



Unit 8 Nimrod
De Havilland Way
Witney
OX29 0YG
United Kingdom
Tel: (44) 1608 810110

Our ref: DS/JB/ZPKNEAQ/23XXXX
Contact: John Bruce
Tel: + 44 (0) 1608810110

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Technical note re: review of Air Quality Impact Assessment for Land off Bourbles Lane, Preesall, Lancashire (planning reference LCC/2023/0030) for Preesall and Knott End against the Quarry Group

Background

1. DustScanAQ provides dust and air quality measurement and consulting services to mineral and waste site operators throughout the UK and abroad.
2. DustScanAQ consultants have prepared numerous Dust and Air Quality Assessment for proposed mineral sites throughout the UK to assess the potential impact of the planned minerals development on receptors nearby with specific regard to dust and air quality emissions.
3. Such assessments typically follow industry standard best practice guidance produced by the Institute of Air Quality Management (IAQM). It is considered the authoritative protocol for use in assessments such as these.

Proposed development

4. It is understood that the proposed development on land off Bourbles Lane would serve to extract approximately 460,000 tonnes of sand and gravel over a four to five year period.
5. Mineral extraction would be undertaken over five phases with progressive restoration and mineral processing undertaken in a site area at Phase A.
6. HGV movements from the site would be up to approximately 74 per day.

Overview of the Air Quality Impact Assessment

7. An Air Quality Impact Assessment for the proposed site has been prepared by Vibrock entitled "*Air Quality Assessment – Proposed Mineral Extraction and Restoration*".
8. Section 2 of the assessment states that it is undertaken in accordance with the National Planning Policy Framework (NPPF) 2021 and its supporting document, the Planning Practice Guidance 2014. It also references other appropriate national and local guidance, including the aforementioned IAQM's "*Guidance on the Assessment of Mineral Dust Impacts for Planning*".
9. The assessment goes on to assess baseline conditions in Section 3, including site based sticky pad dust monitoring undertaken in 2022.
10. The assessment goes on to consider the potential sources of dust emissions in Section 4, including site preparation and restoration, mineral extraction, processing and handling, on and off-site transportation, and wind erosion from stockpiles and exposed surfaces. Residual source emissions are categorised as Small or Medium for all sources.

11. Section 5 sets out the assessment methodology and results and uses the IAQM guidance. It begins by setting out the distance categorisation and potential for dust-laden winds for groups of receptors, and then calculates the resulting pathway effectiveness. It then uses the highest Residual Source Emission value (i.e. Medium) to calculate the highest possible Magnitude of Dust Effect for each receptor group. Five receptors are predicted to receive up to 'Moderate Adverse Effects' and 7 receptor group are predicted to receive up to 'Slight Adverse Effects'.
12. Section 6 sets out an assessment of human health effects. As predicted background concentrations are low, no impacts are predicted with regard to PM₁₀, PM_{2.5} or Respirable Crystalline Silica (RCS). Whilst the impact on PM_{2.5} has been assessed, it has not been assessed against the legislation in force at the date of the assessment, which is the Environmental Targets (Fine Particulate Matter) (England) Regulations 2023, which have a significantly lower target value than the one used.
13. Section 7 provides a scoping assessment of HGV impacts; essentially, as HGV flows will be less than 100 per day and the site is not inside or adjacent to an Air Quality Management Area (AQMA), a detailed modelling assessment is not required.
14. Section 8 sets out proposed dust management and mitigation measures. It suggests that the 'Magnitude of Dust Effects' at all receptor groups will be reduced to Negligible with the given mitigation measures in place. Further mitigation measures are also outlined in Appendix 3.
15. As there are no nearby activities, Section 9 suggests that cumulative impacts will be negligible. Conclusions are summarised in Section 10 which states "*it has been demonstrated that the occurrence of potential dust events will be limited, of short duration and will be minimised by implementation of the dust control recommendations*".

Comments on the DAQA

16. This section presents comments on the Dust and Air Quality Impact Assessment. Suggested comments on the report are determined based on best available techniques and drawn from the experience of the author. Table A.1 in Appendix A gives further details on these comments, with reference to relevant guidance and policy.
17. The key points to consider are:
 - The assessment as it stands follows the IAQM Minerals guidance up until Section 8, where it deviates in reassessing the Magnitude of Dust Effect for each receptor group "with mitigation measures in place", reducing the magnitude at all receptors down to Negligible. This reassessment is not justified or adequately explained in the text and has a major impact on the results and conclusions of the assessment.
 - Some residential locations are not considered or are grouped within larger receptor groups;
 - PM_{2.5} is not assessed against the appropriate target value.
 - Current best practice involves the dispersion modelling of PM_{2.5} and RCS to assess impacts quantitatively at receptor locations (see here for example planning application in Leicestershire 2023/EIA/0096/LCC: <https://leicestershire.planning-register.co.uk/Planning/Display?applicationNumber=2023%2FEIA%2F0096%2FLCC>)
 - No assessment is presented of the health risk from emissions of Respirable Crystalline Silica. The risk was given as a reason for refusal by the inspector for the Bengoe sand and gravel planning inquiry (see planning appeal reference APP/M1900/W/17/3178839); and
 - The conclusions of the report too easily disregard any potential impacts.

Conclusions

18. DustScanAQ has reviewed the Dust and Air Quality Impact Assessment and presented comments and recommendations for consideration. Comments have been made with reference to relevant national guidance and from the experience of the author. The IAQM recognises that the minerals dust assessment guidance last revised in 2016 requires up-dating to take into account of changes in legislation and best practice.
19. It is suggested that the comments outlined in this report should be addressed before the local planning authority determine the planning application. Failure by the local planning authority to exercise due diligence in evaluating the evidence appropriately before arriving at a planning determination renders the authority vulnerable to a judicial review by any party with a legitimate interest in the decision; a judicial review could reverse any decision made by the local planning authority.



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Appendix A

Table A.1: Comments on report

Subject	Relevant Section of Report	Relevant Guidance	Comments
Impact assessment	Section 5 and 6	IAQM's "Guidance on the Assessment of Mineral Dust Impacts for Planning"	<p>The author appropriately uses the IAQM guidance in Section 6. However, in Section 8, it deviates significantly from the guidance in reassessing the Magnitude of Dust Effect for each receptor group "with mitigation measures in place".</p> <p>The IAQM guidance is based on an assessment of 'Residual Source Emissions', which, as the name implies, are designed to assess emissions <u>after designed-in mitigation measures</u> have been taken into account (see Section 5.1 of the guidance which also highlights this point). It is therefore not appropriate to state that the emissions are Medium, resulting in Moderate Adverse Impacts, then later re-evaluate impacts inappropriately.</p> <p>For example, if dust emissions after significant additional mitigations were accounted for were reduced from Medium to Small, the resultant Magnitude of Dust Effect would reduce from Moderate Adverse to Slight Adverse, and not to Negligible.</p> <p>Reducing the magnitude at all receptors down to Negligible is therefore inappropriate. This reassessment is not justified or adequately explained in the text.</p>
PM _{2.5} assessment		Environmental Targets (Fine Particulate Matter) (England)	<p>Whilst the impact on PM_{2.5} has been assessed, it has not been assessed against the legislation in force at the date of the assessment, which is the Environmental Targets (Fine Particulate Matter) (England) Regulations 2023, which have a significantly lower target value (10 µg/m³) than the one used (20 µg/m³).</p>

Subject	Relevant Section of Report	Relevant Guidance	Comments
		Regulations 2023	
Missing residential receptors	Section 6	IAQM's "Guidance on the Assessment of Mineral Dust Impacts for Planning"	Residential properties near to the site are grouped into a number of receptor locations. Within this grouping it appears that some residential locations have been missed. It is best practice to obtain a comprehensive list of residential properties from Post Office AddressBase data.
Respirable Crystalline Silica (RCS)	n/a	General best practice	<p>No quantitative assessment is presented of the potential health risk from emissions of Respirable Crystalline Silica (RCS) at the site.</p> <p>This risk was given as a reason for refusal by the inspector for the Bengeo sand and gravel planning inquiry (see planning appeal reference APP/M1900/W/17/3178839).</p>
Conditions - Dust monitoring and mitigation measures		General best practice	<p>It is recommended that a condition is implemented where no development is commenced until an appropriate Dust Management and Monitoring Plan is prepared and approved by the local planning authority.</p> <p>Proposals for dust monitoring should include what monitoring would be undertaken during site operations. We would recommend that PM₁₀/PM_{2.5} monitoring, disamenity dust monitoring and monitoring of RCS concentrations in the community are all undertaken if permission for the site is granted, due to the close proximity of the site to residential receptors.</p>
Conclusions	Executive Summary and Conclusion	n/a	The conclusions presented are not substantiated by the evidence presented in the assessment and rely on the inappropriate use of the guidance outlined above.