

KONINGS JUICES AND DRINKS UK LTD

Noise and Vibration Management plan

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Introduction

1.1 Report Context

This Noise and Vibration Management Plan (NMP) has been prepared to support an application for an IPPC licence.

The site is in the process of installing a 2nd line. When the new line is complete we will be capable of producing in excess of 300 tonnes of finished products a day. This is a listed activity under Part 6.8 (1)(d)(ii) of the Environmental Permitting Regulations (2016).

This document sets out the Konings Juices and Drinks UK Noise and Vibration Management Plan (NMP) for the site to assist with any permit conditions that may arise as part of our permit application.

This Noise and Vibration Management Plan details the current noise control mechanisms and procedures for the site. This document has been prepared with reference to the following guidance:

The H3: Horizontal Guidance for Noise. This guidance provides supplementary information, relevant to all sectors, to assist in preventing and minimising emissions of noise as described in the Sector Guidance Notes (or the General Sector Guidance Note).

The guidance is in two parts:

Part 1 – Regulation and Permitting – outlines the main considerations relating to the setting of Permit conditions and subsequent regulation of noise. Part 1 is aimed primarily at the information needs of regulators.

Part 2 – Noise Assessment and Control – describes the principles of noise measurement and prediction and the control of noise by design, by operational and management techniques and abatement technologies. Outline methods of noise control are provided such as:

- *use of inherently quieter processes;*
- *selection of inherently quiet plant or “low-noise options”;*
- *site layout to maximise natural screening, screening by buildings and separation distances;*
- *orientation of directional noise sources away from sensitive receptors; and noise barriers or bunding.*

The document also details how noise should be managed and includes in Appendix 4 information that should be included in a Noise Management Plan. Part 2 is aimed equally at the Regulator and at Operators.

1.2 Objectives

The Noise and Vibration Management Plan (NMP) is designed to ensure that Konings Juices and Drinks UK Ltd, continues to meet existing and future Environmental Permit (EP) requirements relating to noise control. In addition to the conditions of the EP and in line with standard Environmental Permitting Guidelines, the operator is committed to using Best Available Techniques (BAT) to reduce the potential for noise nuisance complaint from the site.

A NMP has therefore been developed and employed to principally:

- identify and employ 'appropriate measures' to minimise the generation of noise and vibration and subsequent exposure/impact;
- prevent exposure of people outside the site to levels of noise which would result in complaints; and
- minimise the risk of unplanned 'noisy' events which have the potential to result in offsite noise complaints.

This NMP serves to aid the decision-making process on the choice of controls, general site design, and operational practice in line with current industry best practice. The NMP is a working document with the specific aim of ensuring:

- noise and vibration impact is considered as part of routine operations;
- the minimisation of the risk of unplanned 'noisy' events that could result in offsite complaints;
- noise is primarily controlled at source by good operational practices, the correct use and maintenance of plant, and operator training; and
- 'appropriate measures' are taken to prevent or, where that is not reasonably practicable, to minimise noise or vibration emanating from the facility.

1.3 Status

This NMP is a controlled document, and forms part of the site's Environmental Management System.

The specification for the periodic review and update of this plan will be set out within the EMS however, this plan will be reviewed as required should the following occur:

- significant changes are made to the plant or operational practices;
- the EA requests that the NMP is updated, in their role as regulator; or
- 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 Noise Management Plan.

2. Site setting and background

2.1 Location

Konings Juices and Drinks UK Ltd is involved in the washing and pressing of apples and the filtering, pasteurizing, filling, and capping of apple juice, orange juice and juice blends packaged into PET containers.

The site is situated just off of the A134 which runs between Colchester Essex and Sudbury Suffolk. The factory stands on land bordered by apple orchards owned by Boxford Suffolk Farms. There are two residential properties adjacent to the site also owned by Boxford Suffolk farms.

The nearest villages are those of Leavenheath and Boxford and the surrounding land is mainly farm land which is designated Green belt. The nearest river is The Box.

2.2 Process Description

The raw materials (apples) are delivered via bulkers where they are offloaded, cleaned and pressed. Other juices such as orange are tankered. After pressing the juice is stored in tanks where it is then pasteurised and bottled. We are currently able to produce up to 16000 bottles per hour, but this is due to increase by a further 24000 bottles per hour when our 2nd line is installed.

Our main by-product is apple pomace. This is transported to the farm that is situated next door and used as a fuel for their anaerobic digestion plant.

The site also operates a waste water treatment plant where all the process water is treated before it sent to the lagoon.

2.3 Sensitive Receptors

In selecting appropriate sensitive receptors, following IEMA, 2014; it is recognised that these may include building uses other than dwellings, or animals other than human beings. There are no known sensitive, ecological or wildlife sites in the immediate area; such that residential dwellings and heritage assets define the local noise sensitive receptors.

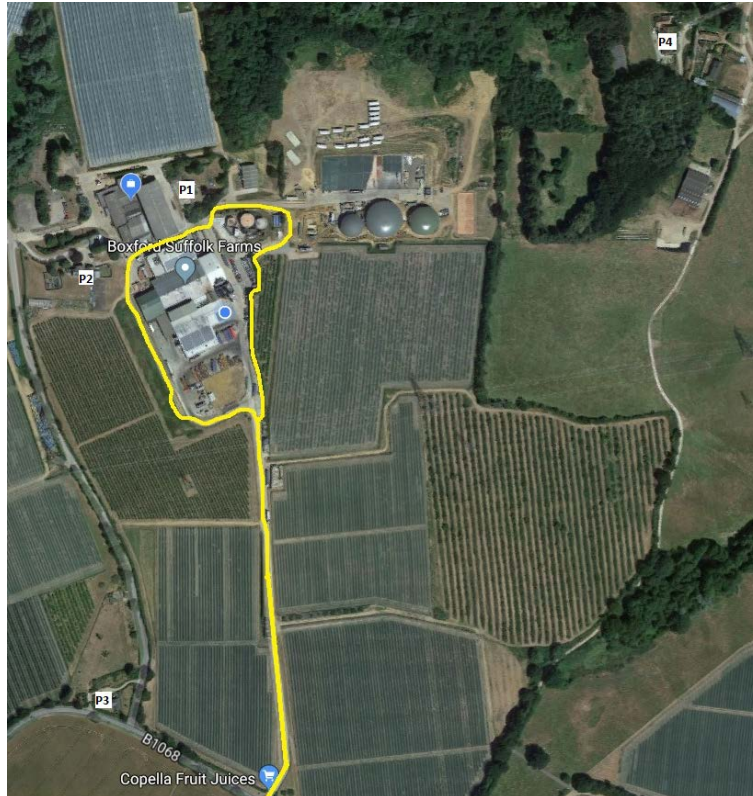
The impact of noise has been considered at all sensitive locations listed in this section.

P1 - The Old Farm House is a detached dwelling, 25m from the north boundary of The Site, 45m from Konings dry goods warehouse and 15m from Boxford Farm buildings. This premise lies within the wider industrial site of Boxford Farms.

P2 - Langlands defines a row of terraced properties immediately beyond the north boundary of The Site; 40-50m from Konings production building. These premises lie within Boxford Farms site.

P3 - Blackthorn Lodge is a detached property on the road junction of the B1068 Stoke Road and Stone Street, south of The Site; 375m from Konings production building.

P4 - Peyton Hall defines a heritage asset in the setting of Boxford; 500m from Konings production building.



2.4 Background and Boundary Noise Levels

Background sound level data at each of the sensitive receptors was taken in January 2017. The data recorded is displayed in the table below.

Local Receptor	Period	Rating Sound Level dB L _{Ar, Tr}	Background Sound Level dB L _{A90, T}	Difference dB L _{Ar, Tr} – L _{A90, T}
P1 Old Farm House	Day (07:00 – 23:00)	48	48	0
	Night (23:00 – 07:00)	48	48	0
P2 Langlands	Day (07:00 – 23:00)	39	42	-3
	Night (23:00 – 07:00)	39	41	-2
P3 Blackthorn Lodge	Day (07:00 – 23:00)	36	42	-6
	Night (23:00 – 07:00)	36	29	+ 7
P4 Peyton Hall	Day (07:00 – 23:00)	34	35	-1
	Night (23:00 – 07:00)	34	28	+ 6

2.5 Noise Complaints History

There have been 2 noise related complaints reported to site in the last 2 years. Both of these have been formally recorded. On investigation it was found that on both occasions the noise came from the farm. We passed the complaint to the farm and have recorded their responses.

3. Noise Sources & Assessment

3.1 Identification of Key Noise Sources

The key to limiting noise effects on local receptors is to control noise emissions at source.

As part of a recent planning application for the site expansion, noise surveys and noise modelling were undertaken, in order to model potential noise impacts from the site post upgrade. This modelling including the collection of background noise data at 4 nearby, noise sensitive receptors and identification of the key noise sources on the site.

The existing noise environment was observed at the start and end times of measurement and can be briefly summarised as follows.

- Position 1 (P1) – Mechanical plant noise, emanating from the east of Koning’s dry goods warehouse, is influential on the sound climate. This also includes a lesser contribution from the waste water treatment plant east of P1. Intermittent, low-speed vehicular movements, including forklifts and HGV’s, are noticeable about Koning’s and Boxford Farm buildings. Loading and unloading activity occurs adjacent to P1 as attributable to Boxford Farm.
- Position 2 (P2) – Cold store chillers to the west of Koning’s production building influence the underlying sound climate. Intermittent and low-speed vehicular movements occur along the access route about the west of Koning’s production building.
- Position 3 (P3) – Road traffic noise influences the sound climate at this location; primarily along the B1068 Stoke Road with frequent, moderate speed movements. Brick Kiln Hill / Stone Street includes a reduced number of vehicular movements travelling to and from the associated road junction at the B1068.
- Position 4 (P4) – Low-level, distant road traffic and industrial sound is audible. The position represents typical rural conditions of the area surrounding The Site with limited or no view of neighbouring noise sources.

3.1 Noise Sources

The definition of noise sources within the NMP includes activities at the installation which may produce noise or vibration, and process plant items where noise may be generated as a result of the processing activity.

Juice pressing and filling operations are all located internally within enclosed buildings and as such there is limited risk of noise from these operations and are excluded from this assessment. Such issues are covered by occupational noise assessments and controls.

The areas we have identified that emit a noise are as follows

Area	Description
Waste Water Treatment Plant	Pump and motor equipment at the WWTP
Loading Bays	The trailers are currently powered by diesel and hum when running.
Cold store chillers	These hum when running.
Air conditioning units & Hvac	Humming noise when running.
FLT’s	White noise when reversing, horn.
HGV’s	Engine noise, tyre rumbling.
Apple offloading equipment	Electric motors – Infrequent squeaking sound.

Cooling towers	Humming noise.
Boiler house & Ammonia room	Both located in the building, however noise does emit outside from this area. Boilers emit a loud hissing sound once a week during the boiler blowdowns.

3.2 Noise Assessment and Controls

The emphasis in the management of noise from the site is on prevention, and as such preventative maintenance, management, monitoring and inspection of all potential sources of noise are the main control measure.

4. Management Responsibilities

4.1 Roles and Responsibilities

Details of the roles and responsibilities of site staff with regard to noise management shall be formally recorded.

On-site communication between the different site teams and contractors is a vital aspect of any environmental management system. At team meetings any noise & vibration issues shall be discussed to a programme to monitor performance and to identify and address any new issues.

The roles that shall be identified are described below.

4.1.1 Site Leader

The Site Leader has the overall responsibility for all of the actions and activities at the site.

4.1.2 Site Quality, Safety and Environment Manager

The Site Quality, Safety and Environment Manager is responsible for implementation of the NMP, including implementation and testing of odour control mitigation measures, responding to incidents, monitoring, reporting and other procedures within the NMP. The Site Quality, Safety and Environment Manager will ensure that the NMP is kept updated and that all staff training records are up to date.

4.1.3 Operations Manager

Responsible for implementation of noise controls within their management regime. This would be achieved by ensuring that all documentation is accurate and up to date, and that all tasks are undertaken by trained and competent persons.

4.1.4 Engineering Manager

Responsible for maintaining and repairing equipment and ensuring any planned maintenance activities take place.

4.1.5 Operational / Contractor Staff

All operational and contractor staff shall comply with site procedures and permit conditions and not deviate from normal procedures without authorisation from a member of the site senior leadership team. They shall co-operate with managers and communicate any potential issues associated with the work.

5. Routine Noise Control Measures

5.1 Operating Parameters and Noise Abatement Techniques

There is no specific noise abatement equipment. A combination of management techniques, housekeeping, monitoring, maintenance and inspection are used to minimise noise.

5.2 Maintenance Procedures

There is no active noise abatement equipment necessary on the site which requires maintenance. General planned preventative and reactive maintenance of site equipment is audited as part of the EMS.

The table below details the processes and checks carried out to minimise noise emission from operations at the site.

Processes and Checks Carried out to Minimise Noise Emission from Operations Potential Noise Source	Minimisation Technique
HGV Movements onto/from Site	HGV's are given the route to site and informed that they must not enter the site via stone street. Vehicles are required to be driven on and off site with due consideration for neighbours. No vehicle waiting on public roads
FLTs	FLT's have been fitted with white noise reversing sirens to minimise noise. Enforced speed limit of 10MPH Trained vehicle operatives
Fixed plant	Daily inspections by the engineering function or designated personnel to ensure that the equipment is well maintained. Regular maintenance carried out in line with the Planned Preventative Maintenance Plan (PPM).
Process Line	Operation performed within an enclosed building to contain potential noise. All machinery is switched off when not in use. Regular maintenance carried out in line with the Planned Preventative Maintenance Plan (PPM).
Fans, motors, HVAC and refrigeration units.	Efficient extractor fans, motors and refrigeration units used, maintained in good condition to avoid excessive noise. Equipment register inspections completed by competent employee. Preventive maintenance programme
Alarm systems	External alarm on apple offloading system uses a light instead of sound.

5.3 Training

The need for noise minimisation is widely advertised on site. As part of staff training and induction, it is explained to employees that they are to carry out their work with the minimal amount of noise possible especially if they are working outside.

5.4 Noise Surveillance

Noise surveillance was completed in January 2017.

6. Monitoring and Improvement

6.1 Operational Parameters Monitoring

Noise abatement equipment has been installed on all the fork lift trucks. They now use white noise sirens which limit the impact of any noise they emit.

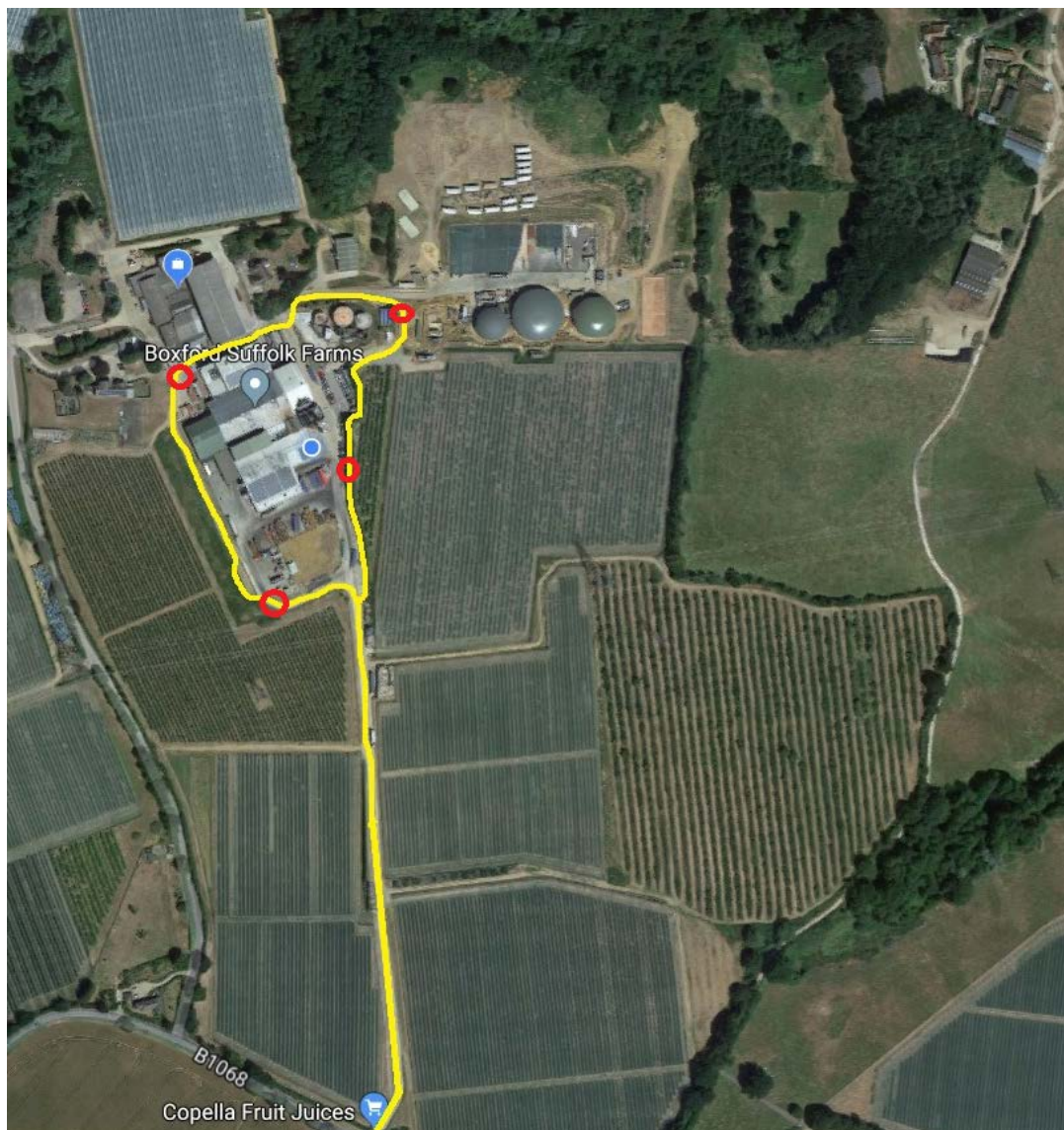
6.2 Identified Improvements

- Installation of sockets at the loading bays to allow the cooling units to run on electricity.
- Look into running the cold store chillers on the Ammonia system to eliminate the noise from the chillers at the rear of the building.

6.3 Noise Monitoring

The QSE manager is responsible for ensuring that inspections are made of the site and its perimeter in order to identify any sources of noise and to establish whether excessive noise is discernible at the boundary.

The 4 main areas that should be inspected are highlighted in red below.



A noise assessment score is made in the following way:

- 0 – No noise;
- 1 – Very faint noise;
- 2 – Faint noise - *a noise that is slight and not easy to notice;*
- 3 – Distinct noise - *when the character of the noise can be recognised*
- 4 – Strong noise – *a noise that produces a strong response by an individual;*
- 5 – Very strong noise;
- 6 – Extremely strong noise.

If applicable a note is made of the persistence and character of any noise.

Should a level of noise be of 4 or more be identified on the scale, the site management will be Informed.

Observations including time, date, wind direction, temperature, wind strength, wind direction are recorded in the daily checklist form. Any specific site operating conditions at the time of survey will also be recorded, enabling the identification of any 'abnormal' site operating conditions such as downtime for refurbishment or maintenance.

6.4 Contingency Measures

In the event that noise complaints are substantiated by site management or noises are found during monitoring, appropriate remedial action will be implemented.

The nature of the remedial action will be dependent upon the nature and source of the noise issue. Where the noise relates to the operation of a specific item of plant or equipment at the site, the item will be isolated as soon as practicable and appropriate remedial action identified to minimise a reoccurrence of the issue. Where it is impractical to isolate the item giving rise to the noise, temporary noise screening will be applied where practicable to minimise its offsite impact until a more permanent solution is implemented.

Site inspections and complaints may identify that the root cause of an issue is a failure to follow company and site policies and procedures. Refresher training to appropriate staff will be delivered, backed with tool box talks to all site staff. If the complaint originates from the actions of contractors on site, additional training and a requirement to submit new method statements for the works will be implemented.

Where the noise complaint relates to vehicle movements or mobile plant on site, identification of the underlying cause for the noise will be undertaken. Where site procedures have not been followed, leading to a noise issue, additional or refresher staff training will be delivered to appropriate staff. Where the noise has been caused by a vehicle or plant fault, the item will be taken out of service until appropriate repair or replacement works have been undertaken.

In the event that the source of noise is a vehicle or mobile plant owned and operated by a third party, such as a logistics contractor, the individual vehicle or plant will be removed from site and banned from site until such time as appropriate mitigation measures have been implemented by the owner or operator. Where the complaint relates to a fixed piece of plant or equipment and the identified source has been found to be operating in accordance with the manufactures specifications, a cost benefit analysis will be undertaken along with additional noise modelling as appropriate, to identify and implement appropriate mitigation measures.

7. Communication

7.1 Complaints

The site has a procedure within the site wide management system for receiving, logging and investigating complaints including noise. This can be found in section 7.4.3 of the sites EMS manual.

Complaints from the general public and stakeholders. All complaints are logged and recorded using form “CE161 External Communication”. Complaints are also recorded on the sites communications log EMS 7.4.2.

Data may be shared with the Environment Agency as requested.

Complaints are subject to investigation as soon as practicable after their receipt. Investigation of odour complaints will include consideration of current plant operation; weather, including prevailing wind direction; and time of day.

Within 24 hours of the complaint being passed to site staff, and where the complainant is identified, they will be called back to discuss the issue they have identified, the cause (if identified) and any implemented remedial actions will be explained to the complainant.

Where complaints are investigated and an issue identified, remedial actions are implemented as soon as possible.

7.2 Investigations

Investigations will be recorded on our Environmental investigation form (EMS11). Any actions will be tracked on the site Environmental action tracker.

Our Non conformity and corrective action process can be found in section 10.2 of the EMS manual.

8. Noise Management Auditing and Review

The NMP will be reviewed on an annual basis. In particular, routine monitoring results and the outcome of any substantiated complaints will be used to review the proposed frequency and types of monitoring and assessment of mitigation measures.

Compliance with noise targets may enable the proposed monitoring frequency to be reduced, whereas frequent exceedances may indicate the need for additional monitoring. Any reductions in monitoring frequency would not be implemented until agreed with the Environment Agency. The NMP will also be reviewed in conjunction with operational changes, including major plant and equipment in order to identify and mitigate any potentially noisy activities.