

Document 1: Response to the Applicant's Submission by William David Moore

I have submitted two documents in response to the [Applicant's Response to Deadline 8 Submissions](#). This is the first of those documents.

In October last year, the Department for Environment, Food & Rural Affairs (DEFRA) published their fourth round of road and rail noise maps. There is a new round every five years, as required by regulations. The contour maps have been publicly available since then and are available to view on <https://environment.data.gov.uk>, just search Round 4. Here are direct links to the DEFRA [Road](#) and [Rail](#) noise maps.

The applicant's [Noise Assessment Update Note](#) [REP3-061] relied on a previous, much more crude, round of DEFRA rail noise maps.

The applicant's Noise Assessment Update Note also relied on an internal road noise map based on baseline traffic data provided by BWB. The applicant objected to my use of the previous round of DEFRA road noise maps because the previous round didn't include as many roads as the applicant's map. The DEFRA Round 4 road noise maps include all roads.

Doubtless, BWB are aware of the DEFRA Round 4 data. It is most unfortunate that the applicant did not inform participants in this process about the DEFRA Round 4 data.

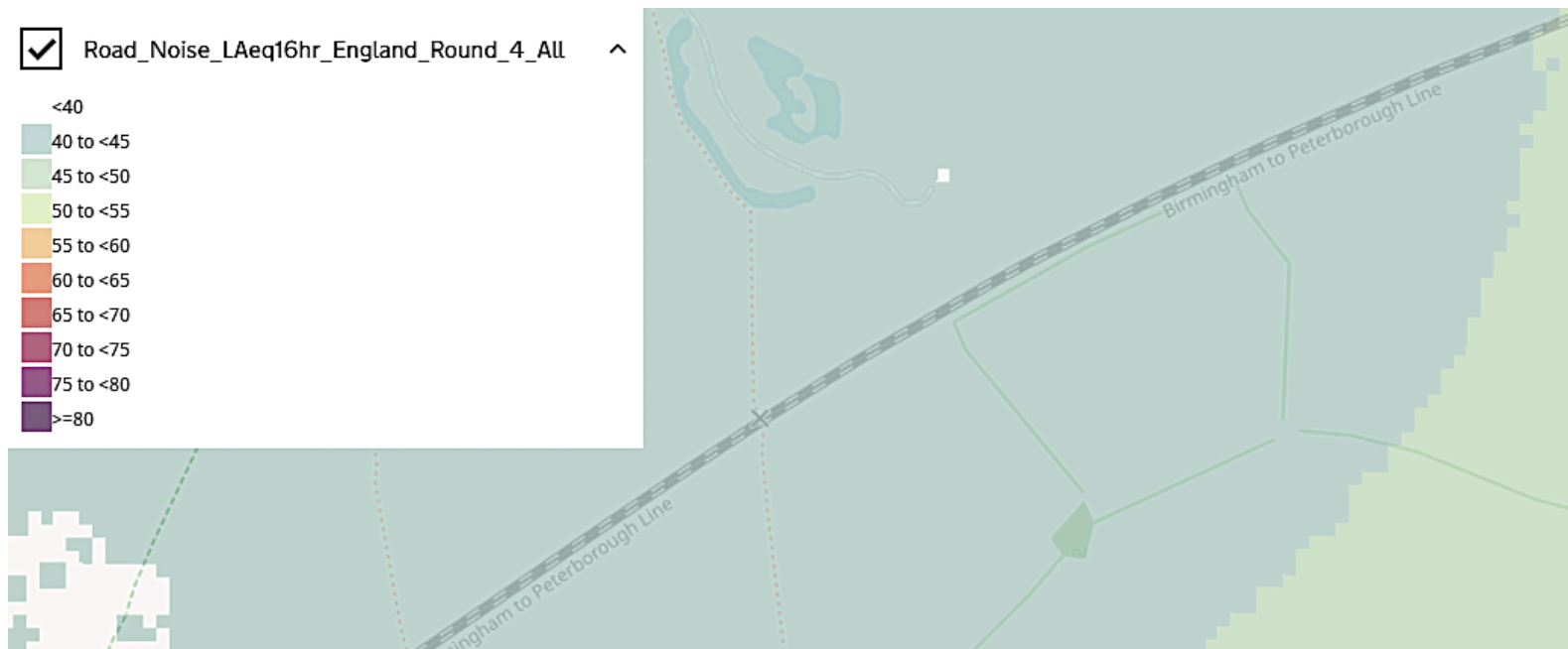
I'm going to compare the applicant's contour claims with the DEFRA Round 4 road and rail contours at the location of the measurements submitted at Deadline 8, 52.557018° N, 1.321985° W (Billington Lakes).

I've provided the full range of each DEFRA contour.

Daytime Road Noise (16 Hour LAeq)

According to the applicant's road contours, the location experiences 55 dB of daytime ambient road noise due to the distant road noise.

The DEFRA Round 4 road noise contours show the location experiencing 40-45 dB of daytime ambient road noise. This is shown in the map below.



This is summarised in Table 1.

Table 1

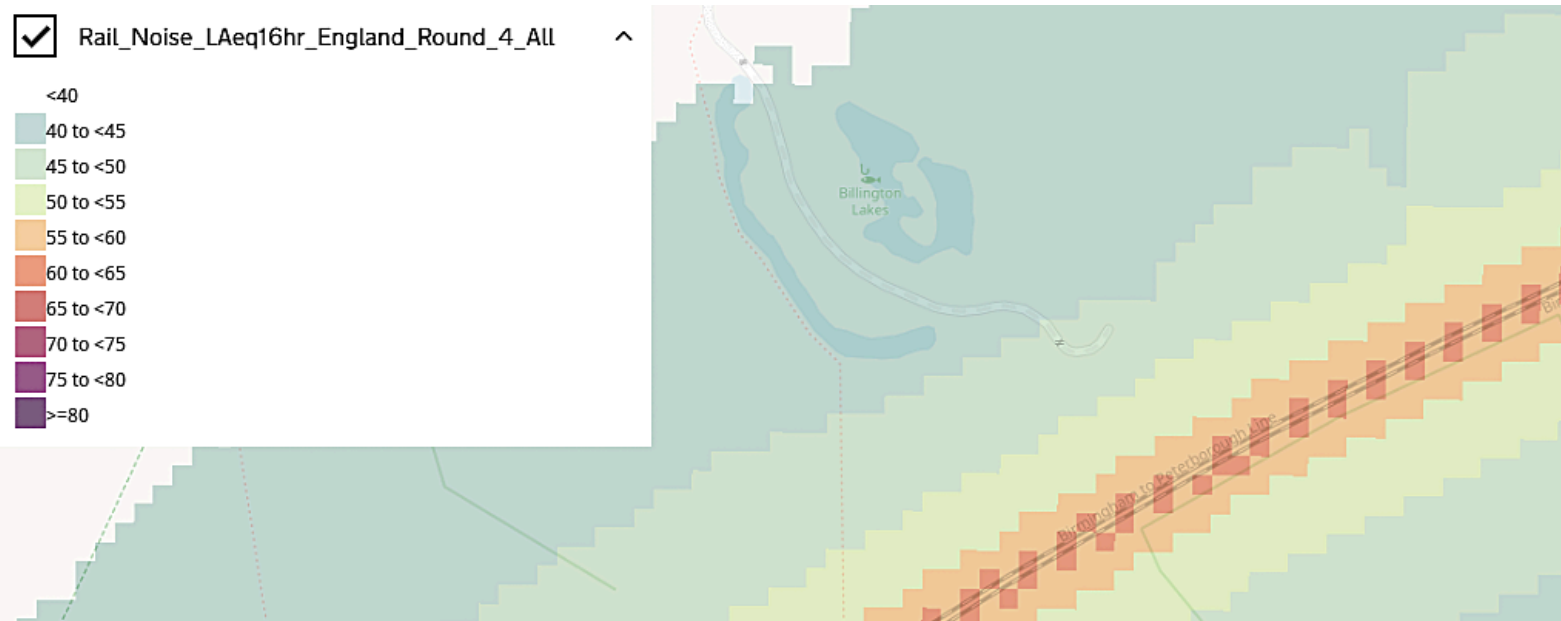
Applicant's claimed daytime road noise contour at 52.557018° N, 1.321985° W (dB)	DEFRA Round 4 daytime road noise contour at 52.557018° N, 1.321985° W (dB)
55	40-45

The DEFRA road contours match with the 39 dB weekday daytime background sound level determined by the applicant for NMP4. The applicant's contour claim doesn't match at all.

Daytime Rail Noise (16 Hour LAeq)

According to the contours introduced by the applicant, the location experiences 50 dB of daytime ambient rail noise.

The DEFRA Round 4 rail noise contours show the location experiencing 40-45 dB of daytime ambient rail noise. This is shown in the map below.



This is summarised in Table 2.

Table 2

Applicant's claimed daytime rail noise contour at 52.557018° N, 1.321985° W (dB)	DEFRA Round 4 daytime rail noise contour at 52.557018° N, 1.321985° W (dB)
50	40-45

You can see the very high ambient rail noise which would be measured ~12 metres from the railway line. The applicant's NMP4 was located ~12 metres from the railway line. That's why it measured such high ambient sound levels.

Cumulative Daytime Road + Rail Noise (16 Hour LAeq)

Table 3 shows the combined road and rail noise levels at the location for both the applicant's contours and the DEFRA Round 4 data. The measurements submitted at Deadline 8 are also shown.

Table 3

Applicant's claimed daytime road + rail contours at 52.557018° N, 1.321985° W (dB)	DEFRA Round 4 daytime road + rail contours at 52.557018° N, 1.321985° W (dB)	Measurement of Friday-Saturday daytime ambient sound submitted at Deadline 8 at 52.557018° N, 1.321985° W (dB)
56.2 (55+50)	43 (40+40) to 48 (45+45)	47.9

The daytime measurements submitted at Deadline 8 are a close match with the daytime DEFRA contours.

Natural sounds at the measurement location will have contributed additional noise, as the acoustics consultant's report states: "The location of the measurements is not close to road traffic noise and was influenced by wildlife such as birds chirping."

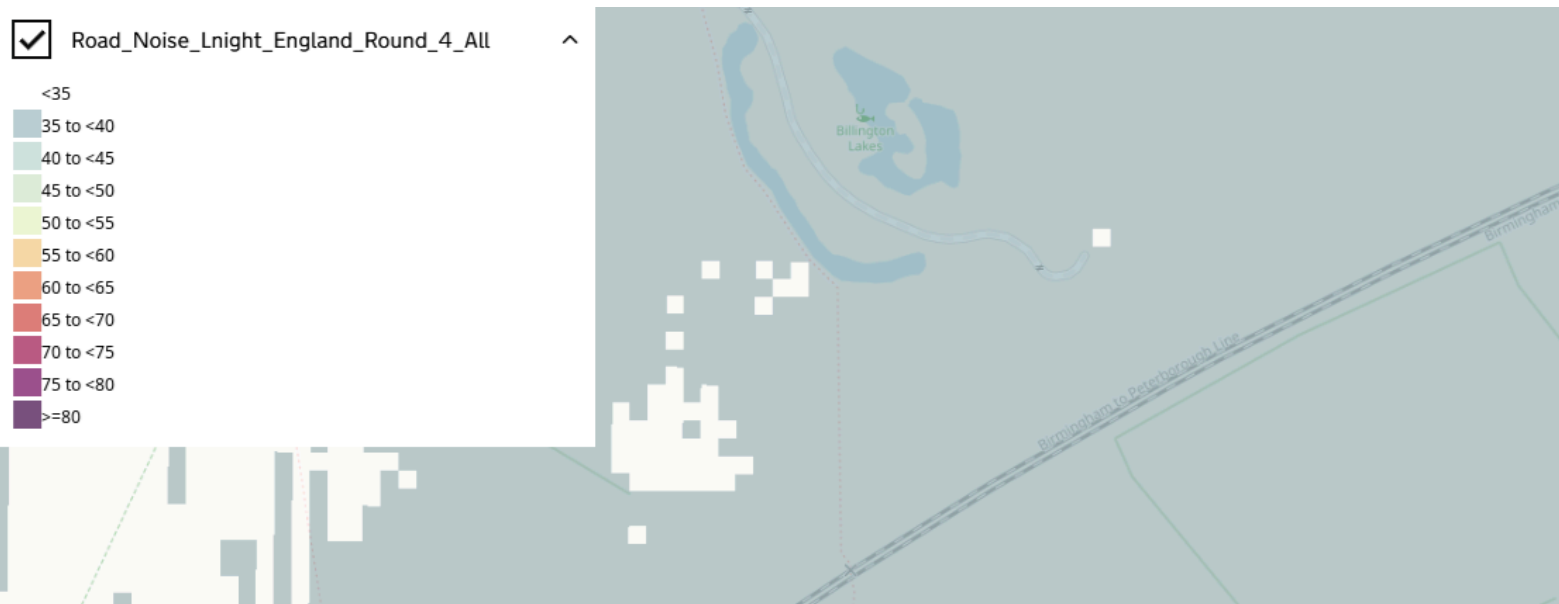
Variations in meteorological conditions and variations in rail movements could be other factors.

Meanwhile, the applicant's contour claims are off in a world of their own, at odds with both the DEFRA contours and the measurements at the location submitted at Deadline 8.

Night-time Road Noise (8 Hour LAeq)

According to the applicant's road contours, the location experiences 53 dB of night-time ambient road noise due to the distant road noise.

The DEFRA Round 4 road noise contours show the location experiencing 35 to <40 dB of night-time ambient road noise.



This is summarised in Table 4.

Table 4

Applicant's claimed night-time road noise contour at 52.557018° N, 1.321985° W (dB)	DEFRA Round 4 night-time road noise contour at 52.557018° N, 1.321985° W (dB)
53	35 to <40

The DEFRA road contours match with the 38 dB weekday night-time background sound level determined by the applicant for NMP4. The applicant's contour claim doesn't match at all.

Night-time Rail Noise (8 Hour LAeq)

According to the contours introduced by the applicant, the location experiences 50 dB of night-time ambient rail noise.

The DEFRA Round 4 rail noise contours show the location experiencing 35 to <40 dB of night-time ambient rail noise.



This is summarised in Table 5.

Table 5

Applicant's claimed night-time rail noise contour at 52.557018° N, 1.321985° W (dB)	DEFRA Round 4 night-time rail noise contour at 52.557018° N, 1.321985° W (dB)
50	35 to <40

You can see the very high ambient rail noise which would be measured ~12 metres from the railway line. The applicant's NMP4 was located ~12 metres from the railway line. That's why it measured such high ambient sound levels.

Cumulative Night-Time Road + Rail Noise (8 Hour LAeq)

Table 6 shows the combined road and rail noise levels at the location for both the applicant's contours and the DEFRA Round 4 data. The measurements submitted at Deadline 8 are also shown.

Table 6

Applicant's claimed night-time road + rail contours at 52.557018° N, 1.321985° W (dB)	DEFRA Round 4 night-time road + rail contours at 52.557018° N, 1.321985° W (dB)	Measurement of weekday night-time ambient sound submitted at Deadline 8 at 52.557018° N, 1.321985° W (dB)
54.8 (53 + 50)	38 (35 + 35) to 43 (40 + 40)	47.1

The weekday night-time measurements submitted at Deadline 8 are a touch higher than the night-time DEFRA contours.

Natural sounds at the measurement location will have contributed additional noise, as the acoustics consultant's report states: "The location of the measurements is not close to road traffic noise and was influenced by wildlife such as birds chirping."

Variations in meteorological conditions and variations in rail movements could be other factors.

Meanwhile, the applicant's claims are off in a world of their own, at odds with both the DEFRA contours and the measurements at the location submitted at Deadline 8.

Different Time Periods

Contours don't distinguish between different days of the week. Ambient sound levels are lower on Saturday night & Sunday day/night due primarily to far lower rail traffic.

The measurements submitted at Deadline 8 did not measure any of those lower time periods. Therefore, measuring over a week including during those time periods would lead to lower ambient sound levels than those submitted at Deadline 8.

I did explain this in my Deadline 8 submission. The measurements over a 24-hour period submitted at Deadline 8 are the *ceiling*, not the *floor*.

It wasn't my responsibility to procure sound measurements during a full week. That was the applicant's responsibility. The applicant chose to do it ~12 metres from the railway line, guaranteeing unrepresentative ambient sound levels.

Different Locations

The location 52.557018° N, 1.321985° W (Billington Lakes), is just one location. It was chosen because it is within the applicant's claimed contours, which the applicant applied to all NSRs associated with NMP4. Various NSRs aren't even in the applicant's claimed contours. I did explain this during the examination process.

It wasn't my responsibility to procure sound measurements in various representative locations. That was the applicant's responsibility. The applicant chose to fail to do it by measuring ambient sound levels ~12 metres from the railway line, guaranteeing unrepresentative ambient sound levels.

NSRs 1-8 & 24-26 are spread over a kilometre as the crow flies. The situation becomes even more ridiculous in other locations. I've picked two NSRs to highlight the absurdity of the applicant's position. Those NSRs are NSR 1 (Bridge Farm), NSR 2 (Bridle Path Road).

Daytime - Table 7

NSR	Applicant's NMP4 weekday daytime ambient sound measurements 12m from railway line and applied to NSR (dB)	Applicant's daytime rail noise contour claim applied to NSR (dB)	Applicant's daytime road noise contour claim due to distant road noise applied to NSR (dB)	DEFRA Round 4 daytime rail noise contour at NSR (dB)	DEFRA Round 4 daytime road noise contour due to distant road noise at NSR (dB)
1	59.2 to 60	50*	55^	Below 40	Below 40
2	59.2 to 60	50*	55^	Below 40	40 to <45

Night-time - Table 8

NSR	Applicant's NMP4 weekday night-time ambient sound measurements 12m from railway line and applied to NSR (dB)	Applicant's night-time ambient rail noise claim applied to NSR (dB)	Applicant's night-time ambient road noise claim due to distant road noise applied to NSR (dB)	DEFRA Round 4 night-time ambient rail noise contour at NSR (dB)	DEFRA Round 4 night-time ambient road noise contour due to distant road noise at NSR (dB)
1	56.2 to 60	50*	53^	Below 35	Below 35
2	56.2 to 60	50*	53^	Below 35	35 to <40

(*) means the NSR was outside the claimed rail contour yet the applicant still wrongly gave that value to the NSR.

(^) means the NSR was in a lower road noise contour within the applicant's road noise contour map yet the applicant still wrongly gave that value to the NSR.

Conclusion

The applicant made a catastrophic error by measuring ambient sound levels ~12 metres from the railway line. The Examining Authority should have intuitively understood that such a location could not be representative of NSRs, but they clearly didn't.

Rather than correct the error, the applicant instead corroborated and reinforced it with a second catastrophic error by submitting inaccurate road and rail contour claims.

The applicant's contour claims were incompatible with the layout of the area, incompatible with the mathematics of sound attenuation with distance, and incompatible with the Summary Results pages of the applicant's own NMP measurements. The applicant claimed - and still claims - there would be higher distant road noise at NSRs which would offset lower rail noise at NSRs. It was completely untrue, yet it fooled the Examining Authority.

At Deadline 8, I submitted [Sound Measurements Which Refute the Applicant's Ambient Sound Claims by William David Moore \[REP8-064\]](#). This was only necessary because the applicant wouldn't yield and there was no sign the Examining Authority could grasp the problem. The measurements, undertaken by a member of the Institute of Acoustics, provided easily understandable proof that couldn't be overlooked. The measurements proved:

1. The measurement locations of NMP4 & NMP3 were unrepresentative of ambient sound levels at NSRs.
2. The contour claims in the applicant's Noise Assessment Update Note were wrong.
3. A council waving something through is no evidence it is correct.
4. The applicant's submissions had the effect of obscuring reality and misleading participants.

The applicant should have acknowledged the proof and admitted error. The applicant has chosen not to. The applicant is still claiming ambient sound levels measured ~12 metres from the railway line are representative of NSRs, which is acoustically impossible. The defence of this irrational position despite proof to the contrary indicates an absence of objectivity and intellectual integrity. This behaviour is well past the point of being attributable to incompetence.

The DEFRA Round 4 contours refute the applicant's contour claims. Furthermore, the DEFRA contours prove NMP4's ambient sound measurements to be utterly unrepresentative of NSRs and more than confirm the measurements submitted at Deadline 8.

This invalidates the applicant's response to Deadline 8 submissions "[Applicant's response to noise measurement report at Billington Lakes](#)", which contained some highly misleading statements, and Paragraphs 3.45.1 and 3.45.2 of the applicant's response to the SoS.

It's easy for the applicant to make false or misleading statements. Disproving them is complex and time-consuming. It should never have been necessary for members of the public to commission professional noise measurements and prepare lengthy documents. I reiterate that the applicant's behaviour has been, and continues to be, absolutely appalling.

Document 2: Response to the Applicant's Submission by William David Moore

I have submitted two documents. This is the second of the two, and it should be read after Document 1.

The Applicant's Introductory Error

The [Applicant's Response to Deadline 8 Submissions](#) begins with a fundamental misdescription in the second paragraph of the document.

“1.2 The main concerns expressed by the Interested Parties are essentially around the use of ambient noise levels, or LAeq,T levels. These were used by the Applicant to provide context in relation to the operational phase noise assessment work only, and only then with respect to assessments which adopt noise measurements from Noise Measurement Position 4 (NMP4 shown on Figure 10.2 Ref 6.3.10.2), APP-271 which has been considered by the Applicant to be representative of the existing noise climate at nearby Noise Sensitive Receptors (NSRs) to the north of the rail line, most notably NSRs off Billington Road East. All other noise measurements and associated noise assessments are not in dispute.”

This is not true. NMP3's ambient sound measurements have also been used to calculate projected changes in ambient sound levels due to operational noise, specifically for NSR 19 (Burbage Common & Woods), as shown in Table 10.58 & Table 10.59 of the applicant's [noise report](#) [REP4-039].

The problem which afflicts NMP4 also afflicts NMP3. Ambient sound levels were measured in extremely close proximity to the railway line. The ambient sound levels at the measurement location aren't representative of those at the NSR, rendering all the applicant's calculated changes in ambient sound levels wrong. It's the same problem, caused by the same error, with the same inevitable outcome.

In addition, NMP3's ambient sound measurements have also been used for the tranquillity assessment of Burbage Common & Woods, including calculating projected changes in ambient sound levels, as shown in Table 10.64 of the applicant's noise report.

The error doesn't just affect one NMP, but two. The error doesn't just affect the operational noise assessments at NSRs 1-8 & 24-26, but NSR 19 too. The error doesn't just affect the operational noise assessment, but the tranquillity assessment too.

I did explain this to the applicant on page 9 of [my submission at Deadline 8](#) [REP8-064], and many other times throughout the examination process. The applicant was well aware of the issue with both NMP4 & NMP3.

The Applicant's Omission of NSRs 1 & 24

The [Applicant's Response to Deadline 8 Submissions](#) recreates a serious omission which had previously been acknowledged and corrected: some NSRs associated with NMP4 haven't been included.

The applicant's [Noise Assessment Update Note](#) [REP3-061] didn't address two NSRs associated with NMP4: NSR 1 and NSR 24. Those NSRs weren't included in Table 5 of that document. I made the applicant aware of this during the examination process. Subsequently, the applicant asserted that the baseline ambient sound levels attributed to NSRs 1 & 24 were "not being questioned", as shown on page 8 of [Applicant's Response to Deadline 4 Submissions](#) [REP5-050]:

"This is incorrect, those receptors located north of the rail line where the noise levels measured at NMP4 have been used are included within Table 5. This is with the exception of NSRs 1 and 24, where the methodology is not being questioned."

The applicant's assertion was untrue. The applicant ultimately accepted having "wrongly assumed" this, as shown on page 16 of [Applicant's response to Deadline 7 Submissions](#) [REP8-019]:

"NSRs 1 and 24 were excluded as it was wrongly assumed that the methodology at these receptors was not being questioned."

The applicant also applied the contour claims from their Noise Assessment Update Note to NSRs 1 & 24, thereby applying them to all NSRs associated with NMP4, as shown on page 19 of [Applicant's response to Deadline 6 Submissions](#) [REP7-068], reproduced (below) as Figure 1. This settled the matter.

It is assumed that this refers to the resultant noise levels at NSRs 1 and 24 which are now shown below

NSR	Daytime (0700-2300)				Night-time (2300-0700)			
	Rating Level	Ambient Level	Rating + Ambient	Increase	Rating Level	Ambient Level	Rating + Ambient	Increase
1	47	56.2	56.7	+0.5	47	54.8	55.5	+0.2
24	50	56.2	57.1	+0.9	47	54.8	55.5	+0.2

However, in the recent applicant's response to Deadline 8 submissions, NSR 1 & NSR 24 have gone missing again and aren't included in Table 1. That's because Table 1 has its origins in the Noise Assessment Update Note, which contained the omission:

Paragraph 1.17: "Table 1 below recreates Table 5 from the Applicant's Written Statement of Oral Case ISH3 – Appendix F – Noise Assessment Update Note [18.7.6, REP3-061], replacing the Applicant's ambient sound levels with those of the IPs."

The mess created by the applicant, which the applicant acknowledged and rectified to their satisfaction during the examination process, has been recreated in response to the Secretary of State's (SoS) invitation for comments. The applicant implies all NSRs not in Table 1 are associated with other NMPs and "are therefore not in dispute":

Paragraph 1.18: "...For receptors that used other NMP data, and therefore are not in dispute..."

But NSRs 1 & 24 used NMP4 data, not any other NMP. You can see proof of this in Table 10.58 and Table 10.59 of the applicant's [noise report](#) [REP4-039]. NSRs 1 & 24 have been given the same current ambient sound levels as NSRs 2-8 and 25-26. That's because they're all using data from the same NMP: NMP4.

The applicant has failed to get this basic fact right, despite the applicant's document having been written by one person, checked by a second and approved by a third.

Tables 9 & 10 (below) present the results of including NSR 24.

Friday-Saturday daytime - Table 9

NSR	Current ambient sound level submitted at Deadline 8 (dB)	Applicant's post-mitigation projected specific sound level (dB)	Cumulative ambient sound level (dB)	Increase in ambient sound level (dB)
24	47.9	50	52.1	+4.2

Weekday night-time - Table 10

NSR	Current ambient sound level submitted at Deadline 8 (dB)	Applicant's post-mitigation projected specific sound level (dB)	Cumulative ambient sound level (dB)	Increase in ambient sound level (dB)
24	47.1	47	50.1	+3

The change in the ambient sound levels isn't below 3 dB. The applicant could only make that claim because the applicant didn't include all the NSRs associated with NMP4.

These figures invalidate Paragraphs 1.19, 1.20 & 1.21 of the applicant's response to Deadline 8 submissions, which also invalidates Paragraphs 3.45.3, 3.45.4 & 3.47 of the applicant's response to the SoS.

Invalid and Transient Sensitivity Analysis

The noise reports of other rail freight interchange proposals included a +3 dB rating penalty due to “other sound characteristics” in the absence of any other rating penalty. However, the noise report for this proposal does not. Subsequently, following discussions with BDC and HBBC, the applicant undertook a sensitivity analysis which applied this +3 dB rating penalty. The sensitivity analysis was never made available to me.

I explained to the applicant that their sensitivity analysis would be worthless because it would be based on the wildly overstated ambient sound levels measured by NMP4 & NMP3. I also explained that because the sensitivity analysis wasn’t included in the noise report itself, the noise report would remain fully distorted by errors and omissions.

[Statement of Common Ground \(NRFI SoCG between the Applicant and Blaby District Council Document Reference 19.1B\) \[REP4-134\] page 40 of 92, reproduced \(below\) as Figure 2:](#)

No.	Matter of Disagreement	Position of HBBC and BDC	Position of Applicant	Reserved for Inspector’s Use
		noise will be audible to local residents and therefore, a character correction of 3dB for ‘other’ should be applied in accordance with BS 4142. Furthermore, the purpose of contextual considerations is not simply to compare impacts against the ambient level. Indeed, if this was the case then there would be no point in assessing against BS 4142. The impact from the site would be clearly distinguishable from the current environment and therefore, the Significant Adverse Impacts from the BS 4142 assessment should not be ignored.	<i>included within the following assessment’.</i> Notwithstanding the above, through discussions with BDC and HBBC, a sensitivity analysis has been undertaken where 3dB penalty for operational noise associated with the HNRFI has been applied. This sensitivity analysis concludes that with the implementation of acoustic barriers, the resultant effects at nearby NSRs are not significant.	

The sensitivity analysis is also mentioned in Paragraph 3.5.89 of the [Examining Authority’s report](#).

Predictably, the applicant has not updated the sensitivity analysis or mentioned that one was undertaken as part of the examination process.

Tables 11 & 12 (below) present the results of taking the applicant’s projected post-mitigation specific sound levels for NSR 24 and adding the +3dB penalty, as per the applicant’s sensitivity analysis.

Friday-Saturday daytime - Table 11

Noise sensitive receptor (NSR)	Current ambient sound level during Friday-Saturday daytime submitted at Deadline 8 (dB)	Applicant's post-mitigation projected specific sound level (dB)	Rating penalty due to other sound characteristics, as per applicant's sensitivity analysis (dB)	Rating level with mitigation (dB)	Cumulative ambient sound level (dB)	Increase in ambient sound level (dB)
24	47.9	50	+3	53	54.2	+6.3

A calculation using NMP4's Friday daytime figure (60 + 53) would see an increase of just 0.8 dB. Using the Saturday figure (58 + 53) would see an increase of 1.2 dB.

Weekday night-time - Table 12

Noise sensitive receptor (NSR)	Current ambient sound level during weekday night-time submitted at Deadline 8 (dB)	Applicant's post-mitigation projected specific sound level (dB)	Rating penalty due to other sound characteristics, as per the applicant's sensitivity analysis (dB)	Rating level with mitigation (dB)	Cumulative ambient sound level (dB)	Increase in ambient sound level (dB)
24	47.1	47	+3	50	51.8	+4.7

A calculation using NMP4's lowest weekday night-time figure (56.2 + 50) would see an increase of just 0.9 dB.

These problematic increases would have been obvious during the examination process (even more so during other time periods) if the applicant hadn't measured ambient sound levels ~12 metres from the railway line. The rating levels also exceed the applicant's self-selected WHO and BS 8233 thresholds.

The applicant supplied BDC & HBBC with the results of a completely worthless sensitivity analysis. The two councils don't understand they were supplied with a worthless sensitivity analysis, because they don't understand that ambient sound levels measured ~12 metres away from the railway line aren't representative of NSRs. The applicant made use of their naivety, and continues to do so.

These figures further invalidate Paragraphs 1.19, 1.20 & 1.21 of the applicant's response to Deadline 8 submissions, which also further invalidates Paragraphs 3.45.3, 3.45.4 & 3.47 of the applicant's response to the SoS.

Paragraph 1.22 is also invalidated along with Paragraphs 3.45.5 & 3.46 of the applicant's response to the SoS.

NMP3, NSR 19 & DEFRA Round 4 Road and Rail Data

As explained on page 1 of this document, the problem which afflicts NMP4 also afflicts NMP3. All the ambient sound levels measured by the applicant's NMP3 are unrepresentative because they've been measured in extremely close proximity to the railway line. This renders all the applicant's calculated changes in ambient sound levels worthless.

What is known:

NMP3 Weekday daytime background sound level determined by the applicant: 36 dB
Operational specific sound level predicted by the applicant for NSR 19: 48 dB

Weekday daytime - Table 13

NSR	Weekday background sound level (dB)	Operational specific sound level (dB)	Excess over background (dB)
19	36	48	+12

Operational rating level predicted for NSR 19, as per applicant's sensitivity analysis: 51 dB

Weekday daytime (Sensitivity Analysis) - Table 14

NSR	Weekday background sound level (dB)	Operational rating level (dB)	Excess over background (dB)
19	36	51	+15

At this point, the applicant would introduce the weekday ambient sound levels measured by NMP3 (57.4-60 dB), and claim the projected change in the ambient sound level is below 3 dB, and therefore the projected operational noise would not be perceptible.

But NMP3's ambient sound levels are not representative of the NSR location, and are worthless, so no usable ambient sound measurements are available for NSR 19 during any time period.

DEFRA Round 4 Road and Rail Noise Data

Helpfully, the DEFRA Round 4 road and rail noise data shows averaged ambient noise levels at the NSR location. I downloaded DEFRA's daytime ambient (LAeq 16 Hour) road and rail noise data as a geoTIFF and imported it to QGIS. I used QGIS to apply contours in 1 dB increments and looked at the location of NSR 19. The DEFRA data shows NSR 19's location experiencing 42 dB of daytime road noise and 44 dB of daytime rail noise.

Logarithmically adding these road and rail values leads to a road + rail ambient sound level of 46.1 dB at the NSR location. This is 11.3-13.9 dB below the weekday daytime ambient sound levels measured by NMP3.

Tables 15 & 16 (below) use the 46.1 dB DEFRA contour data to calculate the projected increase in the ambient sound level due to the projected operational specific sound level and sensitivity analysis rating level for NSR 19

Average daytime - Table 15

NSR	DEFRA Round 4 ambient sound level at NSR 19 (dB)	Operational specific sound level (dB)	Cumulative ambient sound level (dB)	Increase in ambient sound level (dB)
19	46.1 dB	48	50.2	+4.1

Average daytime (Sensitivity Analysis) - Table 16

NSR	DEFRA Round 4 ambient sound level at NSR 19 (dB)	Operational rating level (dB)	Cumulative ambient sound level (dB)	Increase in ambient sound level (dB)
19	46.1	51	52.2	+6.1

It's important to note that the DEFRA contours are averages, and in reality sound levels would differ throughout the week. For example, levels on Sunday would be lower due to lower rail traffic, leading to a current ambient sound level of approximately 43 dB for NSR 19 on Sunday, leading to greater increases than those in Tables 15 & 16.

This would have been obvious to all participants during the examination if the applicant hadn't measured ambient sound levels in extremely close proximity to the railway line, guaranteeing unrepresentative ambient sound levels.

Tranquillity Assessment of Burbage Common & Woods

Current Conditions

The tranquillity assessment location used is the same location as NSR 19.

Weekday daytime ambient sound range measured by NMP3: 57.4-60 dB

Weekend daytime ambient sound range measured by NMP3: 51.8-56 dB

The NMP3 data used indicates the tranquillity assessment location is already above the upper 55 dB WHO threshold during every weekday and Saturday, but it isn't. The DEFRA data shows 46.1 dB on an average day at the assessment location, well below the lower WHO threshold of 50 dB.

Ambient sound levels measured by NMP3 were lower on Sunday due to fewer passing trains, but still above the lower WHO threshold of 50 dB. Due to the lower rail noise, my estimate is more like 43 dB at the assessment location on Sunday, as rail noise is lower due to reduced train movements.

Calculating the Impact of Projected Noise

The projected post-mitigation additional noise due to the projected development (new road and operational noise) is 55 dB, as shown in Table 10.64 of the applicant's noise report. The operational noise component of the projected noise does not include a +3dB penalty due to other sound characteristics, as a sensitivity analysis would.

Table 17 uses DEFRA's Round 4 data to calculate the projected change in ambient sound levels. Table 18 uses my estimated Sunday level, accounting for lower rail activity.

Average daytime - Table 17

DEFRA Round 4 road + rail ambient sound level at assessment location (dB)	Additional noise from proposed development (dB)	Cumulative ambient noise level (dB)	Increase in ambient sound level (dB)
46.1	55	55.5	+9.4

Sunday daytime - Table 18

Estimated Sunday ambient sound level at assessment location (dB)	Additional noise from proposed development (dB)	Cumulative ambient noise level (dB)	Increase in ambient sound level (dB)
43	55	55.3	+12.3

The addition of the projected road and operational noise of 55 dB would take the location from well below the lower 50 dB WHO threshold to above the upper 55 dB threshold during

an average daytime, leading to an ambient sound level increase of +9.4 versus the current DEFRA data, and an estimated +12.3 dB increase on Sunday.

This would have been obvious to all participants during the examination if the applicant hadn't measured ambient sound levels in extremely close proximity to the railway line, guaranteeing unrepresentative ambient sound levels.

Mischaracterisation by the Applicant

The applicant has used the sound levels measured by NMP3 to claim the 55 dB of projected road and operational noise would "not be out of character":

"10.270. It is also worth noting that a review of the noise model indicates that the proposed noise levels are dominated by road traffic on the proposed link road. As the site is already surrounded by busy roads, and the background noise levels are characterised by road traffic, it is considered that the resultant noise levels will not be out of character."

This is wrong for three reasons:

1. The applicant determined the background level measured by NMP3 to be 36 dB during the weekday daytime and 38 dB during the weekend daytime. This is 17-19 dB below the projected ambient noise level of 55 dB, dominated by the proposed road. This contradicts the applicant's claim that the projected noise levels "will not be out of character." The proposed noise would be perceived as 3-4 times as loud as the current background sound level.
2. The ambient sound levels measured by NMP3 aren't representative of the assessment location, and are wildly overstated.
3. The ambient sound levels measured by NMP3 were caused by extremely close proximity train pass bys, not by distant road noise. The DEFRA Round 4 road noise data shows the assessment location experiencing approximately 42 dB of daytime ambient road noise. The DEFRA road noise contour aligns with the background sound levels determined by the applicant. That means a 13 dB gap (55-42) between the DEFRA current ambient road noise value and the applicant's projected new ambient noise of 55 dB dominated by the proposed road.

The Applicant's Stated Post-Mitigation Specific Sound Levels Don't Include The Gantry Cranes

The applicant removed the gantry cranes before presenting the post-mitigation specific sound levels, see Paragraph 10.283 of the applicant's noise report [REP4-039], reproduced (below) as Figure 3:

10.283. Due to the height of the gantry cranes, a barrier of significant height would be required to remove line of sight to the nearest NSRs. Therefore, consideration has been given to plant selection and noise control options further in this section, to control the noise at source. Considering this, the noise associated with the gantry cranes and associated character correction have been removed from the following assessment.

The applicant then presented the post-mitigation specific sound levels excluding the gantry cranes and calculated projected changes vs current background and ambient sound levels.

Subsequently, a 10 dB mitigation was applied to the gantry crane engines and exhausts, and the mitigated gantry cranes were reincluded. However, the applicant did not provide the resulting specific sound levels including the mitigated gantry cranes.

Instead, the applicant presented calculations in Paragraph 10.311 without showing any workings. These calculations indicated a larger projected increase in ambient sound levels for NSR 24 than previously shown, as expected given the reinclusion of the gantry cranes. The +2.5 dB projected increase for NSR 24 is higher than in any of the applicant's earlier Tables.

However, these calculations utilised the ambient sound levels measured by NMP4 and NMP3, rendering the calculations worthless.

This is shown in Paragraph 10.311, reproduced (below) as Figure 4:

10.311. A 10dB reduction has been applied to each of the crane engines and crane exhausts. With all sources operating and the proposed boundary mitigation in place, the results indicate that the predicted increase in noise levels at all of the NSRs remain unchanged (less than 1dB). The largest increase in the overall level is at NSR 24, where a 2.5dB increase is predicted, however it is considered that this is unlikely to be perceptible. Therefore, the residual effect is likely to remain at permanent, minor adverse for all receptors.

Crucially, the post-mitigation specific sound levels with the gantry cranes included are never shown.

I repeatedly explained this problem to the applicant during the examination but the applicant's responses referred me back to Paragraph 10.311, which, rather than resolving the matter, is actually evidence of the problem. Once it's understood that the current ambient sound levels used by the applicant are wrong, Paragraph 10.311 becomes defunct.

During the examination, the applicant also attempted a second response, a version of which they have repeated in their post-examination submission:

“There is a point querying whether the post mitigation specific sound level for NSR 19 due to operational noise includes gantry cranes. Table 10.64 of Chapter 10 Noise and Vibration 6.1.10A, rep-039 Revision 08 includes noise associated with gantry cranes. Paragraph

10.341 states, “It is also worth noting that the above assessment has included cranes with the higher noise level to consider a worse case scenario.”

Table 10.64 and Paragraph 10.341 (10.340 in the updated Jan 2024 noise report) refer to the tranquillity assessment, which does include the gantry cranes. The tranquillity assessment is a separate analysis and is not the operational noise assessment for NSRs 1-8, 19 & 24-26. The applicant’s post-examination submission - once again - wrongly conflates the two.

Disappointingly, the Examining Authority appear to have accepted the applicant’s error without question, as shown in Paragraphs 3.5.90. and Paragraphs 3.5.91. of the [Examining Authority’s report](#):

“3.5.90. Mr Moore [REP6-043] asserts that the post-mitigation specific sound levels listed in the Applicant’s Tables 10.55 to 10.60 to ES Chapter 10 [REP4-039] do not include noise associated with the gantry cranes.

3.5.91. The Applicant draws attention to its tranquillity assessment which has been undertaken for Burbage Common Woods. This is detailed in paragraphs 10.337 to 10.340 of ES Chapter 10 [REP4-039]. This assessment includes noise from the gantry cranes with the higher noise level (that prior to a 10dB reduction that may be applied as a result of mitigation to this equipment).”

The Examining Authority appear not to have appreciated the difference between the operational noise assessment for NSRs 1-8, 19 & 24-26 in Tables 10.55 to 10.60 and the tranquillity assessment for Burbage Common Woods, Aston Firs and Freehold Woods. As I explained earlier, the two are both separate and different e.g. the tranquillity assessment also includes road noise. It isn’t the operational noise assessment. The applicant’s response doesn’t address the problem at all.

Because the applicant has only provided post-mitigation operational specific sound levels without the gantry cranes, I was obliged to use those figures throughout the examination. I’m still obliged to use them in this document. Consequently, the rating levels and predicted ambient sound level increases in Tables 9-16 (above), which relate to the operational noise assessment, are subject to upward revision to account for the missing noise from the currently unincluded gantry cranes.

Conclusion and the Examining Authority's Report

Establishing accurate baseline conditions was extremely important. The applicant's failure to do so was nothing short of catastrophic. The measurements submitted at Deadline 8 provided proof of that; the DEFRA Round 4 data more than confirms the proof. The applicant spent six months denying the problem, and the denial continues even after the examination.

During the examination, I had to try to work backwards from applicant documents which I knew were catastrophically flawed, which was an absurd position to be in. The two councils and the Examining Authority were in a privileged position to engage with and scrutinise the applicant. They were working with the same documents, but they did so obliviously, on an entirely flawed premise. The two councils still don't understand they spent six months looking at nonsense. The applicant misled them into a false reality.

How can a noise assessment be meaningfully scrutinised when average baseline ambient sound levels are overstated by ~15 dB, or more, depending on the location?

The knowledge to understand the error and see through the applicant's flimsy justifications just wasn't there. The inability of the councils and Examining Authority to understand the error despite written submissions and explanations at hearings was disturbing.

How can a noise assessment be intelligently scrutinised by people who lacked the rudiments to understand a catastrophic error in plain sight?

Participants should have been able to trust the statements made by the applicant, but trust in their submissions was gravely misplaced. The applicant made statements on other topics which were variously wrong, misleading, biased or obtuse. Yet the Examining Authority again assumed they were true and satisfactorily addressed matters, even though they didn't.

To avoid being procedurally unfair to the applicant, the Examining Authority's report did not take into account the measurements submitted at Deadline 8. That has consequences:

1. The Examining Authority's report was written as if the baseline ambient sound levels in the applicant's noise report are accurate, even though they aren't. This has other knock-on effects not discussed in this document e.g. the expunging of NMP4's Saturday night-time ambient sound measurements, the only ones not ruined by trains passing ~12 metres away from the NMP.
2. Implicit trust in the judgement and reliability of the applicant's submissions would have become untenable after knowing the applicant spent the examination period doggedly defending a catastrophic error. It would become impossible to take the applicant's statements as authoritative declarations, as the Examining Authority's report clearly did.
3. Knowing they had been successfully misled for six months about something so basic could have made the Examining Authority aware of a lack of understanding of the topic and the intricacies of the applicant's submissions. Both on their own part, and the part of the two councils.

How can the submissions of an applicant who behaves in this way be trusted?