

EPA
Environmental Licensing Programme
Office of Environmental Sustainability

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Reg. No.: W0146-04 Knockharley Landfill

To whom it may concern,

Further to the Agency's correspondence of the 1st of November, we wish to make the following response to items 1-10. A separate response will be submitted in relation to the queries raised in item 2 as this requires work from a UK based olfactory assessment consulting firm.

For ease of interpretation the Agency's questions are answered in sequence below.

1. *Revised Attachment 2-5-1 Technical Knowledge submitted on 07 September 2021 does not provide details in relation to the Deputy Facility Manager or the management structure and organisation chart. In accordance with the [licence application guidance](#), provide the following [Regulation 9(2)(h)]:*

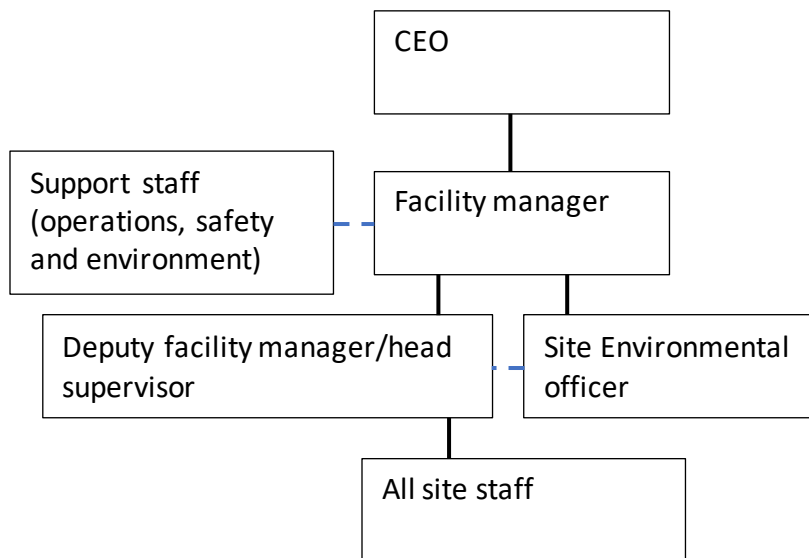
- (a) Details of the Deputy Facility Manager's name, duties and responsibilities and experience/qualifications;*
- (b) Information in relation to the management structure and an organisational chart.*

As outlined previously to the Agency in our letter (reference 146.02-EPA-01-19) dated the 19th of July (Attachment A) the deputy facility manager is Michael Noone. Michael Noone is deputy Facility Manager and Head Supervisor. Michael has over 15 years working in the landfill and has the necessary qualifications and experience to fulfil this role.

The organisation structure is as follows:-

Sean Smith is facility manager, he is assisted by Michael Noone. Aaron Coyle is environmental officer for the facility. Sean reports to Beuparc CEO Brian McCabe. Support for Knockharley landfill is provided by Joe Nicholson, group Safety Manager; David Naughton group environmental manager, David Tobin Sustainability and Circular Economy Director and; Kieran Connor, group processing manager.

An organisational chart is provided below.



2. It is noted from the odour impact assessment in Appendix 7.1 of the EIAR that odour emissions from landfilling activities were modelled and assessed separately from odour emissions from the biological treatment plant. In order to assess the odour impact from the proposed activities, you are required to model all potential sources of odour together within the modelled scenarios and to revise the model/report to take account of the following [Regulation 9(2)(k)]:

- (a) All additional potential odour sources including; the current leachate lagoon and the three additional proposed leachate lagoons, the landfill gas compound and the entrance and exit doors to the biological treatment plant considering the potential frequency of odour emissions during waste unloading and finished compost removal.
- (b) Compare the results of the odour impact assessment to an odour impact criterion of $1.5 \text{ OU}_E/\text{m}^3$ as a 98th percentile of one hour averaging periods.
- (c) Utilise data from an inland meteorological station which may be more reflective of the location of the installation.
- (d) Provide all required details in relation to the model as set out in section 6.12 of EPA Guidance Note (AG4) on Air Dispersion Modelling from Industrial Installations, and in particular a site plan showing buildings, sources, boundary and receptor grid and the model data inputs.
- (e) Clarify whether the odour emission measurements, carried out in October 2010 and March 2018, are considered representative of the site taking account of seasonal variations and the years in which the monitoring was conducted.
- (f) Confirm whether the maximum odour concentration at the outlet of the biofilter, as outlined in section 4.2.3, is based on a design which includes the operation of the scrubber.

- (g) Clarify if the results of the year 4 and year 6 scenarios are considered worst case relative to all other future years.

Please see attached (Attachment B) a Technical Note from Olfasense UK Ltd, which answers the above queries.

3. In relation to cell covers, capping and internal road construction, clarify and/or provide information in relation to the following [Regulation 9(2)(g)]:

- (a) Application Form Attachment L9 'Landfill Controls' lists a number of wastes to be used as daily and intermediate cover and road construction, including IBA waste. Clarify the suitability of IBA as a cell cover and road construction material considering the potential for dust generation outlined in relation to IBA in Section 2.5.5.12 of Volume 2 Main EIAR.

IBA is a suitable cell cover and road construction material due to its density, wear resistance and aggregate like properties. As already agreed with OEE, IBA is currently in use as a cell cover without giving rise to dust generation. In compliance with condition 7.4.2 of W0146-02, in dry weather site roads and other areas used by vehicles are sprayed with water as and when required to minimise airborne dust nuisance.

- (b) Provide details of the assessment criteria to be utilised to determine the suitability of IBA as a cell cover and road construction material, including how it will be demonstrated that the IBA waste is non-hazardous.

Please see attached (attachment C) a letter dated the 20th of October of 2021, which was sent to the Agency with regard to the use of IBA as a cell cover.

In addition, please see attached (Attachment D) SOP EMS-OP-33 *Procedure to determine the quantity of metal contamination in IBA received at Knockharley Landfill Facility and subsequent grading of same.*

As we have made clear in the application it is the intention to process the IBA to remove metals and to work towards achieving an end of waste solution for IBA. It has already been demonstrated to the satisfaction of the Agency that IBA is non-hazardous, as per OEE's letter to Dublin Waste to Energy letter dated the 21st of April, 2020 (Ref: Condition 8.2.3 (b) and 6.14 - Incinerator Bottom Ash Characterisation and Classification Report (Ref. LR045254, LR043724, LR033101)) (Attachment E).

- (c) Section 2.4.4 of Volume 2 Main EIAR states that the slope of the working face will be covered with synthetic cover sheets at the end of each working day. Provide details on the composition/nature of the cover sheets to be used.

Operational practice at the landfill in the past has employed the use temporary covers on the working face. The use of the covers is dictated by the slope of the face and the availability of alternative daily cover materials.

The current practice at the landfill is to employ flatter more accessible slopes thus obviating the need for synthetic temporary covers. Recent experience demonstrates that improved environmental outcomes are achieved using shallower gradients and locally available cover materials.

- (d) Section 2.4.4 of Volume 2 - Main EIAR refers to temporary synthetic low-permeability covers (intermediate capping) being installed as areas of the landfill reach full height and that these practices will continue for future residual non-stabilised waste inputs. However, Section 2.2.2 of Appendix 7.1, Odour Impact Assessment, refers to enhancement of the intermediate capping system from stitched geo-multicover and recovered soils and C&D waste to hermetically sealed geo-multicovers. Clarify which intermediate capping system will be used and provide details on its composition/nature. Additionally, confirm how a hermetic seal will be achieved if applicable.
- (e) Section 2.5.5.12 of Volume 2 - Main EIAR states that once IBA has reached its final profile, temporary covers or a permanent LLDPE liner will mitigate the risk of dust generation. Clarify what materials will be used for the temporary covers.
- (f) Confirm at what stage will a permanent fully engineered cap be placed on IBA cells in the event the material is deemed unsuitable for recovery.

Generally, the landfill has employed a stitched geo-multicover for longer term temporary capped. On occasion, particularly on steeper slopes, the landfill has utilised welded synthetic membranes to provide hermetic seals for both the containment of landfill gas and the elimination of water ingress. Current practice is to use a combination of recovered soils (clay) and less of the stitched geo-multicover as the final engineered cap is constructed in 12-18 months of achieving final height of the landfill. The nature of the materials being landfilled has resulted in less pronounced settlement making the surface more suitable for the final cap earlier than would be the case with a predominantly biodegradable waste fill.

Temporary covers in the IBA cell area would consist of synthetic materials whose primary purpose would be to shed water.

IBA is a heterogeneous material with some elements being readily suitable for recovery, e.g. metals. Other residual fractions of the IBA may be more amenable to recovery but this will only be confirmed through end of waste or similar approvals. In the event that recovery is not achieved on the placed IBA an engineered cap will be progressively constructed from at

the latest Year 6 from the commencement of placement, commencing at the eastern flank and working in a westerly direction.

4. Section 2.18 of Volume 2 – Main EIAR states that works associated with the development of the surface water attenuation lagoon to the north of the proposed IBA facility and the realignment of the stream on the north-eastern corner of the permitted landfill development will each require a Section 50 consent from the Office of Public Works. Confirm whether each Section 50 consent has been applied for or approved [Regulation 9(3)(d)].

It is proposed to engage with the OPW to determine whether a Section 50 consent is required in this instance. The Section 50 consent process applies to structures on watercourses such as bridges, culverts and weirs; whereas the surface water control system is off-line from the existing channel and the connection to the channel is not a structure. The detailed drawings are being finalised with a view to engaging with the OPW to establish the appropriate course of action.

5. Section 2.18 of Volume 2 – Main EIAR states that felling associated with the removal of existing forestry at the location of the proposed screening berms will require a Felling Licence from the Forestry Service. Confirm whether the Felling Licence has been applied for or approved [Regulation 9(3)(d)].

We are unsure as to the relevance of felling licences to the Agency, however, see attached felling Licence for information (Attachment F).

6. Section 2.18 of Volume 2 – Main EIAR states that the acceptance and processing of residual municipal solid fines at the proposed biological treatment facility will require a 'Type 8' facility approval by the Department of Agriculture, Food and the Marine (DAFM). Confirm whether the Type 8 facility approval has been applied for or approved [Regulation 9(3)(d)].

An application for a 'Type 8' facility approval will be made once a final design and construction plan for the biological treatment facility is complete. It is anticipated that the construction plan will not be completed until Q2 2021 at the earliest. A type 8 application will follow thereafter.

7. Drawing No LW14-821-01-P-0050-003 titled "Existing Forestation Proposed Felling and New Planting" shows proposed final forest planting of conifer dominant woodland (e12 and e18) on Phase 7 cells and IBA cell 29. Confirm what measures will be in place to ensure that there will be no impact to the liner and final capping of these cells [Regulation 9(2)(r)].

A revised landscaping plan has been prepared to the satisfaction of Meath County Council, see attached (Attachment G). This revised plan does not include the planting of woodland on the Phase 7 cells and the IBA cell.

8. Table 2-4 of Volume 2 – Main EIAR includes Industrial Emissions Directive activity class 11.4(a)(iv) as follows [Regulation 9(2)(c)]:

Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving one or more of the following activities (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. 254 of 2001) apply):

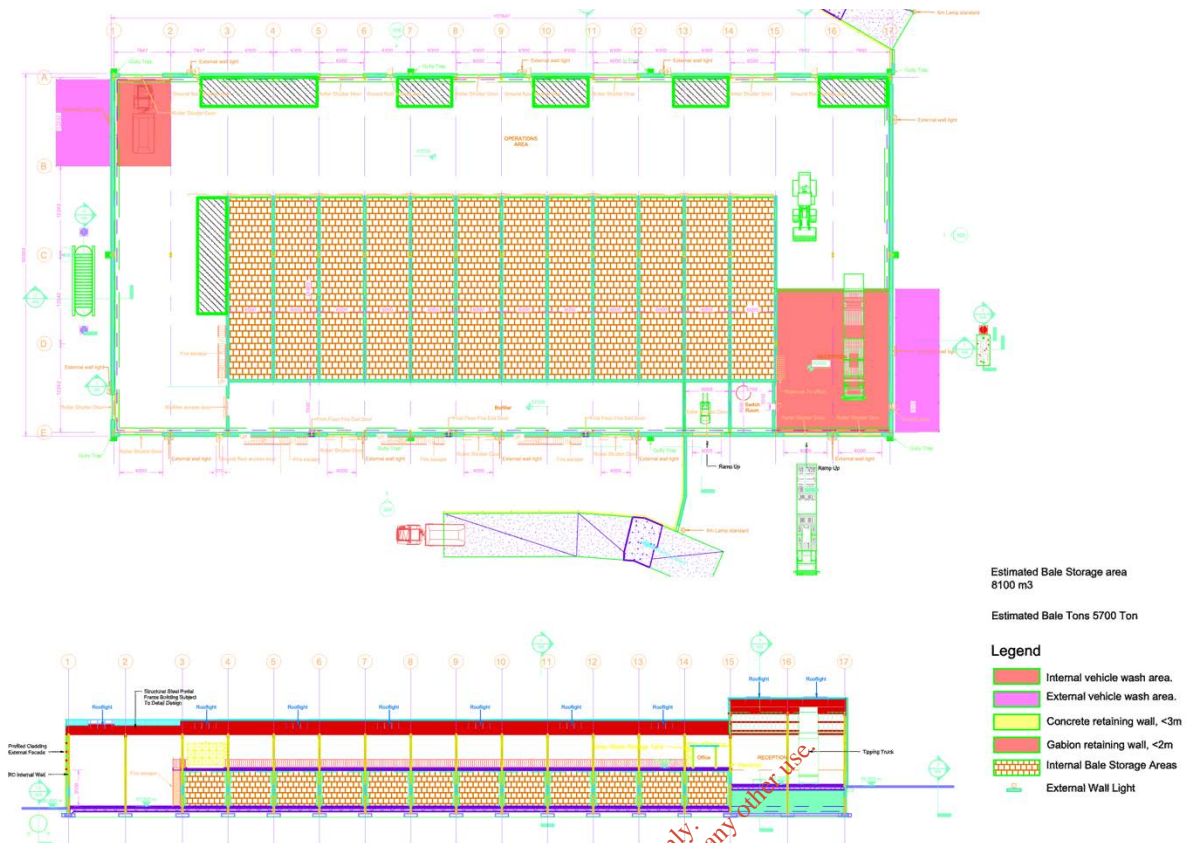
(iv) treatment of slags and ashes;

However, this activity class is not included in the application form or site and newspaper notices. In the event that waste IBA is not suitable for recovery and that the fate of all the material is disposal, Class 11.4(a)(iv) will be required. Confirm whether activity class 11.4(a)(iv) is to be included in the required activity classes as part of this licence review application.

Activity class 11.4(a)(iv) has not been sought as it is our intention to progress towards end of waste. In the event that IBA is not suitable for a recovery/recycling use, a new application will be made.

9. It is noted that the biological treatment facility will be designed to accommodate storage of baled recyclables and baled MSW on the ground floor and above the compost tunnels. Provide a drawing showing the storage locations and the maximum quantity of waste to be stored in each of the storage areas [Regulation 9(2)(g)].

Please see below drawing showing the bale storage areas and the volumes/weights to be stored.



10. Section 2.5.5.3 of Volume 2 – Main EIAR refers to specific design and operational practices to manage safe venting of hydrogen to atmosphere. Provide details of the specific design and operational practices [Regulation 9(2)(g)].

Hydrogen is generated through the oxidation of damp aluminium contained in the IBA. The process continues the aluminium in the bottom ash is fully oxidised or it is extracted. The rate at which hydrogen is generated depends on the quantity of aluminium in the ash, the pH and moisture content; it is however an extremely low rate of evolution only apparent in extremely confined or sealed atmospheres. It will create a safety risk where it is in contained un-vented areas such as the sealed cargo holds of ships or sealed bunkers.

In this instance the IBA will be temporarily stored at the producing facility and then transported by road to Knockharley. At Knockharley it will be stored either externally for a short period when it can vent naturally or in a storage building on an open floor area where the building air can circulate freely thus preventing accumulations of hydrogen gas.

In addition to the above, please also provide an updated non-technical summary (Application Form, and EIS where applicable) to reflect the information provided in your reply, insofar as that information impinges on the non-technical summary.

Not applicable.

Yours sincerely,

David Tobin
For and on behalf of
Knockharley landfill limited

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Attachment A Letter to EPA dated re org structure

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Attachment B Olfasense Technical Note

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Attachment C Letter to Agency re use of IBA as cell cover

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Attachment D SOP EMS-OP-33 *Procedure to determine the quantity of metal contamination in IBA received at Knockharley Landfill Facility and subsequent grading of same.*

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Attachment E OEE's letter to Dublin Waste to Energy letter dated the 21st of April, 2020 (Ref: Condition 8.2.3 (b) and 6.14 - Incinerator Bottom Ash Characterisation and Classification Report (Ref. LR045254, LR043724, LR033101))

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Attachment F Felling Licence

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Attachment G Revised Landscape Plan

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