Final V3

Powys County Council
North Powys Bulking Facility

Environmental Permit Application

Odour Management Plan

Project code: 416.00798.00038
Date: January 2022

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Acknowledgements

The content of this Report has been based upon information provided by WRAP Cymru and Powys County Council.

1.0 Introduction

This Odour Management Plan (OMP) has been prepared to support the Environmental Permit (EP) application for the proposed North Powys Bulking Facility near Newtown, Powys, hereafter referred to as 'the Site'.

The Site will require an EP to be issued by Natural Resources Wales (NRW) before it can operate. NRW guidance Note *H4 Odour Management How to comply with your environmental permit*[1] (hereafter referred to as 'H4 Odour Guidance') describes how the IPPC Directive includes odour in the definition of pollution and requires that "*[…] all the appropriate preventive measures are taken against pollution […]*".

This Directive has been transposed in the UK by the Environmental Permitting Regulations (EPR) and sites encompassed within these Regulations will have the following odour condition included within their permit:

> *Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in an approved odour management plan, to prevent or where that is not practicable to minimise the odour.*

Powys County Council (PCC) as the Operator must therefore employ the appropriate measures necessary to prevent odour pollution or minimise it when prevention is not practicable. The measures that are appropriate will depend on the industry sector and the site-specific circumstances of the bulking facility and will take costs and benefits into account.

1.1 OMP Objectives

As defined within the H4 Odour Guidance, the objectives of an OMP is to:

- Identify potentially significant odour sources at the facility and any foreseeable situations which may compromise the operator's ability to prevent and / or minimise odour releases from the proposed site activities;
- Identify and employ appropriate methods, including monitoring and contingencies, to control and minimise odour pollution;
- Identify and employ appropriate control measures and actions that the operator will take to minimise the impact in the event that odour incidents occur;
- Prevent unacceptable odour pollution at all times;
- Reduce the risk of odour releasing accidents or incidents by anticipating them and planning accordingly; and
- Provide a working document for on-site staff.

1.2 OMP Approach and Structure

The methodologies presented take full account of NRW guidance documentation 'H4 Odour Management, how to comply with your environmental permit'. According to NRW guidelines an OMP should contain the following elements:

[1] *Natural Resources Wales, How to comply with your environmental permit. Additional guidance for H4 Odour Management, Version 2.0, October 2014.*

- An assessment of the risks of odour problems, from normal and abnormal situations, for example of weather, temperature, or breakdowns, as well as accident scenarios;
- The appropriate controls (both physical and management) needed to manage those risks;
- Suitable monitoring;
- Actions, contingencies and responsibilities when problems arise;
- Regular review of the effectiveness of odour control measures; and
- Emission limits (where appropriate).

The OMP is also required to include clear statements to demonstrate that the operator understands and accepts its responsibilities. In particular, it should show:

- That the Operator, either directly or through its contractors or subcontractors, ensures that equipment on site is operated and maintained such that it is effective in the control of odour at all times;
- That the Operator is familiar with the characteristics of the processes and equipment on site and have identified the areas of risk of emissions from odour;
- How the Operator will reduce or cease operations, if necessary, to avoid serious odour pollution;
- How the Operator will engage with neighbours to minimise their concerns and complaints; and
- How the Operator will respond to complaints.

An Odour Impact Assessment (OIA) was produced in 2020 as part of the permit application for the Site[2], and is a useful reference alongside this OMP. The results of the assessment indicate that, in accordance with NRW's H4 Odour Guidance, there is no risk of significant pollution (as a result of the bulking facility's operation) at all receptors.

[2] *North Powys Bulking Facility Odour Impact Assessment, SLR Consulting Ltd, Project code: 416.00798.00038, December 2020.*

2.0 Sources, Releases and Impacts

This section provides an inventory of potential odour sources, release points, pathways and receptors relevant to the bulking facility.

2.1 Description of Operations

The North Powys Bulking Facility receives and stores a variety of material types prior to bulk removal. The material types received at the Site are primarily mixed municipal waste, food waste, Absorbent Hygiene Products (AHPs), dry recyclables (cans, plastic, paper and cardboard), glass and green waste. A full list of the types of material to be received at the Site is presented in Appendix AQ1. Material is received at the Site via road by a fleet of Recycling and Refuse Collection Vehicles (RRVs and RCVs).

Food, mixed municipal waste, bulky waste, textiles and dry recyclables is offloaded within the bulking facility in the Bulking Shed. The AHPs are tipped (from the collection vehicle) on the floor within the Bulking Shed and subsequently moved to a skip (sealed at the bottom and sides) as soon as is practicable. The skip is located within the Bulking Shed and AHPs remain on site for no longer than 7 days. Food waste will arrive on site in RRV pods/stillages or council vehicles and will be tipped directly into a designated food waste bay. All handling activities associated with these material types (tipping, stockpiling and loading) take place within the Bulking Shed.

Green waste and glass are offloaded outdoors in designated bays to the west of the Bulking Shed. All handling activities associated with these materials (tipping, stockpiling and loading) take place outdoors within the designated bays.

The Bulking Shed will be accessed via 5 roller shutter doors and process air from within the building will be extracted by 5 ventilation fans fitted on the north-eastern wall (2 louvres are fitted on the south-west wall to facilitate airflow into the building). These ventilation fans are designed to ensure that the Bulking shed is maintained under a state of negative pressure to minimise the potential for fugitive odours. The system has been designed to achieve a ventilation rate of approximately 1.5 Air Changes Per Hour (ACPH), equating to an approximate extraction airflow of 22,750m^3/hr.

When not in use, RRVs and RCVs are parked at the Site in the marked bays to the southwest of the Bulking Shed. There is potential for RRVs and RCVs to be a source of odours following use in collection operations as a result of waste residue retained in or on the vehicles. Therefore a cleaning regime is in place to control the level of waste residuals in or on the RRVs and RCVs (see section 2.5).

The Site also contains a number of facilities associated with supporting the fleet of RRVs and RCVs such as an office, welfare facilities, a weighbridge, a refuelling station and a staff carpark. None of these facilities are considered to pose a significant source of odour emissions.

The bulking facility receives and processes up to 22,500 tonnes per annum (tpa). Received materials are removed from the site in bulk via road (majority articulated lorries) for further recovery or disposal.

The hours available to the site to operate are between 7am and 6pm Monday to Sunday (including bank holidays). However, the site will only be manned between 7am and 4pm Monday to Friday. Weekend operating hours will vary and will only arise in an emergency.

2.2 Potential Odour Sources

The application of good working practices and process control is of fundamental importance in eliminating and minimising the quantities of odours formed on Site and their subsequent release to atmosphere. This section provides an inventory of all potential odour sources under the full range of normal operating conditions.
The overall aim in the operation of the bulking facility is to apply Best Available Techniques (BAT) at all stages of the material transfer process. For this reason, the bulking 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;
2. Where this is not practicable, minimise the release of odour;
3. Abate excessive emissions; then
4. Dilute any residual odour by effective dispersion in the atmosphere.

There are four primary potential odour sources associated with the bulking facility.

- Materials as received (i.e. vehicles);
- Ventilated/fugitive releases from the Bulking Shed;
- Material types stored and handled outdoors (i.e. green waste); and
- RRVs and RCVs parked at the Site.

The release of odour from vehicles using the public highway are typically outside the control of the Operator, although they can be given 'advice' where necessary. Material is received primarily by RRVs and RCVs, or in covered / sheeted or otherwise contained vehicles. Notification will be given to the relevant party if particularly odorous materials are received. On this basis, odour from vehicles using the public highway are outside the scope of this document.

2.3 Received Materials

As described above, the bulking facility treats up to 22,500tpa of general, recyclable and green wastes.

Material transfer is an inherently odorous process; however, with the correct controls and working practices in place, odours can be contained and reduced appropriately. The sources of potential odour generation are:

- Delivery of incoming material;
- Storage of material on-site; and
- Bulk removal of material offsite.

Typical chemical odorants associated with putrescible materials which may form part of the materials received are detailed in Table 2-1.

Table 2-1: Waste Types - Typical Primary Chemical Odorants

Source	Description Terms	Typical Primary Chemical Odorants
Residual waste	Bottom of dustbin, rotten cabbage, fruity/citrus, acrid, sour, rotten, putrid.	Esters (e.g. Butanoates), odours directly from volatilisation of chemicals from foods e.g. organic acids.
Domestic Food Waste	Putrid, sour, fishy, rotten vegetables, rotten meat.	Putrescine, cadaverine, amines, sulphides, ammonia.
AHPs	Faecal, putrid, sour, fishy.	Ammonia, amines, acidic and sulphonated aromatics.
Green Waste	Woody, ammonia, earthy, piny.	Terpenes, amines, aromatics, ammonia.
Table Source: Applied Environmental Research Centre Ltd, Guidance Manual for Landfill Managers on the Assessment and Control of Landfill Odours (October 2000)		

Putrescible material is generally regarded as being offensive in nature when perceived at sufficiently high concentrations. AHPs can potentially be highly odorous, however considering the relatively low volume of this category of material and the level of containment (i.e. within the bulking shed), the overall odour potential from this material type is considered medium. Recyclables are generally regarded to have a low odour potential (inoffensive and low intensity odour) due to the low organic content of the material.

The European Waste Codes (EWC) permitted to be received at the Site are detailed in Table 2-2. The permitted materials are detailed within the Environmental Management System (EMS) for the bulking facility.

Table 2-2: Accepted Waste Types

Waste Code	Description of Waste
15 01 01	Paper and cardboard packaging
15 01 02	Plastic packaging
15 01 04	Metallic packaging
15 01 05	Composite Packaging
15 01 06	Mixed Packaging
15 01 07	Glass packaging
20 01 01	Paper and cardboard
20 01 02	Glass
20 01 08	Biodegradable kitchen and canteen waste
20 01 11	Textiles

Waste Code	Description of Waste
20 01 34	Batteries and accumulators
20 01 36	Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35
20 01 39	Plastics
20 01 40	Metals
20 01 99	Separately collected fractions of municipal waste (AHPs comprising nappies and AHPs)
20 02 01	Biodegradable waste
20 03 01	Mixed municipal waste
20 03 03	Street-cleansing residues
20 03 07	Bulky waste

2.4 Stored Materials

The purpose of the Site is to receive material from local waste and recycling collections and to store the received materials prior to bulk removal off-site. Therefore, the storage time of materials at the Site is minimised as much as possible. Under normal operational conditions material delivered to the Site is stored for a maximum of 5 days prior to removal (with the exception of food waste which will be stored for 24 hours under normal operating conditions and based on the agreement for this waste stream with PCC's haulier, and AHPs which may be stored for a maximum of 7 days within a suitably sealed container).

Storage bays are cleaned down by use of a pressure washer, where a discernible build-up of waste material is observed on the floor or retaining walls of the bays. The building floor is swept daily after loading and all bays and bay walls are cleaned/swept out three times per week when the bays are completely empty. This will be monitored by site personnel during their usual duties. Removal of residual deposits helps to avoid decomposition of the organic material, mitigating residual odours. The wash water from the cleaning is considered to have a negligible odour potential due to the small volume of organics which would be suspended.

2.5 RRV and RCV Parking

When not in use, RRVs and RCVs are parked at the Site in the marked bays to the southwest of the Bulking Shed. Approximately 31 RRVs/RCVs would be parked at the Site.

There is potential for RRVs and RCVs to be a source of odours following use in collection operations as a result of waste residue retained in or on the vehicles.

In order to control fugitive odour emissions from parked RRVs and RCVs, the following cleaning regime is adopted:

- RCVs are cleaned once per week to guard against excessive build-up of aged waste material within the storage area(s) of empty RCVs;
- food storage 'pods' within the RRVs are cleaned once per day (following collection operations) to remove residual food waste material; and

- cleaning of RRVs or RCVs will be undertaken by use of a pressure washer within the 'wash area'.

Adoption of this cleaning regime controls odour emissions from empty RRVs and RCVs parked at the Site through removal of the residual organic material from the vehicles. Therefore through adherence to the cleaning regime outlined above, the odour potential from empty RRVs and RCVs parked at the Site can be considered negligible. It should also be noted that the wash-water from the cleaning of the RRVs and RCVs can be considered to have a negligible odour potential, in consideration of the small volume of odorous organics which would be suspended within the wash-water.

2.6 Removed Materials

Material is periodically removed from the site in bulk within covered, enclosed or sheeted vehicles.

2.7 Release Points / Potential Odour Generation Sources

The release points for the odour sources detailed above are described in Table 2-3. The release points consider all unintentional non-emergency releases that may occur. Release occurrences considered an emergency are addressed in Section 4.0.

Table 2-3: Odour Generation Sources

Odour Generation Activity	Location	Waste Types	Factors affecting Source	Odour Risk
Delivery of material	Within Bulking Shed	Mixed municipal waste, food waste, AHPs, paper and cardboard, cans and plastic, textiles and bulky waste	State of decomposition on arrival at facility	High
	Outdoors within the relevant bays	Green waste and glass	Organic content of material received	Low/negligible

Odour Generation Activity	Location	Waste Types	Factors affecting Source	Odour Risk
Storage of material	Within Bulking Shed	Mixed municipal waste, food waste, AHPs, paper and cardboard, cans and plastic, textiles and bulky waste	State of decomposition on arrival at facility and retention time on-site	High
	Outdoors within the relevant bays	Green waste and glass	Organic content of material received and retention time on-site	Low/negligible
Bulk removal of material	Within Bulking Shed	Mixed municipal waste, food waste, AHPs, paper and cardboard, cans and plastic, textiles and bulky waste	State of decomposition on arrival at facility and retention time on-site	High
	Outdoors within the relevant bays	Green waste and glass	Organic content of material received and retention time on-site	Low/negligible

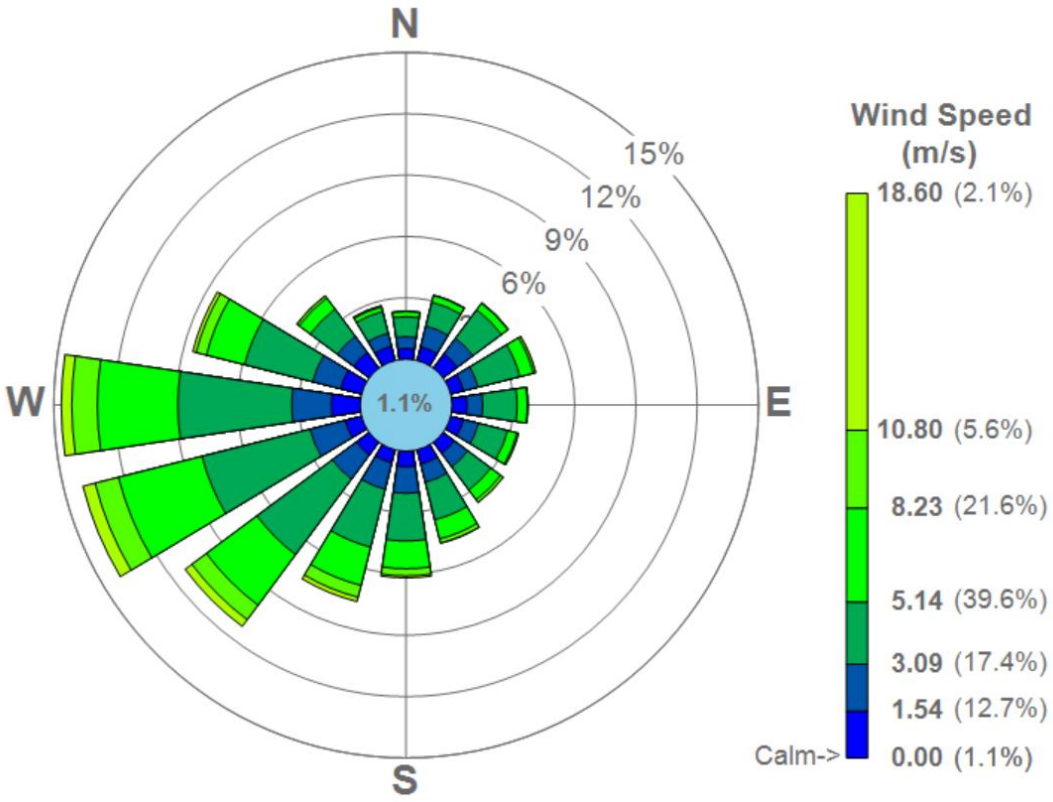
2.8 Pathways

The pathway by which odours may impact upon receptor locations is a result of atmospheric dispersion. In general, high wind speeds lead to emitted odour being rapidly dispersed and diluted due to turbulence, and conversely low wind speeds inhibit the dilution of odours.

Prevailing wind directions are considered in assessing the likelihood and management of emission risks. As there are no meteorological stations in proximity to the Site which are considered to be representative of the Site location , Numerical Weather Prediction (NWP) meteorological data based on the Site location (which was previously acquired for

the Site for the odour monitoring study[3]) has been utilised. Wind speed and direction data for the years 2015 – 2019 (inclusive) is presented in Figure 2-1. It shows the prevailing wind to be from the western and south-western sectors. As a result, the potential impact of emissions is likely to be greater to the east north-east of the Site.

Figure 2-1: NWP Meteorological Data Wind Rose 2015 – 2019 Average



2.9 Receptors

The likelihood and frequency of exposure to odour arising from the facility is determined by the magnitude of release, the prevailing meteorological conditions, and the distance and direction of receptors in relation to the facility.

Potentially sensitive receptor locations for odour are typically defined as locations where people spend time and expect a reasonable level of amenity. Therefore, residential properties are generally regarded as receptors of high sensitivity.

The closest residential properties are isolated farmhouses (R1, R2 and R3) located along the A483 and B4386 to the west, north-east and south-west of the Site, the closest of which is located within approximately 50m of the permit boundary. A number of sensitive receptors are located to the north-west of the Site along Court Close (D4) within 270m of the permit boundary. A further number of isolated residential properties are located to the north-west (D5, D8), south-west (D6) and east (D7, D9, D10, D11) at a distance of 400 metres or more from the permit boundary.

[3] *SLR report reference: 416.00798.00038_North Powys Bulking Facility Odour Assessment*

Reference should be made to Table 2-4 for presentation of odour sensitive receptors surrounding the site.

Table 2-4: Sensitive Receptors

Receptor	Receptor Type	Receptor Sensitivity	UK NGR (m)	Distance from permit boundary(m)
R1	Farm	High	315541, 294125	50
R2	Farm	High	315928, 294395	110
R3	Farm	High	315258, 293914	400
R4	Residential dwellings	High	316069, 294369	270
R5	Residential dwelling	High	315549, 294590	400
R6	Farm	High	315220, 293671	590
R7	Farm	High	316194, 293604	710
R8	Residential dwelling	High	315250, 294596	580
R9	Residential dwelling	High	316591, 294353	860
R10	Residential dwelling	High	316652, 294091	900
R11	Residential dwelling	High	316483, 293848	790

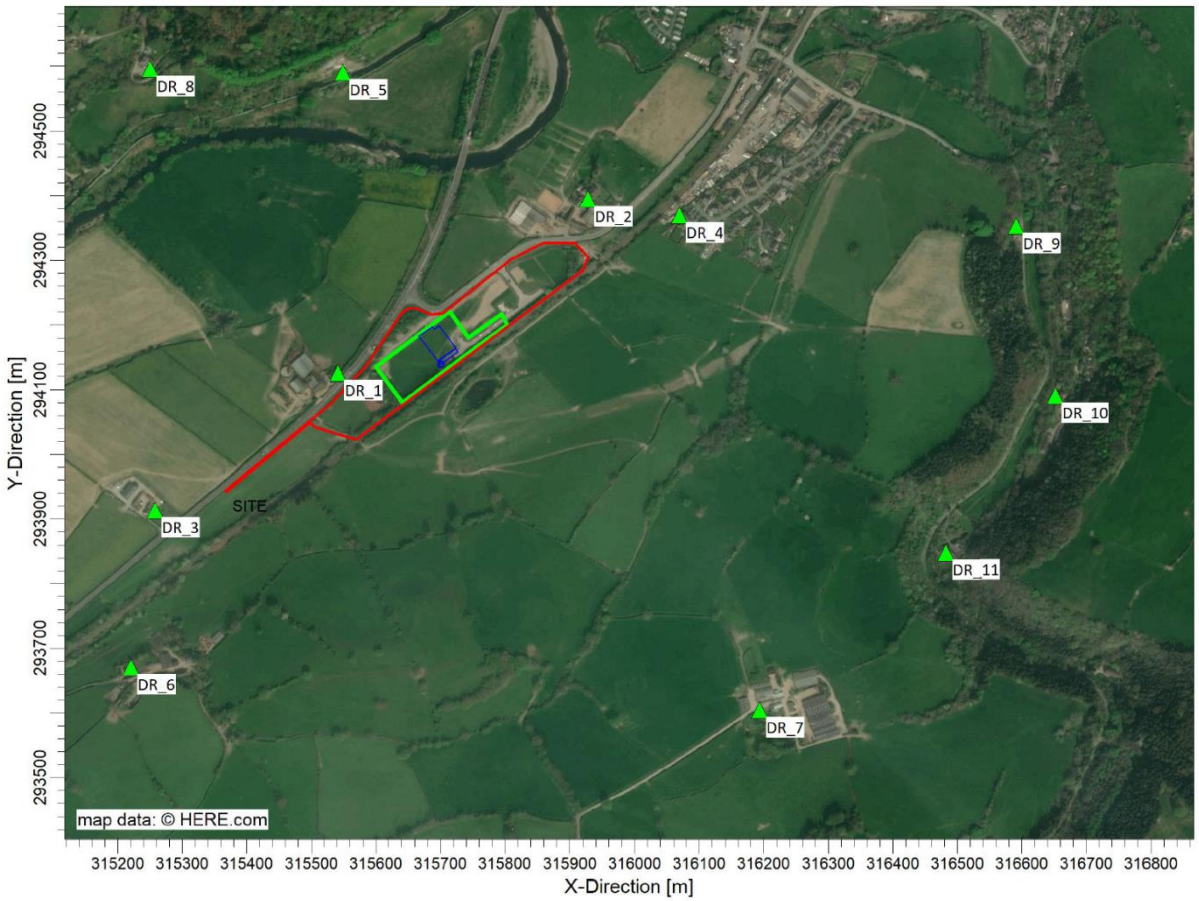
The discrete receptors presented within Table 2-4 is not an exhaustive list, the closest sensitive receptors in each direction surrounding the Site have been identified.

The receptor sensitivity has been determined in reference to the IAQM Odour Guidance[4] in which residential dwellings are determined to be of a 'high' sensitivity to odours and farms as 'low sensitivity to odours. However, in order to provide a suitably conservative approach within this assessment, farms have been determined as 'high' sensitivity.

Reference should be made to Figure 2-2Figure 2- for an illustration of the considered odour sensitive receptors relative to the Site planning boundary (red) and permit boundary (green).

[4] *Best Available Techniques (BAT) Reference Document for Waste Treatment, European Commission, 2018.*

Figure 2-2: Sensitive Receptors



3.0 Site Operations

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.

3.1 Reception Building

The received mixed municipal waste and food waste has the potential to arrive at the Site in an advanced state of decomposition, due to collection frequencies from householders' properties. The receipt, bulking and bulk removal of municipal waste and food waste only takes place within the bulking shed, where a greater degree of containment of odours can be afforded. Food waste will arrive on site in RRV pods/stillages or council vehicles and will be tipped directly into a designated food waste bay. Food waste is typically collected from site daily, before 11am, with the haulage arranged to ensure that all material is cleared from the bay completely on each collection. This will allow the bay to be hosed down after each load is taken, during the off-peak period, before the next load is tipped in the afternoon. A full wash down and deep clean of the food waste bay will be undertaken at least weekly during off-peak periods to minimise disruption to material deliveries.

An extraction system is in place within the bulking shed, comprising 5 horizontally orientated ventilation fans along the north-eastern wall. The air extraction system is designed to achieve 1.5 Air Changes Per Hour (ACPH), equating to an approximate extraction airflow rate of 22,750m^3/hr.

During the working day the 5 roller shutter doors are periodically in use to facilitate the entry / exit of collection vehicles. The roller shutter doors remain closed with the exception of when vehicles enter and exit as far as practicable. Potential fugitive release of odorous air during vehicle entry / exit is mitigated by the air extraction system in place within the bulking shed. The air extraction system creates an area of negative pressure within the building, therefore reducing fugitive releases from the doors when in use. A policy and procedure for the management of these doors is incorporated into the site working plan/operating procedures and training is provided to all relevant staff to ensure that:

- Where possible only one door is open at any one time;
- Where possible, doors are only opened to allow vehicles and mobile plant to enter the reception building once the vehicle is aligned to reverse;
- Vehicles are to reverse slowly into the building (i.e. <5mph) to minimise air displacement;
- The opening of doors to permit vehicles to leave the site only occurs once the driver has signalled confirmation that they are ready to exit. Once the vehicle has safely exited the building the doors are immediately lowered (if another vehicle is not waiting to tip) to close behind it; and
- In the event that two vehicles arrive at the Site at the same time the site operative will instruct the vehicles which doors to enter by.

3.2 Waste Acceptance Procedures

The maximum amount of time for material to be stored prior to being sent off site for onward recovery or disposal is 5 days.
Waste acceptance procedures are followed as per details provided within the EMS. This includes a procedure for how to manage rejected loads and the completion of a rejected load form.

Certain materials accepted receive priority in the bulking facility process, these include:

- Any materials designated as high risk on site;
- Materials which are classified as high odour risk potential; and
- When the site operative is alerted to material being particularly odorous.

During peak operational periods, if the anticipated tonnage has been accepted for the facility for that day, the facility only accepts additional materials following an evaluation of likely tonnages over the coming days to ensure that a backlog of material in storage in the reception building does not occur.

3.3 Material Storage and Transfer Control

Material is stored on site for no longer than 5 days (with the exception of food waste which will be stored for 24 hours under normal operating conditions and based on the contractual agreement for this waste stream with PCC's haulier, and AHPs, which may be stored for a maximum of 7 days within a suitably sealed container); and are stored in the relevant designated bays. Wastes with high odour risk are stored within the building/containers preventing the potential for odour emissions (e.g. AHP; non-conforming wastes delivered to site).

3.4 Bulking Shed – Floor Cleaning

The incoming waste vehicles carrying mixed municipal waste and food waste reverse into the relevant storage bays and unload within the Bulking Shed. However, there may be occasions, where material is tipped onto the floor in front of the bays for inspection prior to transfer into the relevant storage bays. There may also be occasions where driver error leads to material falling onto the floor of the tipping area.

The tipping hall floor is swept daily and washed down weekly. Cleaning takes place during off-peak periods where possible to minimise disruption to material deliveries.

3.5 General Housekeeping

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. Building floors are swept daily after loading up material and all bay floors and walls are cleaned/swept three times per week when bays are completely empty. Additionally, all operational areas of the site are swept as and when required in line with the daily inspections and appropriate remedial and corrective action will be implemented as soon as practicable. Checks are carried out by site operatives to ensure that there is no old material stuck between building walls and bays or in corners. If material is identified it will be cleaned up as soon as possible.

3.6 Loading and Bulk Removal of Material

Loading of the most odorous material types (mixed municipal waste, food waste and AHPs) is undertaken within the Bulking Shed. Loading of the remaining material types (of a lower odour potential) is undertaken outside, with the exception of paper, mixed plastic/cans and cardboard recycling which is located within the Bulking Shed.

All material vehicles leaving the site are securely sheeted (or enclosed) at all times.

3.7 Mitigation of Community Impacts

The following measures are adopted to ensure a 'good neighbour' approach to local residents:

- Engagement with local residents and stakeholders;
- A telephone number has been made available for residents to contact PCC;
- Engagement with local residents should odour problems be anticipated to keep the public informed of progress, remedial measures and timescales;
- Responding to odour complaints promptly and keeping the complainant informed of outcome of investigation; and
- Meetings to be held with local residents if required in discussion with NRW.

3.8 Monitoring and Maintenance

Monitoring of process controls, odour containment, odorous releases, and dispersion pathways are as described in the sections below.

3.8.1 Monitoring Potential Odour Sources

The material as received and stored is monitored in the following ways:

- The material is subject to document checks at the weighbridge to ensure it conforms to the Waste Acceptance Procedure;
- The material is subject to visual inspection as part of the material reception protocols to ensure all materials conform to the agreed Waste Acceptance Procedure;
- The Site Supervisor and site operatives are responsible for visually monitoring and noting the placement of received material to ensure older material is processed as a priority; and
- The Site Supervisor and site operatives monitor, via sniff-test, to determine whether particularly malodorous loads require removal from site during the next available material collection.

3.8.2 Monitoring of Ambient Odours

Monitoring of ambient odours from the Site provides a broad indication of the effectiveness of the odour management as a whole, i.e. odour minimisation and containment. This is a reactive process and should be considered as a final indicator of odour control effectiveness.

The assessment is "*sensory*" in that the human nose is used as the detector – a sound approach considering that no analytical instrument can give unified measure of a complex mixture of compounds in the same way that a human experiences odour.

Sniff testing is employed for the following reasons:

- As part of a survey at the site boundary during normal operations, to confirm the effective performance of odour management measures in place;
- At the site boundary during periods of adverse meteorological conditions (i.e. hot, still days with winds blowing towards nearby receptors), breakdowns or during other abnormal events to evaluate the effectiveness of the control measures in place and the likelihood that odour complaints could be received; and
- In the event that complaints are received, at the locations of sensitive receptors as part of the complaint investigation procedure outlined in the complaints form in Appendix AQ3 (detailed in Section 4.8.

'Sniff tests' will follow the procedure detailed within Appendix AQ4 as set out in NRW's H4 Guidance and will be undertaken:

- Weekly by trained site management with any issues recorded in the site logbook;
- On a monthly basis by a team member (non-Bulking Shed based team member) accompanying the Site Supervisor and results recorded; and
- On a reactive basis by an appointed monitoring company. This allows for monitoring to be undertaken outside of the site's operational hours. A monitoring company could be appointed to undertake scheduled periodic monitoring, or 'reactive' monitoring (i.e. in response to odour complaints received) as required.

3.8.3 Monitoring Meteorological Conditions

The Site Supervisor or other designated responsible person records daily weather conditions in the Site Diary, sourced from the site's weather station. PCC intend to install a weather station on site prior to the commencement of operations because the nearest meteorological recording stations are located a considerable distance from the site and have significantly differing characteristics.

The recording of meteorological data is an effective management tool and can be used for the following reasons:

- During routine operations, (to assess odour impacts) to plan where boundary monitoring should be focussed;
- During abnormal events (i.e. breakdown) to predict where odour impacts could occur; and
- In the investigation of odour complaints or to verify community observations.

3.8.4 Recording of Results and Reporting

Daily records are maintained and include the following details (where applicable):

- Results of inspections and any olfactory monitoring carried out by site personnel;
- Weather conditions including wind direction (automatically recorded and stored electronically);
- Operational problems including date, time, duration and cause of problem;
- Complaints received including address (if available); and

- Details of corrective actions taken and any subsequent changes to operational procedures.

The weekly sniff tests undertaken are made on the Odour Monitoring Form presented in Appendix AQ2 which will be filed and kept on site for inspection by NRW as and when required.

In the event that odour is detected at the site boundary, this will be noted in the site diary and the Site Supervisor will be informed to allow for appropriate steps to be taken to mitigate the odour. The results of the daily odour monitoring will not be reported to NRW unless required by the EP.

3.8.5 Notifying NRW

In the event that an accident or incident occurs, PCC will notify NRW as soon as practicably possible using the emergency 24hr phone line (0300 065 3000). The Site Supervisor or Waste & Recycling Area Manager will also notify NRW should any complaints be received directly to the Site and advise what remedial measures have been undertaken. Copies of any complaints will be made available for NRW to review.

4.0 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.

4.1 Receipt of Particularly Odorous Materials

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 Bulking Shed) and removed from site within 24-hours, minimising retention-time.

4.2 Compromised Odour Containment

Odour containment may be compromised by damage to the building fabric or doors (extraction is dealt with separately).

In the case of a roller door motor malfunction, the doors will be operated manually whilst repairs are undertaken.

If doors are stuck open or building fabric is damaged, then the following contingency measures will be implemented:

- 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.

Odour surveys will be undertaken 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.

4.3 Bulking Facility Over-Capacity

Each day a review will be carried out of the stock in comparison to expected incoming material and material removal. Lines drawn on the inside of each bay mark the maximum quantity of material to be stored in that location. This will determine the available capacity and the ability to receive material.
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.

4.4 Temporary Odorous Activities

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 Waste & Recycling Area 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.

Additional control measures will incorporate:

- Where practicable, timing operations when the prevailing wind direction is away from the nearby sensitive receptors; and
- Ensuring prompt re-establishment of containment.

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.

4.5 Abnormal Meteorological Conditions

Extreme meteorological conditions that promote the generation of odour and inhibit its effective dispersion, specifically 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:

- 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);
- More frequent assessment and/or maintenance of the ventilation system within the Bulking Shed (i.e. checking of ventilation rates against design specification[5], cleaning); and
- Reviewing requirements for activities that involve building door opening and reduce frequency and duration of door opening if practicable.

4.6 Detection of odour at the site boundary or off-site during routine odour surveys or response to complaints

The olfactory survey methodology as detailed in Appendix AQ4 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.

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 external odour assessment sheet (Appendix AQ2).

[5] *1.5 air changes per hour, equivalent to 22,750m^3/hr between all 5 fans.*

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.

The olfactory survey will be repeated on consecutive days after initiation of corrective actions, until odour has reduced to an acceptable level.

NRW will be informed in line with EP requirements.

4.7 Out of Hours Contact Details

An Emergency Duty Standby Number will be made available which will always be answered in the event of an emergency.

4.8 Receipt of an Odour Complaint

4.8.1 Complaint Logging

A phone number for members of the public to contact PCC with any complaints will be visible on the Site board at the entrance. Following the receipt of a complaint PCC 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 AQ3 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 AQ2. 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.

4.8.2 Complaint Investigation

The following 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 Waste & Recycling Area Manager (or any appointed representative) will undertake the following assessment process:

- Review of the site 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 AQ4 and complete a complaint form such as the one presented in Appendix AQ3.

NRW will be informed in line with the EP requirements.

5.0 Emergency Plans

This section details the emergency actions that will be undertaken in case of accidents (or incidents) which could result in the loss of control of odorous substances and could have an unacceptable short-term impact on the local community.

The section considers the emergency scenarios, measures taken to minimise their occurrence and short-term measures to minimise impacts.

5.1 Prolonged Mobile Plant Failure

In the unforeseeable event of complete site mobile plant failure for a prolonged period (greater that the agreed maximum material retention time of 5 days) consideration will be given to the diversion of incoming material to alternative permitted facilities.

5.2 Fire

Emergency Action Plans are detailed within the site's approved Fire Prevention & Mitigation Plan (FP&MP) that provides procedures for handling fires.

With regard to management of odour impact, the key principles are prompt responses that contain the fire and attempt to extinguish it, minimise damage to containment and extraction infrastructure.

NRW will be informed of any such an occurrence, information would be made available to local residents if requested by NRW with regard to the measures being taken and the timescale to completion.

5.2.1 Explosion

The risk of the explosion is considered to be extremely unlikely.

5.3 Major Spillage / Leak

Details of emergency procedures to be initiated in case of a failure of containment and major spillage / leaks are detailed in the site's EMS.

NRW will be informed of any such an occurrence, information will be made available to local residents if requested by NRW with regard to the measures being taken and the timescale to completion.

5.4 Flooding

The risk of flooding is considered to be extremely unlikely due to the drainage arrangements on the site. If the site becomes flooded, this will inhibit effective storage of material. Material will be removed from site where possible for storage or processing elsewhere.

Widespread flooding may prevent access to site. In such a situation, no further material will be accepted at the Site and priority will be given to removal of stored material (where possible).

Reference should be made to the Environmental Risk Assessment for further detail on the risk of flooding.

5.5 Power Failure

The bulking facility emergency systems have battery backups which will be sufficient to ensure operations can continue in the event of an external power cut.

5.6 Staff Absence

Short-term staff shortages (such as a few days illness) will not affect the ability of the Site to operate effectively as other staff members can be reassigned to critical operations. In the event of prolonged absence of staff members, temporary staff will be recruited and appropriately trained to fulfil non-critical roles whilst other more experienced staff members are reassigned.

5.7 Summary of Emergency Control Measures

To ensure adequate mitigation measures are in place to address all possible odour emission scenarios, the various scenarios and their response measures are presented in Table 5-1.

Table 5-1: Summary of Emergency Control Measures

Scenario	Emergency Operations	Location	Likely effect on emissions inventory	Contingency / Control Measures
Prolonged bulking facility breakdown	Emergency	Whole site	Risk of increased impact from area of Site where normal operations are affected during and after breakdown	A supply of spares critical to the operations will be kept on site. To promptly undertake any repairs, plant will be hired if required. If unavailable, the relevant operations will be suspended if necessary. Contingency arrangement for diversion of incoming material will be implemented if required.
Fire	Emergency	Whole site	Risk of impact from any area of the Site affected by fire	Fire risk procedures adopted.
				Further receipt of material will be reduced or suspended until fire is under control and site has been deemed safe and operation is restored.
Flood	Emergency	Whole site	Risk of increased impact from Site where	If flooding should occur and material is submerged, there is a high likelihood of rapid onset of degradation

Scenario	Emergency Operations	Location	Likely effect on emissions inventory	Contingency / Control Measures
			normal operations are affected during and after flood	and anaerobic conditions. Submerged material will be immediately removed from Site (if possible).
Transfer failure	Emergency	Whole site	Increased emissions from stored material exceeding the agreed retention period (5 days)	Operating procedures in place to prevent breach of material retention timescales. Operating first in first out principle during normal operations. In emergency situation site will liaise with NRW and agree an action plan.

6.0 Document Updates and Reviews / Management

6.1 Responsible Staff

The site has a well-defined and formally documented management structure for managing the impacts. It is the responsibility of every manager/supervisor, with the support of the environmental professionals, to identify environmental risks that are relevant to the site and determine if a particular activity or service is environmentally significant.

Once identified, it is the responsibility of the Site Supervisor to highlight the significant aspects to all relevant employees and contractors. The Site Supervisor is also responsible for monitoring and managing all activities under PCC's control to improve environmental performance.

Work instructions, job descriptions and procedures exist for critical areas of PCC's activities and have been issued to or made available to personnel responsible for undertaking these tasks.

Further information on the role of staff members and responsibility for odour management is detailed within the site's specific EMS.

6.2 General Procedures for Training and Competency of Staff

Staff competency and the need for training is continually assessed by the Site Supervisor and the Waste & Recycling Area Manager and under all circumstances will be reviewed (at least) annually and formally recorded within the EMS.

6.3 Odour Management Plan Review

This OMP is a controlled document, and forms part of the EMS. A comprehensive record of the results of the monitoring and inspection programme contained within this OMP will also form part of the EMS.

The specification for the periodic review and update of the OMP will be set out within the EMS. In line with the recommendations of NRW's H4 Odour Management guidance, this takes place on an annual basis, as a minimum.

However, the OMP 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:

- Significant changes are made to the plant or operational practices;
- There is a change to the management structure, designation of responsibility or training provision;
- NRW requests that the OMP 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 OMP.

Appendix AQ1: Accepted Waste Types

Table AQ1-1: Accepted Waste Types - Further Details

Waste Code	Description of Waste	Approximate Total Storage Bund Area (m^2)	Estimated Tonnages	Storage Time	Storage Location	Associated Odour Potential
200301	Residual waste	100	8300	4 Days	Bunded area located within Bulking Shed	Medium - High
200303	Street cleaning litter		300	4 Days		Medium - High
200307	Bulky waste		100	4 Days		Low/negligible
200111	Textiles		271	7 Days		Low/negligible
200108	Food waste	40	3100	24 Hours*		High
200199	Absorbent Hygiene Products	up to 10 (1 skip)	2000	1 Week		Very high
15 01 02, 15 01 04, 20 01 39 and 20 01 40	Co-mingled cans and plastic	167	1400	5 Days		Low/negligible
15 01 01 and 200101	Mixed paper and cardboard	100	2000	4 Days		Low/negligible
15 01 07, 19 12 05 and 200102	Mixed glass	115	2400	4 Days	Bunded area located Outdoors	Low/negligible

Waste Code	Description of Waste	Approximate Total Storage Bund Area (m^2)	Estimated Tonnages	Storage Time	Storage Location	Associated Odour Potential
200201	Green (garden) waste	115	4500	4 Days		Low
20 01 34	Batteries	Battery Box	14	3 Months	Within the bulking shed	Low

* Under normal operating conditions and based on the contractual agreement for this waste stream with PCC's haulier, food waste will be stored on site for 24 hours.

The odour potential of the different types of material have been determined in reference to odour monitoring data from a range of sites around the UK, IAQM Odour Guidance and Waste Sector Guidance. The trend observed is that the lower the organic content of material type, the lower the odour potential (and also the inverse).

Green Waste is an exception in that it is comprised almost entirely of plant matter but has a moderate odour potential. However, when considering the site setting (agricultural), the sensitivity of nearby residential receptors to green-waste type odours is likely to be low, therefore the associated odour potential has been considered 'low'.

Appendix AQ2: Odour Assessment Form

Background Information			
Person Undertaking Survey (& Position)			
Date:		Time:	
Description of Wind Strength (i.e. strong, gusty)			
Wind Direction			
Weather (i.e. sunny, overcast)			
Temperature (degree Celsius)			

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
10		

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 AQ3: 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 AQ4: 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 odour 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 Section 4.0 will be followed.

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