FEHILY TIMONEY & COMPANY

CONSULTANTS IN ENGINEERING & ENVIRONMENTAL SCIENCES

IRELAND UNITED KINGDOM POLAND SAUDI ARABIA

Ref: J:/LW09-660-04/Let015/DFM

Administration
Environmental Licensing Programme
Office of Climate, Licensing & Resource Use
EPA Headquarters
PO Box 3000
Johnstown Castle Estate
Co. Wexford

15 August 2013

RE: W0275-01: Notice in accordance with Article 14(2)(b)(ii) of the Waste Management (Licencing) Regulations

Dear Sir/Madam,

Please find enclosed a submission responding to the notice in accordance with Article 14(2)(b)(ii) of the Waste Management (Licencing) Regulation, dated 21 June 2013, in relation to W0275-01.

This submission comprises;

- 1 original and 1 copy of the response in hardcopy format
- 16 copies of the response in searchable .pdf on CD-ROM
- Drawing Schedule

It is noted that the notice requires the submission of a revised non-technical summary (Application form and EIS) to reflect the information supplied insofar as that information impinges on the non-technical summary. It is considered that the only information submitted impacts on Request No. 3 of the notice i.e. to describe how the waste hierarchy in Section 21A of the Waste Management Act 1996 to 2013 is applied.

As noted in the response document, this issue has been responded to in previous correspondence with the Agency, dated 13th September 2011. A revised non-technical summary of the Application From was submitted at that time as a revision was appropriate.

It is not considered than information contained in this submission, or previous correspondence with the Agency, requires the revision of the non technical summary of the EIS.

contd....

In relation to drawings prepared, two new drawings have been submitted as part of the submission as follows:

- LW09-660-04-200-025-A: submitted in response to issue 1 of submission
- LW09-660-04-400-002-A: submitted as part of ELRA & CRAMP

An existing drawing, prepared as part of the waste licence application, has been revised and included in Appendix 2 to the submission response. The enclosed Drawing Schedule indicates the status of this drawing.

I trust that this submission is in order. Please do not hesitate to contact the undersigned should you have any queries in respect of this submission.

Yours sincerely,

Derek Milton
For and on behalf of **Fehily Timoney & Company**

Encl.

Schedule of Drawings – Article 14 response _15 August 2013

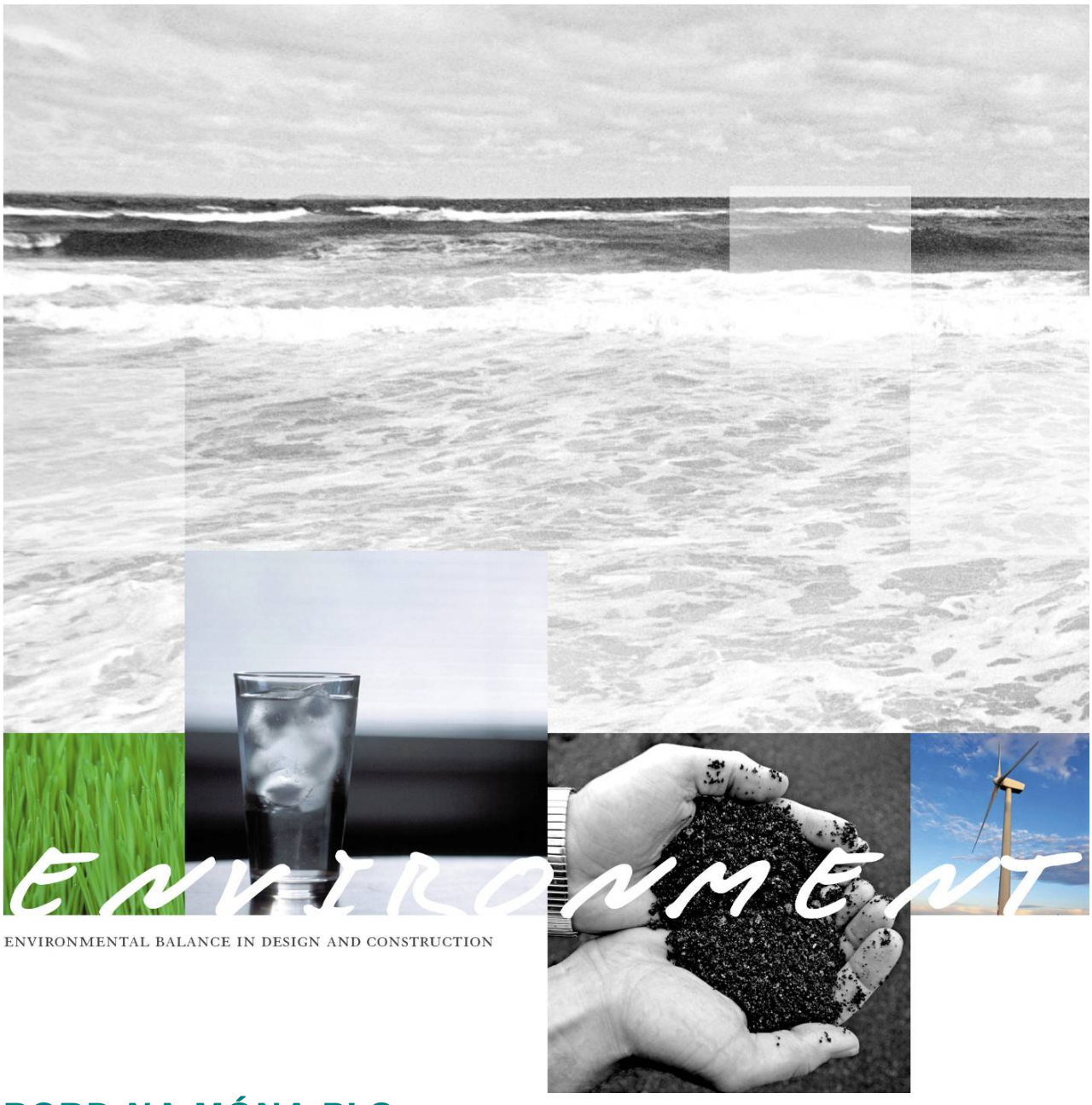
Bord na Móna PLC Waste Licence Application – Materials Recycling & Waste Transfer Station at Drumman, Co. Offaly

Previously Submitted Drawings

Drawing No:	Revision:	Title	Scale	Status
LW09-660-04-300-005	A	Proposed Emission and Monitoring Locations	1:1500 (A3)	Superceded
LW09-660-04-300-005	B	Proposed Emission and Monitoring Locations	1:1500 (A3)	Current

New Drawings

Drawing No:	Revision:	Title	Scale	Status
LW09-660-04-200-025	A	Site Services Plan	1:1500 (A3)	Current
LW09-660-04-400-002	A	Drumman CRAMP & ELRA	1:1000 (A3)	Current



ENVIRONMENTAL BALANCE IN DESIGN AND CONSTRUCTION

BORD NA MÓNA PLC

RESPONSE TO ARTICLE 14(2)(b)(ii) REQUEST IN RELATION TO WASTE LICENCE APPLICATION W0275-01

ORIGINAL

AUGUST 2013

BORD NA MÓNA PLC

FEHILY TIMONEY & COMPANY

ENVIRONMENTAL BALANCE IN DESIGN AND CONSTRUCTION

BORD NA MÓNA PLC

RESPONSE TO ARTICLE 14(2)(b)(ii) REQUEST IN RELATION TO WASTE LICENCE APPLICATION W0275-01

COPY

AUGUST 2013

BORD NA MÓNA PLC

FEHILY TIMONEY & COMPANY

BORD NA MÓNA PLC

RESPONSE TO ARTICLE 14(2)(b)(ii) REQUEST IN RELATION TO WASTE LICENCE APPLICATION W0275-01

User is Responsible for Checking the Revision Status of this Document

Rev. Nr.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
0	For Issue	DFM/MT	DFM/PON	DFM	15.08.2013

Client: Bord na Móna PLC

Keywords: waste licence application, materials recovery, waste transfer facility

Abstract: This document presents the response from Bord na Móna PLC to a request, made in June 2013, under Article 14 (2)(b)(ii) of the Waste Management Licencing Regulations 2004, regarding waste licence application W0275-01

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APPENDICES

1. INTRODUCTION

This submission is made in response to an EPA information request, made under Article 14 (2)(b)(ii) of the Waste Management Licencing Regulations (as amended), regarding waste licence application W0275-01, in correspondence from the EPA dated 21st June 2013.

Information regarding the following issues is to be provided.

1. Fully complete the tables in Section E of the application form and provide one drawing showing both the site and emission points to surface water.

2. Describe in outline the main alternatives, if any, to the proposals contained in the licence application which were studied by the applicant.

3. Describe how the waste hierarchy in section 21A of the Waste Management Act 1996 to 2013 is applied.

4. Provide an assessment of the potential for odour to impact sensitive receptors at locations outside the site boundary.

5. With reference to the *BAT Guidance Note for the Waste Sector, Waste Transfer and Materials Recovery,* published by the Agency, state whether it is proposed to maintain the waste reception and process building and the biowaste reception area under negative pressure.

    a. State by what means air will be extracted.
    b. State what treatment system will be used at air extraction points.
    c. Specify what emission limit values are proposed for air emission points.

6. State the arrangements for managing foul water arising from the accepted biowaste.

7. Undertake a screening for Appropriate Assessment and state whether the activity, individually or in combination with other plans or projects is likely to have a significant effect on a European Site(s), in view of best scientific knowledge and of the conservation objectives of the site(s).

    Where it cannot be excluded, on the basis of objective scientific information, following screening for Appropriate Assessment, that an activity, either individually or in combination with other plans or projects, will have a significant effect on a European Site, the applicant shall provide a Natura Impact Statement, as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations (S.I. No. 477 of 2011). Where based on the screening it is considered that an Appropriate Assessment is not required, a reasoned response should be provided.

    You are furthermore advised to refer to the document *'Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities* ', issued in 2009 by the Department of the Environment, Heritage and Local Government, and revised in 20 10. This document is available at: http://www.npws.ie/publications/archive/NPWS_2009_AA_Guidance.pdf.

8. In accordance with section 53(1) of the Waste Management Acts 1996 to 2013, please furnish particulars in respect of the ability of Bord na Móna plc to meet the financial commitments of liabilities that will be entered into or incurred in carrying on the proposed activity and provide evidence that Bord na Móna plc will be in position to make financial provision that is adequate to discharge these financial commitments.
    Specifically:

    (a) Prepare a fully detailed and costed Closure, Restoration and Aftercare Management Plan (CRAMP) for the facility, to include as a minimum the following:

    - A scope statement for the plan.
    - The criteria which define the successful closure and restoration of the facility or part thereof, and which ensure minimum impact to the environment.
    - A programme to achieve the stated criteria.

- Where relevant, a test programme to demonstrate the successful implementation of the plan.
- Details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility.
- Details of the costings for the plan and the financial provisions to underwrite those costs.

(b) Prepare a fully detailed and costed Environmental Liabilities Risk Assessment (ELRA) which addresses the liabilities and potential liabilities from past and proposed activities, including those liabilities and costs identified in the CRAMP. Provide evidence that the assessment was prepared or reviewed, and was found to be complete and accurate, by an independent and appropriately qualified consultant or expert.

(c) Provide a proposal for financial provision to cover any liabilities associated with the operation and identified in the ELRA (including closure, restoration and aftercare and unanticipated accidents, incidents and liabilities). Provide evidence that Bord na Móna plc will be in a position to put such financial provision in place in the event that a waste licence is granted and prior to development works commencing.

The preparation of the CRAMP and ELRA and evaluation of the amount and form of financial provision should have regard to Environmental Protection Agency guidance including *Guidance on Environmental Liability, Risk Assessment, Residuals Management Plans and Financial Provision (2006).*

2. ISSUE 1

Fully complete the tables in Section E of the application form and provide one drawing showing both the site and emission points to surface water

2.1 Response to Issue 1

The following tables from Section E of the application form submitted to the Agency are completed and presented in Appendix 1 to this document:

- Table E.1 (ii) – Main Emission to Atmosphere
- Table E.1 (iii) – Main Emission to Atmosphere – Chemical characteristic of the emission
- Table E.1 (iv) – Main Emission to Atmosphere – Minor/Fugitive
- Table E.2 (i) – Emission to Surface Waters
- Table E.2 (ii) – Emission to Surface Waters - Characteristics of the Emission
- Table E.5 (i) – Noise Emissions

Other relevant sections related to Section E are not relevant to this application i.e. emissions to sewer, emissions to groundwater and landfill gas flare emissions.

Please refer to Drawing LW0966004_200-025 in Appendix 2 showing both the site and emission points on the same drawing.

In addition, Drawing LW09-660-04-300-005_Rev A, submitted as part of the waste licence application, has been revised to Rev B and is included in Appendix 2. This to provide clarity on the location of the surface water emission point with respect to the surfacewater monitoring points such that:

- SW1 & SW2 are identified as surfacewater monitoring points
- SWD is identified as the surface water emissions point

3. ISSUE 2

Describe in outline the main alternatives, if any, to the proposals contained in the licence application which were studied by the applicant.

3.1 Response to Issue 2

Alternatives to the proposed development were addressed by the applicant in Section 1.8 of Volume 2 of the EIS submitted with the application and which is summarised in the following.

3.1.1 Summary of Section 1.8 of the EIS

Alternatives in relation to the Drumman project are considered under the following headings:

- Alternative site location
- Alternative locations within the preferred site
- Alternative processes at the preferred site
- 'Do-nothing' alternative

Alternative Site Location

A number of alternatives sites were assessed for suitability for development of a 99,000 tonnes per year material recycling/waste transfer facility. These sites were assessed from the significant land bank under the ownership of Bord na Móna PLC.

Sites under the ownership of Bord na Móna PLC and within the areas in which AES Ireland Ltd. operate were identified. A list of 35 potential sites was prepared.

This list of potential sites was reduced by the application of two high level criteria. These were:

- The location of a site within a 30km radius of the existing Tullamore facility
- The requirement for ready access from a national route

After application of these criteria, the list of 35 potential sites was shortened to 6 potential sites,

A number of further criteria were applied to the list of 6 potential sites. These were:

- Current site use
- Access
- Ground conditions
- Site Services i.e. ESB, water
- Potential Planning & Environmental Issues
- Suitability for Development

When the current use of the potential sites was taken into consideration, a shortlist of three potential sites was created. These were:

- Lemanaghan (Celtic Roots)
- Derrygreenagh Works
- Drumman

When assessed against the above criteria, it was concluded that the preferred site for the development of a materials recycling & waste transfer facility was the Drumman site.

Alternative Locations within the Preferred Site

The Drumman site covers an area of approximately 21 hectares. The footprint required for the development of the proposed facility is 3.22 ha.

Two factors were identified as influencing the location of the facility within the wider Drumman site, namely:

- Proximity to the proposed power plant at the adjacent Derrygreenagh Works site and
- Ground conditions within the Drumman site.

Proximity to the proposed power plant at the adjacent Derrygreenagh Works site

Under S.I. 74 of 2006 (implementing Council Directive 96/82/EC on the control of major accidents involving dangerous substances, amended by 2003/105/EC), the proposed power plant at the adjacent Derrygreenagh Works site is considered a 'Seveso' site due to the storage of specified materials in excess of thresholds identified in regulation.

Of the range of fire and explosion scenarios examined as part of a Major Accident Hazard Report prepared as part of the power plant development , the most serious potential impact in terms of distance from the power plant was in the modelling of a jet fire based on the incoming 70 bar(g) gas supply.

The zones of influence resulting from an event of this nature were identified and mapped. It was determined that a location beyond a particular zone of influence i.e. a zone with 1800 thermal dose units, would be suitable for the development of the proposed facility, with the orientation and design of the facility buildings to account for the potential of windows shattering as a result of overpressure of 70 mbar.

Ground Conditions at the Drumman Site

Based on the results of the site investigations carried out at the site, the shallowest peat depths (therefore requiring the least amount of peat extraction) and most stable underlying ground conditions were located in the south western portion of the site.

Upon consideration of the issues presented by the Seveso classification of the proposed power plant and the results of the geotechnical site investigations, the most appropriate location for the location of the proposed materials recycling & waste transfer facility was determined.

Alternative Processes Considered

While the site was chosen primarily for the development of a materials recovery & waste transfer facility to service the infrastructural requirements of AES Ireland Ltd., a number of alternative waste management processes that could potentially be developed at the Drumman site are addressed.

The location of the Drumman site may provide a suitable location in terms of access for the development of a landfill facility. However, Bord na Móna PLC operates a landfill facility at the Drehid Waste Management facility in Co. Kildare with a current waste acceptance rate of 360,000 tonnes per annum. To this end, there is no strategic requirement for the development of a landfill facility by Bord na Móna PLC at this time.

The scale of the site and its location may be suitable for the development of a biological waste treatment facility at Drumman. However, Bord na Móna PLC has developed a 25,000 tonnes per annum composting facility at the Drehid Waste Management Facility to ensure that there is adequate capacity for the treatment of biodegradable municipal waste under the control of AES Ireland Ltd. Therefore, the development of another Bord na Móna PLC biological treatment facility is, at this juncture, not strategically nor economically justified.

Although the proposed site at Derrygreenagh may be suitable for the development of Energy from Waste (EfW) infrastructure, energy from waste (via mass burn incineration) is not being pursued by Bord na Móna PLC in terms of its development of residual waste treatment infrastructure.

'Do Nothing' Alternative

The primary objective of the proposed development is the recovery and recycling of a number of recyclable waste streams and the management of other wastestreams such that the volumes of waste disposed to landfill is minimised.

In the event of the development of the proposed facility not occurring, there will be a deficit in the waste management infrastructure of AES Ireland Ltd. which may result in delays in the implementation of national, regional and local waste policy objectives in relation to increasing the recovery of waste materials and minimising the volumes of treated waste disposed to residual landfill, given that AES Ireland Ltd. is a significant waste management service provider in the midland and other waste management regions.

The proposed location will remain in its current status as a post extraction cutaway bog.

4. ISSUE 3

Describe how the waste hierarchy in section 21A of the Waste Management Act 1996 to 2013 is applied.

4.1 Response to Issue 3

An Article 14(2)(b)(ii) request, dated 10th August 2011, was previously received by the applicant and, under Item 2, the same query was made.

A response was submitted to the Agency, dated 13th September 2011, which addresses this topic and is available on the EPA website at: http://www.epa.ie/licences/lic_eDMS/090151b2804049bc.pdf

5. ISSUE 4

Provide an assessment of the potential for odour to impact sensitive receptors at locations outside the site boundary.

5.1 Response to Issue 4

The issue of potential odour impacts associated with the proposed developed has been addressed in Section 3.4 (and others) of Volume 2 of the EIS submitted with the application. The following provides a summary of the relevant issues relating to potential odour impact.

5.1.1 Summary of Relevant Sections of the EIS

Sensitive Receptors

Figure 3.1 of Volume 2 of the EIS submitted by the applicant shows the location of receptors with respect to the proposed development location. Figure 3.1 is included as Appendix 3 to this document.

Derryarkin Sand and Gravel Ltd. is located approximately 500 m to the south west of the site and at a location approximately 2.5 km north of the site while a commercial piggery is located approximately 2 km to the south of the site. The Bord na Móna Derrygreenagh Works site is located approximately 600 m to the south east of the proposed development location. Two residential dwellings are located 1.5 km to the north west of the site with two further dwellings located 1.5 km to the south east.

For the purposes of assessing potential impacts from odour, the dwellings located within 1.5 km of the proposed location are considered 'sensitive' receptor due to their residential nature.

Climatic Factors

Figure 3.9 of the EIS (included in Appendix 3 of this document) presents the wind rose plot for the Mullingar synoptic station, located approximately 10 km north of the development site. This indicates that the prevailing wind in the region is from a south westerly direction thus, when prevailing winds dominate, wind direction is away from the sensitive receptors identified.

Potential Odour Generation

The Waste Reception and Processing Building will accept 'brown bin' biowaste material for bulking up prior to transportation for further processing. This material has the potential to generate some minor, localised odour with the impact depending on the degree of degradation of the material prior to acceptance at the facility.

Mitigation Measures for Potential Odour Generation

Best available technology (BAT) considerations will be employed in all design aspects of the proposed facility. The Waste Reception and Processing Building will be operated under negative pressure such that extracted air will pass through an appropriate dust filtration system located to the rear of the processing building.

The area of the Waste Reception and Processing Building where biowaste material will be accepted will be operated under a separate negative pressure extraction system with extracted air being passed through an appropriate biofiltration system to ensure adequate treatment of potentially odiferous air.

Conclusion

It is considered that the potential for odour impact at sensitive receptors is low due to:

- The distance of sensitive receptor form the proposed development site
- Prevailing wind direction with respect to sensitive receptor location
- Implementation of biofiltration of building air extracted under negative pressure from specific biowaste reception areas

6. ISSUE 5

With reference to the BAT Guidance Note for the Waste Sector, Waste Transfer And Materials Recovery, published by the Agency, state whether it is proposed to maintain the waste reception and process building and the biowaste reception area under negative pressure.

a. State by what means air will be extracted.
b. State what treatment system will be used at air extraction points.
c. Specify what emission limit values are proposed for air emission points.

6.1 Response to Issue 5

The EPA publication *BAT Guidance Note for the Waste Sector, Waste Transfer and Materials Recovery* states that "*emissions to air at transfer stations and materials recovery facilities generally occur as fugitive emissions from materials movements/treatment/processing on site, and vehicles. BAT guidance seeks to regulate these by site operations management*".

In terms of air emissions, control and management techniques for dust and odour are identified. For dust, control measures identified include:

- Use dust extraction system to remove dust and particulates from working areas/ buildings, where applicable

In terms of odour, management and control measures identified include:

- The location of the facility with regard to off-site receptors should be considered during the design stage
- Any handling or treatment of malodourous waste should be carried out in an enclosed area suitable for the capture, containment and treatment of odours
- Use of appropriate odour abatement equipment

In addition, the EU BREF Document (Reference Document on Best Available Techniques for the Waste Treatment Industries) makes the following recommendations in relation to the application of BAT for air emission treatments:

- Not allowing direct venting or discharges to air by linking all the vents to suitable abatement systems when storing materials that can generate emissions to the air (e.g. odours, dust, VOCs) (BAT number 35)
- Apply a suitably sized extraction system which can cover holding tanks, pre-treatment areas…… (BAT number 37)
- Correctly operate and maintain the abatement system…. (BAT number 38)

In terms of proposals regarding control and management of air emissions at the Drumman facility, Section 3 of Volume 2 of the EIS addresses air quality. In addition, odour control measures have been addressed in Section 5 of this document. Measures proposed are considered to be in keeping with the BAT and BREF recommendations outlined above.

In relation to the EPA specific queries above, the following responses are provided:

State whether it is proposed to maintain the waste reception and process building and the biowaste reception area under negative pressure

As per Section 3.4.6 of the EIS, the Waste Reception and Processing Building will be operated under negative pressure such that extracted air will pass through an appropriate dust filtration system located to the rear of the processing building.
The area of the Waste Reception and Processing Building where biowaste material will be accepted will be operated under a separate negative pressure extraction system with extracted air being passed through an appropriate peat or woodchip (or other appropriate media) based biofiltration system to ensure adequate treatment of potentially odiferous air.

State by what means air will be extracted

Building air will be extracted through an air extraction network consisting of ventilation pipework and air handling units incorporating aeration fans.

State what treatment system will be used at air extraction points.

A dust filtration unit, incorporating fabric filter or similar, will be used to treat building air from within the waste transfer and processing building.

An appropriately designed peat or woodchip (or other appropriate media) based biofiltration system will be used to ensure adequate, separate treatment of potentially odiferous air from the biowaste reception area within the waste reception and processing building.

Specify what emission limit values are proposed for air emission points.

Drawing LW09-660-04-300-005_RevB (included in Appendix 2 to this document) identifies the location of 2 no. air quality emission locations. Emission location A1 refers to the emission location from the proposed biofiltration unit while location A2 refers to the envisaged emission location from the dust filtration system. .

In terms of the emission limit values for the biofiltration unit, it is considered that the following parameters are considered appropriate in relation to potential odour impacts:

- Hydrogen sulphide (H_2S) 5 mg/m^3
- Mercaptans 5 mg/m^3

It is considered that the application of these emission limit values will ensure that emissions of odours do not result in *significant impairment of, and/or significant interference with amenities or the environment beyond the installation boundary*, as per Section 6.3.3. of the BAT Guidance Note for the Waste Sector, Waste Transfer and Materials Recovery.

It is not proposed to monitor ammonia emissions from the biofiltration unit as it is considered that ammonia emissions are more relevant to process air associated with, for example, a composting process. As only non process building air will be treated through the biofiltration unit, the potential for ammonia generation is considered negligible.

In addition, the applicant proposes to carry out regular odour assessments as per AG5: *Odour Impact Assessment Guidance for EPA Licensed Sites* at a frequency determined by the Agency.

An assessment of the development at Drumman, submitted to the Agency under separate cover, has identified that this development comes under the remit of the Industrial Emissions Directive (2010/75/EU) and the implementing Irish legislation, the European Union (Industrial Emissions) Regulations 2013 (S.I. No. 138 of 2013).

To this end, and in respect of emission limits proposed for dust emissions, the Regulations state that:

> *"Where any of the relevant BAT conclusions referred to in subparagraph (i) describe a best available technique, but do not contain emission levels associated with the technique, the Agency, under subparagraph (i), shall determine a best available technique which provides a level of environmental protection equivalent to the best available techniques described in the BAT conclusions and shall attach one or more conditions to a licence or revised licence which specify requirements necessary to give effect to that best available technique."*

A 'BAT conclusion' is defined as:

> *"a document containing the parts of a BAT reference document laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures."*

The BAT Guidance Note for the Waste Sector, Waste Transfer and Materials Recovery does not contain any specific emission limit value in terms of dust emission from dust extraction systems. Thus, it is concluded that the installation of an effective dust extraction system is, in itself, considered BAT, without there being a requirement to apply emission limit values.

However, the requirement to measure dust deposition levels at proposed monitoring locations D1 and D2, as per Figure 2.5 of Volume 2 of the EIS, will ensure assessment of the impact of dust generation at the facility as whole, as identified in Section 6.3 of BAT Guidance Note for the Waste Sector, Waste Transfer and Materials Recovery.

7. ISSUE 6

State the arrangements for managing foul water arising from the accepted biowaste

7.1 Response to Issue 6

Section 5.5.3 of Volume 2 of the EIS addresses the means of foulwater management and is repeated in abbreviated format in the following.

7.1.1 Summary of Section 5.5.3 of the EIS

Wastewater will be produced on site from the welfare facilities (e.g. toilets, showers, canteen) and from washdown within the waste reception and processing building.

The wastewater will be treated on site in a proprietary wastewater treatment plant (Puraflo or similar) and discharged to the Mongagh River. It is proposed that the effluent receive secondary treatment to a standard of 20:30 (BOD mg/l: Suspended Solids mg/l) as per 'BS: 6297 The Code of Practice for the Design and Installation of Small Sewage Treatment Works and Cesspools'.

It is assumed that, once operational, there will be approximately 30 - 35 no. staff working at the facility. The wastewater loading was calculated using the 'EPA Wastewater Treatment Manual, Treatment Systems for Small Communities, Business, Leisure Centres and Hotels' for an industrial office and/or factory with canteen:

- Flow - 60 l/day per person
- BOD – 30 g/day per person

The individual areas of the waste reception and processing building will be washed down at different intervals depending on the level of contamination of the waste being sorted within the areas. For the purposes of sizing the onsite WWTP, the maximum flow from the building will occur when all three areas are washed down on the same day. It is assumed that it will take approximately 2 hours to wash down the building with a standard hose with a flow rate of 1 l/s. The maximum flow to the onsite wastewater treatment plant and subsequently discharging to the Mongagh River is therefore estimated as 9,000 l/day.

Section 5.5.3 also provides an assimilative capacity assessment for the proposed effluent discharge.

While Section 5.5.3 of the EIS identified a maximum flow of 9,000 l per day to the wastewater treatment plant in order to adequately size the plant for the maximum flow, it should be noted that this represents a maximum theoretical flow based on all areas of the waste reception and processing building being washed down simultaneously.

In practice, and based on the applicants experience in operating facilities of a similar nature, the washdown of buildings is a typically infrequent event. Therefore, the likelihood of the generation of a flow equivalent of 9,000 l per day, resulting from entire building washdown, is low.

8. ISSUE 7

Undertake a screening for Appropriate Assessment and state whether the activity, individually or in combination with other plans or projects is likely to have a significant effect on a European Site(s), in view of best scientific knowledge and of the conservation objectives of the site(s).

Where it cannot be excluded, on the basis of objective scientific information, following screening for Appropriate Assessment, that an activity, either individually or in combination with other plans or projects, will have a significant effect on a European Site, the applicant shall provide a Natura Impact Statement, as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations (S.I. No. 477 of 2011). Where based on the screening it is considered that an Appropriate Assessment is not required, a reasoned response should be provided.

You are furthermore advised to refer to the document 'Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities ', issued in 2009 by the Department of the Environment, Heritage and Local Government, and revised in 20 10. This document is available at: http://www.npws.ie/publications/archiveMWS 2009 AA Guidance.pdf.

8.1 Response to Issue 7

An Appropriate Assessment screening report has been prepared and is included in Appendix 4 to this report.

9. ISSUE 8

In accordance with section 53(1) of the Waste Management Acts 1996 to 2013, please furnish particulars in respect of the ability of Bord na Móna PLC to meet the financial commitments of liabilities that will be entered into or incurred in carrying on the proposed activity and provide evidence that Bord na Móna PLC will be in position to make financial provision that is adequate to discharge these financial commitments.

Specifically:

(a) Prepare a fully detailed and costed Closure, Restoration and Aftercare Management Plan (CRAMP) for the facility, to include as a minimum the following:

- *A scope statement for the plan.*
- *The criteria which define the successful closure and restoration of the facility or part thereof, and which ensure minimum impact to the environment.*
- *A programme to achieve the stated criteria.*
- *Where relevant, a test programme to demonstrate the successful implementation of the plan.*
- *Details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility.*
- *Details of the costings for the plan and the financial provisions to underwrite those costs.*

(b) Prepare a fully detailed and costed Environmental Liabilities Risk Assessment (ELRA) which addresses the liabilities and potential liabilities from past and proposed activities, including those liabilities and costs identified in the CRAMP.

Provide evidence that the assessment was prepared or reviewed, and was found to be complete and accurate, by an independent and appropriately qualified consultant or expert.

(c) Provide a proposal for financial provision to cover any liabilities associated with the operation and identified in the ELRA (including closure, restoration and aftercare and unanticipated accidents, incidents and liabilities). Provide evidence that Bord na Móna plc will be in a position to put such financial provision in place in the event that a waste licence is granted and prior to development works commencing.

9.1 Response to Issue 8

An ELRA, CRAMP and proposal for financial provision (and associated evidence that Bord na Móna PLC will be in a position to put same in place) are included in Appendix 5 to this report.

Appendix 1

Section E Tables




TABLE E.1(i) LANDFILL GAS FLARE EMISSIONS TO ATMOSPHERE

NOT APPLICABLE

Emission Point:

Emission Point Ref. N^{o}:	
Location :	
Grid Ref. (12 digit, 6E,6N):	
Vent Details Diameter: Height above Ground(m):	
Date of commencement of emission:	

Characteristics of Emission :

CO				mg/m^3
Total organic carbon (TOC)				mg/m^3
NOx				mg/Nm^3 0^{o}C. 3% O_2(Liquid or Gas), 6% O_2(Solid Fuel)
Maximum volume of emission				m^3/hr
Temperature	^{o}C(max)		^{o}C(min)	^{o}C(avg)

(i) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up/shutdown to be included):*

Periods of Emission (avg)	_____min/hr _____hr/day _____day/yr

TABLE E.1(ii) MAIN EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. N^{o}:	A1
Source of Emission:	Proposed Biofiltration unit
Location :	located adjacent to the biowaste reception area of the main building
Grid Ref. (12 digit, 6E,6N):	249148, 238629
Vent Details Diameter: Height above Ground(m):	To be determined during detailed design
Date of commencement:	Upon operational commencement

Characteristics of Emission :

(i) Volume to be emitted: To be determined during detailed design			
Average/day	m^3/d	Maximum/day	m^3/d
Maximum rate/hour	m^3/h	Min efflux velocity	$m.sec^{-1}$
(ii) Other factors			
Temperature	^{o}C(max)	^{o}C(min)	^{o}C(avg)
For Combustion Sources: Volume terms expressed as : ☐ wet. ☐ dry. _____$\%O_2$			

(iii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	60 min/hr 24hr/day 365day/yr

It is envisaged that the biofiltration unit will operate on a continual basis.

Emission Point Ref. N^{o}:	A2
Source of Emission:	Proposed dust extraction unit
Location :	Northern corner of the waste reception and processing building
Grid Ref. (12 digit, 6E,6N):	249140, 238685
Vent Details Diameter: Height above Ground(m):	To be determined during detailed design
Date of commencement:	Upon operational commencement

Characteristics of Emission :

(i) Volume to be emitted: To be determined during detailed design			
Average/day	m^3/d	Maximum/day	m^3/d
Maximum rate/hour	m^3/h	Min efflux velocity	$m.sec^{-1}$
(ii) Other factors			
Temperature	^{o}C(max)	^{o}C(min)	^{o}C(avg)
For Combustion Sources: Volume terms expressed as : ☐ wet. ☐ dry. _____%O_2			

(iii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	60min/hr 18hr/day 312day/yr

It is envisaged that the dust extraction unit will operate during facility operational hours i.e. 06:00 to 00:00, Monday to Saturday inclusive

TABLE E.1(iii): MAIN EMISSIONS TO ATMOSPHERE - Chemical characteristics of the emission (1 table per emission point)

Emission Point Reference Number: **A1**

Parameter	Prior to treatment[1]				Brief	As discharged[1]					
	mg/Nm^3		kg/h		description	mg/Nm^3		kg/h.		kg/year	
	Avg	Max	Avg	Max	of treatment	Avg	Max	Avg	Max	Avg	Max
Hydrogen Sulphide Mercaptans					A biofiltration system will be installed onsite for the treatment of potentially odiferous air from the acceptance of 'brown bin' biowaste material.		5 mg/m^3 5 mg/m^3				

1. Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0^{o}C,101.3kPa). Wet/dry should be the same as given in Table E.1(ii) unless clearly stated otherwise.

Emission Point Reference Number: **A2**

Parameter	Prior to treatment[(1)]				Brief	As discharged[(1)]					
	mg/Nm^3		kg/h		description	mg/Nm^3		kg/h.		kg/year	
	Avg	Max	Avg	Max	of treatment	Avg	Max	Avg	Max	Avg	Max
Dust Extraction Refer to Section 5.1 of Response to Article 14 2(b)(ii) requested dated August 2013					Negative pressure will be applied in order to control potential dust emissions resulting from operations within the building from an environmental and health and safety viewpoint. Extracted air will pass through a dust filtration system incorporating fabric filter or similar.						

TABLE E.1 (iv): EMISSIONS TO ATMOSPHERE - Minor /Fugitive

Emission point Reference Numbers	Description	Emission details[1]				Abatement system employed
		material	Mg/m2 per day	kg/h.	kg/year	
D1 & D2	For potential fugitive dust emissions form site activities occurring in the open, i.e. monitoring using Bergerhoff gauges will be employed at the identified monitoring locations	Dust deposition	350 maximum			

1 The maximum emission should be stated for each material emitted, the concentration should be based on the maximum 30 minute mean.
2 Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0^{o}C101.3kPa). Wet/dry should be clearly stated. Include reference oxygen conditions for combustion sources.

TABLE E.2(i): EMISSIONS TO SURFACE WATERS
(One page for each emission)

Emission Point:

Emission Point Ref. N^{o}:	SW 1
Source of Emission:	Onsite Wastewater treatment plant & Stormwater Attenuation Pond
Location :	Mongagh River
Grid Ref. (10 digit, 5E,5N):	SW1: 48934, 38849
Name of receiving waters:	Mongagh River Catchment
Flow rate in receiving waters:	$0.015m^3.sec^{-1}$ Dry Weather Flow $0.03m^3.sec^{-1}$ 95%ile flow
Available waste assimilative capacity:	BOD Assimilative Capacity of Receiving Waters = 3.84 kg/day OP Assimilative Capacity of Receiving Waters = 0.13 kg/day

Emission Details:

(i) (a) Volume to be emitted (wastewater treatment plant)			
Normal/day	m^3	Maximum/day	9 m^3
Maximum rate/hour	0.5 m^3		

(i) (b) Volume to be emitted (stormwater attenuation pond)

Stormwater attenuation pond designed to provide adequate attenuation to Greenfield limiting discharge rates of :

1 year 6.99 l/s

30 year 13.44 l/s

100 year 16.12 l/s

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	Wastewater treatment Plant 60 min/hr 18 hr/day 312day/yr Stormwater Attenuation Pond 60 min/hr 24 hr/day 365day/yr

It is envisaged that emissions from the wastewater treatment plant will follow operational hours i.e. 06:00 to 00:00, Monday to Saturday inclusive

TABLE E.2(ii): EMISSIONS TO SURFACE WATERS - Characteristics of the emission (1 table per emission point)

Emission point reference number : SW1

Parameter	Prior to treatment				As discharged				% Efficiency
	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	
BOD					20	20	0.18	56.16	
Orthophosphate					2	2	0.018	5.616	
Total Ammonia					2	2	0.018	5.616	
Suspended Solids					25	25	Flow dependent	Flow dependent	

TABLE E.3(i): EMISSIONS TO SEWER(One page for each emission)

NOT APPLICABLE

Emission Point:

Emission Point Ref. N^{o}:	
Location of connection to sewer :	
Grid Ref. (10 digit, 5E,5N):	
Name of sewage undertaker:	

Emission Details:

(i) Volume to be emitted			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	_____min/hr _____hr/day _____day/yr

TABLE E.3(ii): EMISSIONS TO SEWER - Characteristics of the emission (1 table per emission point)

NOT APPLICABLE

Emission point reference number : _____

Parameter	Prior to treatment				As discharged				% Efficiency
	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	

TABLE E.4(i): EMISSIONS TO GROUNDWATER (1 Page for each emission point)

NOT APPLICABLE

Emission Point or Area:

Emission Point/Area Ref. Nº:	
Emission Pathway: (borehole, well, percolation area, soakaway, landspreading, etc.)	
Location :	
Grid Ref. (10 digit, 5E,5N):	
Elevation of discharge: (relative to Ordnance Datum)	
Aquifer classification for receiving groundwater body:	
Groundwater vulnerability assessment (including vulnerability rating):	
Identity and proximity of groundwater sources at risk (wells, springs, etc):	
Identity and proximity of surface water bodies at risk:	

Emission Details:

(i) Volume to be emitted			
Normal/day	m^3	Maximum/day	m^3
Maximum rate/hour	m^3		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	_____min/hr _____hr/day _____day/yr

Table E.5(i): NOISE EMISSIONS - DAYTIME - REFER TO ATTACHMENT E

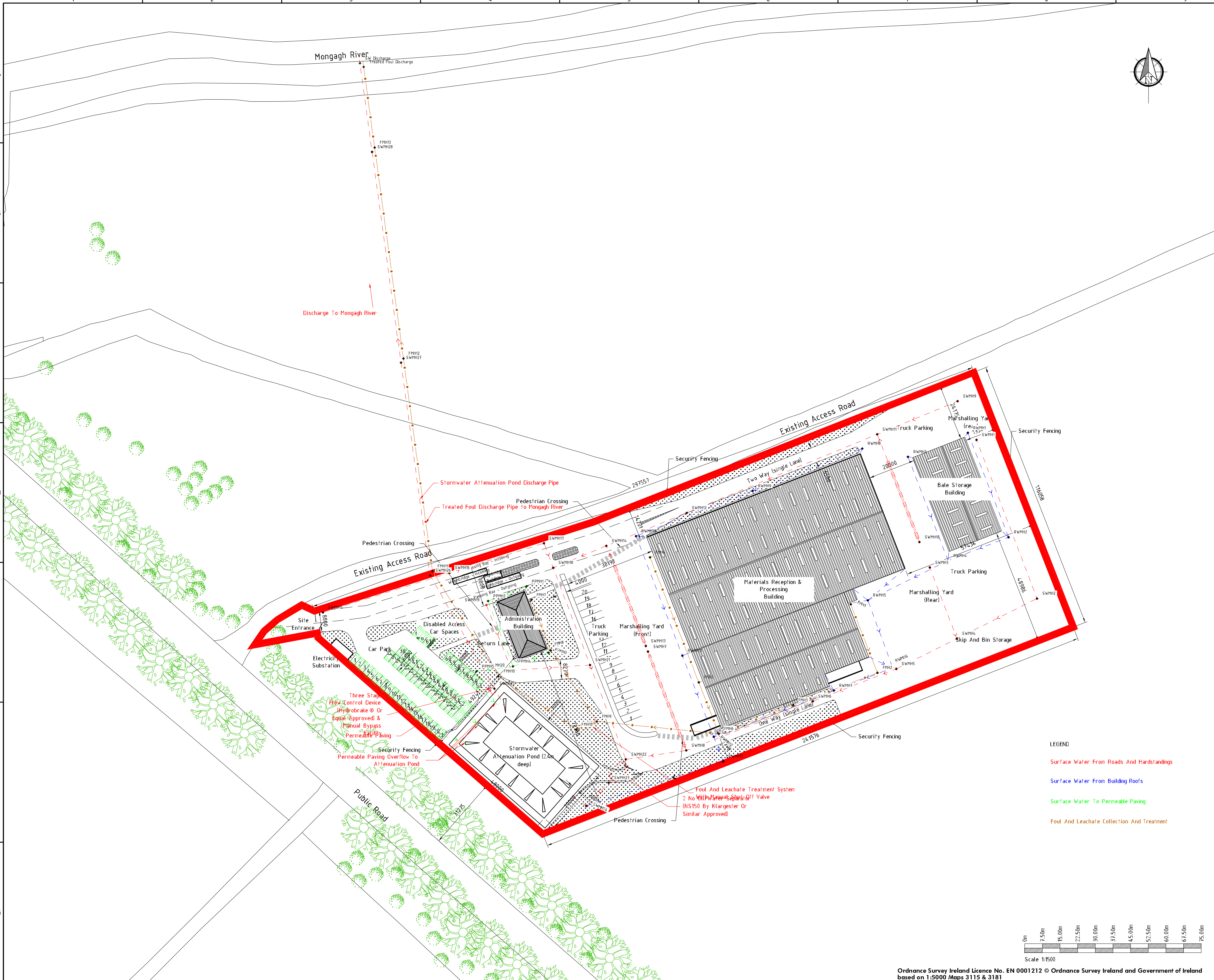
Source	Emission point Ref. No	Equipment Ref. No	Sound Pressure[1] dBA at reference distance	Octave bands (Hz) Sound Pressure[1] Levels dB(unweighted) per band									Impulsive or tonal qualities	Periods of Emission
				31.5	63	125	250	500	1K	2K	4K	8K		
Waste Delivery vehicle			96 @ 10 m											
Material Export vehicle			96 @ 10 m											
Door 1 (Breakout)			95@ 10 m											
Door 2 (Breakout)			95 @ 10 m											
Facades 1 - 7			79 @ 10m											

1. For items of plant sound power levels may be used.

Appendix 2

Drawings

Sheet FTC-A1-2006 rev. C (template filed in O:Acad\Templates\Autocad) (May 2007) - template externally referenced



Mongagh River
SW Discharge
Treated Foul Discharge
FMH13
SWMH28
Discharge To Mongagh River
FMH12
SWMH27
Stormwater Attenuation Pond Discharge Pipe
Treated Foul Discharge Pipe to Mongagh River
Pedestrian Crossing
Existing Access Road
297557
Security Fencing
Two Way (single Lane)
Truck Parking
Marshalling Yard (rear)
SWMH9
RWMH1
SWMH1
RWMH8
RWMH3
SWMH11
20000
Bale Storage Building
116058
24175
SWMH10
RWMH2
57434
RWMH4
SWMH3
SWMH2
48986
Marshalling Yard (Rear)
SWMH4
Skip And Bin Storage
RWMH5
FMH1
RWMH6
SWMH5
FMH2
RWMH7
SWMH6
FMH3
Materials Reception & Processing Building
RWMH9
SWMH12
RWMH10
14201
6500
SWMH14
SWMH17
SWMH18
38198
4000
Truck Parking
Marshalling Yard (Front)
SWMH13
SWMH7
RWMH11
FMH4
FMH5
SWMH21
FMH11
SWMH26
SWMH16
Passing Bay - Incoming
Weighbridge - Incoming
Weighbridge Building
Weighbridge - Outgoing
Passing Bay - Outgoing
SWMH19
9096
PPMH1
PPMH2
FMH7
Administration Building
FMH8
PPMH3
PPMH4
PPMH5
MH20
FMH10
Return Lane
8279
Disabled Access Car Spaces
Car Park
Site Entrance
SWMH15
8800
Electricity Substation
Three Stage Flow Control Device (Hydrobrake ® Or Equal Approved) & Manual Bypass Facility
Permeable Paving
Security Fencing
Permeable Paving Overflow To Attenuation Pond
SWMH25
49241
3000
FMH9
FMH10
19180
Stormwater Attenuation Pond (2.4m deep)
48000
31275
SWMH22
SWMH23
SWMH24
SWMH8
FMH6
RWMH12
RWMH13
One Way (single Lane)
241576
Security Fencing
Foul And Leachate Treatment System With Manual Shut-Off Valve
2 No Oil/Water Separator (NS150 By Klargester Or Similar Approved)
Pedestrian Crossing
Public Road
LEGEND
Surface Water From Roads And Hardstandings
Surface Water From Building Roofs
Surface Water To Permeable Paving
Foul And Leachate Collection And Treatment
0m
7.50m
15.00m
22.50m
30.00m
37.50m
45.00m
52.50m
60.00m
67.50m
75.00m
Scale 1:1500

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Rev.	Drawn	Chk'd	App'd	Rev Origin / Date	Description
A	KK	DOS	DOS	Cork 06.08.13	ISSUE FOR PLANNING PERMISSION

Revision History A

Name of Client

Bord na Mona PLC

Name of Job

Drumman Project

Title of Drawing

Site Services Plan - Proposed

Scales Used 1:1500

This Drawing was printed to A3

Dwg. No. LW09-660-04-200-025

Rev. A

O:\ACAD\2009\LW09\660\04\LW0966004_200-025

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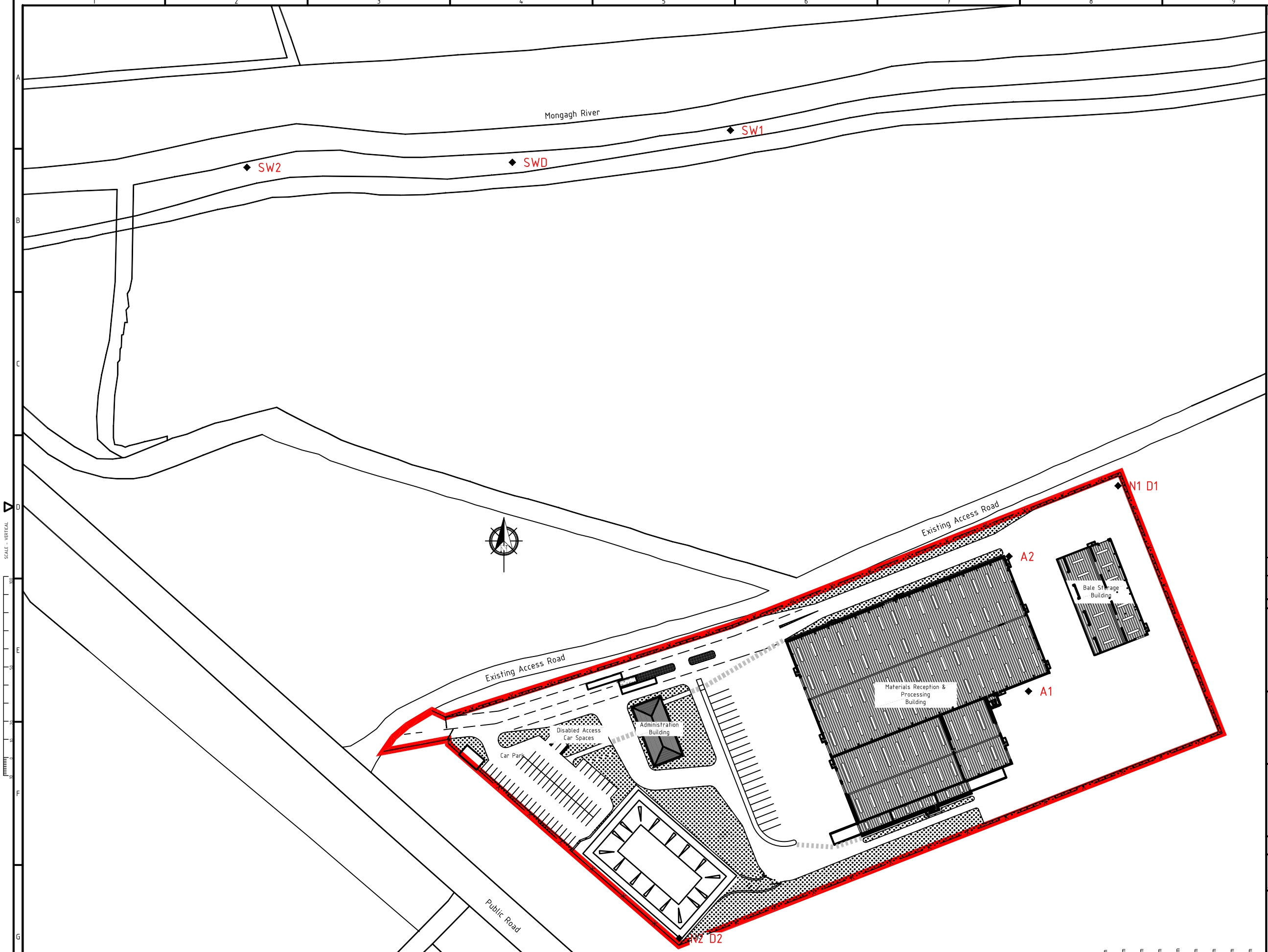
ORIGINAL DRAWING SIZE A1 - (841 x 594)



Emission Locations

A1, A2 - Air Emission Points (indicative)
SWD - Surface Water Emission Point

Monitoring Locations

D1, D2 - Dust Monitoring Locations

N1, N2 - Noise Monitoring Locations

GW1 - To Be Conformed

SW1, SW2 - Surface Water Monitoring Points

Grid Reference Of Emission & Monitoring Locations (Indicative Only)

A1:	E: 249148	N: 238629
A2:	E: 249140	N: 238685
N1, D1:	E: 249185	N: 238714
N2, D2:	E: 249003	N: 238267
SW1:	E: 249024	N: 238862
SW2:	E: 248824	N: 238846
SWD:	E: 248934	N: 238848

Rev.	Drawn	Chkd	Appd		
A				Dublin 15.08.13	ISSUE FOR WASTE LICENSE APP
				Rev Origin Date	Description

Revision History A

Name of Client

Bord na Mona PLC

Name of Job

Drumman Project

Title of Drawing

Proposed Emission and Monitoring Locations

Scales Used 1:1500

This Drawing was printed to A3

Dwg. No. LW09-660-04-300-005

Rev. B

O:\2009\LW09\660\04\LW09660404_300-005

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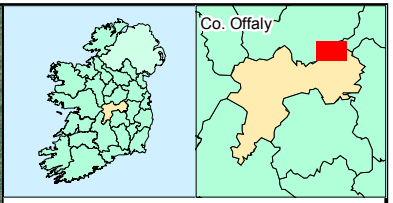
Appendix 3

Figures from Volume 2 of EIS
Figures 3.1 & 3.9

LW09-660-04_Figure 3.1_Dwellings in Vicinity of Proposed Development_Rev A



Legend

site boundary

Dwelling Classification

- commercial
- residential
- residential and commercial

data source - derived from Geodirectory 2009 and windscreen survey

Date	25/01/2010
Name of Client	Bord na Mona
Name of Job	Drumman EIS
Title of Figure	Dwellings in Vicinity of Proposed Development
Scales Used	1 : 22,000 @ A4
Figure No.	3.1
Rev	A

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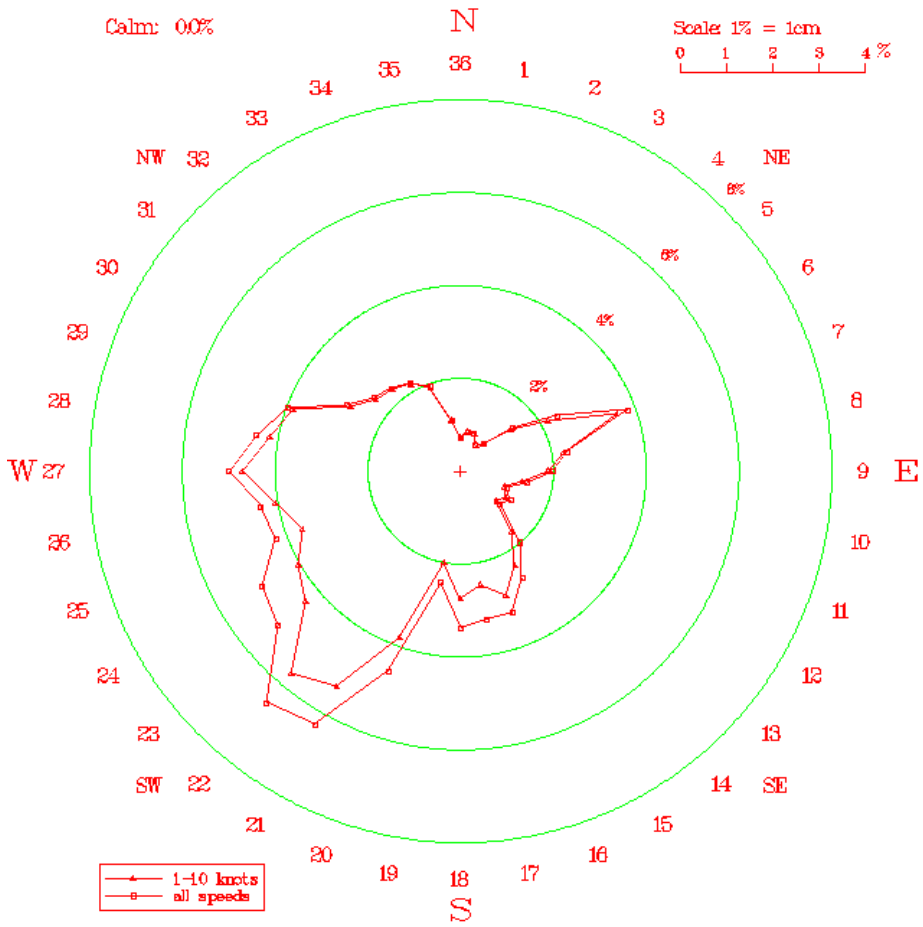
MULLINGAR 1979–2009

Percentage Frequency of Occurrence of Wind Directions



Percentage Frequency of Occurrence of Wind Speeds

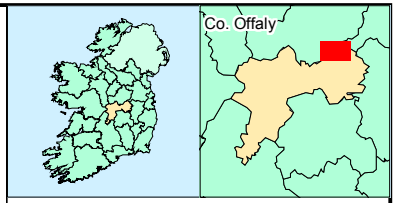
+ less than 0.1

0	1–6	4–6	7–10	11–16	17–21	22–27	28–33	34–40	41–47	over 48 knots
0.0	25.4	36.6	28.0	9.4	0.6	+	0.0	0.0	0.0	0.0 %

mean wind speed: 6.0 knots
anemometer height: 12m

standard deviation: 3.3 knots

Met Eireann, Glasnevin Hill, Dublin 9.



Date	25/01/2010
Name of Client	Bord na Mona
Name of Job	Drumman EIS
Title of Figure	Wind Rose for Drumman Site (Mullingar Synoptic Station)
Scales Used	
Figure No.	3.9
Rev	A

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Appendix 4

Appropriate Assessment Screening Report

APPROPRIATE ASSESSMENT SCREENING REPORT FOR A MATERIALS RECYCLING & WASTE TRANSFER FACILITY AT DRUMMAN, CO. OFFALY

CLIENT: BORD NA MÓNA PLC

AUGUST 2013

BORD NA MÓNA

FEHILY TIMONEY & COMPANY

APPROPRIATE ASSESSMENT SCREENING REPORT FOR A MATERIALS RECYCLING & WASTE TRANSFER FACILITY AT DRUMMAN, CO. OFFALY

User is Responsible for Checking the Revision Status of this Document

Rev. Nr.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date
1	Revised Issue to Client	AB/MG	DFM/PON	DFM	15.08.2013

Client: Bord na Móna PLC.

Keywords: materials recycling & waste transfer facility, Drumman, Appropriate Assessment Screening, Article 6 of the Habitats Directive, Natura 2000 sites.

Abstract: This document comprises an Appropriate Assessment Screening Report for a 99,000 tonnes per annum materials recycling & waste transfer facility at Drumman in the townland of Derrygreenagh, Co Offaly. This report has been prepared on behalf of Bord na Móna PLC in support of a waste licence application to the Environmental Protection Agency for the facility. Based on an assessment of the potential impacts of the proposed development and the implementation of appropriate mitigation measures, it is considered that there will be minimal impact on the existing environment from the proposed development.

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LIST OF FIGURES & TABLES

1 INTRODUCTION

1.1 Brief Introduction

This report has been prepared on behalf of Bord na Móna PLC in support of a waste licence application to the Environmental Protection Agency for the material recycling & waste transfer facility at Drumman. This application is being processed under Register Number W02075-01. Planning permission was granted by Offaly County Council for this development in September 2010 under Planning Reference 10/93.

Appropriate Assessment (AA) is required under Article 6(3) and 6(4) of the Habitats Directive (92/43/EEC). It is an assessment of the potential effects of a permitted plan or project, on its own or in combination with other plans or projects, on one or more Natura 2000 sites (Special Protection Areas (SPA) for birds, Special Areas of Conservation (SAC) for habitats and species).

Screening is the first stage of the AA process, in which the likely impacts of a project or plan on a Natura 2000 site are assessed, and whether or not they are significant. If likely significant impacts are identified then the second stage of the process, Appropriate Assessment, and production of a Natura Impact Statement (NIS), is carried out. The NIS considers the impact of a project or plan on the integrity of a Natura 2000 site and on its conservation objectives, and where necessary, draws up mitigation measures to avoid impacts.

There are two Natura 2000 sites located within 10km of the material recycling & waste transfer facility; Lough Ennell SAC (000685) and the Raheenmore Bog SAC (000582). The Lough Ennell SPA (004044) is just over 10km from the site and its boundaries overlap with the Lough Ennell SAC.

This AA Screening Report assesses the likely impacts of the Drumman material recycling and waste transfer facility, and draws a conclusion as to whether Stage 2 of the Appropriate Assessment process should be carried out. The information contained in this report will inform the Appropriate Assessment of the site, to be carried out by the relevant authority

1.2 Legislative Requirements

Appropriate Assessment is a requirement of Article 6(3) and 6(4) of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, also known as the Habitats Directive, which states:

6(3) Any plan or project not directly connected with or necessary to the management of the site (Natura 2000 sites) but likely to have significant effect thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the site in view of the sites conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

6(4) If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

The statutory agency responsible for Natura 2000 sites is the National Parks and Wildlife Service of the Department of Arts, Heritage and the Gaeltacht (DAHG). The European Court of Justice, on December 13 2007, issued a judgement in a legal case against Ireland that found Ireland had failed in its statutory duty to confer adequate protection on designated areas. In December 2009 “Appropriate Assessment of Plans

and Projects in Ireland: Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government" was published. This guidance document was prepared jointly by the NPWS and Planning Divisions of the Department of Environment, Heritage and Local Government (DoEHLG), now DoECLG, with input from local authorities.

The Habitats Directive formed a basis for the designation of Special Areas of Conservation (SACs). Similarly, Special Protection Areas are legislated for under the Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds). Collectively, SACs and SPAs are referred to as Natura 2000 sites. In general terms, they are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community.

2 OBJECTIVES OF APPROPRIATE ASSESSMENT

1. The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures to be addressed in the AA process.

2. Firstly, a project should aim to avoid any negative impacts on Natura 2000 sites by identifying possible impacts early in the project, and should design the project in order to avoid such impacts.

3. Secondly, mitigation measures should be applied during the AA process to the point where no adverse impacts on the site(s) remain.

4. Under a worst-case scenario, a project may have to undergo an assessment of alternative solutions.

5. Under this stage of the assessment, compensatory measures are required for any remaining adverse effects, but they are permitted only if (a) there are no alternative solutions and (b) the project is required for imperative reasons of overriding public interest (the 'IROPI test'). European case law highlights that consideration must be given to alternatives outside the project area in carrying out the IROPI test.

2.1 Appropriate Assessment Methodology

There are 4 stages in an Appropriate Assessment as outlined in the European Commission Guidance document (2001). The following is a brief summary of these steps.

Stage 1 - **Screening**: This stage examines the likely effects of a project either alone or in combination with other projects upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant.

Stage 2 - **Appropriate Assessment**: In this stage, a Natura Impact Statement is prepared, in which the impact of the project on the integrity of the Natura 2000 site is considered with respect to the conservation objectives of the site and to its structure and function.

Stage 3 - **Assessment of Alternative Solutions:** Should the Appropriate Assessment determine that adverse impacts are likely upon a Natura 2000 site, this stage examines alternative ways of implementing the project that, where possible, avoid these adverse impacts.

Stage 4 - **Assessment where no alternative solutions exist and where adverse impacts remain**: Where imperative reasons of overriding public interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the Natura site will be necessary.

In the preparation of this assessment, therefore regard has been given to the Habitats Directive and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) and with reference to the relevant guidance, in particular:

- *Assessment of Plans and Projects significantly affecting Natura 2000 Sites*: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission 2001.
- *Managing Natura 2000 Sites:* The Provisions of Article 6 of the 'Habitats Directive' 92/43/EEC, European Commission, 2000.
- *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.* National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin 2009.

2.2 Impact Assessment

The first step in the screening process is to develop a 'long list' of Natura 2000 sites potentially affected by the project. Each Natura 2000 site is reviewed to establish whether or not the project is likely to have a significant effect on the integrity of the site, as defined by its structure and function, and its conservation objectives.

The qualifying interests of each Natura 2000 are identified and the potential threats are summarised into the following categories for the screening process, and described within the screening matrix:

- *Direct impacts* refer to habitat loss or fragmentation arising from land-take requirements for development or agricultural purposes. Direct impacts can be as a result of a change in land use or management, such as the removal of agricultural practices that prevent scrub encroachment.

- *Indirect and secondary impacts* do not have a straight-line route between cause and effect, and it is potentially more challenging to ensure that all the possible indirect impacts of the plan – in combination with other plans and projects - have been established. These can arise when a development alters the hydrology of a catchment area, which in turn affects the movement of groundwater to a site, and the qualifying interests that rely on the maintenance of water levels. Deterioration in water quality can occur as an indirect consequence of development, which in turn changes the aquatic environment and reduces its capacity to support certain plants and animals. The introduction of invasive species can also be defined as an indirect impact, which results in increased movement of vectors (humans, fauna, surface water), and consequently the transfer of alien species from one area to another.

Disturbance to fauna can arise directly through the loss of habitat (e.g. bat roosts) or indirectly through noise, vibration and increased activity associated with construction and operation.

3 STAGE ONE SCREENING

3.1 Brief Description of the Site

Planning permission has been granted for a material recycling & waste transfer facility at Drumman, Co. Offaly. The site is located adjacent to the existing Bord na Móna Derrygreenagh Works on the R400 Rochfortbridge to Rhode road, approximately 2 kilometres south of Junction 3 on the M6 motorway.

The development will consist of a waste reception and processing building and a bale storage building. Access will be via a double weighbridge system and a staff accommodation and office building will also be constructed. A marshalling yard will be located to the front and rear of the waste reception and processing building with dedicated areas for skip, container and trailer storage and parking.

The facility will accept 99,000 tonnes per annum of mixed dry recyclables, mixed municipal wastes, construction and demolition (C&D) wastes, commercial and industrial (C&I) wastes and brown bin organic wastes, primarily collected by AES Ireland Ltd, a subsidiary of Bord na Móna PLC.

Approximately 50,000 tonnes of mixed dry recyclables will be accepted at the facility and this material will be processed within the facility prior to transport off site for recovery/ recycling. This material will be brought from other AES Ireland Ltd. transfer stations for processing at the permitted facility such that the permitted facility will operate as the primary AES Ireland Ltd. mixed dry recyclables processing facility. Processing will comprise the mechanical separation, sorting and baling of the various recyclable waste streams.

The remaining 49,000 tonnes of material will be mainly C&D and C&I material with approximately 5,000 tonnes of brown bin organic material being accepted also. These materials will not be processed, other than some recovery from the C&D/C&I material and will be bulked up and transported off site, for further treatment and/or disposal in the case of the C&D/C&I material and for biological treatment in the case of the brown bin organic material. 'Bulking up' refers to the process of accepting smaller volumes of waste from refuse collection vehicles (RCV's), skips etc. and transferring this material to larger volume trailers for more efficient and economic transportation of the waste material.

The development site at Drumman is located at an area of bog that has been cutover in the recent past. There are areas of bare peat, patches of Birch woodland and small areas of standing water at the site. The surrounding landscape is largely cutover bog. Habitat mapping was carried out at the site in 2009 as part of the fieldwork conducted for the Environmental Impact Assessment. Three habitat types were identified within the Drumman site boundary. The habitat types and their habitat codes (after Fossitt, 2000) are Cutover Bog (PB4), Bog Woodland (WN7) and Recolonising Bare Ground (ED3).

The Mongagh River bounds the site to the north at a distance of approximately 200m from the permitted site boundary. The Mongagh River flows in an easterly direction joining the Yellow River to the south of Castlejordon. The Yellow River continues in an easterly direction, flowing into the River Boyne to the north of Grange.

The development site is relatively flat and low-lying. The site drains in a north easterly direction towards the Mongagh River. There are a number of drainage ditches at the site remaining from the peat extraction activity which are now generally redundant.

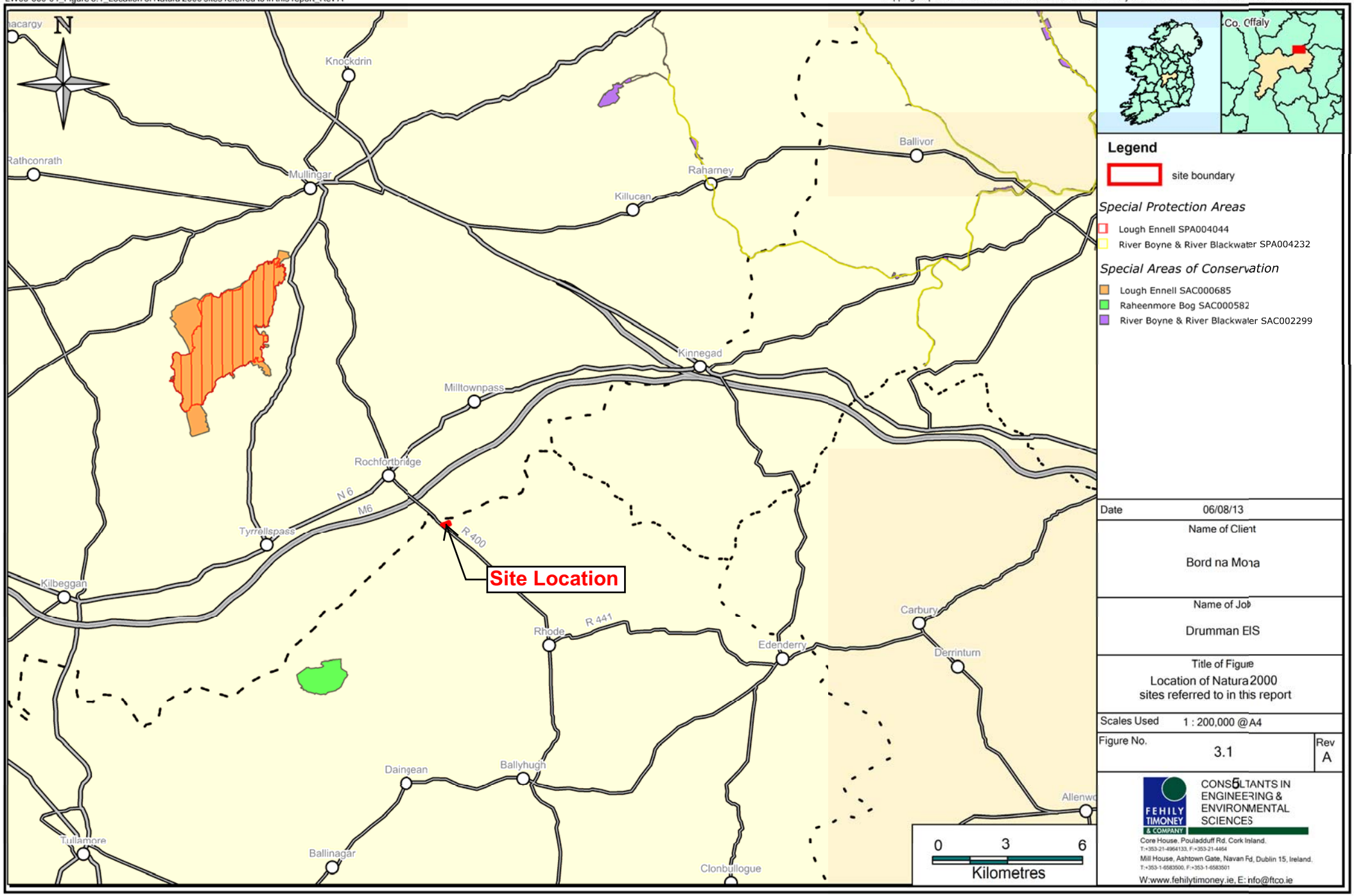
There is permission for the construction of a power station at Derrygreenagh adjacent to the material recycling & waste transfer facility. The power station will consist of two units: a reserve/peaking Open Cycle Gas Turbine unit of c. 170 MW, and a flexible Combined Cycle Gas Turbine unit of c. 430 MW.

3.2 Brief Description of the Natura 2000 Sites

Table 3.1 summarises the characteristics of each of the Natura 2000 sites, and the qualifying features for which the sites are designated. Figure 3.1 shows the location of Natura 2000 sites in relation to Drumman material recycling & waste transfer facility. The full site synopses for the Natura 2000 sites are available on www.npws.ie.

There are two Natura 2000 sites within 10km of the permitted site; the Raheenmore Bog SAC (000582) and the Lough Ennell SAC (000685). The Lough Ennell SPA is just over 10km from the permitted site and its boundaries overlap with the boundaries of Lough Ennell SAC. The River Boyne and River Blackwater SPA (004232) and SAC (002299) are over 20km from the waste transfer facility site but have hydrological links to the site.

LW09-660-04_Figure 3.1_Location of Natura 2000 sites referred to in this report_Rev A



Date	06/08/13
Name of Client	Bord na Mona
Name of Job	Drumman EIS
Title of Figure	Location of Natura 2000 sites referred to in this report
Scales Used	1 : 200,000 @ A4
Figure No.	3.1
Rev	A

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Table 3.1: Summary of the Natura 2000 sites referred to in this report

Designated Site	Qualifying Interests	Reason for designation	Threats	Distance from site (km)
Raheenmore Bog SAC 000582	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150]	This raised bog developed in a small basin in the catchment of two major river systems i.e. the Brosna and the Boyne. The bog has a well-developed hummock and hollow system. Raheenmore Bog is within the breeding territory of a pair of Merlin, a scarce species in Ireland and one that is listed on Annex I of the EU Birds Directive. Other typical bogland birds which breed include Red Grouse and Snipe. Raheenmore Bog is a classical example of a Midland Raised Bog and the deepest remaining in Ireland. The site is remarkably intact and is one of the few raised bogs where restoration of the lagg zone is feasible	Drainage	7.12
Lough Ennell SAC 000685	Brook lamprey (*Lampetra planeri*) [1096] Otter (*Lutra lutra*) [1355] Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. [3140] Alkaline fens [7230]	Lough Ennell supports a diverse aquatic flora; seven Stonewort species have been identified including two Red Data Book species, *Chara denudata* and *C. tomentosa*. Scharff's Char (*Salvelinus scharffi*), a distinct race of char which was once found only in Lough Owel and Lough Ennell, is now thought to be extinct. Notable aquatic invertebrates recorded from the lake include *Tinodes maculicornis*, *Metalype fragilis, Limnephilus nigriceps* (Trichoptera); *Picromerus bidens*, *Monarthia humili* (Hemiptera) and *Donacia obscura* (Coleoptera). This site shares an internationally important Greenland White-fronted Goose flock with Loughs Iron, Glen and Owel. Nationally important bird populations have been recorded on Lough Ennell. Lough Ennell is of significance as a highly productive lake which supports a rich variety of lower plant and invertebrate species. Its lakeshore habitats, which include alkaline fen, a habitat listed on Annex I of the EU Habitats Directive, support a diverse flora. These habitats also provide important refuges for wildfowl.	Eutrophication from sewage and fertiliser inputs. Boating activities on the lake.	9.56

Designated Site	Qualifying Interests	Reason for designation	Threats	Distance from site (km)
Lough Ennell SPA 004044	Pochard (*Aythya ferina*) [A059] Tufted Duck (*Aythya fuligula*) [A061] Coot (Fulica atra) [A125] Wetlands & Waterbirds [A999]	Lough Ennell is one of the most important Midland lakes for wintering waterfowl, with nationally important populations of Mute Swan (340), Pochard (738), Tufted Duck (1,303) and Coot (433) - all figures are average peaks for the 5 seasons 1995/96-1999/00. The population of Tufted Duck represents over 3% of the national total. At times, the lake is utilised as a roost (with limited feeding) by the internationally important Midland lakes population of Greenland White-fronted Goose (c. 400 strong). The site also attracts Golden Plover (200) and Lapwing (673) though these feed mainly outside of the site, as well as Little Grebe (30), Mallard (93), Great Crested Grebe (24) and Goldeneye (22).	Pollution from agricultural and domestic sources. Increased recreational activities could cause disturbance to the birds.	10.7
River Boyne and River Blackwater SPA 004232	Kingfisher (*Alcedo atthis*) [A229]	The site is a Special Protection Area (SPA) under the E.U. Birds Directive of special conservation interest for the following species: Kingfisher. A survey in 2010 recorded 19 pairs of Kingfisher (based on 15 probable and 4 possible territories) in the River Boyne and River Blackwater SPA. A survey conducted in 2008 recorded 20-22 Kingfisher territories within the SPA. Other species which occur within the site include Mute Swan (90), Teal (166), Mallard (219), Cormorant (36), Grey Heron (44), Moorhen (84), Snipe (32) and Sand Martin (553) – all figures are peak counts recorded during the 2010 survey.	There are no known threats.	20.8
River Boyne and River Blackwater SAC 002299	River lamprey (*Lampetra fluviatilis*) [1099] Salmon (*Salmo salar*) [1106] Otter (*Lutra lutra*) [1355] Alkaline fens [7230] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	This site comprises the freshwater element of the River Boyne as far as the Boyne Aqueduct, the Blackwater as far as Lough Ramor and the Boyne tributaries including the Deel, Stoneyford and Tremblestown Rivers. The site is a candidate SAC selected for alkaline fen and alluvial woodlands, both habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Atlantic Salmon, Otter and River Lamprey.	Drainage and maintenance dredging. Water pollution from agricultural runoff and inputs from domestic and industrial sources.	20.8

3.3 Assessment Criteria

3.3.1 Description of the likely impact of the project on the Natura 2000 sites

The Drumman material recycling and waste transfer facility is not located within or adjacent to any Natura 2000 sites. It is located 7.12km from Raheenmore Bog SAC, which is the nearest Natura 2000 site. The facility will not impact on the size and scale of the SAC, or any other Natura 2000 site, and it will not result in any land-take from it. There will be no excavation or resource requirements from any SAC or SPA as a result of the waste transfer facility. There will be no direct emissions from the waste transfer facility to any SAC or SPA.

The main element of the material recycling and waste transfer facility at Drumman that could potentially indirectly impact on Natura 2000 sites in the vicinity would be potential contamination of waterbodies, which could eventually contaminate aquatic systems within SACs or SPAs.

There are no hydrological links from the permitted waste transfer facility to the Raheenmore Bog SAC, the Lough Ennell SAC or the Lough Ennell SPA. There will be no impacts on aquatic systems within these SACs or SPAs as a result of the facility.

There are indirect hydrological links from the material recycling and waste transfer facility site to the River Boyne and River Blackwater SPA and SAC via the Mongagh River and Yellow River to the River Boyne. The SAC and SPA are approximately 20.8 km downstream of the permitted waste transfer facility site. Pollution from agricultural runoff and inputs from domestic and industrial sources is listed as one of the threats to the SAC in the Natura 2000 data form (www.npws.ie).

The design of the materials recycling & waste transfer facility development at Drumman includes;

- the use of silt fencing initially and an appropriately sized attenuation/settlement pond during construction to prevent any increase in the sediment load to the watercourse during works,
- During operation management of surface water runoff from the project will include attenuation of the increased surface water runoff and settling of suspended solids by directing all runoff from the site through the attenuation/settlement pond,
- A proprietary wastewater treatment plant will treat washdown water and administration building foulwater to an appropriate standard prior to discharge to the Mongagh River.

The EIS submitted as part of the planning process concluded that the residual effects of the development on water quality would be insignificant.

There is no route for the material recycling and waste transfer facility at Drumman to contaminate aquatic habitats at the Raheenmore Bog SAC, the Lough Ennell SAC or the Lough Ennell SPA.

The impact of the facility on water quality is expected to be insignificant. Furthermore, the River Boyne and River Blackwater SPA and SAC are located approximately 20.8km downstream of the permitted waste transfer facility and therefore there are not likely to be any impacts on water quality at the SPA or SAC due to the distance of the Natura sites from the development site.

It can be concluded, therefore, that the material recycling and waste transfer facility at Drumman is not likely to significantly impact on the Natura sites, and can be screened out at Stage One of the Appropriate Assessment process.

3.3.2 Cumulative Impacts

The material recycling and waste transfer facility at Drumman, in combination with other projects or plans, is not likely to significantly impact on the Natura sites due to:

- The negligible impact of the facility at Drumman on water quality,
- The distance to Natura 2000 sites which could potentially be impacted by a decrease in water quality (28.1 km downstream).

There are four IPPC licensed facilities in the vicinity of the Drumman site; two for peat extraction and two for intensive farming of pigs (EPA Envision maps, www.epa.ie). There are no waste licensed facilities nearby.

There is permission for the construction of a power station at Derrygreenagh. The power station will consist of two units: a reserve/peaking Open Cycle Gas Turbine unit of c. 170 MW, and a flexible Combined Cycle Gas Turbine unit of c. 430 MW. The EIS submitted as part of the planning process for the power station states that;

'It is anticipated that the overall residual impact will be minimal, as the location of the site for the proposed power plant development is not in close proximity to any significant water body, and the water discharged to the Yellow River will be fully treated prior to discharge.' (www.derrygreenaghpower.ie)

Negative impacts on water quality in the Boyne Upper WMU are currently mainly due to diffuse agricultural and wastewater point source pollution according to the *ERBD River Basin Management Plan 2009-2015* (http://www.wfdireland.ie/).

3.3.3 The likely impacts on the Natura 2000 sites as a whole

Describe any likely impacts on the Natura 2000 site as a whole in terms of:

- *interference with the key relationships that define the structure of the site;*
- *interference with key relationships that define the function of the site.*

There will be no impacts on the key relationships that define the structure and function of the Raheenmore Bog SAC, the Lough Ennell SAC, the Lough Ennell SPA, the River Boyne and River Blackwater SPA or the River Boyne and River Blackwater SAC.

A 'Finding of No Significant Effects Report' has been completed and is included in Appendix 1 of this Screening Report.

4 REFERENCES

DoEHLG, 2009. Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities. Department of Environment Heritage and Local Government, 2009 (now Department of Environment, Community and Local Government).

EPA, 2007. Code of Practice – Environmental Risk Assessment for Unregulated Waste Disposal Sites. Published by the Environmental Protection Agency, Ireland.

European Commission Directorate-General. 2001. Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Commission Directorate-General. Oxford.

European Commission. 2000. Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

The following websites were also consulted:

- The National Parks and Wildlife Service (NPWS) map viewer and site synopses www.npws.ie
- EPS Envision maps (www.epa.ie)
- Offaly County Council Planning website: www.offaly.ie/eng/Services/Planning/Planning_Search
- Derrygreenagh Power Station EIS: www.derrygreenaghpower.ie
- ERBD River Basin Management Plan 2009-2015: http://www.wfdireland.ie/

APPENDIX 1

Finding of No Significant Effects Report

Finding of no Significant Effects Report	
Name and location of the Natura 2000 sites	Raheenmore Bog SAC - 7.12km SW of permitted waste transfer facility Lough Ennell SAC – 9.56 km NW Lough Ennell SPA – 10.7 km NW River Boyne and River Blackwater SPA - 20.8 km NE River Boyne and River Blackwater SAC - 20.8 km NE
Description of the project or plan	The material recycling & waste transfer facility at Drumman, Co. Offaly is located adjacent to the existing Bord na Móna Derrygreenagh Works on the R400 Rochfortbridge to Rhode road. The development will consist of a waste reception and processing building and a bale storage building. Access will be via a double weighbridge system and a staff accommodation and office building will also be constructed. A marshalling yard will be located to the front and rear of the waste reception and processing building with dedicated areas for skip, container and trailer storage and parking. The facility will accept 99,000 tonnes per annum of mixed dry recyclables, mixed municipal wastes, construction and demolition (C&D) wastes, commercial and industrial (C&I) wastes and brown bin organic wastes, primarily collected by AES Ireland Ltd, a subsidiary of Bord na Móna PLC. The Drumman site is located at an area of bog that has been cutover in the recent past. The Mongagh River bounds the site to the north at a distance of approximately 200m from the permitted site boundary. The Mongagh River flows in an easterly direction joining the Yellow River to the south of Castlejordon. The Yellow River continues in an easterly direction, flowing into the River Boyne to the north of Grange. The development site is relatively flat and low-lying. The site drains in a north easterly direction towards the Mongagh River. There are a number of drainage ditches at the site remaining from the peat extraction activity which are now generally redundant.
Is the Project or Plan directly connected with or necessary to the management of the site (provide details)?	No
Are there other projects or plans that together with the project of plan being assessed could affect the site (provide details)?	There is planning permission for a Power Plant at Derrygreenagh adjacent to the Drumman site. The power plant is not expected to decrease the water quality in the Mongagh River. There are no expected significant effects on the River Boyne and River Blackwater SPA and SAC as a result of the development in combination with other plans or projects.

The Assessment of Significant Effects	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site	The main element of Drumman material recycling & waste transfer facility that could potentially indirectly impact on the Raheenmore Bog SAC, the Lough Ennell SAC and SPA or the River Boyne and River Blackwater SPA and SAC would be potential contamination of waterbodies from the facility, which could eventually contaminate aquatic systems within the Natura sites. A decline in the water quality in the SACs or SPA could compromise the habitats and species for which the sites are designated.
Explain why these effects are not considered significant	There is no route for the material recycling and waste transfer facility at Drumman to contaminate aquatic habitats at the Raheenmore Bog SAC, the Lough Ennell SAC or the Lough Ennell SPA. There are indirect hydrological links from the waste transfer facility site to the River Boyne and River Blackwater SPA and SAC via the Mongagh River and Yellow River to the River Boyne. The SAC and SPA are approximately 28.1 km downstream of the permitted waste transfer facility site. There will be no likely significant impacts on aquatic habitats at the River Boyne and River Blackwater SPA and SAC as a result of the Drumman waste transfer facility due to the distance between the Drumman site and the Natura 2000 sites.

Name of Agency or Body Consulted	Summary of Response
Development Applications Unit, NPWS DAU & Linda Patten, Divisional Ecologist were also contacted as part of the EIS consultation	None received to date

Data Collected to Carry out the Assessment			
Who carried out the assessment	*Sources of Data*	*Level of assessment completed*	*Where can the full results of the assessment be accessed and viewed*
This assessment was completed by Fehily Timoney and Company	• The National Parks and Wildlife Service (NPWS) map viewer and site synopsis www.npws.ie • EPS Envision maps (www.epa.ie) • Offaly County Council Planning website: www.offaly.ie/eng/Services/Planning/Planning_Search • Derrygreenagh Power Station EIS: www.derrygreenaghpower.ie • ERBD River Basin Management Plan 2009-2015: http://www.wfdireland.ie/	Stage One Screening for Appropriate Assessment	

Overall conclusions

Any potential impacts from the material recycling and waste transfer facility at Drumman, Co. Offaly on the Raheenmore Bog SAC, the Lough Ennell SAC, the Lough Ennell SPA, the River Boyne and River Blackwater SPA or the River Boyne and River Blackwater SAC have been screened out at Stage 1 of the AA process. Therefore an Appropriate Assessment (Stage 2) is not required.

Appendix 5

ELRA & CRAMP

ENVIRONMENTAL BALANCE IN DESIGN AND CONSTRUCTION

ENVIRONMENTAL LIABILITIES RISK ASSESSMENT (ELRA) & CLOSURE, RESTORATION AND AFTERCARE MANAGEMENT PLAN (CRAMP) FOR W0275-01

AUGUST 2013

BORD NA MÓNA PLC

FEHILY TIMONEY & COMPANY

ENVIRONMENTAL LIABILITIES RISK ASSESSMENT (ELRA) & CLOSURE, RESTORATION AND AFTERCARE MANAGEMENT PLAN (CRAMP) FOR W0275-01

User is Responsible for Checking the Revision Status Of This Document

Rev. Nr.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
0	For Issue	DFM/MT	PON	DFM	14-08-13

Client: Bord na Móna PLC

Keywords: waste transfer station, materials recycling, waste licence, Environmental Liability Risk Assessment, Closure Restoration Aftercare Management Plan (CRAMP), Environmental Liabilities Risk Assessment (ELRA).

Abstract: Item 8 of an information request received under Article 14 (2)(b)(ii) of the Waste Management Licencing Regulations, dated 21 June 2013, requires the preparation of a fully detailed and costed CRAMP and an ELRA, with indication of financial provision to cover any liabilities associated with same. This document forms the response in relation to this issue.

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1 INTRODUCTION

A waste licence application was made to the Environmental Protection Agency in March 2010 regarding the proposed development of a 99,000 tonnes per annum materials recycling and waste transfer facility at Drumman, Co. Offaly. This application has been assigned the register number W0275-01. The applicant is Bord na Móna PLC.

Item 8 of an information request regarding the application for W0275-01, received under Article 14 (2)(b)(ii) of the Waste Management Licensing Regulations and dated 21 June 2013, requires the preparation of a fully detailed and costed CRAMP and an ELRA, with indication of financial provision to cover any liabilities associated with same. This document forms the response in relation to this issue.

Bord na Móna PLC has retained Fehily Timoney & Company (FTC) to prepare this ELRA & CRAMP. As an independent waste management and environmental consultancy, FTC is experienced in the preparation of ELRAs and CRAMPs and has prepared and submitted a number of these documents to the Agency in the past for landfill facilities, particularly for local authority clients.

The specific request is presented as follows:

In accordance with section 53(1) of the Waste Management Acts 1996 to 2013, please furnish particulars in respect of the ability of Bord na Móna PLC to meet the financial commitments of liabilities that will be entered into or incurred in carrying on the proposed activity and provide evidence that Bord na Móna PLC will be in position to make financial provision that is adequate to discharge these financial commitments. Specifically:

(a) Prepare a fully detailed and costed Closure, Restoration and Aftercare Management Plan (CRAMP) for the facility, to include as a minimum the following:

- *A scope statement for the plan.*
- *The criteria which define the successful closure and restoration of the facility or part thereof, and which ensure minimum impact to the environment.*
- *A programme to achieve the stated criteria.*
- *Where relevant, a test programme to demonstrate the successful implementation of the plan.*
- *Details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility.*
- *Details of the costings for the plan and the financial provisions to underwrite those costs.*

(b) Prepare a fully detailed and costed Environmental Liabilities Risk Assessment (ELRA) which addresses the liabilities and potential liabilities from past and proposed activities, including those liabilities and costs identified in the CRAMP.

Provide evidence that the assessment was prepared or reviewed, and was found to be complete and accurate, by an independent and appropriately qualified consultant or expert.

(c) Provide a proposal for financial provision to cover any liabilities associated with the operation and identified in the ELRA (including closure, restoration and aftercare and unanticipated accidents, incidents and liabilities). Provide evidence that Bord na Móna plc will be in a position to put such financial provision in place in the event that a waste licence is granted and prior to development works commencing.

1.1 Environmental Liability Regulations

A relevant and related issue concerns the Environmental Liability Directive (2004/35/EC), which has been transposed into law through the European Communities (Environmental Liability) Regulations (2008) and the Environmental Liability Act. The Directive identifies activities for which 'strict liabilities' apply, for which waste management operations are identified.

The Regulations places a number of responsibilities on operators i.e. the entity that controls an activity, namely:

- Prevention of environmental damage including taking measures to prevent (environmental) damage occurring when there is an imminent threat of damage
- Informing the EPA of the imminent threat of environmental damage where the preventative measures have not been successful in dispelling the threat
- Informing the EPA when environmental damage has occurred
- Complying with the EPA's direction in relation to when an imminent threat of damage has occurred
- Where damage has occurred, the operators shall take steps to control, contain, remove or manage the contaminants

Section 4.1 of the document '*Environmental Liabilities Regulations – Guidance Document, EPA 2011'* identifies **proactive risk management** as a core principle by which these Regulations will be implemented by the EPA. Section 4.3 of the Regulations identifies Environmental Liability Risk Assessment (ELRA) as being a good example of a methodology for environmental risk management. Therefore, the preparation of an ELRA can be considered as a means of implementation of these Regulations.

1.2 Environmental Liability Risk Assessment

Environmental Liabilities can be subdivided into **known** and **unknown liabilities**. Different financial instruments are appropriate depending on whether it is an anticipated liability, such as the ongoing environmental management of a closed and restored landfill, or whether it is an unknown liability arising from, for example, accidental discharge, tank rupture of uncontrolled migration at a waste treatment facility.

- The financial instruments most suited for the provision of **known liabilities (Closure and Aftercare)** are cash based, such as Trusts, Cash funds or Escrow.
- The financial instruments most suited for the provision of **unknown liabilities (ELRA)** are Insurances, Bonds, Standby Letters of Credit and Guarantees.

The EPA Guidance Document *'Guidance on Environmental Liabilities Risk Assessment, Residuals Management Plans and Financial Provision'* (hereafter referred to as the 'Guidance Document') states that "Closure Restoration Management Planning (CRAMP), Environmental Liabilities Risk Assessment (ELRA) and Financial Provision (FP) are mutually dependent".

This document identifies a systematic step-wise approach to assess and quantify the risks and liabilities of a licensed facility as follows:

- Step 1: Initial Screening & Operational Risk Assessment
- Step 2: Preparation of a Closure, Restoration and Aftercare Management Plan (CRAMP) for known Liabilities
- Step 3: Environmental Liability Risk Assessment (ELRA) for unknown Liabilities
- Step 4: Identification of Financial Provision (FP) and Instruments

Step 1: Initial Screening & Operational Risk Assessment

Step 1 of the process involves a risk assessment decision matrix which is used to classify the Drumman Materials Recycling and Waste Transfer Facility into a Risk Category (1-3) and thereby select the specific CRAMP, ELRA and FP requirements that are required.

Step 2: Preparation of a Closure, Restoration and Aftercare Management Plan (CRAMP) for Known Liabilities

Depending on the nature of activities, either a Closure Plan or a more extensive Closure, Restoration and Aftercare Management Plan (CRAMP) will be required.

At a minimum a Closure Plan is required which, as per the Guidance Document, must address:

- Introduction
- Site Evaluation
- Closure Considerations
- Criteria for Successful Closure
- Closure Plan Costing
- Closure Plan Update and Review
- Closure Plan Implementation
- Closure Plan Validation

A Closure Plan has been prepared herein which was informed primarily by the environmental impact statement (EIS) prepared as part of the planning and waste licence application processes.

It is considered difficult to fully identify the requirements of a Restoration, Aftercare and Management Plan for the facility at this juncture when detailed design has not been undertaken and operation have not commenced. Thus, a Restoration, Aftercare and Management Plan has not been full developed. However, an assessment of costs associated with potential restoration/aftercare activities has been identified.

Step 3: Environmental Liability Risk Assessment (ELRA) for Unknown Liabilities

An ELRA has particular regard to accidents, emergencies, past activities or other incidents, which might occur at a facility and their effect on the environment, on the neighbours of the facility and on adjoining land-uses. Information gathered during a desk based review of proposed operations and through operational experience was used to determine potential environmental risks.

The risk assessment identifies:

- any historical environmental liabilities related to the site
- potential environmental liabilities arising from the proposed activities at the site
- potential environmental liabilities arising from ceasing to carry out these activities
- financial provisions required for the site

This report contains a matrix identifying potential areas of risk, probability of an incident occurring and the consequences of such an incident. Worst-case scenarios for each incident or potential incident have been evaluated.

The risk assessment includes a costed environmental liabilities risk assessment for the facility. Based on this, the financial provisions that should be put in place are calculated. The financial provisions include the costs entered into or incurred in the carrying on of the activities to which this waste licence application relates including decommissioning and closure of the facility.

Step 4: Identification of Financial Provision (FP) and Instruments

The main objective of Financial Provision is to ensure that sufficient financial resources are available to cover:

- known environmental liabilities that will arise at the time of facility closure
- known environmental liabilities that are associated with the aftercare and maintenance of the facility until such time as the facility is considered to no longer pose a risk to the environment, if applicable
- unknown environmental liabilities that may occur during the operating life of the facility

The amount of financial provision required for the Drumman Materials Recycling and Waste Transfer Facility has been determined using the CRAMP (Step 2) and ELRA (Step 3) processes as outlined in the Guidance Document.

1.3 Status of this Document

It must be stated at the outset that the preparation of an ELRA and Closure Plan/CRAMP, with identification of appropriate financial provision, at the application stage for a waste licence can only result in an ELRA and Closure Plan/CRAMP that can be considered preliminary in nature. This is due to the fact that, at this juncture and specific to the Drumman Materials Recycling and Waste Transfer Facility:

- detailed design of the facility has not been undertaken nor has the facility been constructed
- no operations have commenced at the facility

In the past, the preparation of ELRA and CRAMP has typically been a condition of a waste licence granted, therefore allowing the licence holders to have a fuller appreciation of issues that may result in potential unknown liabilities during operations and to allow consideration of plans and requirements for closure and restoration and aftercare (if required).

Thus, this document will aim to identify known and unknown liabilities as best as possible based on the current understanding of the development proposal. It is suggested that, in the event of the award of a licence under register number W0275-01, a review of this document be undertaken at a frequency identified by the Agency to reflect the operational realities that present themselves at the time.

It is understood at the time of writing that this approach is considered acceptable to the Agency.

2 STEP 1 – INITIAL SCREENING AND OPERATIONAL RISK ASSESSMENT

The initial screening and operational risk assessment of the Drumman Materials Recycling and Waste Transfer Facility was carried out to establish if the facility is of Low, Medium or High risk. The risk assessment criteria are as follows:

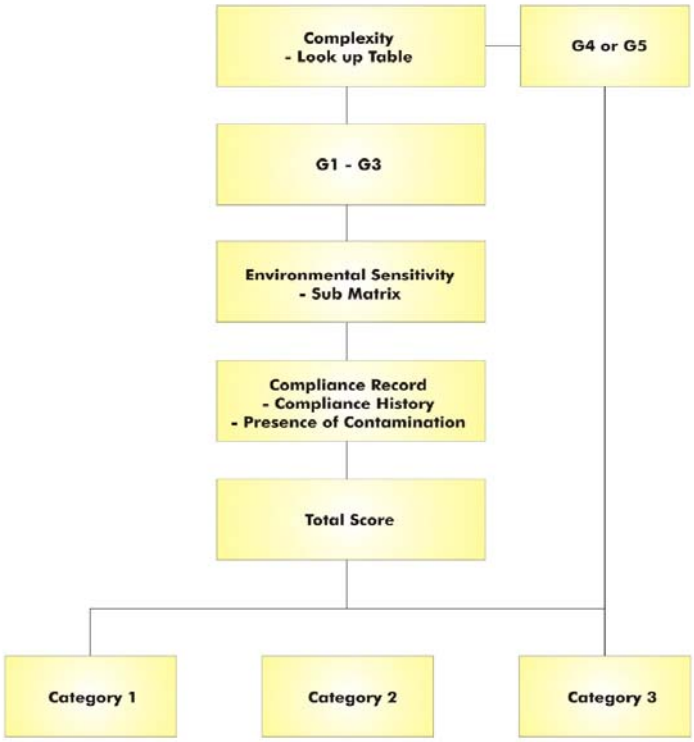
- ***Complexity*** *– the extent and magnitude of potential hazards present due to the operation of the facility (e.g. a function of the nature of the activity, the volumes of hazardous materials stored on site etc.). A Complexity Band (G1 least complex to G5 most complex) for each class of activity has been assigned and included in a Look-Up Table (Appendix B of the EPA Guidance Document). For activities with complexity G4 or G5, these facilities are automatically classified as Risk Category 3. For activities with complexity of G1, G2 or G3, these facilities must consider and evaluate their score using the Environmental Sensitivity and Compliance record*

- ***Environmental Sensitivity*** *– the sensitivity of the receiving environment in the vicinity of the facility, with more sensitive locations given a higher score (e.g. the presence of aquifers below the site, groundwater vulnerability, the proximity to surface water bodies and their status, the proximity to sensitive human receptors, etc). The Environmental Sensitivity is calculated on a site-specific basis using a sub-matrix*

- ***Compliance Record*** *– the compliance history of the facility and whether soil and/or activities carried on are in compliance with licence requirements and emission limits.*

Each aspect is multiplied to give the Total Score for the facility, and this can be used to place the facility into an appropriate Risk Category (1-3). Once this has been completed, the licensee proceeds through the relevant steps of CRAMP, ELRA and FP that are considered appropriate for the Risk Category. Figure 2.1 shows the overall Step 1 process.

Figure 2.1: Flow chart of Initial Screening and Operational Risk (EPA, 2006)



2.1 Complexity

The '*Guidance on Environmental Liability Risk Assessment, Residuals Management Plans and Financial Provision'* (EPA 2006) was used to determine the initial screening and operational risk assessment of the Drumman Materials Recycling and Waste Transfer Facility. There are five possible complexity bands for a facility, G1 to G5, G5 being the most complex. The bands are used to determine the value used in the Operational Risk Assessments. Table 2.1 is based on Appendix 2 of the Guidance Document.

Table 2.1: Complexity Rating

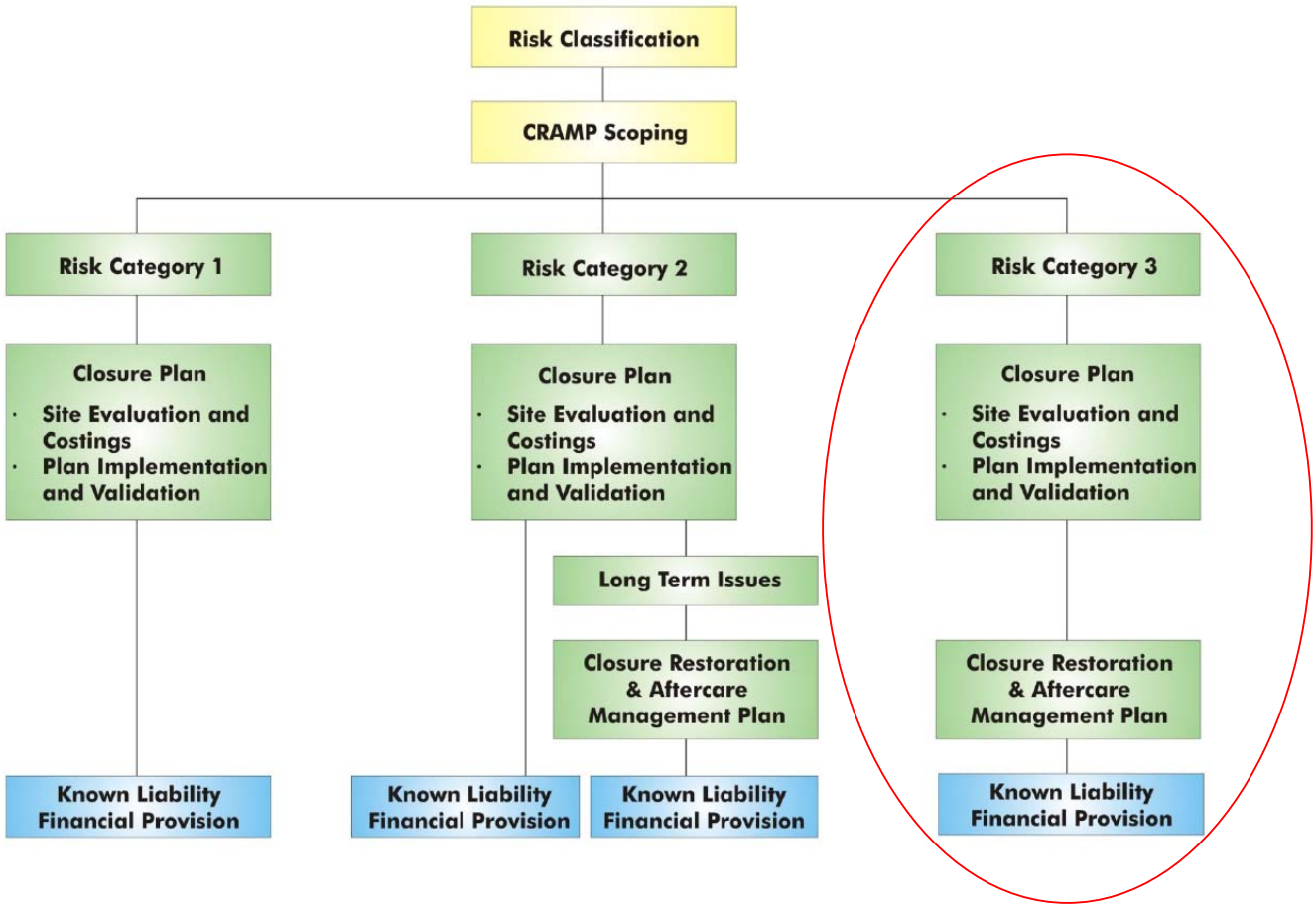
Complexity	Score	
Waste Recovery Activity	**Complexity Band**	**Risk Category**
Recycling or reclamation of organic substances which are not used as solvents; where:		
• < 5,000 tonnes per annum	G2	
• 5,000 – 25,000 tonnes per annum	G3	
• **> 25,000 tonnes per annum**	**G4**	**3**
• mushroom composting	G4	

The Principal Activity to be carried out at Drumman Materials Recycling and Waste Transfer Facility will be the "recycling/reclamation of organic substances", as per R3 of the Fourth Schedule of the Waste Management Acts 1996 to 2010, with a facility capacity of 99,000 tonnes per annum. Therefore, the Complexity Band for Drumman Materials Recycling and Waste Transfer Facility is **G4** and the site is automatically assigned a **Category 3** risk status, as per Figure 2.1.

3 STEP 2: CLOSURE, RESTORATION AND AFTERCARE MANAGEMENT PLAN (CRAMP) - KNOWN LIABILITIES

As a result of the Initial Screening (previous Step 1), the Drumman Materials Recycling and Waste Transfer Facility is deemed to be a Category 3 facility. Therefore, a Closure Plan and Restoration and Aftercare Plan (CRAMP) are required.

Figure 3.1: Closure, Restoration and Aftercare Management Plan Process (CRAMP) (EPA, 2006)



3.1 Closure Plan for Drumman Materials Recycling and Waste Transfer Facility

The closure plan for the Drumman Materials Recycling and Waste Transfer Facility includes the following sections (as set out in Table 3.2 of the EPA Guidance Document):

- Introduction
- Site Evaluation
- Closure Considerations
- Criteria for Successful Closure
- Closure Plan Costing
- Closure Plan Update and Review
- Closure Plan Implementation
- Closure Plan Validation

3.1.1 Introduction

Facility Details

A material recycling & waste transfer facility is proposed for development at Drumman, Co. Offaly.

The proposed facility will accept 99,000 tonnes per annum of mixed dry recyclables, mixed municipal wastes, construction and demolition (C&D) wastes, commercial and industrial (C&I) wastes and brown bin organic wastes, primarily collected by AES Ireland Ltd, a subsidiary of Bord na Móna PLC.

Approximately 50,000 tonnes of mixed dry recyclables will be accepted at the facility and this material will be processed within the facility prior to transport off site for recovery/ recycling. Processing will comprise the mechanical separation, sorting and baling of the various recyclable waste streams.

The remaining 49,000 tonnes of material will be mainly C&D and C&I material with approximately 5,000 tonnes of brown bin organic material being accepted also. These materials will not be processed on site, other than some recovery/removal of bulky waste items from the C&D/C&I material and will be bulked up and transported off site, for further treatment and/or disposal in the case of the C&D/C&I material and for biological treatment in the case of the brown bin organic material.

A waste licence application was made to the Environmental Protection Agency in March 2010 regarding the development of this facility and the application has been assigned the register number W0275-01.

Facility Closure Scenarios Covered in the Plan

Closure scenarios that could potentially be encountered at the facility are as follows:

- Planned closure over an identified time period in consultation with all relevant bodies
- Unexpected closure due to an unforeseen or emergency event

It should be noted that once operational, it will be intention of the operator to operate the facility for the full duration of its design lifespan.

3.1.2 Site Evaluation

Facility Description & History

The proposed location for the facility is at Drumman which is located in the townland of Derrygreenagh in Co. Offaly, approximately 7 km to the north west of the village of Rhode, Co. Offaly and 3 km to the south east of Rochfortbridge village in Co. Westmeath. The River Mongagh, which flows in a west to east direction within 500 metres of the site, represents the boundary between counties Westmeath and Offaly.

Derryarkin Sand and Gravel Ltd. operates approximately 500 metres to the south west of the site and periodically at a location approximately 2.5 km to the north of the proposed facility. A commercial piggery is located approximately 2 kilometres to the south of the site. Two residential dwellings are located 1.5 km to the north west of the site with two further dwellings located 1.5 km to the south east.

The site is located within an area of cutaway bog which is part of the Derrygreenagh Group of bogs. Extraction of peat is no longer feasible at the proposed location which is adjacent to the Derrygreenagh Works from which peat extraction in the Derrygreenagh group of bogs was previously managed.

The topography of the site is generally flat and scrubland has developed in the western corner of the site since the cessation of peat extraction.

An existing gated entrance of 7.5 m diameter provides access to the site and a gravel based haul road extends parallel to the proposed site location and follows the course of the Mongagh River in a north easterly direction further into the network of the Derrygreenagh group of bogs.

Facility Compliance Status

As identified, the facility is not operational and hence facility compliance cannot be evaluated.

Facility Processes and Activities

The facility will accept 99,000 tonnes per annum of mixed dry recyclables, mixed municipal wastes, construction and demolition (C&D) wastes, commercial and industrial (C&I) wastes and brown bin organic wastes.

Approximately 50,000 tonnes of mixed dry recyclables will be accepted at the facility and this material will be processed within the facility prior to transport off site for recovery/ recycling. This material will be brought from other transfer stations for processing, which will comprise the mechanical separation, sorting and baling of the various recyclable waste streams.

The remaining 49,000 tonnes of material will be mainly C&D and C&I material with approximately 5,000 tonnes of brown bin organic material being accepted also. These materials will not be processed, other than some recovery/removal of bulky waste items from the C&D/C&I material and will be bulked up and transported off site, for further treatment and/or disposal in the case of the C&D/C&I material and for biological treatment in the case of the brown bin organic material. 'Bulking up' refers to the process of accepting smaller volumes of waste from refuse collection vehicles (RCV's), skips etc. and transferring this material to larger volume trailers for more efficient and economic transportation of the waste material.

Inventory of Site Buildings, Plant, Raw Materials & Wastes

The following identifies site building and plant to be utilised at the Drumman site. Raw materials and Wastes will be confirmed during facility operations. The proposed facility layout is identified in Drawing LW0966004_400-002 in Appendix 1 of this document.

Administration Building

The Administration Building will be a two storey construction used to provide welfare facilities for the site operatives and an administration centre for the site operations. The first floor is provided within the roof area. The total floor area of the building will be 430m^2 on a footprint of 352m^2.

The building will be constructed in traditional style concrete block cavity walls with prefabricated timber roof trusses. The first floor will be formed using a concrete slab. Alternatively, the building will be a prefabricated building constructed in sections off site, supplied and erected on site by a specialist contractor. The building shall conform to the Building Regulations in all respects and will use energy saving technologies where appropriate.

Waste Reception and Processing Building

The Waste Reception & Processing Building will be a single storey construction with internal floor area of 6,810m^2 approximately. It will be subdivided internally by reinforced concrete walls and cladding partitions. The subdivided areas are the materials recovery area (4,674 m^2 approx), the waste transfer area (1,583 m^2) and the biowaste reception and processing area (552 m^2).

The structure will be based on a steel portal frame on reinforced concrete foundations. The external envelope will be formed using a cladding panel to approved fire resistant specification. Opaque rooflights and side panels will be included to maximize the use of natural daylight. Steel roller shutter doors will be installed to provide access for incoming trucks and facilitate loading/unloading operations

Bale Storage Building

The Bale Storage Building will be a single storey construction with internal floor area of 978m^2 approximately. It will be subdivided internally by reinforced concrete walls used to support the stored bales. The building is open on one side which allows free access to fork lifts moving processed waste from the waste reception and process building. A 2.7m canopy will shield the open side of the building. Lorries moving the bales off site will be loaded within the building.

The structure will be based on a steel portal frame on reinforced concrete foundations. The external envelope will be formed using a single steel cladding panel. Opaque rooflights and side panels will be included to maximize the use of natural daylight. Steel roller shutter doors will be installed to provide access for incoming trucks and facilitate loading operations

Materials Recycling Plant

The following items of mobile and stationary plant may be utilised at the facility:

- Conveyors – feed, metering, incline & in-floor
- Picking Stations – locations for the manual capture of recyclable materials or contaminants
- Screens – paper & card separation
- Magnetic & eddy current separators – metals separation
- Optical separator – plastics separation
- Balers – for the baling of separated, recyclable waste streams
- Loading shovel(s) – for the loading of the materials recovery plant
- Forklift(s) – for the movement of baled materials

Weighbridge

A dual weighbridge system is proposed for the facility. The weighbridges and weighbridge hut will be located some 40 m from the facility entrance gate and will be 5 – 10 m from the administration building. The weighbridges will either be surface or pit mounted platforms consisting of a steel frame and reinforced concrete infill.

3.1.3 Closure considerations

Clean or Non Clean Closure Declaration

It is expected that a **clean closure**[1] will occur upon cessation of operations at the facility. Given the nature of activities proposed at the facility, it is not considered that there will be any remaining environmental liabilities post closure.

No further processing operations will be carried out post closure of the facility. Office activities may be carried out for a period of time to be determined.

Plant or Equipment Decontamination Requirements

Drumman Materials Recycling and Waste Transfer Facility will not require significant decommissioning or decontamination of plant, buildings or other infrastructure at the closure point due to the nature of site operations.

Mobile and stationary plant will require cleaning/washdown upon cessation of operation but no other decontamination will be required.

The site wastewater treatment plant may require desludging, and possibly the surfacewater full retention hydrocarbon interceptors. This will be carried out by authorised contractors.

Biofiltration and dust filtration units will be cleaned and emptied of media or filters and these will be disposed of at an authorised facility in an appropriate manner.

Procedures for plant and equipment decommissioning will be developed as part of the environmental management system (EMS) for the facility.

[1] Clean Closure – upon cessation of operations and subsequent decommissioning at the facility, there are no remaining environmental liabilities.

Plant Disposal or Recovery

Mobile and stationary plant will be cleaned and decommissioned upon cessation of facility operations. A commercial decision will then be taken as to the re-use, sale or recovery (as scrap) potential of this equipment.

Waste Disposal or Recovery

As identified, closure of the facility may be planned or unplanned. In either event, waste acceptance will cease at the facility and will be directed to another authorised facility in the region for appropriate treatment.

Waste material previously accepted at the facility will be transported offsite to another authorised facility in the region for appropriate treatment. In the event of an unplanned closure of the site, the emergency plan developed as part of the EMS will outline the procedures to be followed to ensure appropriate management and removal of waste materials at the site.

3.1.4 Criteria for Successful Closure

The following criteria will be used to determine whether successful closure of the facility has been achieved.

- All plant safely to be decontaminated using standard procedures and authorised contractors
- All wastes handled and/or stored to be disposed or recovered in a manner which complies with regulatory requirements
- All relevant records relating to waste and materials movement and transfer or disposal to be managed and retained throughout the closure process.
- No soil or groundwater contamination at the site to be verified using monitoring data and a soil /groundwater assessment at the time of closure (if required).
- The Environmental Management System to remain in place and be actively implemented during the closure period.

3.1.5 Closure Plan Costing

Table 3.1 shows a matrix of decommissioning and closure tasks and associated costs.

3.1.6 Closure Plan Update and Review

Proposed Frequency of Review

This closure plan will be reviewed and updated as per the requirements of the Agency.

Proposed Scope of Review

The updated plan will take into account any site process changes, technology changes and costing changes. Updates will be included as part of the relevant AER and submitted to the EPA for approval.

3.1.7 Closure Plan Implementation

EPA Notification

Upon cessation of waste acceptance at the Drumman Materials Recycling and Waste Transfer Facility, the EPA will be notified.

In the event of a planned closure, the operators will liaise with the EPA 3 months in advance of closure to ensure that any Agency requirements are satisfied. Should closure result from an unexpected event, the Agency will be informed at the earliest possible time and in keeping with any waste licence requirement.

Closure Plan Programme

In the event of a planned closure, it is envisaged that the closure plan will be implemented over a 'ramp down' period of time of approximately 6 – 8 weeks duration.

However, in the event of an unplanned closure, it may be necessary to implement a shorter closure programme dependent on circumstances prevailing at this time.

Test Programme

It is not envisaged that a dedicated test programme will be required during the implementation of the closure plan, given the nature of activities and expected duration of the closure period. However, it is expected that environmental monitoring will be undertaken at the facility for a duration agreed with the Agency, such that baseline/background environmental conditions can be demonstrated.

Table 3.1: Decommissioning and Closure Tasks and Associated Costs and Responsibilities

Element of Facility	Removal	Decontamination	Waste Disposal / Recovery	Decommissioning Supervision	Demolition	Environmental Monitoring	Verification audit / certification
Plant							
Conveyors, Picking Stations, Screens, Magnetic & eddy current separators, Optical separator, Balers, Loading shovel(s), Forklift(s)	Some Instances (3rd party)	Washdown only – internal staff	n/a	3rd Party	No	n/a	3rd Party
Other site infrastructure							
Weighbridge	No	No	n/a	No	No	n/a	n/a
Site fencing and gates	No	n/a	n/a	n/a	No	n/a	n/a
Monitoring infrastructure	No	n/a	n/a	Facility personnel	No	Yes (for limited period)	3rd Party
Roadways, carpark	No	n/a	n/a	n/a	No	n/a	n/a
Surface Water Management							
Surface water pond	No	3rd party	3rd party	No	No	n/a	3rd Party
Full Retention Oil Interceptor	No	3rd party	3rd party	Facility personnel	No	n/a	3rd Party
Surface water collection pumps & pipework	No	3rd party	3rd party	n/a	No	n/a	3rd Party
Wastewater treatment plant	No	3rd party	3rd party	Facility personnel	No	n/a	3rd Party
Foulwater collection pumps and pipework	No	3rd party	3rd party	Facility personnel	No	n/a	3rd Party
Facility Buildings							
Administration building	No	n/a	n/a	n/a	No	n/a	n/a
Waste Reception & Processing Building	No	Washdown only – internal staff	€65,000 (see Note 1)	3rd Party	No	No	3rd Party
Bale Storage Building	No	Washdown only – internal staff	€0 (see Note 2)	3rd Party	No	No	3rd Party
Subtotals	*€10,000*	*€5,000*	*€62,000*	*(included in Verification)*	*No*	*€2,000*	*€5,000*
Estimated Total Cost							**€84,000**

***Note 1**: Costs based on an assumption of 3 days of input material stored within waste reception and processing building totalling 950 tonnes – assumed cost of removal of €62,000 (assuming €50,600 alternative treatment costs & €11,400 transportation)*

***Note 2:** At full capacity, Bale Storage Building can hold c. 500 bales. Cost of removal offsite assumed neutral due to intrinsic market value.*

Local or other Statutory Authority Notifications

In the event of a planned closure, the operators will liaise with Offaly County Council as required well in advance of closure. Should closure result from an unexpected event, the operator will inform Offaly County Council at the earliest convenience.

Full or Partial Closure Considerations

Given the nature of the facility operations, it is not considered that a partial closure of the facility would be applicable or feasible. In the event of closure, it is envisaged that closure will be a full closure in terms of waste processing operations – administrative operation may continue at facility.

3.1.8 Closure Plan Validation

Audit, Report and Certificate

Upon closure of the facility, Bord na Móna PLC will retain the services of a suitably qualified independent auditor to certify the closure process to determine the success of the closure against the criteria identified in Section 3.1.4, and who will report their findings and certify same.

It is understood by the operator that this validation relates solely to the physical closure of the facility and that any formal acceptance of closure and ultimate surrender or transfer of a licence is a separate process that must be formally agreed with the EPA.

3.2 Restoration and Aftercare Management Plan for Drumman Materials Recycling and Waste Transfer Facility – Scope Statement

The Guidance Document identifies that "*some Risk Category 2 and the majority of Category 3 facilities will require a restoration and aftercare management plan*".

The elements to be addressed in a restoration and aftercare management plan are:

- Restoration and Remediation Proposals
  - Site Investigation Findings
  - Qualitative and/or Quantitative Risk Assessment
  - Remediation and/or Restoration proposals

- Aftercare Management
  - Proposed Short term Aftercare Monitoring and Maintenance
  - Proposed Long term Aftercare Monitoring and Maintenance

- Site Restoration & Aftercare Management Costs
  - Restoration and/or Remediation Costing
  - Aftercare Costings

The Guidance Document also identifies that "*there are two main circumstances in which site restoration and aftercare management plans will be required……:*

- *Significant soil and groundwater contamination including brownfield redevelopment*
- *Landform changes – landfill and mine sites"*

As "landform changes" are not applicable to the proposed development, the requirement for a restoration and aftercare management plan for the Drumman Materials Recycling and Waste Transfer Facility can only be linked to any potential for "significant soil and groundwater contamination". As the proposed site location

is not a brownfield site[2], contamination could only result during future operations and thus, cannot be quantified at this juncture.

Given that, at time of writing, detailed design of the facility has not been undertaken and no operational phase has commenced, it is difficult to assess what likely restoration and/or remediation requirements may be applicable in the event of significant soil and groundwater contamination being identified at the facility.

The design of the facility will incorporate impermeable surfaces in all waste acceptance, processing and storage areas with the intention of eliminating any potential for soil and/or groundwater contamination at the facility.

However, the Guidance Document also states that "*where there is evidence of soil and groundwater contamination or there have been spills in the past, facilities will be required to undertake some level of soil and groundwater investigation and risk assessment".*

Therefore, at this time, and given the intention to undertake a clean closure at the site, a restoration and aftercare management plan is not fully developed.

However, an allowance for undertaking exploratory soil and groundwater investigation is presented, in the event of any significant spills resulting from future operations or evidence of contamination being observed.

Table 3.2 presents estimated costs for aftercare management post clean closure. This table can be amended in future iterations of this report, when comprehensive information regarding detailed design of the facility and ground condition at the site location are available.

Table 3.2: Estimated Restoration & Aftercare Costs

Activity	Estimated Cost
Exploratory Site Investigation Works	€20,000
EPA monitoring (and potential licence surrender)	€15,000
Estimated Total	**€35,000**

3.3 Conclusion – Known Liabilities

With regard to the known liabilities for Drumman Materials Recycling and Waste Transfer Facility, this section has attempted to identify, insofar as possible at this juncture, the provisions required for the closure, restoration and aftercare of the facility.

Estimated costs of **€119,000** are identified to account for closure, restoration and aftercare actions arising from a clean closure event at the facility.

[2] The proposed development location, while formerly operated as a peat extraction site under IPPC licence, is not considered a brownfield site, as per the CABNERET (Concerted Action on Brownfields and Economic Regeneration) Network definition as "*sites that have been affected by the former uses of the site and surrounding land; are derelict and underused; may have real or perceived contamination problems; are mainly in developed urban areas; and require intervention to bring them back to beneficial use'*

4 STEP 3: ENVIRONMENTAL LIABILITIES RISK ASSESSMENT (ELRA) - UNKNOWN LIABILITIES

The objectives of a detailed ELRA, as identified in the EPA Guidance Document, are:

- to identify and quantify environmental liabilities at the facility focusing on unplanned but possible and plausible events occurring during the operational phase
- to calculate the value of financial provisions required to cover unknown liabilities
- to identify suitable financial instruments to cover each of the financial provisions and
- to provide a mechanism to encourage continuous environmental improvement through the management of potential environmental risks

This section addresses:

- Risk Scope
- Risk Classification
- Risk Identification
- Risk Assessment
- Risk Prevention/Mitigation
- Costs

4.1 Risk Scope

As per the Guidance Document, environmental risks addressed in this ELRA will be deemed to cover all risks to surface water, groundwater, atmosphere, land and human health.

4.1 Risk Classification and Identification

In order to identify and quantify the degree of risk the following are required:

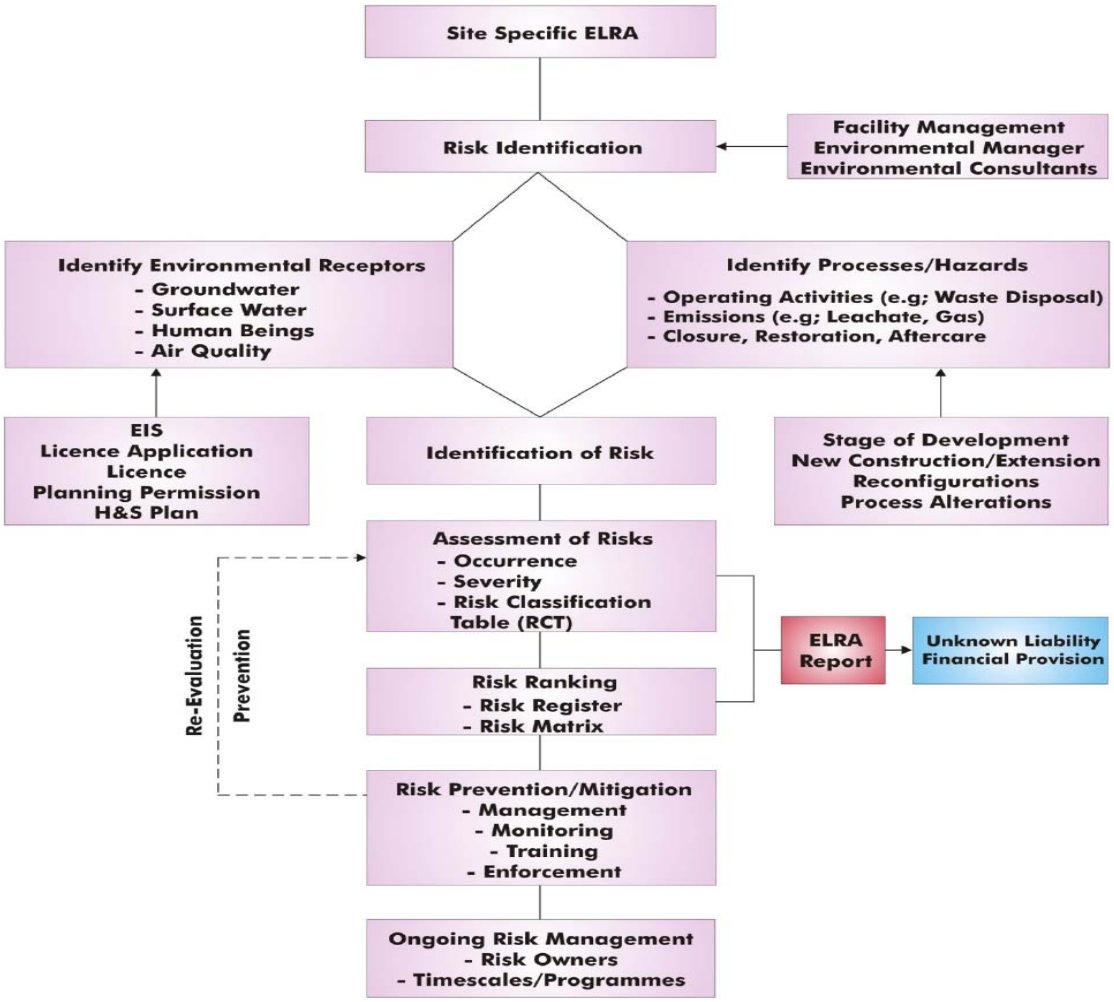
- the establishment of risk classification and
- the identification of risks

A flow chart summarising the process for Category 3 sites is shown in Figure 4.1 (extracted from the Guidance Document). The risk classification is based on an assessment of the probable occurrence of an event and following on from that, the likely severity if an event does occur. The combination of probable occurrence and likely severity determines the Risk Score and consequently the amount of financial provision required.

Probable Event Occurrence x likely Event Severity = Risk Score

A 'Risk Classification Table – Occurrence' and 'Risk Classification Table – Severity', as per the Guidance Document, are included in Tables 4.1 and 4.2. Estimated costs have been inserted into Table 4.2.

Figure 4.1: Environmental Liability Risk Assessment – Risk Category 3 Facilities (EPA, 2006)



A list of potential risks has been identified, based on the current proposed operation and the knowledge and experience of the operator, Bord na Móna PLC, and the consultant FTC.

Table 4.3 presents these risks in a Risk Register.

Table 4.1: Risk Classification Table – Occurrence (EPA, 2006)

Rating	Occurrence		
	Category	Description	Likelihood of Occurrence (%)
1	Very Low	Very low chance (0-5%) of hazard occurring in 30yr period	0-5
2	Low	Low chance (5 - 10%) of hazard occurring in 30yr period	5-10
3	Medium	Medium chance (10 -20%) of hazard occurring in 30yr period	10-20
4	High	High chance (20 -50 %) of hazard occurring in 30yr period	20-50
5	Very High	Very high chance (>50%) of hazard occurring in 30yr period	>50

Table 4.2: Risk Classification Table – Severity (EPA, 2006)

Rating	Severity		
	Category	Description	Cost of Remediation €
1	Trivial	No damage or negligible change to the environment	500-1,000
2	Minor	Minor impact/ localised or nuisance	1,000-5,000
3	Moderate	Moderate damage to environment	5,000-50,000
4	Major	Severe damage to local environment	50,000-300,000
5	Massive	Massive damage to a large area, irreversible in medium term	300,000-1,500,000

**The facility specific cost estimates are based on expert opinion*

The identified risks were classified in accordance with Tables 4.1 and 4.2.

4.2 Assessment of Risks

The risks are scored in accordance with the severity rating and the occurrence rating as presented in Table 4.3.

4.3 Risk Matrix

Based on the risks identified in Table 4-3, a risk matrix has been developed to allow the risks to be easily displayed and prioritised.

The risks are colour coded to provide a broad indication of the critical nature of each task, using the following colour code:

- Red – risks highlighted in red are considered to be high level risks requiring priority attention
- Amber – these risks are considered medium level risks requiring mitigation and/or management
- Green – (light and dark) these are identified as low level risks, however, they still require continuing awareness and monitoring on a regular basis.

Table 4.3: Risk Register for potential Unknown Risks

Risk ID	Potential Hazard	Potential Impact on Environment (inc Human health)	Mitigation Measures	Occurrence	Basis of Occurrence	Severity Rating	Basis of Severity	Risk Score	Likelihood of Occurrence, %	Cost Range, €	Median Probability	Median Severity	Most Likely Cost Scenario
1	Breach in integrity of foulwater collection infrastructure	Contamination of soil, groundwater and/or surfacewater	Construction Quality Assurance Validation	2	Low occurrence if properly constructed	3	Cost of repair of system and remediation of soil, groundwater or surfacewaters	6	5 - 10	5,000 – 50,000	7.5	27,500	2,062.50
2	Failure of Full retention hydrocarbon interceptor	Contamination of receiving surface waters with hydrocarbons	Maintenance contract to be put in place	2	Low occurrence if properly installed and maintained	3	Cost of repair of system and remediation of surfacewaters	6	5 - 10	5,000 – 50,000	7.5	27,500	2,062.50
3	Under or Non performance of surface attenuation lagoon	Contamination of receiving surface waters with suspended solids: potential fish kills	Detailed design considering appropriate hydrological conditions	2	Low occurrence if properly designed	3	Cost of repair of system and remediation of surfacewaters	6	5 - 10	5,000 – 50,000	7.5	27,500	2,062.50
4	Failure/malfunction of onsite wastewater treatment plant	Contamination of receiving surface waters with elevated ammonia, BOD; potential fish kills	Maintenance contract to be put in place	2	Low occurrence if properly installed and maintained	3	Cost of repair of system and remediation of surfacewaters	6	5 - 10	5,000 – 50,000	7.5	27,500	2,062.50
5	Leak from onsite diesel storage	Contamination of soil, groundwater and/or surfacewater	Bund integrity testing as per licence conditions	2	Low occurrence if properly installed and maintained	3	Cost of repair of system and remediation of groundwater/ surfacewaters	6	5 - 10	5,000 – 50,000	7.5	27,500	2,062.50
6	Fire in the Administration Building	Air Pollution; contaminated surface water runoff during fire fighting	Fire control and fighting SOPs to be developed	1	Very low occurrence if SOP adhered to	3	Cost of repair of building and remediation of surfacewaters/disposal of firewater	3	0 - 5	5,000 – 50,000	2.5	27,500	687.50
7	Fire in the Waste Reception and Processing Building	Air Pollution; contaminated surface water runoff during fire fighting	Fire control and fighting SOPs & waste acceptance SOPS to be developed	1	Very low occurrence if SOP adhered to	3	Cost of repair of building and remediation of surfacewaters/disposal of firewater	3	0 - 5	5,000 – 50,000	2.5	27,500	687.50
8	Fire in the Bale Storage Building	Air Pollution; contaminated surface water runoff during fire fighting	Fire control and fighting SOPs to be developed	1	Very low occurrence if SOP adhered to	3	Cost of repair of building and remediation of surfacewaters/disposal of firewater	4	0 - 5	5,000 – 50,000	2.5	175,000	687.50
9	Site works: welding, excavations, machinery, lagoons	Fatalities from electrocution; asphyxiation; burial; struck by vehicles; drowning	SOP for facility operations; Method statements for onsite works	1	Very low occurrence if SOP adhered to	5	Cost of compensation and/or fines	5	0 - 5	300,000 – 1,500,000	2.5	900,000	22,500
10	Failure of dust extraction and uncontrolled release of dust during operations	Potential nuisance in the localised area	Maintenance contract to be put in place	2	Low occurrence if properly installed and maintained	2	Cost of system repair, minor clean up costs	4	5 - 10	1,000 – 5,000	7.5	3,000	225
11	Failure of biofiltration system and uncontrolled release of odour during operations	Potential nuisance in the localised area	Maintenance contract to be put in place	2	Low occurrence if properly installed and maintained	2	Cost of system repair	4	5 - 10	1,000 – 5,000	7.5	3,000	225
												Total	**€ 35,325**

Table 4.4: Risk Matrix

Occurrence						
V. High	5					
High	4					
Medium	3					
Low	2		10, 11	1, 2, 3, 4, 5		
V. Low	1			6, 7, 8		9
		1	2	3	4	5
		Trivial	Minor	Moderate	Major	Massive

Severity

There are no risks identified in the red or amber zones that would require attention and/or further mitigation than that currently identified. All risks currently identified require ongoing monitoring and awareness on an ongoing basis. Regular risk reviews will examine the status of the identified risks on an ongoing basis.

4.4 Risk Prevention & Mitigation

Upon development of the facility and commencement of operations, standard operation procedures (SOPs) will be developed for all activities at the site. When available, these SOPs can be integrated into the Risk Register as identified mitigation measures and used to reduce the level of any future risks identified, as part of any review procedure of this document.

4.5 Quantification of Unknown Environmental Liabilities

The Risk Register in Table 4.3 identified and assessed the median probability and the median severity of the identified risks to identify a 'most likely scenario cost'. A cost scenario of **€35,325** is identified.

4.6 Reviews of Risk Assessment

In the event of grant of a waste licence under register number W0275-01, the risk assessment may be reviewed as part of the overall review of the ELRA and CRAMP, to reflect any changes in environmental risks.

In particular, the reviews will include:

- an update of the risk register through the addition of new risks or the omission of redundant ones
- verification of continued management systems in place, i.e. mitigation measures
- ensure that the financial provision continues to cover the environmental liabilities at the site
- verification that the financial instruments continue to effectively provide the financial provision

5 FINANCIAL PROVISION

Financial provision ensures that an available source of funding is maintained for:

- known environmental liabilities that will arise at the time of facility closure
- known environmental liabilities that are associated with the aftercare and maintenance of the facility until such a time as the facility is considered to no longer pose a risk to the environment
- unknown environmental liabilities that may occur during the operating life of the facility

The EPA Guidance Document indicates that unknown environmental liabilities are costed only for the operational phase of a facility and that the likelihood of unknown environmental liabilities occurring during the aftercare phase and post surrender of the licence should be extremely low if all significant environmental liabilities are identified and addressed during closure, restoration and aftercare phases.

As operator, Bord na Móna PLC will operate critical environmental management systems during the operational phase which will include any closure period. The likelihood of liability is considered to be low as the facility will be actively managed in accordance with the conditions of the waste licence and in accordance with the various management plans and procedures to be developed when operations commence.

The amount of financial provision required for known liabilities associated with the CRAMP have been costed in Section 3 of this report.

The financial provision for unknown liabilities associated with the ELRA that may occur during the operating life of the facility are presented in Section 4 of this report.

Table 5.1 summarises the financial provision measure to be put in place by Bord na Móna PLC to address the known and unknown liabilities associated with the Drumman Materials Recycling and Waste Transfer Facility. As evidence that Bord na Móna PLC will be in a position to put appropriate financial provision in place in the event of a waste licence being granted, company financial information is provide in Appendix 2.

Table 5.1: Financial Provision for Drumman Materials Recycling and Waste Transfer Facility

Liability Type	Description	Method of Quantification	Amount of Provision	Financial Instrument
Known Liability – Closure	Clean Closure of the facility	Closure Plan – Section 3.1	€84,000	Cash Deposit, Escrow Account or alternative provision that satisfies Agency requirements
Known Liability – Restoration and Aftercare Management	Restoration and aftercare management of the facility post closure	Restoration, Aftercare & Management Plan – Section 3.2	€35,000	Cash Deposit, Escrow Account or alternative provision that satisfies Agency requirements
Unknown Liability (Operational Phase)	Risk of unplanned/unknown events occurring at the facility	ELRA – Section 4	€35,325	Accidental Pollution Liability Insurance that satisfies Agency requirements (see Note 1)

Note 1 – as an example, details of Bord na Mona's accidental pollution liability insurance for the existing Drehid Waste Management Facility are provided in Appendix 3.

Appendix 1

Drawings

Sheet FTC-A1-2006 rev. C (template filed in O:Acad\Templates\Autocad) (May 2007) - template externally referenced

NOT FOR CONSTRUCTION UNLESS SPECIFICALLY STATED OTHERWISE

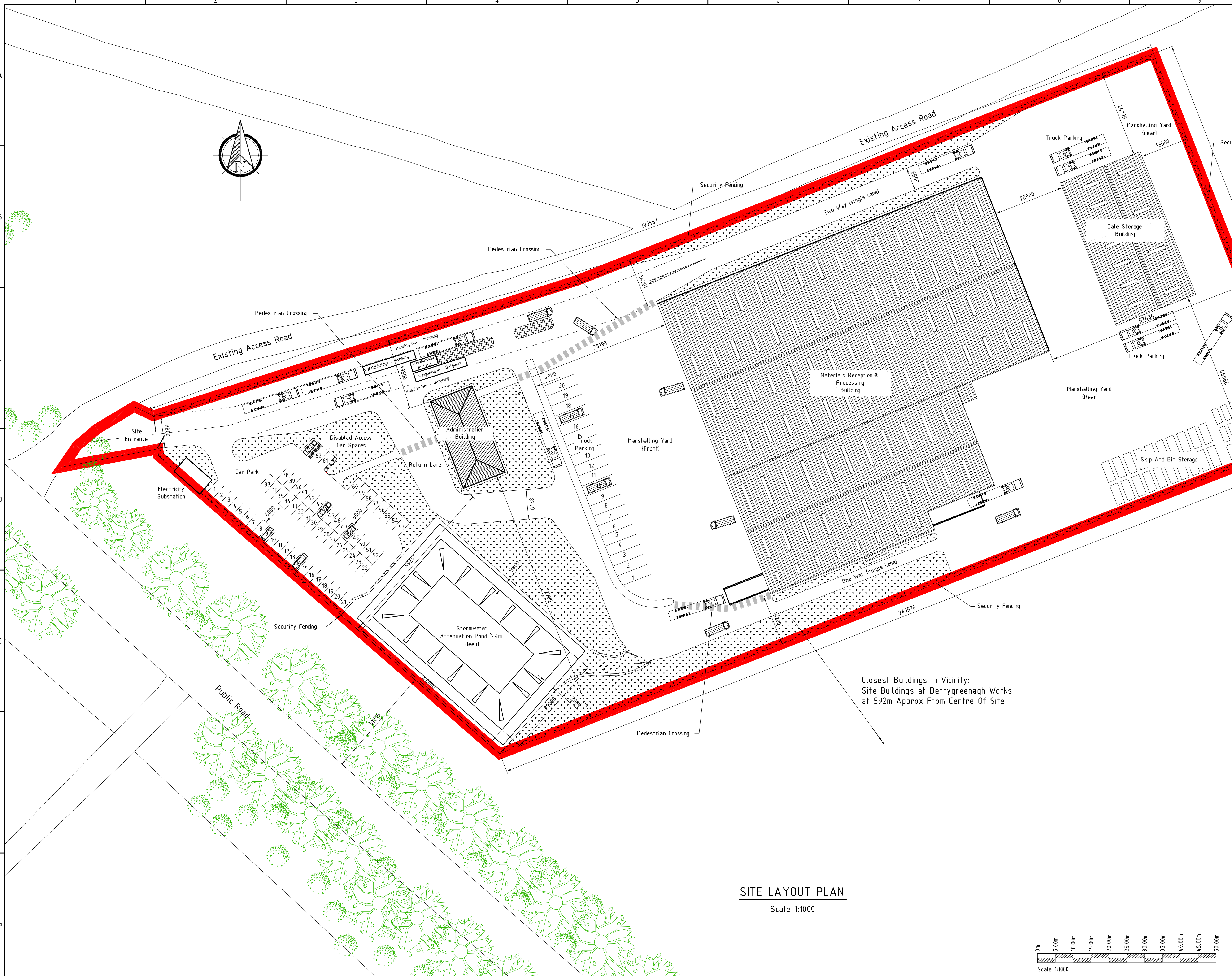
Notes

1. Finished Floor Levels Of Buildings

Baling Storage Building - 79.000m (+0.500mm)

Materials Recovery & Processing Building - 78.875m (+0.500mm)

Administration Building - 78.375m (+0.500mm)



Rev.	Drawn	Chk'd	App'd	Rev Origin / Date	Description
A	KK	DOS	DOS	Cork 06.08.13	ISSUE FOR PLANNING PERMISSION

Revision History A B

Name of Client

Bord na Mona PLC

Name of Job

Drumman Project

Title of Drawing

Drumman CRAMP & ELRA

Scales Used 1:1000 — This Drawing was printed to A3

Dwg. No. LW09-660-04-400-002 — Rev. A

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ORIGINAL DRAWING SIZE A1 - (841 x 594)

Appendix 2

Company Financial Information

INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF BORD NA MONA PLC

We have audited the Group and parent Company financial statements (the "financial statements") on pages 32 to 65. These financial statements have been prepared under the accounting policies set out therein.

Respective Responsibilities of Directors and Auditors
The Directors' responsibilities for preparing the Annual Report and the financial statements in accordance with applicable Irish law and the accounting standards issued by the Accounting Standards Board and published by the Institute of Chartered Accountants in Ireland (Generally Accepted Accounting Practice in Ireland) are set out in the Statement of Directors' Responsibilities on page 28.

Our responsibility is to audit the financial statements in accordance with relevant legal and regulatory requirements and International Standards on Auditing (UK and Ireland). This report, including the opinion, has been prepared for and only for the Company's members as a body in accordance with Section 193 of the Companies Act, 1990 and for no other purpose. We do not, in giving this opinion, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

We report to you our opinion as to whether the financial statements give a true and fair view, in accordance with Generally Accepted Accounting Practice in Ireland, and are properly prepared in accordance with Irish statute comprising the Companies Acts, 1963 to 2009, and the European Communities (Companies: Group Accounts) Regulations, 1992. We state whether we have obtained all the information and explanations we consider necessary for the purposes of our audit, and whether the Company balance sheet is in agreement with the books of account. We also report to you our opinion as to:

- whether the Company has kept proper books of account;
- whether the Directors' report is consistent with the financial statements; and
- whether at the balance sheet date there existed a financial situation which may require the Company to convene an extraordinary general meeting of the Company; such a financial situation may exist if the net assets of the Company, as stated in the Company balance sheet, are not more than half of its called-up share capital.

We also report to you if, in our opinion, any information specified by law regarding directors' remuneration and directors' transactions is not disclosed and, where practicable, include such information in our report.

We read the other information contained in the Annual Report, and consider whether it is consistent with the audited financial statements. This other information comprises only the Chairman's Statement, the Managing Director's Review and the Directors' Report. We consider the implications for our report if we become aware of any apparent misstatements or material inconsistencies with the financial statements. Our responsibilities do not extend to any other information.

We review whether the statement regarding the system of internal financial control required by the Code of Practice for the Governance of State Bodies made in the Directors' Report on page 28 reflects the Group's compliance with paragraph 13.1 (iii) of the Code and is consistent with the information of which we are aware from our audit work on the financial statements and we report if it does not. We are not required to consider whether the Board's statements on internal financial control cover all risks and controls, or form an opinion on the effectiveness of the Group's corporate governance procedures or its risk and control procedures.

Basis of Audit Opinion
We conducted our audit in accordance with International Standards on Auditing (UK and Ireland) issued by the Auditing Practices Board. An audit includes examination, on a test basis, of evidence relevant to the amounts and disclosures in the financial statements. It also includes an assessment of the significant estimates and judgments made by the directors in the preparation of the financial statements, and of whether the accounting policies are appropriate to the Group's and Company's circumstances, consistently applied and adequately disclosed.

We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or other irregularity or error. In forming our opinion we also evaluated the overall adequacy of the presentation of information in the financial statements.

Opinion
In our opinion the financial statements:

- give a true and fair view, in accordance with Generally Accepted Accounting Practice in Ireland, of the state of the Group's and the Company's affairs as at 30 March 2011 and of the Group's profit and cash flows for the year then ended; and
- have been properly prepared in accordance with the requirements of the Companies Acts, 1963 to 2009 and the European Communities (Companies: Group Accounts) Regulations, 1992.

We have obtained all the information and explanations which we consider necessary for the purposes of our audit. In our opinion proper books of account have been kept by the Company. The Company's balance sheet is in agreement with the books of account.

In our opinion the information given in the directors' report on pages 26 to 29 is consistent with the financial statements.

The net assets of the Company, as stated in the Company balance sheet on page 42 are more than half of the amount of its called-up share capital and, in our opinion, on that basis there did not exist at 30 March 2011 a financial situation which under Section 40 (1) of the Companies (Amendment) Act, 1983 would require the convening of an extraordinary general meeting of the Company.

PricewaterhouseCoopers
Chartered Accountants and Registered Auditors
Dublin
23 June 2011

ACCOUNTING POLICIES, CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Basis of Accounting and Preparation of Financial Statements
The financial statements are prepared in accordance with accounting standards generally accepted in Ireland and Irish statute comprising the Companies Acts, 1963 to 2009, and the European Communities (Companies: Group Accounts Regulations, 1992). Accounting standards generally accepted in Ireland in preparing financial statements giving a true and fair view are those published by the Institute of Chartered Accountants in Ireland and issued by the Accounting Standards Board.

The financial statements are prepared in Euro under the historical cost convention.

The Group's significant accounting policies, critical accounting estimates and judgements are set out below, together with an explanation of where changes have been made to previous policies. There were no new standards adopted during the year.

Basis of Consolidation
The consolidated financial statements include the financial statements of Bord na Móna plc and all of its subsidiaries. The Group financial statements consolidate the financial statements of the holding Company and its subsidiary undertakings.

The policies set out below have been consistently applied to all years presented in the consolidated financial statements and are consistently applied by all Group entities. Comparative figures have been restated where required in order to present on a consistent basis.

Intragroup transactions are eliminated on consolidation in the preparation of the Group financial statements.

The results of subsidiary undertakings acquired or sold are included in the consolidated profit and loss account and cashflow statement up to or from the date control passes.

The identifiable assets and liabilities of the acquired entity are included in the consolidated financial statements of the acquirer at their fair values at the date of acquisition. The difference between these and the cost of acquisition is recognised as goodwill or negative goodwill. The results of the acquired entity are included in the profit and loss account of the acquiring Group from the date of acquisition. The assets and liabilities recognised in the allocation of fair values are those of the acquired entity that existed at the date of acquisition. They are measured at fair values that reflect the conditions at the date of the acquisition. The cost of acquisition is the amount of cash or cash equivalents paid and the fair value of other purchase consideration given by the acquirer, together with the associated transaction expenses.

The fair value exercise includes the measurement of contingent assets and liabilities. These are determined based on the Group's reasonable estimates of the expected outcome. Certain contingent assets and liabilities that crystallise as a result of an acquisition are also recognised, where the underlying contingency was in existence before the acquisition (e.g. environmental reinstatement provisions).

Turnover
Turnover is comprised of revenue, excluding value added tax and trade discounts and including other levies on goods and services to external customers arising in the normal course of business.

The Group supplies electricity to ESB Customer Supply under a Power Purchase Agreement ('PPA') which expires in December 2015. Turnover is recognised for (i) capacity availability and (ii) energy supplied, on the basis of contractual performance in accordance with the terms of the PPA. Related pass through costs are recognised in accordance with the terms of the PPA. .

Turnover on long-term contracts is recognised using the percentage-of-completion method, calculated on an input cost basis.

On receipt of payment from customers, in advance of the performance of the Group's contractual obligations to its customers under the normal course of business, in respect of certain of its activities the Group recognises deferred revenue. The deferred revenue is included in Creditors on the balance sheet, representing the Group's obligations under the contract terms. When the Group performs its obligations and thereby obtains the right to consideration under the terms of business, it reduces the liability and recognises that reduction as revenue in the profit and loss account. The costs associated with the delivery of the services are charged to cost of sales as incurred, to the extent that they are less than the unamortised deferred revenue. A provision is recognised where future costs in respect of the delivery of the service are estimated to exceed unamortised deferred revenue.

Revenue earned on service delivery but unbilled is recognised in accordance with contractual terms and separately disclosed as accrued income within Debtors.

Operating lease rental income is recognised in accordance with the contractual terms.

All other revenue is recognised when the goods or services are delivered.

Turnover is stated as after eliminating sales within the Group.

Foreign Currencies
Transactions denominated in foreign currencies are translated into Euro at the rate of exchange ruling at the transaction date or, if hedged, at the rate of exchange under the related forward currency contract. Monetary assets and liabilities denominated in foreign currencies are translated at the exchange rates ruling at the balance sheet date or, if hedged forward, at the rate of exchange under the related forward currency contract. The resulting profit or loss is included in the profit and loss account. Gains and losses arising on forward foreign exchange contracts which are used to hedge foreign transaction cash flows are recognised as an operating expense in the profit and loss account. Interest rate swaps agreements and similar contracts are used to manage interest rate exposures. Amounts payable or receivable in respect of these derivatives are recognised as an interest expense over the period of the contracts.

The financial statements of foreign subsidiaries are translated into Euro using the closing rate method. Profits and losses arising on the re-translation of foreign subsidiaries are taken to reserves and recognised in the statement of total recognised gains and losses. Differences on foreign currency borrowings, to the extent that they are used to finance or provide a hedge against Group equity investment in foreign subsidiaries, are also taken to reserves and recognised in the statement of total recognised gains and losses.

Derivative Financial Instruments
The Group uses derivative financial instruments including a number of cross currency interest rate swaps to hedge its exposure to interest and foreign exchange risks arising from two US private placements. In order to fully hedge the associated US Dollar exchange rate exposures and convert the underlying interest rates to fixed, the Group entered into a number of cross currency swaps to match the maturity profile of the unsecured loan notes.

Derivative financial instruments are recognised at book value. Interest differentials arising on the derivatives are recognised in net interest expense over the period of the related contract. The fair value of the financial instruments is disclosed at each balance sheet date.

Emission Allowances
In accordance with the provisions of the European CO_2 emissions trading scheme, emissions allowances covering a percentage of the expected emissions during the year are granted to Bord na Móna at the beginning of each year by the relevant Government Authority.

As emissions arise, a charge is recorded in the profit and loss account to reflect the amount required to settle the liability to the Authority. This provision will include the current market value of any additional allowances required to settle the obligation. These allowances, together with any additional allowances purchased during the year, are returned to the relevant Authority within four months of the end of that calendar year, in order to cover the liability for actual emissions of CO_2 during that year. Certain of the emissions costs are recoverable from ESB Customer Supply under the power purchase agreement as a pass through cost. The recoverable credit is recorded in the profit and loss account.

Tangible Fixed Assets
Cost
Freehold land and the estimated residual value of peatland after the peat production phase, are stated at cost. Cost includes direct costs (including direct labour), overheads and interest incurred in financing the construction of tangible fixed assets.

Peatland and other tangible fixed assets are stated at cost less accumulated depreciation.

The cost of landfill sites includes the cost of acquiring, developing and engineering sites and interest incurred during the construction phase.

Assets in the course of construction represent the cost of purchasing, constructing and installing tangible fixed assets ahead of their productive use.

The Group has adopted a policy of capitalising finance costs. Finance costs that are directly attributable to the construction of tangible fixed assets are capitalised as part of the cost of those assets. Where funds are borrowed specifically for the purpose of financing the construction of a tangible fixed asset, the amount of finance costs capitalised is limited to the actual costs incurred on the borrowings during the period in respect of expenditures to date on the tangible fixed asset. The capitalisation of finance costs ceases when the asset is commissioned or where active development has been interrupted for an extended period of time.

Depletion and depreciation
A depletion charge is recorded in respect of peatland, drainage and railways. Other tangible fixed assets are depreciated on a straight line basis at the rates indicated;

Plant & Machinery	5% to 33.3% per annum
Buildings	5% to 10% per annum

The Group's power plant at Edenderry is depreciated on a unit of production basis in order to relate the depreciation to the estimated production capability of the plant. The Group operates a Power Purchase Agreement ('PPA') with the Electricity Supply Board ('ESB') to supply electricity on a priority despatch basis. This PPA expires in 2015 and the plants contractual entitlement to priority despatch ceases at that date. The unit of production method of depreciation seeks to relate the depreciation charge to the estimated production capability of the plant. This reflects a change in the estimate of depreciation during the year-ended 30 March 2011 and resulted in an additional depreciation charge of €0.1 million in that year.

The Group's peaking plant at Edenderry, which was commissioned during the year, is depreciated on a straight line basis with the charge calculated to write the cost of the asset down to its estimated residual value. The use of the straight line basis of depreciation reflects the anticipated consumption of the economic benefit of the plant on a consistent basis over the useful life of the plant based on its availability to the grid.

The cost of the landfill asset is depreciated over either the licensed life of the engineered facility or on the basis of the usage of void space.

No depreciation is charged on assets in the course of construction.

Financial Assets
Interests in subsidiary undertakings are initially recorded at cost on the Holding Company balance sheet. The Group carries out an impairment review if events or changes in circumstances indicate that the carrying value of the financial asset may not be recoverable.

The recoverable amount is determined by comparing the carrying value of the financial asset against the higher of its fair value and its value in use. The value in use is determined by discounting estimated future cash flows expected to be derived from the financial asset, to net present value. To the extent that the carrying amount exceeds the recoverable amount, the financial asset is impaired and is written down.

Investment Properties
Investment properties are included in the balance sheet at their open market value.

Goodwill and Intangible Assets
Purchased goodwill, being the excess of the consideration paid on the acquisition of a business over the fair values of the entity's identifiable assets and liabilities, is capitalised and classified as an asset on the balance sheet. Goodwill is amortised to the Group profit and loss account over its estimated useful life (between three and twenty years).

Impairment of Assets and Goodwill
If events or changes in circumstances indicate that the carrying value of tangible fixed assets or goodwill may not be recoverable, the Group carries out an impairment review.

The recoverable amount in respect of income generating units ('IGUs') is determined by comparing the carrying value of the IGU to the higher of its net realisable value and the value in use. The value in use is determined by discounting estimated future cash flows expected to be derived from the income generating unit, to net present value. The discount rate used reflects an appropriate risk weighting for the type of investment being tested for impairment.

To the extent that the carrying amount exceeds the recoverable amount, the asset is impaired and is written down. Any impairment loss arising is recognised in the profit and loss account unless it arises on a previously revalued asset.

Research and Development
Expenditure on pure or applied research and development is written off to the profit and loss account as incurred.

Grants
Capital grants received and receivable under EU-assisted schemes are recognised when received or when their receipt can be foreseen with virtual certainty. Grants received in respect of tangible fixed assets are treated as a deferred credit and amortised to the profit and loss account annually over the economic useful life of the related tangible fixed assets.

Stocks, Work in Progress and Long Term Contracts
Stocks and work in progress are valued at the lower of cost and net realisable value. Coal stocks are valued at weighted average cost.

Cost includes all direct expenditure incurred in bringing products to their current state under normal operating conditions. The cost of milled peat stock harvested is determined at each peatland location as the cost of the annual harvest allocated over the normal levels of harvest production calculated based on standard tonnage. The unit cost is reduced to actual cost where actual cost per tonne is lower than standard cost per tonne. The costs of milled peat stocks include a depletion charge, direct labour, other costs and related production overheads. Variations from standard tonnage (i.e. up tonnages where the actual output tonnages are greater due to improved moisture content) are recognised on measurement of the peat when the stock pile is fully outloaded. The additional bonuses of work groups which only arise when up-tonnage is recognised are provided for when the related up-tonnages are identified and recognised as part of this measurement process.

Net realisable value is based on anticipated selling price less the cost of selling such goods and any sales incentives or penalty payments.

Profit on long-term contracts is recognised once the outcome can be assessed with reasonable certainty. Losses on long-term contracts are provided as soon as they are foreseen. Long-term work in progress is stated net of payments received on account.

Provision is made for damaged, deteriorated, obsolete and slow moving items where appropriate.

Trade Debtors
Trade debtors are initially recognised at fair value. Trade debtors are considered for impairment on an on-going basis. Provision for impairment of trade debtor balances are recorded against identified doubtful debtors.

Cash and Cash Equivalents
Cash and cash equivalents comprise of cash at bank and in hand and short term deposits.

Borrowings
Interest bearing loans and borrowings are initially recognised net of arrangement fees. These arrangement fees are amortised over the life of the related borrowing.

Leases
Assets held under finance leases are included in tangible fixed assets at cost and are depreciated over the shorter of the lease term or their useful economic life. Obligations relating to finance leases, net of finance charges in respect of future periods, are included as appropriate under creditors due within or after one year. Finance charges are allocated to accounting periods over the lease term to reflect a constant rate of interest on the remaining balance of the obligations.

Rentals under operating leases are charged to the profit and loss account as incurred.

Provisions
A provision is defined as a liability of uncertain timing or amount. Provisions are recognised in accordance with FRS 12 when the Group has a legal or constructive obligation as a result of a past event, a reliable estimate of that obligation can be made and it is possible that an outflow of economic benefits will be required to settle the obligation. Where the effect of the time value of money is material provisions are discounted.

Environmental Reinstatement Provision
Provision is made for environmental reinstatement costs relating to the after-use of cutaway peatland and decommissioning costs. The provision is made when the circumstances giving rise to the obligation to make the reinstatement occur. The amount of the provision represents the present value of the expected future costs. A depletion charge is recorded in the profit and loss account in order to charge the cost of capitalised reinstatement costs to the profit and loss account reflecting extraction.

Landfill Restoration Provision
A provision is recorded for the Net Present Value (NPV) of the Group's unavoidable costs in relation to restoration liabilities at its landfill site. This value is capitalised as a tangible fixed asset. The Group also provides for the NPV of intermediate restoration costs over the life of its landfill sites, based on the quantity of waste deposited in the year. Provision is made for the NPV of post closure costs based on the quantity of waste deposited in the year. Similar costs incurred during the operating life of the sites are written off directly to the profit and loss account and not charged to the provision.

All long term provisions for restoration and aftercare are calculated based on the NPV of estimated future costs. The effects of inflation and unwinding of the discount element on existing provisions are reflected within the financial statements as a finance charge.

No provision has been made for the decommissioning of the generating assets as it is assumed there will be no net outflow of economic benefits.

Self Insurance Provisions
Self insurance provisions relate to the estimated liability in respect of costs to be incurred under the Group's self insurance programmes for events occurring on or prior to the year end. The provision is estimated based on a case by case assessment by the independent claims handling agents of the likely outturn on each case.

Legal Provisions
Provisions for legal claims are included in the financial statements, for legal and other matters on the basis of the amounts that the Group consider will become payable, after evaluating the recommendations of legal advisors, their in-house legal teams, and other experts.

Warranty Provision
The Group issues warranties for goods and services. The warranty costs are provided for based on the duration of the warranty period.

Redundancy Provision
Redundancy costs are provided for by the Group, once a detailed formal plan has been prepared and approved and the Group is irrevocably committed to implementing the plan.

Pensions and Post Retirement Benefits
The Group has both defined benefit and contribution pension arrangements. Defined benefit pension scheme assets are measured at fair value. Defined benefit pension scheme liabilities are measured on an actuarial basis using the projected unit credit method. The excess of scheme liabilities over scheme assets is presented on the balance sheet as a liability net of related deferred tax and pension scheme surpluses, to the extent that they are considered recoverable are presented on the balance sheet as an asset net of related deferred tax. The defined benefit pension charge to operating profit comprises the current service cost and past service costs. The excess of the expected return on scheme assets over the interest cost on the scheme liabilities is presented in the profit and loss account as other finance income. Actuarial gains and losses arising from changes in actuarial assumptions and from experience surpluses and deficits are recognised in the statement of total recognised gains and losses for the year in which they occur. Where the scheme rules require a surplus arising in the scheme to be shared between the employer and the members, the amount passed to the members is treated as an increase in the scheme liabilities.

The defined contribution pension charge to operating profit comprises the contribution payable to the scheme for the year.

Taxation Including Deferred Tax
Current tax represents the amount expected to be paid in respect of taxable profit for the year and is calculated using the tax rates and laws that have been enacted or substantially enacted at the balance sheet date.

Deferred tax is recognised in respect of all timing differences that have originated but not reversed at the balance sheet date where transactions or events that result in an obligation to pay more tax in the future or a right to pay less tax in the future have occurred at the balance sheet date.

Timing differences are temporary differences between profit as computed for taxation purposes and profit as stated in the financial statements which arise because certain items of income and expenditure in the financial statements are dealt with in different periods for taxation purposes.

Deferred tax assets are regarded as recoverable and recognised in the financial statements when, on the basis of available evidence, it is more likely than not that there will be suitable taxable profits from which the future reversal of the timing differences can be deducted. The recoverability of tax losses is assessed by reference to forecasts which have been prepared and approved by the Board.

Deferred tax is measured, on an undiscounted basis, at the tax rates that are expected to apply in the periods in which the timing differences are expected to reverse based on tax rates and laws that have been enacted or substantively enacted by the balance sheet date.

Share Based Payment
Equity settled share based payment to employees are measured at the fair value of the equity instruments at the grant date. The fair value is expensed on a straight line basis over the vesting period. In accordance with FRS 20 'Share Based Payments', the Group recognise an expense in the profit and loss and a corresponding increase in equity in respect of the fair value of the shares issued to employees. The fair value of the shares issued is determined on a minority non-controlling basis. Factors taken into consideration in determining the fair value include the market, discounted cash flow, net assets value and the characteristics of the shares being acquired.

Share Capital
Ordinary shares are classified as equity.

Dividends
Dividends are recognised in the financial statements when they have been appropriately approved or authorised by the shareholder and are no longer at the discretion of the Company.

Critical Accounting Estimates and Judgements
Preparation of the consolidated financial statements requires management to make certain assumptions that affect the reported amounts of assets and liabilities. These include the following areas:

Pension scheme assets and liabilities
The actuarial valuation of pensions is based on assumptions regarding inflation, discount rates, the expected return on plan assets, salary increases, pension in payment increases and mortality rates. The assumptions adopted by the Group at 30 March 2011 are outlined in Note 24 to the financial statements and have been determined with assistance from the Group's actuarial advisors.

The Turf Development Acts 1946 to 1998 and the rules governing the Bord na Móna GESS and RWESS pension schemes lay down in considerable detail the benefits that are to be provided to members. They also stipulate the shared contributions to be paid by both Bord na Móna and the contributing members. This does not conform to the 'balance of cost' defined benefit approach. For the purposes of reporting in accordance with Financial Reporting Standard 17 at 30 March 2011, 100% of the pension scheme deficit on the GESS scheme has been recognised in the financial statements. The RWESS pension scheme has a surplus at 30 March 2011 and the group has accounted for its share of the pension scheme surplus on a 50:50 basis between members and the Group.

Impairment of assets and goodwill
Intangible assets and property, plant and equipment are reviewed for impairment when events or changes in circumstances indicate that the carrying values may not be recoverable. Goodwill is reviewed for impairment if events or changes in circumstances indicate that the carrying value may be impaired. The recoverable amount of income generating units is determined based on the determination of a value in use for the income generating unit. This determination is based on forecasted future cashflows. The Group's Resource Recovery business is operating in challenging and highly competitive economic conditions, in a changing regulatory environment. In the event that the Group does not deliver anticipated volume and price increases or achieve anticipated cost reductions, or in the event that current weak economic conditions prevail in the domestic market, then the value in use assessment of the income generating unit may be adversely impacted. The determination of the value in use also requires application of an appropriate weighted average cost of capital and assessment of a long-term growth rate for the sector. The impact on the recoverable amount of changes in these key assumptions are set-out in Note 7 to the financial statements.

Carrying value of power plants
The Group's Power Plant at Edenderry operates a fifteen year Power Purchase Agreement ('PPA') with a third party to supply electricity on a priority despatch basis. This PPA expires in December 2015. The plants contractual entitlement to priority despatch will cease as at that date. The Group anticipate that the plant will continue to operate in the period post 2015 in the single electricity market ('SEM') co-fired by biomass and peat. The related goodwill is being amortised over the period to 2025 reflecting a useful economic life of 20 years. In considering the carrying value of the plant at Edenderry and the goodwill arising on acquisition of the business, a number of key assumptions are made in respect of the operation of the plant in the period post 2015. These assumptions are considered on an annual basis on assessment of the appropriateness of the carrying value of the plant and the related goodwill.

Environmental obligations
The Group has certain environmental obligations arising as a result of its land, and landfill operations. Determination of the provisions for the related environmental rehabilitation obligations in the period to and post extraction and operation reflects certain key assumptions in respect of the associated costs. These assumptions are reviewed on an on-going basis reflecting actual experience.

Accounting Year
The financial year ends on the last Wednesday in March. These financial statements cover the 52-week period 1 April 2010 to 30 March 2011 (prior year: 53-week period 26 March 2009 to 31 March 2010).

GROUP PROFIT AND LOSS ACCOUNT
FOR THE YEAR ENDED 30 MARCH 2011

	Note	**2010/2011 €'000**	2009/2010 €'000
Turnover	2	**382,069**	384,417
Operating costs	2	**(357,611)**	(361,379)
Operating profit	2	**24,458**	23,038
Other finance charges	5	**(7,731)**	(10,139)
Profit on ordinary activities before taxation		**16,727**	12,899
Taxation on profits on ordinary activities	6	**(3,807)**	(2,437)
Profit after taxation on ordinary activities		**12,920**	10,462
Equity minority interests	19	**207**	50
Profit for the financial year		**13,127**	10,512

On behalf of the Board:

Fergus McArdle
Chairman

Gabriel D'Arcy
Managing Director

STATEMENT OF GROUP TOTAL RECOGNISED GAINS AND LOSSES
FOR THE YEAR ENDED 30 MARCH 2011

	Note	THE GROUP 2010/2011 €'000	2009/2010 €'000
Profit for the financial year		**13,127**	10,512
Actuarial (loss) / gain recognised on pension schemes	24	**(855)**	29,725
Deferred tax related to actuarial loss / (gain)	17(e)	**123**	(3,602)
Revaluation of investment property	9	**(1,700)**	(5,400)
Exchange loss on foreign subsidiaries		**(244)**	(128)
Total recognised gains and losses for the financial year		**10,451**	31,107

On behalf of the Board:

Fergus McArdle
Chairman

Gabriel D'Arcy
Managing Director