PARLEY ODOUR MANAGEMENT PLAN

Environmental Permit No: EPR/GP3793FY

Parley Health, Safety & Environmental Management System

January 2025

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1.0 Introduction

Odour control for operations at Eco's Parley site is an integral part of the site's Environment Management System (EMS). It is stored within Eco's Document Management Ledger (DML) under the reference number **ECO-SM-01.**

This Odour Management Plan (OMP) will focus specifically on how the site intends on preventing or, where that is not practicable, minimising offsite odour throughout all its biological treatment processes.

It will detail specifically but not exclusively systems employed, technologies utilised, management and control processes and where appropriate third-party collaborations.

This plan will be reviewed annually by the HSQE Team as a minimum or following the implementation of any new management measures or a change to work practices at the site. All applicable staff are trained in the sections relevant to them during induction or via work briefings.

This plan is for Site Managers and the wider operations team.

This document has been created using guidance from the Environment Agency Odour Management Plan Template (V2 05/05/21).

2.0 Definition of Terms

2.1 Malodour

An odour that is deemed by an individual to be unpleasant and offensive in its nature*. Wastes of this type will not be accepted on site.

2.2 Odour

A volatile substance or mixture of volatile substances that are perceived through a person's sense of smell*

2.3 Non-conforming waste/materials

A waste that is contaminated with material that is unsuitable or inhibiting for the composting process or is deemed to have the potential to cause a nuisance level off site odour**.

2.4 Sensitive Receptor

Person(s) or businesses which are particularly susceptible to the potential effects of offsite odour.

** An industry guide for the prevention and control of odours at biowaste processing facilities, Jeremy Jacobs, Nick Sauer and E.Jane Gilbert, The Composting Association, 2007*

*** PAS 100:2005, Specification for composted materials, WRAP, The Composting Association, 2005*

3.0 Site Overview

Eco Sustainable Solutions Limited Parley site (Eco Parley), located at:

Eco Sustainable Solutions Limited,
Chapel Lane,
Parley,
Christchurch,
Dorset.
BH23 6BG.

This site is a waste management and recycling site which is permitted to accept street sweepings, food waste, soils, green waste and wood waste (see permitted EWC codes in our environmental permit). It is situated in an industrial area next to Bournemouth airport.

The site is also permitted to carry out the anaerobic digestion of food waste, subject to a number of pre-operational conditions. This version of the OMP supports a substantial permit variation application to change the limits f activity currently specified for AD, such that the AD plant can be operated.

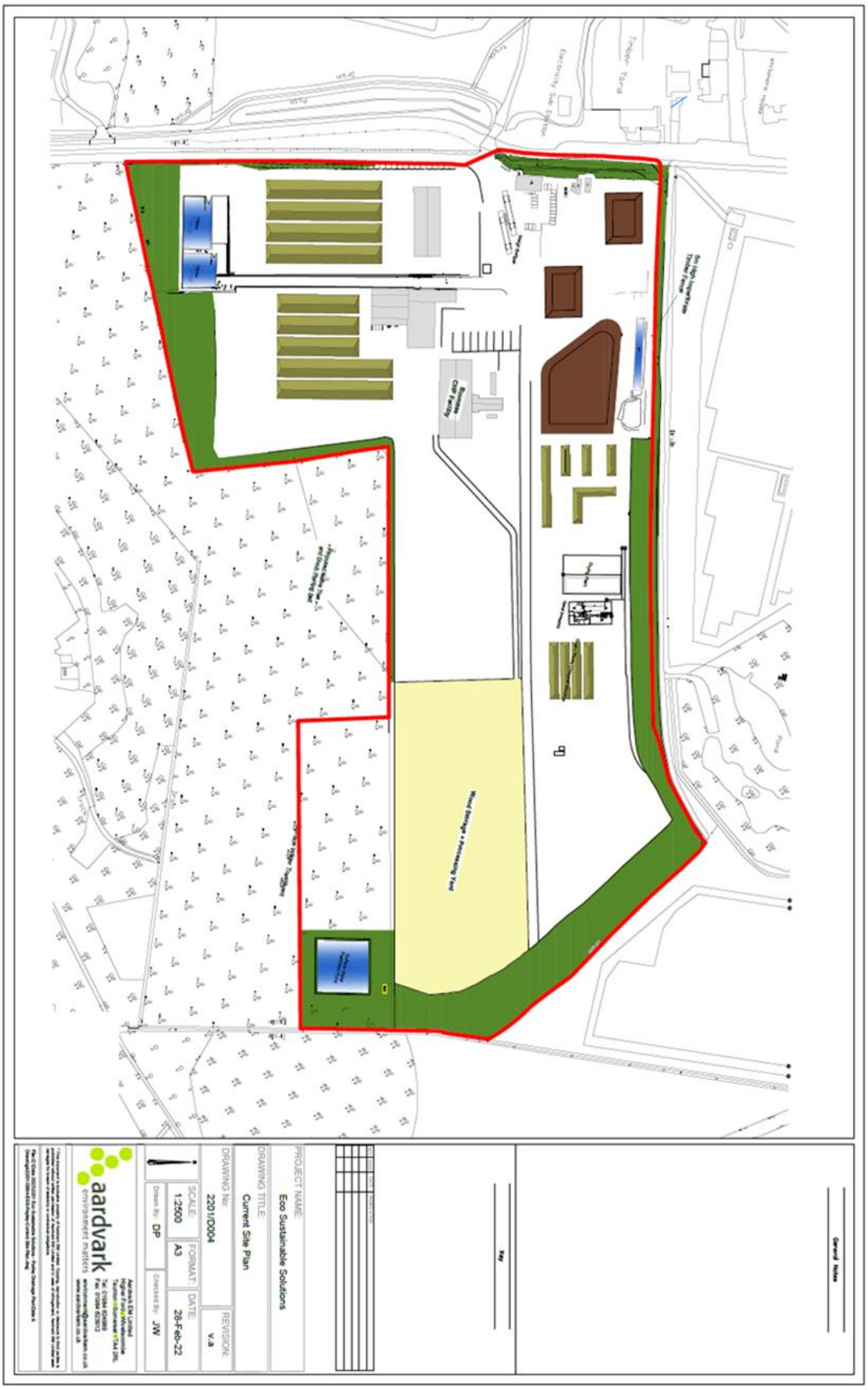
Site Opening Hours:
Mon to Fri: 07:00 - 17:00 (last tip 16:30) & Sat: 07:00 - 11:30

Tel: 01202 593601

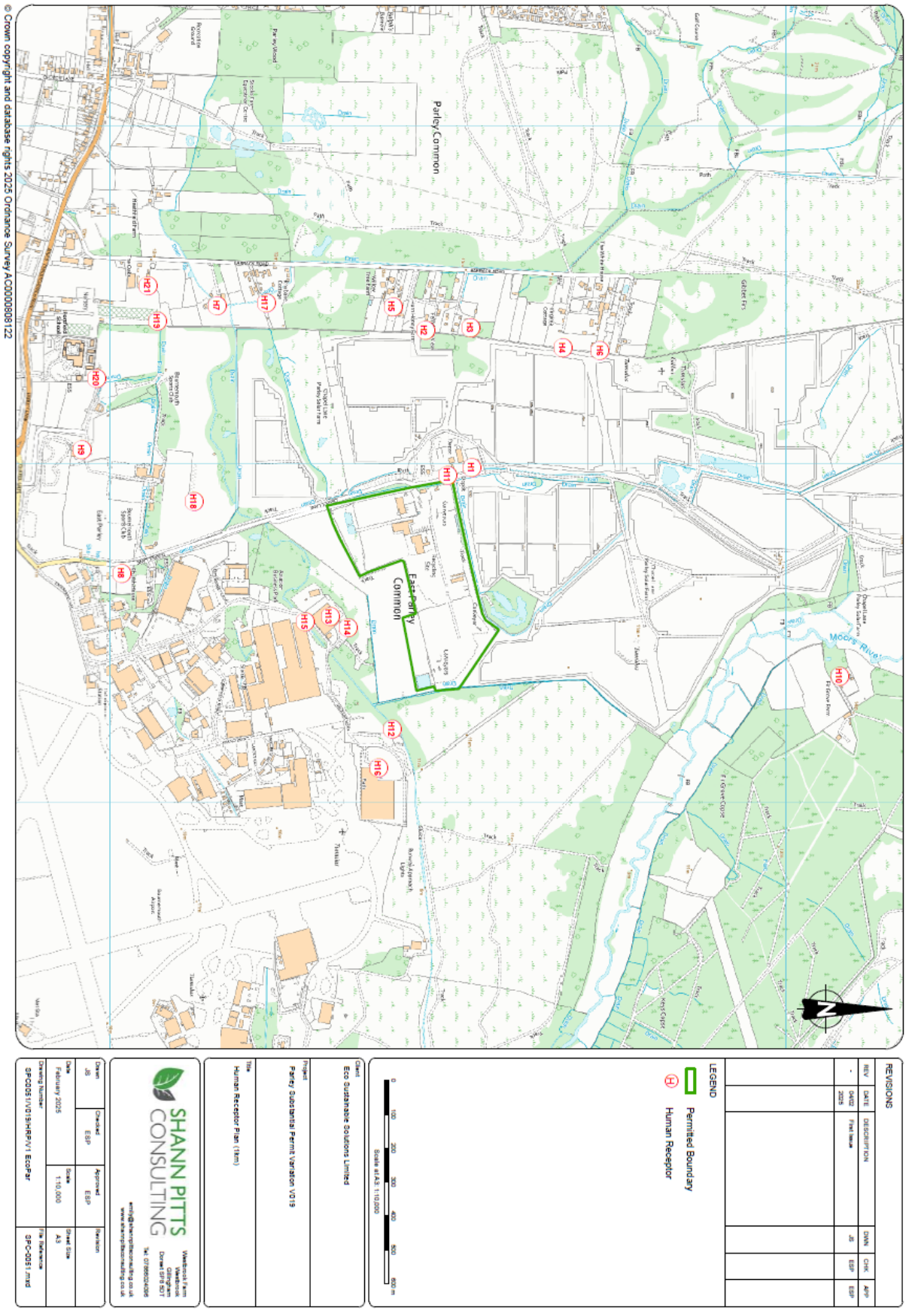
E: office@thisiseco.co.uk

Environmental Permit:
EPR/GP3793FY
Planning Application:
8/16/2910/DCC

3.1 Diagram 1 - Site Layout (Pre-AD Construction)



3.2 Diagram 2 - Receptor Locations



3.3 Receptor List

Table 1 Receptor list

Receptor ID	Receptor name	Type of receptor	Distance from site boundary (m)	Direction from site
H1	Fencing Centre	Workplace	10	West
H2	Whitemere House	Residential (owned by operator)	60	North
H3	Express Gases, Bournemouth Airport Aviation Park	Workplace	115	Southeast
H4	Mass Concrete Bournemouth Airport Aviation Park	Workplace	135	Southeast
H5	Lewis Vehicle Services Bournemouth Airport Aviation Park	Workplace	155	Southeast
H6	Bournemouth Airport Aviation Park - other	Workplaces	220	Southeast
H7	Bournemouth University & Bournemouth Rugby Sports Pitches	Amenity	410	South
H8	Properties including Willow Tree Farm & Hurn Honey Fram, Barrack Road	Residential	430	West
H9	Properties at north end of Barrack Road	Residential	505	Northwest
H10	Parley Wood Business Centre	Workplace	615	Northwest
H11	Barrack Road including Ash Lea, Rhubane Cottage	Residential	650	West
H12	Four Acres, Barrack Road	Residential	660	Southwest
H13	South Coast Karting	Amenity & Workplace	740	Southwest
H14	Golden Acres Nursery	Amenity & Workplace	750	Southwest
H15	Portfield School	Amenity, Workplace & Residential	790	Southwest
H16	The Oaks, Barrack Road	Residential	835	Southwest
H17	Fir Grove Farm	Residential	1,000	Northeast

4.0 Daily Odour Monitoring

Routine proactive monitoring as well as reactive odour monitoring is carried out at Parley. Monitoring is used to investigate potential sources, pathways, and destinations of odour dispersion as part of continued odour control over the site.

Monitoring can also identify specific causes of odour following reports or complaints. The investigation of potential causes and routine checks enable the appropriate measures to be applied to reduce or eliminate the effect on off-site receptors as promptly as possible when required. Measures might include the removal of odorous material from the site, reprocessing or re-blending materials.

Wind conditions will be monitored daily by the Site Manager or another appropriate member of staff and will be recorded in the Parley Site Daily Record Sheet (See appendix 5).

Where appropriate, offsite odour assessments will also be conducted to ensure that the site is fully aware of any potential nuisance and can react accordingly. The results along with any actions will also be recorded in the Parley Site Diary. If the potential for offsite odour is high, then more than one assessment may be required per day.

Odour reports are recorded and analysed on a monthly basis to track odour control performance at Parley and identify priority areas/activities for improvement.

4.1 Windrose and Weather Data

The site uses https://www.xcweather.co.uk/forecast/bh23_6b to assess current and forthcoming weather conditions daily. The site also uses https://www.wunderground.com/?cm_ven=cgi, which provides a historical weather record including wind speed and direction. This information will be used to correlate any complaints to potential sources on or around site, ensure that dust management is tailored to required control (so saving water resources) and tailor site activities during periods of high wind to minimise potential generation.

The wind rose represents five years' meteorological data, obtained for the period 2019-2023 for the area surrounding the Site location (Latitude 50.79°, Longitude -1.853°), from a Numerical Weather Prediction system known as the Global Forecast System (GFS).

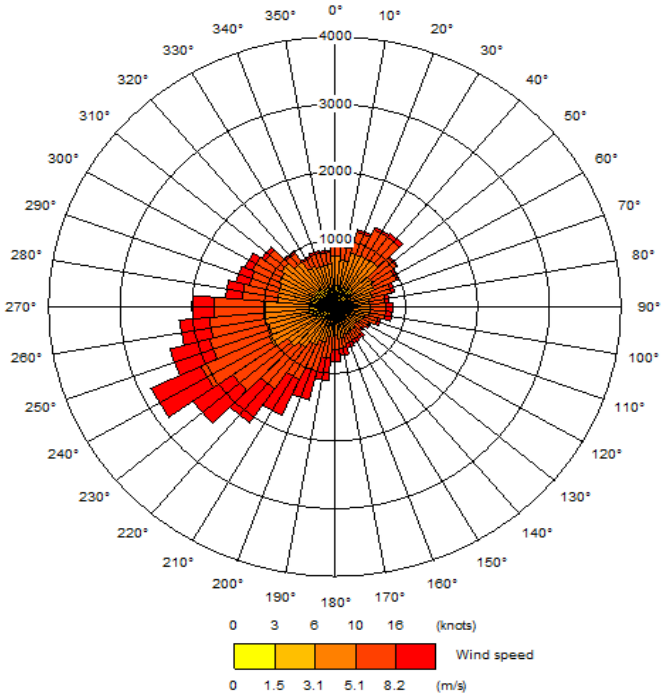
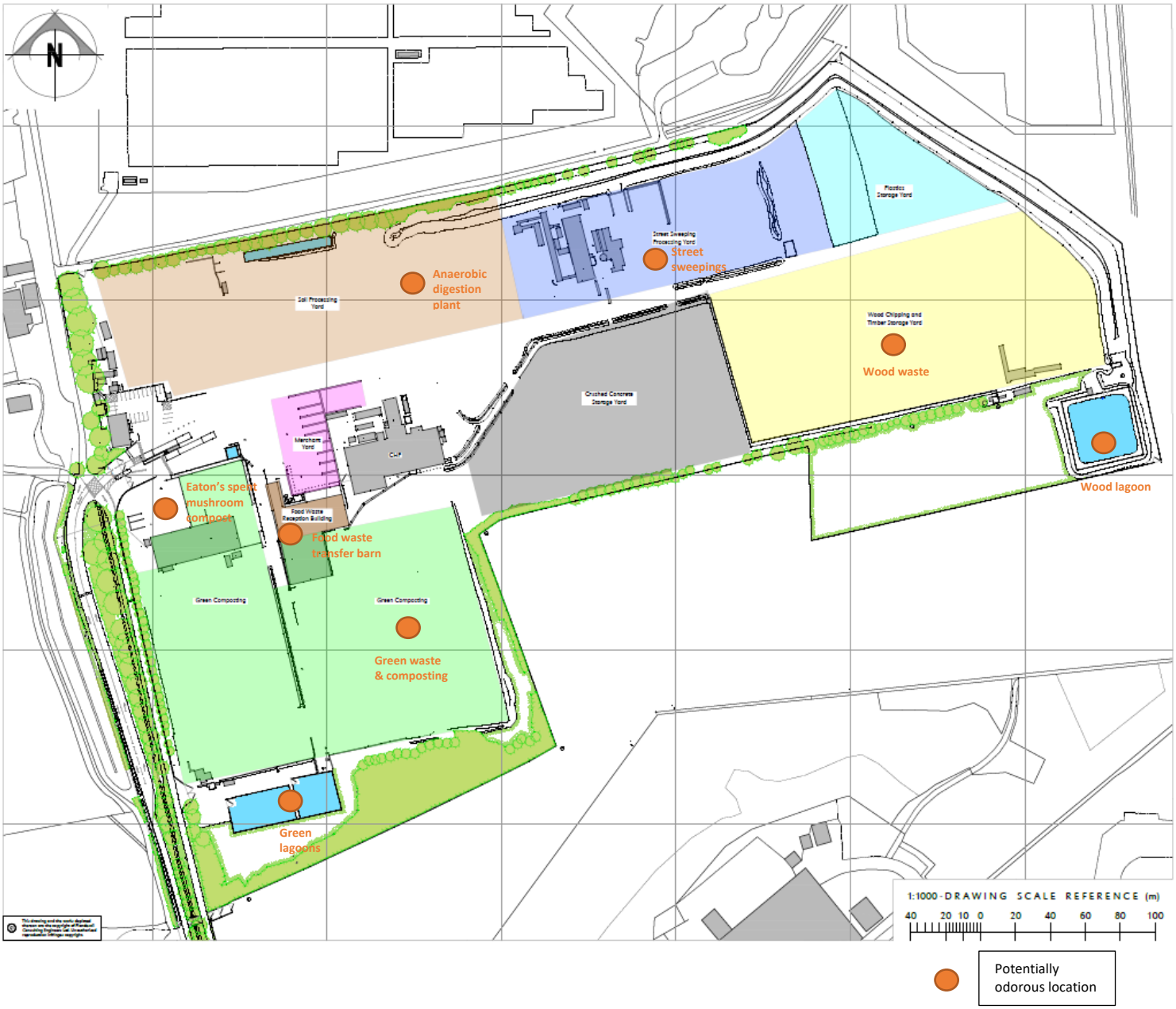


Figure 1 Wind rose, GFS meteorological data (50.79°, -1.853°), (2019 – 2023)

4.2 Diagram 3 – Potentially Odorous Locations



5.0 Potential Odour Sources and Management Measures at Parley

Please note that processes not detailed within this OMP are not operational at Eco Parley and have been omitted for the sake of clarity and brevity.

Table 2 Odorous materials

Odorous/ potentially odorous material	Odour potential risk	Max. quantity on site	Max. time held on site	Location of odorous materials on site	Additional comments
Food waste (transfer operation)	High	200 tonnes	1 week	Existing food barn	Stored within building with odour abatement plant.
Solid food waste (AD feedstock)	High	400 tonnes	48 hours	New waste reception building for AD plant	Stored within building with odour abatement plant.
Packaging waste from AD	Med	36 tonnes	1 week	Anaerobic digestion plant within feed barn	Stored within building with odour abatement plant.
Liquid waste	High	90 tonnes	48 hours	Anaerobic digestion plant covered liquid waste tanks	Sealed tanks
Green waste	Med	Approx. 500 tonnes	24 hours (72 over weekends and bank holidays)	Green waste area	No more than 1,200m^3 of green waste pending treatment and composting shall be stored at any one time.
Open windrow composting	High	1,200m^3 pending treatment, 25,000m^3 stored on maturation pad	12 Weeks	Green area	
Road sweepings	Med	N/A	N/A	Road sweepings area	
Wood waste	Low	7,000 tonnes	128 days Unprocessed N/A	Wood area	
Site lagoons	Low	2000M^3	N/A	Green, wood, street sweepings areas	
Spent mushroom compost	Med	20 tonnes	24 hours	Eatons	External management by Eatons

5.1 Anaerobic Digestion (AD) Plant

Eco's Parley site treats food waste through an Anaerobic Digestion (AD) plant. This plant includes:

- Crop feeding system (80m^3)
- Premix and Rotacut (for crop feeding system)
- Waste Reception Building with fast acting roller shutter doors and air handling system containing:
    - Waste hopper (up to 100 tonnes)
    - Waste storage bay (up to 300 tonnes)
    - Grit trap
    - Wackerbauer feed system
    - Mavitech washer

  - Runi screw press
  - Rejection storage bay (6m x 3m x 2m)
  - Sump for liquids (pumped back to process)
- Biofilter serving waste reception building
- 3. No Liquid waste storage tanks (30m^3 each)
- Macerator and screen pre-digesters
- Secondary containment system containing:
- 2 No. Pre-storage tanks (working capacity 469m^3 each)
- 2 No. Digesters (working capacity 5,039m^3 each)
- 1 No. Hybrid end storage tank (working capacity 5,039m^3)
- Screen pre-pasteurisation
- Pasteurisation system (3 No. 15m^3 tanks)
- Heat exchange system
- Biogas desulphurisation system
- Biogas chillers and condensate collection system
- Biogas upgrading unit
- Biomethane Network Entry Facility
- Pressure Reduction & Metering System
- Natural gas boiler (0.8MW)
- Combined heat and power engine (natural gas) (1MW)
- Back-up generator
- Emergency flare

5.1.1 Food Waste Transfer Station (FWTS)

Eco also treats food waste through an AD facility near Dorchester. Local food waste is accepted at Parley in the transfer barn before it is delivered to the AD facility.

The Transfer Barn is 20 x 45m and has a cubic capacity of c.6,800m^3.

It has a standalone drainage system with all residues being pumped directly to Palmersford SWT.

5.1.1 Waste Acceptance

Parley's food waste acceptance capacity is divided between food waste from local authority collection (Category 3); food waste from other sources such as commercial and industrial (Category 3 ABP); and liquid waste (Categories 3). This material is typically transported to the facility in 35 cubic yard containers, rear end loaders, food waste collection vehicles and tanker lorries.

All loads received at the Anaerobic Digestion Plant and Food Waste Transfer Station arrive in sealed vehicles as a requirement under ABPR. This also reduces the odour generation potential of incoming food waste.

In the AD plant reception barn, most material is deposited directly by tipper vehicle into reception pit/hopper. But, on occasion very dry material (>25% DS) is deposited into one of the holding bays for mixing with the food waste in the hopper as it is too dry to be fed directly into hammer mill.

Local Authority wastes are delivered to site under the auspices of the contract with the relevant Local Authority.

Please see appendix 3 for Parley Site Waste Acceptance Procedure (**ECO-OP-04**).

5.1.2 Storage & Transfer Procedures

All discharge, storage and reloading activities will take place within the sealed Reception Buildings, behind closed doors. There are two bays within the Transfer Station, as well as two bays and a reception pit/hopper in the AD reception barn, and these are filled and emptied alternately to ensure a first in first out policy when it comes to stock rotation. This rota also ensures that the bays are completely cleared and cleaned at least once a week.

Deliveries of food out of the Transfer Station will be undertaken daily and will broadly match the input volumes.

The tonnages of waste stored at any one time will be within the maximum tonnages stated in Table 2 above.

5.1.3 Abatement Measures and Monitoring Process

A daily site walk is conducted with sniff tests to check for odour at the site boundary and main potential odour sources (see diagram 3).

The reception barns are maintained as enclosed areas under negative pressure to prevent the fugitive emission of untreated odour.

A fast-opening automatic roller door is used to access the buildings. This is opened by a sensor that triggers when a vehicle approaches the door and closed automatically when the vehicle is inside.

Air ingress rates will be monitored and reported on by MCERT approved external engineer on an annual basis. Records will be retained by Eco and made available to the local Environment Agency officer.

The reception barns have active bio-filtration systems that consist of a pair of radial abstraction fans which draw air out of the barns, providing four air changes per hour. This action maintains negative pressure within these buildings, so ensuring any draughts are into the buildings, not out. Vents are used to ensure safe levels of oxygen are maintained.

Air abstracted from the buildings is fed through a pair of 900mm square ducts which then pass the air to 150mm diameter flexible drainage pipe that lies under the bed of the biofilter. The biofilter material comprises of 150mm gravel (to provide drainage) overlaid by 3m of shredded, seasoned wood chip. Residence times within the biofilter are approximately 30-40 seconds.

The biofilters are equipped with an automatic sprinkling system which is utilised during the summer months to ensure the surfaces are kept moist (see Photographic Plates section below).

The integrity and temperature of the biofilters is checked daily and recorded on the Housekeeping & Environmental Check Sheet.

To prevent degradation of the biofilter media, the media is tightly monitored and if required partially changed once a year. A full change is never carried out as this would destroy the bacterial colony within the filter media.

To ensure the biofilters are performing adequately odour sampling is conducted every 6 months by an MCERTS accredited sampling technician using techniques that comply with the British Standard for Olfactometry BSEN 13725: 2003. The results of which will be made available to the local EA officer.

5.1.4 Emergencies or Incidents

All incoming waste is either discharged, handled and bulked up behind closed doors in the Transfer building, or discharged, handled, bulked up, and processed behind closed doors in the AD reception barn.

All the incoming waste to the Transfer Station is solid in nature and so flowing spills are highly unlikely. It is surrounded by a 300mm cast concrete bund to ensure any spills do not flow outside the building.

The AD plant accepts liquid waste. Should any spillage of material occur due to a failure of transport (for example), then Eco will immediately clear the spill up, disinfecting the area as required. The liquid waste dispatch point is within the AD Reception Building and any spillages would be retained within the sealed drainage system.

The AD reception barn benefits from a sealed drainage system from which dirty water is collected, stored in the Buffer Tanks and reused in the process.

Should a spillage of material occur outside either reception barn (for example, due to a failure of transport), then Eco will immediately clear the spill up following the spillage procedure (ECO-OP-06), disinfecting the area as required. Disinfectant is held on site for this purpose and this course of action would be followed for any incident involving ABPR material.

5.2 Food Waste Processing in the AD Plant

It is planned for the site to be a registered producer of digestate under the Biofertiliser Certification Scheme.

It is planned that the plant will be approved and certified by the Animal & Plant Health Agency (APHA) for processing Category 3 Catering waste & Category 3 animal by-products.

5.2.1 Material Waste Acceptance

Maximum annual tonnage is 70,000 tpa.

Civic Amenity and Local Authority wastes are delivered to site under the auspices of the contract with the relevant Local Authority.

Please see Appendix 3 Parley Waste Acceptance Procedure (**ECO-OP-04**).

Each accepted load is assessed to identify the processing requirements and any potential problems.

Delivered waste is held in the loading pit, or if the pit is full, in the contingency storage bays in the reception barn.

5.2.2 Emergencies or Incidents

In the event of spills outside the Reception Barn area, Eco have sufficient plant on site to enable fast and efficient clean-up of the spilled material before a nuisance occurs.

Accidents and incidents that occur on site follow the procedure as outlined in the Accident & Incident Reporting and Investigation Procedure (**ECO-MP-19**). Any accidents and other incidents that occur on site, the known or suspected cause(s), and the actions taken are recorded in the accident report book. The need for preventive action shall be considered, and any such action taken shall be recorded on the above record.

5.3 Release of Biogas

There is 1550m^3 of biogas storage in each of the two digesters and the end storage tank, therefore providing a total of 4650m^3 of biogas storage. The theoretical maximum production is 1279m^3 per hour. Therefore, the gas storage capacity allows for approximately 3.6 hours of production. Feed rates are reduced ahead of longer periods of maintenance to reduce gas production. Biogas is not routinely flared to atmosphere. The flare is only used during periods of extended CHP maintenance and during abnormal operating conditions should the biogas storage become full.

The pressure and vacuum valves (PVRVs) can be adjusted at a max. overpressure of 4.5 mbar and a max. under pressure of 0.7 mbar. The flare starts at >100% gas pressure indication. The settings ensure that the flare ignites prior to any gas venting through the PVRVs.

The digesters and end storage tank have gas level indicators which sends a signal to SCADA which is then converted to a % level reading. A high gas level indication automatically triggers the start of the flare and if flare fails to start then SMS alert message is sent to the duty operator. Flaring is a more favourable environmental outcome than release of raw biogas through the PVRV. Venting is used only in extreme circumstances as a precautionary approach to prevent catastrophic pressure build up within the system. Both are minimised as much as possible by monitoring and efficient operation of the site.

Gas volume is monitored and regulated through process monitoring. The process is monitored and controlled by process management which include regulation of feed rates and monitoring of dry matter content and biochemical methane potential of feedstocks.

5.4 Green Waste Composting

The site operates a PAS100/Compost Quality Protocol accredited green waste composting system. The accreditation has been awarded by the Organic Farmers & Growers (certificate reference: **PR014-TCB**).

5.4.1 Material Waste Acceptance

The majority of input materials (c.70%) are from Local Authority collections of source-separated material.

Civic Amenity and Local Authority wastes are delivered to site under the auspices of the contract with the relevant Local Authority.

The remaining 30% of the input materials are received from local landscapers. Details of all of Eco's customers and waste deliveries are retained.

Please see Appendix 3 for Parley Waste Acceptance Procedure (**ECO-OP-04**).

No malodorous wastes will be accepted on site for processing.

Each accepted load is assessed to identify the processing requirements and any potential problems. For example, any moist or wet loads discharged are routinely blended upon discharge with other woody inputs or oversize material to reduce the possibility of anaerobic conditions developing and so causing and odour release. Bagged material which has the potential to be highly anaerobic and odorous is identified during the sorting process. The bags are then split, and the material mixed with amendment material (woodchip for example) to ensure that the optimum structure for oxygen flow is attained, and odour mitigated. Some input materials are stored for blending with other incoming wastes, although this storage is only for a short time to comply with Permit requirements.

Delivered waste is held in one of two green waste reception areas before being processed. The reception area for Pad A is 60m by 20m, up to 4m high. This is the original reception area. The reception area for Pad B is 30m by 20m, up to 4m high and is situated east of the original reception area. Both are located at the southernmost ends of each respective compost pad.

Waste accepted and stored for composting shall not be stockpiled in a quantity that exceeds 1,200m^3 as outlined in Eco's Environmental Permit. The maximum quantity equates to a tonnage of approximately 500 tonnes at 400kg/m^3.

5.4.2 Green Waste Processing

Eco's green waste processing plant is capable of processing 800 tonnes per day, so this permitted stockpile is therefore of a manageable size. The maximum storage duration for input materials prior to shredding should not exceed 24 hours during normal operations, with up to 72 hours allowed over weekends or bank holidays.

This storage duration may be exceeded in the unlikely event of mechanical failure or severe weather conditions. However, if this is the case, the site does have available two other shredders and several loading shovels to cover for downtime or catch-up shortfall in shredding.

These shovels can also service the reception areas, if need be, blending material as required. In the unlikely event that the waste is to be stored for longer than 72 hours, then the material will be mixed at least once daily by loading shovel and the local EA officer will be notified.

Eco use a Jenz BA 725 electric shredding unit and Komptech Multistar Screen. This setup offers an extremely flexible approach to creating the best C:N ratio and porosity to optimise the composting process. See photographic plate section (Photographic Plate of Green Waste processing plant)

The Jenz shredder has several variables which can be modified to suit the input material such as the size of the rear gate, the number of hammers and the speed at which the rotor is driven which all have a bearing on the output material. The electrically driven Jenz is also very efficient and requires less maintenance than a diesel driven unit. This means its downtime is less and processing rate is better.

The Komptech Star Screen allows the operator to determine the porosity of the product. By speeding up or slowing down the stars the operator can increase or decrease the amount of woody material which goes into each batch. This is extremely important as the makeup of the windrow can have a significant effect on its performance. For example, too much course material will increase the available oxygen but may have a negative effect on the temperature of the windrow and its ability to hold moisture. The operator will construct each windrow/batch with this in mind.

During periods of peak demand, typically through spring/summer, two wheeled loading shovels and operators will be utilised to ensure throughput is maintained and prevent accumulation of unprocessed material.

Should, for any reason, it become impossible to treat the waste before the material becomes odorous, it will be removed from site.

5.4.3 Batch Formation, Turning & Process Monitoring

Each batch/windrow is 12m wide and 4m in height and typically contains c.900tonnes of processed material. Once the batch is complete it is given a unique identification barcode and monitored using Compost Manager.

Compost Manager allows the operator to probe the material daily (in ten separate locations per windrow) and measures the levels of Oxygen, Carbon Dioxide, Moisture and Temperature within the windrow and how these parameters are working together. The system then informs the operator of how best to treat the batch, for example, whether to turn, irrigate or leave alone to ensure optimum conditions are maintained in the windrow.

The regime of monitoring required by the Compost Manager system also ensures that the operator undertakes a visual inspection of each windrow regularly.

If turning is required, the site operates a Volvo EC 250 EL excavator which uses a rake to ensure the compost is blended well and that the outside particulates are moved into the core zone. Where practicably possible the site will turn when the wind is from a favourable direction (i.e., not Northwest or directly East) however not turning the compost for long periods can increase the potential of odour so a common-sense approach will be required in order to minimise the risk.

If a batch is not performing to meet PAS 100/QP requirements, for example not reaching the stabilisation requirements of 65^{o}C for 7 days then the batch will need to be reformed and the conditions improved.

5.4.4 Product Preparation

Once the green waste has met PAS100/QP requirements, it is screened through one of two screening plants. The Komptech Multistar screen, which is located in a preparation barn to the north of the windrows, is typically used, however, due to the proximity of some windrows (the furthest windrows are over 200m away from the screen) a secondary mobile screening plant may sometimes be utilised to reduce the distance required to travel by the wheeled loading shovels. This secondary screen will not be utilised if the wind is blowing from a Northwest direction toward the nearest sensitive receptor on the Aviation Park West. As this screen is only sporadically used, all material will be cleared from the mobile screen and its bays at the end of the day to prevent further degradation and odour.

During periods of peak demand, typically through spring/summer, two wheeled loading shovels and operators will be utilised to ensure material is being screened at a comparable or increased rate to the input/shredding rate. By having two dedicated wheeled loading shovels along with the option to operate 2 screening plants, the screen capacity of (c.700t/day) far exceeds the site's requirements.

Once screened, the compost is held in a sales area prior to despatch from the composting site as one of the products the site sells or uses to manufacture recycled soils. The stock level is maintained within this yard to minimise environmental (odour) impact. When excess stocks occur, the products are sent out as an agricultural soil conditioner in bulk or used as a blend in increased soil manufacture. This increased removal will reduce the volume and residence time within the storage area.

5.4.5 Evaporation

Some evaporation naturally occurs from maturing compost during the normal process of the degradation of plant material. This is managed through the active monitoring, control and turning of the current windrow system used on Parley site.

5.4.6 Emergencies or Incidents

The green waste composting process takes place upon a sealed concrete surface. All runoff is directed to aerated lagoons.

In the event of spills outside the main composting area, Eco have sufficient plant on site to enable fast and efficient clean-up of the spilled material before a nuisance occurs.

Due to the nature of the material composting and how CompostManager monitors and controls the processing of the compost, the compost does not become anaerobic, and any potentially odorous material is dealt with in a controlled and rapid manner.

The Eco Parley Emergency Preparedness Plan (**ECO-EP-02**) also contains Contingency Plans to cover responses to major issues that may occur on site (Section 19).

5.5 Road Sweepings Plant

5.5.1 Road Sweeping Processing

Eco operate a road sweepings plant to enable 42,000 tonnes per annum of road sweepings waste derived from local authority street sweepings to be treated and recycled on site. The plant will operate by separating the organic element (mainly leaves) from the grit, stones and sediments through a washing, screening and centrifugal system.

No odour is generated by the plant as it is a closed loop system using only water and flocculants that are continually recycled through the plant and no putrescible or readily degradable wastes will be processed through the plant.

Strict waste acceptance procedures will be adhered to, to ensure only permitted wastes are accepted and processed through the plant.

Please see Appendix 3 for Parley Waste Acceptance Procedure (**ECO-OP-04**).

The cleaned stones and aggregates are sold as a cleaned recycled product, with the residual sediment landfilled. However, the organic element (approximately 10,000 tonnes per annum) once cleaned and screened through the process will be composted in active open windrows to produce a Compost Like Output (CLO).

CLO cannot be produced to PAS100 due to the input parameters not meeting the quality standard, and the product is therefore prohibited from being composted within a green composting system and spread to agricultural land. The product can only be sold as an infill to land regeneration and capping within brown field sites. The CLO product at Eco is therefore kept fully separated and processed as a unique product within separate windrows located close to the road sweepings plant.

Although the CLO product will not meet PAS100 quality, the windrows will be managed using the exact technique as the green composting described in section 5.2 of this Odour Management Plan to ensure the mitigation of any odours associated with the process. This is achieved through the utilisation of the full CompostManager system.

5.5.2 Storage arrangements

All solid road sweepings waste on arrival on site will be stored within the discharge bay within the waste reception area.

Recycled aggregates produced by the plant will be stored in bays within a proximity to the plant.

The organic fraction will be stored within windrows and managed as outlined earlier. Prior to dispatch the material is prepared through a screening plant (to remove contamination and oversize material) before being transferred to a storage bunker to be loaded off site as per the process adopted by the certified PAS:100 system.

Eco have an existing long term disposal route for the CLO compost, as this type of waste has been historically produced on site. The CLO will continue to be transferred off site by a suitably licensed contractor to be utilised in landfill land quarry restorations.

5.5.3 Emergencies or Incidents

The Road Sweeping Plant area benefits from impermeable concrete surfacing with an engineered sealed drainage system. In the interim, all runoff is directed to a temporary standalone lagoon.

In the event of spills outside the main composting area, Eco have sufficient plant on site to enable fast and efficient clean-up of the spilled material before a nuisance occurs.

5.6 Waste Wood Recycling Yard

5.6.1 Waste Acceptance

The wood yard deals with wood waste, either clean or secondary grade, of very low odour risk.

The waste will be accepted in accordance with Eco's Waste Acceptance Criteria (**ECO-OP-04**).

Eco will not accept any odorous wastes or wood contaminated with odorous wastes for processing here.

5.6.2 Waste Processing

Should odorous wastes be encountered during discharge, sorting or processing, it will be loaded into a segregated covered skip and removed from site to a suitably permitted disposal facility at the earliest opportunity.

The processing will entail separating, sorting, shredding and screening the wood and biomass waste to give a variety of fuel grades.

The waste wood is processed to make a fuel for biomass CHP plants within the UK and on site at Eco Parley.

5.6.3 Emergencies or Incidents

The wood yard does not deal with liquid or odorous wastes unless discovered as non-conforming material within discharged loads, in which case the contravening material will either be segregated and then removed, or the whole load reloaded and sent off site.

In the event of spills outside these processing areas, Eco have sufficient plant on site to enable fast and efficient clean-up of the spilled material before a nuisance occurs.

5.7 Soils Recycling Yard

5.7.1 Waste Acceptance

This unit deals with as dug soils for screening and recycling.

The waste will be accepted in accordance with Parley Waste Acceptance Procedure (**ECO-OP-04**).

Eco will not accept any odorous wastes or waste contaminated with odorous or deleterious wastes for processing within this unit.

5.7.2 Waste Processing

Should odorous wastes be encountered during discharge, sorting or processing of the incoming waste, it will be loaded into a segregated covered skip and removed from site to a suitably permitted disposal facility at the earliest opportunity.

The processing for the soil will entail discharge, stockpiling, checking, blending and screening the incoming as dug soils waste to give a variety of recycled soil grades.

Some of the screened aggregates are also washed to give aggregates suitable for drainage or pipe bedding use.

5.7.3 Emergencies or Incidents

These processes taking place on site do not deal with liquid or odorous wastes unless discovered during the process, in which case they will be removed for disposal elsewhere.

In the event of spills outside these processing areas, Eco have sufficient plant on site to enable fast and efficient clean-up of the spilled material before a nuisance occurs.

5.8 Site Lagoons

The surface water run-off and leachate from the green waste composting area and sales area of the site is collected by surface channels and directed to a lagoon system located at the southern end of the site.

This system is fed by two inflow drainage channels flowing into two concrete-lined lagoons; Lagoon 1 is 24m x 24m and Lagoon 2 is 20m x 37m, both having a depth of 1.5m. In front of each lagoon is a removable screen which prevents a large number of solids from entering the lagoon therefore increasing the biological oxygen demand (BOD).

When necessary, water from the lagoons can be pumped directly to Palmersford STW via a settlement tank and filtration bag to reduce COD and Suspended Solids, through the purpose-built pumping mains.

Eco operate 4no. float mounted spiral aerators, with 2 in each lagoon. These aerators (two no. 3kW units in the smaller lagoon and two no.2.2kW units in the larger lagoon) provide 400m^3/hr of air to each lagoon (see photographic plate of Lagoon Aeration Pumps).

Spiral Aerators are ideally suited to lagoon installations with their high mixing capacity and efficient oxygen transfer. They create a strong horizontal flow pattern ensuring uniform oxygenation of the main water column over the whole lagoon, to maintain aerobic conditions and prevent the release of odours. Spiral Aerators also do not cause surface splashing or spray with associated bio-aerosol issues.

To the south of the wood processing area is a lagoon which can hold c.1,000m^3 of water. The lagoon is used to capture surface water run-off from the processing area. Surface water runs to a gulley and then into a capture tank from where the water is pumped into the lagoon. The surface water run-off from this area will be relatively clean and so is used for dust suppression duties. The lagoon uses a circulation pump when being run for dust suppression to ensure continuous mixing and stop stagnation.

5.8.1 Lagoon Monitoring & Cleaning

Ensuring that the lagoons do not cause odour issues is by keeping them aerobic. Typically, a lagoon is considered to be aerobic if the DO (dissolved oxygen) level recorded within it is excess of 0.5mg/L.

Monitoring for DO is undertaken daily (green waste and sweepings lagoons) and weekly (wood yard lagoon) by the **Site Manager** using hand-held monitoring equipment and the results recorded in the Parley Site Diary. If the DO falls below 0.5mg/L, then the site will increase the frequency of the aeration which is managed on a timer system.

If required temporary additional aerators are available to hire within 24hrs. Each aerator is individually powered so if one fails others can remain in operation.

Once a year (more if necessary) the aerators will be removed, and the lagoons will be cleaned out using a wheeled loading shovel. In-flow drainage channels are maintained daily and recorded as part of the Housekeeping & Environmental Check Sheet (Appendix 4).

5.9 Spent Mushroom Compost

Spent mushroom compost (SMC) is bagged by a third party on the Parley site. The bagging of SMC can lead to the generation of odours if material, which has been undisturbed for a period, is moved and agitated. SMC material received to the bagging area is bagged within 24 hours of arrival to ensure that material is not stored in an undisturbed state for excessive periods of time, which may result in anaerobic conditions and odour generation. If the SMC is left overnight before being bagged, then it will be sheeted down.

Volatile sulphur compounds and other volatiles (including creosols) can exist in the air space above stored SMC which can be particularly odorous also.

6 Control Measures and Process Monitoring

Table 3 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
Food waste storage in food reception barn	First In First Out (FIFO) / alternate bays, automatic speed door, biofilter	FIFO: Ongoing throughout shift; Air ingress: annual; biofilter: daily and bi-annually.	Visual inspection to ensure the bay with the oldest material is emptied first and the second bay isn't allowed to fill completely. Air ingress rates monitored and reported on by MCERT approved external engineer on an annual basis. Integrity and temperature of the biofilter checked daily and recorded on the Housekeeping & Environmental Check Sheet.	Bay 1 full and not being emptied, Bay 2 more than half full.	If reception storage is reaching capacity, waste deliveries will be ceased until process is back under control.
Food waste storage and processing in AD reception barn	First In First Out (FIFO) / fast-opening automatic speed door, biofilter	As above	Oldest or most odorous waste is treated first where possible. Air ingress rates monitored and reported on by MCERT approved external engineer on an annual basis. Integrity and temperature of the biofilter checked daily and recorded on the Housekeeping & Environmental Check Sheet.	Maximum storage volume of waste approaching. Loss of biofilter integrity.	If reception storage is reaching capacity, waste deliveries will be ceased until process is back under control. If there any issues with the integrity of the biofilter then repairs are carried out on the same working day.
Green waste	Minimise residence times. Turning when wind is going in a favourable direction (i.e., not Northwest or directly East). Waste characterisation and (pre-) acceptance procedures in place. Orienting windrows so the smallest area of composting mass is exposed to prevailing wind.	Daily	Sniffing methods. Wind direction checked daily and recorded on the Parley Site Diary. However not turning the compost for long periods can increase the potential of odour so a common-sense approach will be required in order to minimise the risk.	Winds exceeding 32mph (28 knots)	Small amounts of dust will be dealt with by either damping down the area, operation or material that is causing the dust. Large amounts of visible dust will result in the operation being ceased until effective dust suppression measures can be installed and/or, the operation is changed, or feed stock damped sufficiently to stop dust generation. The operation will only be restarted when the dust can be successfully managed.
Lagoons	Aerators and pumps within lagoons to prevent stagnation.	Monitoring for DO is undertaken daily (green waste and sweepings lagoons) and weekly	Monitoring by the Site Manager or Site Supervisor using hand-held monitoring equipment and the results recorded in the Parley Site Diary.	If DO falls below 0.5mg/L, then the site will increase the frequency of the aeration which is	Temporary additional aerators are available to hire within 24hrs.

		(wood yard lagoon).		managed on a timer system.	
SMC	Minimise residence times; material is bagged within 24 hours of arrival to ensure that material is not stored in an undisturbed state for excessive periods of time.	Ongoing throughout shift.	Sniffing methods.	Excessive odour, particularly during easterly/south-easterly wind.	

7 Response to Odour Protocol

The following outlines the response to incidents such as odour complaints:

Any complaint or concern expressed by interested parties, including operatives, customers, clients and regulatory authorities about quality or usability of materials, shall be recorded on in the complaints tab of the 'Compliance KPIs Proactive & Reactive' spreadsheet with a subsequent decision made as to necessary actions in response to the matter.

Such record shall include:

- name of the person who expressed concern or made a complaint
- specific subject(s) of the concern or complaint
- the site activities at the time of the complaint
- whether the site diary has been checked
- whether the complaint has been substantiated
- follow up action.

On receipt of any complaints, the **HSQE Manager** will take steps to identify, locate, preserve, and recover evidence. If the waste under investigation is dispatched to a customer and subsequently returned to the site, it will be quarantined and not re-processed.

8 Abnormal Events

We apply the following process when presented with an abnormal event:

a. observation and assessment
b. determine risk to site ops or personnel
c. take associated plant offline and isolate if required
d. communicate with other team members and management
e. implement corrective actions and bring associated plant back online

Table 4 Abnormal events

Abnormal event	Recovery steps
Equipment Breakdown	Critical infrastructure analysis has been carried out and we hold a stock of critical parts. We also have a contract in place for breakdown required within 24 hours. Waste will be diverted to an alternative location until repaired.
Strong winds	Cease un-enclosed shredding or screening of light material, loading of any light products on site, turning of compost windrows (based on a common-sense approach) until wind dies down to below 32mph (28 knots).

9 Site General

Site Housekeeping is a basic yet fundamental aspect of Odour and Site Management.

The Parley Site Daily Record Sheet (Appendix 5) keeps a record of all daily maintenance checks which are undertaken by a dedicated team member.

All drainage gullies feeding the lagoons are inspected and cleaned daily, to prevent the potential over-flow of surface water or leachate and the pooling of liquids on-site, which may give rise to odour.

The **Site Manager**, the **Assistant Site Manager** or a **Team Leader** will inspect the site and sign off the Housekeeping & Environmental Sheet on a weekly basis to ensure that the necessary checks have been undertaken, and standards are sustained.

10 Stakeholder engagement

Eco seeks to engage with neighbours and to always maintain a positive relationship with residents and businesses in the surrounding area. The company understands that not all local stakeholders are willing to engage but a proactive and open-door policy has always been adopted.

Given the ongoing changes and developments to onsite operations Eco have endeavoured to communicate formally with local stakeholders (though informal face to face meetings often occur much more regularly). This is something the site is keen to continue through the medium of stakeholder liaison meetings as well as through email and letter correspondence.

Eco also hold regular open days and invite all local stakeholders.

It is important that the surrounding community is engaged and made aware of the operations at Eco and the measures in place to manage odour.

11 Photographic Plates

Plate 1 Photographic Plate of Biofilter

Plate 2 Photographic Plate of Excavator EC 250

Plate 4 Photographic Plate of Lagoon Aeration Pumps

12 Appendices

Note:

To avoid multiple uncontrolled electronic copies of documents circulating, appendices will only be included within this document in hard copy.

A list of appended documents is below:

Appendix 1: Environmental Permit

Appendix 2: Planning Permission

Appendix 3: Parley Waste Acceptance Procedure (ECO-OP-04)

Appendix 4: Housekeeping & Environmental Check Sheet

Appendix 5: Parley Site Daily Record Sheet