters for all employees;
- Inform employees of their duties and obligations under the Act;
- Provide equipment, systems of work and arrangements for the use, handling, storage and transport of the articles and substances we use in our work that are safe and without risk to our health;
- Provide all employees with personnel protection and clothing suitable for the task to which they are assigned;
- Provide and maintain safe access to and egress from any place of work under our control and ensure emergency plans are in place for each place of work;
- Promote personal responsibility and effort by employees at all levels to minimize health and safety hazards to themselves, other employees and persons who may be affected by their acts or omissions;
- Maintain a Safety Statement as required by law;
- Bring the Safety Statement to the attention of employees and others as required by law, in a form, manner and as appropriate, language that is reasonably likely to be understood;
- Place a copy of the Safety Statement in an appropriate location in each of our offices and on the intranet.

Martin Sheahan (Jnr),
Managing Director
Mr. Binman Limited.

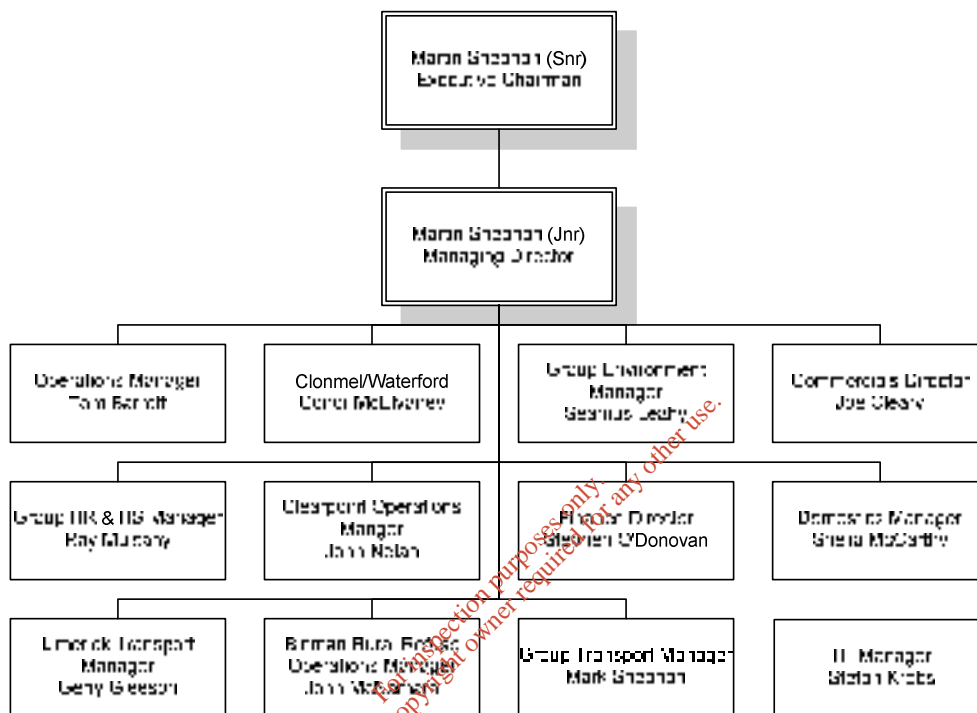


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3. Responsibilities

3.1. Structure – Safety Organisation Chart:



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3.2. Managing Director

Responsibilities:

The Managing Directors has the overall responsibility for:-

- The provision of a safe working environment for all Mr. Binman Ltd employees, contractors, visitors and other persons impacted by our operations.
- The establishment and maintenance of an effective Health & Safety Policy and ensuring that the: -
 - Policy is established and is current.
 - Policy is understood at all levels.
- Ensuring that management systems are operating correctly to safeguard the safety, health and welfare of all employees, contractors and visitors and any persons impacted by our actions on or off site.
- Ensuring that the company is in compliance with applicable legislative requirements.
- Ensuring that appropriate employees and resources are made available to meet the requirements of all applicable health and safety legislation and Mr. Binman Ltd environmental, health and safety guidelines, directives and procedures.
- Ensuring that responsibility for safety, health and welfare is assigned and accepted at all levels within the company.
- Ensuring that all direct employees under the MD's management are held accountable for their performance in relation to occupational health and safety, and that this measurable performance is evaluated at the time of their annual review.
- Ensuring that only the highest standard of safety is acceptable by role modelling commitment to safety.
- Setting Health and Safety performance objectives annually for all departments.



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3.3. Health and Safety Manager

Responsibilities:

The Health and Safety Manager is responsible for the management and the development of all Health and Safety programmes within Mr. Binman Ltd.

In particular the Health & Safety Manager is responsible for:

- Managing Safety, Industrial Hygiene, Ergonomic, and Occupational Health programmes to ensure a safe and healthy working environment for employees.
- Working with department management on strategies for the implementation and revision of all programmes under their control
- Advising the company on all regulatory requirements relating to safety, health and welfare.
- Working directly with, when required, the officers of the National Authority for Occupational Safety and Health. (H.S.A).
- Establishing a safety committee and other safety teams as required.
- The generation of safety health and welfare reports to appropriate personnel within Mr. Binman Ltd.
- Maintaining detailed safety, health and welfare records in accordance with regulatory requirements as applicable.
- Fully investigating all significant accidents, incidents and dangerous occurrences and reporting on same to the Health and Safety Authority (H.S.A) as required.
- Ensuring that occupational safety and health inspections or audits are conducted and that all departments are complying with the terms of the Safety Statement and the maintenance of records of such inspections.
- Ensuring that risks are assessed and that appropriate control measures are adopted.
- Working with site Emergency Response Team Coordinators, on evacuation procedures, fire fighting, fire drills, fire exits and compliance with fire safety regulations.
- Ensuring that fire and emergency response drills are carried out on a regular basis to ensure a high level of familiarity with procedures.
- Developing and updating the company Safety Statement on an annual basis, or more frequently, if circumstances dictate.
- Developing safe practices and procedures and safe systems of work in conjunction with relevant departments to help ensure the health, safety and welfare of all employees on site.
- Issuing guidelines for the development of safety training programmes to ensure that such programmes are implemented.
- All new facilities plant, processes or machinery brought onto any Mr. Binman site must conform to the current regulatory provisions governing health and safety within Ireland.



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3.4. Senior and General Managers

Each manager is responsible for ensuring that all employees under their control, and others such as contractors and visitors, are made aware of and fully comply with the requirements of the company's Safety Statement and that they understand the organisational structure and arrangements present for carrying it out.

In particular each manager is responsible for:

- Ensuring that all employees within their department receive adequate safety training and instruction appropriate to the tasks they perform.
- Role modelling, through personal behaviour, that only the highest standards of safety is acceptable.
- Ensuring that systems supporting safety and health programmes are functional in the department to enhance protection of personnel from risks while carrying out their duties.
- The understanding and implementation of the company's Safety Statement in accordance with the provisions of the Safety, Health and Welfare at Work Act 2005 and Mr. Binman Health and Safety Policy.
- Investigating all accidents, incidents and dangerous occurrences, in their area of control, and reporting on same in accordance with company procedures.
- Ensuring that all employees under their control are held accountable for their performance in relation to occupational health and safety.
- Ensuring, at appropriate frequency, that safety, health, and related information is communicated to their employees.
- Ensuring that all employees under the manager's immediate control are aware of actions to be taken in the event of an emergency.

3.5. Finance Director

The Finance Director has responsibility for the day to day management of the finance function within Mr. Binman Ltd and for the supervision of all employees assigned to them.

Responsibilities:

- Liaise with CEO, Directors, Health & Safety Manager, HR Manager and General Managers on matters of safety, health and welfare.
- To report periodically on trends relating to public and employer liability insurance and compensation claims.
- To ensure that each manager is aware of the cost of accidents and ill health in their departments.
- Ensure that adequate financial resources are available to support the management and operation of the health and safety management programme.
- Ensure that employees under their control are fully aware of their responsibilities in relation to Health & Safety.



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3.6. Human Resources

Responsibilities:

- Ensure that the management team is advised on personnel aspects of safety matters as an integral part of personnel policy.
- Ensure that the duties of all employees in relation to safety and health are included in job descriptions.
- Ensure that all employees recruited are to be made aware of the existence of the safety statement in their contract of employment.
- Ensure that all current and new employees receive a copy of the Mr. Binman handbook.
- Keep fully informed regarding statutory and other developments in safety, health and welfare pertaining to employees.
- That all job descriptions adequately describe their responsibilities of the incumbent for occupational Health and Safety.
- That appropriate and adequate training in occupational Health and Safety is available to all levels of employees.
- That induction training in Safety and Health is carried out with all new employees.
- That Health and Safety training records are maintained in an appropriate central location.
- That pre-employment medicals and occupational health surveillance programmes are implemented and that records are maintained.
- That absenteeism records are examined in order to identify potential occupational health problems.
- That policies and programmes for dealing with stress and bullying in the workplace are developed and maintained.
- That there is an adequate and workable disciplinary procedure in existence to deal with breaches of safety and health regulations.
- That all employees understand that adequate procedures are in place for consultation in any matter of concern.
- That there is adequate provision for supervision of employees to prevent improper conduct or behaviour.



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3.7. Duties of the Employer

Section 8 of the Safety, Health and Welfare at Work Act 2005 states that employer's duty extends to the following:-

- managing and conducting work activities in such a way as to ensure, so far as is reasonably practicable, the safety, health and welfare at work of his or her employees;
- managing and conducting work activities in such a way as to prevent, so far as is reasonably practicable, any improper conduct or behaviour likely to put the safety, health or welfare at work of his or her employees at risk; as regards the place of work concerned, ensuring, so far as is reasonably practicable:
- the design, provision and maintenance of it in a condition that is safe and without risk to health,
- the design, provision and maintenance of safe means of access to and egress from it,
- and the design, provision and maintenance of plant and machinery or any other articles that are safe and without risk to health;
- ensuring, so far as it is reasonably practicable, the safety and the prevention of risk to health at work of his or her employees relating to the use of any article or substance or the exposure to noise, vibration or ionising or other radiations or any other physical agent;
- providing systems of work that are planned, organised, performed, maintained and revised as appropriate so as to be, so far as is reasonably practicable, safe and without risk to health;
- providing and maintaining facilities and arrangements for the welfare of his or her employees at work;
- providing the information, instruction, training and supervision necessary to ensure, so far as is reasonably practicable, the safety, health, and welfare at work of his or her employees;
- determining and implementing the safety, health and welfare measures necessary for the protection of the safety, health and welfare of his or her employees when identifying hazards and carrying out a risk assessment under section 19 or when preparing a safety statement under section 20 and ensuring that the measures take account of changing circumstances and the general principles of prevention specified in Schedule 3;
- having regard to the general principles of prevention in Schedule 3, where risks cannot be eliminated or adequately controlled or in such circumstances as may be prescribed, providing and maintaining such suitable protective clothing and equipment as is necessary to ensure, so far as is reasonably practicable, the safety, health and welfare at work of his or her employees;
- preparing and revising, as appropriate, adequate plans and procedures to be followed and measures to be taken in the case of an emergency or serious and imminent danger;
- reporting accidents and dangerous occurrences, as may be prescribed, to the Authority or to a person prescribed under section 33, as appropriate, and
- obtaining, where necessary, the services of a competent person (whether under a contract of employment or otherwise) for the purpose of ensuring, so far as is reasonably practicable, the safety, health and welfare at work of his or her employees.



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3.8. Duties of Employees

Section 13 of the Safety, Health and Welfare at Work Act, 2005 states that employees shall:

- Comply with the relevant statutory provisions, as appropriate, and take reasonable care to protect his or her safety, health and welfare and the safety, health and welfare of any other person who may be affected by the employee's acts or omissions at work.
- Ensure that he or she is not under the influence of an intoxicant to the extent that he or she is in such a state as to endanger his or her own safety, health or welfare at work or that of any other person.
- If reasonably required by his or her employer, submit to any appropriate, reasonable and proportionate tests for intoxicants by, or under the supervision of, a registered medical practitioner who is a competent person, as may be prescribed.
- Co-operate with his or her employer or any other person as far as is necessary to enable his or her employer or the other person to comply with the relevant statutory provisions, as appropriate.
- Not engage in improper conduct or other behaviour that is likely to endanger his or her own safety, health or welfare at work or that of any other person.
- Attend such training and, as appropriate, undergo such assessment as may reasonably be required by his or her employer or as may be prescribed for use by the employee at work or for the protection of his or her safety, health and welfare at work, including protective clothing or equipment.
- Having regard to his or her training and the instructions given by his or her employer, mark correct use of any article or substance provide for use by the employee at work or for the protection of his or her safety, health and welfare at work, including protective clothing or equipment.
- Report to his or her employer or to any other appropriate person, as soon as practicable –
- Any work being carried on or likely to be carried on, in a manner which may endanger the safety, health or welfare at work of the employee or that of any other person.
- Any defect in the place of work, the systems of work, any article or substance which might endanger the safety, health or welfare at work of the employee or that of any other person.
- Any contravention of the relevant statutory provisions which may endanger the safety, health and welfare at work of the employee or that of any other person, of which he or she is aware.
- An employee shall not, on entering into a contract of employment, misrepresent himself or herself to an employer with regard to the level of training as may be prescribed.
- A person shall not intentionally, recklessly or without reasonable cause –
- Interfere with, misuse or damage anything provided under the relevant statutory provisions or otherwise for securing the safety, health and welfare of persons at work.
- Place at risk the safety, health or welfare of persons in connection with work activities.



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4. Resources

- Mr. Binman is committed to providing sufficient resources to implement the policy outlined in this safety statement.
- Mr. Binman accepts that the implementation of the safety management programme is dependent upon the provision of resources.
- This safety statement sets out the resources in terms of time and people provided to secure the Safety, Health and Welfare of employees.
- Considerable resources are expended by Mr. Binman in securing the safety, health and welfare of employees in terms of personnel, time, materials, equipment and training.
- Mr. Binman will endeavour to allocate adequate time to individuals for training and administration of their Health and Safety duties. This includes Safety Reps, Safety Committee members, Fire Wardens etc.
- Resources are available for education and training in a variety of areas related to safety, health and welfare such as induction/safety awareness, manual handling, fire and emergency, truck driver assessments and training, plant & machinery operator, safety representative, specialist areas (confined space, lockout/tag out, hazardous waste handling).
- Mr. Binman is committed to providing ongoing health and safety training. A health and safety training needs analysis will be conducted for each site and a training matrix maintained.
- When required the company Mr. Binman will engage external consultancy services to provide assistance in the implementation of the Health and Safety Management System and provide training and advice as required.
- Where new hazards are identified Mr. Binman in so far as is reasonably practicable will provide for additional resources to control them.
- Where significant amount of expenditure is required resources may have to be allocated on a phased basis.
- Ongoing expenditure is committed to maintaining the fleet, premises, plant and equipment.
- Health & Safety information will also be disseminated through safety bulletins, employees newsletter and team toolbox talks.
- Employees will be provided with the appropriate personal protective equipment.



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4.1. Budgeting for Health and Safety:

An annual Health and Safety budget shall be prepared by the Health & Safety Manager. Provision shall be made in this budget for:

- Resources internal and external (personnel, external consultants etc.)
- Training
- Certification
- Benchmarking
- Occupational exposure monitoring
- Legal briefings
- Incident and Injury Free Programme
- Seminars
- Provision should be made for
- Personal protective equipment
- Health and Safety signage
- First aid equipment and supplies
- Fire fighting equipment and refills.
- Statutory audits and inspections of equipment.
- Accident and emergency costs
- Occupational health activities (inoculations, occupational health screening and consultations)
- Capital Expenditure
- Provision should be made in the capital budget for expenditure to mitigate hazards identified as a result of Risk Assessments.
- Provision should be made in the capital budget for expenditure in relation to any upgrading or change to any Emergency Response Plan.
- Provision should be made in the capital budget for the scheduled replacement of old or sub-standard vehicles, mobile or static plant and equipment.



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5. Safety Management

5.1. Safety Management program:

- Mr. Binman will manage Health and Safety within the organisation by continuously monitoring and reviewing performance.
- Health & Safety Objectives will be set annually and reviewed quarterly by the Safety Leadership Team.
- When setting objectives performance indicators will include.
 - Near misses
 - Accidents and incidents,
 - Non conformances
 - Risk assessments.
 - Direct observation.
 - Safety Audits.
 - Suggestions / feedback with operatives.
 - Best practice within the industry
- Any proposed changes in infrastructure, work practices or employee numbers will also be considered.
- Responsibility for the execution of any required actions will be allocated to designated personnel.
- Appropriate time scales/ deadlines will be allocated to any proposed actions.

5.2. Site Safety Committee:

- Safety Committees have been established by site or operation to assess the on-going progress of the safety management program set out in the safety statement.
- The committees are chaired by the Health and Safety Manager.
- A minimum of 4 members shall be required to form a team.
- The committee will meet every month.
- Minutes from the meeting will be posted on the health and safety notice boards.
- The Safety Committee - Terms of Reference:
 - Review the implementation of the safety management program as set out in the safety statement.
 - Review the allocation of resources on site.
 - Analysis and review corrective measures.
 - Make submissions and action them.
 - To report on the implementation of the safety management program.
 - Review accident/incident trends for the site.
 - Consider representations made by the safety representative on behalf of employees and make recommendations where appropriate.
 - Review safety and health training requirements for the site.
 - Review the safety management system with a view to drive continuous improvement.



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5.3. New Employees:

- All new employees must attend a pre-employment medical before commencing employment with the company.
- All new employees must participate and complete the Mr. Binman safety induction course before commencing work.
- As part of the induction procedure, new employees will be introduced to the safety arrangements in operation at Mr. Binman.
- During their first week of employment, the HR/HS Manager shall ensure that new employees:
 - Receive a copy of the Health and Safety booklet
 - Accompany their supervisor on a guided tour of the workplace including familiarisation with emergency exits, fire fighting equipment, and other safety measures.
 - Be familiarised with the safety arrangements in operation.
 - Be given the opportunity to study the safety statement and ask any questions.
 - Be provided with any personal protective equipment relating to their tasks and duties.
 - Be provided with adequate training and supervision to allow them safety complete their tasks.

5.4. Contractors and Visitors to Mr. Binman:

- Mr. Binman recognises that there are various occasions when contractors and visitors are on the sites and that their activities may create hazards. In order to control such hazards, Mr. Binman requires all contractors to the following General Rules apply:
 - Before commencing any activity sub contractors will be required to submit their safety statement and or method statement for approval to the Health and Safety Manager.
 - This document will set out the site specific safety precautions required from sub contractors while carrying out work on any of the Mr. Binman facilities.
 - Contractor activity will be subject to the particular sites permit to work system.
 - Contractors may not use tools or equipment, which are the property of Mr. Binman, or seek the assistance of their workers without prior permission of the site manager.
 - Contractors wishing to use any equipment belonging to Mr. Binman must seek the permission from the Site Operations Manager
 - Contractors must report any accidents or near-miss incidents to the site Operations Manager or Safety Officer without delay and must co-operate in any subsequent investigation of the accident or incident.
 - Contractors must leave all plant and equipment in a safe condition after work is completed. They must clean up and remove all materials and equipment belonging to them.
 - Contractors must confine themselves to the work area. If there is a requirement to work outside the site inside the tenant areas the site Operations Manager must be informed.
 - Take all precautions as far as is reasonably practicable to avoid any risk to themselves or anyone who may be affected by their acts or omissions.
 - Provide full and clear information to those who may be affected by their work activities so as to reduce their exposure to risk.
 - Familiarise themselves with the safety rules, evacuation plans and emergency procedures.
 - Follow all instructions and comply with all safety rules, evacuation plans and emergency procedures.
 - Provide adequate instruction, supervision, and personal protective equipment and ensure that all relevant regulations and codes of practice are observed.
 - Visitors must be under the direct or indirect supervision of an employee member at all times.
 - All warning signs, directions and rules must be followed at all times.
 - Visitors will be asked to sign in and wear visitor's high visibility vest.



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6. Consultation

The Safety, Health and Welfare at Work Act, 2005 places a duty on employers to consult with their employees. Section 26 (1) of the Act states that it shall be the duty of every employer:

- consult his or her employees for the purpose of making and maintaining arrangements which will enable the employer and his or her employees to co-operate effectively for those purposes,
- In accordance with the arrangements referred to in paragraph (a), consult with his or her employees, their safety representatives or both, as appropriate, in advance and in good time regarding issues which affect the safety of employees.

Section 26 (2) of the Act states that:

- “Employees shall have the right to make representations to and consult their employer on matters of safety, health and welfare in their place of work”.
- This representation may be made through the Safety Representative, The Safety Committee or on an individual basis directly to management.
- Matters relating to safety should always be discussed initially with the appropriate Supervisor/Manager. Items may be referred to the site Safety Representative or the Safety Committee when, in the opinion of the employee, the initial response of management is felt to be unsatisfactory, or when corrective action agreed by management is not implemented within a reasonable time.

6.1. Safety Consultation:

- Consultation is an important part of safety management and Mr. Binman welcomes the views of employees. Mr. Binman consults its employees for the purpose of establishing and maintaining arrangements which will enable employees to co-operate effectively in promoting and developing measures to ensure their safety, health and welfare at work and in ascertaining the effectiveness of such measures.
- Matters relating to safety should always be discussed initially with the appropriate department manager.
- Items may be referred to the Safety Representative or the Safety Committee when, in the opinion of the employee, the initial response of the management is felt to be unsatisfactory, or when corrective action agreed by management is not implemented within a reasonable time.
- This representation may be made through the site Safety Representative, the Safety Committee or on an individual basis.
- Mr. Binman through the Safety Committee will annually review the effectiveness of the consultation /communication process.
- All Employees are entitled to make representations to and consult their Site Manager on matters of safety, health and welfare in their place of work.
- Mr. Binman will take into account of any representations made by employees as far as is reasonably practicable.
- Mr. Binman has established Safety Committees, whose function it is to discuss the progress of the safety management program set down in the Safety Statement. The Safety Representatives are members of these committees. The Safety Committees enable management and employees to consult each other on all aspects relating to safety, health and welfare at work.



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6.2. Safety Representative:

- Employees have the right under Section 25 of the Safety, Health and Welfare at Work Act, 2005, to select a safety representative to represent them in matters of safety, health and welfare at work. It has been agreed in consultation with the Trade Unions to select the safety representative(s) by secret ballot. It is recommended that the person(s) selected shall hold the position for a period of three years in order to maintain continuity of the safety program.
- “Employees may, from time to time, select and appoint from amongst their number at their place of work a representative (in this Act referred to as the “safety representative”) to represent them in consultations with their employer”.
- The safety representative has the right to such information from Mr. Binman Ltd as is necessary to ensure, so far as is reasonably practicable, the safety and health of employees at the place of work.
- Mr. Binman will take such steps as are practicable to inform the safety representative when an inspector of the Health and Safety Authority (HSA) enters the workplace for the purpose of making a tour of inspection, (other than a tour of inspection for the purpose of investigating an accident).
- The site safety representative will be a member of the site Safety Committee.
- The safety representative may:
 - Make representations to the Department Head or the Safety Committee on any aspects of safety, health and welfare at the place of work;

A safety representative may:

- a) Make representations to the department head or safety committee.
- b) Investigate accidents and dangerous occurrences provided that he or she does not interfere with or obstruct the performance of any statutory obligation required to be performed by any person under any of the relevant statutory provisions.
- c) After the giving of reasonable notice to the employer, investigate complaints relating to safety, health and welfare at work made by any employee whom he or she represents.
- d) Accompany an inspector who is carrying out an inspection of the place of work under section 64 other than an inspection for the purpose of investigating an accident or dangerous occurrence.
- e) At the discretion of the inspector concerned, accompany an inspector who is carrying out an investigation under section 64 for the purpose of investigating an accident or dangerous occurrence.
- f) At the discretion of the inspector concerned, where an employee is interviewed by an inspector with respect to an accident or dangerous occurrence at a place of work, attend the interview where the employee so requests.
- g) Make representations to the employer on any matter relating to safety, health and welfare at the place of work.
- h) Make oral or written representations to inspectors on matters relating to safety, health and welfare at the place of work, including the investigation of accidents or dangerous occurrences.
- i) Receive advice and information from inspectors on matters relating to safety, health and welfare at the place of work, or
- j) Consult and liaise on matters relating to safety, health and welfare at work with any



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other safety representative who may be appointed in the undertaking concerned, whether or not those safety representative work in the same place of work, in different places of work under the control of the employer or at different times at the place of work.

- k) It is important to be aware that the Elected Safety Representative supports the safety and well being of all employees.
 - l) The Safety Representatives are charged with various tasks and responsibilities. The fact that the Safety Representatives have accepted responsibilities in no way releases any other individual from their own statutory obligations.
 - m) Mr. Binman Ltd shall consider any representations made by the safety representatives on any matter affecting the safety, health and welfare at work of any employee whom s/he represents.
 - n) For the purpose of acquiring the knowledge and training necessary to discharge his/her function as a safety representative, s/he shall be granted time off from his/her duties as may be reasonable without loss of remuneration.
- Mr. Binman Ltd shall grant the safety representative such time off from his/her duties as determined by the department head, without loss of remuneration in order to discharge his/her function as a safety representative.
 - The safety representative is a member of the Safety Committee. As a member it is his/her function to put forward any representations or recommendations on behalf of the employees on the subject of safety, health and welfare at work.
 - Any queries which employees may have in relation to safety, health or welfare at work should be initially addressed to their supervisor. If unresolved the issue should be addressed to the site Operations Manager who shall record the query/complaint and outcome in writing. If the issue cannot be resolved, the matter may be referred to the safety representative. Where the issue remains unresolved, it may be raised at the next meeting of the Safety Committee.

6.3. Information and Consultation:

- Any developments or alterations to the safety arrangements in operation in Mr. Binman Ltd shall be brought to the attention of employees via a memorandum or email issued by the Chief Executive.
- All employees' members are provided with a copy of the appropriate sections of safety statement and any revisions as applicable.
- Copies of the minutes of the meetings of the Safety Committee will be displayed on the safety notice boards.
- Safety notices are placed in prominent positions throughout Mr. Binman facilities and employees should read these carefully.
- All records of statutory safety inspections and Technical Services schedules relevant to safety systems, are available to the safety representative on request to the Engineering Department and the Health and Safety Manager.
- The safety statement will be available on the Mr. Binman Intranet.



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7. Accidents & Emergencies

In the event of a personal injury on site the following steps should be followed:

- If the injured person is immobilised the emergency services should be contacted immediately. A first aider should be called to the scene and the injured party made as comfortable as possible pending the arrival of the emergency services.
- The Operations Manager and the Safety Officer should be contacted immediately and informed of the incident they in turn should inform the General Manager and the Group Health & Safety Manager.
- If the injured party is mobile they should be removed immediately to a place of comfort and safety (e.g. canteen or office) and a first aider should be called to assist. The first aider should assess the injury and inform the supervisor if the injured party can be treated on site or if it is necessary for them to go to Accident & Emergency. The site Operations Manager and the Site Safety Officer should be contacted immediately and informed of the incident they in turn should inform the General Manager and the Group Health & Safety Manager.
- If it is deemed necessary for an employee to go to A&E, the injured person must not be allowed to leave site and arrangements must be made to bring the injured person to A&E without delay.
- If an injury is not reported immediately but reported later in the day or any period thereafter the individual may be required to attend A&E immediately. The individual will be required to attend a scheduled appointment with the company Occupational Health Advisors.

7.1. Accident and Near Miss Reporting:

- The goal of Mr. Binman Ltd management is to provide an Incident and Injury Free working environment for all our employees, contractors, visitors and all those affected by our actions.
- The Operations Manager/Senior Manager is responsible for ensuring that all accidents and incidents are reported verbally to the Health & Safety Manager immediately or as soon as is reasonably practical after the incident.
- The Operations Manager/Senior Manager or Site Safety Officer must insure that the Incident/Accident report form is completed and sent to the Health & Safety Manager with copies to HR and Finance (Insurance section) within 24 hours.
- It is important to monitor the accidents and near misses that occur within the confines of any of the Mr. Binman Ltd facilities.
- In the case of an accident involving injury however slight an employee must report it immediately to their supervisor and give full details. Mr. Binman Ltd will investigate the circumstances of accidents and determine their cause. Employees will be encouraged and expected to fully co-operate with such investigations. Employees have a responsibility to report as soon as possible any accident or emergency to the Supervisor/Manager.
- Where there is a dangerous occurrence, fire explosion or a serious near miss it is the responsibility of the Health and Safety Manager to ensure that the form IR3 form is completed and forward to the HSA.
- In the case of a dangerous occurrence (defined below) or if injury occurred as a result of the accident that necessitates the injured party to be absent from work for more than three days then it is the responsibility of the Health and Safety Manager to ensure that the form IR1 form is completed and forward to the HSA.
- Copies of all completed Accident/Incident Report Forms will be kept in the employees file.
- All accidents and near misses will be recorded in an accident data base.
- Copies of accident/incident reports will also be maintained on each site for inspection as required.



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7.2. Accident Investigation:

- Within 24 hours of an accident requiring medical treatment a full incident report will be required after the Accident/Incident.
- The Health and Safety Manager in liaison with the Senior Manager shall conduct any investigations (accompanied by the Safety Representative if requested). The Operations/General Manager shall complete a report on same. The Engineering Department will provide any required technical advice. All employees are obliged to co-operate with such investigations and to provide any information which may be useful in establishing the circumstances surrounding the accident/dangerous occurrence.
- The purpose of any investigation will be to:
 - Determine the root cause of the accident.
 - Identify any other contributory factors.
 - Determine the steps to be taken to prevent reoccurrence.
- A record of any accident or dangerous occurrence will be recorded and maintained with the purpose of reducing the risk of a similar situation arising.
- Accident and emergency procedures, reports and investigations are seen as an essential part of the safety management programme within Mr. Binman Ltd.
- Risk assessments will be revised where necessary as a result of accident/incident investigations.

7.3. Dangerous occurrence:

“Dangerous occurrence” means an occurrence arising from work activities in a place of work that causes or results in—

- (a) The collapse, overturning, failure, explosion, bursting, electrical short circuit discharge or overload, or malfunction of any work equipment,
- (b) The collapse or partial collapse of any building or structure under construction or in use as a place of work,
- (c) The uncontrolled or accidental release, the escape or the ignition of any substance,
- (d) A fire involving any substance, or any unintentional ignition or explosion of explosives,

8. Welfare and First Aid

Mr. Binman Ltd is committed to ensuring the welfare as well as the safety and health of all employees. To this end, Mr. Binman Ltd provides the following facilities:

8.1. Welfare:

For the purposes of safeguarding and improving the health and welfare of all employees the organisation shall provide the following:

- Adequate Hygiene Facilities.
- Adequate Canteen Facilities.
- Access to Medical Facilities/Personnel.
- Pre-employment medicals.
- Inoculations as appropriate
- Availability of trained First Aiders.
- Monitoring of Attendance and Absenteeism.

Washing, toilet/shower and cloakroom facilities are provided in each site/work area. The employees eating room and drying area will be made available to all employees.



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8.2. First Aid:

Any minor wounds will be attended to on site. Where injuries require medical attention employees will be required to attend A&E or the companies Occupational Health Advisors (See section 7.0 Accidents and Emergencies Near miss for further details).
The exact location of the first aid box should be known by all employees in each department/work area.

8.3. Drugs, medication and alcohol:

1. If you are prescribed drugs or medication that may affect your ability to carry out your work, you must inform your Supervisor.
2. In the event of an employee who is receiving medication having an accident that requires hospital treatment, this information should be given to the hospital so that the correct treatment can be given.
3. Mr. Binman Ltd is committed to providing its employees with a drug and alcohol free workplace.
4. Employees shall not be under the influence of, use, distribute, possess, sell or purchase illegal drugs or alcohol while performing work for the company or on the company premises. Violations will result in disciplinary action up to and including termination of employment.
5. Employees may be asked to undergo a blood test where there is reasonable suspicion on the part of a Supervisor or Manager that an employee may be under the influence of an intoxicant or illegal drug.
6. Employees are reminded that they must not refuse any reasonable request to undergo such a test.

9. Pregnant Employees

Mr. Binman Ltd is aware of its obligations, under the Safety, Health and Welfare at work regulations SI No 218 of 2000, to pregnant employees and those who may be breast feeding or have recently given birth.

Mr. Binman Ltd will assess in writing any risk to the safety and health of pregnant employees, employees who have recently given birth and breastfeeding employees from any activity leading to risk of exposure to mother and child.

Mr. Binman Ltd will determine the nature, degree and duration of any exposure and take the preventative and protective measures necessary to ensure the safety and health of :-

- The employee herself.
- The unborn child of the pregnant employee.
- The child of a breastfeeding employee.

9.1. Preventative Actions:

Where the Risk Assessment carried out reveals that it is not practicable to ensure the safety or health of the employees concerned through protective or preventative measures Mr. Binman Ltd will:

- Adjust temporarily the working conditions or the working hours of the employee concerned so that exposure to risk is avoided or
- Provide the employee with other work which does not present a risk to safety or health or If either of the above is not feasible then employee leave should be granted or the period of maternity leave extended.



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While taking account of the Health Surveillance requirements laid down in Part II of the General Application Regulations 1993 and other requirements listed in the:

- Biological Agents Regulations 1994,
- Carcinogens Regulations 1993,
- Dangerous substance Regulation 1994,
- Chemical Agents Regulations 2001,
- Ionising Radiation Regulations 1991 and 1994,
- Manual Handling of Loads Regulations 1993 General Application,
- Visual Display Screen Regulations 1993 General Application,

9.2. Notification by the Employee

Regulation 3 of the Regulations requires the employee to notify her employer of her condition as soon as practicable after it occurs and to give her employer or produce for her employer's inspection a medical or other appropriate certificate confirming her condition.

10. Harassment & Bullying

10.1. Definition

Bullying in the workplace is repeated aggression, verbal, psychological or physical, conducted by an individual or group against another person or persons. Bullying is where there is aggression or cruelty, viciousness, intimidation or a need to humiliate or dominate relationships.

Policy

Mr. Binman Ltd will not tolerate bullying behavior. Individuals who feel that they are the victims of bullying should contact their supervisor. If they feel they cannot program their Senior Manager they should contact either the Human Resources Department.

The Human Resources Department have a program to assist victims of bullying. Disciplinary action will be taken against any employee or trainee who is in breach of the college anti-bullying policy. Contact Human Resources for more details on the company bullying police.

Effects

The effects of bullying on the person can be manifested by any or all of the following:

- Emotional effects (fear / anxiety)
- Cognitive (concentration) effects (making mistakes, having accidents)
- Behavioural effects (smoking, excess drinking, overeating)
- Physiological effects (contributing to raise blood pressure, heart disease)
- Reduced resistance to infection, stomach and bowel problems and skin problems.
- Depression possibly leading to more serious consequences

The effects on the organisation as a whole:

- Increased absenteeism
- Low motivation
- Reduced productivity
- Reduced efficiency
- Hasty decision-making
- Poor industrial relations.



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Forms of Bullying

Mr. Binman Ltd recognises the following behaviour as forms of bullying:

- Physical contact
- Verbal abuse
- Implied threats
- Jokes, offensive language, gossip, slander, offensive songs.
- Posters, photocopied cartoons, graffiti, obscene gestures, flags, bunting and emblems
- Isolation or non co-operation or exclusion from social activities
- Coercion for sexual favours
- Intrusion by pestering, spying and stalking
- Repeated requests giving impossible deadlines or impossible tasks
- Repeated unreasonable assignments to duties, which are obviously unfavourable to one individual
- Vandalism of personal property (destroying clothing, scratching paintwork or cars)

11. Stress

Definition

Stress occurs in the work place where the pressure of work exceeds the individual's ability to cope. Stress is a natural reaction to excessive pressure it is not a disease. Where stress is excessive and is present for some time it can lead to mental and physical ill health.

Policy

Mr. Binman Ltd recognises its responsibility to ensure that its employees are not exposed to ill health through excessive work related stress.

Mr. Binman Ltd will employ organisational measurers through the department managers to avoid excessive workloads.

Where required Mr. Binman Ltd will provide employee assistance programmes to assist individuals who are suffering from work related stress.

In a situation where an individual feels they are suffering from stress they should contact the Senior Manager.

If they feel they cannot program their department manager they should contact the Human Resources Department directly.

Effects of stress

- Changes in a persons behaviour
- Deteriorating relationships
- Irritability
- Indecisiveness
- Absenteeism
- Reduced Performance



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12. Hazard Identification & Risk Assessments

The risk assessment process involves the following:

- Identifying the significant hazards present in the workplace
- Identifying what groups of people are most affected by those hazards e.g. employees, contractors and visitors.
- Recording the likelihood and severity of injury/illness associated with the hazard. Calculating the risk rating based on likelihood and severity (the risk rating is arrived at by multiplying the likelihood of injury x severity of injury - see below for details).
- Listing the current controls in place, along with responsible members of employees.
- Recommending additional controls in order to ensure that risks are reduced to the lowest level reasonably practicable (see hierarchy of controls below).
- Designating a member of employees to co-ordinate the implementation of additional controls. Stating a date when action should be complete and recording when that action has been completed.
- The length of time specified for implementing control measures will vary and be dependent on the risk rating for the hazard i.e. the higher the risk, the faster action should be taken. If additional control measures reduce the likelihood or severity of injury, a revised risk rating can be recorded.
- Risk assessments should generally be reviewed annually and any necessary amendments made. They should also be reviewed if there is a change in circumstances e.g. new equipment, processes, procedures etc., following an accident or incident and in the event of new legislation, codes of practice or guidance being published.

12.1. Hierarchy of Controls

- The selection and implementation of the most appropriate method of risk or hazard control is a crucial part of the risk assessment process.
- The following hierarchy should be used when deciding on control measures, starting with the first in the list and working down to the last resort, which is the provision of personal protective equipment and clothing.

1. Elimination: Eliminating the hazard entirely from the workplace is the best way to control it. Examples of this would be providing a lifting device, which eliminates the need to carry out manual handling or disposing of unwanted chemicals.

2. Substitution: If not possible to eliminate the hazard, replace it with something less hazardous, which will perform the same task in a satisfactory manner. Examples are substituting a hazardous chemical with a less toxic one or substituting a smaller package or container to reduce the risk of manual handling injuries.

3. Engineering Solutions: If the hazard cannot be eliminated or a safer substitute implemented, then reduce the chance of hazardous contact.

4. Administrative Solutions:

These are the management strategies that can be introduced, training, job rotation, limitation of exposure time, and provision of written work procedures. For example:

- Safe systems of work that reduce the risk to an acceptable level
- Written procedures that are known and understood by those affected
- Adequate supervision
- Identification of training needs and provision of appropriate training
- Information/instruction (signs, handouts)



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5. Personal protective Equipment & Clothing:

Personal Protective Equipment and Clothing should always be considered as a last resort. It can also be used as an interim measure to reduce exposure to a hazard. Examples of PPE include: masks, ear-plugs, respirators, helmets, boots, safety shoes, overalls, etc

Summary

The most effective way to control risk is obviously to remove it. Elimination is by definition 100% effective. The further you go down the list the less effective the methods become. Training for example has been estimated as being only 10% effective.

It is also worth bearing in mind that the amount of management and supervisory effort needed to maintain the controls is in inverse rank order. In other words, item 5 takes the most effort to maintain and item 1 the least effort.

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Risk Assessment Method Used

(Likelihood (L) x (S) Severity) = Risk Rating (RR)

Priority Table

Severity Effect

| | Slightly Harmful | Harmful | Very Harmful |
|---------------|------------------|---------|--------------|
| Unlikely | 1 | 2 | 3 |
| Likely | 2 | 4 | 6 |
| Very Unlikely | 3 | 6 | 9 |

| Slightly Harmful | Harmful | Very Harmful |
|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Superficial Injuries Minor Cuts & Bruises Eye Irritation from Dust Nuisance & Irritation Temporary Discomfort | Lacerations Burns Concussion Serious Sprains Minor Fractures Deafness Dermatitis Asthma Minor Disability | Amputation Major Fractures Poisoning Fatal Injuries Occupational Cancer Severely Life Shortening Disease Fatal Disease Head Injuries Eye Injuries |

Risk Rating Action Required

| Risk Rating | Priority | Action Required |
|-----------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Trivial Risk 1 | Non - Urgent | No action needed. |
| Acceptable Risk 2 | Non - Urgent | No additional controls. Monitoring required. Assessment recorded. |
| Moderate Risk 3-4 | Action Needed | Controls required as soon as practical. Assessment recorded. Controls documented. |
| Substantial Risk 6 | Urgent Action Needed | Controls required immediately. Assessment recorded. Controls documented. |
| Intolerable Risk 9 | Urgent Action Needed | Work Prohibited/Ceased Controls required immediately Assessment recorded. Controls documented. Work stoppage documented |



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|--------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---|----|-------------------------------------------------------------------|-----------------------------|--------------|---|----|
| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Company Lorries, Contractors | Injury or Death Collision Entrapment Obstructed Access/Egress | Induction Training Full Driving License holders Traffic Management Plan Traffic Signs Road Markings Supervision PPE Uniforms One way system | 2 | 3 | 6 | Supervision of traffic New Road to site Public Amenity Area | H&S Manager Yard Manager | 2 | 2 | 4 |
| Public Access | Injury or Death Collision Entrapment Obstructed Access/Egress | Traffic Management Plan Traffic Signs Road Markings Supervision One way system | 2 | 2 | 6 | Supervision of traffic New Road to site Public Amenity Area | H&S Manager Yard Manager | 2 | 2 | 4 |
| Noise | Collision | Traffic Management Plan Road Markings Supervision Training | 1 | 2 | 2 | Noise Assessment to be carried out in yard | H&S Manager Yard Manager | 1 | 2 | 2 |
| Pedestrians | Injury or Death Collision Entrapment | Induction Training Traffic Management Plan Traffic Signs Road Markings/Pathways Supervision PPE Uniforms One way system | 2 | 3 | 6 | Re-Training of all staff on traffic Management Plan. | H&S Manager Yard Manager | 1 | 3 | 3 |
| Plant Machinery | Injury or Death Collision Entrapment | Training Traffic Management Plan Traffic Signs Road Markings/Pathways Supervision PPE Uniforms | 2 | 3 | 6 | Re-Training of all plant machinery staff | H&S Manager Yard Manager | 1 | 3 | 3 |

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| Area/Dept./Activity: Traffic Management Assessment | | | Assessment By: Raymond Mulcahy and HSS | | | | | | | |
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| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Emergency Procedure | Injury or Death Confusion Unsafe Work Place | Emergency Plan Procedure Policy and Procedures in place Trained First Aiders Supervision | 1 | 2 | 2 | Review of traffic plan and emergency procedure at monthly meetings. | Management Team | 1 | 2 | 2 |
| Lighting | Injury or Death Collision | Lighting across the site. Cleaned and Checked on weekly basis. | 1 | 2 | 2 | To be documented in a check sheet. | H&S Manager | 1 | 2 | 2 |
| Parking | Obstructed Access/Egress | Designated parking location No Parking sign Traffic Plan | 1 | 2 | 2 | New car park as park of new road layout. | Management Team | 1 | 2 | 2 |
| Training | Injury Collision Entrapment Obstructed Access/Egress | Induction Training Full Driving Licenses | 1 | 2 | 2 | Review of all employee training records. | HR Manager | 1 | 2 | 2 |
| Refueling Area | Slips, Trips and Falls Fire Dermatitis | Controlled Parking Vaccination of staff Restricted access to pumps Bonding of tanks No Smoking Emergency spill kits Emergency plan procedure | 1 | 2 | 2 | Review of traffic plan and emergency procedure at monthly meetings. | Management Team | 1 | 2 | 2 |
| Housekeeping | Slips, Trips and Falls Fire | Housekeeping procedure in place Road Sweeper on site Supervision | 1 | 2 | 2 | Review housekeeping procedure | H&S Manager Yard Manager | 1 | 2 | 2 |



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| Area/Dept./Activity: Offices | | | Assessment By: Raymond Mulcahy | | | | | | | |
|--------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---|----|-------------------------------------------------------------|--------------------------------|--------------|---|----|
| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Visual Display Unit's | Repetitive Strain Injury, Eye Strain/Fatigue, Tiredness, Headache, Aches. | Ergonomic Workstations. VDU equipment is flexible and adjustable. Anti Glare Screens Fully adjustable chairs are provided Employees take regular and short breaks from VDU equipment | | | 2 | Manual Handling course designed on office area. | H&S Manager | 1 | 2 | 2 |
| Lifting Heavy Stationary. | Manual Handling Injuries – Back/Neck Trips, Falls | Follow Manual Handling techniques to lift, carry, put down, push, and pull safely. If an item is too heavy or awkward, get help. Always check the area first to look for and obstructions before undertaking manual handling. Use mechanical aids where possible. | 1 | 2 | 2 | Refresher Manual Handling Training plan to be put in place. | H&S Manager | 1 | 2 | 2 |
| Electricity | Electrocution, Fire, Trips from cables, Burns | Never carry out electric work yourself (ask the electrician). Never overload sockets. Check electric equipment before use and report defects. Plug out unessential electric equipment at night. Avoid trailing cables/ Run cables in a manner least likely to pose a trip hazard. | 1 | 2 | 2 | | | 1 | 2 | 2 |
| Filing Cabinets | Fall, Trip, Collapse, Manual Handling. | Always fill the bottom drawers first and empty them last. Never try to open two drawers at the same time. Never leave filing cabinet drawers open. Always follow correct Manual Handling procedures. | 1 | 2 | 2 | Review of current storage locations. | H&S Manager and Office Manager | 1 | 2 | 2 |



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| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Tippex Fluid/Photocopier Chemicals | Respiratory illness due to inhaling vapours. Skin Irritation, Illness due to inhaling toner dusts etc., Electrocutation, Fire | Use tippex in a well-ventilated area and avoid inhaling vapours. Keep the lid firmly on when not in use. Handle photocopy chemicals with care in accordance with manufacturer's instructions. Always read the label first. Photocopier is sited in a well-ventilated area. Staff is advised to copy with the lid down. Photocopiers are maintained in good condition and serviced periodically. | 1 | 2 | 2 | Chemical Awareness Training to be given as part of safety induction. | H&S Manager | 1 | 2 | 2 |
| Shredder | Cuts, Wounds | Sited in a secure location. Keep hands and fingers well away from blades. Maintained in good condition. | 1 | 2 | 2 | | | 1 | 2 | 2 |
| Fire | Burns, Smoke inhalation, Damage to property, Death. | Never smoke in prohibited areas and obey all no smoking signs. Keep papers away from electrical appliances. Never overload electric outlets. Keep fire exits and fire fighting equipment free from obstruction. Follow fire evacuation procedures in the event of fire. | 1 | 2 | 2 | | | 1 | 2 | 2 |
| Scissors/Sharps | Cuts, Wounds | Take great care when using sharps. Only use a safety cutter (with retractable blade) – never an ordinary blade. Only use safety drawing pins. | 1 | 2 | 2 | | | 1 | 2 | 2 |



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| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| | | Always store sharps pointing down. First Aid Box available. | | | | | | | | |
| Access to high shelves | Fall, Back Injury, Head Injury. | Always use a step ladder when to access high shelves Never overstretch to reach an item out of your reach. Always follow correct Manual Handling procedures. | 1 | 2 | 2 | | | 1 | 2 | 2 |
| Security | Assault | Security Procedures in Place. CCTV (24hr) in operations. Key code locks to all doors. Consultation with Garda. Direct debit / online payments postal options | 1 | 2 | 2 | | | 1 | 2 | 2 |

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| Area/Dept./Activity: Canteen & Cleaning Jobs | | | Assessment By: Raymond Mulcahy | | | | | | | |
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| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Hot Water Dispenser | Burns, Scalds | Be extra careful when carrying hot liquids and warn others in your path. | 1 | 2 | 2 | Notice to be placed warning of hot surface. | | 1 | 2 | 2 |
| Deep Fat Fryer | Burns, Scalds, Electrocutation and Fire | To be used by experienced/trained personnel only. Maintain in good condition. Do not top up deep fat fryers with oil from large containers. Lower food into the fat slowly. Ensure oil is left to cool and fat fryers plugged out before cleaning. Never leave deep fat fryers unattended. Cleaned on a regular basis. Avoid filling pan beyond recommended oil level. Ensure food is dried before immersing into oil to prevent frothing and subsequent overflowing. Fire blanket and extinguisher provided. Plug out when unattended. | 1 | 2 | 2 | Notice to be placed warning of hot surface. | | 1 | 2 | 2 |
| Hob | Burns, Scalds, Electrocutation and Fire | To be used by experienced/trained personnel only. Maintained in good condition and cleaned on a regular basis. Never leave cooking unattended. Always turn pot handles inwards so they don't overlap the edge of the hob. Keep your face well clear when opening lids on pots. Fire blanket and extinguisher provided. | 1 | 2 | 2 | Notice to be placed warning of hot surface. | | 1 | 2 | 2 |



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| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Toaster | Burns, Electrocutation and Fire | Maintained in good condition. Beware of hot surface – “Do not touch” sign displayed on it. Fire blanket and extinguisher provided. Plug out when unattended. | 1 | | 2 | Notice to be placed warning of hot surface. | | 1 | 2 | 2 |
| Knives | Cuts, Wounds | Never leave a knife lying about and especially not in water. Never walk around with a sharp knife in your hand. Ensure knives are kept sharp. Ensure knives are placed under counter when not in use. Always chop on a board and never in the hand. | 1 | 2 | 2 | | | 1 | 2 | 2 |
| Microwave | Burns, Scalds, Electrocutation | To be used by experienced/trained personnel only. Maintain in good condition. Cleaned on a regular basis. Shield yourself from steam when uncovering microwave food servings. | 1 | 2 | 2 | Notice to be placed warning of hot surface. | | 1 | 2 | 2 |
| Floors | Slips, Trips, Falls | Ensure floors are kept clean and always mop up spillages immediately. Floors should not be over polished. | 1 | 2 | 2 | Floors to be cleaned after sittings and wash notice in place. | | 1 | 2 | 2 |
| Electricity | Electrocutation, Fire | Always unplug electrical appliances before cleaning them. Never plug in or unplug electric appliances with wet hands. Plug out unessential electric appliances at night. Never carry out electric work yourself (call the | 1 | 2 | 2 | | | 1 | 2 | 2 |



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| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| | | electrician). Fire blanket and extinguisher provided. | | | | | | | | |
| Detergents/Cleaning Agents | Skin irritation, Eye injuries due to splashes | Always wear rubber gloves provided when using cleaning agents. If your skin comes in contact with a chemical agent, wash immediately with lukewarm water. If a splash of chemical causes an eye injury, contact a first aid person immediately. Store chemical agents with the lids tightly secured in labeled containers. | 1 | 2 | 2 | | | 1 | 2 | 2 |

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| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Access for unauthorised personnel | Exposure to harm due to presence of the activities | Camera in plant room. | 1 | 3 | 3 | Investigate restricting access (– possibly locking outside normal operating hours) Signage indicating only authorized personnel | | 1 | 2 | 2 |
| Manual Handling | Abdominal hernias. Fatigue leading to accidents Injuries from sudden exertion | Training and revision in manual handling techniques is provided to employees who are required to handle or lift loads in the course of their duties. A two-man lift or a lifting aid is utilized for large/bulk items. | 1 | 3 | 3 | Ensure mechanical aids are used and re-training as appropriate is undertaken. | | 1 | 2 | 2 |
| Tools / Machinery | Entanglement Cuts/Punctures Electric shock, Lacerations, Damage to hearing lung damage from airborne dusts. | Loose fitting cloths, gloves and jewelry (exp wedding bands) are forbidden when operating machines. All operators wear safety boots All employees have been instructed in proper manual handling techniques and will request assistance when a machine accessory is heavy or awkward. All machinery and equipment is to be subject to routine servicing and regular maintenance and inspection by a qualified and competent person Records are kept of all maintenance and inspections | 2 | 2 | 4 | While maintenance or repair is being carried out on any machine, the power supply to that machine should be isolated and notice posted advising that such work is being undertaken (Lock out/Tag out). Ensure that the maintenance log is updated and current All work, tools, guards and safety devices attached to the machine to be examined for security before the machine is used Use warning signs relating to use and control equipment provided. Ensure Suitable protective equipment and clothing are worn when using portable electrical hand tools. This includes eye and ear protection. When working with | | 1 | 2 | 2 |



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| | | | L | S | RR | | | L | S | RR |
| | | | | | | abrasives for polishing a suitable dust mask is worn. Audit the use and maintenance of all workshop equipment | | | | |
| Abrasive Wheels | Injuries from contact with wheels Cutting and crushing injuries from trapping between the wheel and work rest Eye injuries | The side of the abrasive wheel must never be used for grinding Suitable eye protection is provided. | 2 | 3 | 6 | The use and servicing of the bench-grinding machine must conform to the Abrasive Wheel Regulations. Under the Abrasive Wheels Regulations 1982, all employers using abrasive/grinding wheels must appoint a person to mount and maintain such wheels. This person must be trained in the selection, mounting, operation and storage of abrasive wheels. Ensure that the visors and goggles used are fit for use for high velocity impact protection While grinding, the visor guards are always to be lowered to the correct position and maintained in good condition. Guarding must not be removed from angle grinders Grinding wheels must be changed at intervals in accordance with manufacturers instructions Grinders must only be used only for the purpose they were designed. | | 1 | 3 | 3 |

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| | | | L | S | RR | | | L | S | RR |
| | | | | | | <p>Post notices over bench grinders relating to the correct use and control equipment provided.</p> <p>Disciplinary action must be taken against anyone violate these provisions</p> | | | | |
| Compressed Gas Cylinders | Rupture Explosion Various injuries | <p>Cylinders should be inspected upon arrival for damage.</p> <p>Cylinders must be stored upright and securely fastened with chains.</p> <p>Cylinder valves must always be opened slowly.</p> <p>Cylinders with leaking or damaged connections must not be tampered with. Leaking cylinders must be immediately reported to the Supervisor.</p> <p>Cylinders and valves must be kept clean. Oil or grease must not be allowed to contaminate a cylinder and it's fittings as these can ignite violently in the presence of compressed air or oxygen.</p> <p>Cylinders are color coded according to their contents. Compressed gas cylinders should be labelled with their contents and recognised hazards</p> <p>Most Cylinders are stored outside in areas protected from damage by passing/falling objects, ignition sources, heat, or subject to</p> | 2 | 3 | 6 | <p>Appropriately designed trolleys should be used when transporting cylinders</p> <p>Valve caps should not be used to lift cylinders</p> <p>Equipment, including manifold systems and protection devices, for use with compressed gasses should be maintained</p> <p>Cylinder should never be placed where they can become part of an electrical circuit</p> <p>Gas cylinders containing different materials must be segregated i.e. flammables and oxidising agents are to be segregated</p> <p>Ensure that all gas cylinders have been tested by the manufacture within the previous 5 years (the ring on the collar indicated the last test date)</p> | | 1 | 3 | 3 |



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| | | | L | S | RR | | | L | S | RR |
| | | tampering by unauthorised persons All gas cylinder should be inspected for damage upon arrival and any damaged cylinders moved to a safe location and not to be used | | | | | | | | |
| Welding Operations | Arc Eye, Fire Burns Electrocution Noxious gases, fumes and aerosols leading to lung damage. Some welding sticks carcinogenic | Only Experienced welders are allowed to operate this equipment and apprentices are supervised during instruction. Apprentices are supervised during instruction PPE provided Fire extinguisher present Welding mask/visor in use Electrodes are removed from holders when not in use. Objects are earthed when being worked. Workshop is well ventilated The valves on the oxygen cylinders are kept clear of oil and grease | 2 | 3 | 6 | Enforce the use of appropriate dust masks Staff must check equipment before use and report all damage/defects Do not wear metallic jewellery, rings or watch straps If a leak in the cylinder is discovered, take the cylinder to a safe place in the open air and contact a supervisor to take corrective action Investigate requirement for welding curtains Ensure bottles of Argon are tied to a position preventing them falling. | | 1 | 3 | 3 |
| Portable Electrical tools | Electric shock, Lacerations, Damage to hearing and lung damage from airborne dusts. | Suitable protective equipment and clothing are provided Portable hand tools are only used for the purpose for which they are designed. All portable electrically operated tools must be supplied at 110v. | 2 | 3 | 6 | Ensure Cables, wiring, insulation, plugs and sockets shall all be checked regularly (every six months) for any signs of wear, breakage or damage Use warning signs relating to use and control equipment provided. | | 1 | 2 | 2 |



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| | | | L | S | RR | | | L | S | RR |
| | | Electrical cables and extension leads must be laid out in a neat and tidy fashion to avoid tripping hazards and becoming damaged by other vehicles and equipment. Only trained and competent staff individuals will carry out repairs, service or maintenance on any electrical equipment. | | | | Ensure Suitable protective equipment and clothing are worn when using portable electrical hand tools. This includes eye and ear protection. When working with abrasives for polishing a suitable dust mask is worn. Audit the use and condition of all Electrical equipment | | | | |
| Generator | Fumes, Burns, Electric Shock, and Fire. Back Injury, Neck Injury, Foot Injury, Shoulder Injury. | Do not connect a generator to power systems unless a transfer switch is used. Always run the generator outdoors. Do not make connections to the generator when it is running or during conditions. Always follow manufacturer's instructions and guidelines. Keep all combustible materials away from generator. Keep generator well maintained. Always perform correct manual handling Procedures in accordance with the manual handling rules. | 2 | 3 | 6 | Audit the use and condition of all generator equipment. Ensure Suitable protective equipment and clothing are worn when using portable generators. | | 1 | 2 | 2 |
| Confined Space | Fume/Gas Inhalation, Breathing difficulties, Unconsciousness, | Before allowing anyone to enter a confined space a risk assessment must be performed by a competent person. Electrical equipment must be securely switched off – lock out the isolating switch. | 2 | 3 | 6 | Confined space training to be instructed. | H&S Manager | 1 | 3 | 3 |



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| | | | L | S | RR | | | L | S | RR |
| | Entanglement, Entrapment. | <p>Testing of a confined space must be carried out so that it can be certified that it is safe to enter.</p> <p>Where work is going on inside a confined space and no breathing apparatus is being used an adequate supply of respirable air must be maintained.</p> <p>When breathing apparatus is required as a result of the risk assessment and the testing of the air, this breathing apparatus (self contained BA) must be worn by the person working in the confined space.</p> <p>A lifeline and harness should be worn by the worker.</p> <p>Equipment and trained persons must be available at all times for rescue.</p> <p>Rescuers must not enter a confined space unless they are wearing breathing apparatus.</p> | | | | | | | | |
| Electric Current/Electrical Room | Electrocution, Burns | <p>Must be kept locked at all times.</p> <p>Only Authorized/Qualified Electrical staff permitted entry.</p> <p>Always comply with electricity rules.</p> <p>Never leave unprotected/exposed electrical cables</p> | 2 | 3 | 6 | | | 1 | 3 | 6 |



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| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Working on Vehicle in Garage | Crash, fumes, fire | <p>Ensure the handbrake is applied or the wheels are securely chocked to prevent the vehicle moving forwards or backwards.</p> <p>If the engine is to run, ensure there is adequate ventilation, or an extraction hose is present to remove exhaust gases.</p> <p>Ensure there is adequate room to jack-up the vehicle and remove the wheels.</p> <p>Ensure the battery is disconnected if working on the engine underneath the vehicle, or the vehicle is jacked up.</p> | | | | | | | | |
| Vehicle Jacking | Collapse | <p>Always position the vehicle on a hard level surface.</p> <p>If the vehicle must be jacked up on a surface, use load-spreading blocks under the jack and chassis stands.</p> <p>Always ensure that the jack is of sufficient capacity to lift the load.</p> <p>Always securely chock the wheels of the axel remaining on the ground to prevent the vehicle moving.</p> | | | | | | | | |
| Using Axel Stands. | Collapse | <p>Axle stands must always be used to support a jacked up vehicle when working near to or inboard of the road springs on the axle.</p> <p>Two stands of equal height and adequate load capacity should be used for each axle.</p> <p>Always use only the correct, designed adjusting pins in axle stands and check them regularly for straightness and damage.</p> | | | | | | | | |



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| | | | L | S | RR | | | L | S | RR |
| Disconnecting a Battery | Shock, Crash, Fume Inhalation | Always stop the engine before disconnecting the battery. Always disconnect the battery before commencing repair operations which require: The vehicle to be jacked-up, Work on the engine, Work underneath the vehicle. Always disconnect the Battery negative (-) lead first. | | | | | | | | |
| Reconnecting a Battery | Shock, Crash, Fume Inhalation | Avoid creating sparks. Always ensure electrical systems are switched off before reconnecting the battery. Reconnect the Battery positive (+) lead first and the negative (-) last, ensuring that there is good electrical conduct and the battery terminals are secure. | | | | | | | | |
| Connecting a Slave Battery using Jump Leads. | Shock, Explosion. | Ensure jump leads are suitable for the task. Ensure the slave battery is of the same voltage as the vehicle battery and is only connected in parallel (positive to positive and negative to negative terminals). Always ensure the electrical circuits are switched off before connecting jump leads. Always connect the jump leads in the following sequence: Vehicle battery positive first, the slave battery positive. Vehicle battery negative next, and then slave battery negative last. Ensure that the ends of the jump leads are not allowed | | | | | | | | |



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| | | | L | S | RR | | | L | S | RR |
| | | to touch each other or to earth (the vehicle body) at any time while the leads are attached to the battery. Always reduce the engine speed to idling before disconnecting the jump leads. Always disconnect the jump leads in reverse order to the connecting sequence. | | | | | | | | |
| Chemicals - General | Toxic, Corrosive, Irritant, Sensitive, Highly Flammable. | Wear protective clothing and equipment supplied. Remove chemical materials from skin and clothing after soiling. Carefully read and observe hazard and precaution warnings given on material container labels and in MSDS, posters or other instructions. Organize work practices and clothing to avoid soiling skin and eyes; breathing vapours/aerosols/dusts/fumes; inadequate container labeling; fire and explosion hazards. Wash before job breaks, before eating, smoking, drinking, before and after using toilet, or handling chemical materials. Keep work areas clean, uncluttered and free of spills. Segregate chemicals of different types. Do not mix chemical materials except under manufacturer's instructions. Do not spray chemical materials in confined spaces. Do not apply heat or flame to chemical materials except under manufacturer's instructions. | | | | | | | | |



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| | | | L | S | RR | | | L | S | RR |
| | | Do not leave containers open. Do not transfer chemical materials to unlabelled containers. Do not clean hands or clothing with chemical materials. Do not use empty chemical containers for other materials. Do not sniff or smell chemical materials. | | | | | | | | |
| Acids & Alkaline's | Irritant, Corrosive, Burns | Avoid splashes to the skin, eyes and clothing. Wear gloves, goggles, aprons and Wellingtons as appropriate. Do not breathe mists. Always follow manufacturer's instructions. Skin and eye contact should be avoided by wearing gloves and eye protection. Use in well ventilated areas only. | | | | | | | | |
| Adhesives & Sealers | Highly Flammable, fumes, Irritant, Burns. | No Smoking in the vicinity of Adhesives and Sealers. Keep away from sources of ignition. Containers should be labeled. Fire extinguisher available. Always use correct P.P.E. | | | | | | | | |
| Brake & Clutch Fluids | Combustible, Irritant | Avoid splashes to skin and eyes by wearing eye protection and gloves. | | | | | | | | |
| Lubricants & Greases | Irritant, Skin Cancer | Avoid all prolonged and repeated contact. Wash skin thoroughly after work involving oil. Avoid eye contact. Do not allow work clothing to become contaminated with oil – Dry-clean or launder such clothing at regular | | | | | | | | |



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| | | | L | S | RR | | | L | S | RR |
| | | intervals and discard oil-soaked shoes. Used oil must be disposed of in accordance with local and national regulations. | | | | | | | | |
| Solvents (Cleaning Materials, Paints, Plastics, Resins, Thinners, Etc...) | Irritant, Highly flammable, Respiratory problems, Eye Injury. | Avoid repeated or prolonged skin contact – wear gloves. Avoid eye contact by wearing eye protection. Do not breathe vapours or mists – wear respirator. Keep containers tightly sealed. When spraying use extraction ventilation or self contained breathing apparatus. Keep away from sources of ignition | | | | | | | | |
| Petrol | Highly Flammable, Irritant | Petrol must not be used as a cleaning agent. Avoid skin and eye contact. Avoid inhaling petrol fumes. Ensure there is adequate ventilation when handling and using petrol. Petrol must not be siphoned by mouth. | | | | | | | | |
| Paraffin | Flammable, Irritant | Avoid skin and eye contact. Exposure to mists and vapours from paraffin at elevated temperatures should be avoided. | | | | | | | | |
| Diesel | Combustible, Skin disorders | Keep away from sources of ignition. Avoid skin contact. | | | | | | | | |
| Gas (LPG) | Combustible | Smoking near LPG is strictly forbidden. L.P.G. Regulations should be adhered to at all times. | | | | | | | | |
| Brake, Clutch Lining & Pads | Lung Damage | Because these items may contain asbestos, any drilling, grinding or filing should be carried out under strictly controlled conditions. | | | | | | | | |



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| | | | L | S | RR | | | L | S | RR |
| | | Self-contained breathing apparatus should be worn if dust is formed. Air jets should not be used to blow out dust from brake drums. | | | | | | | | |
| Electricity | Electrocution, Fire | Ensure that electrical equipment is maintained in good condition and frequently tested. Ensure flexes, cables, plugs and sockets are not frayed, kinked, cut, cracked or otherwise damaged. Ensure electrical equipment is adequately protected by the correctly rated fuse and the installation, as appropriate, of earth leakage circuit breakers, residual current devices etc. | | | | | | | | |
| Exhaust Fumes | Toxic | Engines should only be run under conditions of adequate local extraction and never in a confined space. | | | | | | | | |
| Fan Blades | Amputation, Cuts, Wounds | Never stand in the line of a revolving fan. Keep fingers away from blades. Remove battery ground clamp before working on fan. | | | | | | | | |
| Gas Cylinders | Explosion | Avoid mechanical damage to gas cylinders. Store in well-ventilated enclosures. Protected from ice, snow and sunlight. Avoid sources of ignition. Check fittings on a regular basis for leaks. | | | | | | | | |
| Garage Tools & Equipment. | Cuts, Wounds, Collapse, Eye injuries | Ensure tools and equipment is well maintained. Use correct safety equipment. Never use tools for any purpose other than which they were designed for. Never overload equipment such as hoists, jacks, chassis | | | | | | | | |



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| | | | L | S | RR | | | L | S | RR |
| | | stands etc. | | | | | | | | |
| High Pressure air, Lubrication & Oil Testing Equipment. | Serious personal injury | Always keep high-pressure equipment in good condition and regularly maintained, particularly at joints and unions. Never direct a high-pressure nozzle at the skin. Compressor safety valve settings must be checked on a regular basis by a "competent person" as should the pressure gauges on all associated equipment. A safety cage must be used when inflating truck or tractor tyres, which are not fitted to the vehicle. | | | | | | | | |
| Radiator Pressure Cap | Face Injuries, Burns | Always let the radiator cool down before removing cap. When removing a pressure cap: Always place a protective rag over the cap. Always stand to one side. Always open cap to the safety stop and wait for the steam pressure to subside. | | | | | | | | |
| Suspended Loads/Manual Handling | Manual Handling injuries, Collapse | Never work under an unsupported, suspended or raised load. The lifting and carrying of heavy weights by individuals should be avoided. – Use mechanical aids or seek assistance. Follow correct Manual Handling Procedures. | | | | | | | | |
| Welding | Eye Injuries, Burns | Protect eyes and skin when resistance welding – wear gloves and shield Avoid inhaling fumes. Boiling or steaming out of fuel tanks must occur before welding takes places on vessels that contain combustible | | | | | | | | |



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| | | | L | S | RR | | | L | S | RR |
| | | materials. All such vessels must be gas freed. | | | | | | | | |
| Grinding | Cuts, Wounds, Eye Injuries, Hearing Damage | Ensure guard is in place before starting. Always wear eye protection and protective gloves. Wear ear protection. Never leave the angle grinder down until it has completely stopped. | | | | | | | | |
| Abrasive Wheels | Eye Injuries, Cuts, Wounds, Entanglement. | Always check that guards are in place and the working rests before starting. Always adjust the guards as required. Always wear eye protection. Keep loose clothing and jewellery away from moving parts. Never dig a groove into the wheel. Always dress down the wheel if required. Always carry out a "ring" test before fitting a new wheel. | | | | | | | | |



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| | | | L | S | RR | | | L | S | RR |
| Tipping Glass into skips/hoppers - Bobcat | Crash, Fall, Collapse, head Injury. | Never stand under a load always wear Protective Head Gear. Total load must not exceed 50% of Bobcat capacity. Bobcat drivers must follow safety rules for Bobcats In Appendix B. When unloading rest the nose of the container on the skip edge and release the handle. Raise forks to tip load. | | | | | | | | |
| Conveyors/Glass | Entanglement, Electrocutation, Cuts, Wounds, Eye Injury. | Only employees familiar with operating instruction – manufacturer’s guidelines are permitted to operate conveyors. Emergency stop buttons in place. Always turn off conveyors before attempting to clear blockages. Never stand on conveyors. Stand well back from moving conveyors. Never wear loose fitting clothes when working in the vicinity of conveyors. | | | | | | | | |
| Glass | Cuts, Wounds, Eye Injury | Operators working in the Glass Plant must wear eye protection & Hand Protection at all times. Glass Pickers must wear cut-resistant gloves. Operators working in the Glass Plant must wear footwear with steel toecaps and Non-slip soles. A protective screen is in place to prevent glass from being dispersed into other work areas. | | | | | | | | |
| Clearing Blockages (Vibrating Screen) | Entanglement, Electrocutation, Cuts, Wounds , | Ensure screen is isolated before clearing blockages. Always isolate the Vibrating Screen before attempting to clear blockages. | | | | | | | | |



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| | | | L | S | RR | | | L | S | RR |
| | | Use a long handled implement to clear blockages - Never use your hand. | | | | | | | | |
| Cleaning the Crusher, Cyclone, Ceramic Remover | Entanglement, Electrocutation, Cuts, Wounds, Dust, Eye Injury, Head Injury. | Crusher, Cyclone, Ceramic Remover must be isolated before cleaning commences. Wear correct P.P.E at all times. | | | | | | | | |
| Working/Access Platforms and Stairs | Fall, Trip, Slip | Working/Access Platforms and stairs are hand railed. Keep Working/Access Platforms, Stairs and floors free from obstructions. Position leads/cables in a manner least likely to pose a trip hazard. | | | | | | | | |
| Glass Raking | Cuts, Wounds, Cold/Wet Environment, Slips, Trips, Falls, Dust. | Operators raking glass must wear eye/dust protection at all times. Operators raking glass must wear cut-resistant gloves. Operators raking glass must wear footwear with steel toecaps and Non-slip soles. Raingear and thermal clothing must be worn in wet and cold weather. Stand well back from conveyor transfer. | | | | | | | | |
| Transferring Glass and Cans | Crash, Collapse, Head Injury, Collision. | Only Certified/Trained Drivers operate Forklift Trucks / Bobcats and make full use of warning signals. Keep a sharp lookout for Forklift Trucks/Bobcats/Pedestrians. Ensure correct attachment is used and is securely fixed. | | | | | | | | |



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| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| | | Never overload the attachment. | | | | | | | | |

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| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Refuse tipped by Bin Truck | Crash, Personal Injury, Collapse, Head Injury, Eye Injury, Fire. | <p>Always keep a sharp lookout and stand well clear of the Bin Truck.</p> <p>Employees wear high P.P.E at all times.</p> <p>Bin Truck Drivers/Helpers must follow safety rules for Vehicles/Driving.</p> <p>All Vehicles are to adhere to the one-way system around Boa-Plant ; except Loading Shovels, Bobcats and Teleporters.</p> <p>Helpers are to :</p> <ul style="list-style-type: none"> To stay with Vehicles until load tipped. To notify Bob-Cat driver of presence. To direct driver into position. To stay well clear when emptying and to ensure other personnel are well clear. To ensure that container is closed securely before moving off. No "Ride-on Lifts" while trucks are in motion. <p>All trucks are to be kept clean.</p> | | | | | | | | |
| Bobcat moving refuse onto conveyor. | Crash, Collapse, Personal Injury, Head Injury, Dust/Fumes, Eye Protection. | <p>Driver to follow safety rules for Forklifts/Bobcats under Arrangements No 14 & Appendix B.</p> <p>Always keep a sharp lookout and stand well clear of the Bobcat.</p> <p>Employees wear P.P.E at all times.</p> | | | | | | | | |
| Employee pushes refuse onto conveyor. | Cuts, Wounds, Entanglement, Bacteria, Exposure to Odours , Head Injury, Eye Injury, | <p>Employees wear P.P.E at all times..</p> <p>Keep brush well away from conveyor.</p> | | | | | | | | |



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| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| | Fire. | | | | | | | | | |
| Conveyors | Entanglement, Electrocution, Head Injury. | Emergency stop buttons in place. Always turn off conveyors before attempting to clear blockages. Never stand on conveyors. Stand well back from moving conveyors. Never wear loose fitting clothes when working in the vicinity of conveyors. Control panel clearly labeled. Employees wear P.P.E at all times. | | | | | | | | |
| Working in Sump. | Confined Space, Electrocution, Personal Injury. Fume/Gas Inhalation, Breathing difficulties, Unconsciousness, Entanglement, Entrapment. | Before allowing anyone to enter a confined space a risk assessment must be performed by a competent person. Electrical equipment must be securely switched off – lock out the isolating switch. Testing of a confined space must be carried out so that it can be certified that it is safe to enter. Where work is going on inside a confined space and no breathing apparatus is being used an adequate supply of respirable air must be maintained. When breathing apparatus is required as a result of the risk assessment and the testing of the air, this breathing apparatus (self contained BA) must be worn by the person working in the confined space. A lifeline and harness should be worn by the | | | | | | | | |



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| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| | | <p>worker. Equipment and trained persons must be available at all times for rescue. Rescuers must not enter a confined space unless they are wearing breathing apparatus. Lighting is adequate for confined space work.</p> | | | | | | | | |
| Working/Access Platforms and Stairs | Fall, Trip, Slip | <p>Working/Access Platforms and stairs are hand-railed. Keep Working/Access Platforms and stairs free from obstructions. Stairs is covered with non-slip material. Floor is non-slip.</p> | | | | | | | | |
| Picking Conveyor | Exposure to Odours, Bacteria, Cuts, Wounds, Entanglement, Electrocutation, Fire. | <p>Emergency stop buttons in place. Always isolate conveyors before attempting to clear blockages. Never stand on conveyors. Stand well back from moving conveyors. Never wear loose fitting clothes when working in the vicinity of conveyors. Picking Operators wear masks, gloves, Safety Glasses, Non-slip steel toe capped Safety Shoes. Employees wear P.P.E at all times.</p> | | | | | | | | |
| Bobcat moving skips from beneath chute. | Crash, Collapse, Head Injuries, Eye Injuries, Dust/Fumes. | <p>Driver to follow safety rules for Bobcats. Ensure the load capacity of the skip is not exceeded. SWL's marked on Skips. Employees to wear P.P.E at all times.</p> | | | | | | | | |



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| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Loading of refuge into Hopper | Crash, Collapse, Head Injury, Eye Injury. | Driver to keep shovel well back from edge of hopper. All other employees to stand well clear. Employees wear P.P.E at all times. | | | | | | | | |
| Transferring Metal/Steel to skips. | Crush, Crash, Being knocked down, Head, Eye Injuries, Manual Handling. | Always keep a sharp lookout and stand well clear of the Bobcat. Driver to follow rules for Forklift Trucks/ Bobcats Employees wear P.P.E at all times. | | | | | | | | |
| Cutting Cardboard Bales | Cuts, Wounds, Manual Handling, Fire. | Use a safety knife only. Employees wear P.P.E at all times. | | | | | | | | |
| Baler | Cuts, Wounds, Entanglement, Electrocutation, Head Injury, Eye Injury, Dust/Fumes, Fire. | Always follow standard operating procedures/ manufacturer's guidelines when using Baler. Always thread wires through rollers – front of Baler. Always use a safety cage on a forklift or ladder to access rollers. Always thread wires through pulleys – back of Baler. Safety interlock switches prevent baler from operating if doors are not in a safe operating position. Baler chamber contains a sensor that automatically shuts down the baler if somebody enters the chamber. When clearing blockages in the chamber the baler is isolated and the operator brings the key with him into the chamber. | | | | | | | | |



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| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| | | Never hold onto materials being fed into the Baler. Never wear loose clothing, dangling jewellery etc. Employees wear P.P.E at all times. | | | | | | | | |
| Transferring Bales by Forklift/Bobcat. | Crash, Collapse, Head Injury, Eye Injury, Dust/Fume | Driver must follow rules for Forklifts/ Bobcats. Stand well clear of forklift/Bobcat operations. Employees wear P.P.E at all times. | | | | | | | | |
| Compactor | Electrocution, Entanglement, Head Injury, Eye Injury, Dust/Fumes | Review and follow the manufacturer's operating instructions. Operation of compactors takes place in a ventilated area. Keep hands and clothing away from moving parts at all times. Ensure the work area is clear of debris. Employees wear P.P.E at all times. Compactor operates on a relatively level grade. Compactor must be inspected and maintained on a regular basis. | | | | | | | | |
| Artic | Crash, Collapse, Injury to driver | Always follow safety rules for Driving Vehicles. Signals must be provided by signalman for lorry driver when reversing. Artic is clamped in place and engine is switched off and handbrake engaged. | | | | | | | | |
| Shredder | Entanglement, Cuts, Wounds, Amputation, Head Injury, Eye Injury, Dust/Fumes, Foot Injury. | Only authorized trained persons are allowed to operate this machine. Maintained in good condition. Operation is by remote control. Emergency stop buttons present. Ensure guards are in place and maintained. | | | | | | | | |



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| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| | | All controls clearly marked. Battery Isolator switch must be removed and emergency stop buttons activated before maintenance work is carried out. Operators must stand well clear of operating mechanisms. Do not touch blades. Operators must wear ear protection if there is a risk of hearing damage. Employees wear P.P.E at all times. | | | | | | | | |
| Stairs | Slip, Trips, Falls. Head Injury, Limb Injury. | Stairs will be constructed to building regulations. All stairs will be fitted with hand rail and non-slip steps. Personnel are not to run or horseplay while climbing/descending stairwells. Personnel are to wear Hard Hats, Safety Shoes(Non-Slip) | | | | | | | | |



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| Company Name: Mr. Binman, Luddenmore, Grange, Limerick | | | Assessment Date: April 2008 | | | Review Date: April 2009 | | | | |
| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Bin Trucks | Entanglement, Crash, Crush, Knocked Down. | <p>Drivers must follow safety rules for Bin Trucks listed above.</p> <p>Always keep a sharp lookout for pedestrians.</p> <p>Only trained and authorized persons are permitted to operate Bin Trucks.</p> <p>Tipping of bin into refuse truck is done automatically – control buttons must be clearly labeled.</p> <p>Emergency stop buttons in place.</p> <p>Do not walk under raised bins.</p> <p>Keep clear of operating area.</p> <p>Camera installed so driver can see operation at back of truck.</p> <p>Regulator installed on back step to prevent driver from driving more than 20 mph with person standing on back step.</p> <p>When standing on step always maintain a firm grip with the handrail.</p> <p>Always ensure that the truck weight capacity is not exceeded.</p> | | | | | | | | |
| Cold/Wet Environment. | Colds, Flues, Ill-Health, Slips, Trips, Falls, | Bin men are provided with water-resistant clothing and all necessary Safety Gear. | | | | | | | | |
| Collecting Compactors | Crash | <p>Always obey speed limits on site.</p> <p>Abide by site safety rules and heed warning signs.</p> <p>Ensure compactor is securely fixed to truck.</p> <p>Ask for help when reversing.</p> | | | | | | | | |



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| Area/Dept./Activity: Refuse Collecting | | | Assessment By: Raymond Mulcahy | | | | | | | |
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| Hazard | Potential Harm | Current Controls | Risk Rating | | | Recommended Controls | Person Responsible | Revised Risk | | |
| | | | L | S | RR | | | L | S | RR |
| Tipping Compactors, Trucks, Skips. | Collapse, Fall, Crush, Personal Injury. | Follow manufacturer's guidelines for tipping operations. Never walk/stand under a raised load. Ensure vehicle is on a stable firm ground. Ensure the vehicle will not runaway. Personnel are to wear Hard Hats, Eye Protection, Dust/Fume Masks. Non-slip steel toe capped Safety Shoes | | | | | | | | |
| Bobcat Loading Curtain Trailer. | Crash, Collapse | Bobcat Driver must follow safety rules under Arrangements No.14 & Appendix B above rules Lorry driver to provide signals for Bobcat Driver. Stand well clear of Bobcat operations Ensure lorry wheels are chocked to prevent lorry from moving. Ensure curtains are closed before transporting. | | | | | | | | |
| Shovel Tipping into trailer. | Collapse, Fall, Crash. | Ensure nobody is in trailer compartment before tipping. Lorry driver to provide signals for Loading Shovel Driver. Stand clear of tipping operation. Ensure lorry wheels are chocked to prevent lorry from moving. | | | | | | | | |



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13. Personal Protective Equipment

Mr. Binman Ltd has developed a policy on the use of Personal Protective Equipment. The organisation intends to regularly review this policy and to update it as necessary. The review will consider the experiences to date changes in work arrangements and practices. Where risks to employees cannot be avoided by technical means of collective protection or by work organisation, personal protective equipment will be provided.

The personal protective equipment will:

- Be appropriate for risk involved;
- Take account of existing conditions at the place of work, and of requirements and the employee's state of health, and fit the wearer correctly.

P.P.E. provided will comply with relevant European Community Directives, regarding design and manufacture. It will be maintained in good working order and in satisfactory hygienic condition by providing storage, maintenance, repair or replacement.

Where P.P.E. is used, the employee will:

- Be informed of the risks against which the equipment protects him/her;
- Be provided with information on the P.P.E.;
- Be given instruction on the use of the P.P.E.;
- And be provided with training or appropriate demonstration in wearing of such equipment;

Where required the equipment will be given out annually and replaced when worn out. Spare equipment will be maintained on site in the event of loss or damage.

The department manager is the person responsible for completing the assessment, maintaining the equipment and providing instruction and training.

It is the duty of every person issued with PPE to wear and use it.

14. Fire Safety

It is Mr. Binman Ltd's policy to ensure the safety of employees through the implementation of an Emergency Response Plan at each site.

Fire evacuation drills will be held every six months on all sites. All areas have instructions on the action to be taken in the event of activation of the fire alarm and on the discovery of fire.

Dates of drills etc. are logged in each of the facilities Fire and General Register.

The Fire Marshal at each location ensures that all the fire safety measures provided are adhered to. The Fire Warden in charge of any building/unit/area shall report as soon as possible any damage to these fire safety measures.

The Emergency Response Plan is concerned with the proper upkeep of systems and fire safety measures, the provision of information on fire safety measures, and the institution of good housekeeping arrangements.

15. Legal Requirements

Mr. Binman Ltd is committed to fulfilling its statutory obligations. To this end Mr. Binman Ltd complies with the current statutory requirements and envisages an on-going programme of continuous improvement of the company's safety performance.



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16. Training and Instruction

- Mr. Binman Ltd recognises that training and instruction of employees by competent personnel is essential in ensuring the safety and health of the workforce.
- All instruction, training and supervision will be provided in a form, manner as appropriate and in a language that is reasonably likely to be understood by the employee concerned.
- It shall be a condition of employment that all employees participate and complete a basic induction course before starting work at any Mr. Binman Ltd Facility.

16.1. Induction course for employees.

All new employees must receive Safety, Health and Induction Training. This will include information on and an introduction to Mr. Binman Ltd. The following topics will be covered:

- Manual handling.
- Safety Policy and Safety Statement.
- Safety Representative and Safety Committee.
- Policy on Fire Prevention and Emergency Evacuation procedures.
- Welfare facilities (canteen, toilets etc.).
- The location of the First Aid/Medical Centre.
- Smoking Policy.
- Accident reporting procedure.
- Housekeeping.

The induction course will also include an explanation of the duties imposed by the Health and Safety Legislation which affects the individual to include:

- General Duties of Employers.
- General Duties of Employees.

Resources are spent on the provision of training in a variety of areas related to safety and health at work. General Managers are responsible for:

- identifying employees in need of training or refresher courses.
- ensuring employees receive appropriate instruction/training in standard work practices.
- identifying work situations which require instruction/training of employees.

All new equipment will be assessed by a competent person in order to identify any training implications and shall devise appropriate safety arrangements where necessary.

On-site contractors receive appropriate instructions relating to any risks to safety and health which they may encounter during their work activities on Mr. Binman facilities.

16.2. Continuous Safety Health and Welfare Training All Employees

Health & Safety training shall be arranged as required, based on changing employees requirements and as a result of ongoing risk assessments, in respect of:

- Evacuation.
- Use of Fire Extinguishers.
- Manual Handling.
- First Aid.



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- Ergonomic set up VDU workstation.
- Use of specialist work equipment (where required).
- Fire Fighting.
- Spill training
- Chemical handling.

17. Disciplinary Action

- Disciplinary Action will be taken where compliance with Safety and Health rules/regulations cannot be achieved through advice and persuasion.
- Disciplinary procedures will be in line with what is already in place and detailed in employees' contracts of employment and the employee handbook.

18. Emergency Plan

- All Mr. Binman Ltd sites will have prepared an Emergency Response Plan to ensure a co-ordinated site response to all foreseeable dangerous occurrences and emergencies.
- The emergency procedures will be reviewed regularly to ensure that they take account of all changes in processes, equipment, personnel, standards etc.
- Evacuation drills will be carried out every six months so that all employees are familiar with escape routes and the procedures to be followed.
- Responsibility for the organisation of evacuation drills will rest with the Site Fire Marshal.

19. Safety Statement Revision

- Mr. Binman Ltd will, taking into account any risk assessments carried out, review the safety statement where:
 - a) there has been a significant change in the matters to which it refers,
 - b) there is another reason to believe that the safety statement is no longer valid, or
 - c) an inspector in the course of an inspection, investigation, examination, inquiry under section 64 of the Safety, Health & Welfare at Work Act 2005 or otherwise directs that the safety statement be amended within 30 days of the giving of that direction, and following the review, Mr. Binman shall amend the safety statement as appropriate.

20. Monthly Report

- Mr. Binman will prepare or have prepared an monthly Health & Safety Report for inclusion in the companies monthly Board Report.
- Issues arising in the monthly Health & Safety Report will be included in the Goals & Objectives set by the Board of Directors for the coming year.



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21. EMERGENCY CONTACT NUMBERS

Doctor:

Dr. Michael Sheehan

086-857 5693

Dr. Michael Cleary

061-383106

Ambulance:

999/061-301111

Hospitals:

Regional Hospital, Limerick

999/061-301111

Fire Brigade:

999

Gardai:

999 / 061-351102

National Poisons Control/Information Centre:

Beaumont Hospital

01-8379964 / 8379966

Health and Safety Authority:

061-419900

Environmental Protection Agency

053-47120

Limerick County Council:

061-318477

ESB:

061 415 592

Mr. Martin Sheehan Jnr.:

Mobile:

086-2428762

Mr. Martin Sheehan Snr.:

Mobile

086-2548943

Mr. Gerry Gleeson:

Mobile:

086-8503322

Safety Manager: Ray Mulcahy

Mobile:

086 0400469

Environment Manager: Seamus Leahy

Mobile:

086 0455078

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DECLARATION

I _____ hereby declare that I have read this Safety Statement and understand the safety policies and procedures.

I am committed to the safety, health and welfare of myself and other persons in the company, and I agree to abide by the procedures and regulations of the safe work practices.

I understand my responsibilities and obligations under the Safety, Health and Welfare at Work Act 2005 and undertake to co-operate with management and other employees to ensure a safe and healthy workplace.

Signed:

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