



1.0 ODOUR ASSESSMENT - TECHNICAL NOTE

Resource and Environmental Consultants Ltd was commissioned by Seabridge Developments Ltd to undertake an Odour Assessment (Ref: AQ100222r3, submitted on 16th November 2015) in support of the potential development of land at Gillow Heath, Biddulph. Following the submission of the assessment to Staffordshire Moorlands District Council (SMDC), a number of comments have been provided. This technical note addresses those comments.

2.0 COMMENTS

The following sections detail the responses to the comments received from SMDC.

2.1 Comment 1

"Model inputs:

Odour Sources

(Table 4): Seem reasonable but would be better informed by reference to the associated EP permit held at the site (available to public) which is likely to contain an odour management plan identifying sources"

2.1.1 Response 1

The model input parameters will be referenced from the Environmental Permit for the Wastewater Treatment Works (WwTWs) and corrected accordingly, should it be deemed to be necessary.

2.2 Comment 2

"Emissions

The following statement is made odour emission rates from the facility/ sources.

3.4 Emissions

Consultation with Staffordshire Moorlands District Council (SMDC) indicated that the authority has no record of odour complaints from the Biddulph WwTWs, although the facility is located close to existing properties. Due to the lack of complaints, it is considered likely that minimal odour is being produced from the facility. As such, low emission rates were utilised from the UKWIR in accordance with best practice.

These are summarised in Table 5.

Table 5 Odour Emission Rates Source	Odour Emission Rate (ou_E/m²/s)
Inlet Channel	20
Storm Tanks	2
Aeration Lanes	2
Primary Tanks	0.8
Final Settlement Tanks	0.3



2.2.1 Comment 2a

- "The criteria (lack of complaints) minimal odour is being produced at the installation is not accepted, as definitive proof of low emission rates. SMDC, has received subsequent odour complaints about the facility from nearby residents. Complaints may also have been made directly to United Utilities that do not inform this conclusion."

2.2.2 Comment 2b

- "Emission rates should have been run in the model to establish the sensitivity of this unproven assumption, and to see predicted outcomes if emissions were typical, high or very high as per the table."

2.2.3 Comment 2c

- "The adopted emission rates from the sources described in Table 5, should more clearly relate to the sources provided in the referenced Table 5.1 (Report Ref: UKWIR USE) and the assumptions made for these processes (Table 5.2)

Other input sources are accepted (3.5 – 3.8)."

2.2.4 Response 2a

It should be noted that at time of producing the odour assessment, consultation with SMDC indicated that the authority has no record of odour complaints from the Biddulph WwTWs. In light of these new odour complaints, this element of the assessment will be revised.

Furthermore the Council states that:

"Complaint Update

In May and June 2016 there were 8 named complaints received against the treatment works from neighbours from all directions of the site. These complaints were based on severe noise and odour impacts, they were substantiated by witnessing officers and Severn Trent was contacted. The company had experienced technical issues with machinery, which required excavation of a lagoon causing significant odours in the vicinity. The noise impacts relate to standard operating noise at the site which has more significance during the night in hot weather due to windows being open through the night time."

It is not considered reasonable to consider short periods of malfunctioning equipment as part of the normal operation of the facility. The odours and the complaints generated by them were clearly the result of not-normal operation of the site, and therefore, while the presence of odour complaints is acknowledged, this should not be treated as a reason for expecting the processes at the WwTWs to be "most offensive".

2.2.5 Response 2b

This will be undertaken as part of a revised odour assessment.

2.2.6 Response 2c

This will be addressed within the revised odour assessment.



2.3 Comment 3

"Significance of Odour Impacts (section 3.9)

- This is not accepted

The author makes the following statement which is not accepted by virtue of it being nonsense, as the odours clearly fall into most offensive category. Table 1 is reproduced in part for reference.

The significance of impacts was assessed through the interaction of the predicted 98th %ile of 1-hour mean odour concentrations and receptor sensitivity, as outlined in the IAQM guidance⁹. It should be noted that this document has been compiled on the assumption that the odour in question is at the offensive end of the spectrum. As shown in Table 1, odours from the WwTWs would fall into the 'moderately offensive' category as they are unlikely to be septic in nature."

Table 1:

Relative Offensiveness of Odour

Benchmark Level as 98th %ile of 1-hour Means (ouE/m³)

Most offensive odours:

- Processes involving decaying animal or fish
- Processes involving septic effluent or sludge
- Biological landfill odours

2.3.1 Response 3

An appeal decision in 1993 relating to a site at Newbiggin-on-Sea (APP/F2930/ A/92/206240) appears to be the first application of odour standards in a planning appeal. There the Inspector found that a level equivalent to 2.5ou_E/m³, creating "a faint odour", was a "reasonable and cautious" standard.

The EA later disputed that this erred on the side of caution. Its view seems to be derived from a Dutch survey-based study of annoyance levels caused by pig farm odours, even though the EA's Assessment of Community Response, cautions against transposing results into different locations and different national environmental criteria and aspirations. Moreover the study was criticised because it did not appear to differentiate between odours originating from farm buildings and those from spreading of pig slurry, which can have very different effects.

An appeal at Leighton Linlade (APP/P0240/A/09/2110667) mainly concerned Green Belt issues, but odour impact was also considered. There a much larger Sewgae Treatment Works (STW) than at Biddulph, with far greater levels of tanker movements, adjoined a residential area. The predicted 5ou_E/m³ contour ran next to rear gardens and complaints had been received from properties experiencing lower levels. The Inspector considered 5ou_E/m³ a reasonable threshold in terms of both nuisance and amenity. He found that evidence of no harm being caused to be unconvincing but recognised that odour control methods could be used to mitigate regular and unacceptable odour annoyance.

A more recent appeal at Haverhill, in this borough (APP/E3525/A/11/2145235) concerned a housing



site some 7m from a STW boundary where predicted levels were between 3 and 5ou_E/m³. The Inspector found that proposal acceptable, with no significant harm caused. The Council approved a subsequent application, using a 5ou_E/m³ benchmark.

In a judgement ([2011] EWHC 3253 (TCC)) relating to one of the largest STWs in the country at Mogden, west London, Ramsey J found that nuisance would certainly be established by the time 5ou_E/m³ is reached. This implies that the standard relating to loss of amenity would be somewhat lower. However it should be noted that at Mogden there were constantly large areas of septic sludge and it is not considered that the same threshold need apply at Biddulph, where some septicity may be present at some times in particular circumstances.

Although not supported by all on its Air Quality Panel, CIWEM does not agree with a 1.5ou_E/m³ threshold. It indicates that complaints are unlikely at levels below 3ou_E/m³, with exposure to this level or less appropriate unless the locality is highly sensitive or the odours highly unpleasant. The terms "sensitive" or "unpleasant" are not qualified, but a highly sensitive locality appears to be one with a high complaint history; unpleasantness seems to be considered within the context of STW.

H4 differentiates between "most offensive" unmodified odours, having a benchmark of 1.5ou_E/m³, and "moderately offensive" odours with 3ou_E/m³ benchmark. An indicative example within the "most offensive" category is "processes involving septic effluent or sludge". H4 does not say that these processes should predominate, nor that they are "likely to become septic". Moreover, despite differences of view on the reasons, the final version of H4 specifically excluded waste water treatment from the top category of unpleasantness. It is not considered adequate that some irregular septicity at STWs outside the remit of H4 is sufficient to label their activities as a whole as "most offensive". It is considered, that H4 relates to large works which generally involve primary sludge and are septic on a regular basis. Odours from them are considered to be more offensive than from small STWs like Biddulph.

Taking the relevant advice, decisions and practice into account, it is considered that the appropriate threshold for this type of small STW is more than the 1.5ou_E/m³. A more appropriate threshold in this case is 3 - 5ou_E/m³, the level of the DEFRA guidance's "faint odour".

2.4 Comment 4

"The author then note: As such, the significance criteria has been adapted from the IAQM guidance¹⁰ to reflect this odour type!!

These are presented in Table 7. Note Low and medium sensitive receptors are of no relevance and only serves to confuse:

Greater than 10	Substantial
5 - 10	Moderate
3 - 5	Moderate
1.5 - 3	Slight
0.5 - 1.5	Negligible
Less than 0.5	Negligible
This should read:	
Greater than 10	Substantial
5 - 10	Substantial
3 - 5	Moderate
1.5 - 3	Moderate



0.5 - 1.5	Slight
Less than 0.5	Negligible"

2.4.1 Response 4

It should be noted that the whole table within the IAQM guidance¹ was referenced for completeness and to provide full context. Furthermore, the IAQM Guidance states that:

"When compiling this Table, it has been assumed, on a conservative basis that the odour in question is at the offensive end of the spectrum. For odours that are less unpleasant, the level of odour exposure required to elicit the same effect may be somewhat higher, requiring professional judgement to be applied"

Based on the assumption that odours from the WwTWs would fall into the 'moderately offensive' category as they are unlikely to be septic in nature, the significance criteria has been adapted from the IAQM guidance to reflect this odour type. The relevant adjusted assessment matrix is summarised in Table 7 of the original assessment.

2.5 Comment 4

"3.10 Model Uncertainties

The author claims they have adopted worst case scenarios inputs to provide a robust assessment to account for listed uncertainties. With reference to the comments above I do not share this view. An obvious starting point would have been to include some sensitivity analysis (i.e. a range of genuine worst case scenarios and compare the outputs), notably the emission data and the correct odour impact reference.."

2.5.1 Response 4

As stated above, the odour impact matrix was adjusted based on the assumption that odours from the WwTWs would fall into the 'moderately offensive' category. The significance criteria has been adapted from the IAQM guidance to reflect this odour type.

It is considered that the modelling input parameters are representative of worst case assessment scenario, however a sensitivity analysis will be undertaken as part of a revised assessment to consider any variation in emission rates from the WwTWs.

Complaint Update

In May and June 2016 there were 8 named complaints received against the treatment works from neighbours from all directions of the site. These complaints were based on severe noise and odour impacts, they were substantiated by witnessing officers and Severn Trent was contacted. The company had experienced technical issues with machinery, which required excavation of a lagoon causing significant odours in the vicinity. The noise impacts relate to standard operating noise at the site which has more significance during the night in hot weather due to windows being open through the night time.

Note prepared by Gabor Antony and Conal Kearney, Principal Air Quality Consultants at REC Ltd, on

¹ Guidance on the Assessment of Odour for Planning, IAQM, 2014.



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