NOISE SURVEY LTD

Noise Management Plan Morris & Co (Handlers) Ltd

Report Ref: 243NEATH

Client: Morris & Co (Handlers) Limited

Site Location: Top Shed
Neath Abbey Wharf
Skewen
Neath SA10 6BL

Date of Issue: Monday 27th August 2018

Date of Assessment: Monday 20th August 2018 (Onsite noise measurements)

Picture 1: noise measurements outside opening to the factory.

Contents

1. Introduction

The Noise Management Plan details the methods by which the site operator known as Morris & Co (Handlers) Limited, will assess, reduce and prevent noise emissions from the incinerated steel and steel can metal recycling facility located at;

Morris & Co (Handlers) Limited
Top Shed
Neath
Abbey Wharf
Skewen
Neath SA10 6BL

2.0 General Sector Guidance Note IPPC SO.01

The purpose of the Noise management Plan is to comply with section 2.9 of the General Sector Guidance Note, Integrated Pollution Prevention & Control (IPPC) published by the Environmental Agency. It states;

"This UK General Sector Guidance is to be used when there is no sector specific IPPC guidance. It is a supplemental note for use with existing Integrated Pollution Control (IPC), or waste, or other guidance, and deals with issues included in IPPC which may not have been covered in the previous regulatory regimes, such as accidents, energy, noise, site restoration etc. It lays down some general standards and expectations in the UK (England and Wales, Scotland and Northern Ireland) for the techniques and standards that need to be addressed to satisfy the Regulations".

It is considered that the method and type of steel recycling conducted at the Neath site is not specifically covered by another sector specific guidance.

Section 2.9 of the General Sector Guidance is applicable to this noise management plan. The guidance states;

"The level of detail supplied should be in keeping with the risk of causing noise-related annoyance at sensitive receptors. Where an installation poses no risk of noise-related environmental impact because the activities undertaken are inherently quiet, this should be

justified and no further information relating to noise need normally be supplied. It should, however, be remembered that there can still be an underlying level of annoyance without complaints being made. Where noise issues are likely to be relevant, the Operator will be required, in the Application, to provide information on the following: (for more details see H3 Part 1 Noise)

- the main sources of noise and vibration that will fall within the IPPC installation and also on
- Infrequent sources of noise and vibration
- the nearest noise-sensitive sites
- conditions/limits imposed under other regimes
- the local noise environment
- any environmental noise measurement surveys, modelling or any other noise measurements
- any specific local issues and proposals for improvements. Within this section “noise” should be taken to refer to “noise and/or vibration” as appropriate, detectable beyond the site boundary.

The PPC Regulations require installations to be operated in such a way that “all the appropriate preventative measures are taken against pollution, in particular through the application of BAT” (Best Available Techniques). The definition of pollution includes “emissions that may be harmful to human health or the quality of the environment, cause offence to human senses or impair or interfere with amenities and other legitimate uses of the environment”. BAT is therefore likely to be similar, in practice, to the requirements of the statutory nuisance legislation, which requires the use of “best practicable means” to prevent or minimise noise nuisance. It is understood that raw material handling can generate noise where glass is being recycled or broken up. It is suggested that consideration be given to the use of sonic booths or sound proofing to control the generation of noise where such activities are being carried out. In the case of noise, “offence to any human senses” can normally be judged by the likelihood of complaints, but in some cases it may be possible to reduce noise emissions still further at reasonable costs, and this may exceptionally therefore be BAT for noise emissions.

Indicative Best Available Techniques (BAT) for monitoring

1. The Operator should employ basic good practice measures for the control of noise, including adequate maintenance of any parts of plant or equipment whose deterioration may give rise to increases in noise (for example, maintenance of bearings, air handling plant, the building fabric as well as specific noise attenuation measures associated with plant, equipment or machinery).

2. The Operator should also employ such other noise control techniques to ensure that the noise from the installation does not give rise to reasonable cause for annoyance, in the view of the Regulator and, in particular, should justify where either Rating Levels (LAeq,T) from the installation exceed the numerical value of the Background Sound Level (LA90,T).

3. Further justification will be required should the resulting field rating level (LAR,TR) exceed 50 DB by day and a facade rating level exceed 45 DB by night, with day being defined as 07:00 to 23:00 and night 23:00 to 07:00.

4. In some circumstances "creeping background" may be an issue. Where this has been identified in pre application discussions or in previous discussions with the local authority, the Operator should employ such noise control techniques as are considered appropriate to minimise problems to an acceptable level within the BAT criteria.

5. Noise surveys, measurement, investigation (which can involve detailed assessment of sound power levels for individual items of plant) or modelling may be necessary for either new or existing installations depending upon the potential for noise problems. Operators may have a noise management plan as part of their management system."

This noise management plan together with the accompanying noise survey show that;

1. Suitable noise mitigation has been implemented and will be maintained to minimize the generation and impact of noise to nearby noise sensitive receptors
2. The noise of exposure at noise sensitive receptors will be maintained at levels that are unlikely to result in adverse impact and to minimize complaints
3. Unplanned elevated noise events will be minimised

2.1 Horizontal Guidance Note IPPC 3 (Part 2) for Noise Assessment and Control

The purpose of the Horizontal Guidance Note for Noise Assessment and Control is to provide supplementary information, relevant to all sectors, to assist applicants in preventing and minimising emissions of noise and vibration as described in the Sector Guidance Notes (or the General Sector Guidance Note).

Part 2 of the guidance known as *Noise Assessment and Control* – describes the principles of noise measurement and prediction. It also provides example practices and methods for the control of noise and vibration. Methods of noise control include;

- Elimination and reduction of noise at source including the use of low noise machinery and processes;
- Use of facades and buildings to reduce the spread of noise. The building at the Neath site does provide a means of noise control by reducing the spread of noise towards the identified nearest noise receptors.
- Site layout to take advantage of the natural environment such as hills and valleys to control the spreading of noise. At the neath site, the opening to the building does not face noise receptors
- Orientation of directional noise sources away from sensitive receptors; and by use of
- noise barriers or bunding, At the neath site the highest noise emitting activities such as the trommel and baler are conducted inside the building..

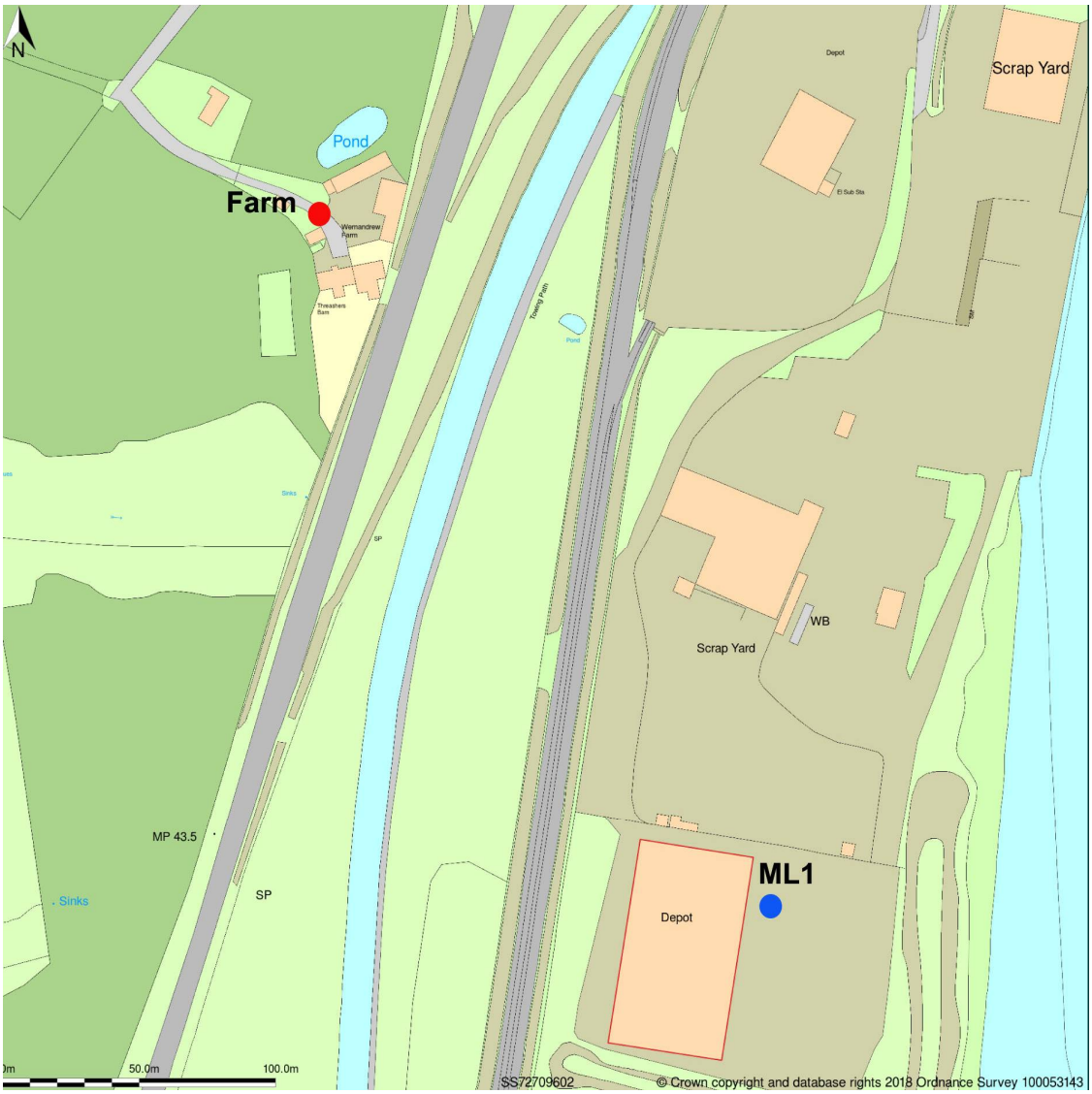
Application of the methods in Part 2 of the Horizontal Guidance note are in keeping with the BAT principles.

3.0 Noise Sensitive Receptors

The site is located in a predominantly recycling industrial area. Within a 310m radius is a single residential noise sensitive receptor known as Wernandrew Farm.

At a distance of approximately 500m are additional residential receptors and a school known as LLandarcy Academy of Sport.

There are access roads to the site and these may be accessed by local residents on foot or by vehicle.



Location plan: The blue circle indicates the measurement location. The building with a red border is the building within which recycling of incinerated steel and can steel is conducted. The nearest noise receptor is the farm house and it is highlighted with a red circle.

Key Sources of Noise from the Morris & Co (Handlers) Recycling Site at Neath

The potential sources of noise that have been identified in the Amenity Risk Assessment

1. Delivery and collection Heavy Goods Vehicles (HGV's). These vehicles bring the product for recycling and are also a means of transporting recycled products to various destinations. Noise is emitted mainly from their diesel engines.

2. When steel is delivered, it is tipped onto the floor inside the building. This can result in rattling and clanging inside the building. This takes place inside the building.
3. Two material handlers are used to move the steel and place it either in the trommel or the baler. Noise is generated as the metal comes in contact with other metal. Noise is also generated from the engines that power the material handlers. These machines are a Fuchs 340 and a Sennebogen 830. These are located inside the building.
4. A Kenny & Co fixed trommel is used to recycle incinerated steel. Noise is generated from the shaking of the metal and the engines of the trommel system. This takes place inside the building.
5. A Henschel Hydraulic baler is used to bale steel cans. Noise is generated from the crushing of the steel and the engines of the baler. This takes place inside the building.
6. When storage inside the building is not available, the metal is moved from inside the building and tipped outside the building. A reverse process also occurs when metal placed outside the building is taken back inside the building. Noise is generated from the engines of the material handler and the contact and clanging of metal as it is picked up. This process occurs both outside and inside the building.
7. Mechanical maintenance of machines. This takes place predominantly inside the building.
8. Cleaning and general maintenance of the site. This is mainly inside the building.
9. There is five staff who operate the recycling machines and processes. Staff engage in conversation as they interact with each other. This takes place both inside and outside the building.

Amenity Risk Assessment

In accordance with Table 2.9.2 of *Horizontal Guidance for Noise Part 2 - Noise Assessment and Control* (2004) the noise sources identified in this noise management plan are detailed in Table 1 below.

The table shows the nature of each noise is described and the contribution to the overall noise emission.

Noise Sources		
Source of Noise	**Nature of Noise**	**Contribution to overall Emiission**
Cleaning of the work area	Not dominant	Low
5 Staff conversing and interaction	Not dominant	Low
Maintenance and repair	Not dominant	Low
HGV movements	delivery and collection of steel	Medium
Material Handler external	Movement of steel from inside to outside the building and visa versa	medium
Pouring of steel deliveries onto the floor inside the building	Lasts for short periods not dominant	medium
Kenny & Co Fixed Trommel	Cleaning of incinerated steel continuously inside the building	High
Henschel Hydraulic Baler	Baleing of steel cans inside the building	High
360 material handlers Fuchs 340 Sennebogen 830	Moving steel from delivery to inside the trommel or baler respectively.	Medium

Table 1: Nature of Noise from the recycling process.

Processes and Checks Carried out to Reduce Noise Emission from Operations

Noise Source	Minimisation Action
Heavy Goods Vehicles (HGV's) Deliveries/Collection	A speed limit is to be placed onsite of 5mph
	Loading or collection of product should take place inside the building.
	The unloading/tipping of product should take place inside the building
	HGV's should be required to turn of engines whilst parked or waiting for longer than 2 minutes.
Tipping	This should take place inside the building
Material Handler fuchs 340 & Sennebogen 830 and Truck	The machines should be maintained on a regular basis in compliance with the manufacturers guidance for this type of use. A maintenance check should be conducted on a annual basis or more frequently as and when performance impairment is identified. Maintenance records should be kept up to date and available upon request.
Kenny & Co Fixed Trommel and Henschel Hydraulic Baler	The machines should be maintained on a regular basis in compliance with the manufacturers guidance for this type of use. A maintenance check should be conducted on a annual basis or more frequently as and when performance impairment is identified. Maintenance records should be kept up to date and available upon request.
Moving metal inside to outside of the building and visa versa for storage	Storage of metal outside of the building should be a last resort when all internal storage space has been exhausted. Collection of product on a regular basis should be planned and coordinated to reduce the need to store product externally
General Maintenance	The façade of the building should be checked on a monthly basis for holes and gaps in the building where noise can spread easily. This can be done with a visual examination around the parameter of the building. Any leaks in the roof should be repaired as soon as possible to reduce the escape of noise through holes and gaps. Light visible through the façade of the building should be sealed. A record of each inspection should be maintained together with records of defects in the façade and remedies applied. The inspection and maintenance records should be available on request,
	Maintenance of machines and tools should where possible take place inside the building. Maintenance records should be kept up to date and available upon request.
Staff Interaction	This should be consistent with normal work place conversation levels

Cleaning	This should be consistent with work place practices
Roller Shutter Doors	Consideration should be given to the use of automatic roller shutter doors to reduce the noise emission through openings.
Openings/Doors	Openings not in use by vehicles should be kept closed to reduce the spread of noise
Deviations	Deviations from the working practices and use of stated machinery shall be logged and an observation of the noise levels produced from the deviation be noted to show whether an increase in noise levels was caused by the deviation

Table 2: Processes for reducing noise at source and the spread of noise into the environment

The three highest sources of noise are from the;

1. Kenny & Co fixed trammel
2. Henschel hydraulic baler
3. Material handlers

These machines are located inside the building and reliance is placed on the building as an effective barrier and attenuator of noise. Regular maintenance of the machinery and the building is essential to this noise management plan.

3.1 Noise Management Plan Frame work

Potential sources of noise have been identified in the Amenity Risk Assessment.

The format of this noise management plan is based on the requirements presented in *Horizontal Guidance for Noise Part 2 - Noise Assessment and Control* (2004), and the general Sector Guidance Note IPPC SO.01.

Noise Management Plan Status
This Noise Management Plan is a controlled document, and forms part of the site Management System.

The specification for the periodic review and update of the noise management plan will be set out within the site Management System and will be on an annual basis, as a minimum. However, the noise management plan is intended to be a live document which serves as a reference during daily operations, and as such would be updated on a more frequent basis should the following occur;

- Noise levels increase due to a change of recycling process or the introduction of additional noise emitting machinery
- Significant changes are made to the plant or operational practices

- the National Resources Wales requests that the noise management plan 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 document.

4.0 Noise Surveillance

The purpose of noise surveillance is to demonstrate to the National Resources Wales that the permitted development is being operated in such a manner as to minimise the noise impact at nearby noise-sensitive receptors. In the event that complaints are received noise monitoring would prompt remedial actions to ensure ongoing future compliance.

In the first instance a responsible person shall undertake monthly noise patrols at the nearby noise-sensitive receptors. Audibility or otherwise of the site noise should be logged in a register.

The closest noise-sensitive receptors are considered to be:
1. Residential property approximately 310m to the North West of the site known as Wernandrew Farm
2. A school known as Llandarcy Academy of Sport located at a distance of approximately 500m from the site in a North Westerly direction.

The sites listed above should be included in the monthly patrols.

Significant deviations from normal working practices shall be logged with a statement stating whether noise levels from the site have been increased as a result of the material deviation.

5 Complaint Procedure

If a complaint is received from a local resident, an investigation shall be instigated within one working day to identify the cause of the non-compliance/complaint.

The Noise Complaint Form shown below will be filled in and appropriate action will be taken to remedy the problem should the complaint be validated.

A complaint investigation may involve the identification and cessation of the activity. It can also instigate consideration of mitigation measures to reduce the noise emission levels from the activity or activities, for example, by replacement of noisy plant with quieter alternatives and/or the use of temporary screening.

Any deviation from agreed working practices shall be identified immediately and conformance to the working practice reinstated. If it is not possible to identify the source of the complaint it may be necessary to undertake a noise survey. If this is needed a suitably qualified person should be employed to undertake the required survey work.

The date and results of the noise survey should be logged and reported in accordance with the relevant British Standard.

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Complaints Processing Form

Noise Complaint Form

Complaint No:……..

Time and date of complaint:	**Name and address of complainant:** **Telephone number of complainant:** **Email of complainant:**
Location of caller in relation to the site?	

Date of noise event:	
Time of noise event:	
Duration of offending noise:	
Weather conditions at the time of offending noise (i.e., dry, rain, fog, snow):	
Temperature (very warm, warm, mild, cold or degrees if known):	
Wind strength (none, light, steady, strong, gusting):	
Wind direction (eg from NE):	
Complainant's description of noise: **o What kind of noise is it?**	
o Duration of the offending noise (time):	
o Is it a constant or intermittent noise in this period: **o Does the complainant have any other comments about the noise?**	
Are there any other complaints relating to this noise? (either previously or relating to the same exposure):	
Operating conditions at the time of the offending noise and any deviations from standard practices at the time:	
Do you accept that the noise is likely to be from your activities?	
What was happening on site at the time the noise occurred?	
Follow up, time and date caller contacted:	
Actions taken:	

Is an amendment to the Noise Mgt Plan required?		
Form completed by:	**Date:**	**Signed:**

Noise Survey

Summary

The specific noise of LAeq(60min) 35dB at the nearest noise sensitive receptor known as Wernandrew farm located approximately 310m from the Morris & Co recycling site is the same as the guidance in BS8233:2014 recommended for day time noise level outside a bedroom.
The BS4142:2014 rating level of 35dBA and a rating level of 0dBA over the background level indicate a low likelihood of adverse impact in the context of the noise environment.

It is recommended that the Client reduces noise when it is reasonably practical to do so and/or by regular maintenance of recycling plant and vehicles.

A noise assessment should be conducted once per year preferably at the noise sensitive receptors. A noise assessment should be conducted sooner if there is a change of noise level due to a change of processes or machinery.

Uncertainty is assessed at ± 4 dB

Objective:

Picture 1A: Measurements included noise from collection and delivery trucks

The Client recycles steel cans and steel that has been in an incinerator. Delivery trucks bring the steel to the recycling plant. The material is tipped inside the fabricated building onto the floor. The steel tins are separated from their original bale using a materials handler and are put into the onsite Henschel hydraulic baler where it is baleed into a new sized bale. Finished steel bales of cans are stored inside the factory until they are collected. The moving of the steel bales is done with a 360 material handler known as a Fuchs 340.

Steel that has been incinerated is moved from the tipping area into a Kenny & Co fixed trommel that removes waste such as ash from the steel. The steel is then stored both internally and externally depending on the quantity awaiting collection. The incinerated steel is moved using a 360 materials handler known as a Sennebogen 830.

The purpose of this noise report is to provide useful information to aid in the provision of the noise management plan . The noise survey is based on measured noise levels at the site and recommended noise levels outside noise sensitive receptors stated in BS8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings.

Source under Assessment

The recycling center has two separate buildings. One is an administrative office and the second is a factory where the recycling process is conducted. There is a yard to the front of the factory. At the rear of the factory are shrubs and trees.

Picture 2: Steel can bales and henschel hydraulic baler.

The recycling of steel at Morris & Co (Handlers) Ltd involves the use of plant that is located inside a fabricated building. In addition noise is generated from the movement of the metal. Noise from the recycling process includes;

- Moving of metal from inside to outside and visa versa. This generates clanging when metal is dropped. Noise is also generated from the vehicle engines. This noise takes places outside the front of the building.
- Movement of metal inside the building. This involves the use of material handlers and noise from their engines.
- Kenny & Co fixed trommel
- Henchel hydraulic baler
- Collection and delivery trucks and associated transportation noise

The recycling site shares a boundary with another metals recycling station known as Sims Metal Management. Next to Sims Metal management is a manufacturing factory known as Express Asphalt an asphalt mixing plant. The River Neath runs parallel to the factories.

Picture 2: Kenny and Co fixed trommel and materials handler inside the factory.

Picture 3: Moving steel from inside to outside the factory and visa versa.

Picture 4: The nearest noise sensitive receptor is a farm house known as Wernandrew farm. It is approximately 310m from Morris & Co recycling site (measurements obtained from google maps). This is located behind the factory building.

Methodology

The noise assessment was commissioned by the Client and there was no obligation by the noise receptors to allow background noise measurements on their private land. To expedite the report, measurements of the specific noise were obtained at the recycling site. A standard propagation formula is used to predict the specific noise at the noise sensitive dwelling.

The background noise level was not measured at the nearest noise sensitive receptor. The BS8233:2014 guide of LAeq (16hour) of 35dB outside bedrooms during the day has been used as the acceptable background level outside Wernandrew Farm house. In practice the daytime LAF90 background level may be lower or higher than the background level used in this report.

The author of this report visited Wernandrew farm to request permission for onsite measurements. Unfortunately no one was in however anecdotally it was noticed that the specific noise was not detected using human ears. However this is only anecdotal information and not meant to form part of the methodology.

Picture 4A: Wernandrew farm house residential noise receptor

A single type 1 Cel 63X sound level meter was calibrated and used to take measurements at the recycling site only. The sound level meter was positioned at the front of the factory building at a distance of 4m from the façade. Measurements were also obtained at the back of the factory at the same distance from the façade.

Measurements of the internal noise generated from the trommel and baler were obtained internally for reference purposes only.

Measurements were conducted on Monday 20th of August 2018. These measurements include the specific noise at the recycling site and not at the nearest noise receptors. The background noise level was not measured but the BS8233:2014 daytime LAeq(16 hour) 35dB outside bedrooms has been used to represent the background level.

It is confirmed that all the noise sources outlined as involved in the recycling process where generated during the measurement of the onsite specific noise. This included the baler, trommel, material handlers, moving of metal both internally and externally and delivery/collection of recycling material.

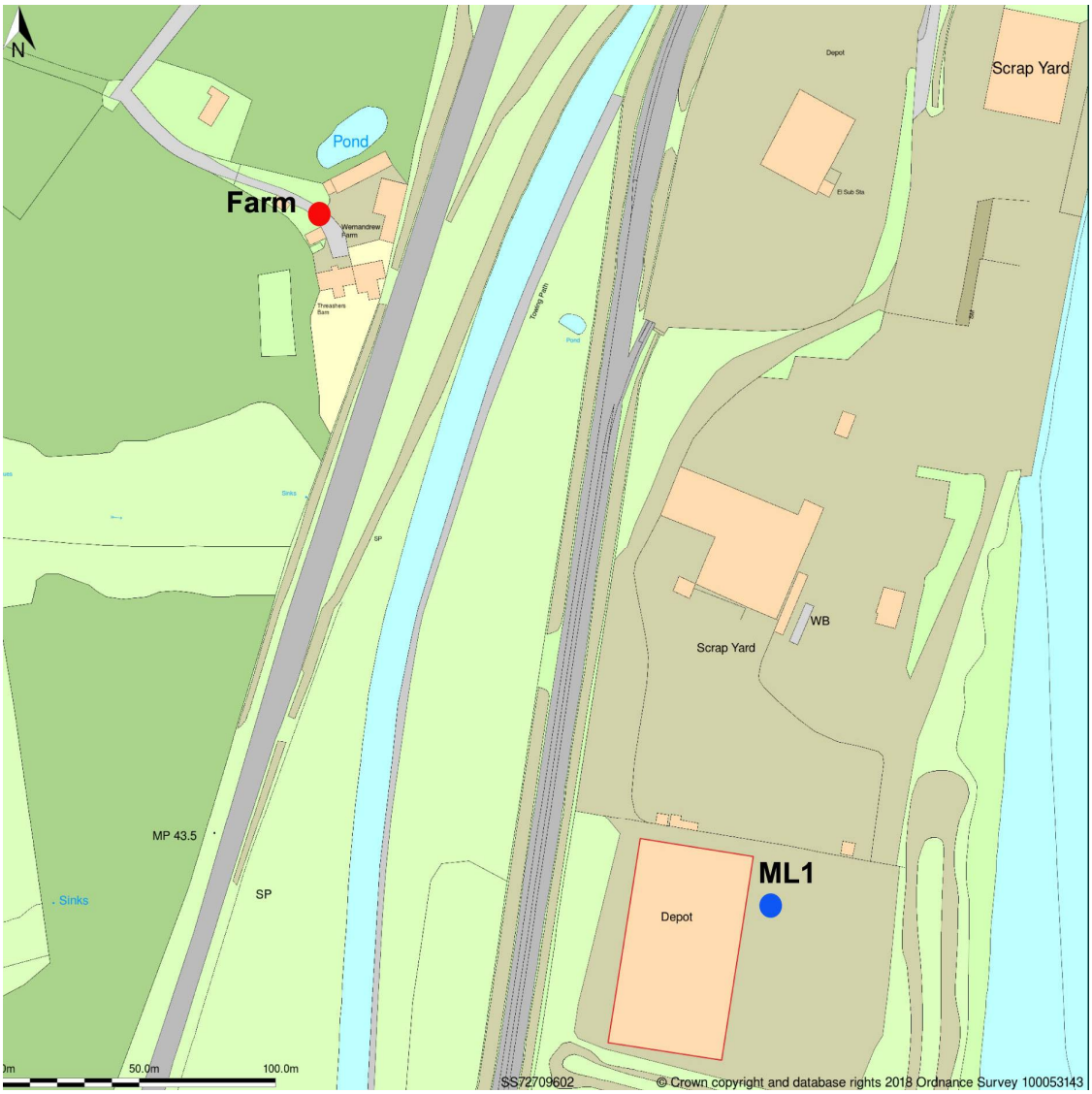
Picture 4B: Loading of collection truck with bales of steel can.

Façade Correction

Façade measurements occur when the meter is outside but in front of a large reflective surface at a distance of less than 3.5m away from the reflective surface. The sound level meter was positioned 4m from the nearest reflective surface. No façade correction has been applied and the measurements are considered to be comparable to free field conditions.

Picture 5: Another noise sensitive receptor is Llandarcy Academy of Sport located approximately 500m from the site (google measurements). No measurements were obtained at the school (anecdotal evidence is the author could not detect the specific noise using human ears when at the academy car park).

Site and Measurement Locations



Site plan: This is a site location plan purchased and cropped from the website https://www.buyaplan.co.uk on 22nd August 2018 at 11:25. The full site plan is attached as part of this report in the Appendix. The blue circle indicates the noise measurement location and is marked with ML1. The red circle is to identify the farm house.

Hours of Operation

The factory is open Monday – Friday 07:00 – 17:00 and on Saturdays from 07:00 – 12:00

Sunday: Closed

Receptor Sensitivity

The residential house on Wernandrew farm is the nearest noise receptor and is located approximately 310m from the Morris & Co recycling site.

The Llandarcy Academy of Sport is located approximately 500m from the Morris & Co recycling site.

Date and Time of Measurements

Monday 20th August 2018 (onsite measurements of the specific noise)

Measurements were conducted from 12:30 – 17:00

Mode of Operation

The site was operating in a consistent mode.

Noise Characteristics

Irregular: The noise is irregular from the on and off nature of onsite handling vehicles. However this is not thought to be detectable at the nearest noise sensitive dwelling.

Impulsive: Clanging from the dropping of metal is impulsive however this is not detected at the dwelling

Tonal: There is a tone from the humming of machinery however this is not detectable at the noise sensitive dwelling.

A combined character correction of 0dB has been added to the rating level.

The Specific Noise

Morris & Co Onsite External measurements at ML1		
Duration	Laeq	LAF90
28min	75.8	69.5
60min	75.4	68.5
47min	75.4	70.5

Table 1: Onsite external measurements at ML1. During the measurements all the activities associated with the recycling plant were conducted. They show a specific noise of LAeq(60min) of 75dB. Measurements at the rear of the building which is closest to the noise sensitive receptors was LAeq(5min) 64dB.

The noise will spread across a single reflective surface over a distance of 310 meters to the nearest receptor.

At the front where the LAeq(60min) is 75dB measured at 4m from the façade, the sound power is LWA 95dB. Spread over a distance of 310m the specific noise is 37dB less 2dB for attenuation from the soil, shrubs and grass results in a specific noise at the nearest receptor of LAeq(60min) of 35dB. This is equal to the BS8233:2014 LAeq(16hour) 35dB recommended level for outside bedrooms.

However the noise sensitive receptors are at the rear of the building. Noise from the front and inside the factory is reduced by the façade of the building that acts as a barrier and also provides sound reduction. Noise measured at the rear of the building (the side facing the noise receptors) was LAeq(5min) 64dB. Measurements were over a single reflective plane at a distance of 4m from the façade. The sound power at the rear is LWA 84dB. Spread over a distance of 310m the specific noise is 26dB less 2dB for attenuation from the soil, shrubs and grass results in a specific noise at the nearest receptor of LAeq(60min) of 24dB. This is less than the BS8233:2014 LAeq(16hour) 35dB recommended level for outside bedrooms.

At noise receptors, such as the LLandarcy Academy of sport, approximately 500m away the specific noise is lower at 20dB using a sound power of LWA 84dB and 31dB using a sound power of LWA 95dB.

BS4142:2014 Assessment Day Time

Results		**Relevant Clause BS4142:2014**	**Commentary**
Measured ambient sound level	$L_{Aeq\ (60min)}$ n/a	7.3.1	Only onsite Measurements available
Residual Sound Level	$L_{Aeq\ (60min)}$ n/a	7.3.3	Non obtained at the nearest receptor
Background sound level	$L_{AF90\ (16hour\ )}$ 35dB	8.3	Based on BS8233:2014 recommendation for outside bedrooms
day time, reference time interval is 60 min.		7.2	
Specific sound level (ambient noise – residual noise)	35dBA	7.3.3	Propagation over a single reflective plane at a distance of 310m less 2dB ground attenuation
Acoustic feature correction	+0dB	9.2	Not detectable at the receptor
Rating Level (specific level plus correction for noise characteristics)	35dB	9.2	
Excess of rating over background level	35- 35 = 0dB	11	
This indicates a low likelihood of an adverse impact in the context of the noise environment		11	
Uncertainty of the assessment	Uncertainty is estimated at ± 4dB		

Table 3: BS4142 noise rating level calculation for day time specific noise.

Context of the Noise Environment

- The measurement location has a concentration of recycling facilities including metal and plastics recycling as well as asphalt production.
- Near by factories include Steel Supply (Western) Ltd, Sims Group (UK) ltd, Express Asphalt Ltd, Fenestration Recycling Company, Derwen Plant Ltd and Aggregate industries UK ltd. These factories are located close to the noise receptor.
- There are other recycling and industrial manufacturers closer to Wernandrew Farm than the Morris & Co recycling site.
- The A465 and M4 motorway contributes road traffic noise to the environment.
- The presence of road traffic noise and concentration of recycling and industrial producers could mean that the background level at the noise receptor is higher than that used for this assessment.
- The specific noise at the nearest receptor of LAeq(60min) 35dB is the same as the BS8233:2014 recommended noise level outside bedrooms of LAeq(16hour) 35dB.

In the context of the noise environment, the difference over background of 0dB during the day represents a low likelihood of adverse impact.

A noise assessment should be conducted when ever there is a change of process or machinery. A noise assessment should be conducted once every year and preferably at the noise sensitive receptors.

Uncertainty

The noise levels were obtained by direct onsite measurements. The sound level meter was fitted with a wind shield and maintained on a tripod during the measurement period. Once readings were started, the sound level meter was free from human interference. This was done to minimize uncertainty in the readings. In addition, the data used was taken during suitable weather conditions. Each measurement was conducted for a duration sufficient to provide a representation of the specific noise at the site.

Uncertainty arises from variations in day to day noise levels. The noise environment might be quieter on different days for because of for example; changes in number of deliveries/collections. Or the amount of recycling processed in a day, as a result a factor of ± 4dB has been added to the uncertainty calculation to account for these changes in noise levels.

Laboratory calibration uncertainty of the sound level meter ± 1 dB

$$u = \sqrt{a^2 + b^2 + c^2 ... etc}$$

U = ± 4 dB

Signed:

Donald I Angir

Donald Angir AM IOA BA(Hons)

Noise Consultant

Noise Survey Limited

BIBLIOGRAPHY

British Standards Institution (2014) BS EN 4142:2014 **Methods for Rating and Assessing Industrial and Commercial Sound.** London. BSI

British Standards Publication (2014) BS EN 8233:2014 **Guidance on Sound Insulation and Noise Reduction for Buildings.** London BSI

APPENDIX A

Measuring Equipment

- Casella Cel 63X type 1 sound level meter serial 2670932 (ML1). Last calibrated by Pennine Instrument Services April 2018 traceable to UKAS standards cert no. 037864-2.
- Casella Acoustic Calibrator. Last calibrated 11th August 2017 by Pennine Instrument Services serial 1S38252 cert no. 035297-2.
- Kane May Thermostat model KM330 serial: 723858

- Kaindl Electronic model: Windtronic 2 Anemometer.

Measuring Equipment & Calibration

On each occasion at the beginning and at the end of measurements the meter was calibrated successfully with an acoustic calibrator before and after the measurements.

Measurement Data

Morris & Co Onsite Measurements at ML1		
Duration	Laeq	LAF90
28min	75.8	69.5
60min	75.4	68.5
47min	75.4	70.5

Table 2: Measurements at ML1. At the rear of the building the LAeq(5min) is 64dB at a distance of 4m from the façade of the factory building.

Picture 6: Measurements at the rear of the building that faces the noise sensitive receptors.

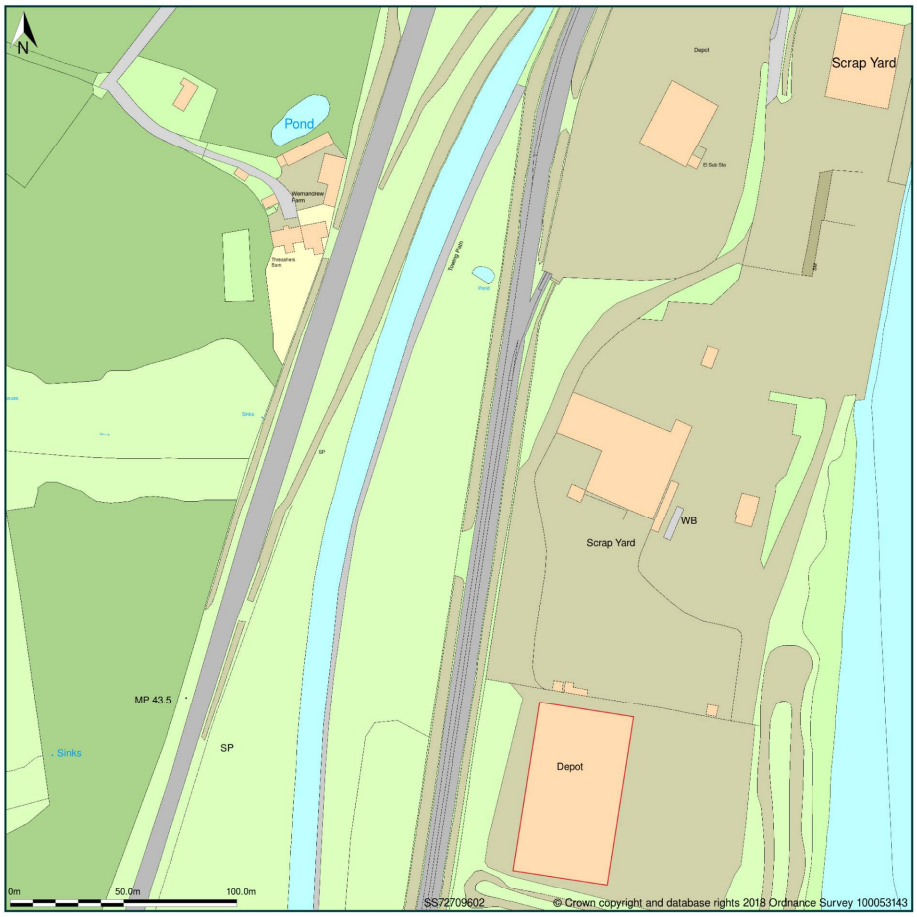
Internally at the rear of the tin can baler the noise was LAeq(33min) 85dB. At the trommel the LAeq(37min) was 92dB.

Weather Conditions

	Wind	Cloud Cover (Subjective)	Temperature	Precipitation
12:30 Monday 20th August 2018	1.6m/s	100%	18°C	Yes. Rain was intermittent and measurements were stopped and started to avoid the rain
17:00 Monday 20th of August 2018	0.4m/s	100%	17°C	Intermittent rain

Table 5: Weather conditions during measurement.

Wernandrew Farm, Lane From Cardonnel Road To Wernandrew Farm, Skewen, Neath Port Talbot, SA10 6NH



Site Plan shows area bounded by: 272507.03, 195822.66 272907.03, 196222.66 (at a scale of 1:2500), OSGridRef: SS72709602. The representation of a road, track or path is no evidence of a right of way. The representation of features as lines is no evidence of a property boundary.

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