



Noise Monitoring Scheme

**Bersham Colliery,
Wrexham**

**BERSHAM (GLENSIDE)
LIMITED**

**R23.12053/1/SE
Date of Report: 29 November 2023**

REPORT DETAILS

Client	Bersham (Glenside) Limited
Report Title	Noise Monitoring Scheme
Site Address	Bersham Colliery, Wrexham
Project No.	R23.12053/1/SE
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QUALITY ASSURANCE

Issue No.	Issue Date	Author	Review
1	29/11/23		
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1.0 INTRODUCTION

- 1.1 Vibrock Limited were commissioned to prepare a noise monitoring scheme to address the requirements of Planning Condition 14 of permission ref. P/2015/0337 for the reclamation of spoil at Bersham Bank Colliery Tip in Wrexham.
- 1.2 The scheme is to be submitted to the Mineral Planning Authority (Wrexham County Borough Council) for approval prior to any monitoring being undertaken.
- 1.3 The aims of the Noise Monitoring Scheme are:
 - to help prevent noise pollution and minimise disturbance and annoyance to residents;
 - to demonstrate good practice and that all appropriate measures are taken to prevent or, where that is not practicable, to reduce noise emissions from the operations;
 - to consolidate any noise issues on the site to assist the Operator in complying with Planning and/or Permit conditions;
 - to assist the Regulator in enforcement and complaint responses.

2.0 NOISE LIMITS

- 2.1 Noise emission levels from the quarry site are limited by the following condition (Planning ref. P/2015/0337):

Condition 13:

During normal operations the level of noise emitted from the site shall not exceed 55 dB(A) Leq (1 hour) as measured at any noise sensitive receptor outside the site. Noise in excess of this limit, up to a limit of 70 dB(A) Leq (1 hour) may be emitted for up to 8 weeks in any year in connection with short-term activities such as the construction of screening mounds, temporary haul roads, and permanent landforms. The minerals Planning Authority shall be notified in advance of such periods.

3.0 MONITORING METHODOLOGY

3.1 Survey Periods

3.1.1 Monitoring shall be undertaken during a daytime period when the site is operating normally avoiding.

- staff lunch/break times;
- periods of plant maintenance or breakdown;
- public, bank and school holidays; and
- periods of peak road traffic on the local road network.

3.2 Monitoring Locations

3.2.1 Monitoring shall be conducted at 3 locations representing the closest noise sensitive premises as identified on Figure 1.

3.2.2 The exact location of the monitoring position will be decided prior to or during the survey visit depending on access and agreement with land owners/local residents.

3.2.3 Monitoring will be undertaken either directly at the premises within an external amenity area, such as a private garden, or at an alternative location where the acoustic environment (including any contributions from the site) is considered to be similar.

3.2.4 Where possible, the selected monitoring locations should be accessible from public roads and footpaths and should also be available to the site operator as well as local authority officers.

3.2.5 In any event, full details of the selected monitoring locations will be included within the noise monitoring report.

3.3 Measurement Positions

3.3.1 Monitoring shall be undertaken in 'free-field' conditions, with the microphone placed at a height of between 1.2 - 1.5 metres above the ground and at least 3.5 metres away from other reflecting surfaces.

3.3.2 If, for any reason, free-field measurements are not possible then details of the measurement position, height and the distance from any reflecting structure other than the ground shall be reported.

3.4 Measurement Parameters

- 3.4.1 The equivalent continuous A-weighted sound pressure level ($L_{Aeq,T}$) shall be measured at each monitoring location over a minimum period of 1 hour or calculated from a number of shorter contiguous or disaggregated measurements (e.g. $4 \times L_{Aeq,15min}$ or $2 \times L_{Aeq,30min}$) via logarithmic averaging.
- 3.4.2 Sound levels shall be measured using a 'fast' time weighting.

3.5 Sources of Interference

- 3.5.1 Precautions shall be taken to minimise the influence on the sound level readings from sources of interference such as temperature, wind, rain and electrical interference.
- 3.5.2 Monitoring shall be avoided during heavy precipitation, when temperatures are below 3°C, and when wind speeds are greater than 5 ms⁻¹.
- 3.5.3 All sound level meters shall be fitted with an effective windshield to minimise turbulence at the microphone.
- 3.5.4 Meteorological conditions prevailing during the monitoring shall be recorded and reported.

3.6 Extraneous Noise

- 3.6.1 There is potential for extraneous noise, for example, from transportation sources, agricultural activities or birdsong, to make a significant contribution to the measured levels at the monitoring location.
- 3.6.2 Where extraneous sound sources dominate the acoustic environment and quarry operations are not audible, this should be stated clearly within the report.
- 3.6.3 Where the ambient noise level is above the relevant noise limit and where site noise is audible but sound levels are also considered to be influenced by extraneous sources, the site noise level shall be evaluated accordingly. The method for determining the site noise level shall be reported along with the reasons for using it.

3.7 Observations

- 3.7.1 During the survey, detailed observations of the acoustic environment including the identification of any dominant sound sources will be recorded and reported.
- 3.7.2 Full details of the activities taking place at the quarry site during the monitoring periods will also be recorded and reported.

4.0 INSTRUMENTATION

4.1 Specification

- 4.1.1 Instrumentation should preferably conform to Class/Type 1, but at least of Class/Type 2 as specified in either BS EN 61672-1:2013, BS 7580-1:1992 or BS 7580-2:1997.
- 4.1.2 Sound calibrators should preferably be Class/Type 1 and conform to BS EN 60942:2018.

4.2 Verification

- 4.2.1 Sound level meters and field calibrators shall have had their conformity and calibration checked periodically in accordance with manufacturer recommendations or relevant standards.

4.3 Field Calibration Checks

- 4.3.1 With the equipment set up in the configuration used during measurement, field calibration checks shall be performed immediately before and after the survey period using a sound calibrator.
- 4.3.2 Any significant drift in the calibration value observed between the initial and final checks will be recorded and reported.

5.0 REPORTING

5.1 Frequency

- 5.1.1 Noise monitoring shall be undertaken at 6 monthly intervals.
- 5.1.2 As per the requirements of Condition 14, the Mineral Planning Authority shall be advised 14 days in advance of noise monitoring being carried out.
- 5.1.3 Noise monitoring reports shall be submitted to the Mineral Planning Authority within 4 weeks of the completion of the monitoring.

5.2 Exceedance of Noise Limits

- 5.2.1 The results of the survey will be evaluated against the following noise limits as stipulated by Condition 13:
 - Normal Operations – 55 dB LAeq(1 hour) (free field)
 - Short-term Activities (e.g. construction of screening mounds, temporary haul roads, and permanent landforms) – 70 dB LAeq (1 hour) (free field) up to 8 weeks in any year
- 5.2.2 Where sound emissions from site activities are considered to have been the cause of a noise level above the specified limit, the site manager shall be notified and a review will be undertaken by the operator to determine the cause of the exceedance. The activities causing the breach of the noise limit shall be ceased until steps to attenuate the noise have been implemented.

6.0 REVIEW

- 6.1 The Noise Monitoring Scheme will be reviewed and updated, as appropriate, in consultation with the Mineral Planning Authority.
- 6.2 In particular, the scheme should be reviewed:
- following the receipt of any complaints relating to noise;
 - following the addition of new plant or modification to existing plant; or
 - when a new noise-sensitive receptor is introduced in the vicinity of the site.
- 6.3 During a review, particular reference shall be made to the following:
- the results of previous compliance monitoring;
 - monitoring frequency;
 - measurement locations;
 - noise complaint record;
 - the range of noise mitigation measures deployed; and
 - the general progress of site works.
- 6.4 Where any amendments are made to the scheme as a result of the periodic review, the scheme document will be updated and submitted to the Mineral Planning Authority for approval.

7.0 COMPLAINTS

- 7.1 It is the duty of all members of staff to receive and record complaints, which will be processed by the Site Manager.
- 7.2 The Operator will maintain a record of all complaints received. An example noise complaint recording form is provided in Figure 2. The complaints log will be made available to the Mineral Planning Authority for inspection upon request.
- 7.3 All complaints will be investigated to identify the likely source of the noise. If it is established that the operator could be the source of the noise, further investigation will be undertaken to determine the scale of impact. This may include carrying out monitoring of noise levels to determine compliance against noise limits outlined in the site's planning consent.
- 7.4 Should clear impacts of noise from site operations be identified then, if practicable, the operator will implement suitable noise control measures in consultation with the Mineral Planning Authority.
- 7.5 During any investigation and subsequent remedial action, the complainant will be kept updated of progress.

8.0 REFERENCES

1. ANC Guidelines: Environmental Sound Measurement Guide. 2021.
2. BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound, British Standards Institution 2019.
3. BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites. Part 1: Noise.
4. BS EN 60942:2018 Electroacoustics – Sound calibrators.
5. BS EN 61672-1:2013 Electroacoustics – Sound level meters. Part 1: Specifications.
6. BS 7445-1:2003 Description and measurement of environmental noise – Part 1 Guide to quantities and procedures.
7. BS 7580-1:1992 Specification for the verification of sound level meters – Part 1: Comprehensive procedure.
8. BS 7580-2:1997 Specification for the verification of sound level meters – Part 2: Shortened procedure for type 2 sound level meters.

FIGURE 1

Monitoring Location Plan



FIGURE 2

Example Complaint Reporting Form

Noise complaint report form	Date:	Ref. No.
Name and address of complainant		
Tel no. of complainant		
Time and date of complaint		
Date, time and duration of offending noise		
Weather conditions (e.g., dry, rain, fog, snow)		
Wind strength and direction (e.g., light, steady, strong, gusting)		
Complainant's description of noise (e.g., hiss, hum, rumble, continuous, intermittent)		
Has complainant any other comments about the offending noise?		
Any other previous known complaints relating to installation (all aspects, not just noise)		
Any other relevant information		
Potential noise sources that could give rise to the complaint		
Operating conditions at the time offending noise occurred (e.g., flow rate, pressure at inlet and pressure at outlet)		
Action taken:		
Final outcome:		
Form completed by		Signed