

7. NOISE

The following Technical Appendices referred to in this chapter can be found at Appendix 1 to this document.

Appendices

Appendix 1.1 – Glossary of Acoustic Terms

Appendix 1.2 – Baseline Survey and Assessment Locations

Appendix 1.3 – Phasing Plan Showing Proposed Bunding

Appendix 1.4 – Instrumentation and Calibration Details

Appendix 1.5 – Baseline Noise Survey Results

Appendix 1.6 – Noise Calculation Method and Calculation Sheets

7.1 Introduction

- 7.1.1 This chapter of the Environmental Statement (ES) has been prepared by Dr Robert Storey of WBM and considers the impact of noise from the proposals on the nearest noise sensitive properties.
- 7.1.2 This noise assessment sets out the findings of baseline noise surveys conducted in February, April and May 2018 at positions representative of the closest noise sensitive properties to the proposed site and suggests site noise limits in relation to the background noise levels observed in 2018, for the proposed operations on site.
- 7.1.3 The background noise levels measured in 2018 are still likely to be representative of the normal background noise levels in the vicinity of the site. This is particularly relevant in light of the restrictions due to the Covid-19 pandemic which would have impacted on the validity of any updated baseline noise surveys that could have been completed in the intervening period.
- 7.1.4 It sets out the calculated noise levels arising from the site operations and compares those calculated noise levels with the suggested site noise limits at the nearest noise sensitive premises to the site.
- 7.1.5 The noise criteria are based on current advice from the government contained in the web document “Planning Practice Guidance” for Minerals (PPGM), first published in March 2014.
- 7.1.6 Mitigation measures are proposed as part of the site design to minimise the impacts of the proposed development once the site is operational. Any anticipated residual effects of the proposals are then stated.
- 7.1.7 A glossary of terms used in the assessment is included in Noise Appendix 1.

7.2 Study Area

7.2.1 The proposed quarry is to be located on the former Hamble Airfield site in Hamble-Le-Rice in Hampshire.

7.2.2 The site falls under the jurisdiction of Hampshire County Council who provided pre-application advice dated 07 July 2016, which contained the following text relating to noise:

“A noise assessment in line with the current British Standard should be supplied and show how the development compares with the relevant standards and the World Health Organisation guideline levels. Background and predicted absolute noise levels at nearest noise sensitive receptors should be clear and the plant noise emission levels should also be provided in an assessment. Paragraph 21 of the National Planning Practice Guidance offers advice on the appropriate noise standards for mineral operators for normal operations and states that developments should not exceed the background noise level (LA90,1h) by more than 10dB(A) during normal working hours (0700-1900).How the working practices on site and phasing programme would mitigate noise during extraction to and infilling to achieve this level of protection and restoration should also be provided.”

7.2.3 The World Health Organisation Environmental Noise Guidelines for the European Region were revised in 2018 and no longer consider noise from combined sources, concentrating on noise due to road traffic, railways, aircraft, wind turbines and leisure sources.

7.2.4 As such, this assessment was undertaken in relation to the advice relating to minerals sites in Planning Practice Guidance (Minerals).

7.2.5 The Hampshire County Council pre-application advice also requires that the SPA/SAC and Ramsar sites are considered and that site noise levels are not

to “cause noise of more than 5 decibels as heard on the SPA and Ramsar sites”.

7.2.6 The site is currently open grassland and the nearest noise sensitive receptors in the vicinity of the site are residential properties around the western, southern and eastern boundaries (Hamble Lane to the west, the estate on which Astral Gardens and Tutor Close are located to the south and properties on and off Satchell Lane to the east/north-east). Hamble School is located directly to the north of the site.

7.2.7 The six locations selected for site noise assessment are:

1. Astral Gardens/Tutor Close;
2. The Close, Satchell Lane;
3. Properties on Satchell Lane;
4. Wessex Manor;
5. Hamble School; and
6. Properties on Hamble Lane.

7.2.8 These site noise calculation locations are indicated on the plan in Appendix 1.2.

7.3 Methodology

Previous Assessment Stages

- 7.3.1 Following the baseline noise surveys in April and May 2018 and the initial plans for the development, preliminary calculations were undertaken by WBM to provide advice regarding bunding requirements for the site. This advice has been incorporated into the design of the final scheme.

Legislation and Planning Policy

Planning Practice Guidance

- 7.3.2 The web-document “*Planning Practice Guidance*” for Minerals (PPGM) first published in March 2014 provides guidance with regard to the assessment of noise from mineral sites.

- 7.3.3 Paragraph 21 of the PPGM (Reference ID: 27-021-20140306) states:

“What are the appropriate noise standards for mineral operators for normal operations?”

Mineral planning authorities should aim to establish a noise limit, through a planning condition, at the noise-sensitive property that does not exceed the background noise level (LA90,1h) by more than 10dB(A) during normal working hours (0700-1900). Where it will be difficult not to exceed the background level by more than 10dB(A) without imposing unreasonable burdens on the mineral operator, the limit set should be as near that level as practicable. In any event, the total noise from the operations should not exceed 55dB(A) LAeq, 1h (free field). For operations during the evening (1900-2200) the noise limits should not exceed the background noise level (LA90,1h) by more than 10dB(A) and should not exceed 55dB(A) LAeq, 1h (free field). For any operations during the period 22.00 – 07.00 noise limits

should be set to reduce to a minimum any adverse impacts, without imposing unreasonable burdens on the mineral operator. In any event the noise limit should not exceed 42dB(A) LAeq,1h (free field) at a noise sensitive property.

Where the site noise has a significant tonal element, it may be appropriate to set specific limits to control this aspect. Peak or impulsive noise, which may include some reversing beepers, may also require separate limits that are independent of background noise (e.g. Lmax in specific octave or third-octave frequency bands – and that should not be allowed to occur regularly at night.)

Care should be taken, however, to avoid any of these suggested values being implemented as fixed thresholds as specific circumstances may justify some small variation being allowed.”

7.3.4 Paragraph 22 of the PPGM (Reference ID: 27-022-20140306) states:

“What type of operations may give rise to particularly noisy short-term activities and what noise limits may be appropriate?

Activities such as 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.

Increased temporary daytime noise limits of up to 70dB(A) LAeq 1h (free field) for periods of up to eight 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 eight 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) LAeq 1h (free field) limit referred to above should be regarded as the normal maximum.”

Local Planning Policy

- 7.3.5 The site falls within the jurisdiction of Hampshire County Council, whose Minerals and Waste Plan was adopted in October 2013. In addition, the site falls within the area defined by the Eastleigh Borough Local Plan (2001-2011), which was adopted in May 2006. Both documents are summarised below with regards to noise impact relevant to this site.
- 7.3.6 Policy 10 “*Protecting public health, safety and amenity*” of the Hampshire Minerals and Waste Plan (HMWP) specifies that minerals and waste development should not cause unacceptable adverse amenity impacts and lists within this, unacceptable impact from noise. This policy also requires that potential cumulative impacts of minerals and waste development and the way they relate to existing developments be addressed to an acceptable standard.
- 7.3.7 The relevant action for Minerals and Waste developers aiming to meet the requirements of HMWP Policy 10 is to carry out a suitable assessment of the impact of proposals and assess any cumulative impacts. Further, they should suggest suitable mitigation measures or indicate positive impacts where development is proposed.
- 7.3.8 This report meets the aims of HMWP Policy 10 by providing an assessment of the noise impact from the site and has included, at an early design stage, additional means for mitigation of noise with earth bunds. Cumulative impacts are addressed in Section 7.9 of this report.
- 7.3.9 Noise is addressed within the Eastleigh Borough Local Plan in the ES Policies section, which also includes pollution and contaminated land. In

addition the local plan provides advice on Environmental Impact Assessments (EIA).

- 7.3.10 There is no specific ES policy relating to minerals extraction and noise. Policy 29.ES is the closest to this type of development and considers industrial / commercial noise. Policy 29.ES states *“Industrial or commercial development which would result in any noise-sensitive premises being subject to a loss of amenity by means of an excessive increase in noise and / or vibration exposure, will not be permitted”*.
- 7.3.11 The local plan requires developments that fall under EIA to consider the advice in PPG 24. This document has now been superseded and has been replaced by the National Planning Policy Framework (NPPF). Advice on meeting the objectives of the NPPF can be found in the web document *“Planning Practice Guidance”* for Minerals (PPGM), which has been used as the basis of the assessment in this report
- 7.3.12 For specific guidance on minerals and waste, the local plan refers the reader to the Hampshire Minerals Local Plan (though the 1998 version of the plan is referenced). It further notes that where proposals include the extraction of minerals an EIA is required.
- 7.3.13 This assessment meets the requirements of the local plan by providing an EIA for the site, taking into account noise impact at the nearest noise-sensitive dwellings and referring to the relevant HMWP and Government guidance on minerals.

Assessment Methodology

Receptor Sensitivity

Table 7.1 Methodology for Assessing Sensitivity of Receptors

Sensitivity	Example of Receptor
Very High	World Heritage Sites Grade I Listed Buildings
High	Residential properties (permanent tenants) and schools and hospitals
Medium	Transient residential receptors such as users of hotels, users of public footpaths
Low	Commercial premises
Negligible	Assets with very little or no surviving cultural heritage interest

7.3.14 This assessment is focused on the residential properties to the south, west, north-east and east of the proposed extension area as being of high sensitivity. The school to the north of the site is also considered as being of high sensitivity and has therefore been included in the assessment.

7.3.15 The noise impact on the users of the public footpath to the south of the site (Rail Trail) are considered as being of medium sensitivity.

7.3.16 The receptors of high sensitivity considered in this assessment are as follows:

- Dwellings on Astral Gardens and Tutor Close;
- Dwellings on The Close off Satchell Lane;
- Dwellings on Satchell Lane;
- Wessex Manor on Satchell Lane;
- Hamble School; and
- Rear of dwellings on Hamble Lane.

Determining Impact Magnitude

7.3.17 The criteria for assessing magnitude of impact are outline below in Table 7.2.

Table 7.2 Assessing Magnitude of Impact for Calculated Site Noise Levels

Impact Magnitude	Typical Criteria Descriptors	
	Routine Operations	Temporary Operations
Slight	≤ 55 and $\leq LA90+10$	Not applicable
Moderate	≤ 55 and $> LA90+10$	≤ 70 and ≤ 8 weeks per year
Substantial	> 55 and $> LA90+10$	> 70 and > 8 weeks per year

Determining Significance and Nature of Effects

7.3.18 The significance of effect is determined by combining the magnitude of impact with the sensitivity of the receptor.

7.3.19 If an impact magnitude is negative then the resulting effect is described as being adverse; if an impact magnitude is positive the resulting effect is classed as being beneficial. In this chapter any significance of effect that is defined as being above moderate adverse/beneficial or greater is defined as being significant.

Table 7.3 Significance of Effects Matrix

		Magnitude of Impact			
		Substantial	Moderate	Slight	Negligible
Sensitivity	Very High	Major	Major	Major/Moderate	Neutral
	High	Major	Major/Moderate	Moderate/Minor	Neutral
	Medium	Major/Moderate	Moderate	Minor	Neutral
	Low	Moderate/Minor	Minor	Minor/Neutral	Neutral

EIA Assumption Limitations

- 7.3.20 The greatest limitation of the assessment and the largest level of uncertainty is whether the proposed activity will give rise to the calculated noise level at the six receiver locations in practice.
- 7.3.21 The calculations and assessment have been based on all components of the mineral extraction, infilling and processing operations taking place simultaneously and for 100% of each hour during the expected working daytime periods to represent a realistic worst case scenario. In reality, this situation is unlikely to occur and noise levels would, in all likelihood, be lower than those presented in the assessment.
- 7.3.22 The site noise calculations do not include any allowance for air absorption, which would be minimal in any case and make no difference to the assessment.
- 7.3.23 The average background sound level was used in the assessment as the surveys covered a range of wind directions and this was considered to be representative of the background sound level that would be normal for the properties in the vicinity of the site.

7.4 Baseline Environment

7.4.1 Baseline noise survey work was undertaken by WBM in February, April and May 2018 and involved attended sample measurements on three days.

7.4.2 The survey details are presented in Noise Appendix 1.4.

7.4.3 The locations for the baseline attended measurements were chosen to be representative of the nearest existing receptors to the proposed development.

7.4.4 The receptors used in the assessment are detailed in the following table

Table 7.4 Baseline Receptor Locations (used in noise assessment)

Ref.	Description	Approximate Co-ordinates		
		E	N	Height (m)
1	Astral Gardens/Tutor Close	447690	107380	1.5
2	The Close, Satchell Lane	448140	107500	1.5
3	Satchell Lane	448125	107760	1.5
4	Wessex Manor	447920	108350	1.5
5	Hamble School	447560	108275	1.5
6	Hamble Lane (rear)	447490	107700	1.5

7.4.5 The attended sample measurements were taken between 13:10 and 15:30 on Monday 12 February 2018, between 12:05 and 14:20 on Tuesday 24 April 2018 and between 11:00 and 15:35 on Tuesday 15 May 2018 and were of fifteen minutes duration with four measurements taken at each location.

7.4.6 A summary of the baseline noise survey results is presented in the following table with the full results presented in Noise Appendix 1.5.

Table 7.5 Summary of 2018 Baseline Noise Survey Results

Location	Monitoring Date and Times	Average L _{Aeq} (dB)	Average L _{A90} (dB)	Range L _{A90} (dB)
1	12/02/18 13:13 24/04/18 14:03 15/05/18 12:55 & 15:02	46	40	38 to 43
2	12/02/18 13:37 24/04/18 13:39 15/05/18 12:33 & 14:40	44	39	37 to 42
3	12/02/18 14:00 24/04/18 13:16 15/05/18 12:13 & 14:18	45	40	39 to 41
4	12/02/18 14:33 24/04/18 12:51 15/05/18 11:51 & 13:56	53	45	41 to 48
5	12/02/18 14:53 24/04/18 12:31 15/05/18 11:32 & 13:36	52	45	43 to 46
6	24/04/18 12:08 15/05/18 11:11, 13:14 & 15:21	49	44	43 to 45

7.4.7 Based on the baseline survey data and the advice contained in PPGM, the following noise limits for routine operations on site are suggested.

Table 7.6 Suggested Site Noise Limits

Location	Average L _{A90} (dB)	Suggested Site Noise Limit (dB L _{Aeq} , 1 hour free field)
Routine Operations (07:00 – 17:00)		
1. Astral Gardens	40	50
2. The Close	39	49
3. Satchell Lane	40	50
4. Wessex Manor	45	55
5. Hamble School	45	55
6. Hamble Lane	44	54
Temporary Operations		
All Locations	N/A	70

7.4.8 The pre-application response from Hampshire County Council raised concerns over the 07:00 start time of the site, although acknowledged that

this was in the absence of any noise surveys supplied with the pre-application submission. Planning Practice Guidance (Minerals) considers the daytime working hours to start at 07:00 hours.

- 7.4.9 The noise surveys did not cover the period immediately after 07:00, but this period would normally be subject to road traffic noise increases as people start going to work. The site noise limits suggested in this assessment are based on representative background noise levels during the middle part of the day (11:00 to 15:45 hours), when daytime road traffic noise levels in the area would be expected to be at their lowest.
- 7.4.10 As such, the suggested site noise limits should be sufficient to protect the amenity of local residents during the period 07:00 to 08:00 hours.

7.5 Embedded Mitigation

- 7.5.1 Mitigation has been included in the layout of the proposed extension area following initial consultations with WBM regarding noise.
- 7.5.2 Following the preliminary noise assessment work, the following bunding was incorporated into the design and has been included in the site noise calculations:
- A bund around the boundary of the site between 3 and 5 metres high (the bunding in the vicinity of the nearest residences is to a height of 5 metres above local ground level towards Astral Gardens/Tutor Close and Hamble Lane and to a height of 4 metres above local ground level towards Satchell Lane, Wessex Manor and Hamble School).
- 7.5.3 The locations and heights of the proposed bunding are shown on the plan included in Noise Appendix 1.3.

7.6 Calculation Methodology

- 7.6.1 The Equivalent Continuous Noise Level, $L_{Aeq,T}$, is the preferred unit for assessing noise sources. It is the value of a continuous level that would have equivalent energy to the continuously varying noise over the specified period "T". This unit is recommended internationally for the description of environmental noise and is in general use. It is the chosen unit of BS 5228 for Construction and Open site noise; Planning Practice Guidance for Minerals and BS 7445 for the Description and Measurement of Environmental noise.
- 7.6.2 The noise levels likely to arise at dwellings depend on the method of working and the sound power levels of the plant chosen to work a site as much as on the distance to the properties and the effects of intervening ground. Proper allowance can be made for these variables in order to calculate site noise levels.
- 7.6.3 The PPGM states in paragraph 19 that those making development proposals should consider "*estimating the likely future noise from the development and its impact on the neighbourhood of the proposed operations*".
- 7.6.4 The PPGM does not contain details of noise prediction methods and in the absence of detailed guidance, the calculations in this report are based on the methods contained in BS5228-1: 2009 "*Code of practice for noise and vibration control on construction and open sites – Part 1: Noise*" + A1: 2014, Annex F.
- 7.6.5 Further details of the calculation methods are set out in Noise Appendix 1.7. A summary site noise calculation sheet for each of the six dwellings considered is included in Noise Appendix 1.7.
- 7.6.6 For the purposes of examining a reasonable worst case, the various items

have been assumed to operate at the closest practical position of the proposed simultaneous extraction/infilling areas to each dwelling. It has also been assumed that the plant items work 100% of each hour apart from the tipping of inert material into the extraction void which is assumed to take place 20% of each hour.

Noise Sources and Sound Power Levels

- 7.6.7 The sand and gravel from the proposed site will be extracted by excavator, loaded onto a conveyor using a loading shovel to be transported to the plant site. There it will be stockpiled and processed by the proposed processing plant and loaded into road going HGVs for transport off site.
- 7.6.8 For the initial working in Phase 1, the conveyor will not be in place and transportation of mineral to the plant site will be undertaken by dump truck. At this stage there will be no infilling operations on site.
- 7.6.9 Following the extraction of mineral in each phase, the void will be restored, with inert material imported by means of road going HGVs.
- 7.6.10 The site will be infilled to the former height of the top of the mineral and restored to near original ground heights using the stored soils.
- 7.6.11 Sound Power Levels of the machinery to be used in the proposed extension area are based on manufacturers' data and typical measurements of such plant items on similar sites which are contained on the WBM plant noise database.
- 7.6.12 The plant items used in the calculations are listed in the table below along with the Sound Power Levels and source heights used in the calculations.

Table 7.7 Plant Items and Sound Power Levels

Plant Item	Sound Power Level dB L _{WA}	Source Height (m)
Routine Extraction Operations		
360° Excavator for mineral extraction	106	2
Loading Shovel loading conveyor	105	2
Conveyor	86 per metre	1
Infilling Operations		
HGVs importing Infill	104	2
Tipping of Infill	108	1
Dozer for Grading	107	2
Processing		
Processing Plant	112	4
Loading Shovel at Plant Site	105	2
HGV movements on Access Road		
HGVs	104	2
Temporary Operations		
360° Excavator	106	2
Dump Trucks	105	2
Dozer	108	2

Site Operation Assumptions

7.6.13 In order to assess the noise levels for the proposed site operations, the contribution from each significant specific noise source has been evaluated separately and then combined together to give the overall noise level.

7.6.14 The activities that will take place on the site are:

- Soils and overburden stripping and bund formation considered as temporary operations;
- Extraction of mineral as per the phasing plan presented in Noise

Appendix 1.3;

- Transportation of the extracted mineral to the plant site by means of conveyor (apart from during the initial mineral extraction in Phase 1 when the movement of mineral will be by dump truck);
- Stockpiling and processing of the extracted mineral using the proposed processing plant (with loading shovel and radial conveyors operating as part of the processing plant operations);
- Infilling of the void (in the previous phase) with inert materials imported by road going HGVs; and
- Transportation of processed mineral off site by road going HGVs.

7.6.15 The soils and overburden is to a depth of 0.3 metres to around 2 metres across the proposed extraction area and this was used to inform the initial working depth for extraction as representing the highest level of working, with the exact depth depending on the assessment location.

7.6.16 A working depth of 0.3 metres has been assumed for the highest level of working for the infilling operations (prior to the restoration using the stored soils).

7.7 Likely Significant Environmental Effects

Operational Phase (Extraction and Infilling, Processing and Restoration)

- 7.7.1 Site noise limits have been suggested in line with the provisions of the web document “*Planning Practice Guidance*” for Minerals, based on the average background noise level plus 10 dB(A) and not to exceed 55 dB $L_{Aeq, 1 \text{ hour, free field}}$ at dwellings. Site noise calculations have been undertaken for the seven chosen assessment locations.
- 7.7.2 A comparison of the calculated site noise levels at the nearest dwellings and the suggested site noise limits is shown in the following table. The calculated site noise levels and the suggested site noise limits in the tables below are all in terms of dB $L_{Aeq, 1 \text{ hour free field}}$.
- 7.7.3 Calculated site noise levels at ground floor level (1.5 metres above local ground height) are presented for the sand and gravel extraction, infilling in the previous extraction phase with inert material as well as processing operations at the designated plant site.
- 7.7.4 A combined figure for all the routine operations taking place simultaneously is presented.
- 7.7.5 Set back distances from the proposed bunding have been explored and the highest calculated site noise levels presented.
- 7.7.6 The calculations assume that all plant for extraction and infilling is operating simultaneously in the closest practical area of the site to each receiver location.

Table 7.8 Calculated Site Noise Levels (Routine Operations)

Location	Receptor Sensitivity	Calculated Site Noise Level dB L _{eq, 1hour free} field	Suggested Site Noise Limit (Routine Operations) dB L _{eq, 1hour free} field	Complies with Noise Limit (Y/N)	Magnitude of Impact	Significance of Impact
1. Astral Gardens	High	49	50	Y	Moderate/Minor	Good standard of amenity
2. The Close	High	46	49	Y	Moderate/Minor	Good standard of amenity
3. Satchell Lane	High	47	50	Y	Moderate/Minor	Good standard of amenity
4. Wessex Manor	High	49	55	Y	Moderate/Minor	Good standard of amenity
5. Hamble School	High	48	55	Y	Moderate/Minor	Good standard of amenity
6. Hamble Lane	High	50	54	Y	Moderate/Minor	Good standard of amenity

7.7.7 The calculated site noise levels for routine extraction, infilling and processing comply with the suggested site noise limits at all six of the chosen assessment locations for which site noise limits have been suggested.

Temporary Operations (Site Preparation and Restoration)

7.7.8 Activities such as 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, as noted in Paragraph 022 of the PPGM, can be regarded as temporary operations.

7.7.9 Paragraph 022 Reference ID: 27-022-20140306 states:

“Increased temporary daytime noise limits of up to 70dB(A) LAeq 1h (free field) for periods of up to eight 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 eight weeks, a lower limit over a longer period should be considered.”

- 7.7.10 For ‘temporary’ operations Paragraph 22 Reference ID: 27-022-20140306 states:

“What type of operations may give rise to particularly noisy short-term activities and what noise limits may be appropriate?”

Activities such as 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.

Increased temporary daytime noise limits of up to 70dB(A) LAeq 1h (free field) for periods of up to eight 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 eight 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) LAeq 1h (free field) limit referred to above should be regarded as the normal maximum.”

- 7.7.11 The construction of a bund is a brief operation taking typically a matter of two or three weeks to complete. For each dwelling the highest noise level

that is calculated for storage bund formation would be reached only on a few days.

7.7.12 The highest $L_{Aeq,T}$ noise levels expected from the closest temporary operations in the proposed quarry, with one set of equipment as set out in the calculation sheet, are shown in the following table.

Table 7.9 Calculated Site Noise Levels (Temporary Operations)

Location	Receptor Sensitivity	Calculated Site Noise Level dB $L_{Aeq, 1hour free}$ field	Suggested Site Noise Limit (Temporary Operations) dB $L_{Aeq, 1hour free}$ field	Complies with Noise Limit (Y/N)	Magnitude of Impact	Significance of Impact
1. Astral Gardens	High	61	70	Y	Major/Moderate	Adverse Effect
2. The Close	High	61	70	Y	Major/Moderate	Adverse Effect
3. Satchell Lane	High	61	70	Y	Major/Moderate	Adverse Effect
4. Wessex Manor	High	60	70	Y	Major/Moderate	Adverse Effect
5. Hamble School	High	66	70	Y	Major/Moderate	Adverse Effect
6. Hamble Lane	High	61	70	Y	Major/Moderate	Adverse Effect

7.7.13 The proposals comply with a 70 dB $L_{Aeq, 1 hour, free field}$ noise limit for temporary works in line with current Government guidance.

Rights of Way/Public Footpaths

- 7.7.14 There is a public footpath (The Rail Trail) that runs to the south of the southern boundary of Phases 2 and 3 of the proposed development.
- 7.7.15 The highest site noise levels experienced by members of the public using the footpath due to routine site operations would be experienced only for a very brief period of time when a person is walking along the footpath and is at the closest possible approach to the site operations.
- 7.7.16 When extraction and/or infilling operations are taking place in Phases 3 and 4, bunding will be in place to a height of 5 metres above local ground level along the southern boundary of those phases.
- 7.7.17 Assuming a minimum distance of 115 metres between the nearest routine site operations and the footpath (including the presence of the proposed bunding), the highest calculated noise level on the footpath due to site operations would be 49 dB $L_{Aeq, 1 \text{ hour free field}}$.
- 7.7.18 Within a minute, it would be expected that a walker would be up to 150 metres from the site activity and the corresponding noise level due to the site operations at this separation distance would be expected to decrease by around 10 dB.

SSSI/SPA/SAC and Ramsar Sites

- 7.7.19 The Hampshire County Council pre-application advice also requires that the SPA/SAC and Ramsar sites are considered and that site noise levels are not to “*cause noise of more than 5 decibels as heard on the SPA and Ramsar sites*”.
- 7.7.20 The sites identified in the pre-application advice are as follows:
- Lee on the Solent to Itchen Estuary SSSI (300 metres to the east);

- Solent Maritime SAC (320 metres to the east);
- Solent & Southampton Water SPA (320 metres east); and
- Solent & Southampton Water Ramsar (520 metres south-west).

7.7.21 Due to the distances between the site and the SSSI/SPA/SAC and Ramsar sites, the calculated site noise levels are no more than 4dB(A) above background noise levels at the nearest assessment locations to each ecological site.

7.7.22 Interpreting the requirements of the pre-application advice as meaning that the noise levels from the site should be no more than 5dB(A) over background, it can be demonstrated that the site would not have a detrimental effect on the SSSI/SPA/SAC and Ramsar sites.

7.8 Assessment Summary and Likely Significant Residual Environmental Effects

Operational Phase (Routine Extraction and Restoration)

- 7.8.1 The calculated site noise levels for routine extraction, infilling and processing comply with the suggested site noise limits at all six of the chosen assessment locations for which site noise limits have been suggested.
- 7.8.2 As all the receptors considered are of high sensitivity and the calculated site noise levels comply with the suggested site noise limits at all the assessment locations, i.e. the calculated site noise levels are less than the representative background noise levels plus 10dB(A) and therefore represent a slight impact, it is considered that the impact at all the receiver locations is identified as being “*Moderate/Minor*”.
- 7.8.3 As only those impacts identified as having a significant effect would have been taken forward for further consideration in the residual impact assessment, there is no significant residual impact with regard to noise. Additional mitigation above that proposed by the operator as part of the site design has therefore not been considered.

Temporary Operations

- 7.8.4 The proposals comply with a 70 dB $L_{Aeq, 1 \text{ hour, free field}}$ noise limit for temporary works in line with current Government guidance.
- 7.8.5 Although identified as an adverse impact, these works will be of limited duration during the periods in which bund construction and soils/overburden stripping is taking place at the nearest point to the assessment locations.

Post-Restoration

- 7.8.6 There will be no noise generating activity related to mineral workings post-restoration.

7.9 Cumulative Impacts

- 7.9.1 There are no similar sites in the immediate vicinity of the application site, with the nearest mineral extraction operations on the other side of Southampton Water at a distance of at least 4 kilometres from the nearest assessment locations.
- 7.9.2 The nearest recycled aggregates site is in Ashley Crescent, Southampton which is located over 1.5 kilometres to the north-west of the site and therefore is unlikely to be audible at any of the assessment locations.
- 7.9.3 There are some housing developments on Hamble Lane, but these are located to the north of the application site at a distance where construction operations are unlikely to contribute significantly to the cumulative impact on the local area due to the development.
- 7.9.4 These housing developments are further from the site than the assessment locations considered and therefore the operational noise from the site should have minimal impact on the amenity of these new dwellings.
- 7.9.5 An application for a housing development to the east of the site (off Satchell Lane) was refused in August 2021. If this development were to go ahead, it is likely the construction noise levels will be in excess of the noise levels due to the proposed quarry.
- 7.9.6 If the housing development off Satchell Lane were to go ahead, the operational noise on those properties would be similar to that assessed for the nearest properties on Satchell Lane and therefore the site operations would not prevent a good standard of amenity for the residents.

7.10 Conclusion

- 7.10.1 This assessment sets out the findings of a noise assessment prepared in support of a planning application for the extraction of sand and gravel from a proposed quarry at the former Hamble Airfield site in Hampshire.
- 7.10.2 The proposed quarry is situated on the former Hamble Airfield site in Hamble-Le-Rice within the jurisdiction of Hampshire County Council.
- 7.10.3 Current guidelines on noise are contained in the web-document “*Planning Practice Guidance*” for Minerals, first published in March 2014.
- 7.10.4 Site noise limits for the dwellings in proximity to the proposed quarry are suggested, based on the guidance contained within the Planning Practice Guidance for Minerals having regard to the measured background noise levels at locations taken to be representative of the dwellings selected for this assessment.
- 7.10.5 Site noise calculations have been undertaken for six noise sensitive locations, taken to be representative of Hamble School and the nearest dwellings to the proposed quarry. The calculated site noise levels are presented for inspection and comparison with the suggested site noise limits at the receptors and demonstrate compliance with the suggested site noise limits at all nearest noise sensitive properties.
- 7.10.6 The calculated site noise levels for routine and temporary operations at the proposed quarry comply with the suggested site noise limits at all the assessment locations.
- 7.10.7 The impact of site noise on the Rail Trail public footpath to the south of the site and the SPA/SAC and Ramsar areas in the vicinity of the site has also been considered.

- 7.10.8 Since the proposed operations conform to the advice set out in the Planning Practice Guidance for Minerals with regard to both routine and temporary operations, it is considered that the site can be worked while keeping noise emissions to within environmentally acceptable limits.