Brookhurst Wood - Open Windrow Compost Facility

Environmental Permit Variation EPR/AB3700LS/V006 Noise and Vibration Management Plan for ATRF and OWC

Biffa Waste Services Ltd

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Quality information

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1. Report Context

1.1 Introduction

AECOM has been commissioned by Biffa Waste Services Limited ("the Operator" or Biffa) to prepare an application to develop a new Open Windrow Composting Facility (OWC) at Brookhurst Wood, Warnham, West Sussex. Given the locality of the new development on site, the new OWC will be added as an additional operation to the environmental permit (EPR/AB3700LS) for the Aggregate Treatment and Recycling Facility.

The new OWC facility is being developed to treat up to 60,000 tonnes per annum (tpa) of green waste and 30,000 tonnes per annum of wood waste.

This document has been prepared to support the permit application and details the Noise and Vibration Management Arrangements for the new OWC processes. The report should be read in conjunction with other supporting application information.

1.2 Proposed Facility

There are no changes proposed to the existing Aggregate Treatment and Recycling Facility (ATRF) processes although a new crushing operation will be included, and some additional waste codes will be added to the permitted waste list including mixtures of waste from the mechanical treatment of wastes that contain a high proportion of recoverable aggregate..

The proposed facility will comprise new plant to facilitate the receipt, shredding and subsequent composting of green waste and shredding of wood waste. Waste types accepted at the facility will be defined according to their List of Waste (LoW) Code and will generally consist of:

- wood waste;
- green waste;
- leaves;
- grass clippings; and
- horticulture type waste.

The facility will not receive or accept any waste covered by the Animal By-Product (Enforcement) (England) Regulations 2013 (ABPR).

The new plant will be designed to effectively shred the constituent parts of the incoming waste, which is then transferred to open air windrows for composting and maturation. Green waste will be treated through the composting process while wood waste will only be shredded.

The intention is to produce a PAS 100 compliant compost from the inputs and as such it will be deemed to have reached end of waste criteria and is therefore no longer subject to waste regulatory controls as it has achieved product status. The product can be utilised for a wide range of beneficial after-uses including landfill restoration, community projects within West Sussex, domestic use and for agriculture.

2. Noise Sensitive Receptors

The nearest noise-sensitive receptors are detailed below in Table 1. A location plan of the local area showing receptor and noise monitoring positions is provided in Appendix A.

Table 1 Environmental Noise Receptors

Receptor ID	Description	Approx. Distance from Planning Application Site Boundary (m)	Direction
R1	Bramblehurst	400	Southeast
R2	Graylands Lodge	250	East
R3	Kingcoate House	650	Northwest
R4	Cox Farm	350	West
R5	Andrew's Farm	650	Southwest
R6	18 Station Road	600	South
R7	South Lodge	300	Northeast

3. Site Operations and Site Noise Sources

3.1 Operating Hours

Waste will be accepted in accordance with the ATRF facility Planning Permission (WSCC/003/14/NH) as detailed in Table 2 below.

Table 2 Hours of Waste Acceptance

Day of the week	Opening Hours
Monday to Saturday:	07:00 to 18:00
Sunday:	Closed for deliveries
Public Holidays:	07:00 to 10:00

3.2 ATRF Operations

The existing ATRF facility is situated on existing hardstanding and treats up to 60,000tpa of street cleansing and similar residues to produce a range of outputs including:

- Aggregate materials;
- Metals;
- Organic materials; and
- Silts.

The principal elements of the ATRF process are separation, washing, polymer addition, flocculation and dewatering. The process includes wet physico-chemical treatment to separate pollutants from the clean aggregate materials. In addition a mobile crusher will be mobilised on a campaign basis for around 2 – 3 weeks each quarter to process oversize material. The crusher will be located adjacent to the ATRF plant to the north.

Plant associated with the ATRF are summarised in Table 3:

Table 3. ATRF Noise Sources

Component	Location
Excavator	ATRF reception area
21T dump truck (tipping fill)	ATRF - input
Excavator	ATRF - input
Raw feed hopper with trommel.	ATRF processing plant
Variable speed belt feeders	ATRF processing plant
Feed conveyor with Belt magnet and weighing scales	ATRF processing plant
AggMax 80R Washing System	ATRF processing plant
Coarse aggregate screen, Vibrating poly' deck screen, twin motors.	ATRF processing plant
Sand product vibrating screen, polyurethane deck.	ATRF processing plant
Organics screen, Vibrating polyurethane deck.	ATRF processing plant
Evowash 71 System with hydrocyclone, dewatering screen, sump and slurry pump	ATRF processing plant
Output conveyors * 2	ATRF processing plant
Density cyclone feed pump	ATRF processing plant
Density cyclone separator 500 mm diameter	ATRF processing plant
Fines feed pump	ATRF processing plant
Fines dewatering screen, High frequency polyurethane deck.	ATRF processing plant
Dosing system (coagulant/ flocculant)	ATRF processing plant
Fines cyclone separator	ATRF processing plant

Component	Location
Decanter centrifuge	ATRF processing plant
Filter belt press	ATRF processing plant
Mobile crusher	Area north of ATRF processing plant

The ATRF plant would only be used for short durations and not be a continuous source of sound during the operational hours. Similarly the crusher is only operated for short periods once per quarter and would not be a continuous source of sound during the operational hours.

3.3 Open Windrow Composting Process

The existing ATRF facility will be situated on a new concrete treatment pad and treats up to 60,000tpa of green waste and 30,000 tpa of wood waste. Waste types accepted at the facility will be defined according to their LoW Code and will generally consist of:

- wood waste;
- green waste;
- leaves;
- grass clippings; and
- horticulture type waste.

The principal elements of the OWC process includes shredding, screening and separation plant. These will be generally enclosed within the plant room, but with some of the plant protruding from the plant room on its eastern façade.

Plant associated with the OWC are summarised in Table 4:

Table 4 Plant – Open Windrow Composting Facility

Component	Location
Excavator	OWC waste storage area
Loading Shovels	OWC storage and separation area
High speed tracked shredder (Terex TBG630)	OWC windrow area
Raw feed hopper with vibrating screen.	OWC Screening and Separation Area
Variable speed belt feeder	OWC Screening and Separation Area
Organics screen, Vibrating polyurethane deck.	OWC Screening and Separation Area

OWC plant would only be used for short durations and not be a continuous source of sound during the operational hours.

3.4 Site Layout

A plan showing the installation boundary and layout for the ATRF and OWC is presented in Figure 3, Appendix A.

4. Noise Control Measures

4.1 Physical Measures

No additional physical noise control measures (e.g., additional noise bunds, acoustic barriers, or enclosures) are currently proposed beyond those already in place. Opportunities for additional physical noise control measures will be reviewed on a regular basis and, where practicable and cost effective, may be implemented.

The fitting and use of audible reversing warning systems on mobile plant and vehicles is a health and safety requirement which saves lives. The use of conventional audible reversing alarms ('bleepers') can cause excessive noise that may transmit beyond the site boundary. Alternatives exist, which, whilst ensuring they give proper warning, have a reduced noise impact on persons outside the site (e.g., self-adjusting (to background noise levels) and broadband 'white noise' alarms which produce a reduced tonal noise).

Mobile plant operated by the site shall be fitted with white noise or other suitable reversing alarms that will be unlikely to cause annoyance to nearby noise sensitive receptors.

It is likely that vehicles accessing the site are fitted with a range of reversing alarms that are essential for health and safety at other sites that they serve. Reversing will only be carried out where necessary.

4.2 Management Measures

The Site Manager has overall responsibility to ensure noise from the site is kept to a minimum. The Site Manager is responsible for ensuring that any applicable noise limits at sensitive receptors set by any planning permission conditions are met.

All staff working on the site have a responsibility to be aware of the need to ensure noise generated by the site is kept to a minimum and to report any potential issues or any potential improvements.

A range of management noise control measures will be implemented. These measures will continue and, as for physical noise control measures, will be regularly reviewed and improvements implemented where practicable.

Management noise control measures will include:

- all site staff to be instructed on the importance of noise control and minimising noise emissions from the site during their inductions;
- reinforcement of induction information within regular "toolbox talks";
- signage on site, reminding all staff of the need to keep noise to a minimum;
- horns on vehicles and mobile plant not to be used, unless absolutely necessary;
- engines not to be "revved", unless absolutely necessary;
- vehicle and mobile plant engines to be switched off when stationary, unless impracticable;
- static plant engines to be switched off when not in use;
- all plant and machinery used on site to be fitted with an effective silencer and operate with doors or cowls of engine(s) in the closed position;
- vehicle speeds within the site to be restricted; and
- all plant and machinery to be regularly maintained (in accordance with the planned maintenance programme), to ensure that no item will produce excessive noise.

4.3 Plant Purchasing Policy

When new plant is to be purchased, the relative noise emission levels of the suitable options will be a consideration in the decision making process. Noise emissions for individual items of plant are generally

provided as a sound power level (SWL or Lw) in dB(A). The lower the sound power level, the quieter the plant.

The above applies equally to hiring of plant or the transfer of plant from another company site.

5. Compliance Noise Monitoring Protocol

5.1 Noise Monitoring Schedule

Compliance noise monitoring will only be undertaken in the event that:

1. A noise limit or monitoring has been stipulated (e.g., within environmental permit or planning conditions) and compliance must be demonstrated; or
2. In circumstances where complaints have been received and one of the following conditions are met:
   - Corrective action has not resolved the problem; or
   - Monitoring will assist in determining source/cause and what further remedial action may be required.

Where compliance monitoring is required, it will be completed in accordance with the sections below.

5.2 Instrumentation

Noise monitoring will be undertaken with a tripod mounted Class 1 integrating sound level meter (SLM), meeting the requirements of in BS EN 61672-1:2003 'Electroacoustics. Sound level meters. Specifications.'

The SLM and associated calibrator will have valid calibration certificates.

The SLM will be fitted with a suitable windshield.

5.3 Noise Monitoring Locations

Noise monitoring shall be undertaken at locations adjacent to the receptors as in shown in Table 1 and the receptor plan (Appendix A). Note that access to Receptor 4 (Cox Farm) may require arrangement with the landowner/tenant as this is located on a private access road.

5.4 Noise Monitoring Procedure

Noise monitoring will be undertaken during normal operations and should avoid breaks and periods of plant maintenance or breakdown.

Measurements will be undertaken during suitable meteorological conditions (i.e., no precipitation, winds below 5 m/s and no snow on the ground).

The noise monitoring equipment will be sited in free-field conditions (i.e., at least 3.5 metres from any reflecting surface apart from the ground), with the microphone between 1.2 and 1.5 metres above ground level.

Noise monitoring will be undertaken by a suitably qualified person and in accordance with good acoustical practice.

LAeq, LA90 and LAmax noise will be logged in 1 minute intervals over a 1 hour period. This will enable the exclusion of measurement data significantly affected by short term extraneous sources of noise not attributed to the SHTF or SWF.

All results will be recorded on a suitable log sheet, which will include time of day, duration of measurements and a description of audible noise sources, together with site activities over the time of monitoring. Prevailing weather conditions, including wind direction and speed, air temperature and degree of cloud cover, will also be recorded with each set of measurement results.

An example log sheet is provided as Appendix B; alternative forms may be used but would still need to record the required information.

A permanent record of all noise monitoring undertaken will be kept on site and made available for inspection by relevant parties. The site operator will furnish the relevant authoritative body with the particulars of measurements recorded within two working days of a request.

5.5 Exceedance of Noise Limits

Where the results of the noise monitoring indicates that any applicable noise limit is exceeded at the noise sensitive property, the Site Manager will be notified, and actions taken to reduce noise levels so far as is practicable. The remedial actions taken in these circumstances will be noted and reported to the relevant authoritative body.

The remedial actions will include:

1. Identification of the plant and / or activities responsible for the exceedance;
2. An assessment of the options to reduce noise levels, resulting in one or more of the following:
   - modification of site working practice (e.g., relocating plant, phasing of activities so as not to run concurrently);
   - installation of noise bunds, acoustic barriers, or mobile enclosures (details to be agreed with the relevant authoritative body);
   - replacement of certain plant items; and
   - cessation of use of certain plant items for a percentage of each working hour

Once the remedial actions have been put in place, noise monitoring at the receptor locations will be carried out according to the noise monitoring procedure and the measured noise levels will be assessed. Full details of the remedial actions taken, and the post action noise monitoring will be entered on the log sheet.

In the highly unlikely event that the above procedure does not result in compliant site operations, a phase shutdown, potentially leading to a temporary suspension of all site operations, will be implemented. An action plan to remedy the situation will be developed and agreed with the relevant authoritative body and fully implemented, whereby site activities will re-commence.

6. Complaint Management

6.1 Procedure

Should complaints arise from nearby residents regarding noise from site activities, a log of the complaint will be made, to include the:

- date and time that the complaint was received by the site;
- name, address and telephone number of the complainant; and
- nature of the complaint.

The Site Manager shall be notified as soon as possible that a complaint has been received, and if required, contact the complainant to obtain further details.

The relevant authoritative body shall be notified of any complaint within two working days of the complaint being received.

If the complaint relates to an event in the past, then the likely cause of the complaint will be investigated as soon as possible via records of site activities. The complainant will be advised of the results of the investigation and any remedial action taken as a result of the complaint, within two working days of the complaint being received.

If the source of the complaint is still ongoing, it will be investigated as soon as reasonably practicable. If initial investigations identify that the noise levels are unusual or the site noise limits (if applicable) may be being breached, then remedial action will be taken to reduce noise levels.

If the source of the complaint relates to normal day to day activities, noise monitoring will be undertaken to determine if such works are likely to result in a breach in the future. The results will be discussed with the complainant and explained with regard to any site noise limits (if applicable) and the influence of other noise sources outside the site.

If the noise monitoring results indicate that normal day to day activities are likely to result in a breach, then adjustments to the working methods will be undertaken to reduce noise levels.

Complaints should be directed to:

Name: Mr Lee Coulson – Site Manager

Address: Brookhurst Wood Landfill Site

Langhurstwood Road. Warnham, West Sussex, RH12 4QD

Tel.: Landline 01403 274 777

Out of Hours 0800 917 6896

6.2 Complaint Records

Details of any complaint will be recorded in the compliance database which will ensure data is collected and recorded in a systematic way. The compliance database is accessible by the Site Manager and other Senior Managers and will be reviewed at least quarterly for trend analysis.

6.3 Stakeholder Engagement

Biffa meet with the local community liaison committee on a regular basis (at least 2 per annum) to provide an update on site operational performance including issues related to odour. In the event that a change is planned to the site operations, treatment processes or nature of the wastes being accepted at the site then Biffa will convene additional liaison meetings as necessary to proactively engage the community.

7. Record Keeping

Records relating to the management and monitoring of noise shall be maintained, to include:

- results of routine inspections;
- results of compliance noise monitoring and any additional quantitative noise monitoring undertaken;
- details of any complaints, to include date, time, location of complainant, prevailing weather conditions and outcome of the complaint investigation;
- details of any remedial action taken in response to issues identified by members of staff or via a complaint, and any subsequent change to normal operating procedures; and
- plant maintenance schedule.

The records will be kept in the main site office.

The records shall be available for inspection by the relevant authoritative body.

The relevant authoritative body will be provided with the results of any noise monitoring within two working days.

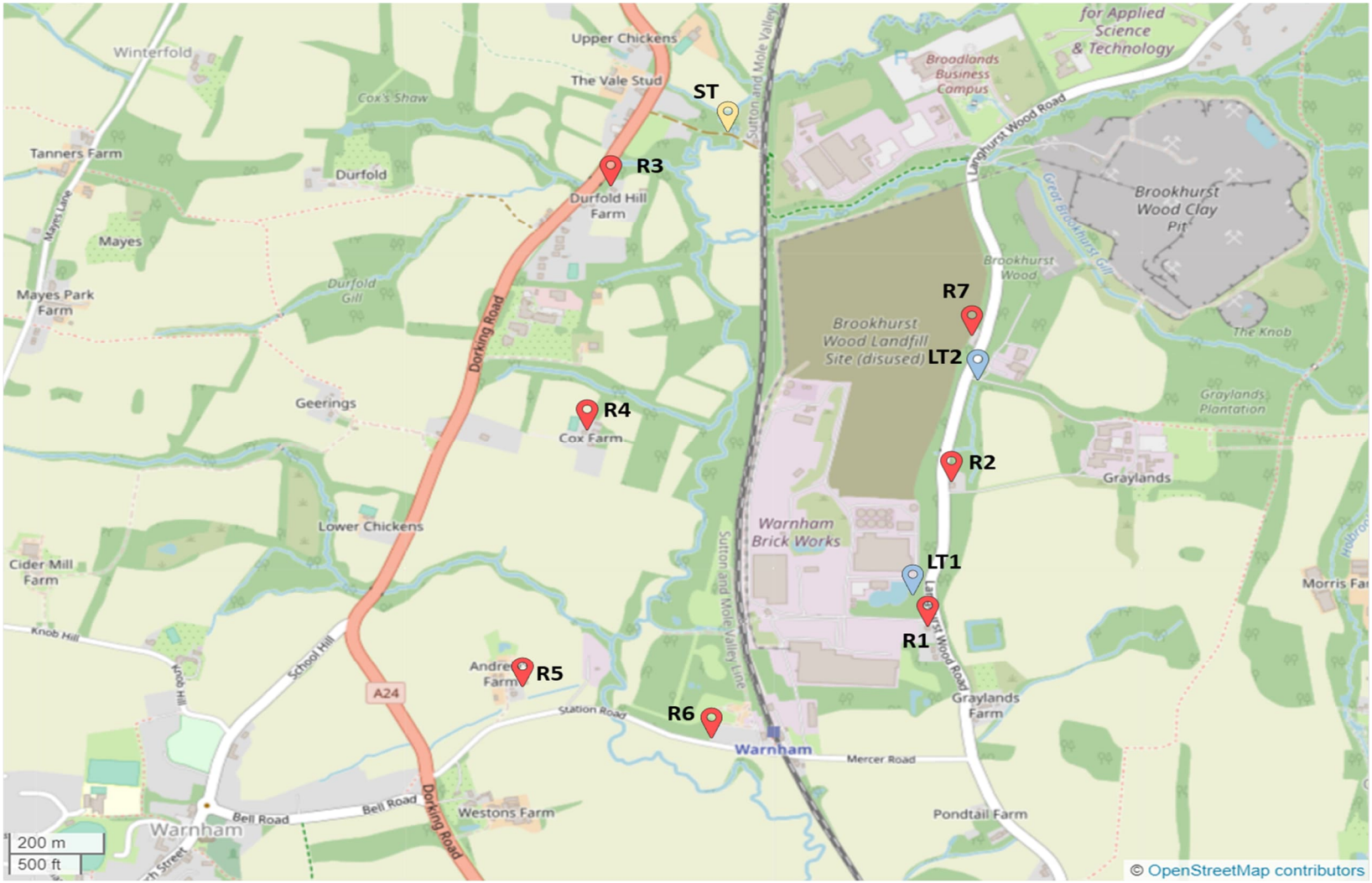
8. Review / Update

This NVMP is a controlled document, and forms part of the Integrated Management System. Records relating to the management and monitoring of noise resulting from the implementation of this NVMP will also form part of the Integrated Management System.

The NVMP is intended to be a live document which serves as a reference during day-to-day operations, and as such would be reviewed on an annual basis. The NVMP will also be reviewed and updated should any of the following occur:

- significant changes are made to the process or operational practices;
- there is a change to the management structure, designation of responsibility or training provision; and
- complaints are received, which on subsequent investigation result in the identification of further control measures or remedial action, in addition to those set out within this NAP.

Appendix A Figure 1 Environmental Noise Receptors and Measurement Locations Map



Appendix B Example Log Sheet

Noise Monitoring Sheet

Sheet 1 of

Project Title		Job No	
Site			

Staff Initials

START TIME: (DD-MM-YY, HH:MM) - - : START

END TIME: (DD-MM-YY, HH:MM) - - : END

METER SLM XX / VLM XX — < 2 YEARS SINCE CALIBRATION? (SEE LABEL) — Tick

CALIBRATOR CAL — SAME CALIBRATOR USED AT END? — Tick — < 1 YEAR SINCE CALIBRATION? — Tick

METER CHECKS AND SET UP

	Tick		Tick		Tick
Sufficient battery?		Date and time correct?		Correct windshield correction set	
Sufficient memory?		Clocks synchronised?			

CALIBRATION

* Adjust sensitivity at start. Note value but do not adjust at end

	Start	End	
Calibration Level			
Cal within ±0.5 dB			Tick to confirm that values within 0.5 dB of expected

LOGGING PERIOD — RESOLUTION — Tick

File name / Number

WEATHER CONDITIONS

	Wind direction (arrow) START			Wind direction (arrow) END		
WIND SPEED (m/s)	N W E S	AV m/s	MAX m/s	N W E S	AV m/s	MAX m/s
CLOUD COVER (eighths)		/8			/8	
TEMPERATURE (°C)		°C			°C	

PRECIPITATION (Tick)							ROAD CONDITIONS (Tick)				GROUND CONDITION (Tick)			
	NONE	DRIZZLE	RAIN	SNOW	HAIL	FOG/MIST	DRY	DAMP	WET	ICE/SNOW	SOFT	HARD	ICE/SNOW	FROZEN
START														
END														

Subjective description of sound climate (close your eyes and describe what you hear)

Dominant Noise (Start)	Dominant Noise (End)
Other Sources (Start)	Other Sources (End)

Other Comments:

Noise Monitoring Sheet

Sheet 2 of

Site		Date		Meter	

EQUIPMENT LOCATION

MICROPHONE HEIGHT ABOVE GROUND ____ METRES

MICROPHONE MOUNTED ON (TICK)				DISTANCE FROM VERTICAL SURFACE / FAÇADE (>3.5M OR =1M)	
TRIPOD		A FRAME		LINE OF SIGHT FROM SOURCE TO RECEIVER? (Y/N)	
MAST		FENCE			
OTHER					
OTHER					

Plan view sketch with distances.

Mark: Meter location North arrow Main audible noise souces

Photographic direction and positions (meter installed and all round view of surroundings)

Distance to nearest roads and other noise sources (identify) ____ estimate ____ measured

Note position, height and construction material of barriers. ____ estimate ____ measured

Note position and type of ground cover (grass, stone, shrubs etc)

	2 letters	5 numbers	5 numbers		east/west	north/south
GPS Coordinates				or		

Camera ID: ____ GPS ID ____

	Print name	Signature	Date
Site staff			
QA checked			

Noise Monitoring Sheet

Project Sheet of

Site **Date** **Meter**

Time	Duration	Comment	LAEQ, T (dB)	OTHER (dB)