



**Noise Monitoring and
Management Plan for
Mineral Extraction at
Whetstone Bridge Farm,
Gloucestershire**

M.C. CULLIMORE (GRAVELS) LTD

**R16.8899/2/1/JG
Date of Report: 25 February 2016**

Whetstone Bridge Farm, Gloucestershire

M.C. Cullimore (Gravels) Ltd

NOISE MONITORING AND MANAGEMENT PROGRAMME

Condition 28

1.0 Introduction

- 1.1 Mineral extraction operations have the potential to be a source of disturbance to local residents in the vicinity of Whetstone Bridge Farm. This noise monitoring and management programme has been developed to control construction noise and suggest mitigation measures to be implemented to manage noise issues associated with the works.
- 1.2 The objective of this plan is to minimise adverse noise impacts associated with the operation of any plant, machinery or other equipment on site at all times.
- 1.3 The plan has been prepared with consideration of the planning conditions outlined in application reference 12/0015/CWMAJM granted by Gloucestershire County Council dated 19 April 2012.
- 1.4 Once the Noise Monitoring and Management Programme has been agreed, the details are to be implemented upon commencement of operations on the site.

2.0 Planning Conditions

- 2.1 Mineral extraction activities at Whetstone Bridge Farm are permitted by Gloucestershire County Council, application no: 12/0015/CWMAJM. The following conditions relate to noise considerations:

“Noise

- 28) *Prior to the commencement of development a scheme shall be submitted to and agreed in writing by the Minerals Planning Authority which specifies the provision to be made for the control of noise emanating from the site during mineral extraction and restoration as a result of the development hereby approved. Such a scheme shall provide for noise barriers of a type and specification to be approved by the Minerals Planning Authority and noise mitigation measures. The approved scheme shall be implemented in full prior to the commencement of development and complied with at all times.*

Reason: In the interest of amenity of the area in accordance with NPPF Technical Guidance and Policy 37 of the Gloucestershire Waste Local Plan and DC1 of the Gloucestershire Minerals Local Plan and Cotswold District Council Local Plan Policy 5 and the pollution considerations of the National Planning Policy Framework and NPPF.

- 29) *All HGV vehicles and plant machinery shall be fitted with white noise reversing warning devices.*

Reason: In the interest of amenity of the area in accordance with NPPF Technical Guidance and Policy 37 of the Gloucestershire Waste Local Plan and DC1 of the Gloucestershire Minerals Local Plan.”

3.0 Potential Noise Sources

- 3.1 The planning application was accompanied by an Environmental Impact Assessment (EIA), with noise assessment ref CJC 120308B an accompanying document to the planning application. This report identified a number of noise generating processes during mineral extraction at Whetstone Bridge Farm:

- i) Soil stripping and bund formation; operation of a hydraulic excavator and articulated dump truck,
- ii) Mineral extraction and processing; operation of a wheeled loader (back actor) and articulated dump truck,
- iii) Mineral transport; operation of articulated dump truck, with approximately 10 movements along the haul road per hour,
- iv) Aggregate processing; operation of processing plant, including screens and wash plant.

4.0 Operating Hours

4.1 All extraction activity, including delivery of materials and equipment, must be restricted to those hours approved in the Planning Conditions. These are between the hours of 07:00 – 18:00 Monday – Friday, and between the hours of 07:30 – 13:00 on Saturdays. Work shall not take place on Sundays or bank holidays.

5.0 Mitigation Measures

- On-site mineral extraction and processing operations should be carried out during the hours permitted in the planning application.
- Operations shall occur as far away from potential receptors as practicable.
- Where practicable activities considered to be noisy should be undertaken during the least sensitive times of day, avoiding early morning periods.
- Works will be phased to maximise the benefit of screening from perimeter structures.
- Works will be scheduled, where practical, to avoid simultaneous noisy activities occurring on site.
- Any proposed screening along the perimeter should be constructed as early as practicable.
- All pneumatic tools/compressors used on site shall be silenced or be sound reduced models and located away from noise sensitive receptors where possible.
- The quietest suitable plant reasonably available will be selected for each individual works activity. Plant and equipment shall be operated with engine covers or doors closed.
- All operatives involved in the extraction of minerals and processing of aggregates should be instructed on the importance of reducing noise to a minimum. Noise awareness training for all site staff should be included as part of general site induction.
- Delivery vehicles and mobile plant should be routed so as to minimise disturbance to local residents.
- No vehicles on site should be left with their engines running.
- All plant machinery should be properly maintained and operated in the appropriate manner and in accordance with manufacturer's recommendations.
- Mobile plant should be fitted with white noise reversing alarms instead of tonal reversing beepers where feasible.
- Plant known to emit noise strongly in one direction shall be oriented so that the noise is directed away from noise sensitive receptors where possible.
- Local hoarding, screens or barriers shall be erected as necessary to shield particularly noisy activities. Temporary spoil heaps should be constructed where possible to shield nearby receptors.

- All site personnel must adhere to the site OH&S requirements in relation to use of appropriate personal protective equipment (PPE) when operating, or in the vicinity of noise generating plant/equipment.
- The site operator will nominate a member of the site staff to be the contact with residents regarding noise issues.
- A considerate and neighbourly approach to relations with the local residents shall be adopted throughout.
- Residents will be informed, in advance, of the commencement of particularly noisy operations and given an estimate of their duration.

6.0 Noise Monitoring - Methodology to be Adopted

6.1 Noise monitoring shall be undertaken in a free-field location, with the microphone placed at a height of between 1.2 - 1.5 metres above the ground.

6.2 At the agreed locations, noise shall be monitored over a one hour period, sampling 4 x 15 minute noise samples. The following parameters shall be recorded:-

L_{Aeq} in dB
 L_{A10} in dB
 L_{A90} in dB
 L_{Amax} in dB

6.3 Monitoring shall only be undertaken during times that mineral extraction work is ongoing, for example avoiding meal breaks, during the authorised hours.

6.4 Calibration shall be undertaken before and after each period and the instrumentation shall be supervised during monitoring.

6.5 Monitoring shall be undertaken in accordance with the procedures outlined in BS 4142, 2014. Monitoring will, whenever possible, be avoided when wind speeds are greater than an average 5 ms^{-1} and during heavy precipitation. Meteorological conditions prevailing during the monitoring shall be recorded.

6.6 It is possible that extraneous noise, for example, from passing traffic or agricultural activities, would make a significant contribution to the measured levels at the noise sensitive locations. To address this it is proposed that noise measurements, where relevant, shall be undertaken closer to construction site activities and the noise level due to construction site activities calculated with respect to the location. This procedure is outlined within section 6 of BS 4142.

6.7 A report detailing the noise recordings and calculations to the noise sensitive locations shall be submitted to the Planning Authority within 3 weeks of the survey taking place.

7.0 Noise Monitoring - Instrumentation

7.1 Noise monitoring instrumentation shall correspond to Class 1 of BS EN 61672-1:2013 "Electroacoustics - Sound level meters - Part 1: Specifications".

7.2 The instruments shall have valid certificates of calibration.

8.0 Noise Monitoring - Locations and Frequency of Monitoring

8.1 Three residential receptor locations have been identified as being potentially noise sensitive.

8.2 The locations are detailed below:-

- a) Whetstone Bridge Farm, south of Marston Meysey
- b) Round House Farm, south of Marston Meysey
- c) Alex Farm, north east of Cricklade

8.3 The above monitoring locations have been identified as the most likely noise sensitive receptors to experience an adverse noise impact. However, if noise complaints are received from residents of other properties, noise monitoring would also be undertaken at the property of the complainant, see following section.

8.4 Monitoring would be undertaken three times annually.

8.5 After a period of 12 months from the commencement of monitoring in accordance with 8.4 above, the Planning Authority and the operator will review the monitoring procedures.

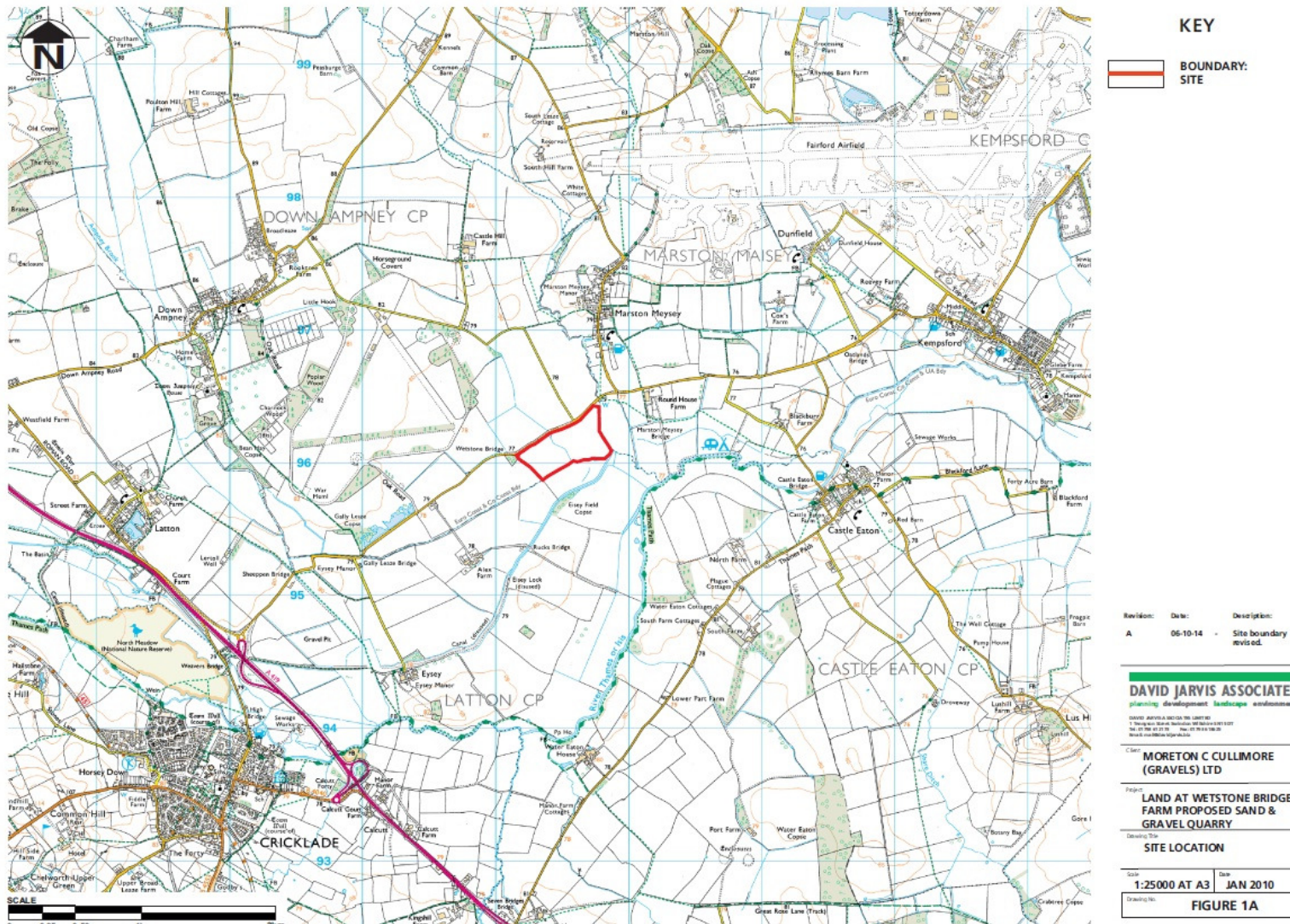
9.0 Complaints Procedures

9.1 Should complaints be made to the construction management relating to noise levels emanating from the operations, then these shall be immediately investigated and, where necessary, measures to reduce the received noise level shall be implemented.

9.2 All such complaints shall be recorded in a log held at the construction office, which will be available for inspection by the Planning Authority. The log shall include the following information:-

- The name, address and telephone number of the complainant
- The date and time the complaint was received
- The nature of the complaint
- Details of any action taken as a result of investigation into the complaint

FIGURE 1
Site Location



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**M C CULLIMORE (GRAVELS) LTD: NOISE ASSESSMENT FOR PROPOSED
SAND AND GRAVEL EXTRACTION AT WETSTONE BRIDGE FARM MARSTON
MEYSEY.**

Prepared for David Jarvis Associates Ltd
1 Tennyson Street
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SN1 5DT

Date: 12 March 2008
Report CJC 120308B

1. Introduction

M C Cullimore (Gravels) Ltd (MCC) is proposing to carry out mineral extraction on land at Wetstone Bridge Farm. The Company operates a sand and gravel quarry on adjoining land to the east at Roundhouse Farm. Operations there are very similar in terms of noise levels to those that would occur at Wetstone. The proposed planning application will be accompanied by an environmental assessment and this report covers the associated noise assessment for the proposed scheme of working; the site location is shown at Figure 1.

2. Noise Terminology

Noise is defined as unwanted sound and the unit of measurement is the decibel (dB).

Noise levels range from the threshold of hearing at 0dB to levels of over 130dB at which point the noise becomes painful.

Sound consists of vibrations transmitted to the ear as rapid variations in air pressure, the more rapid the fluctuation, the higher the frequency of the sound. However, the sensitivity of the human ear varies with frequency, therefore most everyday noise, including railway noise and road traffic noise is measured in dB (A), the (A) suffix indicating that the measured level has been adapted to allow for this phenomenon.

It has been found that changes in noise level, when measured in dB (A) most closely correlate with the changes in subjective reaction.

The range of values of pressure over which the ear can hear is vast and for convenience the decibel scale, which is logarithmic, is used as the resulting numbers correspond, generally to the noise perceived. A change in noise level of 10dB (A) represents a halving or doubling in perceived loudness.

3. Noise Criteria

The ambient environmental noise at any location will vary according to the activities in progress around that location. In the vicinity of a busy motorway, for example, the noise level will remain fairly constant due to the relatively steady noise input from road traffic, whereas the noise level close to a source of high noise over short periods, such as an airport, will vary over a much wider range. It is therefore necessary to consider how to

quantify the existing noise levels in an area in order to accurately assess the acceptability of the introduction of a new noise source.

The background noise level, defined as the L_{A90} parameter, represents the noise level exceeded for 90% of a measurement period, or the ninety percentile level. It generally reflects the quieter noise level between noise events and generally ignores the effects of short term higher noise level events. The fifty and ten percentile levels, L_{A50} and L_{A10} , represent the average noise level and the level exceeded for 10% of the measurement period, respectively. The latter, for example, is commonly used to describe and quantify noise from road traffic.

The equivalent continuous sound pressure level or L_{Aeq} parameter, is a measure of the average sound energy over a given time period. It will include noise from all contributing sources. Unless the noise level at the receiving point is perfectly steady, the L_{Aeq} will always be higher than the L_{A90} over any one measurement period.

MPS2 – Minerals Policy Statement 2: Controlling and Mitigating the Environmental Effects of Minerals Extraction in England. Annex 2: Noise

This annex [1] replaces Minerals planning guidance Note 11 (MPG 11). *The control of Noise at Surface Mineral Workings* (1993). It states the planning considerations the Government expects to be applied to noise emissions from surface mineral operations. The Government looks to the minerals industry to keep noise emissions to a level that reflects the highest environmental standards and to work for continuous improvement. As a basic policy consideration for acceptability the statement refers to the *Guidelines for Community Noise* (1999) in which the World Health Organisation advises that:

"to protect the majority of people from being seriously annoyed during the daytime, the outdoor sound level from steady continuous noise should not exceed 55 dB L_{Aeq} on balconies, terraces, and outdoor living areas. To protect the majority of people from being moderately annoyed during daytime, the outdoor sound level should not exceed 50 dB L_{Aeq} ."

Planning conditions should be used to apply absolute controls on noise emissions with limits normally being set at particular noise-sensitive properties. This enables the effect of noise to be related most directly to its impact on local people. In some circumstances, however, it might be more appropriate to set the limits at the site boundary or some other point. Subject to a maximum of 55dB $L_{Aeq, 1h}$ (free field) MPAs should aim to establish a noise limit at the noise-sensitive property that does not exceed the background level by more than 10dB (A). It is recognised, however, that this will in many circumstances, be difficult to achieve without imposing unreasonable burdens on the mineral operator. In such cases, the limit set should be as near that level as practicable during normal working hours (0700-1900) and should not exceed 55dB ($L_{Aeq, 1h}$ (free field) . Evening (1900-2200) limits should not exceed background level by more than 10 dB(A) and night time limits should not exceed 42dB(A) $L_{Aeq, 1h}$ (free field) at noise sensitive dwellings. Where tonal noise contributes significantly to the total site noise, it may be appropriate to set specific limits for this element. Peak or impulsive noise, which may include some reversing beepers, may also require separate limits that are independent of background noise e.g. L_{max} in specific octave or third -octave bands - and should not be allowed to occur regularly at night.

All mineral operations will have some particularly noisy short-term activities that cannot meet the limits set for normal operations. Examples include soil-stripping, the construction and removal of baffle mounds, soil storage mounds and spoil heaps, construction of new permanent landforms and aspects of site road construction and maintenance. However, these activities can bring longer- term environmental benefits. Increased temporary daytime noise limits of up to 70dB (A) $L_{Aeq, 1h}$ free field) for periods of up to 8 weeks in a year at specified noise sensitive properties should be considered to facilitate essential site preparation and restoration work and construction of baffle mounds where it is clear that this will bring longer-term environmental benefits to the site or its environs. Where work is likely to take longer than 8 weeks, a lower limit over a longer period should be considered. In some wholly exceptional cases, where there is no viable alternative, a higher limit for a very limited period may be appropriate in order to attain the environmental benefits. Within this framework, the 70 dB (A) $L_{Aeq, 1h}$ (free field)

limit referred to above should be regarded as the normal maximum. Local Authorities should look to operators to make every effort to deliver temporary works at a lower level of noise impact. Operators should seek ways of minimising noisier activities and the noise emissions from them when designing the layout and sequencing of temporary operations, and should liaise with local residents prior to such operations taking place.

4. Noise Measurements

Locations

There are a number of noise sensitive receptors in close proximity and a baseline noise survey was carried out to determine the existing noise profile. The measurement locations selected are described below and indicated in Fig 1.

1. Wetstone Cottage (Rear garden area)
2. The Round House (At driveway gates near southern boundary with adjacent Field)

Both positions were free field i.e. ≥ 3.5 metres from a reflective surface.

Equipment

Set 1

- The equipment used incorporated a Pulsar model 30 which is a Sound Level meter and Real time Spectrum Analyser. (ANSI S1.4, IEC 60651, IEC 60804. IEC 61672:2001 Class 1). The microphone was protected with a wind shield.

Set 2

- Brüell & Kjær Type 2231 Sound Level Meter.
- BZ7101 statistical module to record the “A” weighted L_{eq} , L_{10} , L_{50} , L_{90} , L_{Amin} & L_{max} dB levels continuously in the required time memory periods

The microphones for both meters were protected with a wind shield. The analyser and sound level meter was calibrated with the Pulsar acoustic calibrator model 100B (class1) prior to commencement and after completion of the surveys; no drift in calibration was observed.

Measurements

For the survey at position 1, the one hourly digital output was automatically recorded with set 1 over a period of 06.00 to 19.00hrs; this was to encompass the proposed weekday working times. Measurements were carried out on March 6th and 7th 2008. For

position 2, set 2 was used with the meter microphone mounted 1.5 metres above the ground. The location was visited at regular intervals and 30 minute samples were obtained during each visit

Conditions were acceptable and the actual noise measurements were all taken in dry weather and apart from some short gusts, acceptable wind speeds not exceeding 3.0 m/s throughout the monitoring periods. The wind speed, air temperature and perceptible direction were monitored periodically during the survey using an AZ thermo-anemometer model 8908 (EN 50082-1/1997).

The detailed results of the two surveys of existing noise levels around the site are given in Appendix A together with appropriate on site observations. The noise profile was controlled by local traffic, distant traffic and occasional aircraft; some noise albeit low level was generated on the 7th March by tractor operating in field south of the site. A summary of the L_{A90} background levels measured quoted to the nearest whole number of decibels is shown in table 1.

TABLE 1 . WEEK DAY BACKGROUND SUMMARIES

March 6 th and 7 th 2008 BACKGROUND LEVEL $L_{A90, 1HR}$. dB.								
Location	06:00-07:00	07:00-08:00	09:00-10:00	11:00-12:00	13:00-14:00	14:00-14:30	16:00-18:00	18:00-18:30
1	38	42	41	42	41	40	41	41
2	41	44	43	42	42	41	41	42

5. Predicted Noise From Site

The noise levels associated with the proposed mineral extraction have been estimated at the locations 1, 2 and 3. The predictions take into account the schemes of working and restoration which are indicated at the various key plans produced by David Jarvis. The prediction method used in this study is based on BS 5228:1997 [2] However the maximum barrier attenuation of 10 dB (A) quoted in this reference is conservative and is recognised as such in D.3.2, where it states, “High topographical features and specifically designed and positioned noise barriers could provide greater attenuation”. In order to more accurately estimate barrier or bund attenuation, the method used in Calculation of Road Traffic Noise (CRTN) [3] has been adopted. With regard to the prediction method

detailed in BS 5228:1997, the difference between hard and soft ground can be important, as soft ground can offer some attenuation of noise.

A simple method of estimating attenuation based on the percentage soft ground between the source and receptor, and the heights of both above ground, is given in BS5228. If either the source or receiver is more than 2.5 m above the ground, the additional attenuation offered by soft ground should be reduced until at 15 m its value is the same as that at hard ground. BS5228 also notes that although methods for calculating both the effects of screening and soft ground attenuation, the corrections should not normally be combined. Either the attenuation from screening and hard ground propagation or the attenuation of soft ground, whichever is the greater, should be taken. Therefore soft ground attenuation corrections have not been applied as part of this assessment when a noise barrier or bund is in place.

A list of plant sound power levels (L_{WA} 's) from which the noise predictions were made are presented in Table 2. The items of plant proposed for the site development are as used for current extraction practices. Sound power levels for such plant has been researched from manufacturer's data or obtained by taking specific measurements of similar plant in use. The noise data base for (BS5228) has been updated, see DEFRA [4].

TABLE 2 LIST OF PLANT AND SOUND POWER LEVELS FOR PROPOSED SAND AND GRAVEL OPERATIONS.

Plant Description	Quantity	Sound Power Level L_{WA} dB
SOIL STRIPPING OPERATIONS AND BUND FORMATION		
Hydraulic Excavator	1	108
25-30 tonne articulated dump truck	1	108
MINERAL EXTRACTION AND PROCESSING		
Wheeled Loader (Back Actor)	1	105
25-30 tonne articulated dump truck	1	108

MINERAL TRANSPORT		
25-30 tonne articulated dump truck	Approximately 10 movements /hour	108
Processing Plant, (Screening and Washing).	1	108

All predictions have been calculated with the combinations of plant working at the closest point to the location. They are therefore "worst possible case" scenarios which may be of relatively short duration. However they indicate the maximum L_{Aeq} noise level to which a particular property or group of properties may be exposed during the working of the site. By definition, the "worst case" situation will occur intermittently over the entire life of the site as a short term 'peak', whilst the more routine noise levels perceived outside the site boundary would normally be significantly less. For the purpose of this prediction exercise the described "worst-case" situation has been considered at all times, thus operations are assumed to be undertaken at their realistic minimum distances and maximum heights. In this exercise only the major operations have been considered, as they are likely to have the most impact on the local environs.

6. Predicted Noise

The predicted maximum noise levels associated with soil stripping, extraction and restoration operations are summarised in table 3 and discussed in the noise impact section 7.

TABLE 3 SUMMARY OF PREDICTED MAXIMUM NOISE LEVELS AT NEAREST RECEPTORS CONTRIBUTED FROM INITIAL WORKS AND PHASED WORKING.

Pos	Measurement Duration overlapping operating time span	Existing Noise Levels (dB)		Predicted Max Noise Levels			
		$L_{Aeq, 60min}$	$L_{A90, 60min}$	Temporary Operations Soil Strip, bund formation and final restoration	$L_{Aeq, 1 h}$ (dB)		
					Phase 2A Unscreened Extraction	Phase 2B Extraction with bund	
					2.5 m	4 m	
1	0700-18.00	54-59	40-46	67	67	54	50
2	:	49-52	43-46	47	47	45	NA

7. Noise Impact

Position 1 (Wetstone Cottage)

Existing ambient noise levels

The existing noise at this location is generated by traffic on the adjacent C116 Cricklade Road; there are some local cars but mainly passing HGV's are the primary noise source. Distant traffic on the A419 and occasional aircraft contribute to the overall noise profile. The weekday daytime background noise level (L_{A90}) here varied between 40 and 46 dB. The equivalent continuous sound level ($L_{Aeq,1h}$) for the same measurement periods was 54-59 dB.

Predicted Operational Levels

Activity due to initial works and some final restoration operations could produce a one hour L_{Aeq} of up to 67 dB (A) and would therefore be inside the MPS2A2 advisory limit for such temporary operations. Unscreened extraction operations during phase 2A operations could yield levels of 67 outside the advisory limit of 55 dB (A) but since it is planned to cover all operations including restoration during a 8 week period, this is within the timescale for temporary operations. Extraction during phase 2B (Flexible) Operations during phase 2B could produce a one hour L_{Aeq} of up to 54 dB (A) with the proposed 2.5m topsoil bund and 50 dB (A) with a 4 metre subsoil bund. This would therefore be inside the MPS2A2 advisory limit of 55 dB for such operations. With the 4m bund, the lowest background level (40 dB A) is not exceeded by more than 10dB (A).

Position 2 (The Roundhouse)

Existing ambient noise levels

The existing noise at this location is similar to that at position 1; the weekday daytime background noise level (L_{A90}) here varied between 43 and 46 dB. The equivalent continuous sound level ($L_{Aeq,1h}$) for the same measurement periods was 49- 52 dB.

Predicted Operational Levels

Activity due to initial works and some final restoration operations could produce a one hour L_{Aeq} of up to 47 dB and would therefore be well inside the MPS2A2 advisory limit for such temporary operations. Unscreened extraction operations could also yield a level of 47 which

is well inside the advisory limit of 55 dB (A) and the low background level (40 dB A) is not exceeded by more than 10dB (A).

Mitigation

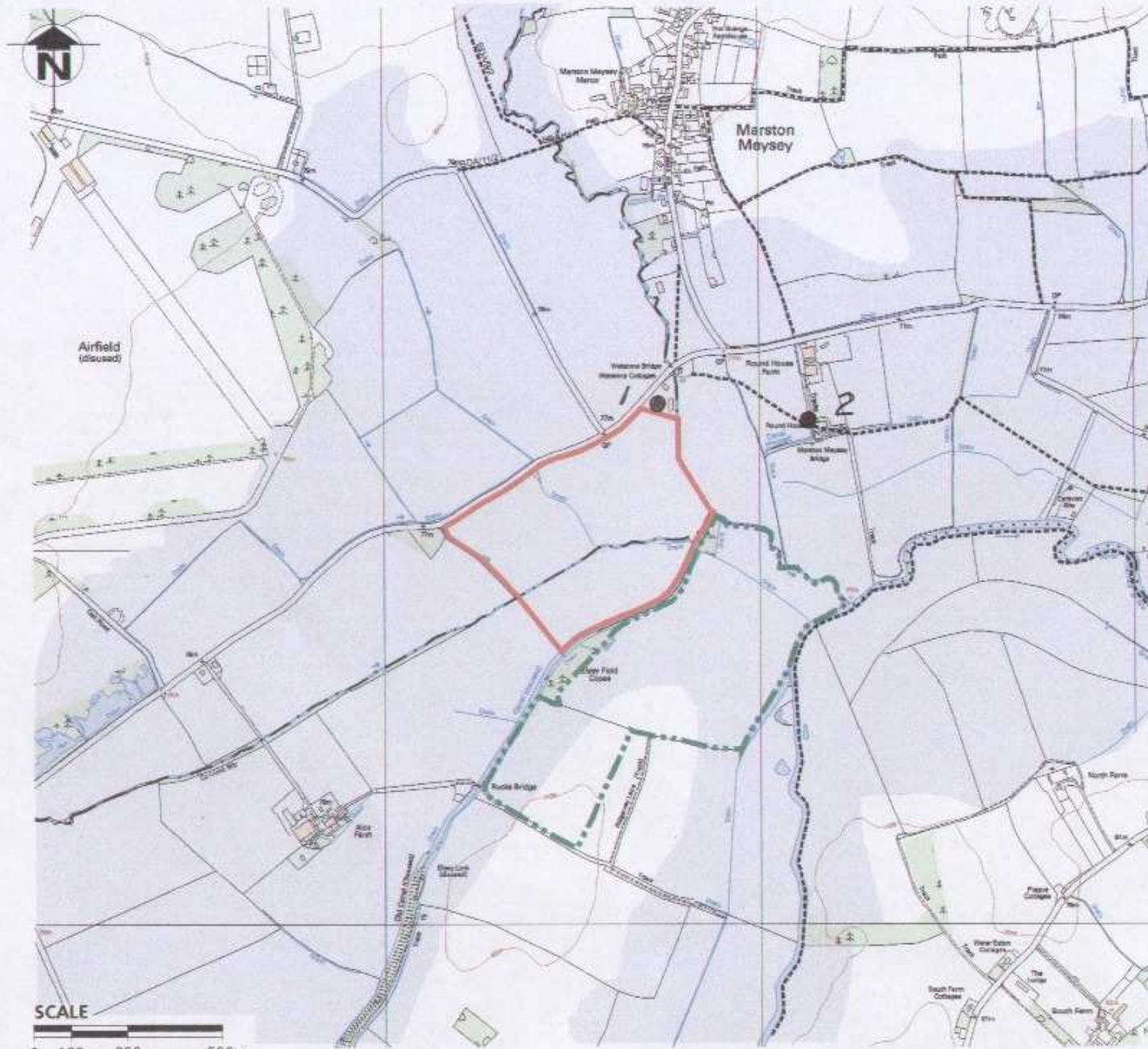
The levels during initial works and unscreened extraction would be inside the desirable MPS2A2 noise criteria and no mitigation is necessary. Although mitigation is not required there will be a topsoil screen at least 2.5m high in place at the north eastern boundary which will reduce the maximum extraction noise to 45 dB.

Conclusions and Recommendations

- Baseline noise surveys have been made at locations which represent the potential noise sensitive receptors nearest to the proposed sand and gravel extraction at Wetstone Bridge Farm. Measurements were made in terms of L_{Aeq} , L_{A10} , L_{A50} , L_{A90} , L_{Amin} & L_{Amax} dB levels thus enabling the existing noise climate to be characterised.
- A series of noise predictions based upon BS 5228 [2] and the proposed scheme of working have been made to the two most sensitive locations and have been assessed against criteria in MPS2A2 [1].
- The predictions for this impact assessment refer to a worst-case scenario, when operations are undertaken at their closest distances and therefore have the greatest influence on the noise levels at residential property. This worst case noise may only last for a short time during the envisaged working life of the extraction area.
- It is apparent that the estimated worst case noise levels from initial and final quarrying operations are below the 70 dB $L_{Aeq 1h}$ criterion at all noise sensitive receptors. The criterion is considered a normally justifiable limit in MPS2A2 for temporary operations on surface mineral extraction sites. The worst case noise levels from extraction do not exceed the 55 dB $L_{Aeq 1h}$ criterion, considered a normally justifiable limit for mineral extraction operations in MPS2A2. Furthermore the supplementary aim to limit noise to no more than 10dB (A) above the lowest background level can be achieved at positions 1 and 2. The assessment shows that mineral extraction operations at Wetstone Bridge Farm can be carried out without exceeding the recommended noise criteria as advised in MPS2A2.

References

- 1) MPS2A2 Minerals Policy Statement 2: Controlling and Mitigating the Environmental Effects of Minerals Extraction in England Annex 2: Noise
- 2) BS5228 1997 Noise Control on construction and open sites.
- 3) Calculation of Road Traffic Noise, Department of Transport, Welsh Office 1988 HMSO.
- 4) DEFRA 2004 Update of noise data base for (BS5228) prediction of noise on Construction and Open sites.



KEY

-  BOUNDARY: SITE
-  PUBLIC RIGHTS OF WAY
-  SCHEDULED ANCIENT MONUMENTS (S.A.M)
-  FLOOD ZONE

NOISE MONITORING
LOCATIONS
FIGURE 1

DAVID JARVIS ASSOCIATES
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MORETON C CULLIMORE (GRAVELS) LTD

LAND ADJOINING WETSTONE BRIDGE FARM

EXISTING CONDITIONS

1:10000 AT A3 FEB 2008

1787/SK2 DRAFT

TABLE 1 Wetstone Bridge Statistical noise (Automatic measurements) at Location 1 (Wetstone Cottage) on 6th and 7th March 2008

Time from 06/03/08- 07/03/08	Sound Pressure Levels, dB re 20 μ Pa						Weather			Observations
	L _{Aeq}	L _{A10}	L _{A50}	L _{A90}	L _{Amax}	L _{Amin}	Temp °C	Wind S m/s	Dir	
14.00-15.00	53.7	58.0	43.5	39.5	71.5	34.0	9.9	2.5	W	Traffic Mainly HGV on C116 road. Some aircraft noise.
15.00-16.00	54.5	59.0	46.5	40.5	70.5	35.6	9.6	2.3	SW	
16.00-17.00	54.8	58.0	46.5	40.0	76.7	35.2	10.0	3.0	SW	
17.00-18.00	55.9	58.0	47.5	41.5	79.5	37.2	8.2	2.8	SW	
18.00-19.00	52.0	55.5	45.5	40.5	75.0	35.1	7.6	2.5	SW	
06.00-07.00	49.4	52.5	43.0	38.0	69.8	33.9	4.5	0.9	W	Traffic on C116 occasional. Distant traffic on A419. Bird song
07.00-08.00	55.4	60.0	48.5	42.0	76.4	37.1	3.7	0.9	WSW	HGV'S on C116 Road
08.00-09.00	56.0	60.5	49.5	42.5	71.6	37.1	4.7	2.2	SW	
09.00-10.00	59.0	61.5	48.5	41.0	76.5	34.4	6.8	2.6	WSW	Tractor operating in area to north, distant aircraft
10.00-11.00	55.3	58.5	50.0	46.0	71.5	39.4	8.1	2.6	W	Tractor operating closer.
11.00-12.00	53.8	57.0	50.0	42.0	71.0	38.8	8.1	2.6	WSW	
12.00-13.00	54.2	58.0	48.5	42.0	72.0	38.5	10.6	2.0	WSW	
13.00-14.00	54.7	57.0	50.0	40.5	71.5	37.2	10.0	2.2	WSW	Traffic Mainly HGV on C116 road. Some aircraft noise.

TABLE 2 Wetstone Bridge Statistical noise at Location 2 attended measurements (The Round House) on 6th and 7th March 2008

Time from 06/03/08- 07/03/08	Sound Pressure Levels, dB re 20 μ Pa						Weather			Observations
	L _{Aeq}	L _{A10}	L _{A50}	L _{A90}	L _{Amax}	L _{Amin}	Temp °C	Wind S m/s	Dir	
14.00-14.30	49.3	52.7	47.3	42.6	62.6	39.0	9.9	2.5	W	Traffic Mainly HGV on C116 road. Some aircraft noise.
17.00-17.30	51.2	52.7	50.0	43.0	63.0	40.0	8.2	2.8	SW	
18.00-18.30	50.0	51.7	49.2	41.5	64.0	39.2	7.6	2.5	SW	
06.30-07.00	49.0	51.0	48.0	41.0	63.0	38.0	4.5	0.9	W	
07.00-07.30	50.5	54.0	51.0	44.0	65.0	40.0	3.7	0.9	WSW	HGV'S on C116 Road
09.00-09.30	52.0	54.2	51.2	43.0	64.0	39.3	6.8	2.6	WSW	Farm Tractor operating in area to north, distant aircraft
10.30-11.00	52.0	55.1	49.7	46.2	65.4	44.0	8.1	2.6	WSW	
13.00-13.30	50.5	52.0	51.5	43.0	62.0	39.5	10.0	2.2	WSW	Traffic Mainly HGV on C116 road. Some aircraft noise.

Note measurements on 6th March 2008 were 14:00-19:00 hrs

Measurements on 7th March 2008 were 06:00-14:00 hrs Wind measurements were over 10 minute averages.

APPENDIX A