Project details	Environmental Permit Variation Application – EPR XP3602PF Sharpsmart Limited – Normanton Waste Transfer and Treatment Facility
Applicant details	Sharpsmart Limited Unit 1 Enterprise City Meadowfield Avenue Spennymoor County Durham DL16 6JF
Report details	**EP Variation Application – Appendix G: Odour Management Plan** **Document reference: SHSMT_2022.01/04_v1**
Report date	13 September 2022
Submitted to	Permitting and Support Centre Environmental Permitting Team Environment Agency Quadrant 2 99 Parkway Avenue Parkway Business Park Sheffield S9 4WF Email: PSC@environment-agency.gov.uk
Author	Rebecca Hodkinson EHS Consultant
Signature	

Reva Environmental Ltd

Tel: [+44] 07949 178558 www.revaenvironmental.co.uk
Company Registered in England No. 11506654

Table of Contents

Contents

1 Introduction

1.1 General

Sharpsmart Ltd (the 'applicant') has requested that Reva Environmental Ltd (the 'agent') prepares an Environmental Permit (EP) variation application, for its Normanton Waste Transfer and Treatment Facility at Unit 1 Loscoe Close, Normanton Industrial Estate, Normanton, WF6 1TW.

The site currently houses two autoclave units that thermally treat (by steam sterilisation) the incoming soft clinical waste. It was formerly operated by HES, until the EP was transferred to the applicant in August 2019.

The EP allows the pre-shredding, autoclaving, and compaction of waste and the associated temporary storage of waste pending that process. The EP includes two directly associated activities (DAAs) which are the operation of a steam boiler and the washing of bins. Additionally, the EP allows the storage and repackaging of non-hazardous and hazardous waste as a Waste Operation. The operator supplies re-usable sharps containers to the healthcare sector and provides a collection service to its customers whereby the used containers are taken to one of the applicant transfer facilities, emptied and cleaned and sent back to the customer. The contents are emptied into UN approved wheeled carts under air extraction. Once the cart it full, the heavy duty liner is sealed and the cart lid locked. The repackaged waste is treated at that site or transferred for treatment at another applicant site, in this case it would be Normanton.

The facility is currently authorised by EP ref. EPR/XP3602PF which was originally issued in April 2011 (as EPR/VP3137TV), and most recently varied (V005) in March 2014. It was transferred to Sharpsmart Limited in August 2019.

The objective of this 2022 application is to obtain a varied EP which enables:

- Treatment of decanted sharps waste through the existing autoclave plants. This waste stream would be subject to pre-treatment shredding and subsequent compaction. The proposed acceptance of sharps waste for treatment in the autoclave will not affect the existing Listed Activity (A1) and the addition of the sharps waste code 18 01 03* (with or without 18 01 09) can be achieved through the amendment of Table S2.2 of the permit.
- Operation of a larger natural gas fuelled steam-raising boiler. The existing EP specifies the operation of the existing boiler as DAA A3. The applicant intends to install a new boiler to better meet the steam demand of the two autoclaves running in parallel. Whilst the input capacity of the boiler (2.5 MW) is below the threshold for a listed activity the applicant does recognise that as the input capacity will exceed 1 MWth the Medium Combustion Plant Directive (MCPD) is applicable and that emission limits will be imposed on this exhaust via permit conditions.
- Treatment of offensive waste (18 01 04) in two ways as follows:
  - Shredding through the existing shredders. For this short to medium term option, the waste stream would not be subject to autoclaving but would be subject to compaction. The shredded offensive waste can be compacted and can be transferred off site as RDF under EWC 19 12 10 / 19 12 12. It is proposed that this is achieved through the addition of a new Waste Operation (A6) for D9/R12 shredding of these non-hazardous wastes (<50 tonnes per day).
  - Shredding and autoclaving. For this medium to long term option, the waste stream would be shredded and autoclaved (not compacted) in order enable the recovery of plastic film from the waste. The uncompacted treated floc would be transferred off site via a national contractor under EWC 19 02 codes or suitable 19 12 codes. It is very unlikely that the autoclaving of offensive waste in the existing plant would exceed 50 tonnes per day (the

threshold for 5.4 Part A(1)(a); it is therefore proposed that this is achieved through the addition of a new Waste Operation (A7) for D9/R5.

- Increase in the storage limit for non-hazardous floc (treated waste) from 40 tonnes to 80 tonnes at any one time.

This Odour Management Plan (OMP) forms part of the Environmental Management System and, in the same way as other procedures are, it will be reviewed on a regular basis in accordance with the EP and also updated as required following any substantiated complaints, changes to process, or to reflect changes in legislation or best practice. It seeks to outline the procedures that are in place to ensure that odour is managed at the site and that odour nuisance does not arise as a result of the operations.

This OMP has been written in accordance with EA Horizontal Guidance H4 Odour Management – How to Comply with your Environmental Permit, dated March 2011. H4 states that emissions from the activities shall be free from odour at levels likely to cause pollution outside the site.

1.2 Site Setting

The facility is located in the Normanton Industrial Estate to the north-east of Normanton and is bounded to the north by the M62 motorway and to the west and south by the A655, Pontefract Road. The area around the facility is predominantly industrial units, with the closest human receptors being 0.425 km west-northwest. The facility is approximately 40 m from a small watercourse, Wain Dyke Beck (to the east) and, within 20 m of the site land is within a (very low) designated flood risk area associated with that watercourse.

Access to the site is off Loscoe Close which runs along the western boundary. The estate is accessed from the M62 motorway (to the north) and the A655 (to the west).

The site setting is shown on **Drawing SHSMT-NMT-EP03 Site Sensitivity Plan** and summarised in Table OMP1.

Table OMP1: Site Setting

Direction	Local Setting
Northern Boundary	The site is immediately bounded to the north by neighbouring buildings in the Normanton Industrial estate. Beyond these the M62 motorway runs in an east to west direction and intersects the A655 (Pontefract Road). The closest residential area is approximately 425 m to the west-northwest, beyond the A655 and the western portion of the industrial estate.
Eastern Boundary	The site is immediately bounded to the east by neighbouring buildings in the industrial estate, beyond which lies the Wain Dyke Beck which separates this portion of the industrial estate from the eastern potion which extends significantly to the east. Ackton Pasture Wood, an Ancient Woodland, lies approximately 1 km to the east-northeast of the site. Details are provided in the ERA for the site; section 1.2.2.
Southern Boundary	The site is immediately bounded to the south by neighbouring buildings in the industrial estate, and the end of Loscoe Close. The A655 runs in a north to south direction to the west of the site. Farmland and a sewage works lies beyond the A655 intersection with the A6539 to the south.

Western Boundary	The site is immediately bounded to the west by neighbouring buildings in the industrial estate, beyond which lies the A655 (Pontefract Road). Beyond the A655 is more of the industrial estate, beyond which is the residential area Normanton Common, at approximately 600 m to the west.

1.3 Wind Rose

Key sensitive receptors are considered to be those within 1 km of the site; the potential dispersion of odours to these depends on the weather conditions.

Figure OMP1 presents the wind rose for the area. This has been sourced from the met office (www.metoffice.gov.uk) and is from a station located at Sheffield Doncaster Airport.

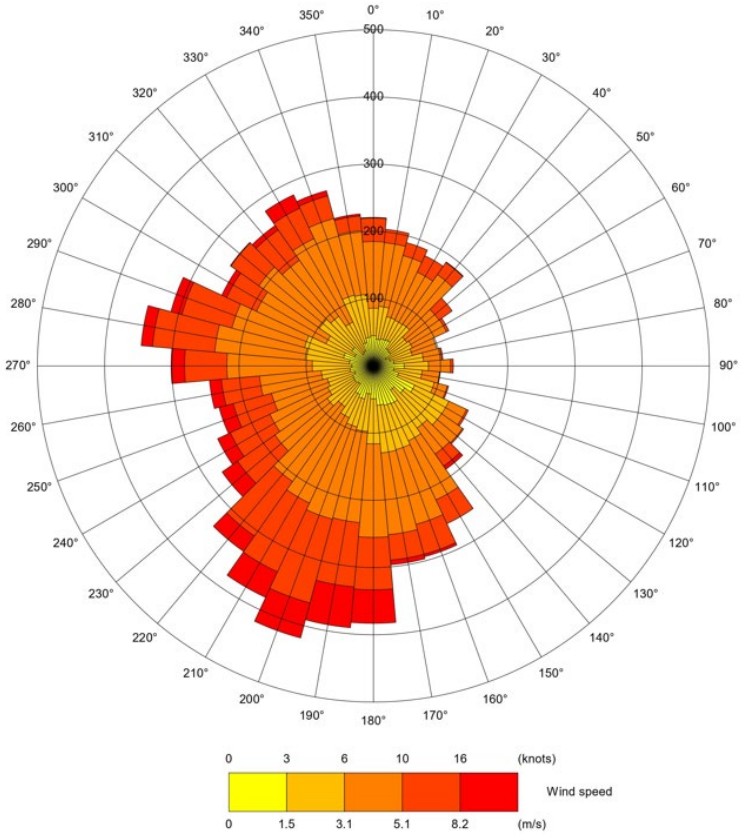

Figure OMP1: Wind Rose

The odour concentrations at receptors located down-wind are likely to be more than at those located cross or up-wind.

1.4 Sensitive Receptors

Some receptors are more sensitive than others, for example a residential area is likely to be more sensitive than an industrial estate. Though not usually considered as sensitive receptors, the adjacent industrial premises have been included in the OMP.

Table OMP2: Sensitive Receptors within 1 km

Receptor	Distance at closest point	Direction	Receptor Type	Relative Risk of Impact
Residential Properties on Beckbridge Road	600 m	West	Residential properties – potential all-day presence	Moderate
Residential Properties on Castleford Road	425 m	West-Northwest	Residential properties – potential all-day presence	Moderate
Residential properties on Newlaithes Crescent	700 m	Southwest	Residential properties – potential all-day presence	Moderate
Residential properties on Rosemount Drive	850 m	South	Residential properties – potential all-day presence	Moderate
Residential properties on Arnall Street	800 m	North	Residential properties – potential all-day presence	Moderate
Whitwood Common	500 m	North	Public open space, transient use all day	Low
Ancient Woodland – Ackton Pasture Wood	1 km	Northeast	Public open space, transient use all day	Low
Workers in other premises in the Industrial Estate	Immediately adjacent	North, East, South and West	Commercial/industrial workplace, all day presence	Moderate
Wain Dike Beck	40 m	East	Surface water drain with adjacent footpath	Low

1.5 Complaint History

To date, the current operator (the applicant) has not received any complaints from members of the public or from neighbours in the industrial estate with regards to odour. Details of the process in the event of receipt of an odour complaint are provided in section 5.4 of this OMP.

2 Odour Sources and Pathways

2.1 Raw Materials

Raw material use for the site is minimal, and limited to:

Disinfectant – This is used for general cleaning purposes.

Cleaning fluids – These are use in the bin washer (pine disinfectant), and as a protective spray for the cleaned bins (Apple Fresh).

Raw materials are delivered to the site when stock checks identify the need for more, and are in small proprietary containers. They are stored within the building in a dedicated area. When needed, the containers are carried to the plant area where it is required.

Due to the nature of the raw material and the storage and handling arrangements, the risk of odour release is considered to be very low.

2.2 Waste Receipt, Handling, and Storage

Clinical waste arrives at the facility in two forms:

Bagged waste – This waste is always contained within a yellow lidded rigid 770 litre waste bin/cart. It is delivered to the site in an appropriate waste delivery vehicle and unloaded using the tail lift on the vehicle. The vehicle reverses right up to the doors into the process building. Bins are wheeled into the dedicated bin store area for waste pending treatment. The access doors are open only during the delivery and transfer processes.

Sharps waste – This is sharps waste but that has been decanted/repackaged at another of the applicant's sites so arrives in lined rigid 770 litre waste bins/carts. The bins are placed in a dedicated area pending treatment. Note that metal instruments are received for autoclave only so the lined carts are emptied directly into lined autoclave carts via the bin-to-bin tipper.

The bin-to-bin tipper operates infrequently but does so under negative pressure, with the local exhaust ventilation system benefiting from a pre-filter and a HEPA filter for particulates.

The maximum storage period for any load of waste is 2 weeks. The storage and handling arrangements in place for the waste mean that the risk of odour release is low.

2.3 Waste Shredding

The treatment process begins with the shredding of a batch of waste to break it up to a form that enables efficient heat treatment (autoclaving) to be applied. Waste is loaded (from the 770 litre carts) into a bin tipper mechanism that loads the batch into the shredder unit. The shredders each have an extraction hood which vents to atmosphere (emission points 'A4' and 'A5') via a HEPA air filter and a carbon filter system. The HEPA filter removes small particulates from the air and traps them, preventing their release to atmosphere. The carbon filter removes any contaminants and impurities from the extract, using chemical adsorption. This prevents the release of contaminants to atmosphere and also provides odour control. Once shredded, the waste falls into a lined autoclave cart, the liner is tied and a bin tipper is used to load the bag into the autoclaves.

The waste is potentially odorous however, given that it is processed on a batch system and there is LEV with filters on the shredder, this part of the treatment plant is considered to present a low-medium risk of odour release.

2.4 Waste Treatment (Autoclave)

The autoclaves are horizontally orientated cylindrical vessels that are subject to high vacuum and high pressure. The waste is loaded into the vessel on a batch process which runs for a single cycle of approximately 55 - 65 minutes long. This includes the loading and unloading stages; the actual treatment cycle is between 40 – 60 minutes long. The twin skin design of the autoclave means that at the point of loading, and during the waste treatment cycle, steam is pulled to the condenser unit which produces a small volume of liquid effluent, approximately 220 litres per cycle. The system removes residual steam from the autoclave and flashes residual liquids, drying the waste. This also provides odour control.

There is active air extraction around the autoclave doors which vents to atmosphere (emission point 'A8') via a HEPA air filter and a carbon filter system. This prevents the release of contaminants to atmosphere and also provides odour control.

There are no active emissions to air from the autoclaves.

The waste is potentially odorous however given that it is processed on a batch system within an enclosed pressurised unit and the steam is pulled from the waste via a condenser unit, this part of the treatment plant is considered to present a low-medium risk of odour release.

2.5 Waste Compaction

The sterilised waste floc exits the autoclave and is transported by forklift truck into one of the three sealed compaction units which are positioned within the building whilst they are being filled. The compactors are 35 yd skip containers which reduce the volume of the floc by up to 60%. There are three positioned in the building at any one time, accepting waste. The most northerly one will be dedicated for shredded offensive waste; the middle one will be for floc from the autoclaving of soft waste; the most southerly one will be for the floc from the autoclaving of sharps waste. Whilst the floc from both autoclave streams is likely to be the same, local air extraction will be installed over the southerly one (emission point 'A9') and it will be filtered for particulates and VOCs.

Once full, a compactor is taken outside for storage pending transfer, on hardstanding with a sealed drainage system.

The waste has been fully treated at this stage so is not odorous. This part of the treatment process is therefore considered to have a very low risk of odour release.

2.6 Residue Management

The condensate from the autoclave will be either non-hazardous and can be discharged to sewer under consent (current permit position), or potentially contaminated when sharps waste is treated. The two liquid effluent streams are managed in one of two ways, depending on the composition, as follows:

- If the effluent generated relates to the autoclaving of sharps bin waste, then it is considered potentially pharmaceutically contaminated and is not discharged to sewer. Instead it is collected in an engineered sump and pumped into a storage tank (20,000 litre) for transfer to a permitted energy from waste facility for disposal (and heat recovery).
- If the effluent generated relates to the autoclaving of a batch of solely orange categorised waste (or offensive), then it is considered that there is no pharmaceutical contamination and the effluent is no different to that produced by the transfer facility and can be discharged to sewer under the existing consent.

The autoclaves drain to a sealed tank from which the effluent can be pumped. This will allow the operator to define the route, depending on the above. There is a direct connection from the sealed condensate tank to the permitted discharge point to sewer (S1). A valve will be installed to redirect this condensate to a small holding tank, then it can be pumped to the larger storage tank for off-site transfer.

2.7 Odour Source Assessment

The potentially significant odour sources (materials and processes) are set out in Table OMP3. Details of the location of storage, type of containment, and maximum quantities of each source material are also provided in Table OMP3. In relation to storage, each source has been allocated a unique reference (Odour Source (OS) 1 – 7) and these identifiers are included on a copy of the site layout, provided in Annex OMP2 as the Odour Source Location Plan.

Table OMP3: Odour Sources

Source	Odorous material	Containment / Release Point	Maximum Quantity & Duration	Storage Arrangements	Pattern of Release	Abatement Techniques
Raw materials	Disinfecting chemicals	Fugitive emission from storage and use of the chemical. Localised odour in process area, dilution in ambient air before release via doors	Small quantities of bottles of Pep Active and Apple Fresh. Continuous storage to ensure availability	Stored in proprietary containers (in which they are supplied), and stored within the building in a dedicated area (OS1)	Intermittent – only during cleaning activities	Within building, doors shut as standard
Waste delivery and storage	Clinical waste (770 ltr bins)	Fugitive emissions from the access doors used for delivery and from the waste storage areas, in the process areas within the building, dilution in ambient air before release via doors	<75 tonnes, waste is processed within 2 weeks	All waste arrives in UN approved (sealed) containment, it is also stored in UN approved containers pending processing or transfer (OS2) *NB – Storage of waste in carts pending autoclave are included in OS5*	Continuous during operation	Waste all contained in UN approved 80 micron bags within UN approved 770 litre bins. Bins are stored in a dedicated area within the building pending treatment or transfer
Wash plant	Residual waste in carts	Fugitive emission from the containers once emptied	Bin washing as required (batch basis)	Wash plant (OS3)	Intermittent – only during wash cycle	Enclosed system, use of appropriate disinfecting agents. Air extraction system
Shredder operation	Exhaust air from shredding of clinical waste	Emission from the shredders during loading, closed process vessel during shredding of	Approx. 2.3 tonne per batch (9 carts)	Shredder plant is a fixed within the building, location OS4	Intermittent as shredder is part of a batch process, but continuous	Active extraction with HEPA and carbon filter

Source	Odorous material	Containment / Release Point	Maximum Quantity & Duration	Storage Arrangements	Pattern of Release	Abatement Techniques
		incoming waste, filtered extract via A4 and A5			during operation of the shredder	
Shredder – general	Clinical waste or raw material/effluent spillage	Emission from abnormal scenario – spillage of waste during loading, or spillage of effluent during cleaning/disinfecting leading to localised odour in process area, dilution in ambient air before release via doors	Approx. 2.3 tonne per batch (9 carts)	Shredder plant is a fixed within the building, location OS4	Intermittent as shredder is part of a batch process, but continuous during operation of the shredder	Active extraction with HEPA and carbon filter; plant within the building, on impermeable flooring, building doors are kept shut as standard
Autoclave operation	Exhaust air, hot process air from treatment of clinical waste	Closed process vessel, fugitive emission from the door to the autoclave during loading of carts of shredded waste	Approx. 2.3 tonne per batch (9 carts), process runs for 55-65 minutes per autoclave batch (including loading and unloading)	Autoclaves fixed within the building, location OS5	Intermittent as autoclave is part of a batch process, but continuous during operation of the autoclave	No abatement at loading; abatement via condenser
Autoclave - general	Clinical waste or effluent spillage	Fugitive emission from spillages on the floor, localised odour in process area, dilution in ambient air before release via doors	Approx. 2.3 tonne per batch (9 carts), process runs for 55-65 minutes per autoclave batch (including loading and unloading). 220 litres effluent per batch cycle	Autoclaves fixed within the building, location OS5	Occasional (abnormal scenario), cleaning activities occur regularly	Housekeeping procedures implemented, plant is within building – doors shut as standard
Movement of treated waste	Treated clinical waste	Movement to compactor in autoclave carts by forklift, fugitive emission	Approx. 2.3 tonne per batch (9 carts)	Up to 12 carts of autoclaved waste are stored next to the compactors	Intermittent as autoclave is part of a batch process	Plant within the building and building doors are kept shut as standard

Source	Odorous material	Containment / Release Point	Maximum Quantity & Duration	Storage Arrangements	Pattern of Release	Abatement Techniques
		from the autoclave door to the compactor		pending compaction – these are included in OS6		
Compactor operation	Treated clinical waste	Closed vessel, fugitive emission from the door of the compactor during loading of treated waste	Up to 9 tonnes within each of the 3 compactor units. Loading after each autoclave cycle (55 – 65 minutes). Stored once full for <2 days	Compactors are positioned within the building, OS6	Intermittent as compactor is part of a batch process, but continuous during operation of the compactor	Fully enclosed compactor skip, located within the building during compaction, waste not retained on site for extended periods of time
Compactor operation	Shredded offensive waste	Closed vessel, fugitive emission from the door of the compactor during loading of waste	Up to 9 tonnes within each of the 3 compactor units. Loading after each autoclave cycle (55 – 65 minutes). Stored once full for <2 days	Compactors are positioned within the building, OS6	Intermittent as compactor is part of a batch process, but continuous during operation of the compactor	Fully enclosed compactor skip, located within the building during compaction, waste not retained on site for extended periods of time
Treatment areas – general	Clinical waste or raw material spillage	Fugitive emission from spillages on the floor, localised odour in process area, dilution in ambient air before release via doors	See other rows for specifics	See other rows for specifics	Occasional, cleaning activities occur regularly	Housekeeping, within building – doors shut as standard
Floc storage	Treated clinical and offensive wastes	Enclosed, sealed skip container, fugitive emission of clinical waste odour from the compactor door during storage	Up to 9 tonnes within each of the 3 compactor units. Stored for < 2 days	Compacted in units within the building (OS6), moved outside to OS7 once full	Storage is continuous during facility operations	Fully enclosed, sealed skip, no loading undertaken outside the building

2.8 Odour Release Points and Pathways

Release of odours from the site would be via a release to air from any of the sources details above, and transfer through the air via dispersion. Odour releases can be either from a point source (a physical intentional, forced emission point) or fugitive (an unintentional or passive release). These are as follows:

- Point Source A1 – Boiler exhaust
- Point Sources A2 and A3 – Autoclave emergency exhaust vents (abnormal operation, sterile exhaust, no abatement)
- Point Sources A4 and A5 – Shredder LEV – filtered emissions from the shredding process
- Point Source A6 – Wash plant (air extract from drying process, no abatement)
- Point Source A7 – Bin-to-bin tipper LEV – filtered emissions from the repackaging activity
- Point Source A8 – LEV at autoclave doors – filtered emissions from the area when doors are open
- Point Source A9 – LEV at sharps floc compactor – filtered emissions
- Fugitive Source 1 – Incoming waste storage area
- Fugitive Source 2 – Delivery doors on the western side of the building

3 Odour Risk Assessment

The applicant has carried out a qualitative risk assessment for the facility as a whole. This identifies the sources, their pathways to causing nuisance to the defined receptors, the likelihood of odour release, the control measures in place, and actions required based on the findings. This is presented in Table OMP4.

It is acknowledged that there are also abnormal operating scenarios where odour could be released, e.g. plant failure. These are considered separately in the Accident Management Plan for the site.

Table OMP4: Risk Assessment

Odour Source	Material	Pathway	Main Receptor	Likelihood	Controls	Residual Likelihood	Action Required?
Raw materials	Disinfecting chemicals	Fugitive via open doors, windows – air transportation then inhalation	Any of the identified receptors in Table OMP2, depending on prevailing wind direction	Low	Small quantities held, proprietary container, stored within building	Very Low	No
Waste delivery and storage	Clinical waste			Medium	Intermittent – only during delivery, all waste in closed containers, doors closed at all times outside of delivery, no waste stored outside, waste processed quickly	Low	No
Bin-to-bin tipper emissions	Metal instruments	Fugitive - air transportation then inhalation		Low	Active air extraction whilst in operation (LEV to A7 emission point with HEPA filter - maintained and serviced in accordance with PPM	Very Low	No
Shredder emissions	Exhaust air from shredding of clinical waste	Fugitive - air transportation then inhalation		Medium	Active air extraction whilst in operation (LEV to A4 and A5 emission points, both with HEPA and carbon filter - maintained and serviced in accordance with PPM	Low	No
Autoclave emissions	Exhaust air, hot process air from treatment of clinical waste	Fugitive via open door – air transportation then inhalation		Medium	Negative air system in place (condensers) - maintained and serviced in accordance with PPM. Active air extraction around autoclave doors with HEPA and carbon filter to capture emissions during loading	Low	No
Compactor emissions	Fugitive emission from compacted waste	Fugitive via open doors, windows – air transportation then inhalation		Low	Waste has been heat treated, compactor is fully enclosed, waste not retained on site for extended periods of time. Active air extraction on sharps floc compactor with HEPA and carbon filter	Very Low	No

Floc storage	Fugitive emission from compacted, stored waste			Medium	Waste has been heat treated, skip containers are fully enclosed	Low	No
Treatment areas – general	Clinical waste or raw material spillage			Low	Regular inspection and cleaning, housekeeping controls, all incoming waste is contained	Very Low	No

4 Management Responsibilities

The site is operated in accordance with the defined business management system (current version dated August 2020). This is led by the management team which ensures that the system is implemented, understood, and complied with at all levels of the organisation. The National Operations Manager, Plant Manager, and Plant Supervisor all have responsibility for odour management at the site, as follows:

- National Operations Manager – responsible for overall control of operations for the company and providing the resources required to support the work of the responsible persons in reducing the risk of odour impact from the site;
- Midlands Plant Manager – responsible for (or delegates authorised alternative to be responsible for) maintaining compliance with legal and regulatory requirements, liaising with neighbours (local receptors), implementing the OMP, providing odour training to site personnel, and implementing the odour monitoring regime;
- Plant Supervisor – responsible for day to day management and operation of the site, including provision of operating procedures and training as required.

All employees have a stake in odour control at the site and training is therefore provided to all staff.

5 Odour Control and Response

Further detail is provided in this section of the control measures listed in Table OMP4 above.

5.1 Limiting the Odour Source

The site undertakes the treatment of clinical waste and as such has the potential to generate odour from both the storage of clinical waste pending treatment, and the treatment process itself. Measures are taken to limit the potential for odour, as follows:

- All waste is delivered in sealed containers – the bagged waste is always contained within a locked yellow lidded 770 litre waste bin and is never stored loose. Lids are closed at all times other than loading/unloading;
- Storage of waste is within the building – no untreated waste is stored outside. Waste storage capacity limits apply and quantity on site at any one time is recorded and tracked to ensure that these are not exceeded for any defined waste type;
- Doors to the building are kept closed other than when there is a delivery or collection taking place;
- Procedures ensure that waste is processed quickly. This is usually a matter of up to a few days, however the contingency plan limits it to 2 weeks after which the waste is transferred off site. Waste tracking processes are in place so all waste on site can be dated and this is reviewed on an ongoing basis to ensure timely waste turnaround;
- The three parts of the treatment process are enclosed when in operation and the first two (shredder and autoclave) have air extraction which is filtered via HEPA and carbon systems;
- Daily inspections are undertaken and include housekeeping and cleanliness checks. These are a visual inspection and focus on key areas of plant/equipment that could generate odour; and
- General cleaning of process plant is carried out on a regular basis, including disinfection of the shredder plant. As a minimum, process equipment is cleaned at the end of each shift prior to handover, or at the point of cessation of use if is it not running 24/7.

Due to the nature of the waste, all deliveries have the potential to be odorous so the odour source is potentially present every day during the delivery process. The measures listed above are standard operating procedures and represent best practice to minimise the odour source. However, should any one particular load be identified as being unusually odorous, this would be prioritised for processing and can be re-packaged if necessary once it is received on site.

The waste stream that poses the most odour potential is anatomical; this is transferred to a cold store located within the building (<5 °C) immediately upon arrival at the site and is processed within 14 days in accordance with the EA guidance.

Receipt of waste is managed in accordance with the facility's existing waste acceptance procedure as this remains relevant and appropriate. Part of that procedure covers the protocol for dealing with unacceptable waste being delivered (this can include appropriate re-consignment and transfer for correct disposal or recovery). A designated quarantine area is provided within the building, at the northern end near the anatomical cold store. Under normal operations, receipt of non-conforming waste or that which would require quarantining is rare as waste is collected from serviced customers, in the applicants own (sealed) containers. As the site operates as (and will continue to operate as) a waste transfer facility, should waste arrive that can't be processed or presents an unacceptable odour issue, this would be transferred immediately to a third party treatment facility or processed immediately on site if appropriate.

Drivers are employed by Sharpsmart and are trained in the site procedures, including waste acceptance procedures and the details included above. Where required, drivers are also ADR trained.

5.2 Maintenance and Monitoring

The operator follows a planned preventative maintenance programme to ensure that the plant works efficiently and the likelihood of failure is minimised. This has a direct reduction in the likelihood of odour release resulting from abnormal operations.

The following are included in the PPM:

- Maintenance of HEPA and carbon filters in the LEV systems, in accordance with the manufacturer's guidelines to ensure normal removal efficiency is retained. Pressure differentials are measured across the filters to identify when exchange is required. This is part of the internal site checks carried out by the competent manager where the visual gauge is observed; and
- Maintenance of the component parts – shredder (and bin tipper), autoclave (and autoclave carts), compactor in accordance with manufacturer specification. Critical spares are retained at the site to aid quick repair and maintenance.

The design of the plant is such that the three component parts can each operate in isolation, enabling the operator to carry out maintenance or repair works on any one part whilst the parts can continue to operate. This reduces the impact of failure or shutdown on the overall plant operation.

The operator has received technical advice from the plant manufacturer regarding the ongoing maintenance and repair of the equipment and, on this basis, retains a stock of key spare parts at the facility. An inventory of these spare parts is maintained, and stock replaced upon use to ensure that a sufficient level of parts is always available at the facility. Scheduled maintenance and service is carried out by the manufacturer (or manufacturer's contracted provider); the tools and expertise required for this is therefore assured.

The operator carries out regular olfactory monitoring in accordance with the EA's guidance in H4, using a checklist based on the one provided in H4, a copy of which is attached as Annex OMP1. This monitoring is carried out, and recorded, on a daily basis. It is also carried out following any odour complaints from receptors or identification of odour issues within the building by the operational

team. The frequency may also need to be increased in the event of extreme weather conditions such as long periods of hot weather.

The monitoring is undertaken at several fixed points around the site boundary, as well as a point down-wind at the time of the monitoring (a moveable point). All but the moveable point are shown on Figure OMP1.

Figure OMP2: Olfactory Monitoring Locations

5.3 Odour Incident Response

In the event that there is an issue with odour, within the building, resulting from the treatment plant or associated activities, the incident will be investigated to identify the cause:

- **If the odour source is found to be the treatment process**. The treatment process will be stopped (one or more of the 3 distinct components) to allow assessment of the equipment. Once shutdown the plant will be cleaned thoroughly to remove any residual odour source. If the source is deemed to be abnormal operation of the LEV filter systems these will be checked and filters replaced if required. Olfactory monitoring will be carried out (internal and external to the building) and if odour is no longer being generated, treatment can recommence.
- **If the odour source is found to be a fugitive source (e.g. waste storage, spillage).** The source of the odour will be identified and removed, the area will be cleaned thoroughly to remove any residual odour source.
- **If the odour source is found to be in an external area.** The source of the odour will be identified and removed/repaired – this may require the services of a third party contractor. The area will be cleaned thoroughly if required.

Training is provided to the site team; roles and responsibilities are set out in their terms of appointment. A training matrix forms part of the business management system, and is set at both company and site level for all staffing roles.

Training includes an induction which covers the EMS for the site, including management plans and procedures relevant to their roles. Ongoing training is undertaken on specific parts of the management system, including the OMP. With respect to odour management, all staff are trained in:

- Odour control measures that need to be followed to ensure that operations do not result in a release of odour;
- What action to take in the event of an incident leading to an odour issue;
- How to receive and record an odour complaint from a member of public or via the EA; and
- How to follow up and take action should an odour complaint be substantiated.

In the event of an odour incident the applicant will inform the EA and provide a summary of the investigation and actions taken to address the issue.

5.4 Odour Complaint Response

If an odour complaint is received, this may be directly to the site from a member of public, or via the EA. The complaint will be investigated immediately if it received during normal operating hours, or first thing on the next working day if received outside of normal operating hours.

Following receipt of a complaint, the operator will determine:

- Is the process under control? (i.e. has the site received exceptionally odorous wastes or have wastes been left standing for too long before processing?)
- Have odour containment measures failed? (i.e. has a door been left open, have odorous materials been stored outside a containment area, have adverse conditions, such as weather, overwhelmed containment structures?)
- Have treatment measures failed? (i.e. has a carbon scrubber become saturated, does the LEV system need servicing?)
- If the odour is associated with the treatment of hazardous materials, is there any possibility of health risk to the local community?

As noted in Section 5.2 above, the operator will carry out additional olfactory monitoring in accordance with the EA's guidance in H4, following any odour complaints from receptors. Records will be kept of any investigations that are carried out following an odour complaint. This will include details of any measures taken to rectify the issue where the complaint is substantiated.

In the event of a substantiated complaint, the applicant will inform the EA and provide a summary of the investigation and actions taken to address the source of the odour.

Sharpsmart recognises the need to identify and understand the needs of interested parties; this includes neighbours (e.g. householders) and neighbouring businesses within the business park. Engagement with these parties is encouraged and will be undertaken as required.

5.5 Odour Records

Records of olfactory monitoring are maintained in hard copy at the site. These records can be made available to the EA if requested.

This OMP is a live document and will be reviewed on a regular basis. Circumstances that would initiate an extraordinary review of the OMP includes a significant change to the treatment process or ancillary processes, introduction of any new control measures, introduction of a new odour source, a change to the site layout, or changes to the sensitive receptors.

This OMP forms part of the Environmental Management System and, in the same way as other procedures are, it will be reviewed on a regular basis in accordance with the EP and also updated as required following any odour incidents, substantiated odour complaints, changes to process, or to reflect changes in legislation or best practice. A copy of the OMP (and the rest of the EMS) is kept in the Sharpsmart Resource Library which is an online platform and is accessible (via login) at all times to Site Managers and Shift Supervisors. A hard copy will also be kept in the Site Manager's Office; it's location is communicated to all staff.

Annex OMP1

Olfactory Monitoring Checklist

Annex OMP1

Odour report form				Date	
Time of test					
Location of test e.g. street name etc					
Weather conditions (dry, rain, fog, snow etc):					
Temperature (very warm, warm, mild, cold, or degrees if known)					
Wind strength (none, light, steady, strong, gusting) Use Beaufort scale if known					
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					

Sketch a plan of where the tests were taken, the potential source(s).

Intensity		**Receptor sensitivity**
0 No odour	4 Strong odour	Low (e.g footpath, road)
1 Very faint odour	5 Very strong odour	Medium (e.g. industrial or commercial workplaces)
2 Faint odour	6 Extremely strong odour	High (e.g. housing, pub/hotel etc)
3 Distinct odour	Ref: German Standard VDI 3882, Part 14	

Annex OMP2

Odour Source Location Plan

Annex OMP2
OS1 to OS7: Odour Source Locations