

28th March 2014

Steve Gamble
Land and Planning Director
Gleeson
6 Europa Court
Sheffield Business Park
Sheffield
S9 1XE

Our Ref: 410.03044.00004_L_Bolton on Dearne Odour, Assessment Summary

Dear Steve,

RE: LAND OFF LOWFIELD ROAD, BOLTON ON DEARNE, BARNSELY – ODOUR ASSESSMENT: ASSESMENT SUMMARY

Following ongoing discussions, please find below a summary of the Odour Constraints Assessment submitted in support of the planning application for a proposed residential development on land off Lowfield Road, Bolton on Dearne (Barnsley Metropolitan District Council (BMDC) planning application reference 2013/0960).

Assessment Summary

Gleeson Developments Limited (Gleeson) submitted a planning application for the development of residential dwellings on land off Lowfield Road, Bolton on Dearne. The proposed development site lies to the north of the Bolton on Dearne wastewater treatment works (WwTW) operated by Yorkshire Water Services (YWS). SLR Consulting Ltd (SLR) was commissioned by Gleeson to undertake a detailed Odour Constraints Assessment of the Bolton on Dearne WwTW to quantify odour from the WwTW and inform a buffer zone for development. This included site-specific odour sampling at the Bolton on Dearne WwTW to calculate emission rates.

All aspects of the odour monitoring and dispersion modelling were undertaken with the written agreement of Yorkshire Water Services (YWS). All dispersion modelling has been undertaken in line with best practice guidance, as issued by the Environment Agency.

The dispersion modelling included terrain data to account for local topography and landforms which can affect the dispersion of odour from sources. The modelled odour contours (presented as Drawings AQ1 and AQ2) include calculations at applicable terrain heights for odour sources from the wastewater treatment works (WwTW) and the surrounding receptors.

During the period of odour monitoring at the Bolton on Dearne WwTW, it was noted that there were a number of operational issues resulting in non-compliance with best practice which resulted in the generation of significant malodour (offensive odour) which resulted from malfunctioning equipment. For example, under normal operations, the sludge holding tanks are covered and not associated with the generation of odour; however, on the morning of the period of odour sampling, the 3 sludge holding tanks were overflowing, due to a malfunctioning ball-cock. This resulted in a pool of sludge collecting at the base of the tank,

which was cleaned up by YWS representatives during the period of odour monitoring. Consequently, this malfunctioning of the sludge holding tanks resulted in the generation of significant amounts of non-standard malodour associated with anaerobic conditions as a consequence of raw sludge pooling on the ground, which lead to the release of unabated odour from this source group.

It is noted that an initial Freedom of Information request was made to BMDC which confirmed that no substantiated complaints regarding WwTW related odour had been received. This complaint period included the day during which operational issues resulting in non-compliance was noted. SLR consider that should no complaints be received during this period of elevated offensive odour, then complaints are further less likely during periods of standard operation.

The Chartered Institute for Water and Environmental Management (CIWEM) released a Policy Position Statement regarding odour in February 2011. In consideration of an appropriate assessment criterion to determine potential odour impacts, CIWEM stated that:

“Given the differing odour impact criteria available, the selection of the most appropriate criterion should be determined by the objective of the assessment (whether this be against a standard of avoidance of nuisance or ‘significant pollution’) and the nature of the odour under assessment.

It is, therefore, the view of CIWEM that these and other odour impact criteria should be regarded as indicative guidelines and cannot be applied as over-arching statutory numerical standards. CIWEM considers that the following framework is the most reliable that can be defined on the basis of the limited research undertaken in the UK at the time of writing:

- *$C_{98, 1\text{-hour}} > 10\text{ou}_E/\text{m}^3$ – complaints are highly likely and odour exposure at these levels represents an actionable nuisance;*
- *$C_{98, 1\text{-hour}} > 5\text{ou}_E/\text{m}^3$, – complaints may occur and depending on the sensitivity of the locality and nature of the odour this level may constitute a nuisance*
- *$C_{98, 1\text{-hour}} < 3\text{ou}_E/\text{m}^3$, – complaints are unlikely to occur and exposure below this level are unlikely to constitute significant pollution or significant detriment to amenity unless the locality is highly sensitive or the odour highly unpleasant in nature.”*

The modelled odour impacts corresponding to the standard operation of the Bolton on Dearne WwTW are presented within figures AQ1 and AQ2. These illustrate modelled odour assessed against the $C_{98, 1\text{-hour}} 3.0\text{ou}_E/\text{m}^3$ and $C_{98, 1\text{-hour}} 5.0\text{ou}_E/\text{m}^3$ criteria.

The contours illustrate that should odour be assessed against the $C_{98, 1\text{-hour}} 3.0\text{ou}_E/\text{m}^3$ criterion, impacts above the criteria are predicted at a large number of existing properties to the north and west of the site. Therefore, given that there are existing receptors in close proximity to the WwTW (and in closer proximity than that of the proposed development site) where it is understood that no substantiated complaints regarding odour have been received, it is considered that assessment of odour from the standard operation of the Bolton on Dearne WwTW against an applied benchmark criteria of $C_{98, 1\text{-hour}} 5.0\text{ou}_E/\text{m}^3$ is appropriate.

The application of the $C_{98, 1\text{-hour}} 5.0\text{ou}_E/\text{m}^3$ is frequently quoted and accepted as being sufficient to prevent nuisance for a number of industry sectors, based upon an appeal

decision for a residential development adjacent to a WwTW¹. This impact criteria has more recently been applied within the context of odour assessment from WwTW related odour adjacent to existing and proposed residential receptors, including a planning appeals from Leighton Linlade in 2010², where the inspector stated that '*5 OU_E/m³ as a 98th percentile would be a concentration level above which odour might be a potential nuisance – and that approach seems reasonable and has been accepted at a previous appeal*', from a site in Haverhill in 2011³, where the inspector found that a proposed development approximately 7m from the boundary of a WwTW where odour dispersion modelling '*predicted levels [...] between 3 and 5 OU_E/m³. The Inspector found that proposal acceptable, with no significant harm caused*' and from an Appeal at Stanton⁴ where the inspector considered '*the most appropriate threshold in this case is 5ou_E/m³, the level of the DEFRA guidance's "faint odour"*'.

In a High Court Appeal in relation to Mogden WwTW, one of the largest WwTW in the Country, in London Borough of Hounslow, Mr. Justice Ramsey considered the 5ou_E/m³ assessment criteria for application and assessment of complaints from existing residents surrounding the WwTW, and concluded that '*as the odour concentration rises to 5 ou_E per m³ I consider that this is the area where nuisance from Mogden STW would start [...]*'.

It is therefore considered that the C_{98, 1-hour} 5.0ou_E/m³ is an appropriate assessment criterion for odour in this case.

Closure

SLR consider that the results of the Odour Assessment are defensible, and that the application of a C_{98, 1-hour} 5.0ou_E/m³ exposure criteria is appropriate to ensure the amenity of residents of the Gleeson development would be subject to a significant detrimental impact.

I trust the above provides you with sufficient information. However, please do not hesitate to contact me should you have any further queries.

Yours sincerely
SLR Consulting Limited



Graeme Blacklock
Associate, Air Quality

¹ Department of the Environment (15th July 1993) Appeal by Northumbrian Water Ltd: Land Adjacent to Spital Burn, Newbiggin-by-the-sea, Northumberland. Case ref: APP/F2930/A/92 206240.

² Planning Inspectorate – Appeal Reference: APP/P0240/A/09/2110667.

³ Planning Inspectorate – Appeal Reference: APP/E3525/A/11/2145235.

⁴ Planning Inspectorate – Appeal Reference: APP/E3525/A/11/2162837