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**OBSERVATIONS ON THE DRAFT ODOUR EMISSIONS GUIDANCE NOTE
(AIR GUIDANCE NOTE AG9)**

Prepared on behalf of

Irish Waste Management Association



Report Ref. 25930
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1.0 INTRODUCTION AND SCOPE

This report sets out observations on the Draft Odour Emissions Guidance Note (Air Guidance Note AG9) published by the Environmental Protection Agency (EPA) in December 2018. The observations were prepared on behalf of the Irish Waste Management Association (IWMA) who's members were asked for opinions on the Draft Guidance Note and on these observations.

The IWMA is comprised of 40 member companies that operate in the waste sector in Ireland. The Association supports the Agency's initiatives in introducing new guidelines and in raising standards to enhance the protection of the environment, and welcomes the publication of this Draft Guidance Note. However, as a sector that will be very significantly impacted by the implementation of the Guidelines, the Association has some concerns which are set out in this submission.

The Guidance is aimed at EPA and Local Authority Staff, operators and consultants and while focused on measures to ensure licence compliance, especially for facilities included in the EPA Licensing regime, it is also expected in common with previous Guidance Notes that the Guidance would be widely referenced in sectors and businesses not licenced by the Agency. It is therefore important to ensure that the practical issues relating to implementation of the Guidance in such a broad range of applications have been considered in formulating the Guidance.

2.0 LAYOUT AND CONTENT OF THE DRAFT GUIDANCE NOTE

The Draft Guidance is presented in six main sections with three appendices. A summary of the layout, and the focus of this submission, is as follows:

- Section 1 (Introduction) presents a section on odour nuisance which is of particular interest and concern to the IWMA;
- Section 2 (Odour Guidance) references Odour Guidance from the specified BAT Reference Documents;
- Section 3 (Odour Management Plans) sets out an approach towards developing Odour Management Plans;
- Section 4 (Abatement Technologies) summarises aspects of some selected odour abatement technologies;
- Section 5 (Test Programmes) sets out an outline guideline for formulating Test Programmes for abatement systems;
- Section 6 is the References Section of the document.

The Guidance as presented is in numbered sections but within each numbered section there are several non-numbered sections. To facilitate cross referencing, it would be helpful if every section was numbered.

3.0 PURPOSE AND APPLICATION OF THE GUIDANCE

The Guidance is aimed at a wide audience and the document expresses hope that it will be useful to Local Authority Staff and facilities not licenced by the Agency. While similar principles might be expected to be applied, some recognition of the different scale of activities and odour generating potential in different facilities would be helpful in indicating an appropriate level of attention to the subject of odour management and control.

4.0 OBSERVATIONS ON SECTION 1: DEFINITIONS AND ODOUR SOURCES

4.1 Section 1.0 and Preface

These sections of the Guidance state that the primary purpose of the Guidance is to assist holders of waste and industrial licences from the EPA to comply with their licences. It is also stated that it is hoped that the Guidance will be of use to Local Authority Staff for the purpose of ensuring licence compliance. It is considered likely, in common with previous Guidance documents issued by the EPA, that the Guidance would be widely referenced in sectors and businesses not licenced by the Agency eg those regulated by the Local Authorities under the Air Pollution Act Licensing regime, and those not regulated by any specific licences. While such an approach would be generally welcomed, it is important to ensure that the practical issues relating to implementation of the Guidance in such a broad range of applications have been considered in formulating the Guidance. Some of the comments made in this submission were made specifically to consider the potential application of the Guidance outside the EPA licensing regimes.

4.2 Section 1.1: Definition of odour and nuisance

This Section of the Guidance contains a statement as follows:

The legal definition of nuisance which is accepted by the EPA is as follows:

- *“An act which causes material discomfort, inconvenience or harm to human health or the environment, and it is either persistent or likely to reoccur”.*

Industrial and waste facilities are required to operate in such a way to ensure that odour nuisance does not occur. Typically, the facility will have a licence condition which specifically states that odour should not lead to “significant impairment of, or

significant interference with amenities or the environment beyond the site boundary” or that the facility should not “give rise to nuisance at the facility or in the immediate area of the facility”.

There is no information given in the Draft Guidance as to where such a definition has originated, and just because it is accepted by the EPA, it does not mean that it is either correct or has a basis in law. Legal Opinion obtained from A L Goodbody (Appendix I) has concluded that *“the Definition is not consistent with the Irish courts' interpretation of what constitutes a nuisance. Instead it goes beyond the established position under Irish law and operates to broaden the concept of 'nuisance'”*. The readers attention is drawn to the full Opinion attached in Appendix I.

Statutory definitions from other jurisdictions, where they exist, are very different in format and content from this statement. In the UK for example, specific consideration must be given to ensuring that there is an effect on health and well-being, that only typical rather than uniquely sensitive responses are considered, that the frequency of the occurrence is considered and that the nature and sensitivity of the receiving environment should be considered. Those factors have not been considered in the Draft Guidance for the purpose of the Draft Definition. The definition in the Draft Guidance is loosely stated, ambiguous and could easily be misinterpreted and misapplied.

For example, the Draft Definition envisages that nuisance can occur if *‘an act is likely to reoccur’*. If the ‘Act’ being referred to was odour from a truck passing on a public road, then it could be argued that this would be likely to reoccur every time a similar truck passed by; odour might never be detected from such passing trucks but the fact that the truck was carrying odorous materials would mean that an odour could reoccur and then under the above definition nuisance is deemed to have occurred. This scenario does not consider the duration of any event, the sensitivity of the receiving environment, the nature of the odour or the sensitivity of the observer. Application of the Draft Definition could be interpreted to mean that an event lasting two seconds which a single observer passing a location at a moment in time decided was a discomfort to them represented a nuisance, a non-compliance with a Licence and an actionable occurrence.

We respectfully submit that this is not a reasonable approach and that this section of the Draft Guidance should be removed or at least re-worded. If any serious consideration is to be given to establishing a revised definition of odour nuisance in Ireland, then it is our opinion that it needs to consider all of the available Guidance from other jurisdictions, it needs to have the involvement of legal professionals as well as technical specialists, and it should involve extensive consultation with technical specialists and representatives of industry and business sectors likely to be affected by the definition.

It is noted that the remainder of this section of the Draft Guidance is focused on the FIDOL

characteristics (Frequency, Intensity, Duration, Offensiveness and Location) and that consideration of those factors would be most helpful in considering any definition of odour nuisance.

4.3 Section 1.1.1: Constituents Of Odour

The list of the most odorous chemicals provided in this section is extensive. It is suggested that inclusion of other sulfur compounds such as organic sulfides would be a useful addition. This is suggested because (a) such substances are as commonly encountered as some of the substances listed and (b) the list can be helpful to non-specialists when formulating lists for characterization studies.

Note on nomenclature throughout the Draft Guidance

The International Union of Pure and Applied Chemistry (IUPAC) adopted the spelling ‘sulfur’ in 1990 and the Royal Society of Chemistry adopted the spelling in 1992. It is respectfully suggested that the correct nomenclature is sulfur and that this spelling should be applied throughout to sulfur, sulfate, sulfide etc.

4.4 Section 1.1.2: Impacts Of Odour on Health and Well-being

This section sets out a statement of health impacts of odour, all quoted from a single Reference Alliance (2015). We have several reservations about this section and respectfully suggest that it is rewritten completely or preferably removed. Our reservations are as follows:

- (i) Quoting a single reference is not an appropriate method of setting out the background on such a subject in a Guidance Document which is likely to be extensively quoted. There are many publications in Refereed Journals which would not agree with the information presented.
- (ii) The full title of the article is “Odour and Health Backgrounder”. The Draft Guidance References this as authored by Alliance, C A (2015). The author is actually the Clean Air Strategic Alliance and the document has no academic provenance and has not been subject to peer review in recognised Journals.

4.5 Section 1.2: Types of EPA Licensed Facilities that can cause odour and Section 1.3: Sources of Odour at These Facilities

A list of some of the types of facilities licenced by the EPA that can cause odour is provided and the main sources of odour at these facilities are listed. It is recognised that a sample list of

potentially odorous facilities and potential odour sources is provided; a statement to the effect that omission of an industry / potential source from the list does not mean that it might not be odorous would be helpful. It is suggested that Category 1 and 2 waste should also be listed and not just Category 3. The difference in the application of Waste Management and Animal By-Products Regulations is acknowledged but a complete list of potential odour sources would be helpful.

5.0 OBSERVATIONS ON SECTION 2: ODOUR GUIDANCE IN BAT REFERENCE DOCUMENTS

This section of the Draft Guidance Note presents a very short synopsis of some of the requirements in the BAT Reference Documents relating to odour. In particular there is a focus on what represents BAT for specified sectors. The BAT REF documents referenced are:

- Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector (EC, 2016; CWW BREF),
- Food, Drink and Milk Industries ((First Draft) (EC, 2017) (FDM BREF),
- Slaughterhouses and Animal By-products Industries (EC, 2005) (SA BREF),
- Waste Treatment (Final Draft) (EC, 2017) (WT BREF),
- Intensive Rearing of Poultry or Pigs (EC, 2017) (IRPP BREF).

Each BATREF Document includes a section on Techniques to Consider in the Determination of BAT and also sections on Emerging Techniques. The BREFs note specifically that an exhaustive list of techniques which could be applied in each sector has not been provided in the BREF and that other techniques may exist or may be developed which could be considered in the determination of BAT for an individual installation. It is suggested that inclusion of this information as a statement in the Guidance would be helpful for licensees and for Regulatory Authorities.

Since all of the BREFs refer to the potential for Emerging Techniques to be considered, it is suggested that some Guidance on the approach that the Agency would consider appropriate in demonstrating suitability of an alternative technique to those listed would be helpful. While the Directive does set out the headings and factors that must be considered, guidance on the extent of proof required especially by way of demonstration and application would be helpful.

6.0 OBSERVATIONS ON SECTION 3: ODOUR MANAGEMENT PLANS

6.1 Section 3.1 Odour Audit

This Section presents a general description of the approach to carrying out an audit of odour sources at a site. Page 24 addresses Building Integrity and Pressure. There is a statement included that *“For negative pressure systems to work effectively the integrity of the building*

should be of a high standard.” There is potential for subjective interpretation of the term ‘high standard’. We suggest that this could be reworded to state “.....*the integrity of the building should be sufficient to ensure effective containment of odours.*”

6.2 Section 3.2 Odour Impact Assessment in Accordance with AG5

Some minor points for correction are as follows:

- Odour *adaptation* is the appropriate term rather than odour *adaption* which has been used in places in the Draft Guidance;
- There is a reference to the AG5 Guidance as being published in 2019; the only published version of AG5 on the EPA website is dated 2010.

6.3 Section 3.3 Modelling of odour emissions

This section states that “*Sampling and analysis for a specific chemical can only be undertaken adequately where the release is a single compound although even in this case finding accurate odour detection thresholds can be problematic. Where more than one compound is present, dynamic olfactometry is the preferred approach due to the synergistic and non-linear effects of multiple odorous compounds.*” While it is correct to state that synergistic interactions between the constituents of an odour are important in determining the impact of an odour emission, chemical characterization is critical in many cases to ensure that the correct abatement approach is selected. Chemical characterisation solely for the purpose of comparison with an odour threshold for a single chemical is of limited use and is not recommended but characterization to obtain information for design of an abatement solution is critical.

Relevant Odour Standards

The Guidance contains a statement as follows: “*Guidance from the UK recommends that odour standards should vary from 1.5 – 6.0 OUE/m³ as a 98th percentile of one hour averaging periods at the worst-case sensitive receptor based on the offensiveness of the odour and with adjustments for local factors such as population density.*” It is suggested that this could be amended as follows: “*Guidance from the UK (EA, 2011, and adapted for Irish EPA use) recommends that odour standards should vary from 1.5 – 6.0 OUE/m³ as a 98th percentile of one hour averaging periods at the worst-case sensitive receptor based on the offensiveness of the odour and with adjustments for local factors such as population density.*”

Table 3.1 is presented with Indicative Odour Standards based on EA H4 Guidance but adapted for Irish use. It is not clear what the basis for the changes from H4 are, but of greater concern

is the fact that this table is different from the analogous table that is included in the Agency Guidance Note on Dispersion Modelling, AG4 (Appendix I). It is not helpful to have two different tables of this type in related Guidance Notes which will cause confusion in the sector. We recommend that either the same table is used in both Guidance Notes or else a clear statement on which takes precedence should be included.

The table applies the percentile standards to the worst-case sensitive receptor. We suggest a possible wording for a note to the table as follows "*Note: Professional Judgement should be applied in the determination of where the worst-case sensitive receptor is located.*"

There is also a statement in the Table that "*Most odours from the regulated processes fall into this category [moderately offensive] ie any odours which do not obviously fall within the 'most offensive' or 'least offensive' categories.*" It is recommended that this statement should be removed. Every Professional Guidance in widespread use in Ireland, the UK and further afield recognizes the requirement to consider local circumstances and conditions and the use of professional judgement in reaching a conclusion as to which category would be appropriate for a particular scenario. It is quite possible for many facilities that odour would indeed fall into the least offensive category and to have this option effectively removed from consideration by the blanket statement in the Draft Guidance is in our opinion not reasonable.

Modelling procedure

The Draft Guidance (Page 30) states: "*When modelling odour, it should be understood that measurement of ambient background levels of odour and incorporation of these into the modelling results is not a valid approach as firstly odours are not generally additive and secondly, background odours will usually be below the limit of detection of the monitoring method employed.*" It is agreed that measurement of background odour levels and incorporation into the modelling results is not a valid approach but not for the reasons stated which we respectfully recommend should be corrected. Background odour levels, depending on local circumstances and weather conditions etc will vary but will be well above any detection limit in various scenarios. Reported levels in the Literature vary up to 400OU_E/m³ so it is incorrect to state that background levels will usually be lower than the detection limit.

It is stated at Page 30 that "*The frequency of operation of each source at a facility should be assessed to determine a suitable time-weighted odour emission rate for each source.*" This approach will not consider what could happen during a short period of activity and while this time-weighted approach should be the deciding factor in the overall assessment we recommend that the short term impacts should also be assessed by assuming that the short term events occur continuously for defined periods. A possible wording is as follows: "*The frequency of operation of each source at a facility should be assessed to determine a suitable time-weighted*

odour emission rate for each source and this input data should be modelled for the odour impact assessment. While this time-weighted approach should be the scenario assessed for compliance, it is also appropriate to consider a scenario with the odour source emitting continuously so that an assessment of short terms impacts may be considered .”

6.4 Section 3.4 Abatement technologies

There is a recommendation to carry out a Test programme on a Pilot basis to determine the site-specific abatement efficiency. Since abatement technologies are well established and defined in the BREFs, we consider this to be an inappropriate recommendation. It is possible that professional Judgement, on a site-specific basis, would recommend that a Pilot Trial would be carried out but a mandatory recommendation is considered excessive and would lead to unnecessary additional costs for licensees.

6.5 Section 3.7 Odour Complaint & Investigation Procedure

Table 3.3 might usefully be relocated to an Appendix in line with similar EPA Guidance Notes. It is also suggested that the Agency would provide an editable pdf version of the Complaint Report Form to facilitate licensee use.

6.6 Section 3.8 Odour Management Plan Template

It is recommended that the use of Odour Diaries as a management tool could be considered.

7.0 OBSERVATIONS ON SECTION 4: SUMMARY OF ABATEMENT TECHNOLOGIES

7.1 Summary

The opening paragraph refers to destruction or removal of odorous compounds. We suggest that it would be helpful also to include transformation.

Table 4.1 lists some Pros and Cons and a section on ‘Does not remove’. It is not totally correct to state that technologies such as biofilters and activated carbon do not remove dust – they do, but the filters block and therefore it is not a practical application for those technologies.

It is not clear why risk of dust explosion / fire is only mentioned once in the table whereas in the context mentioned, it should be mentioned in several places. Also, the statement that a biofilter / scrubber combination is not considered necessary as a stack /bio scrubber is sufficient is simplistic, it ignores local circumstances and the need to demonstrate that a stack height combination is possible in order to achieve the desire outcome; also the section being referred

to is wet scrubbing rather than Bio scrubbing. We suggest that this Table needs to be amended. The Table also appears to be directing the Guidance towards one technology which is an inappropriate format for the Guidance.

7.2 Section 4.1 Appropriate Abatement Technologies

We have a number of suggestions as follows:

- The significance of moisture in the gas stream when choosing activated carbon could be emphasised;
- The factors affecting choice and use of treated carbon could be elaborated on;
- There is an over-reliance on the concept of ‘percentage odour removal / odour removal efficiencies’. Efficiency is irrelevant to the achievement of effective odour control as evidenced by no nuisance odours; if there is a very high odour inlet concentration an efficiency of 80% may be insufficient to achieve the required objective. Equally, if there is a relative low odour inlet concentration, a high efficiency may not be required.
- There is a statement that it would be very unusual to select thermal oxidation for odour removal. The justification for the statement is that the majority of odorous air streams in industry are at ambient or room temperatures. We recommend that this statement is removed or amended as it ignores local circumstances and ignores the requirement for professional judgement to be applied on a case-by-case basis. There are applications where this is the most appropriate technology but the statement in the Guidance appears to be directing the reader to ignore this option.
- There are several statements about the cost effectiveness of techniques for odour abatement. These statements do not consider the local circumstances and should not be included without qualification.

8.0 CONCLUSIONS

The IWMA welcome an opportunity to comment on the Draft Odour Emissions Guidance Note, AG9 and have prepared a short submission with a number of observations. The principal concern of the IWMA is that the Guidance is seeking to establish a definition of odour nuisance that has no basis in science or law and which would be unworkable.

Appendix I

A L Goodbody Submission

Date | 28 January 2019
Our ref | 01347500
Your ref |

By Email

Conor Walsh
Secretary
Irish Waste Management Association

Re: Enforcement Odour Emissions Draft Guidance Note (Air Guidance Note AG9)

Dear Conor

You have asked us to provide a letter of advice relative to the legal concept of *'nuisance'*.

We understand the advice is required to supplement a review of the Environmental Protection Agency's (EPA) Enforcement Odour Emissions Draft Guidance Note (Air Guidance Note AG9) (the **Guidance Note**) by Dr Imelda Shanahan. Dr Shanahan has raised concerns regarding the acceptance by the EPA of the definition of *'nuisance'* in the Guidance Note. In particular, she believes this definition is subjective and could therefore be liable to arbitrary interpretation by an EPA Inspector and/or members of the public.

The purpose of this letter is to: (i) explain how the courts have interpreted this question to date; (ii) set out the elements deemed necessary by the courts for a finding of *'nuisance'*; and (iii) examine another statutory definition of nuisance already accepted by the EPA and contrast it with the definition in the Guidance Note.

Summary

- Nuisance is a long established legal concept which, in and of itself, is generally not defined in statute. The legal concept of *'nuisance'* has developed over time through decisions of the courts.
- When assessing a nuisance, the Irish courts will: (i) look at the impact of the act complained of on the enjoyment of land; (ii) apply an objective standard (i.e. that of the *'reasonable man'*); and (iii) assess the reoccurring and persistent nature of the act complained of.
- In our opinion, the legal definition of *'nuisance'* contained in the Guidance Note could be subjectively interpreted. It also appears to broaden the established Irish position relative to the concept of *'nuisance'*.

Common law definition of nuisance

In *Lawrence v Fen Tigers*, Lord Neuberger JSC (Judge of the Supreme Court UK) defined nuisance as:

"an action (or sometimes a failure to act) on the part of a defendant, which is not otherwise authorised, and which causes an interference with the claimant's reasonable enjoyment of his land, or to use a slightly different formulation, which unduly interferes with the claimant's enjoyment of his land."

The standard for determining whether a 'nuisance' has been caused is an objective one, based on an analysis of reasonableness. In *Barr v Biffa Waste Services Ltd*, the judge relied on the following qualification of the reasonableness test:

"Reasonableness is a relevant consideration here, but the question is neither what is reasonable in the eyes of the defendant or even the claimant (for one cannot by being unduly sensitive, constrain one's neighbour's freedoms), but what objectively a normal person would find it reasonable to have to put up with."

In *Halpin & Ors v Tara Mines Ltd*, the High Court set out the reasonableness requirement to be met, as follows:

To my mind the reasonable man connotes a person whose notions and standards of behaviour and responsibility correspond with those generally pertaining among ordinary people in our society at the present time, who seldom allows his emotions to overbear his reason, whose habits are moderate and whose disposition is equable. (Emphasis added).

In *Hanrahan v Merck, Sharp and Dohme*, the Supreme Court emphasised that an objective examination of impact on the healthy enjoyment of land was required, in light of what a reasonable person could tolerate. The suggestion of a subjective test was rejected:

"[T]he plaintiff is not entitled to insist that his personal nicety of taste or fastidiousness of requirements should be treated as inviolable. The case for damages in nuisance ... is made out if the interference is so pronounced and prolonged or repeated that a person of normal or average sensibilities should not be expected to put up with it. It is not necessary that the interference by objectionable smell should be so odious or damaging that it affects the plaintiffs' health. It is enough if it can be said that a reasonable person in the plaintiffs' circumstances should not be expected to tolerate the smell without requiring the defendants to make financial amends." (Emphasis added).

By reference to established Irish case law, the following factors are essential for the classification of an activity as a 'nuisance':

- (i) Is the activity reoccurring or persistent to the requisite degree?
- (ii) Objectively, would a reasonable person be expected to tolerate the activity?
- (iii) Does the activity substantially interfere with the enjoyment of land?

In relation to (iii) above, when examining what constitutes a "substantial interference" with the enjoyment of land, the courts will also examine: (a) the public necessity of the conduct, (b) the social and/or economic benefits attached to the act and (c) the gravity of harm suffered.

Accordingly, these factors must underpin the definition of 'nuisance' contained in the Guidance Note.

Statutory definition of nuisance

Certain types of nuisance are specifically defined in legislation. For example, noise nuisance is defined in section 108 of the EPA Act 1992, as follows:

'Where any noise which is so loud, so continuous, so repeated, of such duration or pitch or occurring at such times as to give reasonable cause for annoyance to a person in any premises in the neighbourhood or to a person lawfully using any public place...'

This definition contains the three common law requirements for establishing a 'nuisance', being an act that: (i) is continuous or repetitive; (ii) causes reasonable annoyance to a person and (iii) causes an impairment of the enjoyment of land.

Nuisance also plays a role in determining whether 'environmental pollution' has occurred under the EPA Act 1992, as amended; i.e. '[Causing] a nuisance through noise or odours'. It must be noted that, as the word 'nuisance' is not defined in the EPA Act 1992, the common law meaning is applied.

Guidance Note definition

'Nuisance' is defined in the Guidance Note as follows:

"An act which causes material discomfort, inconvenience or harm to human health or the environment, and it is either persistent or likely to reoccur" (the **Definition**)

It is further noted in the Guidance Note that this is the legal definition of 'nuisance' which is accepted by the EPA.

The origin of the Definition is not known, despite a review of relevant legislative provisions and case law. Previous guidance notes published by the EPA (AG1 through AG8) make no reference to this wording and refrain from providing any definition of nuisance. In our opinion, the Definition is not reflective of the current interpretation of what constitutes a 'nuisance' under Irish law. Rather, the Definition appears to broaden the concept of 'nuisance' for the following reasons:

- It includes acts which cause "inconvenience" without reference to an impact on an enjoyment of land (either public or private).
- The inclusion of the words 'material discomfort' suggest a subjective test should be applied in assessing the effect of an alleged nuisance. What constitutes a material discomfort will vary from person to person. Accordingly, this is not an objective standard, based on an analysis of reasonableness.
- The standard for determining whether an "act" constitutes a nuisance is whether "it is persistent or likely to reoccur". This appears to be a particularly low standard.

By way of an example, the Definition could be interpreted as meaning an "act" as routine as collecting household refuse once a week (i.e. a repetitive act), which causes an inconvenience to a person, would be deemed a nuisance, without consideration of the factors used to assess whether there is a nuisance in law.

Conclusion

In our opinion the Definition is not consistent with the Irish courts' interpretation of what constitutes a nuisance. Instead it goes beyond the established position under Irish law and operates to broaden the concept of 'nuisance'.

Yours faithfully

[Sent via email, bears no signature]

A&L Goodbody Solicitors

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