

Taggarts

20001

Nine Mile Point Waste Processing Facility

Noise and Vibration Management Plan

V04

Waste & Engineering

We have been involved in waste management and waste facility developments for more than 50 years.

taggarts.uk



Report

TITLE	Nine Mile Point Waste Processing Facility- Noise and Vibration Management Plan
PROJECT	20001
CLIENT	Drumcastle Ltd.
DATE	October 2022
STATUS	FINAL
VERSION	04
AUTHOR	Kerry Brogan

DOCUMENT CONTROL

REVISION	DESCRIPTION	STATUS	DATE	BY	CHECKED	APPROVED
01	NMP Waste Processing Facility- Noise & Vibration Management Plan	FINAL	DEC 2021	KB	AT	AT
02	Amendment to delivery hours	FINAL	MAY 2022	KB	AT	AT
03	Amendment	FINAL	AUG 2022	KB	AT	AT
04	Amendment	FINAL	OCT 2022	KB	AT	AT

Contents

1	Noise and Vibration Management Plan	1
1.1	<u>Introduction</u>	1
1.2	<u>Scope of Management Plan</u>	3
1.3	<u>Standards and Guidance</u>	3
1.4	<u>Operational Noise and Vibration</u>	4
1.5	<u>Existing Environment</u>	5
1.6	<u>Operational Scenarios</u>	7
1.7	<u>Sensitive Receptors</u>	7
1.8	<u>Predicted Noise and Vibration Impacts</u>	8
1.9	<u>Mitigation Management Measures</u>	11
1.10	<u>Noise and Vibration Monitoring</u>	13
1.11	<u>Complaints</u>	13

1 Noise and Vibration Management Plan

1.1 Introduction

This Noise and Vibration Plan provides details of the operational techniques and measures that will be used to minimise and control noise and vibration emissions from the proposed Nine Mile Point Waste Processing Facility.

The Operator of the Facility will be Drumcastle Ltd, hereby referred to as “the Operator”.

A ‘Noise Impact Assessment September 2015 Land at Nine Mile Point Industrial Estate, Caerphilly’ has been carried out for the proposed facility, which is provided with the original permit application. The assessment was undertaken to the criteria of British Standard 4142:2014 Methods for rating and assessing industrial and commercial sound.

The assessment concluded that ‘...subject to the implementation of the inherent design measures, noise from the proposed activities would be considered by the Standard to be an indication of the specific sound source having a low impact. As such it is considered that noise associated with the operation of the proposed facility, as defined within the scope of this report, would not be significantly detrimental to the noise climate of the area...’.

As such it was considered that noise associated with the operation of the proposed facility would not be significantly detrimental to the noise climate of the area and should not preclude the granting of planning permission on grounds of noise, subject to the implementation of appropriate mitigation measures.

Details of the assessment are included in this Management Plan and the Noise Impact Assessment was submitted with the original permit application.

1.1.1 **Site Location**

The Facility is located at:
Nine Mile Point Industrial Estate,
Ynysddu,
Cwmfelinfach,
Caerphilly,
NP11 7HZ

The site is centered at National Grid Reference (NGR) ST 19235 91305. The Facility occupies an area of 1.09 hectares within the approximately 16 hectare Nine Mile Point industrial estate. The site is bordered by industrial unit to the east, a road to the west beyond which are more

industrial units, a road to the south beyond which is woodland and the Sirhowy River, and to the north by woodland.

The nearest residential properties are on New Road, approximately 470m northeast of the eastern edge of the site boundary and William Street, approximately 478m west of the western edge of the site boundary.

1.1.2 Use of Site

Drumcastle Ltd will operate a bespoke Part A Installation Environmental Permit for the operation of the Waste Processing Facility. The Facility will process up to 100,000 tonnes of non-hazardous household, commercial and industrial wastes per annum.

For the majority of the time the facility will accept more than 75 tonnes of waste per day. The waste will be treated to produce either Solid Recovered Fuel (SRF) or Refuse Derived Fuel (RDF) to be exported off site for energy generation. Recyclable wastes will be removed from the incoming waste during the production of the SRF/RDF.

In summary the waste will be brought to site in sheeted vehicles where it is unloaded in the Waste Reception area. The waste will then be loaded into a pre-shredder and screened and sorted to remove fines, metals, and plastics. The waste will then be shredded to the appropriate particle size and the resulting SRF/RDF is then transferred to the end storage bay prior to transfer offsite. Prior to treatment all waste materials will be stored within the building which is on hardstanding.

The scope of the proposed Facility will be limited to the activities specified in Table 1.1

Table 1.1 Regulated Activities

Schedule 1 Activity	Description of the Waste operation	Annex I (D Codes) and Annex II (R Codes) and Descriptions
Part A (1) Section 5.4 Part A(1)(b) ii)	Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day involving pre-treatment of waste for incineration or co-incineration.	Annex II Codes and Descriptions
		R3: Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
		R4: Recycling/reclamation of metals and metal compounds.
		R5: Recycling/reclamation of other inorganic materials.

Schedule 1 Activity	Description of the Waste operation	Annex I (D Codes) and Annex II (R Codes) and Descriptions	
	Bulking of recyclable wastes recovered as an incidental part of production of SRF/RDF	R13: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).	
		<u>Total waste Storage Capacity</u>	1,510 tonnes plus 600 bales (approx. 0.5 tonnes per bale) = 1,810 tonnes
		<u>Non-Hazardous Waste Treatment Capacity</u>	100,000 tonnes per annum which equates to 397 tonnes per day based on 252 operational days per year

1.2 **Scope of Management Plan**

The purpose of this NVMP is to provide noise and vibration management procedures to form part of the Nine Mile Point Waste Processing Facility Environmental Management Plan.

The objectives of the NVMP are to ensure that:

- any noise emissions from the Waste Processing Facility during its operation stage do not exceed regulatory limits, and;
- any noise issues arising are addressed quickly and effectively.

1.3 **Standards and Guidance**

The relevant guidance documents and assessment methodologies appropriate for noise associated with a development such as that proposed at the Nine Mile Point site are listed below and detailed in the 'Noise Impact Assessment September 2015 Land at Nine Mile Point Industrial Estate, Caerphilly' which was submitted with the original permit application.

- Planning Policy Wales – Edition 7 (July 2014);
- Planning Guidance (Wales), Technical Advice Note (Wales) 11, Noise – October 1997;
- British Standard (BS) 4142: Methods for rating and assessing industrial and commercial sound – 2014;
- British Standard 8233: 2014 'Guidance on Sound Insulation and Noise Reduction for Buildings';
- The World Health Organisation Guidelines for Community Noise (1999); and
- World Health Organisation: Night Noise Guidelines for Europe (2009).

1.4 **Operational Noise and Vibration**

There shall be no Heavy Goods Vehicle deliveries to or from the site outside the following times:

- 07:30- 18:00hrs Monday to Friday
- 07:30-13:00hrs Saturdays; and
- No such deliveries on Sunday or Bank Holidays

The majority of the operations will be fully enclosed within an industrial building, and the delivery of waste will take place within the enclosed building. Once processed, baled, and wrapped, the product would be stored within a covered bay area within the site.

The facility will include the following elements:

- The main building including a tipping bay, recycling bays and the SRF/RDF line (40m (w) x 85m (l) x 14m (h) to ridge)
- External movements of mobile plant
- Bale storage area
- Admin office
- 2No. Weighbridges
- Staff/ visitor car parking (17 spaces including 2 disabled bays)

Following commissioning the facility will operate on the basis of the following:

- The non-hazardous, commercial, industrial, and household waste will be imported onto the site in a combination of 20-tonne Roll-on/Roll-off skips and HGV bulk trailers.
- The vehicles will enter the site off Greenmeadow Road, and drive along the western and southern boundaries, past the southern weighbridge and into the main building. The waste will then be tipped into the fully enclosed tipping bay. The vehicles would then leave the building and exit the site via the northern weighbridge.
- The tipped material will pass through a series of shredders, screens, and magnets. Inert materials, recyclable plastics and metals will be extracted leaving a mix of mainly non-recyclable paper, card, wood, textiles, and plastics. For SRF/RDF production, the remaining waste will then be shredded to the appropriate particle size and will be transferred to the end storage bay prior to transfer offsite for energy generation.
- The extracted recyclates will be transferred to recycling bays where they will be stored prior to dispatch in bulk loads.

- The remaining material will be baled and wrapped, and then transferred to the bale storage area at the north of the site.
- The SRF/RDF bales, recyclates and any residual waste will be exported from the site in HGV's.

1.5 **Existing Environment**

The industrial estate is currently occupied by a mixture of industrial uses including manufacturing and distribution, a number of which are understood to operate on a 24/7 basis.

Aside from the existing industrial uses within the immediate vicinity, the area surrounding the site is predominately open in nature being a mixture of open agricultural land and public/private open space. The site is located in a valley running broadly east to west.

1.5.1 ***Existing Background Noise***

A survey was undertaken at the following monitoring locations as a means of establishing the existing noise climate;

Table 1.2 Monitoring Locations

Location Reference	Grid Ref (NGR)	Description
LT01		Sound Level Meter (SLM) located in the raised front garden of the residential property overlooking the B4251. Garden area elevated by approximately 3.5m relative to the carriageway. SLM located on soft ground at a height of approximately 1.2m above local ground. Microphone approx. 1m from nearest flat surface(wooden garden fence).
ST02		Noise monitoring station located on the access track of Ty'r-wan farm to the north of the proposed site. SLM located on soft ground at a height of 1.5m above local ground. No facades within influencing distance.
LT03		SLM located in the terraced rear garden of the residential property, approximately 4m below the B4251. SLM located on hard ground at a height of 1.5m above local ground. No facades within influencing distance.

ST04		SLM located on the access track to the north of the farmbuildings. SLM located on soft ground at a height of 1.5m above local ground. No facades within influencing distance.
------	--	---

A summary of the daytime and overnight noise levels monitored during the long-term monitoring survey period at locations LT01 and LT03.

- The daytime data is presented as averaged 60 minute levels (“T” = 60) over the measurement period
- The Overnight data is presented as averaged 15 minute levels (“T” = 15) over the measurement period.

Table 1.3 Measured Noise Level Data – Long Term locations

Location	Period		Duration hh:mm:ss	Statistical Parameter			
				LAeq ,T	LAm ax, T	LA90, T	LA10 , T
LT01	Weekday	Daytime	50:00:00	62.0	89.7	49.8	65.7
		Overnight	24:00:00	57.2	82.6	40.7	57.0
	Saturday	Daytime	16:00:00	61.0	82.5	46.1	65.4
		Overnight	08:00:00	54.0	73.9	34.0	55.2
	Sunday	Daytime	16:00:00	60.2	89.1	39.3	64.6
		Overnight	08:00:00	56.6	76.4	30.9	61.2
LT03	Weekday	Daytime	50:00:00	46.9	75.6	40.5	48.4
		Overnight	24:00:00	45.4	78.2	36.7	43.8
	Saturday	Daytime	16:00:00	47.2	79.2	36.8	49.8
		Overnight	08:00:00	42.3	67.0	27.7	45.3
	Sunday	Daytime	16:00:00	46.9	66.5	38.0	49.7
		Overnight	08:00:00	44.5	67.8	31.6	47.8

Table 1.4 is a summary of the daytime and overnight noise levels monitored during the short-term attended monitoring survey period at locations ST02 and ST04.

- The daytime data is presented as averaged 15 minute levels (“T” = 15) over the measurement period.
- The overnight data is presented as the averaged 15 minute levels (“T” = 15) over the measurement period.

Table 1.4 Measured Noise Level Data – Short Term Locations

Location	Period	Duration hh:mm:ss	Statistical Parameter			
			L _{Aeq} ,T	L _{Amax} ,T	L _{A90} , T	L _{A10} ,T
ST02	Daytime	01:30:00	47.9	79.9	33.8	47.0
	Overnight	01:00:00	44.8	76.7	26.7	33.1
ST04	Daytime	01:30:00	48.1	66.9	35.7	50.8
	Overnight	01:00:00	44.6	58.6	32.4	49.1

1.6 Operational Scenarios

Following commissioning it is envisaged that the facility would operate on a constant basis 24 hours a day, however, HGV activity would only occur on the site during the daytime period. As such within the assessment it has been assumed that the following operational scenarios would occur:

Table 1.5 Operational Scenarios

Time Period	Operational Scenario
Daytime Period	<ul style="list-style-type: none"> ▪ All internal and external plant and equipment as advised. ▪ HGV activity
Night-time Period	<ul style="list-style-type: none"> ▪ All internal and external plant and equipment as advised ▪ No HGV activity

1.7 Sensitive Receptors

For comprehensive assessment, the following noise sensitive receptor locations were considered and modelled within the assessment as detailed within Figure 1.1 below.

Figure 1.1 Assessment Locations



The baseline noise climate (Tables 1.3 and 1.4) relates to each of the assessment locations (Figure 1.1) as detailed within the matrix in Table 1.6 below. This has been based upon geographic location and proximity to existing sources.

Table 1.6 Assessment Location Matrix

Assessment Location	Relative Monitoring Location
AL01	LT01
AL02	ST02
AL03a	LT03
AL03b	
AL04	ST04

1.8 Predicted Noise and Vibration Impacts

1.8.1 *Day-time Assessment*

Table 1.7 Daytime Period Assessment

Assessment Location	Assessment Period	Average Measured L90, 60mins 'Background' noise level x(1), dB	Predicted BS4142 Specific Noise Level 1, dB	Corrected BS4142 Rating Level 1, dB	Difference, dB	Relevant BS4142 Impact Significance
AL01a	Weekday	50 (49.8)	28 (27.7)	28	-22	<i>an indication of the specific sound source</i>
	Saturday	46 (46.1)			-18	
	Sunday	39 (39.3)			-11	

						having a low impact
AL02	Weekday	34 (33.8)	7 (6.8)	7	-27	an indication of the specific sound source having a low impact
AL03	Weekday	41 (40.5)	31 (30.5)	31	-10	an indication of the specific sound source having a low impact
	Saturday	37 (36.8)			-6	
	Sunday	38 (38.0)			-7	
AL04	Weekday	36 (35.7)	28 (28.2)	28	-8	an indication of the specific sound source having a low impact

*(1) Noise levels rounded to nearest whole dB in accordance with the guidance of BS4142

It can be seen from the table above that noise arising during the daytime operation of the facility would be rated by the BS4142 Standard as being:

- Weekday Daytime - Between -8dB and -27dB below the existing background noise climate of the area, depending upon assessment location.
- Saturday Daytime - Between -6dB and -18dB below the existing background noise climate of the area at the assessed locations.
- Sunday Daytime - Between -7dB and -11dB below the existing background noise climate of the area at the assessed locations.

The assessment of the typical daytime operational scenario concluded that the facility would generate noise considered to be acceptable and rated by the BS4142 standard to be “an indication of the specific sound source having a low impact”.

1.8.2 Night-time Assessment

Table 1.8 Night-time Period Assessment

Assessment Location	Assessment Period	Average Measured L90, 60mins 'Background' noise level x(1),	Predicted BS4142 Specific Noise Level ¹ , dB	Corrected BS4142 Rating Level ¹ , dB	Difference, dB	Relevant BS4142 Impact Significance
---------------------	-------------------	---	---	---	----------------	-------------------------------------

		dB				
AL01a	Weekday	41 (40.7)	25 (25.3)	2 5	-16	<i>an indication of the specific sound source having a low impact</i>
	Saturday	34 (34.0)			-9	
	Sunday	31 (30.9)			-6	
AL02	Weekday	27 (26.7)	5 (5.1)	5	-22	<i>an indication of the specific sound source having a low impact</i>
AL03	Weekday	37 (36.7)	30 (29.9)	3 0	-7	<i>Low likelihood of the sound source having an adverse impact to an indication of the specific sound source having a low impact</i>
	Saturday	28 (27.7)			+2	
	Sunday	32 (31.6)			-2	
AL04	Weekday	32 (32.4)	26 (26.4)	26	-6	<i>an indication of the specific sound source having a low impact</i>

*(1) Noise levels rounded to nearest whole dB in accordance with the guidance of BS4142

It can be seen from the table above that noise arising during the overnight operation of the Energy Centre would be rated by the BS4142 Standard as being:

- Weekday Overnight - Between -6dB and -22dB below the existing background noise climate of the area, depending upon assessment location.
- Saturday/Sunday Overnight -Between +2dB above and -9dB below the existing background noise climate of the area at the assessed locations.
- Sunday/Monday overnight -Between -2dB and -6dB below the existing background noise climate of the area at the assessed locations.

The assessment of the typical overnight operational scenario concluded that the facility would generate noise considered by the BS4142 standard as having a “low likelihood of the sound source having an adverse impact”, tending toward “an indication of the specific sound source having a low impact” depending upon assessment period and location.

Furthermore, with regard to assessment location AL03 during the Saturday night-time period where BS4142 would not be an appropriate assessment tool (due to low background and

rating levels), assessment of internal and external ambient noise concludes the scheme to not be detrimental to amenity.

1.9 **Mitigation Management Measures**

Sector Guidance Note 'S5.06: Guidance on the Recovery and Disposal of Hazardous and Non-Hazardous Waste', Environment Agency 2004 references specific controls for minimisation of noise emissions in Section 2.9: Noise. The measures proposed meet the requirements laid out in this Sector Guidance.

1.9.1 **Roles and Responsibilities**

Table 1.9 Roles and Responsibilities

Action	Responsibility	Timing
Overall Implementation of the NVMP	Site Operator/Facility Manager	Ongoing
Implement methodology for avoiding excessive noise emissions	Site Operator/Facility Manager	Periodically as required
Coordinate monitoring and compile reports	Site Manager will seek appropriately competent environmental consultant	As required
Maintain internal records of monitoring	Site Manager	Ongoing
Collate and maintain records of complaints, respond to complainant	Facility Manager and/or Safety Health Environment and Quality Manager	Ongoing
Identify Non Conformances and notify Site Manager	Safety Health Environment and Quality Manager	Ongoing
Authorise and confirm the implementation of mitigation measures	Site Operator/Facility Manager and Site Manager	As required
Ongoing community consultation	Facility Manager and /or Safety Health Environment and Quality Manager	Ongoing
Implement employee education and induction program	Site Operator/Facility Manager and/or Safety Health Environment and Quality Manager	Ongoing

1.9.2 General Operations

All noise generating equipment will be located within the main process building or within specifically designed acoustic enclosures to reduce noise and vibration emissions.

The Operator will employ basic good practice measures for the control of noise. Equipment associated with waste processing is covered by a maintenance contract and/or a programme of planned preventative maintenance.

All site personnel will receive training appropriate to the nature of their roles and responsibility; the training will include specific information in relation to noise and vibration management.

1.9.3 Plant Noise Audit

Noise emission levels of all critical items of mobile plant and equipment are checked for compliance with noise limits appropriate to those items. This includes an initial test, when new plant arrives on site, followed by noise emission checks, as required.

1.9.4 Vehicles

The main risk of noise and vibration for this Facility will be due to vehicle movements to and from and on-site which can reach sensitive receptors such as local residents, workforce on the industrial estate, and users of amenity sites. The probability of this occurring was deemed to be low with the consequence and magnitude of risk also considered as low. Noise mitigation techniques used for vehicle operations will include the following:

Vehicle movements into and out of the site will only take place during the normal working day. Vehicles will be subject to regular maintenance and service schedules.

All vehicles and plant will be fitted with up to date technology including "white noise" reversing alarms or intelligent alarms that can only be heard in the immediate vicinity.

All vehicles will not be allowed to idle when not in use. A 15mph speed limit will be imposed on site for all vehicles

All roadways will be surfaced with no significant undulations and with 'non-squeal' surfaces.

1.9.5 Attenuation

The process building will have high grade cladding with a dense insulated core. In high activity areas the lower walls of the building will be reinforced concrete which will further reduce the

potential for noise emissions. The cladding alone has been designed to offer a minimum noise attenuation of -25dB.

1.10 Noise and Vibration Monitoring

Noise and vibration management, inspection and monitoring will be included in the regular maintenance checklists for the operation of the Facility to ensure that all related activities are undertaken in a manner to minimise the impact of any noise emissions.

Regular site inspection by operators will be conducted, as well as timely acknowledgement and response to any complaints.

Ongoing spot checks of noise intensive plant and equipment will also be undertaken throughout operation.

1.10.1 *Annual Management Review*

Annual management reviews of the environmental performance of the Facility will assess the continuing suitability, adequacy and effectiveness of the on-site environmental management measures implemented. This review will include performance against the goals of the NVMP.

1.11 Complaints

Operational procedures will be in place to deal with complaints about noise with records maintained.

Any noise emission incidents or complaints received will be managed and the appropriate corrective actions applied.

Staff will be trained appropriately to be able to respond to noise issues or incidents with records maintained.

The operator shall:

- if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration; and
- implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.

Taggarts

23 Bedford Street,
Belfast, BT2 7EJ

taggarts.uk