MEHS
ENVIRONMENT, HEALTH & SAFETY

BALLYFASKIN ENTERPRISES LTD, BALLYFASKIN, BALLYLANDERS, LIMERICK

ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED EXPANSION OF A PIGGERY OPERATION

NON TECHNICAL SUMMARY

Montgomery EHS
Kantoher Business Park
Killeedy, Ballagh
Co. Limerick
Mobile (087) 239 0421
Email: trevor@mehs.ie

BALLYFASKIN ENTERPRISES LTD

NON-TECHNICAL SUMMARY

This document has been prepared on behalf of and for the exclusive use of Ballyfaskin Enterprises Ltd by Montgomery EHS on the basis of an agreed specification for submission to Limerick County Council as part of the EIAR process.

Conclusions and recommendations contained in this Document are based on information supplied by the Client and others. Unless expressly stated otherwise, information provided by Third Parties has not been verified by Montgomery EHS.

Montgomery EHS accept no liability or responsibility whatsoever in respect of any use of or reliance upon all or part of this Document by any third party.

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Rev	Description	Origin	Review	Changes/Amendments	MEHS Approval	Date
1	Draft	TM	MM	Draft for review	Yes	19/09/19
2	Final	TM	MM	Issued	Yes	24/09/19

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1 INTRODUCTION

This Environmental Impact Assessment Report (EIAR) for the proposed development at Ballyfaskin Enterprises Ltd piggery operation at Ballyfaskin, Ballylanders, Co. Limerick has been prepared on behalf of Ballyfaskin Enterprises Ltd by Montgomery EHS.

This proposed site is situated c. 3 km's south east of Ballylanders, Co. Limerick

This E.I.S. forms part of a planning application to Limerick County Council on behalf of Mr. Ballyfaskin Enterprises Ltd, Ballyfaskin, Ballylanders, Co. Limerick for permission to expand capacity of the existing piggery from 600 sows to 1000 sows and their progeny and the construction of an electrical substation. (National Grid Reference: R 78891 23469).

The proposed houses are to be constructed in accordance with, and to comply with, S.I. No. 14 of 2008 EUROPEAN COMMUNITIES (WELFARE OF FARMED ANIMALS) REGULATIONS 2008.

2 BACKGROUND TO THE DEVELOPMENT

2.1 PRESENT SITUATION

This E.I.A.R. forms part of a planning application to Limerick City & County Council on behalf of Ballyfaskin Enterprises Ltd, Ballyfaskin, Ballylanders, Co. Limerick for permission to expand capacity on the site to 1000 sows from 600 and an electrical substation.

The applicant, Ballyfaskin Enterprises Ltd currently operates and manages the existing piggery at a capacity of 600 sows and their progeny.

There are 2 persons employed directly at this site with additional jobs in the areas of transport, feed, etc. indirectly employed. The operation of the proposed development will be along broadly similar principles to that carried out on existing piggery buildings within the county and surrounding counties; however, it will be carried out in a welfare compliant environment. This will involve the feeding, management and husbandry of the pigs and general site management.

All fattened pigs produced on this site will be sent to the one of the pig processing plants in Ireland which are:

- Dawn Pork & Bacon, Grannagh, Waterford
- Dunbia (Ballymena) Ltd Ballymena, Antrim,
- Finns Meats, Mitchelstown, Cork
- Green Pasture Meats, Drumlish, Longford
- McCarren & Co, Cavan, Co. Cavan
- Rosderra (Carrig), Roscrea, Tipperary
- Rosderra (Edenderry), Edenderry, Offaly
- Staunton Foods, Bandon, Cork
- Vion Food Group (Cookstown), Cookstown, Tyrone

The proposed development will involve no modification of existing buildings.

This site of the proposed development is agricultural land, owned by Ballyfaskin Enterprises Ltd the owner / operator of the existing piggery buildings and forms part of his overall landholding including the site of the proposed development. This site is located just off a Regional Road R662 in the townland of Ballyfaskin, Ballylanders, Co. Limerick.

2.2 NEED FOR THE DEVELOPMENT

The development of the pig meat industry is supported by government policy aimed at increasing the value of the export market. The Irish pig meat industry has achieved major success from the mid 1980's onwards in the development of an internationally competitive export orientated pig meat industry in Ireland and by 1995 the value of pig-meat exports had reached in excess of E260 million. At present pig meat processing sector sales are valued at c. E700 million, of which E400 million is exported. Ireland represents less than 1.5% of EU production (2003). This progress was achieved with major rationalisation of the Irish Pig Industry with a reduced number of farmers with a larger number of animals, resulting in the pig industry becoming the most market led industry in Irish Agriculture.

This enterprise conforms to Irish national policy on the pig industry based on the Development Plan for the Irish Pig Industry announced by the Minister for Agriculture and Food on the 10th of July 1987, the Pig Production Group Report of 1988 and the Pig Industry in Ireland, Strategic Study, 2000. The pig industry in Ireland has been through a number of tough economic years in the late nineties. On an island basis it is essential that the present level of production be maintained, a critical mass of greater than three million pigs per annum is essential for the efficiency of the 9 processing plants remaining.

According to a recent European commission report " prospects for agricultural markets in the European Union 2004 - 2011, pig and poultry production and consumption are expected to keep growing over the medium term, with increased trade flows between the new and old member states. The meat exports have returned to a more normal situation after the extreme market conditions due to the second BSE scare, the foot and mouth outbreak in 2001 and avian influenza.

An intensive pig rearing industry has developed in County Limerick and Cork arising from the need to provide additional wealth in the area where more traditional farming practices are difficult.

Pig production in Limerick and Cork accounts for circa. €100 million annually in farm sales and 1,500 jobs in the county are directly dependent on the pig industry. On a national scale this stands at c. E 400 million, or 7% of total agricultural output, with 5,000 jobs directly dependant on the pig industry. This industry also provides a cheap source of organic fertilisers for farmers in the area.

This integrated enterprise will have a number of advantages to ensure its economic viability. It will have cost savings due to better quality buildings resulting in an improvement in herd Feed Conversion Efficiencies, i.e. less feed will be required to produce each unit of pig meat. It will also allow more efficient use of labour and other inputs, as time and expense will not be incurred transporting pigs between different sites.

Within the pig industry, the trend is towards larger scale pig farms reflecting,

1) The concentration of resources in terms of skilled labour and capital
2) Domestic and more increasingly, global pressures and
3) Economies of scale. Due to rising input costs, additional environmental and welfare requirements and the reduction in pig prices (in real terms) over this period Irish pig farmers need to improve efficiencies wherever possible.

The increase in the capacity at Ballyfaskin Enterprises Ltd's piggery operation will help meet the growth in the sector description of the development.

2.3 DO NOTHING AND DO SOMETHING SCENARIOS

The Do-Nothing Scenario looks at the environment, as it would be if no development was carried out. In the Do-Nothing Scenario, the capacity would not be increased to 1000 sows. The long-term viability of the operation would have to be considered.

In the Do Something Scenario, capacity increase to 4,500 fattened pigs.

3 POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION

This section outlines the likely significant Environmental Impacts arising from the proposed increase in capacity of the piggery operation to 4500 fattened pigs. Where possible, design measures have been included to reduce or eliminate possible impacts but where this has not been possible, mitigation measures have been proposed to reduce or eliminate the identified impacts.

HUMAN BEINGS

Human beings interact, to a greater or lesser extent, with all aspects of the receiving environment. Therefore, impacts on any aspect of the environment have the potential to impact on human beings. The impact of the scheme as it specifically relates to human beings is covered under the headings, *Community*, *Human Health, Air Quality*, *Noise and Vibration* and *Landscape and Visual Impacts*.

3.1 COMMUNITY

Ballyfaskin Enterprises Ltd's piggery operation at Ballyfaskin, Ballylanders, Co. Limerick is located 3 km to the south east of Ballylanders, town and some 45 km from Limerick City.

At a regional, county and district level, it was considered that there will be no negative effects on population structure or trends, or on the local settlement pattern. However, the proposed developments at Ballyfaskin Enterprises Ltd's piggery operation will have positive economic benefits and ensure sustained employment over the additional 20-year period. The pig industry is a significant employer in the Limerick Region. A knock on indirect effect leading to support of local services within the community is envisaged. Potential negative visual, noise, air quality and traffic impacts on human beings have been dealt within the relevant sections of the EIAR.

3.2 AIR QUALITY

The air quality impact assessment was carried out by Montgomery EHS for the proposed development.

The proposed expansion to the piggery operation was also considered in terms of dust dispersion.

The existing operation indicates that the air quality in the vicinity of the plant is good with no significant impact to air quality as a result of existing site operations.

The proposed operation will be similar to the existing operation. The proposed additional piggery operation will have dust levels within relevant guidelines and that the future site operations will not have a significant impact on air quality.

Construction activities such as excavations and earth moving may generate quantities of construction dust, particularly in drier weather conditions however; these will be of a short duration and mitigation measures will be implemented. The effect of construction activities on air quality, in particular construction dust, will not be significant. An odour management plan has been generated in order to establish the measures necessary to minimise odour.

3.3 NOISE

Montgomery EHS carried out a baseline noise survey at 3 locations in the vicinity of the proposed development in order to assess and quantify the existing noise environment. Noise levels during the operational phase of the development were then measured to assess the noise impact of the development at nearby residential locations.

The noise climate in the vicinity of the existing site is relatively low. The fact that no complaint has ever been received indicate that noise levels from the plant's current operations do not have a significant impact on the noise levels of the surrounding area, and that there will be no impact from increasing capacity of sows.

The potential noise and vibration impacts on the surrounding area from extending the piggery operation were considered for two distinct stages: the short-term impact of the construction phase and the long-term impact of the operational phase.

During the construction phase of the project, there is a potential for generation of a temporary increase in noise and vibration due to the nature of activities undertaken during site preparation and development, such as rock breaking and excavation. However, the application of noise limits on construction activities and hours of operation, along with adherence to the guidance set out in British Standard BS 5228 1997 "*Noise Control on Construction and Demolition Sites*" will ensure that noise and vibration will be kept to a minimum.

Therefore during the operation phase, it is predicted that noise levels will remain below the EPA noise level limits at the nearest noise sensitive locations.

3.4 LANDSCAPE AND VISUAL

Montgomery EHS assessed the landscape and visual elements of the proposed development. The existing piggery facility and associated infrastructure does not visually dominate the immediate landscape. The landscape itself is rural and agricultural and much of the landscape surrounding the site is low-lying with little topographic relief. Residential property is generally dispersed along local roads through increased development.

The site where the proposed development will be constructed is not visually prominent as it is the east of the existing piggery buildings. The existing hedgerows will be retained and strengthen to reduce the visual impact of the proposed development.

As such the site is neither sensitive nor vulnerable in landscape terms and in overall terms is typical of a landscape type that is widespread in the area.

Given the nature and impact of the existing facility, the proposed extension will not result in significant overall landscape and visual impact, though locally minor visual impact will arise.

Construction work will take place at a relatively low level and against the backdrop of the existing piggery operation with its various on-going activities. This impact will cease once the construction phase is complete.

NATURAL ENVIRONMENT

This section covers the potential effects of the proposed development on the natural environment. The site and the lands surrounding are not part of any ecological designation, both national and EU. The site is of low ecological value, which is improved grassland with the land utilised for silage production.

3.5 TERRESTRIAL ECOLOGY

Montgomery EHS surveyed the flora and fauna within the site of the proposed piggery development. The Ballyfaskin, Ballylanders, Co. Limerick site is surrounded by improved grassland for silage production and grazing of cattle. The main impact on terrestrial ecology since the operation commenced was the removal of grassed area for the existing piggery operation. No significant impacts on terrestrial ecology are anticipated increasing the capacity to 4500 fattened pigs. There is poor quality of habitats within the area of the proposed piggery development which is limited to improved grassland. This habitat is generally widespread around the limerick region. The area provides a habitat for birds and mammals of local importance and the loss of habitat resulting from the development will have a slight negative impact.

3.6 AQUATIC ENVIRONMENT

An assessment of the aquatic environment surrounding Ballyfaskin Enterprises Ltd existing piggery operation was carried out by Montgomery EHS. The site has limited water bodies with a small drainage ditch. Surveys of the habitats and flora and fauna were carried out. None of the species of plants and animals recorded were of specific nature conservation importance or interest.

The site will only discharge clean runoff that is collected and discharge to the drainage ditch. The increasing capacity and the additional piggery buildings will mean an increase in the discharge volume to the drainage ditch. No significant impact on the ecology of the area is expected from the increase in discharge from the clean surface water to the drainage ditch.

During construction, care will be taken that no accidental spillages will pollute the surrounding water bodies. Water runoff form the construction site will also be intercepted to ensure that no suspended solids are released.

3.7 SOILS GEOLOGY AND HYDROGEOLOGY

An assessment of the soils, geology and hydrogeology at the site of the proposed development was carried out by Montgomery EHS. The soil types occurring within the footprint of the proposed piggery development are mostly made up of glacial till.

3.8 CLIMATE

There are no direct impacts predicted on the existing macroclimate as a result of the proposed expansion. The expansion will however increase the viability of the piggery operation thereby facilitating the continued emission of pollutants such as NOx into the atmosphere. Air quality emissions will be licensed by the EPA as part of Ballyfaskin Enterprises Ltd's Industrial Emission License application. In setting limits for industry in an IED licence the EPA take account of national and EU legislative limits and guidelines for air pollutants and also Government policy in relation to Climate Change.

MATERIAL ASSETS

3.9 AGRICULTURE

The proposed piggery operation will occupy an area of approximately 2.6 ha, of which all is surrounded by agricultural lands and improved grassland. Agricultural enterprises in this area and the surrounding land include dairying and drystock.

The lands proposed for the extension are wholly within the ownership of Ballyfaskin Enterprises Ltd. The area is currently utilised used for silage production. This practice will discontinue if the proposed additional goes ahead and there will be a slight impact on volume of silage production due to the loss of volume of silage. Dust control measures during the construction and operation of the piggery operation will ensure that there will be no impact from dust on the surrounding lands or livestock.

3.10 NON-AGRICULTURE MATERIAL ASSETS

The development comprises of an extension to an existing piggery operation business operating for 20 years. It would be expected to have no impact on non-agricultural materials assets such as property commercial enterprises.

3.11 NATURAL AND OTHER RESOURCES

Montgomery EHS assessed the impact on natural and other resources in the vicinity of the proposed extension to the proposed piggery operation and any impact on natural resources due to increased capacity from 3500 to 4500 fattened pigs. Overall, the proposed extension and increase in production rate will have some slight negative impacts on natural and other resources. There will be no significant impact on natural resources from the increase in use of raw materials for feeding and heating the additional piggery buildings. Construction materials in required will be brought from nearby sources.

ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL HERITAGE

An assessment of the impact of the piggery buildings construction on architectural, archaeological and cultural heritage was undertaken by Montgomery EHS. No recorded archaeological sites within the proposed development area were identified and therefore no known archaeological remains will be affected by the proposed development. The site of the proposed development is considered to be of low significant archaeological potential.

FIGURES

Legend

Site Location

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Client	Patrick Ryan
Title	Mapping
Scale. NTS	Project No. P019 1
Figure No. Figure 1	Rev. A

Legend

Site Location

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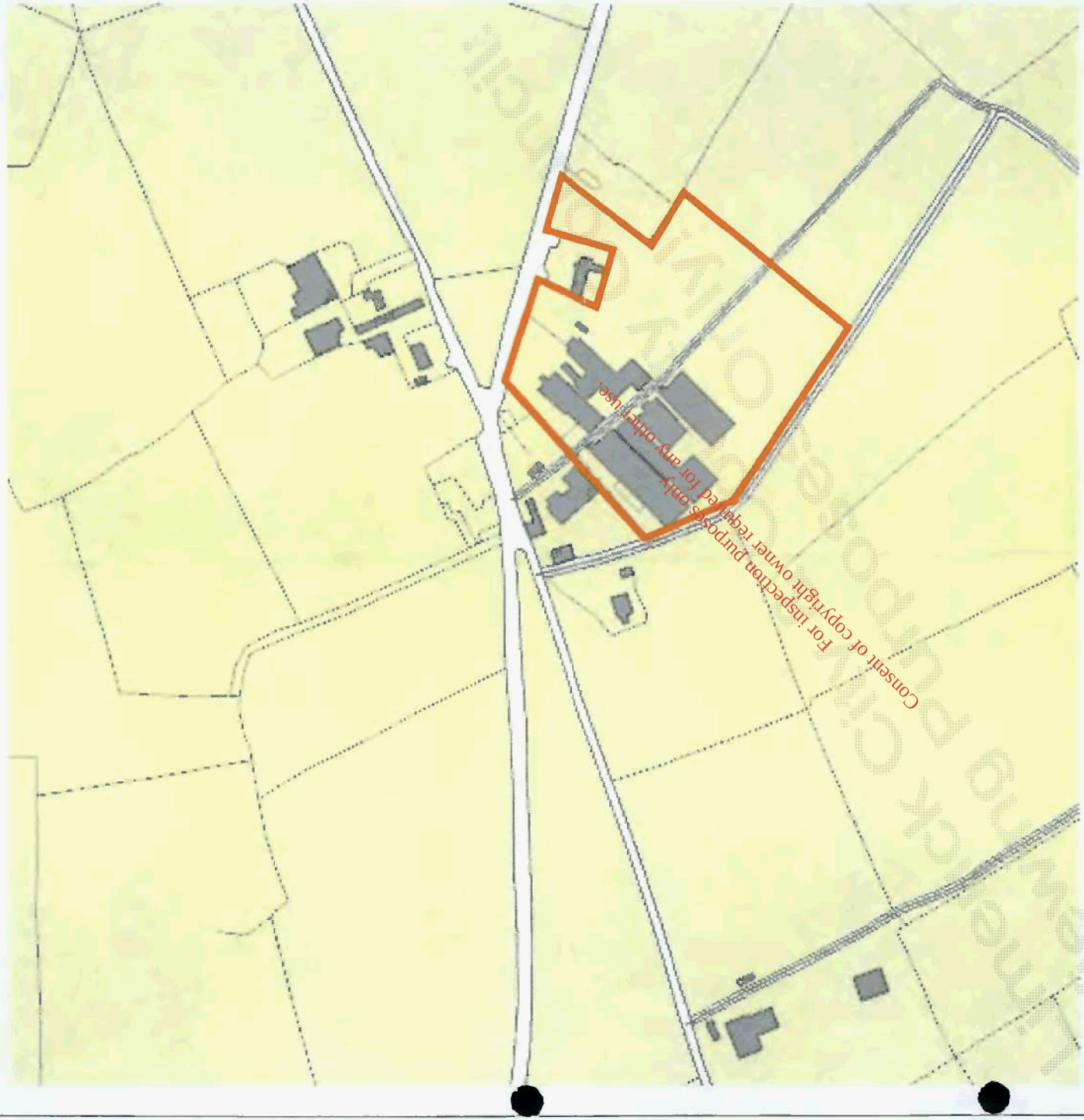
Client	Patrick Ryan
Title	Mapping
Scale	NTS
Project No.	P019 1
Figure No.	Figure 2
Rev.	A



Legend

Site Location

MEHS
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Client	Patrick Ryan
Title	Mapping
Scale	NTS
Project No	P019 1
Figure No.	Figure 3
Rev.	

Legend

Site Location

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Client	Patrick Ryan
Title	Mapping
Scale	NTS
Project No.	P019 1
Figure No.	Figure 3a
Rev.	

Legend

Site Location

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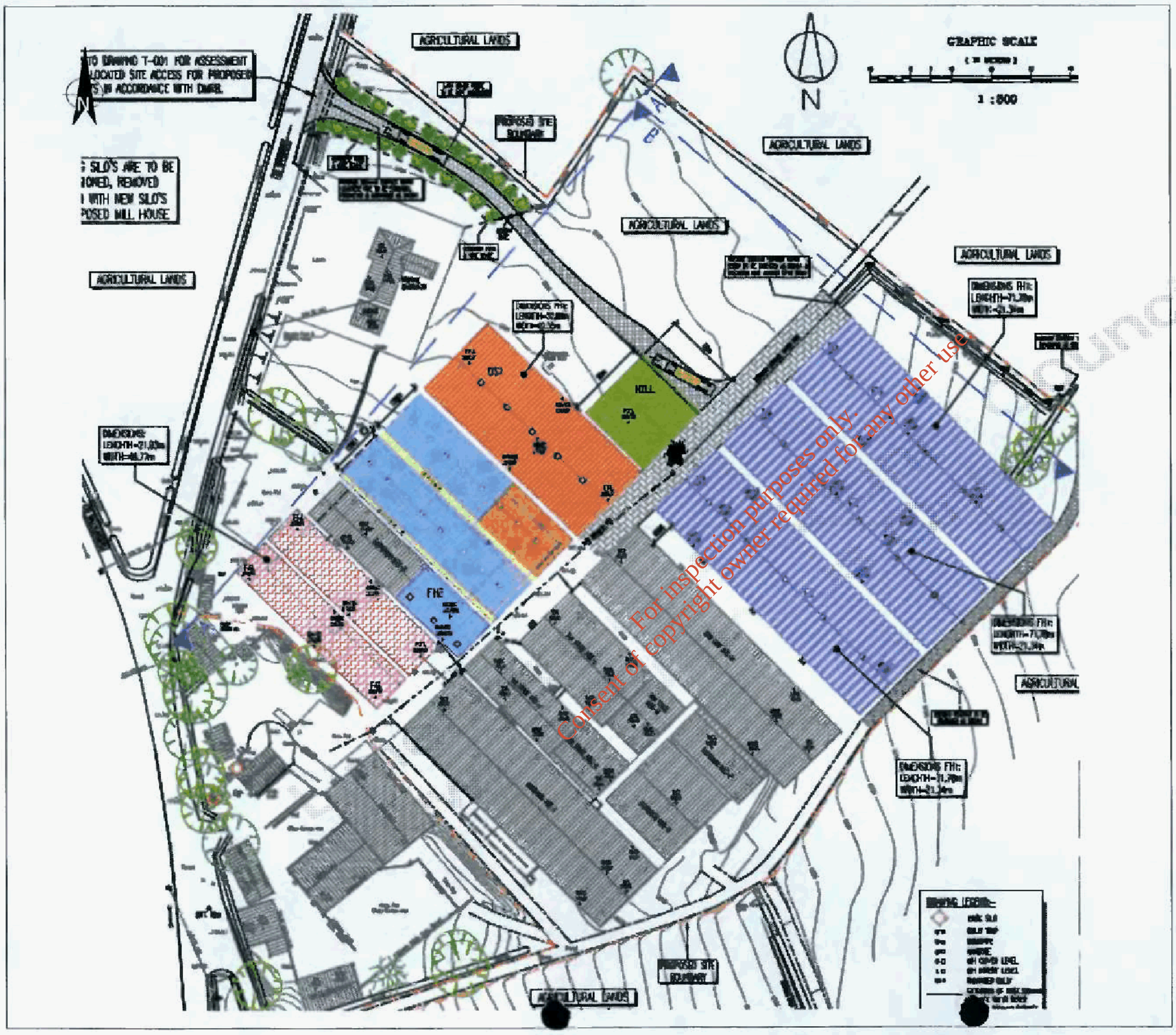
Client	Patrick Ryan
Title	Aerial Photography
Scale. NTS	Project No. P019 1
Figure No. Figure 4	Rev. A



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Site Location

MEHS
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Client	Patrick Ryan
Title	Site Layout
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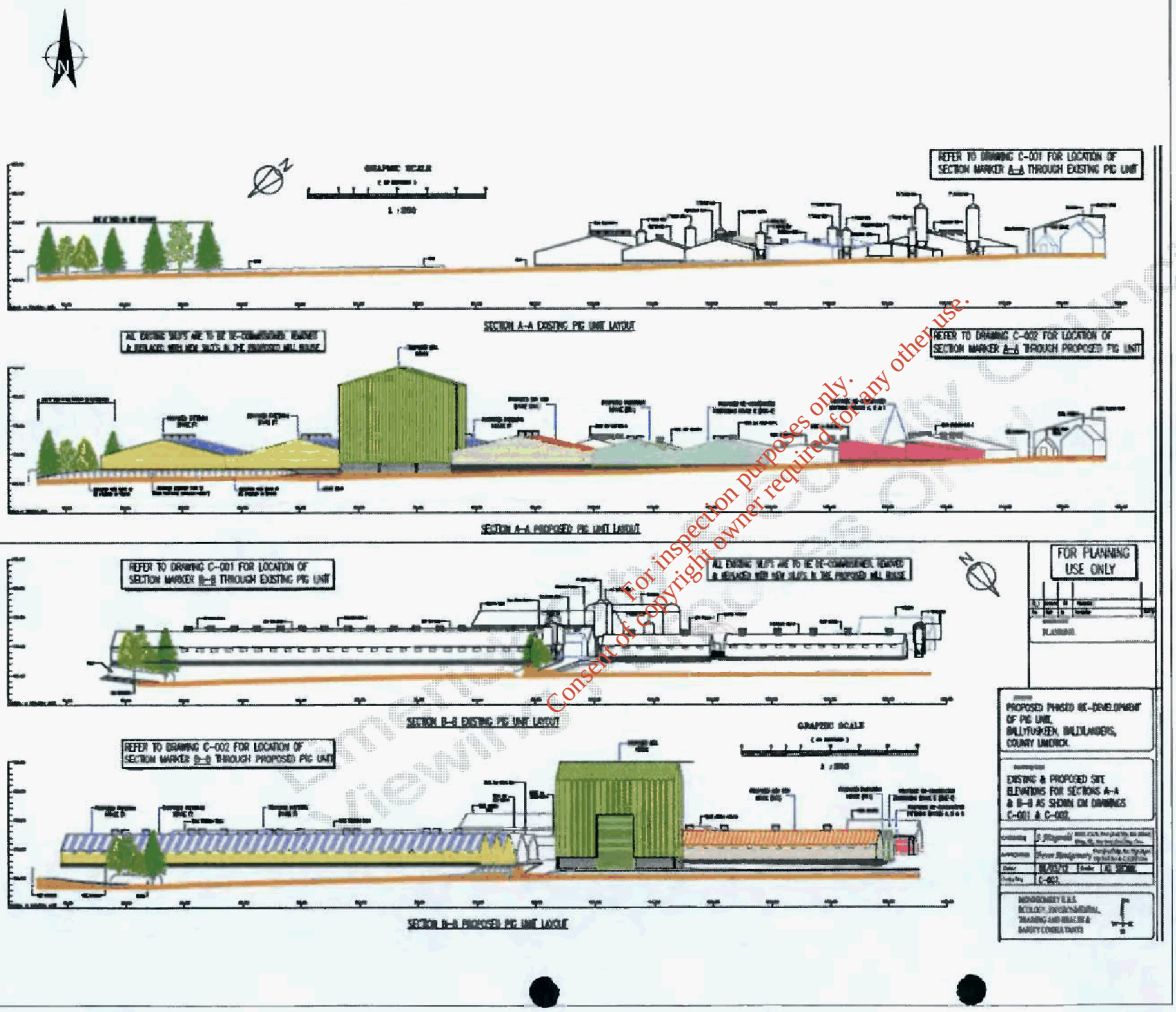
Project No.	P019 1
Figure No	Figure 5
Rev.	A



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Site Location

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Client	Patrick Ryan
Title	Site plans and Sections
Scale	NTS
Project No.	P019 1
Figure No.	Figure 6
Rev.	A

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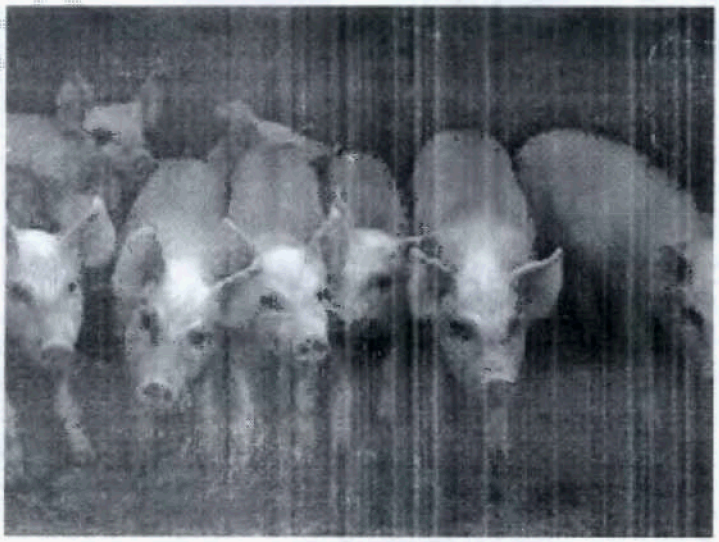
ENVIRONMENT, HEALTH & SAFETY

Patrick Ryan,

Ballyfaskin Enterprises Ltd, Ballyfaskin,
Ballylanders, County Limerick

Environmental Impact Assessment Report for the proposed expansion of a piggery operation



September 2019

Control Sheet

Document Title:	Volume I: Environmental Impact Assessment Report Ballyfaskin Enterprises Ltd, Ballyfaskin, Ballylanders, Co. Limerick	Document No.	MEHS 19-30

Rev	Description	Originator	Reviewer	Change	Date
01	Draft	T M	M M	Review	03 June 19
02	Review	M M	T M	Review	11 June 19

Contents

1 Introduction

1.1 Introduction

MEHS has been appointed by Ballyfaskin Enterprises Ltd to prepare an Environmental Impact Assessment Report (EIAR) in support of a planning application to Limerick CoCo for a proposed pig fattening operation at Ballyfaskin, Ballylanders, Co Limerick. The planning application relates to the increased capacity from 600 sows to 1000 sows and their progeny and in addition the construction of an electrical substation.

1.2 Background

The E.I.A.R. forms part of a planning application to Limerick City & County Council on behalf of Ballyfaskin Enterprises Ltd, Ballyfaskin, Ballylanders, Co Limerick is seeking increased capacity of the piggery from 600 sows to 1000 sows and their progeny in addition a new electrical substation at Ballyfaskin, Ballylanders, Co Limerick.

This Environmental Impact Assessment Report (EIAR) has been prepared in accordance with the requirements of the European Communities (Environmental Impact Assessment) Regulations, 1989 to 2001 and the Planning and Development Act, 2000 and Planning and Development Regulations 2001. This legislation requires the assessment of the effects of certain public and private projects on the environment.

The developer following discussion with the planning authority is required to have an EIAR carried out as part of the planning application under the following regulations:

1. EC (Environmental Impact Assessment) Regulations 1989: Article 24. Schedule. Part II 1. (d) Pig-rearing installations, where the capacity would exceed 2,000 units and where units have the following equivalents; 1 pig = 1 unit, 1 sow = 10 units
2. Planning and Development Regulations 2001 (S.I. No. 600 of 2001).
    a. These regulations state that even if the development is under the relevant EIA threshold the planning authority is required under article 103 to request an EIS where it considers that the proposed development is likely to have significant environmental effects.
    b. Section 17: An EIS is required for " pig-rearing installations, with more than 2,000 places for production pigs (over 30 Kgs.) in a finishing unit, more than 700 places for sows in a breeding unit or more than 2000 places for sows in an integrated unit;).
3. Revised Guidelines on the information to be contained in Environmental Impact Statements, 2002 and Draft, September 2015
4. Advice notes on current practice in the preparation of Environmental Impact Statements – 2003 and Draft, September 2015.
5. EPA (Environmental Protection Agency): Guidelines on the information to be contained in environmental impact assessment reports, (Draft May 2017)

The documents Guidelines on the information to be contained in Environmental Impact Statements, 2002 and Advice Notes on Current Practice (in the Preparation of Environmental Impact Statements), 2003 as prepared by the EPA, were followed in the preparation of this EIAR. The guidelines state that in preparing an EIAR, the developer will carry out an analysis of the likely effects of the project (positive or negative) on the environment. The Environmental Impact Assessment procedure commences at the project design stage when the scope of the study is determined. Studies are then carried out to investigate, in detail, any potential environmental impacts. Where significant adverse impacts are identified, measures are recommended to mitigate or avoid the impact of the proposed Development.

1.3 Site and Surrounding Lands Description

The total area of the site is 65 hectares with approx. 2.6 hectares used for the piggery. The proposed substation will be within the existing site to be situated alongside local road for ease of access and approximately 50m from the road along the site's boundary.

The proposed development will be constructed on a greenfield site, at grid reference R 78891 23469 (O. S. Map no. 64).

This existing farm, and site of the proposed development i.e. the subject site, is located on c. 4.2 Ha, in the townlands of Ballyfaskin which is approximately 3.0 km north east of Ballylanders as shown on Figure 1.1

The application relates to a proposed integrated 1000 sow pig production unit finishing c. 32,000 pigs per annum at 100 kg live weight. As a result of the breeding programme and the high health status of the pigs on this farm, some of the gilts bred and reared on this farm may be sold to other pig farms as replacement breeding stock. It is the intention of the applicant to operate the farm with the uppermost regard for environmental protection while at the same time implementing modern management methods on the farm.

This farm currently operates with a maximum capacity for a 600 Sow unit. At present Mr. Ryan finishes 100% of the pigs on this farm.

The nearest nonfamily operation farm and dwelling house is over 90 meters to the west. The next dwelling house which is vacant is approximately 295 m (north east) from the site. The area is rural and not highly populated. The only construction will be the installation of an ESB substation.

The site boundary is marked by a combination of hedgerows and fencing. The existing farm is situated on flat ground and is largely screened from views from all directions due to the tree's characteristics and of the topography. The site capacity was originally design for finished pigs of 130 kgs. Bord Bia approval for a pig fattening operation required 1.1 m2 for every pig. The pig processing plants now require pigs at a finished weight of 100 to 110 kgs the area required by Bord Bia is 0.65 m2. This allows the site to increase capacity as the floor area required per pig has reduced and no planning is required for additional buildings.

The existing entrance located at the eastern boundary would facilitate the

proposed house, as indicated in the Site Layout Plan (Figure 5).

1.4 Planning and Consents History

This planning application seeks to receive planning permissions for an increased capacity of the site and the construction of an ESB substation.

1.4.1 Recent Planning Applications

File Number	Development Description
06/3801	Construction of a new loose dry sow house to comply with new welfare regulations, adjacent to existing pig farm.
07/2101	The construction of a new store, cover existing open pig manure storage tank with a house for hospital pens, replace 4 no. existing pig houses with new modern design buildings. and construct a covered geomembrane lined pig manure storage basin adjacent to the pig farm
09/588	Extension of farrowing house D and replace existing farrowing house E and associated site works
10/234	The construction of a mill house, dry sow house, extension to farrowing house D, replace existing farrowing house E and associated site works for animal welfare purposes
12/306	The expansion of an existing integrated sow unit to 600 sows. The development proposes to construct a new loose welfare friendly dry sow house, 3 no. fattening houses, a new farrowing house, a feed mill, new site entrance including access road and associated site works. The development proposes to replace two existing farrowing houses, an existing fattening house and a gilt house.
14/276	Construction of a single storey staff facilities building which will be ancillary to the operation of existing pig production unit, including all associated site works & services and construction of an underground rainwater harvesting tank with associated above ground pumphouse.

To ensure a comprehensive assessment was completed which included proposed developments at the Ballyfaskin Enterprises Ltd facility, these developments have been assessed as existing and operational structures and have formed part of the baseline assessments completed to inform this EIAR.

1.5 Regulatory Requirement for an EIAR

Ballyfaskin Enterprises Ltd have compiled this EIAR for the current planning permission to increase the capacity of the site and the construction of an ESB substation.

1.6 Directive EIA 2014/52/EU

This EIAR has been produced following the deadline of 16th May 2017 by which Directive EIA 2014/52/EU was to be transposed into Irish law. On 15th May 2017, the Department of Housing, Planning, Community and Local Government issued Circular Letter PL 1/2017 providing advice on the administrative provisions in advance of the transposition of the Directive into Irish Law. As the Directive was not transposed into Irish Law by this date, the circular stated the following:

"In respect of applications for planning permission or other development consent received on or after 16 May 2017 falling within the scope of Directive 2011/92/EU, or within the scope of Directive 2014/52/EU, competent authorities are advised to consider applying the requirements of Directive 2014/52/EU by way of administrative provisions in advance of the transposition of Directive 2014/52/EU into Irish law."

At the time of writing this EIAR, the directive had not been transposed into Irish Law and the Planning and Development Act 2000 (as amended) and the Planning and Development Regulations 2001 (as amended) had not been amended to reflect the EU directive. To ensure this EIAR complies with directive 2014/52/EU, the amendments required by the 2014 directive have been incorporated into this document.

1.7 Consultation and Scoping for the EIAR

Consultation is a practice that is carried out to ensure that all relevant issues are addressed in the EIAR. The consultation process for the current facility involved the distribution of a formal Scoping Consultation Document to a number of Consultees asking them for a written opinion on the proposed content of the EIAR. The following bodies were consulted in late 2017:

- Limerick City & County Council;
- National Parks and Wildlife Service (NPWS).

2 The Environmental Impact Assessment Report

2.1 The Environmental Impact Assessment Report

The EIAR is a legal document and has been developed in line with requirements of national and international legislation, including the amendments to Environmental Impact Assessment stated within EIA Directive 2014/52/EU. This section outlines the primary sections of this document.

2.2 General Guidance

This EIAR has been prepared in accordance with requirements of the *Planning and Development Act 2000 and the Planning and Development Regulations 2001 (as amended)*. Consideration has also been given to the requirements outlined in the Directive 2014/52/EU on the effects of certain public and private projects on the environment, which provides amendments to the previous Directive 2011/92/EU. Subsequently consideration has been given to the circular letter issued by the Department of Housing, Planning, Community and Local Government *(Ref No. PL 1/2017)* on the 15th May outlining the requirements of the amended Directive as discussed above in section 1.6.

The EIAR has also been prepared in accordance with the following EPA documents and relevant best practice guidelines:

- "Advice notes on current practice in the preparation of Environmental Impact Statements" (2003); and
- "Advice Notes for Preparing Environmental Impact Statements" draft (2015)
- "Revised guidelines on the information to be contained in Environmental Impact Statements,(draft September 2015).
- EPA (Environmental Protection Agency): Guidelines on the information to be contained in environmental impact assessment reports, (Draft May 2017)

"Guidelines for Planning Authorities and An Bord Pleanala Carrying out Environmental Impact Assessment" Department of the Environment, Community and Local Government (2013).
Where a specialist chapter incorporates additional best practice or guidance documents these are outlined within the relevant section's methodology.

2.3 Structure of the EIAR

This EIAR is accompanied by an NIS and a Non-Technical Summary (NTS) of the EIAR. These documents are separate from this EIAR but form part of the overall impact statement. The structure of this EIAR adopts a sequence as follows:

- General Description of the EIAR and how it relates to the development;
- Description of the Development;

- Alternatives considered;
- Impacts – incorporating baseline data and specialist findings;
- Interactions.

With respect to the assessment of various environmental factors potentially impacted on by the proposed development, reference is made to Annex IV, Section 4 of the 2014 Directive in which the EIAR will contain:

'A description of the factors specified in Article 3(1) likely to be significantly affected by the project: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.'

The interactions between each of the relevant factors has also been assessed.

Regarding potential impacts on the environment, vulnerability of the project to 'major accidents and/or natural disasters (such as flooding, sea level rise, or earthquakes)' has also been considered as per the 2014 Directive. Potential impacts associated with such events are discussed under each relevant chapter e.g. the vulnerability of the project to flooding is assessed under Chapter 13 – Water (Hydrology) of this EIAR.

In the description of the impacts of the activity the following attributes of the receiving environment and their interactions are described:

- Biodiversity - Terrestrial Ecology;
- Biodiversity - Aquatic Ecology;
- Land (Soils, Geology, & Hydrogeology);
- Noise and Vibration;
- Air Quality and Odour;
- Cultural Heritage;
- Population and Human Health.
- Water (Hydrology);
- Material Assets, and
- Interactions between the Factors.

2.4 Methodology

2.4.1 Assessment of the Effects – Evaluation Criteria

The assessment of effects has been undertaken in accordance with best practice, legislation and guidance notes. The significance criteria as set out in the EPA Guidelines (2002, 2003 and 2015 (Draft)) and listed in Table 2.1 below have been followed throughout this EIAR unless otherwise stated in the methodology for each chapter and/or specialist reports.

Table 2.1: EIAR Assessment Criteria

Significance Level	Criteria
Profound	An impact which obliterates sensitive characteristics
Significant	An impact, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Moderate	An impact that alters the character of the environment in a manner that is consistent with existing and emerging trends.
Slight	An impact, which causes noticeable changes in the character of the environment without affecting its sensitivities.
Imperceptible	An impact capable of measurement but without noticeable consequences.

As per the EPA Guidelines, impacts are considered as being negative, neutral or positive in nature. Impacts are also considered as being direct, indirect and/or cumulative, as appropriate. Duration of impact is considered as being:

- Temporary (up to one year);
- Short-term (from 1 to 7 years);
- Medium-term (7 to 15 years);
- Long-term (from 15 to 60 years); or
- Permanent (in excess of 60 years).

2.5 Project Team

This EIAR has been prepared by an MEHS EIAR Project Manager assisted by a team of qualified and experienced environmental specialists ('competent experts').

The EIAR has been prepared utilising both desk-based information including the previous planning applications, site reports and other third-party inspections undertaken as required by Limerick City & County Council, Bord Bia and other regimes for the facility, and also site based assessments to fully understand the existing baseline situation at the Ballyfaskin Enterprises Ltd facility and surrounds.

2.6 Guide to the Document

The document has been structured to facilitate a clear presentation of the proposed development, the potential impacts on the environment and the measures to mitigate these. Accordingly, the remainder of the document is set out as follows:

Chapter Three - Description of the Existing Development

Describes the existing processes and infrastructure at the Ballyfaskin Enterprises Ltd facility.

Chapter Four - Description of the Proposed Development

Provides a detailed description of the proposed developments being put forward by Ballyfaskin Enterprises Ltd.

Chapter Five – Alternatives Considered

It is a statutory requirement that a detailed evaluation of alternatives is undertaken within the EIA process. This chapter looks at 'reasonable alternatives studied by the developer' including potential alternative processes, movement of the development elsewhere and a do-nothing scenario and discusses the main reasons for the chosen option as required under the 2014 EIA Directive 2014/52/EU.

Chapters 6 to 13 – Impact Assessments

Chapters 6 to 14 comprise of a number of detailed technical assessments of the proposed development to ensure all potential impacts of the proposed development on the environment are addressed, including:

- Biodiversity - Terrestrial Ecology Assessment;
- Biodiversity - Aquatic Ecology and Appropriate Assessment;

- Land (Soils, Geology and Hydrogeology);
- Noise and Vibration;
- Air Quality and Odour;
- Cultural Heritage,
- Population and Human Health;
- Water (Hydrology); and
- Material Assets.

Chapter 14 – Interactions between the Factors

Chapter 14 assesses the interactions between the aspects of the environment likely to be significantly affected by the proposed development.

3 Chapter Three – Description of the Existing Development

3.1 Introduction

The total area of the site, the proposed areas is 2.6 Hectares. The only construction is the installation of an electrical substation.

The application relates to a proposed integrated 1100 sow pig production unit finishing c. 32.100 pigs per annum, at 105 to 110 kg. live weight. As a result of the breeding programme and the high health status of the pigs on this farm, some of the gilts bred and reared on this farm may be sold to other pig farms as replacement breeding stock. It is the intention of the applicant to operate the farm with the uppermost regard for environmental protection while at the same time implementing modern management methods on the farm.

This farm currently operates with a maximum capacity for a 600 Sow unit. At present Mr. Ryan finishes 100% of the pigs on this farm. Planning Permission was granted to Mr. Ryan for development on this farm by Limerick Co. Co. in 2012, for the extension of the piggery. The only works remaining is the construction of the Mill which will commence in 2019.

It is the intention of the applicant to continue to operate the farm with the uppermost regard for environmental protection while at the same time implementing modern welfare and environmentally friendly management processes on the farm. Modernisation/Consolidation is an essential part of viable sustainable pig production. The structures for which permission is being sought incorporate modern design concepts in the areas of animal welfare, insulation, ventilation and environmental protection in the operation of the farm.

Improvement in production efficiencies in the breeding herd and performance in the grower/finisher pigs are dependent on provision of adequate top quality housing and welfare in tandem with modern feeding and ventilation systems and top quality genetics.

The development of the site over the past 3 years sought to,

- To allow this farm to operate as a fully independent, integrated pig unit
- Provide adequate space for all pigs to ensure maximum performance and efficiency, and to achieve target sale weights.
- Improve the management washing routines within the unit, thus reducing washing time and water usage.
- To ensure the efficient use of all inputs such as labour, machinery etc., and to avoid the inefficiencies with regard to the transport of pigs between farms and the associated division of machinery and labour.

The total area of the site existing site is 2.6 Ha and at grid reference R 78891 23469 (O. S. Map no.73). The site is located in a rural farmland area, approximately 3km northeast of the town of Ballylanders.

Patrick Ryan's site at Ballylanders, Co. Limerick is located within the town land of Ballyfaskin, northeast of Ballylanders town centre and north of the R513 as shown on Figure 1.

The piggery complex is situated alongside a regional road (R 662) which runs along the north of the site in a north northly direction and which connects to the R512 to the south. To the north of the site is Ballyfaskin Cross Roads which intersects a local road and the R662.

The nearest dwelling house is the developer's, at a distance of approximately 30m north of the site. The next dwelling house is approximately 40m from the site. The area is extremely rural and not highly populated. The land around the site of the development is used for silage cutting.

The site boundary is marked by a combination of hedgerows and fencing. The complex is situated on flat ground and it is largely shielded from view from all directions due to the tree's characteristics and the topography.

Mr Ryan has made every effort as part of the development to further obscure the complex from the surrounding locale, if necessary, by a combination of a further hedgerow, native trees, fencing or soil embankment.

The proposed increase in capacity will not severely impact the landscape of the area and will blend with the existing agricultural units on the site.

Proposed to the EPA for consideration is to allow a higher capacity to increase the number of sows from 600 to 1000. The maximum height of the existing buildings would come from the Mill which would be approximately 18.3 meters to apex.

The site boundary is marked by hedgerows with fencing in some parts. The entrance is located at the northern east boundary has sufficient distance off the road to prevent queuing, as indicated in the Site Layout Plan (Figure 5).

Drainage:
Uncontaminated yard and roof runoff are diverted via the surface water gullies to a drain and piped into the site drainage ditch.

Underground Slurry Tanks:
All of the slurry storage tanks have varying capacity and are situated underground and below the buildings with the exception of the Mill. The tanks were constructed to conform to the Department of Agriculture, Food and Forestry's Specification No. 123 "Minimum Specification Slatted Livestock Units: Reinforced Concrete Tanks" DAFF, 1994.

See Figures 5 and 6 and C001 to C007 for a description of the location of site.

3.2 Use of Natural Resources - Water and Power Supply

Water serving the Ballyfaskin Enterprises Ltd facility is supplied primarily from groundwater sources on site and the secondary public water supply. Ballyfaskin Enterprises Ltd facility has a single well, located within the farm boundary. The well is not impacted by the proposed development and will continue to be used as a ground water source throughout the operational phase of the proposed fattening unit.

The proposed Ballyfaskin Enterprises Ltd facility if constructed will utilize the following energy streams:

- Electricity consumption 42,000 KWHrs;

The proposed developments discussed below in Chapter 4 will increase the power or water requirements at the existing farm.

3.3 Hours of Operation & seasons of operation

The proposed Ballyfaskin Enterprises Ltd facility will operate 365 days a year with typically 4500 pigs at different stages of growth at the facility. The typical batch is 16 to 22 weeks depending on the kill weight required by the processing factory. The activity between batches is low being mainly delivery of feed and supplies.

3.4 Input Raw Materials

The raw material for the facility is predominately feed and consumables, which is supplied by dedicated suppliers. The pigs after the 16 to 22 week batch are collected in specialized trailers and transported to the pig processers.

Waste arising from the development is predominately liquids generated during the cleaning of the houses following emptying of the houses. The liquid collected from this process is collected in the underground tanks and land spread in accordance with Nitrate regulations and in compliance with restrictions set by the EPA and Limerick City & County Council.

3.5 Drainage Infrastructure

Contaminated surface water at the proposed Ballyfaskin Enterprises Ltd facility is directed to the underground water tank. Clean water from the roofs is directed to surface water.

The existing surface water management regime on the facility comprises the collection of any potential contaminated surface water run-off via paved surfaces and its diversion into the underground water tank. The surface water discharge is a licensed discharge by the EPA.

3.6 Foul Waste Water

Waste water emissions from the existing Ballyfaskin Enterprises Ltd facility comprise of domestic sewage.

The domestic effluent will be treated in the existing office / welfare facilities on site.

3.7 Waste

The main type of non-hazardous waste produced on the Ballyfaskin Enterprises Ltd facility is pig slurry, fallen animals and a small volume of domestic waste. The non- hazardous waste that is removed from the site goes to a segregation station where further segregation and recycling take place.

Land spreading of pig slurry will be on the land around the site and other farm with an N&P requirement.

3.8 Environmental Management and Emissions

Ballyfaskin Enterprises Ltd facility will operate an Environmental Management System (EMS) covering the following:

- Identification of key environmental impacts of the operational activities;
- The setting of objectives and targets and a programme of improvements;
- Regular monitoring of environmental performance;
- Regular auditing both by internal and external groups;
- Establishment of operational controls to prevent and minimise significant impacts;
- Regular reporting of environmental performance;
- Monitoring and control systems reviewed and amended;
- Environmental procedures including incident reporting, complaints, and emergency procedures established;
- Provision of environmental awareness training and,
- Operation of preventative maintenance programmes.

3.9 Monitoring

The site has a number of requirements in relation to Bord Bia certification, Red Tractor, and Department of Agriculture for example slurry disposal, fuel deliveries, litter supply and other consumables.

3.9.1 Water Quality Monitoring

Under Bord Bia and good agricultural practice the surface drains around the site are inspected on a regular basis.

3.9.2 Monitoring of Air Emissions

The site has emissions from the ventilation system, the storage of the pigs and storage of slurry.

An assessment of potential air quality and odour impacts which includes existing emissions to air from the existing Ballyfaskin Enterprises Ltd facility within the baseline assessment is provided in **Chapter 9: Air Quality and Odour.**

3.9.3 Noise Monitoring

Ballyfaskin Enterprises Ltd facility has no noise monitoring, but noise monitoring has been conducted as part of the EIAR, according to the Agency's "Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities", NG4, 2016 and ISO 1996 "Description and measurement of environmental noise". Ambient noise was measured at 4 no. noise monitoring locations, which includes a number of noise sensitive locations/receptors and site boundary locations. The location of noise monitoring points are shown on **Figures 9.1**

Noise monitoring conducted in May 2019 concluded that no exceedances occurred at select noise monitoring locations for both daytime and night-time ELVs.

An assessment of noise emissions on site, the control of noise on site and a detailed assessment of noise emissions in relation to the proposed development is provided below in **Chapter 9 Noise and Vibration.**

3.9.4 Pest Control

The site now employs an external contractor under the service agreement to provide pest control and monitoring of Ballyfaskin Enterprises Ltd facility. The site is audited quarterly by a field biologist to log pest levels, monitor the effectiveness of controls onsite and identify any performance issues in relation to the pest management system at both sites. Pest management training is also provided to staff.

At the Ballyfaskin Enterprises Ltd facility, 55 external rat and mice traps are checked, monitored and re-laid on a monthly basis.

3.9.5 Wash Water and Land spreading

The pig slurry and contaminated storm water from the facility is collected and land spread.

Land parcels or sections of land parcels containing the following constraints to the spreading of sludge are avoided by Ballyfaskin Enterprises Ltd to screen out and minimise the potential environmental impacts of land spreading in such areas:

- Waterlogged land;
- Land which floods or is likely to flood;
- Frozen or Snow-covered land;
- Steeply sloping ground, (ie; gradients greater than 11%);
- Exposed bedrock;
- Fields that have been piped or mole drained where soil is cracked down to the drains or backfill;
- Fields that have been piped or mole drained in the previous 12 months, and
- Free-draining areas where the water table is within 1 m of the surface at the time of application.

The following buffer zones (listed in Table 3.8) in which no spreading occurs are implemented during land spreading at all suitable landbanks to avoid potential environmental impacts:

Table 3.1: Landspreading Buffer zones implemented at landbanks

Waterbody/Feature	Buffer Zone (m)
Extraction point of water supply providing 100m³ or more of water per day, or serving 500 or more people.	200
Extraction point of water supply providing 10m³ or more of water per day, or serving 50 or more people.	100
Extraction point of any other water supply for human consumption and all wells.	25
Lake shoreline or main river channel	20
Any other watercourse	10
Sensitive Buildings (e.g. schools, Hospitals)	200
Dwelling Houses	100
Public buildings or amenity areas.	50
Public Roads	10

In order to conform to the relevant legislation and to minimise the risk to pollution associated with the land spreading of organic fertiliser, the following conditions are met:

- Organic fertiliser will be applied to land in as accurate and uniform a manner as possible, using spreading machinery correctly calibrated and in good condition.
- The organic fertiliser will only be applied using low trajectory spreaders, band spreader or injection methods. Spray drift must be avoided and so the use of machinery with upward facing splash plate is not permitted.
- Organic fertiliser cannot be spread during the periods outlined in Schedule 4 of the Good Agricultural Practice for Protection of Waters 2010 including amendments S.I. 125 of 2011 & S.I. No 134 of 2014 or when heavy rain is forecast within the next 48 hours.
- Land spreading will be carried out as early as possible in the growing season, or to coincide with the growth patterns of a particular crop. This will maximise the uptake of nutrients by crops and thereby decrease the risk of pollution.
- The quantity of organic matter applied to land will not exceed the nitrogen and phosphorus requirements of the crop, or those detailed in the Nutrient Management Plan. The amount of organic matter applied to land, together with that deposited by livestock, cannot exceed an amount equalling 170 Kgs per hectare per annum.
- Spreading will not be undertaken on lands delineated as Source Protection Areas where areas of extreme vulnerability classification are determined within the Outer Source Protection Area. Areas of high,

moderate, or low vulnerability within the Outer Source protection area are subject to organic loading rates, as specified in the GSI Response Matrix for land spreading of Organic waste.

MONTGOMERY E.H.S.

ECOLOGY, ENVIRONMENTAL, TRAINING AND HEALTH & SAFETY CONSULTANTS

Odour Management Plan

Submitted to Limerick County Council in respect of

Expansion of Piggery Operation of Ballyfaskin Enterprises Ltd, Ballyfaskin, Ballylanders, Co. Limerick

Montgomery EHS Ltd Ltd
Kantoher Business Park
Killeedy
Ballagh
Co Limerick
Mobile (087) 239 0421
Email: trevor@mehs.ie

Environment ● Safety ● Training ● Project Management

BALLYFASKIN ENTERPRISES LTD

ODOUR MANAGEMENT PLAN

This document has been prepared on behalf of and for the exclusive use of Ballyfaskin Enterprises Ltd by Montgomery EHS Ltd on the basis of an agreed specification for submission to Limerick County Council as part of the EIS process.

Conclusions and recommendations contained in this Document are based on information supplied by the Client and others. Unless expressly stated otherwise, information provided by Third Parties has not been verified by Montgomery EHS Ltd.

Montgomery EHS Ltd accept no liability or responsibility whatsoever in respect of any use of or reliance upon all or part of this Document by any third party.

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Montgomery EHS Ltd
Kantoher Business Park
Killeedy, Ballagh,
Co. Limerick
Mobile (087) 239 0421

BALLYFASKIN ENTERPRISES LTD

ODOUR MANAGEMENT PLAN

June 2019

Contents

Montgomery EHS Ltd
Kantoher Business Park
Killeedy, Ballagh,
Co. Limerick
Mobile (087) 239 0421

Montgomery EHS Ltd
Kantoher Business Park
Killeedy, Ballagh,
Co. Limerick
Mobile (087) 239 0421

1.0 Introduction

This Odour Management Plan outlines the methods by which Ballyfaskin Enterprises Ltd will systematically assess, reduce and prevent potentially odorous emissions from the piggery operation at Ballyfaskin, Ballylanders, Co. Limerick.

The Odour Management Plan will serve to aid the decision-making process on the choice of controls, general site design, and operational practice in line with current industry best practice. The odour management plan is a working document with the specific aim of ensuring that:

- Odour is considered as part of routine inspections;
- The risk of unplanned odour releasing incidents or accidents that could result in annoyance is minimised;
- Odour is primarily controlled at source by good operational practices, the correct use and maintenance of plant, and operator training; and
- All appropriate measures are taken to prevent or, where that is not reasonably practicable, to minimise odorous emissions to air from the installation that may be considered offensive at locations outside of the installation boundary. The methodologies presented take account of Environment Agency (EA) guidance documentation, as detailed below:
    - Environment Agency Technical Guidance Note H4 – Odour Management

This Odour Management Plan addresses the impact of odour release and the control measures employed to mitigate the risk. These are supported through monitoring procedures to identify both elevated levels and review complaints should they arise. The complaints management procedure including the management responsibilities are also addressed

This document outlines the methods by which Ballyfaskin Enterprises Ltd will systematically assess, reduce and where possible prevent potentially odorous emissions from his piggery operation.

1.1 The Applicant

Ballyfaskin Enterprises Ltd have been operating piggery operations on a continuous basis since the early 1990's in the area. The site increases the number of sows that the site will produce on a 16 to 24 week cycle.

1.2 What standards of odour control are expected?

1.2.1 What standard of control are we aiming for?

In the case of odour, pollution is considered in terms of causing offence to the sense of smell, i.e. causing annoyance to people who live in the area or are there for some other reason, through exposure to odour.

The point at which `pollution' in the form of offence to the sense of smell is occurring, it is taken to be the point at which there is `reasonable cause for annoyance'.
The aim of the legislation is to achieve `no reasonable cause for annoyance' by persons beyond the boundary of the installation, i.e. sensitive receptors, as far as is possible using Best Available Techniques.

1.2.2 Who are sensitive receptors?

Sensitive receptors are primarily people in dwellings, hospitals, schools and similar premises, but can include people frequenting open spaces, for example, parkland.
The person in control of the installation would not normally be considered to be a sensitive receptor. Persons who live in close proximity in tied housing may be sensitive receptors (consider the families of the farm workers). If such properties are rented to people who do not work on the farm, the tenants are likely to be sensitive receptors, even if they rent with the knowledge that there is an odour source nearby, or recognise that odour is a feature of the rural environment.
In any particular situation however, the interpretation of the courts will be the decisive factor.

1.2.3 What is `no reasonable cause for annoyance'?

The amount of annoyance should not be assessed only by means of the number of complaints. You should still use best practice to keep odour levels as low as reasonably possible where people live close by, even if complaints are rarely received.

The legislation requires that the amount that you spend on taking measures to reduce odour should be in proportion to the annoyance caused or potential to cause annoyance. Good practice should be adhered to at all times by all installations, but if a large number of complaints are received, or the installation is close to a built up area then you may have to expend more effort to reduce odour. BAT covers management techniques (i.e. Best Practice), as well as hardware, to control odour.

1.2.4 Standards for new installations

Ballyfaskin Enterprises Ltd plans to employ BAT from the outset and this will include:

- Watering systems
- Feeding system
- Covered water storage tanks
- Feed Storage systems
- Litter storage
- Storage of carcases
- System for unloading and loading of pigs

1.2.5 Complaints

Odour complaints relating to an installation may be received directly by the Local Authority. The Local Authority will investigate the complaint and if there is found to be a breach of the planning conditions, a notice may be served, requiring the operator to address the issues or proceedings may be instigated.

1.2.6 Overarching Management Responsibility

Ballyfaskin Enterprises Ltd will have responsibility for ensuring that nuisances and hazards arising from the Piggery buildings due to odour are minimised. During operation of the site, meetings will be held as required and at minimum quarterly intervals for site management to discuss current and planned site operations with respect to their potential for generating odorous site emissions. Identified actions arising from the meetings and responsibilities for their completion will be recorded within the meeting minutes.

In promoting proactive management of the risks arising at the site, during active disposal of litter, Ballyfaskin Enterprises Ltd will obtain from recognised sources a three day forecast of meteorological conditions at the site at the start of each working week and then again in the middle of each working week. Details of the forecasted conditions will be assessed against proposed activities for the period of forecast and management/monitoring actions appropriate as required. Key data to assist Ballyfaskin Enterprises Ltd will be the assessment of wind speed, wind direction and potential pressure falls.

1.2.6 Temporary Odorous Activities

On occasion it is necessary to undertake temporary actions that are likely to cause potentially significant odorous emissions (e.g. storage of litter outside), Ballyfaskin Enterprises Ltd will contact the Local Authority and other interested parties before such actions are taken to advise them of the operation being undertaken and that any odour will be of a temporary nature. Where practicable, such actions should only proceed when the prevailing wind direction is away from sensitive receptors and appropriate odour control measures will be implemented in accordance with the Odour Management Plan.

2.0 Management of odour

2.1 General aspects of odour management

2.1.1 Overview

An Odour Management Plan gives an overview of the principles for odour reduction and containment as they relate to Ballyfaskin Enterprises Ltd piggery operation. The piggery operation by nature means that preventing odour generation at source is rarely possible as animals are inherently odorous. However, there are many things that can be done, often at low cost, to minimise odour or to prevent it reaching neighbours.

In most cases, attention to housekeeping and good operational practices should be capable of achieving a significant reduction in the level of exposure experienced at sensitive receptors.

When the piggery operation has implemented all reasonable measures and it has not succeeded in reducing emissions to the point where the exposure of sensitive receptors (local residents) is unacceptable then the next stage of abatement technology will be considered. This will require odorous air from the piggery operation to be contained at source and extracted to an abatement system with minimum fugitive losses. Bio-filters or absorption `scrubber' systems (chemical or biological) are the most technically viable due to cost and ease of operation. The implementation of 'bio-filters or scrubber treatment systems is considerably more expensive.

2.1.2 Using location/siting as a means of odour control

The location of the previous development was selected to move to the east of the existing piggery operation and away from the residential dwelling.

2.1.3 Complaints procedure

A procedure will be established for verifying and responding to complaints about odour as part of the site operation.

The establishment of a procedure covering complaints can:

- improve relationships with neighbours;
- Identify sources of odour and prevent future problems.

The procedure will include a response within 48 hours of receipt of a complaint, including a discussion with an explanation to the complainant.

2.2 Sources of odour

2.2.1 Livestock housing

Odour emission rates from pig houses depend upon the odour concentration within the building and the ventilation rate to the outside atmosphere. Internal odour concentrations depend upon many factors including the number of animals housed, building design and management, methods of provision of feed and drinking water, age of the animals and manure management techniques. The minimisation of odour production is addressed by Defra in Section 4 of its Code of Good Agricultural Practice (Defra, 2009).

The existing pig buildings and the proposed substation, or would be, ventilated via high speed ridge mounted fans, each with a short chimney. This method of exhaust air treatment produces improved air dispersion, especially under low wind speed conditions. Slurry is stored under slats within the houses and fugitive emissions from the housing can be expected to be minimal because of the extraction ventilation systems. Therefore, the ridge mounted chimneys would be the primary source of odour from the site.

Based upon many years of research and measurement, ADAS, in conjunction with the Silsoe Research Institute and the UK Met Office, has developed an emission 'blueprint' which covers odour emissions from a wide range of agricultural sources, including pig farms. Odour emissions can vary seasonally, diurnally and throughout the growing cycle and are also affected by feeding and

drinking systems and slurry and manure storage methods. These factors have been taken into account in the estimation of emissions.

The odour associated with Piggery growing tends to be related to ammonia. Hydrogen sulphide can also be present. High ammonia concentrations usually accompany high odour concentrations in pig buildings where litter is in poor condition (too wet). The presence of high ammonia is only a part of the overall odour issues.

2.2.2 Dust

An important mechanism in the release to atmosphere of odour may be the presence and subsequent emission via the ventilation system of suspended dust particles originating from bedding, feed and the pig. Odorous compounds may be adsorbed onto these particles and the particles themselves may decompose releasing volatile compounds.

2.2.3 Factors affecting the release of odour

The level of odour emissions from intensive livestock installations is dependent on a number of factors, principally:

- size of operation;
- the type of building/ventilation;
- type of operation and the rearing cycle;
- the feeding regime;
- the way in which the operation is managed;
- storage arrangements for wash water and litter;
- Land spreading practices.

The impact of those emissions on the local environment depends upon:

- proximity to local housing and other sensitive receptors;
- The nature of the local topography and prevalent weather conditions.

2.3 Aspects of odour management common to all operations

2.3.1 Selection and use of animal feed

Below gives a guide on the selection and use of piggery feeds at different stages in the rearing cycle in order to reduce nitrogen excretion. A high protein diet increases the nitrogen and sulphur content of litter, contributing to emissions of ammonia to air and potentially other odorous compounds when the litter undergoes anaerobic degradation.

The feed systems available now are significantly improved compared to the feeder installed in the existing houses at other facilities in the area.

2.3.2 Feed delivery, milling and preparation

Good housekeeping measures include:

- avoiding accumulation of waste feed;
- cleaning up spills;
- Avoiding overflow and spillage from feed and drinking systems.

The addition of odorous by-products such as whey and fish meal to feed will not be used by Ballyfaskin Enterprises Ltd's piggery operation as these may increase the odour level of the feed (and accumulated spillages will smell more).

Ballyfaskin Enterprises Ltd's operation avoids the purchase of finely ground feeds and long feed drops onto floors should be avoided because they increase dust emissions. As odours may be absorbed onto particulate matter and then carried out of the building via the ventilation system.

Odours arising from storage of feed is minimised by employing purpose built silos.

The delivery of the feed to the storage areas and from the storage container to the feeding station is through a closed system to minimise the generation of dust.

The piggery operation will conduct the mixing and milling of dry foodstuffs.

2.3.3 Disposal of carcasses

Carcasses will be removed frequently by a licensed contractor on at least a weekly basis to prevent odour-related annoyance and be covered to prevent access by birds or rodents using plastic bags or lidded bins where possible.

The Animal By-Products legislation specifies the requirements for carcass disposal and Ward Waste are licensed by the Department of Agricultural. The carcasses are delivered to a rendering plant for rendering.

2.3.4 Ventilation and humidity

Ventilation rates are determined by the needs of the animals and vary with season. Ballyfaskin Enterprises Ltd's piggery is naturally ventilated odour will be carried out of the houses with exhausted air and the exhaust rate will be highest when the outside temperature is high. This generally occurs in the summer months when the potential to cause odour annoyance is highest.

Ventilation systems should be run at the optimum rate for the number of animals present. Insufficient ventilation capacity can lead to excessively high room temperatures which increase wash water and litter decay rates and hence odour emissions.

2.3.5 Atmospheric dispersion of odours

Once odorous emissions leave the source they undergo dilution and dispersion in the atmosphere downwind of the installation. Where odours are released at height, they are likely to be more effectively dispersed than those released at a low level or, inadvertently, from open doors.

The design of ventilation systems is a specialist field but in general terms roof (apex) vents produce better dispersion of odorous releases than those positioned along the side of buildings (side wall vents).

Ballyfaskin Enterprises Ltd after each batch will ensure that dust deposits around the ventilation discharge points are cleared away on a regular basis to prevent excessive build-up.

2.3.6 Slurry management to prevent stagnation

In any process or operation stagnant slurry can be a source of odour. The following measures can help to ensure that dirty water (water contaminated by livestock excreta) is disposed of quickly and unintentional areas where water could accumulate and stagnate are minimised:

- Fit kerbs to concrete aprons to direct dirty water into collection tanks;
- Enclosing slurry collection systems;
- Emptying and cleaning slurry collection systems to avoid allowing anaerobic conditions to develop in settled sludge;
- Maintaining drains and concrete areas;
- Dealing quickly with dirty water generated when buildings are cleaned out at the end of the cycle.

2.4 Odour management in piggery rearing

2.4.1 Odours from piggery housing

Odours from piggery buildings come from a number of sources. They are mainly caused by the breakdown of droppings and litter. Other sources of odour are from animal feed and waste food spilt onto floors. A major means of minimising odour emissions is through the use of good agricultural practice. Odour mitigation methods will be similar for all different piggery operations.

The UK Defra Code of Good Agricultural Practice for the Protection of Air advises that the following factors contribute to the emission of odours from piggery buildings:

- Build-up of Litter on concrete around buildings;
- Removal and disposal of dead animals;
- Drain maintenance;
- Bedding cleanliness;
- Management of drinking systems, with particular emphasis on frequently adjusting nipple and drip cups to pig eye level to avoid spillage and wet litter;
- Stocking density;
- Litter moisture content;
- Insulation of the buildings and the long term maintenance of that insulation;
- Ventilation and heating system;
- Type of heating;
- Composition of the feed, particularly its oil and fat content and its protein content.

Ballyfaskin Enterprises Ltd's piggery operation will be a well-run operation with good housekeeping practices as listed above. There are many improvements in the feed and watering systems available for piggery operation since first built in the limerick area in the 1980's and 1990's. The buildings will have installed new and improved feed and water systems.

2.4.2 Minimising odour arising from animals and the piggery buildings

Odour from litter and manure based systems may be minimised by increasing the dry matter content of the litter or manure, by both preventing spillages of water and providing a drying mechanism. New buildings should be able to meet this criterion.

2.4.2.1 Dust

Dust emissions may be a problem particularly for larger pigs. Odorous compounds may be adsorbed onto dust particles and the particles themselves may decompose releasing volatile compounds. It is therefore important to:

- Control the generation of dust within the house through management of slurry content and air quality.
- Minimise the amount of dust emitted from buildings.
- Ensure dust deposits around ventilation discharge points are cleared following the empting of each batch to prevent excessive build up. Minimising dust production through good housekeeping and animal husbandry would be cost effective, in addition to the obvious welfare benefits.
- Collect the water discharging from cleaning operations in sealed tanks.

The odour emission from a building can be dependent on particulate emission. Data published by Van Geelen suggests that removing the dust fraction from an odorous stream reduces the odour concentration by about 65%.

2.4.2.2 Litter quality

Litter quality is affected by:

- Temperature and ventilation;
- Drinker type and management;
- Feeder type and management;
- Litter material and depth;
- Condensation;
- Stocking density;
- Feed formulation and quality;
- Pig health.

The house will have systems to minimise ventilation and heating requirements. The new houses ventilation will be designed to remove air moisture and thereby improving litter quality.

2.4.2.3 Drinking systems

The management of drinking systems should ensure that all litter is kept dry i.e. moisture content is less than 40%. Ballyfaskin Enterprises Ltd will check the

operation of his pig buildings on a daily basis, this includes water systems should be checked for leaks and action taken as necessary. The drinking system in the houses will be new and modern in design and these system will include nipple drinkers and drip cups (operate on demand) should be used in preference to bell drinkers (always full of water) and they should be sited at the correct height to minimise spillage.

2.5 Odour and Slurry management

2.5.1 Wash water and Litter handling

Slurry handling and storage can be significant sources of odour. At Ballyfaskin Enterprises Ltd's piggery operation every effort will be taken to reduce odour from slurry as these sources can have a substantial positive effect on the overall odour impact of the installation on local receptors. In particular, anaerobic conditions can lead to the formation of high concentrations of odorous substances within the litter which will be released during `bubbling off or when it is disturbed. The need to keep the litter dry as discussed is critical to minimising odour generating potential.

The operation aims to check access area and other set-down areas kept free of wash water or litter. Minimising the surface area of material exposed will reduce the odour emission.

2.5.2 Wash water and Litter storage

When the piggery operation is emptied every effort will be made to clean the houses out to the best possible condition prior to washing. This reduces the slurry nutrient and organic load. The slurry storage tanks are covered and applied on to lands off-site and covered by a nutrient management plan.

Covering or enclosing slurry storage tanks will stop or significantly reduce odour escaping to atmosphere.

Slurry or litter removed from the buildings at the end of the production cycle should be stored to avoid odour generation. The storage area should be stored away from residential areas. In Ballyfaskin Enterprises Ltd's piggery operation the slurry will be removed and placed in a tanker for off-site recovery of the

nutrient content. This avoids odours from storage of the slurry and associated issues such as runoff, dust, etc.

2.5.3 Treatment of litter and slurry

There will be no treatment of litter at Ballyfaskin Enterprises Ltd's piggery farm and all litter will be loaded into appropriate containers.

Slurry will be applied to lands off-site without further treatment

2.6 Slurry Application to land

Odours released from animal manure spreading activities are one of the most frequent sources of odour complaint to Local Authorities. The slurry from Ballyfaskin Enterprises Ltd's piggery farm is low in odour as the cleaning of the piggery buildings ensures that this is maintained.

3.0 Monitoring

3.1 Monitoring Controls

The monitoring of temperature in the piggery buildings will ensure that the slurry / litter procedures as little odour as possible. In addition monitoring of feed and water systems on a daily basis is critical.

3.2 Monitoring Odorous Releases

3.2.1 Olfactory Monitoring

Odour shall be monitored daily at points around the site boundary and the surrounding locality (when necessary). Locations selected for offsite monitoring are based on the prevailing wind direction (i.e. upwind and downwind locations).

At each location observations shall be made concerning odour intensity, persistence and character. Surveys shall be carried out in accordance with the monitoring protocol contained within the EPA Air guidance Note AG 5. Details will be logged following the instruction provided in the form (see Appendix A).

The odour assessor may not be subject to significant compost odour in the 30 minutes prior to the assessment and shall be compliant with the requirements laid down in the Olfactory Survey procedure. This is to ensure that monitors are not suffering from odour fatigue and will be sensitive to piggery odours.

Wherever possible, odour assessor will be chosen from office or home based employees that are unlikely to suffer from adaptation to odour. Adaptation to odour process whereby a person gets used to (adapts to) an odour and so may be unable to detect an odour. All staff responsible for assessing odour will receive appropriate and adequate training from the site management on the odour inspection procedure. Each assessor carrying out odour assessments will be initially accompanied by a more experienced member of site management to ensure that the nature and offensiveness of any odours detected are being perceived similarly.

Assessors will be instructed to avoid strong food or drinks for at least one hour beforehand and those members of staff who have a cold, sore throat or sinusitis will not be used to carry out odour assessments.

3.3 Monitoring Pathways

3.3.1 Meteorological Conditions

Weather forecasts would be monitored (e.g. web based services) to enable potential contingency actions to be implemented.

The site will be equipped with a basic weather station providing logging of wind speed and direction to help the management of the site in accordance with local weather conditions.

Monitoring Requirements

- Rainfall
- Pressure
- Temperature
- Humidity
- Wind speed and
- Wind direction

All recorded continuously

3.4 Monitoring Impacts

Monitoring of impacts shall be achieved by recording and monitoring complaints. Complaints may be reported directly to site or via Local Authority or the EPA (24hr complaint reporting system).

Complaints records shall include:

- Date & time,

- Nature of complaint,
- Locality of complaint,
- Name of complainant (if available),
- A summary of investigation, actions taken and outcome.

3.5 Record Keeping

In addition to record keeping of the piggery operation as required by planning permission, IPPC License and good practice, daily records shall be maintained and include the following details:-

- Results of inspections and olfactory monitoring carried out by site personnel;
- Weather conditions including wind speed and wind direction;
- Operational problems including date, time, duration, prevailing weather conditions and cause of problem;
- Complaints received including address of complainant (if available); and
- Details of corrective action taken and any subsequent changes to operational procedures.

4.0 Management Responsibilities and Review

The control of odour will be managed according to good practice.

It will be the responsibility of Ballyfaskin Enterprises Ltd to ensure that the operation procedure and practices is adhered to at the site. This includes ensuring that the odour control measures detailed in above.

Ballyfaskin Enterprises Ltd will be supported by an external consultant, Bord Bia Inspector, Local Authority personnel, etc. The Compliance Manager is responsible for monitoring, auditing and evaluation of site performance, which will include ensuring good compliance.

Odour control measures will be reviewed through internal audits as part of the monitoring and reporting of the operation procedures.

5.0 Figures

Figure 1 – Ballyfaskin Enterprises Ltd's piggery operation

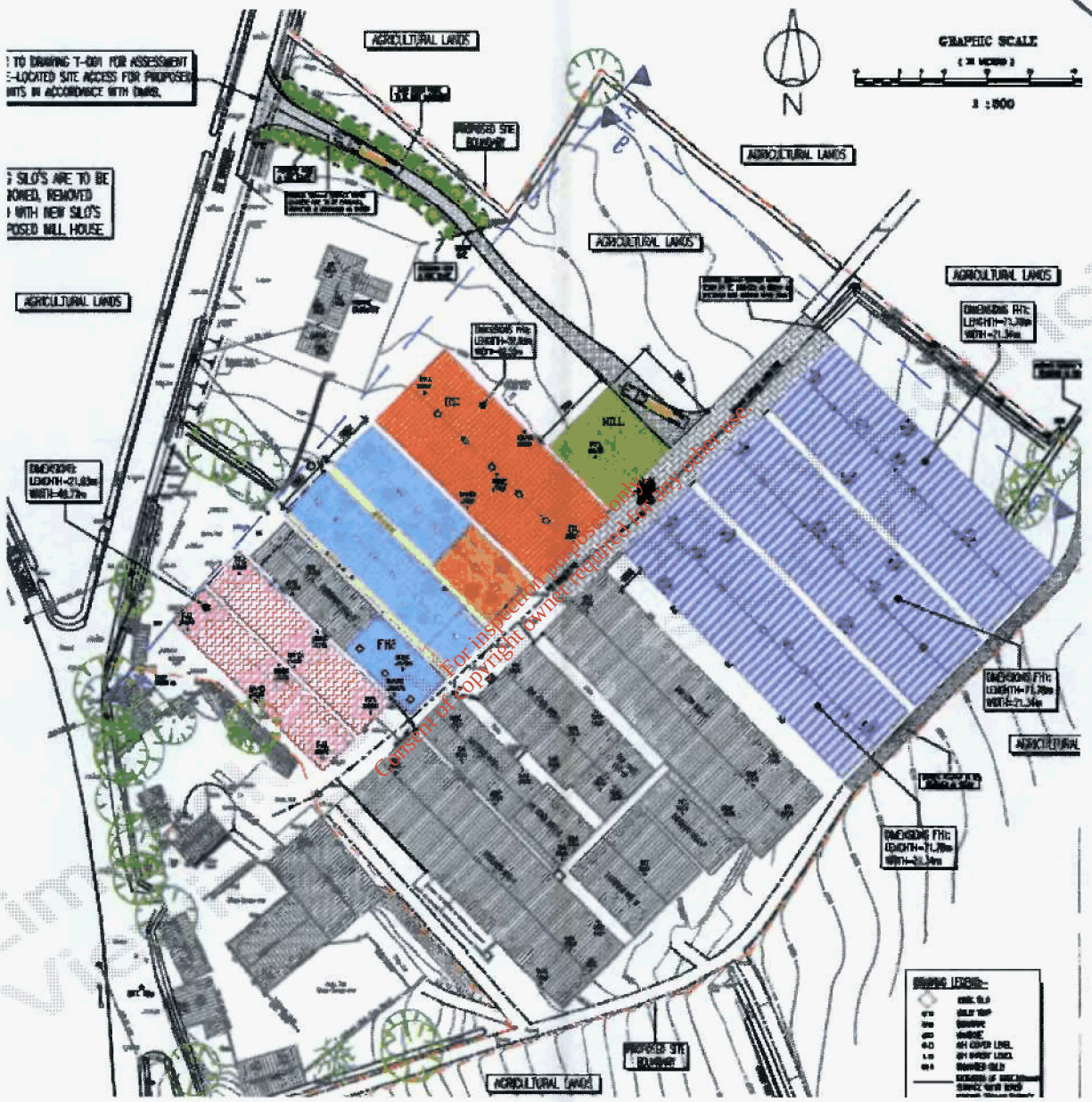
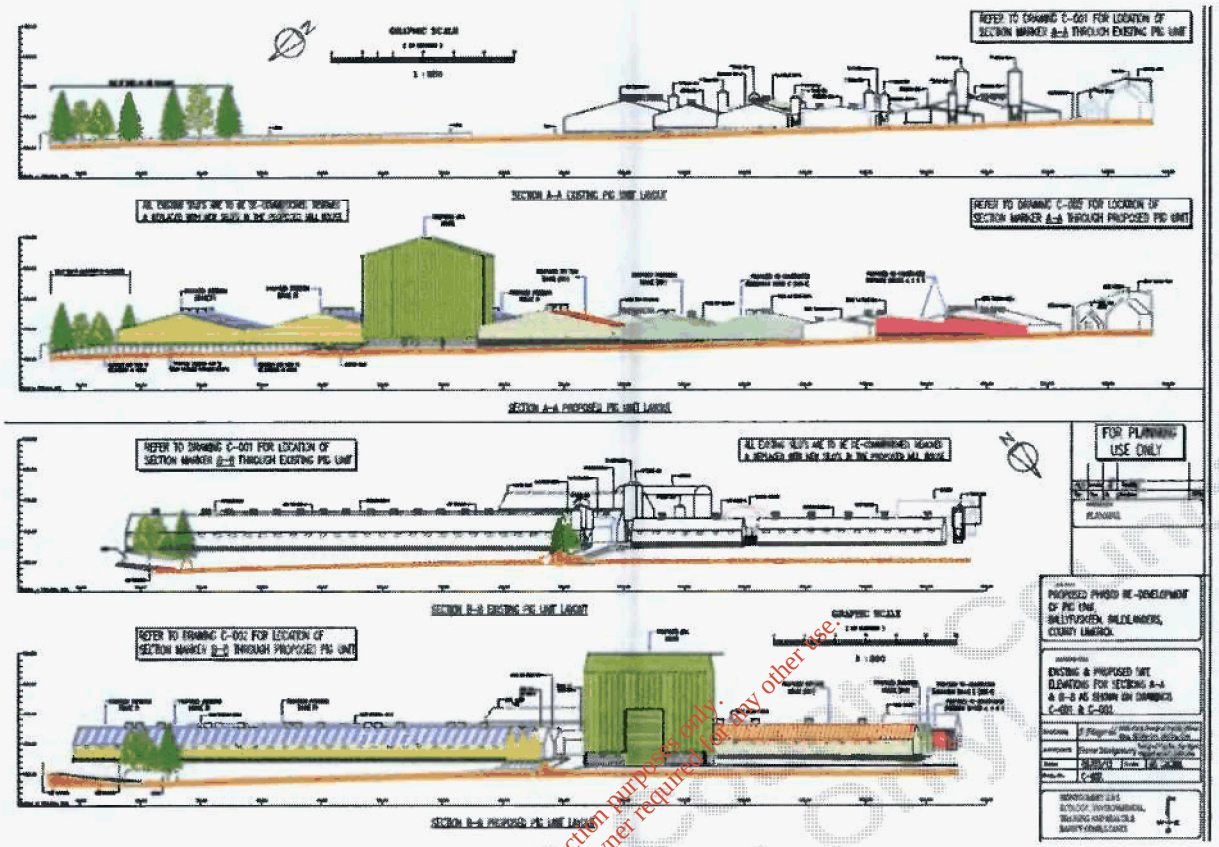
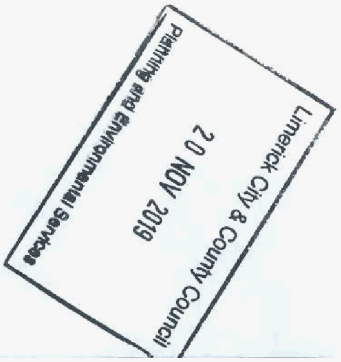


Figure 2 – Ballyfaskin Enterprises Ltd's piggery operation



6.0 Odour Sources and Actions Taken to Minimise Odours

Odour Related Issue	Potential Risks and Problems	Actions taken to minimise odour and odour risks at Poultry Farm
Manufacture and selection of feed	• Milling and mixing of compound feeds. • The use of poor quality and odorous ingredients. • Feeds which are 'unbalanced' in nutrients, leading to increased excretion and litter moisture and emissions of ammonia and other odorous compounds to air.	• No on-site milling and mixing. • Feed specifications are prepared by the feed compounder's nutrition specialist. • Feed is supplied only from accredited feed mills, so that only approved raw materials are used.
Feed delivery and storage	• Spillage of feed during delivery and storage. • Creation of dust during feed delivery.	• Feed delivery systems are sealed to minimise atmospheric dust. • Any spillage of feed around the bin is immediately swept up. • The condition of feed bins is checked frequently so that any damage or leaks can be identified.
Ventilation system	• Inadequate air movement in the house, leading to high humidity and wet litter. • Inadequate system design, causing poor dispersal of odours.	• The ventilation system is regularly adjusted according to the age and requirements of the flock. • The ventilation system is designed to efficiently remove moisture from the house.



Odour Related Issue	Potential Risks and Problems	Actions taken to minimise odour and odour risks at Poultry Farm
Litter management	• Odours arising from wet litter (see above). • The use of insufficient or poor quality litter. • Spillage of water from drinking systems. • Disease outbreaks, leading to wet litter.	• Controls on feed and ventilation (see above) help to maintain litter quality. Additional controls include:- • Use of nipple drinking systems which minimise spillage. • Insulated walls and ceilings to prevent condensation. • Concrete floors to prevent water ingress. • Stocking density at optimal levels to prevent overcrowding. • Use of a health plan, with specialist veterinary input used as necessary.
Carcass disposal	• Inadequate storage of carcasses on site. • On-site disposal of carcasses by incineration.	• Carcasses are placed in sealed containers immediately after they are removed form the house. • Use of a purpose-designed incinerator which is approved by Animal Health.
House Clean Out	• Creation of dust associated with litter removal from houses. • Use of odorous products to clean houses.	• Litter is carefully placed into trailers positioned at the entrance to each house. When full, the trailer is covered. • Only approved and suitable products are used.
Used litter	• Storage of used litter on site. • Transport of litter and applications to land.	• There is no storage of used litter outside the houses at any time. • Litter is transported in covered trailers. • Most of the litter is used for power generation, any which is land-spread is under the control of a separate farming business. A written agreement is in place.
Dirty water management	• 'Standing' dirty water during the production cycle or at clean out. • Applications of dirty water to land.	• Areas around the house are concreted and remain clean during the production cycle. • At clean-out, dirty water is directed to underground tanks for storage. It is then spread onto land, under the control of a separate farming business. A written agreement is in place.

7.0 References

Standard Farming Installation Rules for Pig and Poultry PPC Installations. Version 1.1, February 2001, Scottish Environment Protection Agency.

IPPC Guidance Note H4: Horizontal Odour Guidance Part 1 - Regulation and Permitting, Part 2 - Assessment and Control, Environment Agency, October 2002 (consultation document).

Code of Good Agricultural Practice for the Protection of Air, Ministry of Agriculture, Fisheries and Food (now Defra), October 1998.

Nielsen, V.C. `Prevention and control of smells on livestock farms, farm waste management.' Booklet 2840, Ministry of Agriculture, Fisheries and Food (now Defra), 1985.

Sneath R.W. and Robertson A.P. Odours from Modern Poultry Production.

Clarkson and Misselbrook `Odour emissions from broiler chickens' in `Odour and ammonia emissions from livestock farming' (Neilsen, Voorburg & L'Hermite eds.), Elsevier Applied Science, London. 1991.

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Schauberger and Piringer (1997)`Guidelines to assess the protection distance to avoid annoyance by odour sensation caused by livestock husbandry', Proceedings of the Fifth
International Environmental Symposium, May 29 - 31, pp170-178 in Environment Agency R&D Technical Report P4-079/TR/2 Best Available Techniques for Assessment and Control of Odour pp. 202-213.

Environment Agency Odour Guidance Internal Guidance for the Regulation of Odour at Waste Management Facilities July 2002 VERSION 3.0.

Environmental Agency - Technical Guidance note IPPC4, Draft Horizontal Guidance for Odour Part 1 - Regulation and Permitting.

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New Zealand Ministry for the Environment - Good Practice Guide for Assessing and managing Odour in New Zealand.

Scottish Executive - Code of Practice on Assessment and Control of Odour Nuisance from Waste Water Treatment Works, April 2005.

Scottish Executive - Guidance on Statutory Code of Practice on Sewerage Nuisance, April 2006.

Verein Deutscher Inegieure (VDI) 3940 – PART 2 Measurement of Odour Impact by Field Inspection – Measurement of the Impact Frequency of Recognisable Odours Plume Measurement, February 2006.

Appendix 1 Odour Investigation Field Record Sheet

General	Your Reference	Site Licence No.	Assessment by	Date of Assessment
			Your name: (other Investigator(s) present):	

Pre-Assessment Preparations	Observer is free from medical conditions (cold, sore throat, sinus trouble)?	Observer abstinence (30 min) from smoking, flavoured drinks, scented toiletries and deodorisers?	Reason for odour assessment – Complaint verification; routine; other (specify):	Map – Has a map showing assessment locations been attached?	Weather Conditions Note 3 (record wind info on page 2):
	Yes No	Yes No		Yes No	

Notes (the ranking values in these notes must be used when completing the field observations table overleaf)

Note 1: Observation point Sensitivity (assuming detectable, if not then 0)

1 Remote (no housing, commercial/industrial premises or public area within 500m of observation point)
2 Low sensitivity (no housing, commercial/industrial premises or public area within 100m of observation point)
3 Moderate sensitivity (housing, commercial/industrial premises or public area within 100m of observation point)
4 High sensitivity (housing, commercial/industrial premises or public area within area of observation point)
5 Extra sensitive (complaints arising from residents, business and users of public areas within area of observation point)

Note 2: Wind Strength

0	Calm	Smoke rises vertically
1	Light air	Direction of wind shown by smoke drift, but not wind vane
2	Light Breeze	Wind felt on face, leaves rustle, ordinary vane moved by wind
3	Gentle Breeze	Leaves and small twigs in constant motion
4	Moderate Breeze	Raises dust and loose paper, small branches are moved
5	Fresh Breeze	Small trees in leaf begin to sway
6	Strong Breeze	Large branches in motion, umbrellas used with difficulty, against the wind
7	Near Gale	Whole trees in motion, inconvenience felt when walking against wind
8	Gale	Twigs break off trees, progress generally impeded
9	Strong Gale	Slight structural damage occurs (chimney pots and slates removed)

Note 3: Weather Conditions

Precipitation – dry, rained recently, drizzle, raining, foggy
Temperature – cold, cool, warm, hot

Note 4: Odour Persistence

0 No Odour
1 Intermittent (detected intermittently during the period of assessment)
2 Persistent (detected throughout the period of assessment)

Note 5: Odour Intensity

0 No Detectable Odour
1 Faint Odour (barely detectable, need to stand still and inhale facing into wind)
2 Moderate Odour (easily detectable while walking and breathing normally, possibly offensive)
3 Strong Odour (bearable but offensive – might make clothes / hair smell?)
4 Very Strong Odour (unbearable, difficult to remain in area affected by odour)

Odour Source Investigation (Post Odour Survey)	Start Time:	Do any of the odours experienced on-site match in character those recorded during the off-site survey?	List areas Inspected:	What relevant activities were occurring on-site during the off-site odour assessment?
	Finish Time:	Potential on-site odour sources identified:		

	Observer Location		Wind (nd = if not detectable)			Time		Odour Rating		Odour Description Comments
Parameter	Name of household / commercial site (describe so that location can be easily identified again by a third party)	Sensitivity (1-5) Note 1	Direction (from which wind flows)	Orientation (Observer Vs facility)	Strength Note 2	Start Time (24hr clock)	Period of observation	Odour Persistence (0-2) Note 4	Odour Intensity (0-3) Note 5	Description of any odours, other source(s) of odours etc. (Also note variable weather conditions etc).
Thresholds that could indicate nuisance	...	≥ 3	...	Down-Wind Approx DW or not detectable etc	...	...	...	1 or 2	≥ 2	**Guide-** A location where the score meets or exceeds all the threshold values may be deemed subject to nuisance/significant impairment, particularly if the observations are supported by public complaints on impact, frequency and duration of odours.
Field observations										

Brief details of any meeting with local residents/complaints received during assessment (include names/addresses/telephone numbers etc):