	ENVIRONMENTAL MANAGEMENT SYSTEM Odour Management Plan	EMS.S5.04
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Vale of Glamorgan Resource Recovery Facility

Odour Management Plan

TABLE OF CONTENTS

1.	INTRODUCTION	2
1.1	Report Context.....	2
1.2	Objectives.....	2
2.	SITE BACKGROUND.....	3
2.1	Introduction	3
2.2	Site Setting	3
2.3	Waste Activities	4
3.	POTENTIAL SENSITIVE RECEPTORS	7
4.	POTENTIAL ODOUR SOURCES – NORMAL CONDITIONS.....	10
4.1	Identification of Sources	10
4.2	Reception and Storage of Waste Materials	10
4.3	Preventative and control measures under normal conditions	12
5.	POTENTIAL ODOUR SOURCES – ABNORMAL SITUATIONS	14
5.2	Preventative and control measures during abnormal conditions	14
6.	MONITORING	16
6.1	Schedule	16
6.2	Olfactory Monitoring	17
6.3	Remedial Action Plan.....	17
6.4	Record Keeping and Reporting.....	18
6.5	OMP Review	18
7.	ENGAGING WITH THE NEIGHBOURS.....	18
7.1	Complaints Procedure	18

LIST OF FIGURES

Figure 1 - Permit boundary

Figure 2 - Site Layout

Figure 3 - Sensitive receptors plan

Figure 4 – SSSIs within 2km

Table 1- Limits of activities

Table 2- List of sensitive receptors

Table 3- Storage arrangements for potentially odorous waste streams

Table 4- Preventative and control measures during normal operating conditions

Table 5- Preventative and control measures during abnormal conditions

Table 6- Determination of excessive malodour

Table 7- Contingencies and remedial action

Appendix 1- Odour monitoring form

Appendix 2- Odour complaints reporting form

Appendix 3- Odour Survey Methodology

1 INTRODUCTION

1.1 Report Context

1.1.1 This odour management plan (OMP) has been produced to supplement the Operator's Environmental Management System and a new bespoke waste permit application for a Resource Recovery Facility.

1.1.2 This OMP has been produced in accordance with Natural Resources Wales' guidance of '*How to comply with your permit*' and '*H4: Odour Management*' and in proportion to the risk of fugitive odour emissions posed by the activities onsite.

1.2 Objectives

1.2.1 This OMP has been developed for this operation to ensure that the risk from the proposed activities is acceptable. This management plan will be implemented to ensure action is related to the meteorological conditions and the location of sensitive receptors. These procedures describe the techniques and measures that will be adopted to prevent and minimise the escape of odorous emissions from the facility and integrates with the existing management procedures.

1.2.2 As a minimum this OMP will consider the following elements:

- an assessment of the risks of odour problems- both from normal and abnormal situations at the Facility;
- identify the appropriate controls to manage the identified risks;
- monitoring;
- identify actions, contingencies and responsibilities when odour problems arise; and
- regular review of the effectiveness of the odour control measures.

2 SITE BACKGROUND

2.1 Introduction

- 2.1.1 The site will be operated by the permit holder, Vale of Glamorgan Council (VoG). The site is developed to provide the borough with sufficient bulking capacity for kerbside collected waste streams, to promote the sufficient use of recyclable materials as resource, and to aid VoG in achieving their recycling targets set out in "*Towards Zero Waste*".
- 2.1.2 Atlantic Trading Estate Waste Transfer Station (ATE WTS) will consist of three main areas: an upper, middle and lower yard. The 'upper yard' (southern area of the site) where the main WTS building is located that contains a sorting line, two balers, material input bays, and two overflow bays for non-odorous recyclates. There is also contamination containment in the building, space for night time parking for the loading shovel, COSHH safety cabinets and a bay for aerosol ventilated container storage. Outside of the main building in the upper yard there is a glass bay and the quarantine bay. The 'middle yard' where there is a storage building containing a material bay for food waste and three sealed food waste containers, a pod wash facility and specialised containers for textiles, small WEEE, batteries and spare food pods. The 'lower yard' (northern area of the site) where there is a storage building containing material bays for residual waste and AHP's and external material bays for unprocessed green waste.
- 2.1.3 There is a weighbridge at the entrance of the site and an office and welfare cabin situated adjacent to the green bays in the lower yard. Staff parking is provided on site near the welfare cabin. There is also a drive through vehicle wash near the site exit.

2.2 Site Setting

- 2.2.1 The site is situated in the southwestern part of the Atlantic Trading Estate, Barry. Barry Recycling Centre is located directly adjacent to the eastern site boundary, whilst a range of industrial and commercial buildings border the Site to the north and west. Beyond the industrial estate to the north is a row of residential properties off Bendrick Road. The south of the Site is bounded by a road which runs through the industrial estate and beyond this is an area of undeveloped land and coastline. The Ordnance Survey grid reference for the site is ST 13386 67279.
- 2.2.2 The site is located to the west of the town of Barry. The access roads to the site are off the A4055, which is the main link road between Barry and Cardiff Bay. There are no other major transport links within a 1km radius of the site boundary. A detailed site layout is shown in Figure 2.
- 2.2.3 The proposed waste transfer station will receive, store, process and bulk a range of materials from household and commercial uses. The site will process up to 75,000 tonnes of material per annum. The operational hours of the site will be 6 am to 9 pm Monday to Friday, and weekends and bank holidays as necessary. The potential sensitive receptors are summarised in Section 3 of this document.

2.3 Waste Activities

- 2.3.1 Figure 2 shows the site layout and Table 1 details the proposed activities onsite.
- A new bespoke waste permit application has been submitted for a Household, commercial, industrial waste transfer station (A11) bespoke permit.

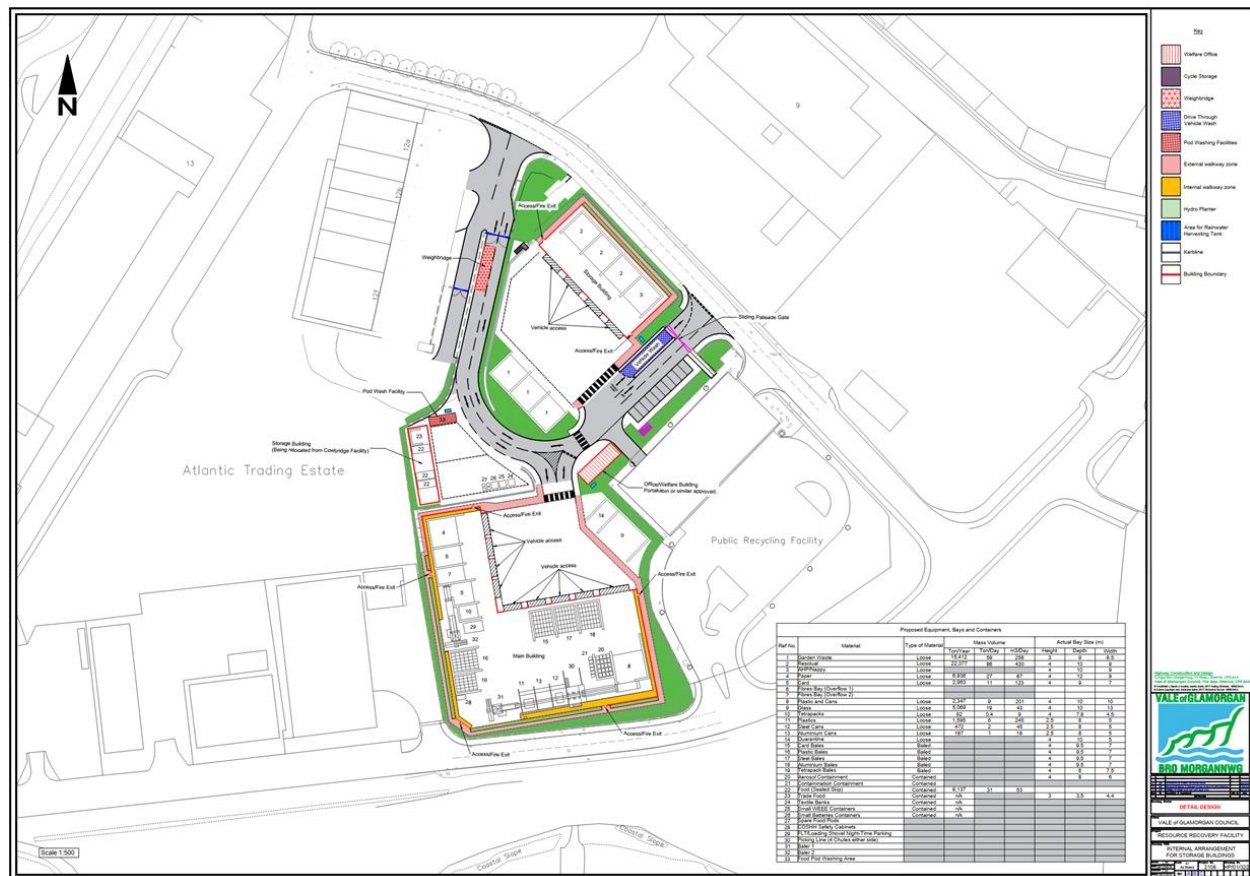
Table 1- Limits of activities

Table S1 1 activities		
Activity reference	Description of activities for waste operations	Limits of activities
Household, commercial and industrial waste transfer station (A11)	<p>D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)</p> <p>R13: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced)</p> <p>D14: Repackaging prior to submission to any of the operations D1 to 13</p> <p>D9: Physio-chemical treatment not specified elsewhere in Annex IIA which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D8 and D10 to D12</p> <p>R3: Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)</p> <p>R4: Recycling/reclamation of metals and metal compounds</p> <p>R5: Recycling/reclamation of other inorganic materials</p>	<p>The maximum quantity of hazardous waste and waste oils (in aggregate) that can be accepted, stored or treated at the site in connection with a disposal operation shall not exceed 10 tonnes per day.</p> <p>Treatment consisting only of manual sorting, separation or compaction of waste into different components for disposal, (no more than 50 tonnes per day) or recovery.</p>

Figure 1- Permit boundary



Figure 2- Site layout



3 POTENTIAL SENSITIVE RECEPTORS

3.1 Sensitive Human Receptors

3.1.1 The nearest residential receptors are detailed in Table 2 below.

Table 2- List of sensitive receptors

Sensitive Receptor Type	Contact Name	Contact Details
Residential	Property at 2 Bendrick Road	2 Bendrick Road CF63 3RE
	HMS Cambria Royal Navy Barracks	Hayes Ln, Sully, Barry, Penarth CF64 5XU- Tel: 01446 744044
	Property at 2 Hayes Lane	2 Hayes Lane CF64 5SF
	Property at 17 Bendrick Road	17 Bendrick Road CF63 3RE
	Hayes Point Development	Barry, West of Atlantic Trading Estate
Healthcare	Ty Hafan Children's Hospice	Sully, Penarth
Commercial	Espex Batteries Ltd	Llandough Trading Estate, Unit 13, Penarth Rd, Cardiff CF11 8RR- Tel: 029 2070 5453
	Lyndon SGB by BrandSafeway	Atlantic Trading Estate, Barry CF63 3RF- Tel: 01446 724920
	The Sausage Revolution	Barry CF63 3RF- Tel: 01446 739525
Industrial	Atlantic Secure Storage	Atlantic Trading Estate, Atlantic Secure Self Storage Unit 8, Barry CF63 3RF- Tel: 07968 539383

Sensitive Receptor Type	Contact Name	Contact Details
	Install Skip Hire	Unit 12F, Atlantic Trading Estate, Vale of Glamorgan, Barry CF63 3RF- Tel: 01446 421072
	Lignia Wood Company Ltd	Atlantic Trading Estate, Unit 10, Barry CF63 3RF- Tel: 01446 507077
	Vale of Glamorgan Brewery	Atlantic Trading Estate, Barry CF63 3RF-Tel: 01446 730757
SSSI	Bendrick Rock	Barry, South Glamorgan
	Jackson's Bay	Barry Island

3.1.2 A map of the sensitive receptors within 1km of the site is detailed in Figure 3, and the SSIS within 2km are shown in Figure 4. The sensitive receptors that are most likely to be affected by an odour emission incident have been identified in Table 6. These receptors may need to be contacted during an incident with updates on the expected duration, where available contact details are available.

3.1.3 In the event of a significant odour emission incident, VoG will use its website and social media channels to communicate information with sensitive receptors throughout the borough. VoG officers will also visit high risk sensitive receptors (e.g. residential receptors) to deliver the message in person.

3.1.4 A qualitative odour assessment¹ has been carried out to accompany the planning application for the facility due to the risk of odour causing amenity-

¹ Stantec UK Limited (April 2021) 'Odour Impact Assessment Vale of Glamorgan Atlantic Trading Estate Waste Transfer Station' Project reference: 332510113/3010.

related impacts resulting at sensitive receptors within the vicinity. A qualitative predictive assessment of the odour effects from the proposed ATE WTS have been assessed. The assessment has been carried out in accordance with IAQM 2018 guidance (IAQM, 2018). In conclusion the overall effect of the Proposed Development on amenity at sensitive receptor locations is considered to be 'not significant'.

- 3.1.5 The potential impact on these receptors is also assessed within a separate Environmental Risk Assessment which formed part of the EMS (doc. ref: EMS.S5.01) and the Permit Application.

Figure 3 - Sensitive receptors plan

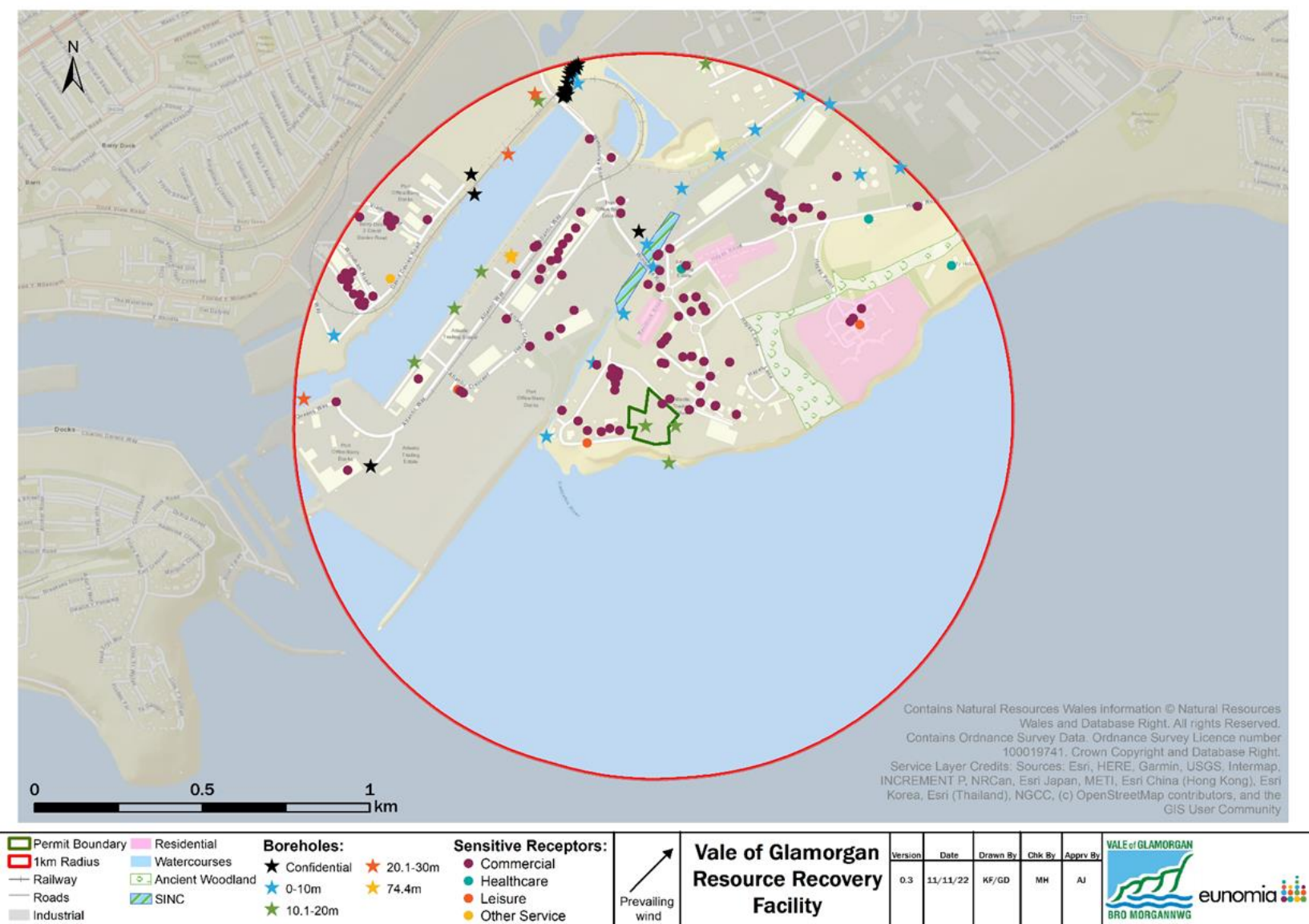


Figure 4 – SSSIs within 2km of the Site



4 POTENTIAL ODOUR SOURCES – NORMAL CONDITIONS

4.1 Identification of Sources

- 4.1.1 Odour from the site may have the potential to cause a nuisance or loss of amenity in the surrounding environment.

4.2 Reception and Storage of Waste Materials

- 4.2.1 The following activities have been identified as capable of producing odour during the reception, offloading and storage of wastes:

- Acceptance and storage of biodegradable materials such as green, residual and food waste, and AHP.

- 4.2.2 The potential for odour generation will be dependent on a number of factors including ambient weather conditions, the nature and age of the material imported to the site, or contaminated/ non-permitted materials.

- 4.2.3 As a result of high ambient temperatures and prolonged storage periods prior to delivery, waste may be delivered in a poor condition or has commenced the degradation process which has the potential to create odour.

- 4.2.4 Please refer to the table 2 for the details on storage of potentially odorous waste types. No treatment will be carried out other than bulking up for dispatch.

Table 3- Storage arrangements for potentially odorous waste streams

Material	Max. Annual Throughput	Standard Max. Storage Time on Site	Exceptional Circumstances Max. Storage Time on Site	Onsite storage	Material Management
Green waste	15412t	7 days	14 days	In storage bay (Bay 1) outdoors	<p>Waste will be collected and stored loose in outdoor storage bay. There will be no treatment taking place onsite which would give rise to odour emissions. Waste will be subject to regular checks both for odour and fire and thus any emissions will be noted early. VoG have regular garden waste collection in place which should prevent the receipt of aged materials.</p> <p>Green waste will be subject to turning- however this is not expected to give rise to odour emissions as</p> <ul style="list-style-type: none"> -the associated odour potential of green waste is generally considered to be low. <p>This is further supported by consideration of the low offensiveness and inoffensive character of odours from green waste;</p> <ul style="list-style-type: none"> -the volume of the green waste storage bay is only 185m³. <p>If during or after the turning of the waste odour emissions are detected, the waste will be managed in line with abnormal operating conditions (Table 5).</p>
General waste	22 377t	24-72 hrs	5 days	In storage bay (Bay 2) in enclosed storage building	Waste will not be treated on-site and will remain within the bags so the potential for odour releases is limited.
Food waste	14 870t	24hrs	48hrs	In storage bay (Bay 22) in sealed skip	<p>Household food waste will be collected in dedicated food pods which will be removed from the RCVs and tipped into skips on arrival at the site.</p> <p>Trade food waste will be delivered to the Site via RCVs and tipped into Bay 23, and immediately transferred into sealed skips. Food waste storage skips will be fully sealed when not in use. Tipping</p>

					areas will be swept and washed down regularly to leave a tidy working area at the end of the working day.
AHP	1750t	3	5	In storage bay (Bay 3) in enclosed storage building	AHP waste will be collected in bags and deposited into Bay 3 in the storage building. AHP waste will not be treated on-site and will remain within the bags. The bay itself is also within a building so the potential for odour releases is limited. Tipping areas will be swept and washed down regularly to leave a tidy working area at the end of the working day.

4.3 Preventative and control measures during normal conditions

The overall aim of the OMP is to ensure that *All Appropriate Measures* are applied; for this reason, the facility is operated and managed in accordance with the accepted hierarchy of preferred controls, that is:

1. Prevent the formation or emission of odorous compounds in the first place; and
2. Where this is not practicable, minimise the release of odour.

The waste streams accepted and stored at the facility arise from VoG Council's kerbside collection service. These are collected on a regular basis and of household origin (i.e. there is no increase in odour risk due to pre-processing or ageing of waste). Residents are educated in what items are collected and how to present these for collection. Each waste type is containerised either in bins or bags until or even after the point of collection. Site operatives collecting waste at the kerbside will commence visual and olfactory checks on the waste streams before it even arrives at the facility. Operatives will be trained to identify the various types of waste that can be collected from the kerbside. Any waste presented at the kerbside which is identified as not covered by the permit, will not be accepted and if practicable the relevant householder/producer will be notified why. If recycle and garden waste receptacles are clearly filled with non-compliant waste these will not be collected. If

residual or AHP waste receptacles are unusually heavy or are clearly filled with non-compliant waste these will not be collected. Site operatives can identify non-compliant wastes comprising of liquid, dust, or excessively odorous substances and will not collect these receptacles.

The site will operate in line with the EMS which includes a specific waste acceptance procedure (EMS 4.02). Furthermore, regular odour monitoring will be undertaken as detailed below in Section 6.2.

Table 4- Preventative and control measures during normal operating conditions

Situation	Preventative measure	Control measure
Reception of waste	<p>VoG provide a regular k/s collection for all waste streams with odour potential. This helps reduce the material sitting for extended period of time and regularly being agitated which will release odour emissions.</p> <p>Site operatives will follow the WAP during waste receipt and identify any high odour risk load.</p> <p>Site operatives are present to assist with offloading and bulking; and the site will be monitored for odour which will aid early detection.</p> <p>Site operatives will follow the Waste Acceptance Procedure (WAP) (doc. ref: EMS.S4.02). If during this initial waste acceptance it is suspected the waste may be odorous (non-compliant) the site operative will take steps to further investigate the nature of the waste in line with the relevant practices (doc. Ref: EMS.S4.03 and EMS.S4.04).</p>	<p>If during monitoring emissions of odour is detected the waste source will be identified and an alternative control system ²/ different storage container will be sought. Odorous waste will then be isolated and removed within maximum 72 hours.</p> <p>If the waste is found to be excessively malodorous the waste will not be accepted and the load will be directed to a suitably licenced facility. Site operatives are present to assist with waste acceptance and to monitor compliance with the permitted waste types.</p> <p>In case of loss of containment odorous waste will then be isolated and removed within maximum 72 hours.</p>

² There will be 3 x 30 yard³ sealed skips readily available onsite- in exceptional circumstances/ if more storage capacity might be needed to address any odour emissions VoG are able to order additional sealed containers at short notice if/ when required.

	<p>The Site Manager will not allow the acceptance of wastes that are likely to be stored for periods that would result in increased decomposition and therefore odour generation potential.</p> <p>The Site Manager will ensure that there is sufficiently trained staff and sufficient plant capacity to deal with the waste coming in</p> <p>The majority of wastes with odour potential are received and stored in an enclosed skip and/or enclosed building.</p>	
Storage of waste	<p>Site will be monitored for odour which will aid early detection.</p> <p>VoG provide a regular³ kerbside collection for all waste streams with odour potential. This helps reduce the material sitting for extended period of time and regularly being agitated which will release odour emissions.</p> <p>Food waste will be stored in sealed containers in an enclosed building, providing double containment for any potential for odour emissions.</p> <p>The receipt, bulking and bulk export of municipal waste and domestic food waste only takes place within the bulking shed, where a greater degree of containment of odours can be afforded.</p> <p>Residual waste and AHP will be only stored onsite for 72 hrs. These waste streams are k/s collected in bags which already provide a level of containment for odour. The waste will not be treated or otherwise agitated that would result in emissions of odour.</p>	<p>Should regular kerbside collections not be able to implemented additional resources would be re-allocated from other service areas (both staff and plant). Due to the health and environmental implications waste collection is classed as a 'frontline service' ⁴operated by VoG which is always prioritised above all other services.</p> <p>Certain wastes accepted receive priority in the bulking facility process, these include:</p> <ul style="list-style-type: none"> -Any wastes designated as high risk on site; -Wastes which are classified as high odour risk potential; and -When the site operative is alerted to waste being particularly odorous. <p>Odorous material detected onsite will be isolated and removed within maximum 72 hours.</p>

³ VoG Council offer a weekly kerbside waste collection service- anything exceeding this timeframe would be considered as non-regular collection.

⁴ VoG Council have a successful track-record of providing continuous service with negligible delays even during the recent CV-19 pandemic. This experience with crisis management is implemented across the county's waste sites. The Council is continuing to have access to and to use the WRAP material brokerage to provide off-takers and haulage in the event of seasonal material fluctuations/ machinery breakdown/contingency situations. Response time is less than 24hours including over the weekend period.

	<p>During the working day the roller shutter doors are opened to facilitate the entry / exit of waste collection vehicles. The roller shutter doors remain closed with the exception of when vehicles enter and exit; thus reducing the fugitive emissions of odour during vehicle entry / exit.</p> <p>Green waste will only be stored onsite for up to 7 days. Due to the ventilation provided by outdoor storage and the composition of the material, odour emission is less likely. Green waste is associated with high seasonality, more material anticipated in the summer months and around the Christmas holidays. This will be considered for haulage; and the capacity of the storage bays are monitored throughout the day including a daily site monitoring check which is recorded.</p> <p>Certain wastes accepted receive priority in the bulking facility process, these include:</p> <ul style="list-style-type: none"> ■ Any wastes designated as high risk on site; ■ Wastes which are classified as high odour risk potential; and ■ When the site operative is alerted to waste being particularly odorous. <p>The Site Manager will ensure that there is sufficient number of trained staff available at all times taking into account emergencies/contingencies such as an odour incident. Onsite plant will be available at all times to move any odorous waste to a separate container/quarantine area.</p> <p>The Site Manager will ensure that there is sufficiently number of trained staff and sufficient plant capacity to promptly process incoming waste.</p>	<p>If odour emissions associated with certain waste streams can clearly be identified at the site boundary during odour monitoring the waste will be isolated in a sealed skip- if containment and isolation proves to be inefficient while awaiting removal then the waste will be sprayed with odour suppressant. Specialist advice will be sought ⁵as required.</p> <p>Storage arrangements and allocated storage times for the problematic waste type will be reviewed within 1 month of an odour incident to prevent the incident re-occurring.</p>
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⁵ If odour emissions are substantiated during the site monitoring exercise or following a complaint VoG will treat this as an odour incident/ contingency. If containerising the waste/ removal from site is not proving to be efficient or not feasible then VoG will procure external specialist assistance to address the incident. A specialist odour control company will be contracted as an emergency, based on their relevant experience and availability. It is not practicable or financially feasible to have an ongoing contract for this scenario, however VoG recognises that odour emissions must be prevented and minimised and will seek relevant external expertise within 48 hours.

	<p>The majority of wastes with odour potential are received and stored in an enclosed skip and/or enclosed building.</p> <p>The site will be cleaned daily which will prevent any accumulation of material that may give rise to odour emissions. Regular cleaning of operational areas such as the outdoor bay areas (i.e. green waste and glass) is undertaken. Site haul roads and drainage channels are cleared out to minimise odour generation from degrading residual waste materials on these surfaces.</p>	
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5 POTENTIAL ODOUR SOURCES – ABNORMAL SITUATIONS

5.1 Identification of abnormal situations

- 5.1.1 In accordance with the current NRW guidance the following abnormal situations have also been considered in section 5.2:

5.2 Preventative and control measures during abnormal conditions

Table 5- Preventative and control measures during abnormal conditions

Situation	Preventative measure	Control measure
Excessively malodorous material is delivered to site	<p>The waste types accepted at the facility originate from households and VoG provide a regular k/s collection for all waste streams with odour potential thus have a low potential to be of odorous nature.</p> <p>Site operatives are present to assist with offloading and bulking; and the site will be monitored for odour which will aid early detection.</p> <p>Site operatives will follow the Waste Acceptance Procedure (WAP) (doc. ref: EMS.S4.02). If during this initial waste acceptance it is suspected the waste may be odorous (non-compliant) the site</p>	<p>If despite following the WAP excessively malodorous material was delivered to the site this will be isolated and removed within maximum 48 hours. As far as practicable the person or company (if commercial delivery) depositing the waste and the source of the waste will be identified and investigated to ensure similar situations are prevented.</p> <p>If odour emissions associated with certain waste streams can clearly be identified at the site boundary during odour monitoring the waste will be sprayed with odour suppressant.</p>

	<p>operative will take steps to further investigate the nature of the waste in line with the relevant practices (doc. Ref: EMS.S4.03 and EMS.S4.04).</p> <p>If the waste is found to be excessively malodorous the waste will not be accepted and the load will be directed to a suitably licenced facility.</p>	<p>Specialist advice will be sought as required.</p> <p>Storage arrangements and allocated storage times for the problematic waste type will be reviewed within 1 month of an odour incident to prevent the incident re-occurring.</p>
<p>Waste has generated an odour whilst on site</p>	<p>Certain wastes accepted receive priority in the bulking facility process, these include:</p> <ul style="list-style-type: none"> ■ Any wastes designated as high risk on site; ■ Wastes which are classified as high odour risk potential; and ■ When the site operative is alerted to waste being particularly odorous. <p>The Site Manager will ensure that there is sufficient number of trained staff available at all times taking into account emergencies/contingencies such as an odour incident. Onsite plant will be available at all times to move any odorous waste to a separate container/quarantine area.</p> <p>The Site Manager will ensure that there is sufficiently number of trained staff and sufficient plant capacity to promptly process incoming waste.</p> <p>The majority of wastes with odour potential are received and stored in an enclosed skip and/or enclosed building.</p> <p>The site will be cleaned daily which will prevent any accumulation of material that may give rise to odour emissions. Regular cleaning of operational areas such as the outdoor bay areas (i.e. green waste and glass) is undertaken. Site haul roads and drainage channels are cleared out to minimise odour generation from</p>	<p>If during monitoring emissions of odour is detected the waste source will be identified and control system / different storage container will be sought. Odorous waste will then be isolated and removed within maximum 48 hours.</p> <p>If odour emissions associated with certain waste streams can clearly be identified at the site boundary during odour monitoring the waste will be sprayed with odour suppressant. Specialist advice will be sought as required.</p> <p>The details of the incident will be recorded in the site diary (occurrence and time of storage).</p> <p>Storage arrangements and allocated storage times for the problematic waste type will be reviewed within 1 month of an odour incident to prevent the incident re-occurring.</p>

	degrading residual waste materials on these surfaces.	
Breakdown or malfunction of site plant/vehicles. (Odorous waste material being left onsite for extended periods of time)	All plant and equipment will be maintained and serviced in accordance with the manufacturer's recommendations and planned maintenance procedures to minimise breakdowns. The operator manages other waste sites within the borough of Vale of Glamorgan - if plant breakdown may give rise to odour emissions the operator can use mobile plant/vehicles from other waste sites in close vicinity.	In the event of a prolonged mobile plant failure or malfunction, alternative equipment will be sourced within 48 hours until the equipment can be repaired or hired in as necessary. Contingency arrangements are in place with third party facilities ⁶ , to enable the diversion of waste material if required.

5.3 Contingencies

In accordance with NRW's Guidance on OMPs, contingency plans have been defined to react to situations where monitoring indicates that a potential odour source is not completely under control, or that adverse impact has occurred. This includes accidents (or incidents) which would result in the loss of control of odorous substances and have the potential to cause an unacceptable short-term impact on the local community but are not considered an emergency situation.

Excessive odour will be determined on the combination intensity and persistence factors:

Table 6- Determination of excessive malodour

Intensity					
6 Extremely strong	Moderate	Moderate	Excessive	Excessive	Excessive
5 Very strong	Moderate	Low	Moderate	Excessive	Excessive
4 Strong	Negligible	Low	Moderate	Excessive	Excessive
3 Moderate	Negligible	Negligible	Low	Low	Moderate
2 Faint odour	Negligible	Negligible	Low	Low	Low
1 Not detectable	Negligible	Negligible	Negligible	Negligible	Negligible
Persistence	A	B	C	D	E
	Occasional	Intermittent	Frequent	Persistent	Constant

⁶ Waste load deliveries will be redirected to Pritchard's, Earthmovers House, Llantrisant Business Park, Llantrisant, CF72 8LF.

Table 7- Contingencies and remedial actions

Incident/ potential cause of impact	Remedial actions/ procedures
Receipt of particularly odorous material	It is considered unlikely that any material received is of sufficient magnitude to cause unacceptable odour impacts outside the Site boundary. However, should any particularly odorous materials be received, these loads will be isolated within the non-conforming waste quarantine area (within the container it was delivered in) and removed from Site as soon as possible (target of 48-hours), minimising retention-time.
Compromised odour containment	<p>In the case of a roller door motor malfunction, the doors will be operated manually whilst repairs are undertaken.</p> <p>If doors are stuck open or building fabric is damaged, then the following contingency measures will be implemented:</p> <ul style="list-style-type: none"> -Arrangements made to re-establish containment; -Requirement for more odorous activities reviewed and suspended as appropriate e.g. loading/unloading; and -Minimise the presence of odorous materials e.g. transferring existing material off-site as soon as practicable. <p>Frequency of odour monitoring will be increased to 3 times a day until an effective fix is implemented. If odour detected during surveys is considered likely to lead to adverse impacts at sensitive receptors, then consideration will be given to ceasing material acceptance if this would alleviate the problem. NRW and neighbours will be notified of the investigations and actions being taken.</p> <p>-If none of the above measures result in the reduction of odour emissions then waste acceptance will be paused, waste will be re-directed to VoG's contingency site and a temporary site closure will be implemented until malodorous waste streams are removed and the site is cleaned .</p>
Approaching storage capacity	Although the site will have effective stock rotation and lines drawn on the inside of each bay mark the maximum quantity of material to be stored in that location, in the event that the material storage areas are not considered to have sufficient capacity, the Site Supervisor will consider the option for diverting incoming

	material to other waste management facilities to prevent build-up of material beyond capacity.
Temporary odorous activities	<p>No routine temporary odorous activities are anticipated to occur at the Site under normal operating conditions. However, it is noted that temporary odorous activities could occur as a result of equipment malfunction or breakdown or (i.e. jamming of roller shutter doors and subsequent repairs). Should any temporary odorous activities be undertaken at the Site, the Site Supervisor or Site Manager will contact NRW and other interested parties (e.g. residents) before such actions are taken to advise them of the operation being undertaken and that any odour will be of a temporary nature.</p> <p>Additional control measures will incorporate:</p> <ul style="list-style-type: none"> -Where practicable, timing operations when the prevailing wind direction is away from the nearby sensitive receptors; and -Ensuring prompt re-establishment of containment. <p>If such operations unavoidably coincide with unfavourable meteorological conditions (i.e. warm and still conditions) additional off-site odour monitoring will be undertaken to clarify the significance of offsite impact.</p>
Abnormal meteorological conditions	<p>Extreme meteorological conditions that promote the generation of odour and inhibit its effective dispersion (e.g temperature inversion, high temperatures and stable conditions) may result in increased risk of impact at receptor locations. Contingency measures to minimise the risk of unacceptable odour exposure at receptor locations during these conditions, will include but not be limited to consideration of:</p> <ul style="list-style-type: none"> -Identifying the source of any odour emissions. -More frequent assessment of the level of containment afforded by the Bulking Shed (i.e. any significant gaps where fugitive emissions might be released to atmosphere); -Reviewing requirements for activities that involve building door opening and reduce frequency and duration of door opening if practicable. -Containerisation of waste and removal from site within 48 hours.

	<p>-If the measures above result in no reduction of odour emissions or are not feasible then waste acceptance will be paused, waste will be re-directed to VoG's contingency site and a temporary site closure will be implemented until malodorous waste streams are removed and the site is cleaned .</p>
Detection of odour at/ beyond the site boundary during odour monitoring or response to a complaint	<p>The olfactory survey methodology as detailed in Appendix 3 will be followed and the likely source(s) of the detected odour identified by determining the sources of greatest odour intensity, contingency actions will be implemented as identified above and in Table 5.</p> <p>-The first assessment of an odour at the Site boundary will be whether the odour has or is likely to leave Site, if it has not and is not likely to leave Site the problem that caused the odour shall be remedied to prevent continuation of odour. All information regarding action taken will be recorded on the odour assessment sheet (Appendix 1).</p> <p>-If an odour at a level which is likely to cause pollution (i.e. high intensity and/or offensiveness) is likely to leave the Site boundary or has already left the Site boundary, the Site Supervisor or representative will be notified immediately. Depending on the source the contingency actions identified above and in Table 5 will be implemented.</p> <p>The olfactory survey will be repeated on consecutive days after initiation of corrective actions, until odour has reduced to an acceptable level.</p>
Staff shortage	<p>Should a large number of staff will not be able to attend work additional resources would be re-allocated from other service areas of the authority and staff will be requested via recruitment agencies. Due to the health and environmental implications waste collection is classed as a 'frontline service' ⁷ operated by VoG which is always prioritised above all other services.</p>
Unavailability of contracted off-takers for odorous waste streams	<p>In an event of VoG's contracted offtakers for odorous waste streams are unavailable for collection alternative private offtakers will be contracted on an emergency</p>

⁷ VoG Council have a successful track-record of providing continuous service with negligible delays even during the recent CV-19 pandemic. This experience with crisis management is implemented across the county's waste sites.

	<p>basis. VoG nurtures a good working relationship with its neighbouring local authorities and can also utilise their waste sites on an ad-hoc basis. Furthermore, the Council is continuing to have access to and to use the WRAP material brokerage to provide off-takers and haulage in the event of seasonal material fluctuations/ machinery breakdown/contingency situations. Response time is less than 24hours including over the weekend period.</p>
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6 MONITORING

6.1 Schedule

6.1.1 Odour monitoring will be undertaken

- in line with preventative measures;
- in order to assess how successful the operational management and mitigating control measures are at the facility;
- to identify whether odour is causing a potential nuisance; and
- to ensure that appropriate remediation measures are adopted early.

6.1.2 Monitoring will be undertaken by designated staff who will be fully trained by site management- please refer to section 4 of the EMS for training records. All site personnel will be responsible for reporting any problem odours identified during their day to day operations.

6.1.3 Monitoring at the Facility will consist of the following;

Parameter	Monitoring Technique	Frequency
Olfactory Monitoring	Site perimeter and off site checks (along the site perimeter). In line with H4 guidance.	<ul style="list-style-type: none">• <i>During normal operating conditions:</i> Daily;• <i>During an incident/abnormal operating conditions:</i> During loading/unloading of material and before site closure. Frequency of monitoring can be increased until incident is resolved in case of an odour complaint.

Complaints Monitoring	Logged in accordance with EMS.S2.06 <i>Complaint Procedure</i> .	Ad-Hoc/ when an incident occur.
Review the effectiveness of the OMP	This OMP will be reviewed for effectiveness and continuous improvement.	<ul style="list-style-type: none"> • <i>In lieu of no complaints:</i> Annually; • <i>After a complaint that was substantiated:</i> Immediately following a complaint at the Facility.

6.2 Olfactory Monitoring

6.2.1 As part of the daily inspections, appropriately trained and experienced site personnel will carry out olfactory monitoring around the site.

6.2.2 Monitoring locations will be alongside the site boundary and will be determined based on wind direction and weather conditions at the time. Additional locations for monitoring may also be included, depending on any complaints/incidents.

6.2.3 The monitoring results will be recorded on the Site Daily Inspection Sheet and site diary, which forms part of the Site's Management System.

6.2.4 During normal operating conditions Odour monitoring will take place daily when the designated person carrying out the monitoring arrives onsite (in line with H4 guidance to avoid odour desensitisation). This will be at various times during the day to avoid bias from regularly monitoring at the same time (e.g. always monitoring outside of loading/unloading window) .

6.2.5 During abnormal operating conditions Odour monitoring will take place at least twice a day, during loading/unloading of materials and before site closure. The frequency of monitoring can be further increased until the incident is resolved or in case of an odour complaint.

6.2.6 Olfactory monitoring will be carried out in accordance with the

recommendations detailed in *'How to comply with your permit'* and the *H4: Odour guidance*, including avoiding strong foods or drinks and strongly scented deodorisers (or toiletries etc.,) for at least half an hour prior to the monitoring. In addition individuals suffering from a cold, sore throat or sinus problems that may impair their ability to detect odours will not be used. The persons monitoring will also be rotated to ensure they have not become desensitised to the odours.

6.2.7 The designated person will exit their vehicle and remain in the locality for a minimum of 1 minute whilst breathing normally. Any external activities that may contribute to odour generation in the surrounding area will also be noted on the form and an assessment of the intensity of the odour will be made using the key provided.

6.2.8 Seasonal changes in environmental conditions such as high ambient temperatures or lack of air movement may promote the potential of fugitive odour emissions. During the following meteorological conditions the site will adopt the monitoring plan set out for 'abnormal operational conditions'- the site will be equipped with a weather station to enable efficient monitoring of weather conditions:

- i. Temperature is $>+25^{\circ}\text{C}$;
- ii. Wind speed is $<10\text{km/h}$.

6.2.9 In the event odour is detected above intensity ranking 3 (moderate odour), the facility management will be informed immediately and the approximate location and extent of the odour plume assessed and site operations reviewed and remediated.

6.3 Remedial Action Plan

6.3.1 Following receipt of a complaint or identification of an odour at the facility, the following action plan will be undertaken, including:

- Additional olfactory monitoring as detailed above to identify the extent and potential cause for the odour i.e. waste material and / or site activity;
- Examination of the operational activities at the Facility at the time of the odour complaint or odour identification;
- Examination of the meteorological conditions at the time of the complaint or odour identification;
- Carry out a review of the operational procedure and process controls as detailed within section 5 detailed above and instigate any control measures immediately following identification of the problem.

6.4 Record Keeping and Reporting

6.4.1 An Odour Complaints Form will be completed as per the procedure detailed above and the forms will be maintained free from damage and kept within the site office and will be made available to the NRW on request.

6.5 OMP Review

6.5.1 This OMP will be reviewed annually or within 1 month following a complaint/incident at the Facility.

7 COMMUNITY ENGAGEMENT

7.1 Complaints Procedure

7.1.1 As part of this Odour Management Plan, engagement with the neighbours will be undertaken.

7.1.2 If a complaint regarding odour emissions is made the complaint procedures detailed in EMS.S2.06 will be followed. A phone number for members of the public to contact VoG with any complaints will be visible on the Site board at the entrance. Following the receipt of a complaint VoG will endeavour to

contact the complainant to provide feedback on actions taken to both assess the event and convey any remedial actions. All complaints will be recorded on an Odour Complaint Form such as that presented in Appendix 2 and forwarded onto the Site's NRW Officer. Information that will be recorded will include the following:

- Date and time at which the odour complaint was received and detected;
- Location / address of complainant (where provided); and
- A description of the odour observed by the complainant (where provided).

Following an odour complaint, a trained member of staff will undertake a sniff test, recording the results on an Odour Monitoring Form such as that presented in Appendix 1. Where possible the sniff test will be undertaken by a member of staff that does not routinely work within the Bulking Shed and will not therefore be accustomed to the characteristic malodours that might arise from the Site. If an odour (which can be attributed to the Site operations) is encountered during the sniff test, the source of the detected odours will be investigated by site management and the outcome recorded.

Investigations will include the likely source and cause of the odour and a review of the meteorological data. Suitable remedial action will be investigated, where required. The complainant will be informed of any action taken and all actions will be recorded.

Should no odours (which can be attributed to the Site operations) be observed, a record of the sniff test will be made, the meteorological conditions will be checked, a report provided to NRW and suitable feedback provided to the complainant.

- 7.1.3 Information will be provided to the local neighbours regarding the point and method of contact for the site in the event of an odour complaint or if they want to discuss any activities etc., at the site.

- The neighbours can be advised that any complaints / concerns will be addressed immediately following identification / notification and contingency action implemented;
- The neighbours can be advised of any corrective action and a follow up call carried out if required.

7.1.4 The primary point of contact at the site for complaints and liaison within the neighbours is the Site Manager who will ensure that the recording, investigation and close out of complaints is undertaken as described above and in accordance with company management procedures.

7.1.5 The following investigative actions will be taken on receipt of an odour complaint:

1. The Site Supervisor will be informed of the odour complaint as soon as possible, including the location, time and date (if reported) of the complaint being lodged;
2. The Site Supervisor and/or Site Manager (or any appointed representative) will undertake the following assessment process:
 - Review of the operations and control systems at the Site prior to and at the time of the complaint to include:
 - Determine if material was being received at the bulking facility at the time of the complaint;
 - Determine if highly odorous material was being received, stored or removed at the time of the complaint;
 - Determine if any abnormal operating conditions were occurring;
 - Determine if any accidents or incidents requiring contingency actions were being undertaken; and
 - Determine if any emergency situations existed at the time.

- Review of the meteorological conditions (wind speed) prior to and at the time of the complaint – to establish whether a pathway can be established between the Site and the complainant; and / or
- Review the previous history of complaints at the location identified.

The Site Supervisor (or appointed representative) will visit the complaint location as soon as is possible in order to subjectively determine odour presence / absence and, if present, odour characteristics and intensity in accordance with the procedure detailed in Appendix D and complete a complaint form such as the one presented in Appendix C.

NRW will be informed in line with the EP requirements.

Appendix 1: Odour Monitoring Form

Background Information			
Person Undertaking Survey (& Position)			
Have you prepared for the test in line with H4 guidance? (If not find another suitably trained member of staff to carry out test.)			
Date:		Time:	
Read the on-site weather station to provide the following information			
Description of Wind Strength (i.e. strong, gusty)*			
Wind Direction			
Weather (i.e. sunny, overcast)			
Temperature (degree Celsius)*			
<p><i>*Please note if the following conditions apply the frequency of monitoring needs to be increased in-line with 'abnormal conditions' (See Table 6.1.3) :</i></p> <p><i>Temperature is >+25 C;</i></p> <p><i>Wind speed is <10km/h</i></p>			
Survey Results			
Location	Intensity (1-6) (see below)	Persistence (A-E) (see below)	Odour Characteristic (e.g. waste, farm, fuel etc)
Northern boundary			
Eastern boundary			
Southern Boundary			
Western Boundary			
Closest Property			
If odour is strong / persistent additional information to be detailed below			
Intensity			
1	No detectable odour		
2	Faint odour (barely noticeable)		
3	Moderate odour (odour easily detected)		
4	Strong odour (bearable but offensive)		
5	Very strong odour (instinct to walk away)		

6		Extremely strong odour highly likely to cause annoyance (May induce nausea)
Persistence		
A	Occasional	Less than 10% of the time
B	Intermittent	10-30% of the time
C	Frequent	30-50% of the time
D	Persistent	50-75% of the time
E	Constant	>75% of the time
If during the survey the odour is strong or persistent at any location on the Site boundary, the following information requires completion regarding plant operation.		
Waste Delivery	Has material recently been delivered to Site?	
	If yes, were the correct procedures followed?	

Appendix 2: Odour Complaints Reporting Form

Installation to which complaint relates:		Date recorded:	Ref No:
Name and address of caller:			
Tel No. of caller:			
Location of caller in relation to installation:			
Time and date of complaint:			
Date, time and duration of offending odour:			
Caller's description of odour, e.g. comparison with other odours, strong/weak, continuous, fluctuating:			
Has the caller any other comments about the offending odour?			
Weather conditions (e.g. dry, rain fog, snow):			
Wind strength and direction (e.g. light, steady, strong, gusting):			
Any previous complaints relating to this odour?			
Any other relevant information:			
Potential odour sources that could give rise to the complaint:			
Operating conditions at the time offending odour occurred – e.g. removing material from bays, deliveries, receipt of potentially odorous materials, work to temporary capping area, for example			
Follow up			
Date and time caller contacted:			
Action taken:			
Amendment required to Odour Management Plan (Y/N, if Y provide details)			
Form completed by:		Signed:	

Appendix 3: Odour Survey Methodology

The exact locations for offsite monitoring are selected based on the prevailing wind direction and proximity to receptors.

The monitoring will be extended to the surrounding locality if odour likely to cause annoyance is detected at the Site boundary.

At each location observations shall be made concerning odour intensity, persistence and character, time, date, weather conditions and any 'abnormal' Site operating conditions at the time of the survey. Surveys shall be carried out in accordance with the monitoring protocol contained within NRW's H4 Odour Guidance.

The odour assessor should not be subject to significant Site odours in the 30-minutes prior to the assessment, or food, drink or cigarettes within the last hour. This is to ensure that monitors are not suffering from odour fatigue and will be sensitive to Site odours. Furthermore, the following exclusions shall apply:

- Staff members that are regularly exposed to Site odours for longer than 30 minutes; and
- Any staff members known or suspected of having a very poor sense of smell should not be used for odour monitoring.

The inspections shall be undertaken as follows:

1. The person should walk slowly and breathe normally and begin their assessment at areas of expected low odour concentration, i.e. upwind of the Site, and should move to areas of high odour concentration. If odour is detected while walking, the intensity should be recorded as at least 3 (distinct), or higher.
2. If an odour cannot be detected whilst walking, the person should periodically stand still and inhale deeply facing upwind. If odour is then detected, but can only be detected in this manner, the odour 'intensity' should be recorded as 2 (faint).
3. Following detection of any odour of intensity 3 or above at the Site boundary during an odour inspection, the following measures will be taken:
 - The olfactory survey will deviate to determine the extent of plume downwind (at or above an intensity level 3) and at potential receptors affected. Contingency measures outlined in Section 5.0 will be followed; and
 - An on-site inspection shall be carried out seeking to trace any observed odour back to source so that the appropriate corrective and/or preventative action can be taken (with regard to Contingency Measures detailed in Section 5.0).

On-site inspections would be undertaken by continuing the olfactory survey methodology onto the Site to inspect all potential odour sources.

The Site Supervisor and/or Waste & Recycling Area Manager shall be notified immediately of any detected odours that are considered to have the potential to give rise to significant off-site odour impact (intensity 3 at a receptor location). The contingency measures

detailed within Table 5 will be followed.

END OF DOCUMENT