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Date: August 2023

Denbighshire County Council

Noise and Vibration Assessment 2nd Critical Technical Appraisal – Application No. 01/2022/0523

Proposed Extension to Winning and Working of Limestone, importation of Inert Waste and Restoration to Amenity Land at Graig Quarry, Graig Road, Denbigh.

Introduction

Following Enzygo's critical appraisal of the noise and vibration assessment undertaken by Pleydell Smithyman Limited referenced M18.155.R.007 dated February 2022, an new, additional, noise assessment has been submitted to Denbighshire County Council in response to the points raised.

The new noise assessment was undertaken by SLR Consulting Limited. Our appraisal of this report is set out below.

Critical Appraisal of the SLR Noise Assessment

This critical appraisal has been undertaken of the noise assessment contained in report undertaken by SLR Consulting Limited referenced 403.064944.00001 dated 2nd August 2023. Our comments related to areas of the assessment which we feel are inadequate or consider further information is required. This is done on a paragraph-by-paragraph basis.

General comments

The introduction indicates that the assessment is a chapter although it is written as a standalone report rather than a chapter in a larger document.

The report makes inconsistent use of the term's 'sound' and 'noise' throughout.

Paragraph-by-paragraph Comments

1.39 *"...For the purposes of this assessment, Phase 1 is considered to represent temporary operations as this phase will include soil stripping and bund construction."*

Phase 1 is assessed against the criteria for normal operations within the report. This is inconsistent with the scenarios detailed in Table 1.7 which indicates Phase 1 will include mineral extraction and is a separate scenario to the 'Temporary Operations' category.

1.45 *"It is understood there are currently 369 return trips undertaken by the dumper for current operations within a monthly period, which would increase to 479 with the proposed extension. Therefore, there will be an additional 110 movements associated with the extension per month."*

The increase from 369 return trips to 479 is an additional 110 **return** trips or 220 additional movements. Therefore, 5 movements per hour is the norm rather than a robust, worst-case scenario.

1.48 *"...Figure 1.3 illustratively shows predicted noise levels at the closest receptors associated with the worst-case Phase along with the plant locations as confirmed with the operator."*

Figure 1.3 does not identify the closest receptors, nor does it show the predicted noise levels at those receptors. The contour plots used show the area where noise levels are below 55dB (the maximum limit for normal operations specified in MTAN1) which is largely irrelevant as noise levels at all receptors are predicted to be below this level.

The figure should show receptor points and the relevant predicted noise level indicated in a dialogue box.

1.54 *"It can be seen from Table 1.10 that:*

- *Reasonable mitigation has been adopted by the mineral operator, in the scheme of perimeter earth bunding along the southern boundary of the extended area."*

Table 1.10 does not mention mitigation measures. In addition, the table shows the predicted noise levels at the receptors across the five phases of the extension and shows an exceedance of 1.3dB at Bryn Neffyd during Phase 1. Bryn Neffyd is located to the west of the extension and therefore any perimeter earth bunding along the southern boundary would not be 'reasonable mitigation' of noise levels to the west.

Table 1.12 indicates that the authors do not deem mitigation measures are required for any receptor. As such, the statement that 'reasonable mitigation has been adopted' seems at odds with the authors conclusions.

1.56 The paragraph appears to omit a word. In addition, the paragraph appears to infer a 'Minor' impact does not warrant mitigation though does not rationalise this conclusion in this or any preceding paragraphs.

1.59 This paragraph argues that an exceedance of the noise limit derived in accordance with the MTAN1 guidance is irrelevant.

1.61 *"...Figure 1.4 illustratively shows predicted noise levels at the closest receptors associated with the worst-case Phase along with the plant locations as confirmed with the operator."*

Figure 1.4 does not identify the closest receptors, nor does it show the predicted noise levels at those receptors. The contour plots used show the area where noise levels are below 55dB (the maximum limit for normal operations specified in MTAN1) which is largely irrelevant as noise levels at all receptors are predicted to be below this level.

The figure should show receptor points and the relevant predicted noise level indicated in a dialogue box.

1.65 *"It can be seen from Table 1.14 that:*

- *Reasonable mitigation has been adopted by the mineral operator, in the scheme of perimeter earth bunding along the southern boundary of the extended area."*

Table 1.14 does not mention mitigation measures. In addition, the table shows the predicted noise levels at the receptors across the five phases of the extension and shows an exceedance of 1.3dB at Bryn Neffyd during Phase 1. Bryn Neffyd is located to the west of the extension and therefore any perimeter earth bunding along the southern boundary would not be 'reasonable mitigation' of noise levels to the west.

Again, Table 1.12 indicates that the authors do not deem mitigation measures are required for any receptor. As such, the statement that ‘reasonable mitigation has been adopted’ seems at odds with the authors conclusions.

1.73 It may be more appropriate to label the ‘mitigation measures’ as Best Practical Mean in accordance with BS5228.

1.78 *“Noise levels at Bryn Neffyd are predicted to be marginally exceeded during the start of Phase 1 but will be met during all remaining phases. However, this exceedance is not considered significant for the following reasons:*

- *The noise limit is based upon the worst-case weekend background noise level, and it is unlikely that operations would take place during this period.”*

The noise limit is based on the **median** background noise level and not the worst-case, which would be the lowest measured background noise level.

As the measured data is produced graphically rather than being tabulated, the background noise levels used within the assessment cannot be verified.

1.80 *“The noise assessment has been based on a baseline sound survey undertaken over midweek and weekend periods at locations considered representative of the nearest noise-sensitive receptors to the development site.”*

The assessment is based on the baseline sound survey measurements for the weekend only with the midweek data excluded; except at Location 6 where weekend measurements were not undertaken. (As per paragraph 1.34).

1.88 The paragraph appears to omit a word.

General Comments

The introduction indicates that the assessment is a chapter for an Environmental Statement although it is written as a standalone report rather than a chapter for a larger document.

The tabulated noise/sound survey data has not been provided therefore no independent analysis of the measured data set can be undertaken. This is pertinent for factors such as the derivation of the ‘median’ measured noise level and resultant noise limits.

Similarly, the noise model files have not been provided therefore no verification of the calculated noise values can be undertaken. This is relevant in the noise model predictions and how the calculations have addressed screening given the use of soft ground in the model. We note Paragraph F2.2.2.2 of BS5228 which states:

‘It is not usually advisable to combine the effects of screening and soft ground attenuation. Take either the attenuation from screening and hard ground propagation, or the attenuation of soft ground, whichever is greater.’

This is particularly relevant as a degree of screening appears to be assumed from earth bunds, etc.

In both instances, it is assumed an appropriate degree of professional diligence has been observed.

The requirement for mitigation measures appears confused throughout the document. In Tables 1.11, 1.12, 1.15 and 1.16, paragraphs 1.53, 1.56, 1.64, 1.67 and 1.72 appear to conclude that no mitigation is necessary. However, the description of the noise model scenario for phase 1 (Table 1.7) and paragraphs 1.54, 1.65 and 1.75 appear to assume mitigation is required. It may have been more appropriate to identify some of the mitigation measures as 'inherent mitigation' and/or best practical means.

The report makes inconsistent use of the term's 'sound', 'noise' and 'acoustic' throughout.

Table 1.5, Summary of Measured Baseline Sound Levels, quotes the background sound level, L_{A90} , as a 15-minute median value, i.e., the middle value of measured levels when ordered smallest to largest. I would have expected this to be the arithmetic average 1-hour background level for such an assessment. The average cannot be determined as the report shows background noise levels graphically rather than as a tabulated dataset.

Conclusion

Despite the comments made above, the assessment methodology is accepted. As ambient noise levels at Location 1, Bryn Neffyd, are significantly higher than those predicted, the conclusions of the new, additional assessment are also accepted. However, this is subject to the implementation of best practice noise control measures at the site throughout its working life.

It is suggested that a planning condition requiring day to day, normal operations, meet the guidance value of 10dB above the prevailing background noise levels, subject to a maximum limit of 55dB(A) $L_{Aeq,1hr}$, at all receptors is included in any planning consent.

It is also suggested that periodic noise monitoring is undertaken to ensure that the permitted limits above are met.

We trust that the above is clear. If you have any queries or comments, please do not hesitate to contact me on **0114 321 5151** or **07496 950010**.

Yours sincerely,



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Director of Acoustics