



# Odour Management Plan

## Colwick RDF & Transfer Facility

Private Road No. 3, Colwick Industrial Estate, NG4 2BD

Permit Reference: JB3304LF

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Date: July 2021

Version: 1.1

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## Version History

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Version	Revision date	Date submitted to Environment Agency	Reason for revision	Revision owner
V1.0	June 2021	-	Permit application	P.Cockerton
V1.1	July 2021	July 2021	Internal review	P.Cockerton

The following drawings form part of this document:

- **VES\_TD\_COLW\_200\_000 - General Arrangement Drawing**
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# 1. Introduction

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## 1.1. Site description

### 1.1.1. Type of site

Colwick RDF & Transfer Facility 'the Facility' which will be operated by Veolia ES (UK) Limited 'VES' is a new build waste transfer and treatment centre comprising the following elements: a new building for the bulking, treatment and transfer of waste materials collected from local businesses and householders with a series of internal bays for the storage of imported materials, including residual wastes, recyclates, clinical bins, and processed waste, and 8 external storage bays for glass, green, inert wastes and street sweepings. The facility will accept and process or transfer up to 150,000t per year of waste.

The Colwick RDF & Transfer Facility at Colwick has the primary purpose of serving regional transfer and bulking requirements of commercial customers including conversion of residual waste arisings into a fuel which will be used to generate electricity. The secondary purpose of the Facility is to support the regional ERF fleet in managing municipal residual waste arisings during outages. Both purposes increase the ability of Veolia to divert residual waste away from landfill.

In normal operating circumstances, mainly commercial waste will be brought to site, although a proportion of Local Authority waste will also be accepted. Accepted waste streams mirror standard rules lists for transfer and treatment with asbestos storage (SR2015 No 10) and clinical waste and healthcare transfer (SR2008 No 24). Residual wastes will have the option of being processed (shredded with metals extracted) and then either; loaded into bulk haulage vehicles for onward transport to an available ERF or in the case of the ERF support function stored on site ready for onward transport for recovery. During ERF outages the waste will be managed on a first in, first out (FIFO) basis to ensure minimum storage times on site. There will also be an option for transfer loading without shredding as a contingency.

### 1.1.2. Pre-operational criteria to carry out treatment

The site will operate as a transfer station without the shredding activity. The carbon filter system will not be required when the site is operating as a transfer station and there are therefore some elements of this management plan that will be implemented prior to the commencement of the RDF production activity. In the medium term the Facility will also accept food waste but similarly to the RDF production activity this will not take place during the initial period of operation. The mechanism of accepting food waste has not yet been determined e.g. direct vehicle to vehicle loading or intermediate tipping. In all cases this is made clear in the management plan.

### 1.1.3. Site setting and location

The facility is located off Road No. 3 in Colwick (Grid Reference SK 62634 40378) just off the A612 (Colwick Loop Road) in the Colwick Industrial estate area of Nottingham, east of Nottingham City Centre. The industrial estate includes several existing regulated waste activities including aggregate and metal waste and an anaerobic treatment plant.

The full address for the site is detailed below:

Veolia ES (UK) Limited  
 Colwick RDF & Transfer Facility  
 Private Road No. 3,  
 Colwick Industrial Estate,  
 Netherfield,  
 Gedling,  
 Nottinghamshire,  
 East Midlands,  
 NG4 2BD

### 1.1.4. Operational profile

The Facility has been designed in such a way as to be able to operate 24 hours, in common with other waste transfer stations and waste management facilities within the wider Colwick Industrial Area and across Nottinghamshire.

The proposed core hours of operation will typically be expected to be 0600 – 2200 with occasional export bulker movements (typically 1 or 2 per hour) outside these hours which provides operational flexibility allowing material to be exported to a wider selection of recovery and recycling facilities. It is also necessary to operate during the early and late hours to allow waste collection from businesses such as in town and city centres during less congested times of the day. The extended hours will also provide operational flexibility in the event of breakdown or other difficulties and ensure the bulk of material can be removed from the building or processed awaiting despatch.

The processing activity, shredding of waste to produce RDF will typically take place within a narrower portion of the core operational hours; 0700 – 1900 range daily, seven days per week.

## 1.2. Maintenance and review of the OMP

Table 1.2 - Training, document access and key review intervals

Training / review aspect	Details
Post holder responsible for OMP related training	[To be arranged, site currently in construction]
OMP storage location (physical)	Site management system folder (hard copy)

copy)	
Review interval criteria	Annually (entire document)
	Following an incident which resulted in actual or potential odour pollution (relevant sections)
	Following instruction by the Environment Agency under the relevant condition of the environmental permit (as agreed with the regulator)
Training overview	<p>The Veolia Management System 'VMS' includes a procedure that defines the process and responsibilities of personnel involved in the identification and evaluation of learning and development needs as well as the subsequent implementation of essential training to enable all employees to perform effectively and proficiently in their individual jobs</p> <p>Site personnel are aware of the parts of the permit relevant to their role and a copy of the permit is available</p> <p>A training matrix for all site personnel is in place and updated with all personnel trained according to the requirements of their role, including refreshers</p> <p>Monitoring is in place to demonstrate competency</p> <p>All weighbridge personnel have completed weighbridge training including WIMS</p> <p>Veolia operatives will receive hands-on training on managing malodorous wastes from the process supplier and through Veolia's web-based training package, Valobio.</p>
Training interval	Management will maintain a statement of training requirements for each operational post and keep a record of the training received by each person whose actions may have an impact on the environment.

### 1.3. Relevant sector guidance on which this OMP is based

Table 1.3 - Reference documents

Guidance title	Source	Publication date / date accessed
H4 Odour Management	<a href="https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management">https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management</a>	March 2011
Develop a management system: environmental permits	<a href="https://www.gov.uk/guidance/develop-a-management-system-environmental-permits">https://www.gov.uk/guidance/develop-a-management-system-environmental-permits</a>	June 2021 [accessed]
(BAT) conclusions for waste treatment, under Directive 2010/75/EU	<a href="https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2018.208.">https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2018.208.</a>	August 2018

	<a href="#">01.0038.01.ENG&amp;toc=OJ%3A2018%3A208%3ATOC</a>	
<b>Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste (Issue 5)</b>	<a href="https://www.gov.uk/government/publications/sector-guidance-note-s506-recovery-and-disposal-of-hazardous-and-non-hazardous-waste">https://www.gov.uk/government/publications/sector-guidance-note-s506-recovery-and-disposal-of-hazardous-and-non-hazardous-waste</a>	May 2013

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## 2. Receptors

### 2.1. Receptor List

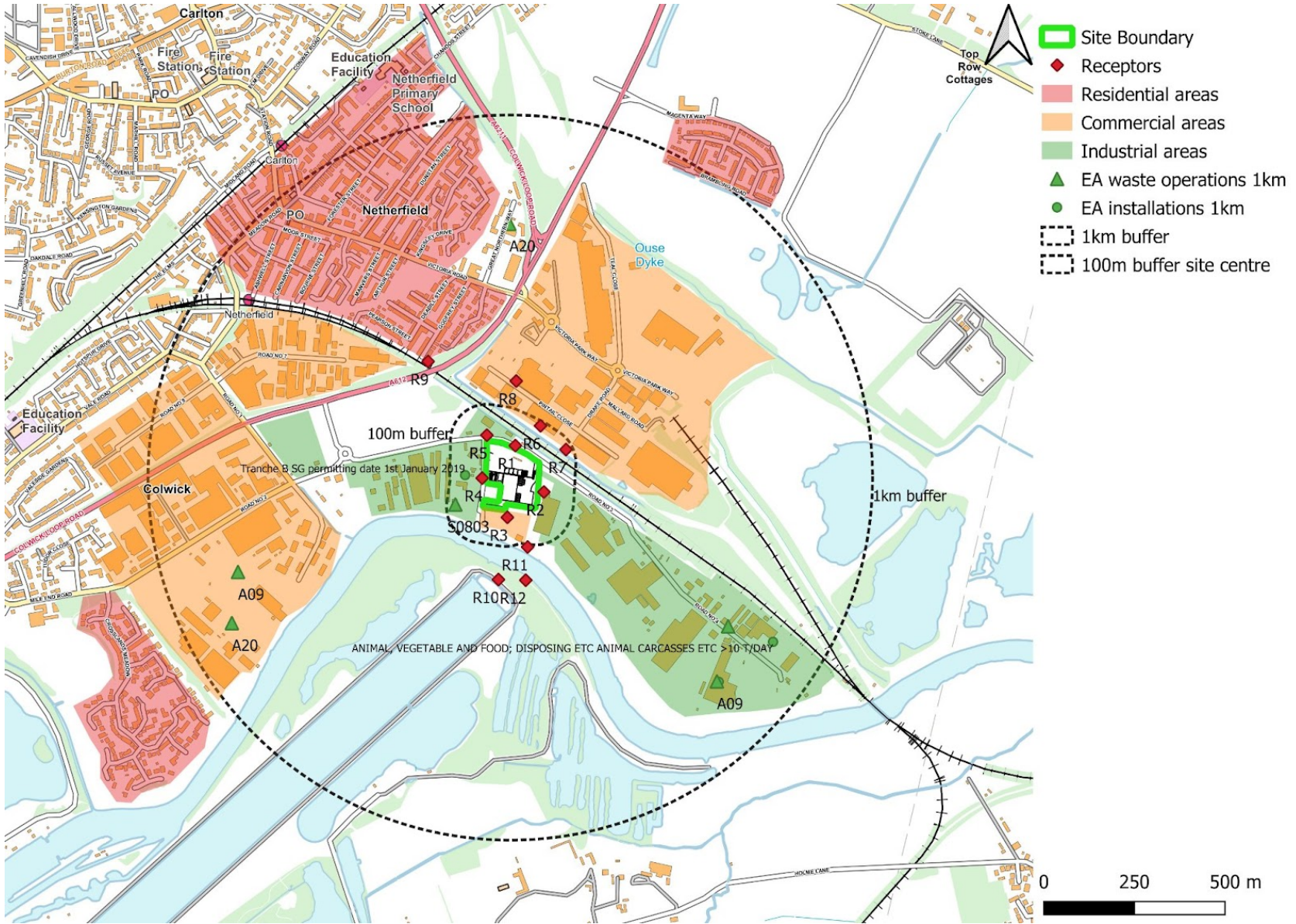
Table 2.1. List of representative receptors

Receptor reference	Land use e.g. house, school, hospital, commercial	Direction from site (North, South, East, West)	Direction descriptor	Approximate distance to site boundary (m)	Sensitivity to odour Low (e.g. footpath/road) Medium (e.g. industrial / commercial workplace) High (e.g. housing / pub / hotel etc.)
R1	Industrial roadway	North	Downwind	8	Low
R2	Commercial	East	Upwind	16	Medium
R3	Commercial	South	Upwind	35	Medium
R4	Industrial	West	Upwind	10	Low
R5	Industrial	North	Downwind	15	Low
R6	Leisure (indoor)	North	Downwind	85	Medium
R7	Commercial	North east	Downwind	80	Medium
R8	Retail	North	Downwind	173	Medium
R9	Residential	North west	Upwind	270	High
R10	Leisure / sports	South	Upwind	190	High
R11	Leisure (footpath)	South	Upwind	107	Low
R12	Leisure (footpath)	South	Upwind	198	Low

Table 2.2. Other potential odour sources

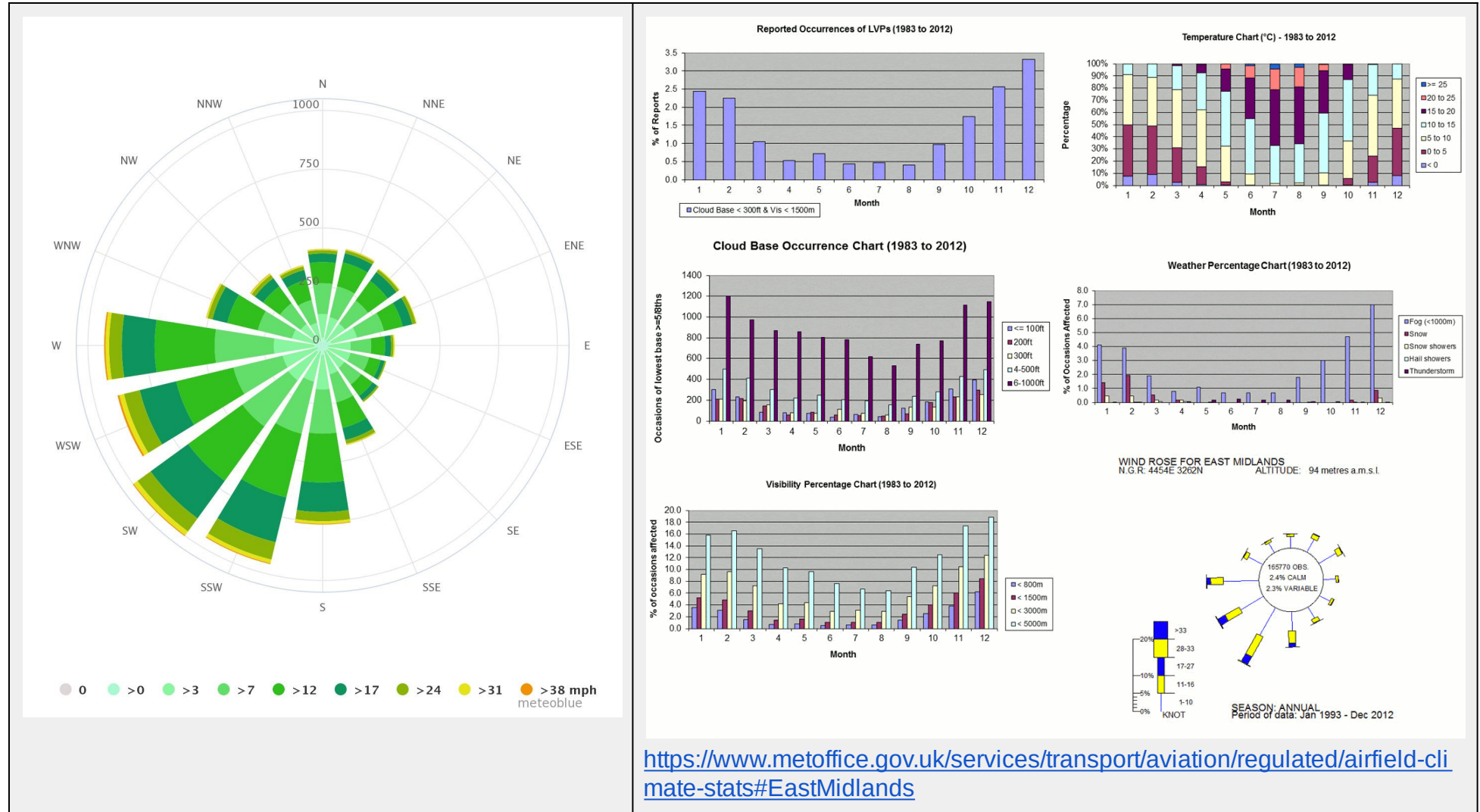
Site	Activity	Distance from Site	Direction from site
Anaerobic Treatment Facility	Waste treatment	880m	SE
Waste site	Waste Storage	710m	SE
Waste site	Waste Storage	500m	E
Waste site	Waste Storage	50m	W
Waste site	Waste storage	625m	SW
Waste site	Waste Storage	820m	SW

Figure 2.1 Map of site location and receptors



## 2.2. Wind rose and source of weather data

Figure 2.2. - Wind rose



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## 3. Sources of odour and site processes

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### 3.1. Odorous materials entering and leaving site

#### 3.1.1. Character of inputs and outputs

Waste collected from householders, businesses and from household recycling centres will be delivered by collection vehicles of various types including Roadside Collection Vehicles 'RCVs' and articulated bulk vehicles.

Table 3.2 describes the types of odorous material accepted and produced at the site. All material received at the site will either be for bulking and transfer off site or processing into a Refuse Derived Fuel <sup>1</sup>.

The majority of material brought to site is of low odour potential with the exception of the residual waste inputs. The residual commercial waste is deemed by the customer to be unsuitable for recycling but is typically dominated by discarded packaging and other office wastes. This waste is described as having medium source odour potential as they may contain a minimal organic fraction although this characterisation is conservative based on operational experience at other facilities handling this waste stream. Residual waste inputs from a municipal setting which the Facility will receive during EfW outages are described as medium / high as the organic content can be more variable. Suitable storage residence times have been selected to ensure material leaving the site is not categorised as having a higher odour potential or more adverse hedonic tone than the input material. The processing activities including shredding do not change the emission profile of the waste material leaving the Facility i.e. no chemical changes or thermal processes / cooking.

Most vehicles bringing waste into the Facility will be enclosed or covered which will reduce fugitive emissions during transport. Most vehicles removing waste from the Facility will be enclosed or covered.

#### 3.1.2. Maintaining control of inputs

##### 3.1.2.1. Contractual control

A major factor affecting the potential for odour emissions at the waste delivery and reception stage is the content and nature of the material. VES policy with its waste suppliers - specifying the inputs that are unacceptable and the frequency of deliveries - is the main control measure. VES will exercise rigorous control of delivered waste. In any contractual agreement there will be a clause which covers the delivery of malodorous

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<sup>1</sup> RDF production and acceptance of food waste subject to meeting pre-operational criteria

content material. It will be within the site supervisor's power to reject any material (e.g. contaminated or odorous wastes that have been stored too long) that will jeopardise the ability to manage the site and prevent the emission of unacceptable odours.

### **3.1.2.2. Waste Acceptance Procedures**

On-site operatives will be trained as to the acceptability criteria for incoming loads. Waste will only be accepted if:

- It conforms to the type and maximum quantity that is specified in the Environmental Permit; and
- It conforms to the description in the documentation supplied by the producer and holder.

A waste acceptance procedure is followed to ensure that only suitable waste is accepted into the facility in accordance with the Environmental Permit.

### **3.1.2.3. Arrival of non conforming waste**

Procedures are in place so that incoming waste considered to be malodorous will either be processed immediately or rejected from the site. If it is deemed necessary, inputs can be refused or diverted to alternative treatment facilities if odour pollution is considered likely.

Vehicles will be directed to tip within a specific waste bay, as directed by the site staff. Once tipped, if the load is found to be malodorous and / or not conforming to pre acceptance criteria the site supervisor will make the decision to either process the load immediately or reject the waste from site.

For waste acceptance in general all business contracts establish collection schedules and storage arrangements that are suitable for the waste types and business size i.e. sealed bins that are emptied on an agreed frequency.

Any rejected inputs will be re-loaded on the delivery vehicle immediately and the manager will contact the site of origin / council to inform them of the rejection from the site and to remind them of the quality of input material deemed acceptable.

### **3.1.2.4. Excessive Influx of Waste**

If there is an excessive influx of waste into the facility, further loads will be diverted to one of our other waste facilities. Veolia has a network of waste facilities across the country including transfer stations, MRFs, RDF facilities and ERF all capable of accepting diverted material. Records will be maintained of all waste accepted onto the site.

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## 3.2. Odorous materials

Table 3.2 Odorous materials

Odorous and potentially odorous material (any solid, liquid or gas)	Odour potential High Risk / Medium Risk / Low Risk	Maximum quantity on site at any given day (m3 unless otherwise stated) <sup>1</sup>	Maximum time held on site (hours or days)	Location of odorous materials on site <sup>2</sup>	Additional comments
<b>INPUTS FOR PROCESSING</b>					
<i>Residual waste inputs (commercial)</i>	<i>Medium</i>	<i>1350</i>	<i>10 days</i>	<i>Internal - reception bay (2 no.)</i>	<i>Input fraction subject to RDF processing. Commercial residual inputs typically have a low putrescible content lower than municipal residual). The material will be from contracted collections allowing contractual control of quality, with clear communicated acceptance criteria.</i>
<i>Residual waste inputs (municipal)</i>	<i>Medium / high</i>	<i>1350</i>	<i>10 days</i>	<i>Internal - reception bay (2 no.)</i>	<i>Input fraction subject to storage and RDF processing during EfW outages. The maximum storage amount is combined with the commercial and residual inputs.</i>
<b>INPUTS FOR TRANSFER / BULKING</b>					
Dry mixed recyclate	Medium	900	10 days	Internal - DMR bay (2 no.)	Transfer / bulking only, not expected to be a source of off site emissions.
Card	Low	100	90 days	Internal - card bay	Transfer / bulking only, not expected to be a source of off site emissions.
Clinical - anatomical	Medium	24 770L bins equivalent <sup>2</sup>	24 hours (72 over weekend) <sup>3</sup>	Internal - bin store	Transfer only, bagged, containerised (e.g. 'rigids') clinical waste in bins for transfer only, no repacking or bin to bin transfer.
Clinical - other	Low		14 days		
<i>Food</i>	<i>Medium / high</i>	<i>TBD</i>	<i>3 days</i>	<i>Internal - food bay</i>	<i>Transfer / bulking only.</i>

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Glass	Low	180	10 days	External - glass bay	Transfer / bulking only, not expected to be a source of off site emissions.
Green waste	Low	200	10 days	External - green waste bay	Transfer / bulking only. Fresh green waste with residence time limited to minimise odour associated with biodegradation. In some circumstances green waste could be considered to have medium potential but the low storage quantity and residence time have been considered.
Inert waste	Low	115	3 months	External - inert waste bay	Transfer / bulking only, not expected to represent a risk of off site odour emissions.
Road sweepings	Low	350	3 months	External - road sweeping bay	Transfer / bulking only. Material is predominantly aggregate fractions, stone / sand / silt and not expected to represent a source of off site odour emissions.
Other input waste streams (internal) including food waste <sup>4</sup>	Medium / high	According to requirements	According to risk (maximum 3 months)	Internal	As a transfer station the Facility will respond to customer demands to maximise opportunities within the circular economy. The proposed list of acceptable waste inputs (list of wastes) allows material input types to be flexible. Material with an odour potential above 'low' will be stored internally.
Other input waste streams (external)	Low	According to requirements	According to risk (maximum 3 months)	External	As above except, no material having an odour potential above 'low' will be stored externally.

**OUTPUTS (PROCESSED)**

RDF outputs	Medium / high	900	10 days	Internal - RDF output bay (2 no.)	Dry shredded RDF.
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<sup>1</sup> - Bay assignments may change in accordance with operational requirements. If bay designations change storage amounts will be kept within the capacity of the bay.

<sup>2</sup> - The maximum storage limit for hazardous clinical waste is 10 t



<sup>3</sup> - Maximum storage limits for anatomical waste are on the basis that there will be no refrigeration equipment installed at the Facility

<sup>4</sup> - Food waste will not be accepted until satisfaction of pre-operational criteria

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## 3.3. Overview of odorous processes and emissions

### 3.3.1. Site layout and buildings

The site general arrangement is described in drawing reference 'VES\_TD\_COLW\_200\_000 REV C. Briefly the site comprises a portal frame transfer station building (size approx 41 x 72m) with distinct internal bays for storage and bulking of residual waste, dry mixed recycling, card and clinical inputs and RDF outputs. Other wastes may be accepted in accordance with the list of permitted waste, these will be subject to the same controls outlined in this document. The building will be approximately 11.3 metres to its eaves (rising to approximately 13.2 metres) allowing sufficient space for vehicles to park and bulkers to be loaded in the building. There are external bays for glass, green waste, inert waste and road sweepings.

### 2.1.6 Building air ventilation system

A central extract ventilation system is installed within the building, which collects air at a rate of 72,000 m<sup>3</sup>/hr, equating to approximately 2.5 building air changes per hour. The extract system ductwork is sized to maintain an approximately 22 m/s extraction velocity at the point of emission to the atmosphere. The extract system is used throughout the working day during the warmer summer months. Operational hours of the system may be reduced outside of the summer period in order to reduce energy usage at the Facility providing this does not compromise odour control.

The extract system has an internally mounted control panel which will display process control parameters including pressure loss which indicates the performance of the abatement system<sup>2</sup>.

### 3.3.2. Loading and unloading areas

Waste collected from householders, businesses and from household recycling centres will be delivered by collection vehicles of various types throughout the working day. Following acceptance checks and weighing waste arriving at the site is tipped and bulked in the input bays as instructed by the site operatives. The newly deposited waste is visually inspected by the shovel driver once the waste is tipped on the floor. Any contaminants are removed and disposed of to landfill or another facility. Vehicles will reverse into the dedicated marked bay within the facility or externally depending on the waste type. Transfer of bulked waste will take place using mobile plant (including a 360 grab and loading shovel). Bulker vehicles will predominantly be loaded within the confines of the building.

All waste will be stored in bays constructed of 120 minute fire retardant concrete to prevent the spread of fire and enable any fire to be isolated quickly.

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<sup>2</sup> Carbon filtration system to be installed prior to commencement of RDF production activity

If a whole load is deemed to be unacceptable due to contamination, the operator will inform the site supervisor. If the site supervisor agrees with the operative's assessment then the load may be manually picked to reduce the contamination. If this is not possible, then the contaminated load will be quarantined and removed from the site.

### **3.3.3. Storage areas**

The General Arrangement drawing shows the location of all internal and external storage areas for waste material. The incoming loads of wastes are weighed at the weighbridge situated at the entrance of the site. Waste material classified as having a source odour potential above medium (residual waste) is stored within the transfer station building. The building is fitted with fast acting doors that will only be opened to allow vehicle entrance and egress, under normal circumstances the doors will remain closed. The residence time for waste on site has been selected on a risk basis to minimise increase in source odour potential between input and output material (see table 3.2).

External areas are used to store waste which has been classified as having a low odour potential.

### **3.3.4. Processing areas**

A residual waste shredding and storage area will be situated to the western area of the transfer station building. Waste material is loaded on a 'first in first out' principle with the input bay being filled from right corner to left corner and subsequently emptied to the shredder from right to left. Residual waste is fed into the inlet hopper of the conveyor system by loading shovel. This is done at a rate in order to match the shredding machine nominal capacity, the waste passes under an over-band magnet to remove any metals. The shredded material is stored in an output bay awaiting onward transport for energy recovery.

There will also be an option for transfer loading without shredding as a contingency. In the event that the residual waste is transferred without processing the waste will be loaded directly from the input bays into the vehicles for onward transport<sup>3</sup>.

### **3.3.5. Fixed plant**

Fixed plant associated with the RDF production activity will include a shredder with associated conveyors and input hopper.

Regular cleaning of the shredder, loader and operational areas such as reception area will minimise odour generation from unprocessed entrained residues. Any areas that have contained particularly odorous material will be washed down using a jet wash or high pressure hose as required and inspected on a daily basis.

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<sup>3</sup> RDF production and acceptance of food waste subject to meeting pre-operational criteria

### 3.3.6. *Mobile plant*

Mobile plant associated with the activity will include haulage vehicles associated with waste inputs and outputs and loading equipment. The working area within the transfer station will be kept clean to ensure that vehicles and waste leaving the site do not transfer odorous material offsite.

### 3.3.7. *Odour emission points*

The collected air from the building envelope is exhausted to the atmosphere via a 17 meter high, 1.073 m diameter discharge stack. The stack is located on the south eastern side of the transfer station building. The filtration system is designed to achieve an odour emission concentration of 3000 OUE/s and the system is designed to achieve an emission benchmark of 3.0 OUE/m<sup>3</sup> at the boundary of the site.

The modelling study shows that the maximum odour concentration outside the site boundary is predicted to be 2.83 OUE/m<sup>3</sup> at the 98th percentile of hourly means, which does not exceed the assessment criterion for 'moderately offensive' odours of 3.0 OUE/m<sup>3</sup> at the 98th percentile of hourly means. The odour concentration at high sensitivity receptors is predicted to be below the level of detection of 1 OUE/m<sup>3</sup><sup>4</sup>.

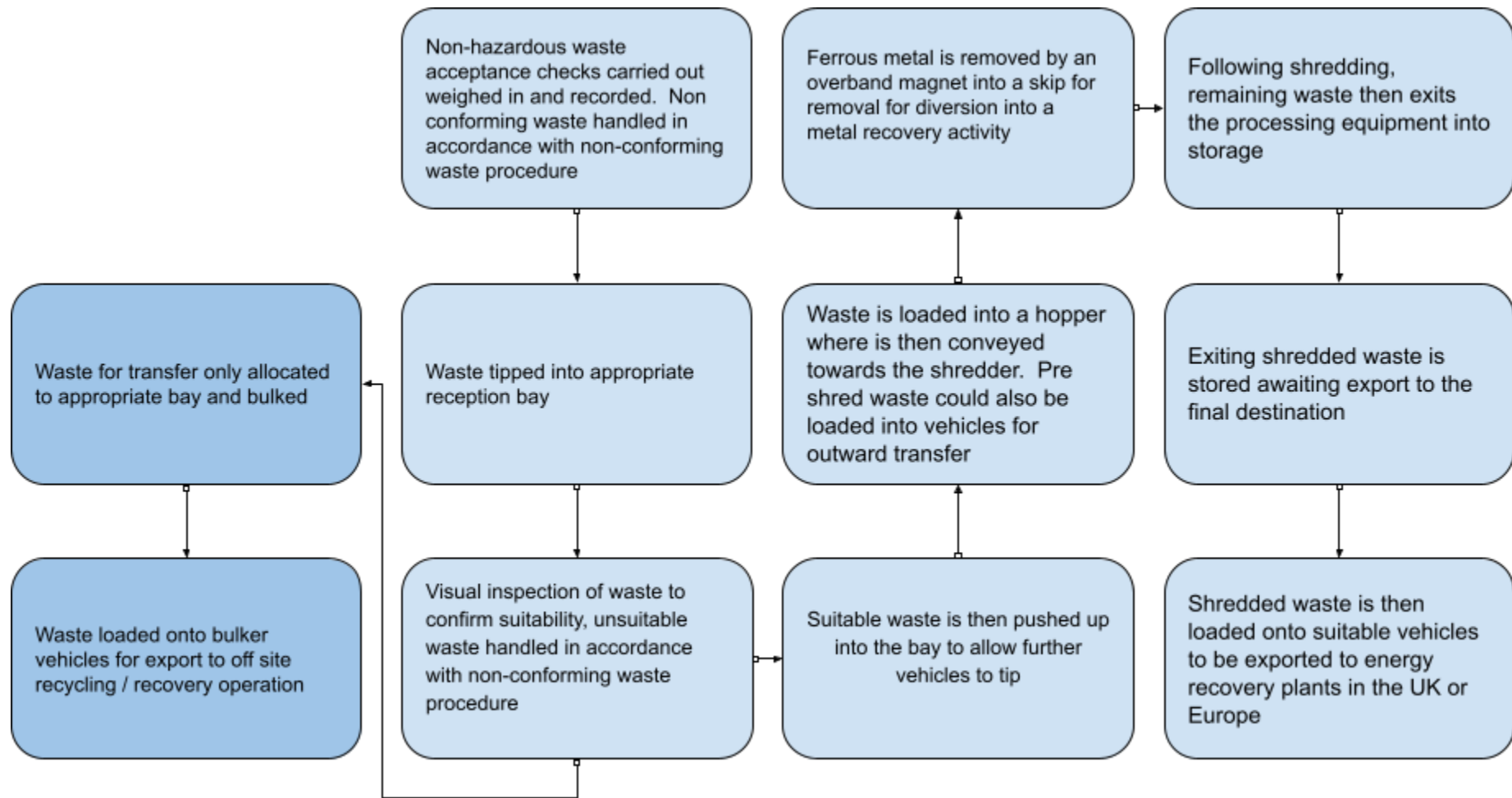
### 3.3.8. *ERF outages*

During Veolia ERF planned outages in the region it is also intended to use the RDF facility to assist with reducing the amount of residual waste diverted to landfill. During these periods the Facility may operate closer to capacity. This waste will be managed on a first in, first out (FIFO) basis to ensure residence time restrictions on site are maintained.

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<sup>4</sup> There will be no point source emissions until installation of the carbon filter and abatement system which will be completed prior to commencement of RDF production or acceptance of food waste.

Figure 3.2 Simplified process flow diagram for transfer, bulking and RDF production<sup>5</sup>



<sup>5</sup> RDF production subject to meeting pre-operational criteria

Figure 3.3 – Site plan showing odorous process locations / odorous emissions / storage

See common drawing reference:

- 202106\_JB3304LF\_VES\_TD\_COLW\_200\_000 REV C PROPOSED SITE GENERAL ARRANGEMENT-c

## 4. Control measures and process monitoring

### 4.1. Appropriate measures / BAT

[Note activities in grey / italics subject to pre-operational criteria]

Table 4.1 Monitoring procedures for appropriate measures/ BAT

Odorous and potentially odorous process / material	Control measures (Appropriate Measure / BAT)	Monitoring frequency	Monitoring procedure and optimum process parameters	Trigger level	Action taken if outside optimum process parameters
<b>INCOMING WASTE</b>					
Waste delivery and reception	<p>Pre-acceptance criteria / contractual control of quality</p> <p>Visual inspection of incoming waste is completed with clear and communicated acceptance criteria</p>	Every load of incoming waste	<p>A copy of the European Waste Catalogue (EWC) codes as specified by the permit along with a simplified description of acceptable waste is available. Only waste on this list can be accepted and a procedure for dealing with non-conforming waste is in place.</p> <p>Pictorial standards are used and displayed with respect to identification of contamination.</p> <p>Sampling and analysis is completed according to customer requirements.</p>	Identification of a non-conforming load	Load assessed on a case by case basis and either prioritised for processing or rejected. A quarantine area is available, demarcated and with signage where loads require decanting for assessment. Feedback provided to waste producer / haulier, discontinuation of contract if necessary.

			Optimal - pre-acceptance criteria ensures only suitable waste is brought to the facility.		
Tipping in the reception hall bays	Acceptance criteria / contractual control of quality.	Tipping of each load	Every load tipped has visual inspection with clearly defined acceptance criteria. Loader drivers are trained in waste acceptance. Processes are in place to safely manage contamination and non-conforming waste.  Optimal - acceptance criteria ensures only suitable waste is accepted at the facility	Identification of a non-conforming load	As above.
Tipping in external bays	Acceptance criteria / contractual control of quality.	Tipping of each load	As above	Identification of a non-conforming load	As above
Waste storage in transfer station	FIFO system	Constant – ongoing through shift	Visual inspection to ensure the bay with the oldest material is emptied first and additional bays are not allowed to fill completely  Optimal - FIFO achieved	Last available storage bay more than half full	If reception storage is reaching capacity, waste deliveries will be reduced or ceased until the process is back under control
	Max. waste residence time linked to odour potential	Daily	Computerised waste monitoring and tracking system. Optimal - waste residence time below stated maximum.  Optimal - maximum residence time not exceeded, no unacceptable off site odour	Waste residence approaching or just exceeding stated maximum	Waste qualitatively assessed for odour emission / potential. Waste dispatch arranged and expedited if required  Residence time reviewed if required
Fugitive emission from	Fast acting doors, default to closed apart	Set PPM interval	Inspection checks are completed on roller shutter doors	Door failure (see section 6)	See section 6



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vehicle access / egress	from delivery and dispatch		Operational checks are in place and included in the PPM schedule Doors operate within full range, closing to ground level  Optimal - doors only open for vehicle entry		
	Traffic light system for vehicle entry on site ensuring ensuring multiple arrivals do not result in extended door opening time	Constant – ongoing through shift	Ongoing monitoring by weighbridge operatives  Optimal - vehicles enter site in an orderly manner	Multiple vehicles arrive on site with waste to deposit	Multiple possible causes related to logistics. Review logistics and take appropriate action to minimise recurrence  Diversion of waste inputs to the site
	Agreed delivery schedules	Constant – ongoing through shift	Weighbridge operative monitors vehicles waiting to enter the Facility	Multiple vehicles arrive on site with waste to deposit	As above
Waste storage in external bays	As per internal bay plus:  Only waste with low odour potential is stored externally.	Constant – ongoing through shift  Implemented as part of site design	Waste acceptance and storage procedures  Optimal - waste stored externally does not cause odour off site	Identification of non conforming load / un expected odour	Investigate source and prioritise for processing or disposal / recovery to a suitably licensed facility
Loading of waste for dispatch	Loading carried out internally to the building  Visual checks on all exiting vehicles are completed to ensure no trailing debris  Area is kept clean and tidy	During loading activity	Visual observations by trained staff and supervisors. Minimum requirement that site manager carries out a monthly site walk around  Optimal - no accumulations identified		

## RDF PRODUCTION / STORAGE

## Odour Management Plan Colwick RDF &amp; Transfer Facility

<i>Emissions from storage and processing of waste with medium to high odour potential</i>	<i>Activity carried out within a building</i>	<i>Constant – ongoing through shift</i>	<i>Waste acceptance procedures ensure waste is stored in the correct location.  Optimal - waste with medium to high odour potential is always stored within a building</i>	<i>Last available storage bay more than half full</i>	<i>If reception storage is reaching capacity, waste deliveries will be reduced or ceased until the process is back under control</i>
<i>Fugitive emissions from building fabric during shredding activity</i>	<i>Negative extraction within building envelope</i>	<i>Daily</i>	<i>Daily system check to ensure the abatement equipment is operational without faults  Optimal - fan and extraction system nominal</i>	<i>Extraction system sub optimal</i>	<i>See section 6</i>
	<i>Building louvres / vents closed and interlocked with abatement system operation (periods when RDF processing is not occurring and inputs are reduced e.g. night time)</i>	<i>Daily</i>	<i>Daily checks to ensure louvres opening / closing with no faults when abatement system is not operating.  Optimal - louvres closed to reduce fugitive emissions.</i>	<i>Louvre failure (see section 6)</i>	<i>See section 6</i>
	<i>Pre / post operational building envelope conditioning  Abatement operation +/- 1 hr shift start / end</i>	<i>Set point / interlock at commissioning</i>	<i>Observations of residual odour on first entry into the building.  Optimal - no release of concentrated odour on first entry into building</i>	<i>Off site fugitive release of more concentrated waste odour</i>	<i>Review automatic abatement system timing, consider increasing pre / post operational conditioning period.</i>
<i>Loading residual waste onto conveyor</i>	<i>Sympathetic handling to minimise fugitive emissions including drop height</i>	<i>Constant – ongoing through shift</i>	<i>Visual observations by trained staff and supervisors  Optimal - minimal loss of containment of inputs or partly shredded material</i>	<i>Build up / loss of containment of waste during conveyor loading</i>	<i>Implement additional cleaning as required  Review staff training</i>

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Shredding	Maintenance of shredder to ensure efficient processing	Set PPM interval	Planned Preventative Maintenance (PPM) schedule is in place and process to manage outstanding tasks.  Optimal - equipment operates without failure	Equipment operating sub optimally / failure	Call off contract in place for equipment maintenance. Unscheduled maintenance takes place with review of root cause  See also section 6.
	Regular cleaning to prevent accumulations increasing source potential  A - Daily cleaning.  B - Deep clean to take place twice per annum.	A - Daily  B - 6 monthly	Visual observations by trained staff and supervisors. Minimum requirement that site manager carries out a monthly site walk around  Optimal - no accumulations identified	Accumulations identified	Review cleaning procedures and operative training
Storage of RDF	Sympathetic handling to reduce likelihood of puncture damage.	Constant – ongoing through shift	Visual observations by trained staff and supervisors  Optimal - minimal loss of containment of inputs or partly shredded material	Material not contained within designated bay.  Signs of advancing decomposition resulting in strong internal odour, e.g. ammonia.	Review cleaning procedures and operative training  Identify source of odour  Review pre-acceptance / acceptance procedure  Review RDF output residence time
<b>ABATEMENT SYSTEMS / CONTROLS</b>					
Stack emission to atmosphere	Design of abatement system to achieve 2 air changes per hour.  System designed to achieve 3 O <sub>Ue</sub> (98%ile) at the site boundary in	Testing of carbon in line with manufacturer's / technology provider recommendation	Carbon saturation test carried out by manufacturer / technology provider  Optimal - saturation levels confirm filter performance at sub emission limit guarantee	Carbon saturation indicates emission guarantee will be exceeded before the next test	Carbon exchange scheduled

	<p>accordance with H4 requirements. Benchmark set based on worst case odour dispersions from 5 years of sequential hourly meteorological data</p> <p>Stack height supported by air dispersion modelling</p>				
	Maintenance of abatement system	Set PPM interval	<p>Planned Preventative Maintenance (PPM) schedule is in place and process to manage outstanding tasks.</p> <p>Startup checks of equipment</p> <p>Optimal - abatement equipment operation is nominal</p>	Equipment operating sub optimally / failure	<p>Call off contract in place for equipment maintenance. Unscheduled maintenance takes place with review of root cause</p> <p>See also section 6.</p>
Storage and processing of municipal RDF (time limited to ERF outages)	<p>As per controls associated with commercial residual waste plus:</p> <p>Alignment of activity with newly exchanged carbon</p>	Pre-planned where possible based on ERF outage programme	<p>As per controls associated with stack emissions to atmosphere.</p> <p>Optimal - carbon exchange occurs prior to acceptance of municipal residual</p>	Approaching ERF outage	<p>Abatement operates to a specified emission limit guarantee so existing controls should be sufficient</p> <p>Implementation is considered precautionary and an additional layer of protection / assurance against alignment of highest odour emission potential with minimum acceptable filter performance and may not always be possible. If implementation is effective higher weighting will be applied to the control during future outage cycles</p>

Increased fugitive emissions during maintenance of abatement equipment	Odour risk assessment carried out prior to any activity	Situational	Off site odour monitoring carried out if required  Optimal - odour emissions off site minimised during maintenance of abatement equipment	Off site odour detected or predicted	Inform Environment Agency  Veolia help line operatives briefed in case of complaints  Management escalation  Undertake root cause analysis and inform future task specific odour risk assessment
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## 5. Odour reporting

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### 5.1. Complaints reporting

All feedback including complaints and non-conformances are recorded and reviewed with corrective and preventive actions put in place in accordance with Complaints and Non-Conformance Reporting procedures.

The management of complaints is controlled by the Veolia Management System 'VMS'. Managers shall ensure that all complaints have been investigated, adequately handled and that any measures necessary to prevent a recurrence have been put in place.

#### 5.1.1. Complaint recording

The recommended minimum level of detail that needs to be collected when an odour potentially linked to on site activities is reported is as follows:

- the time and date when the offensive odour was observed;
- the location (within approx. 100 m) where the offensive odour was observed, e.g. postal address, grid reference)
- the sensitivity of the location;
- a description of odour including a subjective all factors necessary to make an assessment of the impact, including intensity, character (preferably on the basis of a choice from standardised descriptors given in Environment Agency Technical Guidance Note H4), offensiveness, frequency and duration;
- the identity and address of the reporter, if provided / consented, in order to understand the spread of complaints and the number of individuals impacted;
- any other information the reporter can offer on activities at the alleged odour source

It is also necessary to collect (by observation or further investigation) the following additional information to allow subsequent analysis and collation of complaints:

- wind direction and speed, and atmospheric stability class at the time of complaint; and
- any process incidents at the time of complaint.

Complaints are recorded on the standard AVA complaint form. This should then be recorded on AVA as an attachment to the AVA complaint entry.

## 5.2. Investigation of Odour Complaints

The aim of the investigative actions will be to establish:

- the source of the odour complaint; and
- the impact of the odour
- appropriate measures / actions required to prevent pollution if required

### 5.2.1. Complaint screening

The object of the initial screening is to quickly identify those odour complaints that are unlikely to be due to the facility.

Initial screening should consider the following:

- knowledge of potential sources on the facility (timing of the report cross referenced with work activities in progress, any plant problems, etc);
- knowledge of other potential sources in the locality other than the facility;
- wind direction at the time of the alleged odour episode relative to the location of the facility and the reporter;
- distance of the reporter from site; and
- concurrent odour monitoring data where available

VES will liaise with local stakeholders (including the complainant) and inform them on the outcome of the screening assessment of the complaint and whether or not any action is to be taken.

### 5.2.2. Further investigation / substantiation

If the initial screening does not discount the facility as a potential source of the odour reported further investigation will be carried out using:

- on and off-site odour monitoring techniques (sniff testing), using the 'Odour report form' included with this document.
- a review of activities being carried out on site using the inventory of odourous emissions to ensure a systematic, risk based review of potential emission sources
- records about process conditions, observations or inspections at the time of report

Note that on and off site odour monitoring is not appropriate where reports are made retrospectively but records can still be reviewed.

Where the odour is substantiated, VES will carry out a root cause analysis to identify the conditions which are leading to unacceptable odour emissions from the Facility and review containment and control measures as appropriate.

## 5.3. Community engagement

### 5.3.1. *Communicating with the Environment Agency*

In the event a report of odour is received from a member of the public the local Environment Agency officer / team will be informed by telephone or email and a 'Notification of Abnormal Emissions' form will be submitted if the report is substantiated.

### 5.3.2. *Communicating with complainants*

In the case of answerphone messages a return call will be made as soon as possible and within 48 hours. In the case of complaints submitted by email or by letter, a written response will be made within 15 working days of submission of the complaint for complaints made by members of the public, or 5 working days for complaints made by an MP or Councillor.

In the case of further investigations, VES will communicate to the complainant the course of actions likely to be taken so as to ensure that there is transparency and also to establish at the outset clear targets and goals for determining the success of any control measures.

The level of annoyance associated with odours can often be reduced if affected individuals are provided with information about what they are smelling, the process that generates the odours, any factors affecting dispersion, what health impacts might be associated with the odour, what efforts are being undertaken to control odours and what is being done in response to their complaint. These actions can help affected individuals to moderate their own emotions of powerlessness and fear which may be exacerbated by odour. Liaison with the local community, offering credible reassurance and taking complaints seriously are often effective means of mitigating odour nuisance. To put this into practice, VES will aim to communicate the following message:

- The reason for the odour;
- The likely duration of the odour
- What plan is in place to end the odour episode
- What preventative plan will be implemented to prevent a re-occurrence
- What grievance procedure the aggrieved party can take



- Who is the responsible person on site to contact

Members of the public are able to contact VES directly with any odour complaints about the Facility. Methods of contacting VES will be displayed at the site, shown on the company website and communicated through meetings, press releases, bulletins and other forms of advertisement in connection with the operation of the Facility.

Monthly site reviews are in place reviewing all aspects of site performance including performance against objectives, site improvement plan, customer feedback (Customer Feedback Procedure) and site actions.

Quarterly reviews with General Managers are in place. Reviews include objectives, customer feedback, site improvement plan, review of actions and performance (Management Review).

## 5.4. Pro-active odour monitoring

VES will dynamically monitor emissions at their source (i.e. on site) to minimise the likelihood of odour nuisance at sensitive receptors. This monitoring will consist of inspection of feedstock, process, buildings and equipment to check that emissions are being contained and controlled in accordance with the measures identified in this document.

Routine pro-active off site odour monitoring is not indicated for this facility because of the low residual risk of off site odour emissions. Routine monitoring for low risk sites has a risk of becoming administrative and devalued over time. This approach will be reviewed as deemed appropriate by site management. Routine periodic monitoring may then be instigated.

## 5.5. Reactive odour monitoring

Given the pre-acceptance controls in place and the short residence time the potential for unacceptable odour emissions off site is considered to be low. VES will therefore undertake sniff testing dynamically based on the following criteria:

- Observation by trained staff that odour pollution is or may be occurring
- Receipt of waste which is deemed to be borderline malodorous and has triggered a decision to reject the vehicle / load
- Receipt of waste which is deemed to be malodorous but a decision is made that offsite impact could be avoided or minimised by prioritising this material for processing

- Any abnormal operation where there is considered to be a risk of odour pollution
- If notified a complaint is received externally
- If instructed to undertake an off site check by the Environment Agency

Ensuring staff are trained to undertake sniff testing in this manner ensures that the reasons for making a decision to carry out monitoring are well understood.

## 5.6. On site and off site monitoring (when required)

Trained staff will determine what combination of on and off site odour monitoring is appropriate based on the following principles.

- Where on site checks identify pollution is or may be occurring off site checks should be carried out.
- Where an external complaint has been received both on and off site checks should be carried out, in this case off site checks should ideally be carried out first to prevent desensitisation due to higher intensity odours closer to the source.

The sensory field odour (“sniff test”) assessments will be carried out based on the Environment Agency Sniff Test protocol in H4 guidance using the ‘Odour report form’ included in this document. The person carrying out the sniff test will be rotated on a regular basis to ensure reliability; where possible staff members who have been working within the RDF facility for an extended period will not conduct odour monitoring to avoid the desensitising effect caused by prolonged exposure (note this may not always be logistically possible). Where possible testing will be undertaken by non-operational staff and management.

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## 6. Abnormal events

Table 6.1 Abnormal events

Abnormal event	Recovery steps
Equipment Breakdown	<p>A list of spares required and the procedure for re-ordering will be developed as part of Veolia’s Management System and will be based on the manufacturers recommendations together with standby equipment for some critical items. There is a stock of critical parts held on site. We also have a contract in place for breakdown diagnostics and repair.</p> <p>If required waste will be diverted in accordance with the alternative outlets identified in the business continuity plan. Veolia has a network of waste facilities across the country including transfer stations, MRFS RDF facilities and ERF’s all capable of accepting this material.</p> <p>Reason for failure will be investigated (in association with supplier/contractor) and maintenance plan revised if necessary.</p> <p>Depending on how quickly the equipment can be repaired, the Competent Person will decide if it is necessary to redirect delivery vehicles already on the facility (not having discharged their loads) and incoming vehicles to other licensed facilities.</p> <p>If required waste suppliers will be contacted at the earliest opportunity and the situation explained – temporary redirection of delivery vehicles to other facilities might be required.</p>
Extraction system failure	<ul style="list-style-type: none"> <li>- Instigate call off contractual arrangement for extraction system diagnostics and repair.</li> <li>- Stock of critical parts held on site.</li> <li>- Establish lead time and plan actions below accordingly.</li> </ul> <p>Then several options are considered:</p> <ul style="list-style-type: none"> <li>- Consider seasonal impact, during warmer months perceived off site impacts will be higher.</li> <li>- Continue to operate all activities and implement off site odour checks. Keep under active review and implement further measures if unacceptable off site odour is established (either via operator check / external complaint / regulatory observation).</li> <li>- Cease RDF processing activity which has the highest odour potential and reduce operation to transfer only with diversion of RDF inputs to alternative facility (see BCP).</li> <li>- Decrease waste residence time.</li> <li>- Reduce inputs.</li> <li>- Suspend inputs.</li> <li>- Remove waste with higher odour potential from site.</li> </ul> <p>Reason for failure will be investigated (in association with supplier/contractor) and maintenance plan revised if necessary.</p>

Door failure	<ul style="list-style-type: none"> <li>- Instigate call off contractual arrangement for extraction system diagnostics and repair. Establish lead time and plan actions below accordingly.</li> </ul> <p>Then several options are considered:</p> <ul style="list-style-type: none"> <li>- As above (extraction system failure)</li> <li>- Increase extraction system air flow as a short term solution.</li> </ul>
Fire	<p>The site operates in accordance with a Fire Prevention Plan. In the event of a fire impacting site infrastructure associated with odour control including the fabric of the building and / or abatement systems residual waste would be removed and waste acceptance would be suspended until appropriate controls are in place to resume operations.</p>
Spillage	<p>Competent Person to initiate accident response plan – delivery vehicle made safe. If drivable, remaining material discharged into reception hall or vehicle removed off site. Spilt materials and debris immediately collected and transferred into reception area. Spill area then cleaned and hosed down.</p>
Flood	<p>The site is located in Flood Zone 3 of the River Trent. However, the site benefits from the flood defences of the Nottingham Trent Left Bank Flood Alleviation Scheme, which afford a standard level of protection up to at least the 1 in 100 Year event.</p>
Staffing shortage	<p>Contingency measures for staff availability are included within the BCP. Veolia has sufficient resources to redeploy staff from other facilities should this be needed.</p>

<b>Odour report form</b>		<b>Date:</b>		
<b>Person carrying out test:</b>		<b>Role:</b>		
<b>IMPORTANT: START ALL ODOUR ASSESSMENTS UPWIND OF THE SOURCE (WHERE ACCESS IS POSSIBLE). RECORD ALL ODOURS INCLUDING OFF SITE SOURCES.</b>				
<b>Reason for test (see section on proactive and reactive monitoring)</b>				
Time of test				
Location of test Use ref in tab 6.1				
Weather conditions (dry, rain, fog, snow, etc)				
Temperature (very warm, warm, mild, cold, or degrees if known)				
Wind strength (none, light, steady, strong, gusting)				
Wind direction (e.g. from NE)				
Intensity (see below)				
Duration (of test)				
Constant or intermittent in this period or persistence				
What does it smell like?				
Receptor sensitivity (see below)				
Is the source evident?				
Any other comments or observations				
<b>Intensity:</b> 0 No odour 1 Very faint odour 4 Strong odour 5 Very strong odour 6 Extremely strong odour		<b>Receptor sensitivity</b> Low (e.g. footpath, road) Medium (e.g. industrial or commercial workplaces) High (e.g.		

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2 Faint odour 3 Distinct odour	<i>Ref: German Standard VDI 3882, Part 14</i>	housing, pub/hotel etc)
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