Caulmert Limited

Engineering, Environmental & Planning Consultancy Services

Knottingley Waste to Resource Facility

FCC Recycling (UK) Limited

Environmental Permit Variation Application

Odour Management Plan

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Odour Management Plan

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1.1 Overview

1.1.1 FCC Recycling (UK) Limited (a wholly owned subsidiary of FCC Environment (UK) Limited) have appointed Caulmert Limited to prepare a bespoke environmental permit variation application to vary the existing permit (ref. EPR/JP3547JL) to allow several additional activities at Knottingley Waste to Resource Facility (hereafter referred to as 'the Site'). This Odour Management Plan (OMP) forms part of this permit variation application.

1.1.2 The purpose of this variation is to conduct a comprehensive revaluation and optimisation of the Site's operational activities, primarily to refine existing processes while introducing activities to enhance waste management and treatment on site. See Section 1.4 below for more details of the proposed activities.

1.1.3 Odour emissions from the proposed activities will be controlled using a number of odour abatement techniques and as such are not anticipated to cause pollution/nuisance beyond the site boundary.

1.2 Site Location

1.2.1 The Site is located in Knottingley, West Yorkshire. It is centred on National Grid Reference SE 51279 23861 and postcode WF11 8DZ. The main site entrance is accessed from Weeland Road on the southern boundary. The site location is shown in **Figure 1** below.

1.2.2 The site is within a semi-rural and residential location. The residential areas of Knottingley are primarily situated southwest of the site. The closest residential areas to the site are along Weeland Road, The Croft, Springfields Avenue, and Broomhill Avenue. Fernley Green Industrial Estate encompasses the area immediately west of the site boundary and extends northwest. Willow Garth Nature Reserve extends immediately northeast. Approximately 1 km of open countryside abuts the northern and southern boundaries of the site. To the north, the site is bordered by the Bank Dole Cut and Lock, a section of the Aire and Calder Navigation canal, as well as the River Aire. To the south, it is adjacent to the A645 road

Figure 1: Site Location Plan (permit boundary in red) (map from: Google Earth 2025)

1.3 Maintenance and Review of the OMP

1.3.1 This Odour Management Plan (OMP) provides a means of assessing the effectiveness of odour control measures at the site. The proposed Odour Action Plan should be implemented in case of failure of control measures and odour emission events. This document also reviews the current procedures for investigating odour emission events and includes reference information on the understanding of odour nuisance.

1.3.2 The operator intends to use this OMP during the facility's expected operational life. The Plan will be reviewed on a regular basis and when a new element of site infrastructure is introduced (as is the case with this most recent permit variation), or if there is a change in tonnages or new waste types accepted at the site.

1.4 Relevant Sector Guidance

1.4.1 This OMP has been prepared with reference to the Environment Agency's technical guidance 'H4 Odour Management – How to comply with your environmental permit[1]' published April 2011, and to the 'Best available techniques for the assessment and control of odour[2]' published June 2005. It forms part of the operating techniques for the proposed activities.

[1] https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management
[2] https://assets.publishing.service.gov.uk/media/5a7c35dae5274a1f5cc7687f/sp4-079-ts-1-e-e.pdf

1.4.2 In addition, an Environmental Risk Assessment report has been produced which considers any potential risks (including odour) associated with the proposed new activities, under document ref. 5827-CAU-XX-XX-RP-V-0302.

1.5 Existing and Proposed Site Operations

1.5.1 The current permitted activities at the site include the bulk handling and transfer of both hazardous and non-hazardous waste, distillation-based solvent recovery, biological treatment of associated aqueous effluents, the creation of Secondary Liquid Fuel (involving the utilisation of heat and steam from boilers), as well as the storage and management of waste materials and raw substances. Furthermore, the site conducts surface water and process water treatment through a biological treatment plant.

1.5.2 It is proposed to remove the distillation of solvents activities and the activity/waste list for Tank S13 from the permit, but to retain two of the previously three permitted boilers using gas and Secondary Liquid Fuels (SLF) as fuel. Currently, the two remaining boilers (boilers numbered 4 and 5) and associated storage tanks are mothballed, however the Operator would be using the boiler installation to provide steam to the proposed dryer, the ammonia recovery unit and the metals recovery facility as directly associated activities (DAA).

1.5.3 The following activities are also being proposed to be retained in the existing permit but requires amending as follows:

- **Waste Transfer Station -** the storage and transfer of hazardous and non-hazardous wastes, including where appropriate repackaging, size reduction and decanting. To amend the waste list in the permit to add additional waste codes for storage and transfer and to allow these activities to take place on the site as a whole.
- **Associated raw materials/reagents will be stored** and used on site.

- **Discharge of treated effluents** (i.e., site surface water and process water in the aerobic treatment plant) **to sewer** is already permitted but needs updating to reflect the changes that pertains the existing biological treatment activity which is mothballed and will not recommence. However, the Operator has repurposed the infrastructure as a **surface water collection tank,** and no waste treatment activities takes place.

- **The use of existing gas or liquid-fuelled boilers** which is to be reduced to two (i.e., Boiler 4 with rated thermal input of 6.6MWth and Boiler 5 with rated thermal input of 9.0MWth) with tag numbers B01-ZP-01 and B01-ZP-02 and their corresponding boiler stack emission points - EP08 and EP12 (currently A12 and A13 on the existing permit ref. EPR/JP3547JL) within the Boiler Complex, indicated on the Sampling and Emissions Point Plan (ref. 5827-CAU-XX-XX-DR-V-1805) will be retained to provide steam to the proposed dryer, the ammonia recovery unit and the metals recovery facility as directly associated activities (DAA).

1.5.4 It is proposed to undertake the following new activities on site:

- **Refuse Derived Fuel (RDF) Preparation** - processing of non-hazardous industrial wastes into RDF fuel for Energy from Waste (EfW) facilities inc. shredding and storage.
- **Packaged Waste Processing –** including sorting, washing, shredding, drum crushing and storing of drums.
- **Leachate and Aqueous Wastes Treatment -** the physico-chemical and biological treatment of landfill leachate and similar aqueous wastes in a biological treatment plant and two reverse osmosis plants, with treated effluent discharged to sewer or surface water as appropriate, which will include stripping of ammonia from wastes and the recovery of ammonia as an aqueous solution.
- **Physical and physico-chemical Treatment of Aqueous & Inorganic Wastes, Solids and Sludge -** the physico-chemical treatment of solid and liquid wastes so as to facilitate recovery or disposal, the drying of solid and sludge wastes so as to facilitate recovery or disposal; including mixing, blending, separating, washing, filtering, precipitating out, filter pressing, drying, storing. **Also, inspection, storage, and processing (e.g., dismantling and sorting, separation, bulking or shredding)** of hazardous and non-hazardous materials for recovery.
- **Metals and Inorganic Salts Recovery** – pH adjustment, precipitation reactions, separation of precipitated solids and storage for recovery of the precipitated solids; with the remaining liquid effluent either being treated on site or being removed for treatment at a suitable facility.
- **Temporary Storage of Hazardous and Non-Hazardous containerised/palletised wastes.**
- **Discharge of treated effluent to surface water** (river) from leachate and aqueous wastes treatment.
- **Discharge of uncontaminated site surface water run-off to surface water** (river).

1.6 Operational Hours

1.6.1 The Site will be operational 24/7 for 365 days of the year. The gates will be closed and locked outside of operational hours, with no unauthorised access out of hours.

2.0 RECEPTORS & PATHWAYS

2.1 Local Sensitive Receptors

2.1.1 A sensitive receptor search was conducted of the surrounding area within a 1km radius of the site boundary using Defra's Magic Maps website[3] and the sensitive receptors identified are listed below in **Table 1** and also shown on the Sensitive Receptor Plan drawing (ref. 5827-CAU-XX-XX-DR-V-1800). The approximate distance to each receptor is measured from the site boundary.

2.1.2 The closest human receptors to the site are users of the River Aire walking trail, users of the Aire and Calder Navigation Canal and Lock, users of Weeland Road, and users of Stocking Lane. These receptors are all located less than 10m north of the site boundary, with the exception of the A645, Weeland Road, which abuts the southern boundary of the site, and provides access to the site. In addition, the Aire and Calder navigation walk commences 90m south of the site boundary. There are no hospitals located within 1km of the site, however De Lacey High School and Little Acorns Nursery are both located over 900m southwest of the site.

2.1.3 The nearest residential receptors to the site are houses in the residential area of 148 Weeland Road, located 290m SE of the site and Low Green, situated 384m west of the site. The majority of the area located west of the site within the 1km radius is residential. These areas include Fernley Green Close (481m WNW), Springfields Avenue (485m WSW), Marsh End (501m WNW), Broomhill (559m SW), Lamb Inn Road (581m W), and The Croft (873m WNW). Knottingley cemetery is located 822m southwest of the site boundary, and Knottingley RUFC is located 453m west-northwest of the site boundary.

2.1.4 Fernley Green Industrial Estate is located 187m west of the site, comprised of business including Delta MOT and Service Centre Ltd, Beepers Ltd, Allied Glass Group Ltd, Hirst Boatbuilders Ltd, A1 Building Supplies Ltd, and Gillian and Baines Ltd. These are, however, industrial, and commercial receptors and less sensitive to odour. However, it should be noted that the Brick Box Ltd also operates from Fernley Green Industrial Estate and provides children's party services (located 364m NW from site boundary).

2.1.5 A search of the surrounding area using the DEFRA Magic Maps website has established there are no National Nature Reserves (NNRs) within 1km of the site: the closest is Humberhead Peatlands NNR, over 24km southeast of the site. According to the EA Conservation Screen Report (included in Appendix 1 of this report) there are 2 Local Wildlife Sites (LWS), up to 2 protected species and 2 protected habitat within 2km of the site.

2.1.6 There are no Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Local Nature Reserves (LNRs), National Nature Reserves (NNRs), Ramsar sites or Areas of Outstanding Natural Beauty (AONBs) within 2km of the site.

[3] DEFRA Magic Maps 2022: https://magic.defra.gov.uk/MagicMap.aspx

The closest SSSI is located over 7km to the northwest of the site. The closest AONB is The Nidderdale AONB located over 50km to north-northwest of the site.

2.1.7 See **Figure 2** showing the site location with potential Receptors with 1km radius of the site boundary and each receptor listed in Table 1.

Figure 2: Map of Site location with potential Receptors with 1km radius of the site boundary (approx. permit boundary in red).

Table 1: Potential Sensitive Receptors within 1km radius of the site boundary

Receptor Reference	Receptor	Land use	Direction from site	Distance from site	Sensitivity to odour
A	Occupiers of Fernley Green Industrial Estate	Commercial / Industrial	W	187m	Medium
B	Residents of Fernley Green Close	Residential	WNW	481m	High
C	Residents of Marsh End	Residential	WNW	501m	High
D	Residents of Low Green	Residential	W	384m	High
E	Residents of Springfields Avenue	Residential	WSW	485m	High
F	Residents of Lamb Inn	Residential	W	581m	High
G	Residents of Broomhill Avenue	Residential	SW	559m	High
H	Users of A645 Weeland Road	Commercial / Industrial	S	<10m	Medium
I	Users of River Aire Walking Trail	Recreational	N	<10m	Low
J	The Croft	Residential	WNW	873m	High
K	Alex Pol Trans Ltd	Commercial / Industrial	NE	264m	Medium
L	Occupiers of Industrial Units	Commercial / Industrial	SW	231m	Medium
M	Club members of Knottingley RUFC	Commercial / Recreational	WNW	453m	Medium
N	Users of Aire and Calder Navigation Walk	Recreational	S	90m	Low
O	Caddick Construction Ltd	Commercial / Industrial	ESE	320m	Medium
P	OneCT Manufacturing Park	Commercial / Industrial	ESE	634m	Medium
Q	Users of Stocking Lane	Commercial / Industrial	N	<10m	Medium
R	Little Acorns Nursery	Commercial	SW	900m	Medium
S	De Lacey High School	Commercial	SW	1000m	Medium
T	148 Weeland Road	Residential	SE	290m	High

2.2 Pathway Characterization

2.2.1 The principal mechanism for the transit of odorous emissions from site operations to the closest sensitive receptors is via ambient air. The distance and direction that these emissions will be carried is determined by the following factors:

- Source related pathways
- Meteorological conditions
- Topography

Source Related Pathways

2.2.2 The pathway an odorous emission takes from a site may depend on the specific source term and/or location it arises from. For example, odour arising from the Waste Reception area may follow a different route to that issuing from enclosed storage buildings. The nature of the source related pathway could also influence the scale of the resulting impact on a sensitive receptor.

Meteorological Conditions

Wind Direction

2.2.3 The prevailing wind direction will determine which receptors will be affected and at what frequency. The main controlling factor in determining the pathway of odour is the ambient meteorological conditions. This is fundamental to the transportation of odour to sensitive receptors.

2.2.4 The wind rose diagram in **Figure 3** below shows the distribution of wind speed and wind direction at the closest actively recording weather station in Normanton, showing averaged wind statistics from 2013 to 2025.

Wind Velocity

2.2.5 Wind velocity will affect the distance an odour emission will travel. Conversely, increased wind speed could also beneficially improve dispersal. However, those receptors closest to the installation are still considered at the highest risk of a negative impact.

Air Temperature

2.2.6 Warm air may carry odours upwards by convection for their dispersal away from the site. However, warm weather will encourage the onset of biodegradation of exposed or temporarily stored wastes and therefore increase odour potential.

Adverse Weather Conditions

2.2.7 Unusual weather conditions may increase the risk of odour emissions from the site. Site staff shall be vigilant to unusual trends in the meteorological data or forecasts which may indicate strong winds or extremes of temperature which may cause a potential problem.

Topography

2.2.8 Undulating topography i.e. hilly terrain, causes disruption to air flow and causes wind to move differently, often being obstructed or rising or falling due to air convection, when compared to flat land, where wind can move more freely across. Therefore, odours transported by wind can affect receptors differently depending on their location and surrounding topography.

Local Weather Station

2.2.9 Fugitive emissions of odour from the site are likely to be affected by local weather conditions, particularly by wind direction. Wind statistics observed from Normanton weather station, the closest weather station actively recording wind statistics, are considered to be representative of the typical conditions at the site (**Figure 3** below).

2.2.10 Based on the data recorded daily between April 2013 and June 2025 on the Windfinder.com[4] website, the most dominant wind direction is from the west-southwest towards the east-northeast. With reference to the Sensitive Receptor Plan (ref. 5827-CAU-XX-XX-DR-V-1800), predominant annual wind conditions are likely to blow towards the Willow Garth Nature Reserve and the River Aire to the northeast.

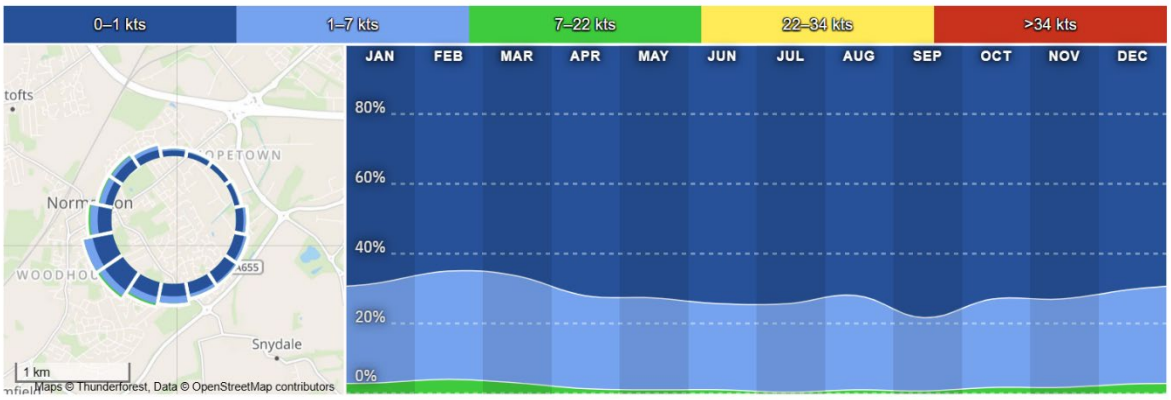


Figure 3: Normanton weather station wind statistics – average wind direction & strength 2013-2025.

[4] Wind & weather statistics Normanton - Windfinder

3.0 POTENTIAL SOURCES OF ODOUR AND SITE PROCESSES

3.1 Waste Reception/Offloading

3.1.1 The main categories of wastes that will be brought onto site will be drummed/packaged wastes, tankered waste and industrial/commercial waste (strictly for the RDF). The first two will be fully contained, while the industrial/commercial wastes for the RDF will either be contained or covered in vehicles/skips. The Operator will not be accepting putrescible wastes.

3.1.2 Waste delivery vehicles that will be bringing containerised wastes (e.g., drums, etc.) and tankered wastes to site will be sealed without the need to cover the vehicle and will not pose a risk of releasing odours to the environment prior to reaching site. Industrial and commercial wastes brought to site which are not containerised will be in covered vehicles/skips, as appropriate, to reduce the potential for odour release.

3.1.3 During waste acceptance, the Site Manager, chemist or their nominated deputy shall check information about the waste, including the source and age of the waste where required. However, the age of the waste is not considered to be necessary for containerised or drummed wastes. This is because they will be stored in sealed containers or drums, therefore their odorous potential will not require assessing whilst on-site. These wastes will only be opened briefly for inspection whilst entering the site, and where repackaging or bulking-up is required, they will only be opened within the relevant enclosed building(s) with air extraction systems and filter, eliminating risks of odours leaving site.

3.1.4 The contents of all containers over 25 litres or kg capacity are compared against the expected properties of the stated material by reference to either/or some of the following:

- Physical state (solid, liquid or gas);
- pH obtained from universal indicator paper or calibrated pH meter;
- Flammability;
- Appearance – colour, viscosity;
- Odour;
- Drum markings/labelling;
- Information supplied with or on incoming waste form;
- Personal experience.

3.1.5 If during the inspection the Site Manager, chemist or their nominated deputy is in any doubt as to the classification of a particular container or whether the waste meets with the appropriate waste acceptance criteria, site management shall be informed immediately, and the non-conformance procedure will be followed.

3.1.6 Most wastes to be accepted at site with the potential to release odour will be within sealed containers/drums, hence no further actions are required to address odour. Any wastes brought to site that are not within a container and that are determined likely to cause an odour issue on-site will either be repackaged within the **Waste Processing 01 or 02 buildings** as quickly as possible, or where this is not possible, then the non-conformance procedure will

be followed, and the load rejected from site. The site operatives will inform the delivery driver of the best course of action. See Section 2.0 of report ref. 5827-CAU-XX-XX-RP-V-0308 for more details (this report is part of the application documents).

3.1.7 It is the responsibility of the Site Manager, chemist or their nominated deputy to safely store chemicals within the designated storage area (**Waste Storage 01 or 02**) once classification of the waste has been completed, paying particular attention to:

- Current contents of the storage area/bay;
- Contents of adjacent storage area/bays;
- Any special storage instructions detailed on the incoming waste form;
- Available storage capacity of storage area/bay.

3.1.8 Waste will be stored in appropriate containers on impermeable, bunded and segregated areas, and handled in accordance with the EA/HSE Joint Guidance (published in November 2011).

3.1.9 No washing of waste delivery vehicles is proposed on-site.

3.1.10 Waste deliveries for the different activities have been subdivided as follow:

Leachate and Aqueous Wastes

3.1.11 Landfill leachate and similar aqueous wastes may be delivered to site in sealed tankers, which following acceptance and confirmation of waste composition is directed to the Leachate and Aqueous Waste Treatment building (i.e., **Waste Processing 07**) for processing.

Aqueous and Inorganic Wastes, Solids and Sludges

3.1.12 Aqueous and inorganic wastes requiring physical and physicochemical treatment, including metal and salts recovery, as well as drying may be brought onto the site in sealed containers, drums or skips. Tankered waste will be received in empty tanks, and if desirable that the waste be added to a storage tank which already contains a waste, the laboratory staff will assess the compatibility of the wastes before transferring it. Skip deliveries will be covered and directed into the appropriate off-loading area/building (i.e., **Waste Processing 01, 02, 04 and 06**), including packaged waste deliveries which will be delivered in sealed containers.

Refuse Derived Fuel (RDF) Preparation

3.1.13 Wastes deliveries for RDF preparation may be brought onto site in covered refuse collection vehicles, roll-on roll-off skips, trailers, or tipper, and will be directed to the **Waste Processing 03** building for RDF processing.

3.2 Repackaging or Bulking of Waste

3.2.1 The repackaging or bulking of wastes will be carried out in the **Waste Processing 01 and 02** buildings prior to sending to the designated storage areas. The buildings will have air

extraction and mitigation systems maintaining negative pressure and activated carbon filters installed. The carbon filter will ensure volatile organic compounds (VOCs) and odours are removed from the air prior to leaving the buildings. It is anticipated that repackaging operations within the buildings will typically take place for only short periods per day, so potential emissions from wastes will not be continuous and will be mitigated by the carbon filter.

3.2.2 It should be noted that the repackaging of waste is undertaken under controlled conditions, wastes are not tipped or stored loose but transferred from one container to another, or package by trained operatives. Therefore, control measures proposed are considered appropriate to the activity undertaken rather than those specified for a traditional waste transfer station.

3.2.3 Repackaging may consist of transferring the contents of numerous smaller containers of one type of waste (for example paint) into larger containers of the same or similar type of waste before treatment on-site for recovery or transferred off-site for further treatment or disposal.

3.2.4 Wastes repackaged in this manner will be checked and supervised by the chemist and site operatives on site to ensure that potentially odorous wastes are identified, handled appropriately, and only repackaged within the building. All wastes will be characterised at reception on site and so the chemical compositions of wastes will be known and documented prior to repackaging. Pouring or transferring the contents of one container of waste to another will be done manually by gravity, by trained site operatives for smaller containers i.e. up to 25 litres, but for larger containers such as 205 litre drums and IBCs, a forklift will be used.

3.2.5 Risk of odour from bulking & repackaging is considered low due to the operations undertaken within enclosed buildings with air extraction, containment of the waste and method of operation, ensuring potentially odorous liquids or substances are contained.

3.3 Drum Crushing

3.3.1 The drum crushing operation will be undertaken within **Waste Processing 01 and 02** buildings, by competent trained site operatives who have undergone site specific training in the drum crushing operation.

3.3.2 The drum crushing operation involves rinsing out, shredding or crushing empty metal drums, previously used to store wastes such as oil, liquid or chemicals. The drums will be up to 205 litres in size, and will be crushed using a hydraulic operated crusher, to reduce the volume of the drums for easier storage, handling and transport. The drum crusher will be powered by electricity and will operate with up to a 15-ton crushing force. The drum crusher will compact the drum into an approximately 75mm high disc in less than a minute.

3.3.3 Prior to crushing, the drums will be checked to ensure they are empty and so the potential for odour release is minimised during the crushing operation. Emptied and crushed drums that contained hazardous wastes will be sent off-site for further treatment, while those containing

non-hazardous wastes may undergo the prescribed physical and physico-chemical treatment for recovery purposes where applicable.

3.3.4 It is anticipated that drum crushing will be undertaken typically for only short periods each day, depending on volumes of empty drums to be crushed on site. Based on experience at the Operator's current facility, the risk of odour release is considered low.

3.3.5 It should be noted that the drum crushing operation involves crushing nominally empty metal drums which previously contained liquid or solid materials; they would contain <1% residues. Drums which once contained inherently odorous materials such as strong acids or ammonia will not be crushed and will be sent off-site as whole and in sealed containers for onward disposal. See case study examples below:

Case Study 1:

- A Laboratory waste bottle of hydrochloric acid at 33% would be likely to cause fumes when poured. The chemist will ensure that this waste is packaged into a suitable container and sent off-site for disposal to an incineration or treatment plant. Should the hydrochloric acid be just a 5% dilute solution, then the chemist may consider this suitable to be poured into a larger container such as an IBC of mixed acids of up to 10%.

Case Study 2:

- Ammoniated oil is a type of oil used in the refrigeration industry, this type of oil which contains a small amount of ammonia would be considered to be too odorous to be decanted and would be sent to an incineration or treatment plant in a sealed container. Mineral oil and hydraulic oil would be considered suitable to be decanted without any concern for a nuisance odour.

- The chemist will make a judgement which chemicals can and cannot be decanted with the possibility of a nuisance odour being one important factor to be considered.

3.4 Storage of Potentially Odorous Substances

3.4.1 The majority of wastes pass through the Site requiring just a short inspection and without the need for any bulking or decanting. Wastes awaiting repackaging or transfer off-site will be stored in the appropriate waste storage areas within individual covered containers, bulked up in larger containers, or drums, or within covered skips or RORO containers.

3.4.2 Risk of odour from the storage of substances on-site is considered low due to them all being fully contained, and substances not exposed to the air.

3.5 Odorous Sources Summary

3.5.1 Based on the above, the potential odour sources on-site are therefore as follows:

- Odour from reception of hazardous and non-hazardous wastes;
- Odour from wastes repackaging activities which will involve pouring or transferring the contents of one container of waste to another;
- Odour from storage or spillage/leakage of potentially odorous liquids/substances onto site surfacing e.g., diesel fuel, hydraulic oil etc.

3.5.2 Risk of odour from the storage of wastes on-site is considered low due to all the wastes, particularly those inherently odorous, being fully contained and substances not exposed to the air.

3.6 Odorous Materials/Wastes Inventory

3.6.1 **Table 2** below provides an inventory of potentially odorous materials/wastes that will be stored and handled on site.

Table 2: Odorous and Potentially Odorous Materials[5]

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 time (tonnes per day or litres per day)	Maximum time held on site (hours or days)	Location of odorous materials on site	Additional comments
Non-hazardous wastes (e.g., water based paint, latex, inks)	Low	900T	180 days	Waste storage 1,2. Waste processing 1,2,4,6	Brought onto site and stored in containers
RDF	Low/Medium	400T	7 days	Waste processing 3	Does not contain malodourous or putrescible household waste.
Filtercake/ inorganic solids for drying	Medium	100T	180 days	Waste processing 5	Brought to site and stored in the Waste Processing 04 building (see report ref. 5827-CAU-XX-XX-RP-V-0308 for details on drying activity).
Solvents (e.g., Solvent based paint, white spirit, ethanol, xylene)	High/medium	100T	180 days	Waste storage 1,2. Waste processing 1,2	Brought onto site and stored in containers
Oily rags	Low/Medium	20T	180 days	Waste storage 1,2. Waste processing 1,2	Brought to site and stored in Waste Processing 01 or 02 building, Waste Storage 01 and 02 respectively.
Acids	Low	250T	180 days	Waste storage 1,2. Waste processing 1,2,4,6	Brought to site in a tanker and kept within enclosed, scrubbed system on site or stored in containers.
Alkalis	Low	250T	180 days	Waste storage 1,2. Waste processing 1,2,4,6	Brought to site in a tanker and kept within enclosed, scrubbed system on site or stored in containers.

[5] The odour will be negligible as waste materials will be delivered to site in containers or tankers which will be stored in containers or tanks (which are scrubbed). The approach taken for the values in the table have assumed that one waste stream could be on site for the maximum amount of time (i.e., up to 6 months). In reality this is not the aim of the processes on site but the Operator has tried to indicate 'worst case scenarios'.

Leachate	High	700T	180 days	Waste processing 7	Brought to site in a tanker and kept within enclosed, scrubbed system on site
Aerosols	Low to High	20T	180 days	Waste storage 1,2. Waste processing 1,2	Brought onto site and stored in containers
Laboratory chemicals	Low to High	10T	180 days	Waste storage 1,2. Waste processing 1,2	Brought onto site and stored in containers
Pesticides	Low/Medium	10T	180 days	Waste storage 1,2. Waste processing 1,2	Brought onto site and stored in containers
Fuel	Low/Medium	30T	n/a - product	Fuel tank	Brought onto site as a product

3.7 Overview of Odorous Processes and Emissions

3.7.1 As mentioned in **Section 1.4** above, the operator proposes to carry out a series of waste management and treatment operations within enclosed, self-bunded buildings to facilitate recovery or disposal. These buildings will be equipped with air extraction and mitigation systems equipped (such as wet and gas scrubbers, including activated carbon filter) dependent on the material being processed and potential fugitive emissions like odour.

3.7.2 The Permit Boundary Plan (ref. 5827-CAU-XX-XX-DR-V-1804) provides an overview of the relevant buildings wherein the proposed waste treatment activities as well as storage of wastes will be undertaken. Also, the sections below focus on the buildings whose activities have the potential of odorous emissions.

Bookings and Vehicle Reception (including Waste Reception/Offloading)

3.7.3 Unless exceptional circumstances dictate, all wastes shall be booked into the site at least the working day prior to delivery. The booking shall identify the quotation reference and the EWC code. Where the code is not considered appropriate or not acceptable under the permit, the client will be contacted and the booking refused. If there is insufficient capacity so that the waste cannot be offloaded, then the booking request shall be declined. Under such circumstances where an alternative site exists that can accept the waste, the client shall be informed of this.

3.7.4 Wastes which arrive without pre-booking, but having been pre-accepted and quoted may be accepted if capacity exists otherwise the waste consignment shall be rejected.

3.7.5 The acceptance of hazardous waste requires a minimum HNC qualified Chemist or other suitably qualified person on site. Wastes will not be received on site unless there is sufficient capacity to store or treat the waste and that sufficient staff are present to supervise this activity.

3.7.6 On arrival at site, the vehicles containing wastes will be weighed using the on-site weighbridge and then directed to the vehicle reception area. Documents relating to the waste consignment (i.e., transfer note and/or hazardous waste consignment note) shall be checked and where errors are evident these shall be corrected, if practicable, before the vehicle is accepted, otherwise the load will be rejected.

3.7.7 Weighbridge records for loads received shall be generated using the site's weighbridge(s), unless the vehicle has an acceptable printed weighbridge ticket, the details of which will be recorded. Where circumstances dictate weighing cannot be undertaken, an estimated weight based upon the vehicle size and the material being carried shall be recorded. Weighbridge records form part of the Enquiry system which tracks wastes.

3.7.8 Bulk wastes will be sampled and/or inspected prior to unloading depending upon their type. Packaged wastes will be inspected prior to unloading for soundness of containment and subsequently inspected and sampled following unloading.

3.7.9 Following completion of unloading, the vehicle delivering the consignment shall be re-weighed and the consignment documentation completed. The weight details shall be recorded on the Enquiry system so that there is a record of the information of the waste enquiry, of pre-acceptance (where applicable) and acceptance of individual loads.

3.7.10 Following inspection and analysis of the loads, where significant variations from the pre-acceptance information are detected, the customer will be contacted to ascertain why the material differs from the enquiry as these variations in characteristics or composition which may indicate the waste is not as described. If the material is deemed to be acceptable on site, the sample will undergo the full pre-acceptance process, for tankers this will be prior to off-loading, so that the most suitable route can be determined. Should the material be unsuitable for process on site or a transfer route cannot be identified the load will be rejected.

3.7.11 Highly odorous wastes, or those capable of producing high odour during treatment will be excluded from the proposed treatment activities.

Bulk Deliveries

3.7.12 Prior to off-loading bulk waste in tankers, the driver will be requested to obtain an appropriate sample or samples. They may be representative of the load as a whole or targeted (e.g. for settled solids or immiscible layers). The sample(s) will be analysed to confirm the characteristics and composition of the load against the initial enquiry and suitability for the intended process route will be confirmed.

3.7.13 Wherever possible, tankered waste shall be received into an empty tank. If it is desirable that a waste be added to a storage tank which already contains a waste the laboratory staff will then be responsible for assessing the compatibility of the wastes.

3.7.14 Skip deliveries will be directed into the appropriate off-loading area where the load will be visually checked against the expected description on the inspection form, with the Site Operator paying attention to any contamination, excessive dust, or odour.

3.7.15 Should the load contain a small amount of unexpected material, these will be segregated and sorted and disposed of accordingly. Any such incidental materials destined for off-site will be drummed or packaged and labelled appropriately. If the material is not acceptable onto site, it will be segregated and rejected.

Packaged Material Deliveries

3.7.16 The containers will be off-loaded and stored in the designated waste storage area. During the off-loading process, the general condition of the containers or pallets will be noted and repackaged or made safe if necessary.

3.7.17 The consignment will be fully checked against the expected material description and each container 25L or above will be sampled. Samples will be taken using a dip tube, or similar, to obtain a representative sample. All containers will be resealed after sampling. The chemist will

undertake any necessary tests including pH, flammability, odour, physical state, and code the drum with the process code to denote the intended route. Samples of all waste received and used for acceptance assessment shall be retained for two weeks.

3.7.18 If appropriate, more tests will be carried out to determine the best process route. In this instance, the container will be labelled appropriately to denote that it is waiting further testing. Once the sample has been analysed and the best process route identified, the container will be coded as appropriate and stored in the relevant bay.

3.7.19 Once the load has been checked, the containers will be stored in the relevant bay within the waste storage areas awaiting processing or transfer and any conflicting labels will be sprayed out or removed. Only compatible materials will be stored together in each bay. Material will not be stored on site for longer than 6 months.

3.7.20 If the material significantly differs from the load expected, the containers will be stored in the quarantine area until more information has been received from the producer or further tests have been carried out to identify the material and process route. Once this has been verified, the load will either be re-located to the appropriate storage area or rejected.

Repackaging or Bulking of Waste

3.7.21 The Knottingley Waste to Resource Facility will incorporate the temporary storage of hazardous and non-hazardous waste, prior to bulking or repackaging for further processing. The majority of wastes pass through the waste transfer station requiring a short inspection and without the need for any bulking or decanting.

3.7.22 Repackaging or bulking of hazardous and non-hazardous wastes will be undertaken on-site within fully bunded buildings (i.e., Waste Processing 01 or 02, and Waste Storage 02). This will include stacking, packing and palletising of sealed containers or bulk items of wastes, ready for on-site treatment or transferred off-site, whichever is preferable. This process is unlikely to release odours.

3.7.23 Where containerised wastes, that are likely to give rise to odours or VOCs emissions, are required to be opened and transferred/emptied into other larger containers, this will be undertaken inside the enclosed buildings (referred to in **Section 3.2.2** above), which will be equipped with air extraction and mitigation systems (e.g., activated carbon filter) to remove odour and VOCs from air leaving the building.

3.7.24 The repackaging activity is only undertaken for short period and high odour materials are precluded at pre-acceptance and acceptance stages, hence the potential for odour release is low. The sampling and emissions point plan (ref. 5827-CAU-XX-XX-DR-V-1805) shows the location of the proposed extraction hoods and stack emissions points to air for the relevant buildings.

Waste Processing 01 and 02

3.7.25 Waste Processing 01 is an existing building, and 02 is a new building, both will undertake the same or similar activities. These buildings are fully enclosed and bunded, intended to be used for the storage, inspection, or processing of waste and each building will be split into 2 separate areas. One area is where the waste material may be stored prior to processing within the buildings.

3.7.26 The storage area in Waste Processing 01 will be split into bays with a capacity of 400 PEq. Storage bays are individually segregated and slope backwards, ensuring that any spilled liquid is contained within the bay and incompatible material will not contact each other. The other area is where the processing will be undertaken. It is not intended that waste will be stored in this area other than that which is awaiting processing.

3.7.27 In the Waste Processing 02 building, one area is where the waste material may be stored prior to processing within the building. The storage area will be split into bays with a capacity of 400 PEq. Storage bays are individually segregated and slope backwards, ensuring that any spilled liquid is contained within the bay and incompatible materials will not contact each other. The other area is where the processing will be undertaken. It is not intended that waste will be stored in this area other than that which is awaiting processing which will be kept to a minimum.

3.7.28 Both buildings are intended for the inspection, storage, or processing (e.g., dismantling and sorting, separation, bulking or shredding) of hazardous and non-hazardous materials before further processing on site for recovery or offsite disposal. Where appropriate, preference will be to dismantle or empty rather than shred to maximise the quality and quantity of recovered materials. Materials will be moved around the building using forklift trucks or similar.

3.7.29 These buildings will house a shredder which is intended to be used for reducing bulk material or segregate packaging from contents, prior to further processing. The shredder will be loaded with waste using a forklift truck. The shredded material will be collected in suitable containers and transferred or repackaged for further recovery or disposal.

3.7.30 These buildings will be suitable for flammable materials. Earthing points will be located within the processing areas which will also house Local Exhaust Ventilation (LEV), fume cupboard or similar local extraction equipment for removal of components during waste processing, dismantling, or bulking, as necessary.

3.7.31 Air exiting these buildings will be passed through the proposed extraction hoods (i.e., EP01 and EP09, for the Waste Processing 01 building), and an activated carbon filtration system (i.e., EP02) for Waste Processing 02 building in order to minimise emissions into the atmosphere.

3.7.32 The crushing of metal drums will also be conducted in one of these buildings using a drum crusher. This process will involve rinsing the drum out and then crushing it, after which it will be stored in skips and sent off-site for recovery. Wastewater generated from this process will

be collected and sent off-site for further treatment. The same procedure will be applied to the solids when applicable.

3.7.33 During processing, the doors will be kept closed to minimise noise and maximise control of fugitive emissions.

Waste Processing 03

3.7.34 Waste Processing 03 is a new building that is fully enclosed and fully bunded, designated for Refuse Derived Fuel (RDF) preparation. It is intended for the storage or shredding of non-hazardous materials prior to further processing on site or for off-site disposal. The building will have two segregated areas, one processing area housing the shredders and a second, receipt and storage area. The storage area has 4 separate bays, each with a storage capacity of 100T.

3.7.35 The proposed RDF preparation activity will involve processing of up to 300 tonnes/day of non-hazardous wastes in an enclosed building with air exiting the building being passed through an activated carbon filter (i.e., EP03). Preparation includes receipt of pre-selected waste materials prior to sorting and shredding for recovery or reuse, with temporary storage of up to 400 tonnes. The primary route for disposal is energy recovery. If this route is not available or suitable, the material may be transferred to an alternative facility.

3.7.36 While free liquids are expected to be minimal from the RDF activity under normal operations, the areas will be designed to allow containment and collection of liquids including, if necessary, fire water. Any fire water will be contained and tankered off-site for further treatment.

Waste Processing 06

3.7.37 This is a new area that will consist of a group of enclosed self-bunded buildings intended to treat aqueous wastes, which may be in either liquid or solid form. The wastes brought to the site can include packaging materials, bulk liquids, or powdered solids. Each type of waste may undergo an individual treatment stage or a combination of multiple stages, depending on the specific waste, to maximise recovery and disposal where applicable. The stages may include:

- Simple separation by filtration/separation including screening, filter bags/screens and sand filtration;
- Blending;
- Dissolution;
- pH adjustment to reduce acidity or alkalinity within wastes;
- Chemical oxidation/reduction;
- Chemical precipitation;
- Separation by extraction, sedimentation or flotation;
- Stabilisation of wastes to reduce leaching of components of concern;
- Solidification to improve handling properties;
- Conditioning (e.g. to reduce dustiness);

- Washing (with water or other reagents) to clean or capture components of interest;
- Complex separation by centrifuge, filter presses or membrane filtration;
- Adsorption by use of activated carbon, ion exchange resins or similar;

3.7.38 For this building, the Operator proposes installing two stack emission points (i.e., EP06 and EP11) equipped with activated carbon filters, and a scrubber (EP10); these will be responsible for discharging abated air into the atmosphere. See sampling and emission point plan (ref. 5827-CAU-XX-XX-DR-V-1808) for the positioning of the respective air extraction and mitigation systems.

3.7.39 There will be dust filtration on the silos that will take powder waste. In addition, during processing, site operators will shut doors to reduce noise and maximise fugitive emissions control.

Waste Processing 07

3.7.40 This is a new building that will be used for the self-contained leachate and aqueous waste treatment operations which will involve the physico-chemical and biological treatment of landfill leachate and similar aqueous wastes with a combination of reverse osmosis, ammonia recovery, biological treatment, ultrafiltration, nanofiltration, centrifugation and activated carbon or similar adsorption. The deployment of these processes will depend upon input composition and effluent quality requirements to achieve BAT for this activity.

3.7.41 This processing area will house two reverse osmosis plants, one ultrafiltration and one nanofiltration plant linked to the biological treatment plant and an ammonia recovery unit. These activities will be carried out within segregated bunded tank areas, a process building and process area.

3.7.42 The aim of these processes is to treat landfill leachate and similar aqueous wastes in order to remove ammonia, biodegradable organic components as well as trace metals, to produce an effluent that may be discharged to sewer (permitted under the existing Discharge Consent in place), or to surface water (in the case of the RO plants' permeate), or for reuse in other processes.

3.7.43 The proposed leachate and aqueous waste treatment area will have one stack emission point (i.e., E07) and an air handling unit responsible for regulating and distributing air throughout the building.

3.7.44 **Table 3** below summarises the potential odorous emission points with corresponding buildings reference for the proposed activities.

3.7.45 Also, a summary of the different emission points (with their corresponding grid references) of all the tanks associated with individual waste processing areas have been included in **Appendix 3** of this report.

3.7.46 See Sampling and Emissions Point Plan ref. 5827-CAU-XX-XX-DR-V-1809 for the positioning of the emission points.

Table 3: Potential Odorous Emission Points

Emission point reference and location	Grid Reference	Source	Parameter
Extraction Hood EP01, Waste Processing 01	SE 51202 23827	Shredding & Repackaging	Odour
Extraction Hood EP09, Waste Processing 01	SE 51193 23826	Shredding & Repackaging	Odour
Stack EP02, Waste Processing 02	SE 51155 23906	Shredding & Repackaging	Odour
Stack EP03, Waste Processing 03	SE 51074 23822	RDF Preparation	Odour
Stack EP06, Waste Processing 06	SE 51292 23832	Inorganic Disposal & Recovery	Odour
Stack EP11, Waste Processing 06	SE 51314 23832	Inorganic Disposal & Recovery	Odour
Scrubber EP10, Waste Processing 06	SE 51292 23853	Inorganic Disposal & Recovery	Odour
Stack EP07, Waste Processing 07	SE 51326 23924	Leachate Treatment Plant	Odour

Waste Storage

3.7.47 Waste storage is provided for bulk and packaged wastes in appropriate areas with segregation of incompatible materials. Where storage is in the open, wastes will be contained within packaging or larger containers suitable for the contents therein. Packaged wastes, which may be hazardous, and stored in the open will be in suitable UN approved containers designed for such storage. Two storage areas will be provided for this purpose on the site, as follows:

Waste Storage 01

3.7.48 Waste Storage 01 is the existing Compound F, now renamed as part of this permit variation application. It is an open, fully bunded area with a capacity of 375 pallets equivalent (PEq). It is intended to be used for the storage of compatible hazardous and non-hazardous materials awaiting further processing. The following materials may be stored in this area, ensuring that only compatible materials are stored in the vicinity of each other:

- Aerosols in UN approved enclosed containers;
- Skips of residues intended for off-site reuse, recovery, or disposal;
- Oily rags in enclosed containers;
- Packaged waste, non-hazardous and hazardous. Hazardous waste will be stored in UN approved containers.

Waste Storage 02

3.7.49 Waste Storage 02 is the drum store, now renamed as part of this permit variation application. This is a covered, fully bunded area that is intended to serve as the packaged waste recovery storage building. It will be divided into two sections where materials may be temporarily stored (<1 working day within the inspection and repackaging area) or <6 months in the storage bays.

3.7.50 Storage bays will be individually segregated and designed to slope backwards, ensuring that any spilled liquid is contained within the bay and incompatible material will not be in contact with each other. The area is intended for the storage of hazardous and non-hazardous materials, awaiting further processing.

3.7.51 The inspection and repackaging area will be separately bunded and used for the inspection and repackaging or bulking of non-hazardous waste materials.

3.8 Waste Operational Odour Controls

3.8.1 The site will employ control measures to ensure odour emissions are minimised. Control measures such as olfactory monitoring, quick waste turnover, good housekeeping, operating within the buildings, and ensuring roller shutter doors (where applicable) are closed when not in use will be used to control odour at the site.

Waste Reception/Offloading

3.8.2 The site will ensure there is sufficient trained staff to deal with the anticipated waste loads coming in, to ensure incoming wastes are processed as quickly as possible.

3.8.3 The majority of wastes brought onto site will be in covered containers, drums, RORO skips or tankers, therefore are unlikely to generate significant odours during transit due to the wastes being enclosed within the vehicles, not exposed to wind blow and unlikely to spill out of the vehicle.

Waste Unloading and Handling

3.8.4 The waste load will be sent into the relevant building for unloading. Wastes will only be unloaded within the building in designated areas (e.g., bulk storage bays). Mobile plants such as forklift trucks will be used to move wastes within the relevant buildings.

3.8.5 The buildings' doors will be kept closed at all times except when in active use allowing vehicles in or out. Remote sensors are installed to each of the roller shutter doors to allow these to automatically close during periods of inactivity. The Site Manager or designated deputy will ensure that the automated roller shutter doors are operating appropriately and that they are only open for an absolute minimum amount of time required for access.

3.8.6 Daily site inspections of the site by trained staff will include checking storage areas for any odours being generated, and these will be logged directly into FCC's online database. In the

event that odour is detected at or leaving the site boundary, additional monitoring will be undertaken at the sensitive receptors downwind of the site to assess the impact on nearby receptors.

Waste Rejection

3.8.7 The waste acceptance protocols aim to identify highly odorous wastes, or those capable of producing high odour on treatment in order to exclude these from treatment. However, if odorous waste is detected upon arrival at the site and is not containerised or able to be repackaged, it will be rejected.

3.8.8 A waste acceptance check will be undertaken at the weighbridge with an additional visual check being at the point of discharge in the relevant building. If the material significantly differs from the load expected, the containers will be stored in the quarantine area until more information has been received from the producer or further tests have been carried out. Once this has been verified, the load will either be re-located to the appropriate storage area or rejected.

Waste Storage

3.8.9 It is considered that actions aimed at reducing storage times, limiting stockpile sizes, and controlling odorous inputs are preferable and practical control methods.

3.8.10 Site operatives will be vigilant for odorous wastes and daily olfactory odour checks will be undertaken. Regular checks will be made of the waste stored which will consider odour, storage time and stockpile size.

3.8.11 The Operator will ensure that the buildings have adequate capacity to receive wastes for all storage areas. Wastes will not be received on site unless there is sufficient capacity to store or treat the waste and that sufficient staff are present to supervise this activity.

3.8.12 Wastes will only be stored within buildings; for example, the Waste Processing 03 building will have a covered 40-yard skip that will be used strictly for site generated general waste/litter. The buildings will provide shelter from wind, rain and heat from the sun, and therefore this will minimise the biodegradation of any biodegradable fractions within the wastes, and potential for odour, by keeping them dry and cool.

3.8.13 Where wastes are stored overnight in the buildings, it will be ensured that all access doors are securely closed. It is considered that in the exception of extreme weather conditions during summer periods, temperatures overnight are significantly cooler than during the daytime and the potential to generate odours are therefore reduced.

3.8.14 Waste will be dealt with on a first-in, first-out basis, typically entire bays will be filled and emptied in one go. Waste will be turned around quickly to minimise the risks of odour generation, ensuring they spend no longer than 7 days on site (in the case of RDF preparation), while bulk or containerised waste can be on site up to 6 months.

3.8.15 The waste storage areas will be subjected to strict housekeeping regime (i.e., routine cleaning) and be kept tidy, with regular sweeping to ensure no build-up of excess debris from the storage of wastes, including areas such as drains, and areas of hard-standing within the vicinity of the roller shutter doors, where applicable. Housekeeping will be undertaken by competent staff based on findings from the daily site checks. Cleaning will include (but not be limited to) a full scrape (using shovel loader) and 'brush down' of each bay and use of a road sweeper if required. These will be arranged to ensure there is no disruption to the continuity of operations.

3.8.16 In addition to the above, staff will be instructed to ensure that all external areas leading from the weighbridge to the waste reception are clear of any litter, debris or other wastes. If additional cleaning is required, the mobile washer or road sweeper may be utilised.

3.8.17 The site will be inspected on a daily basis to make sure that no fugitive emissions of odour are detected. Any significant emissions of odour will be investigated immediately and remedied as per the site's procedures.

3.8.18 Staff will be trained to understand the potential risks of odour associated with the site activities and particular waste types and their role in managing those risks. An induction will also be provided for contractors and visitors so that they are aware of any environmental requirements during the course of their work or visit on-site to minimise odour emissions.

Other Sources of Odour

Drainage

3.8.19 Drainage infrastructure will be inspected daily and maintained and repaired as necessary. Routine maintenance includes flushing through pipework, checking the manhole chambers and interceptors, and periodic emptying of the water holding sump. Tanks and drainage infrastructure will be cleaned/jetted as necessary and no less frequently than annually in any case.

3.8.20 In the unlikely event that odour should become an issue as result of the on-site drainage system, a full review of the infrastructure will be conducted, and cleaning and inspection frequencies adjusted accordingly.

Fuels & Oils

3.8.21 The fuel (diesel) will be stored outside the building in a self-bunded fuel tank on the impermeable concrete site surfacing, including hydraulic oils and lubricants being stored securely in sealed containers inside the building with drip trays and placed on the impermeable concrete site surfacing.

3.8.22 Mobile plant will be maintained as per the site's Planned Preventative Maintenance Programme (PPM) to ensure leaks and spillages of oils and fuels are prevented and minimised from potentially faulty or loose parts.

3.8.23 Daily site checks will include ensuring substances and liquids on site are stored correctly in the correct containers/tanks and no tanks have been overfilled and bunds are clear of liquids that could be a potential source of odour.

4.0 ENGAGING WITH THE NEIGHBOURS

4.1 Complaints Procedure

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

4.1.2 Any complaints received at the site are likely to be direct to the operator, who is willing to deal directly with the complainants, however complaints could also be received through the Environment Agency or Local Authority. Where necessary the following can be implemented:

- If required, information can be provided to the local neighbours (via the Environment Agency) regarding the point and method of contact for the site in the event an odour has been detected, or they want to discuss any activities etc at the site.

- Complainants can be advised that any complaints/concerns will be addressed immediately during operational hours following identification/notification and contingency actions implemented.

- Complainants can be advised of any corrective action and a follow up call carried out by the Site Manager to the complainant, if required.

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

4.1.4 In the event of an odour complaint being received by the Local Authority or Environment Agency, the complaint is passed to the Operator for investigation.

4.1.5 Every complaint is recorded in the relevant environmental incident reporting system following the 'IMS-PRO-176' Environmental Incident/Near Miss/Complaint and CAR Reporting Procedure.

4.1.6 The details recorded for a complaint received at the site should include the following information:

- Date and time of complaint;
- Extent of complaint;
- Meteorological conditions at time of complaint;
- The complainant's contact details including name and contact telephone;
- Name of person filling out form;
- Actions taken to resolve complaint or investigate complaint further;

4.1.7 Depending on the severity, the complaint can be escalated to senior management for even further investigation if necessary.

4.1.8 A Complaints Procedure is already in place as part of the company's accredited environmental management system and includes reporting the findings of the odour investigation.

4.1.9 The odour investigation procedure will also include the following elements:

- Site walk-over coupled with olfactory monitoring along the site boundary, an assessment of the site operations which took place prior to and at the time of the complaint in relation to their odour potential, and other on-site sources of odour.

- Assessment of the weather conditions prior to and at the time of the complaint.

- A suitably trained person who is familiar with the site conditions and the 'sniff-testing' monitoring technique will carry out odour investigations at the site. In the event of a substantiated complaint being received, then mitigation measures will be used for the areas/activities which were the cause of the particular odour event.

4.1.10 A follow up report on the investigation will be issued to the EA if the complaint is found to be substantiated and, if requested, to the Local Authority. The report will identify improvements proposed to reduce the potential for future complaints. Any new recommendations will then be incorporated in the Odour Management Plan and the operating procedures for the site.

5.0 CONTROL MEASURES AND MONITORING

5.1 Schedule

5.1.1 Odour monitoring will be undertaken in order to assess how successful the operational management and mitigating control measures are at the site and to identify, if necessary whether odour is causing a potential nuisance to ensure that appropriate remediation measures are adopted early.

5.1.2 Monitoring will be undertaken by designated staff who will be fully trained by Site Management. All site personnel will be responsible for reporting any problem odours identified during their day-to-day operations.

5.1.3 Daily site checks by trained staff will include checking the site for odour emissions and the source of any odours detected. Checks will include inspecting substances and liquids on site are stored correctly in the correct containers and that the waste storage capacities for bays, skips, RORO containers and other waste storage areas do not exceed capacity. This will be done by trained staff checking that waste stockpiles and/or stacked containerised wastes do not exceed the maximum waste pile height (i.e., a maximum of 2m high) designated for each storage area/bay.

5.1.4 For wastes that are stored in skips and RORO containers, trained staff will ensure they are not overfilled and, if found to be full during the checks, are emptied as soon as possible and no other wastes added until the full skip/RORO has been collected and replaced.

5.1.5 Waste storage areas, bays and skips are also monitored throughout the working day by all trained site operatives, and if found to be nearing maximum capacity, site management are informed immediately to ensure collection of wastes can be arranged.

5.1.6 In the event that odour is detected at the site boundary, additional monitoring will be undertaken at the sensitive receptors downwind of the site.

5.1.7 **Table 4** summarises the monitoring procedures for appropriate measures:

Table 4: Appropriate Control Measures

Odorous and potentially odorous process/material	Control measures (Appropriate Measure)	Monitoring frequency	Monitoring procedure and optimum parameters
Spillages of odorous liquids such as raw leachate, concentrate, etc. during delivery or collection. Leaks of odorous liquids from containers.	(a) Any spills or leaks will be reported immediately to site management and cleaned up quickly. Spilt liquids that are pumped out of bunded areas will be stored temporarily in suitable containment prior to being treated on-site or sent off-site for further treatment. Refer to **Appendix 2** of this report for the Site's proposed Leak detection and repair protocol. (b) If the spillage is from a vehicle during transport across the site, the actions detailed in operational procedures within the Integrated Management System (IMS) will be followed. (c) If the spillage is from another source, trained staff wearing the appropriate PPE will attend to the spillage and contain it using the correct spill kits including spill pads, booms and granules (available around site), to prevent any hazardous liquids leaving site or entering surface water drains. The source of the hazardous liquid will be identified and once absorbed, the used spill pads and booms will be disposed of appropriately as hazardous waste. If the spillage is larger, specialist vacuum equipment will remove the remaining spillage to a suitable disposal facility. The 'Environmental Incident, Accident and Near-Miss Form' will be filled out by site management and recorded in the site diary. A Spillage Procedure is included within the Accident Management Plan in the IMS.	N/A	N/A
Breakdown or malfunction of the air extraction system/carbon filter resulting in unmitigated odour emissions from the site.	(a) Whilst it is unlikely this would cause a significant odour issue, the repackaging of waste materials would be instructed to cease until such time that the extraction and filtration equipment is operational again. (b) In the event of a plant failure or malfunction, alternative equipment will be sourced as soon as possible until the equipment can be repaired or hired in as necessary. Planned deliveries of waste will be stored on site during this period and postponed if necessary. (c) All plant and equipment will be maintained and regularly serviced in	(a) Daily on-site olfactory monitoring as part of routine site inspections (or more frequently following odour complaints).	Olfactory Monitoring/site perimeter, included as part of daily site checks. In the event odours are detected on-site/at boundary, or an odour complaint is received, then off-site checks will be undertaken (towards the

	accordance with the manufacturer's recommendations and planned maintenance procedures to minimise breakdowns. Replacement parts (e.g. carbon filter) will be stored on site or available within 24-48 hours.		identified sensitive receptors).
Periods of adverse weather conditions, including high rainfall leading to flooding, low/high temperatures, temperature inversions and high winds towards the direction of the sensitive receptor.	(a) It is unlikely that adverse weather such as heavy rainfall or high winds would affect the infrastructure. Bunded areas will be checked daily to ensure they are not filled with rainwater in extreme conditions. The canopy roof and covers on skips/containers will provide protection from the rain and wind. (b) Following adverse weather conditions, if sensitive receptors have complained of odour issues from the site, liaison and dealing with complaints from neighbours will be undertaken.	Manually checked at start of each working day and logged (inc. wind direction).	Local weather information/meteorological monitoring
Odour complaints	Following off-site odour detection, this will be logged in accordance with Complaints procedure.	(a) Daily on-site olfactory monitoring as part of routine site inspections (or more frequently following odour complaints). (b) Ad hoc when appropriate.	Olfactory Monitoring/site perimeter, included as part of daily site checks. In the event odours are detected on-site/at boundary, or an odour complaint is received, then off-site checks will be undertaken (towards the identified sensitive receptors).
Shortage of trained operational staff resulting in waste material being stored for longer periods without repackaging.	This is unlikely to cause an odour issue as the wastes that arrive on site are stored in sealed containers, preventing release of odorous emissions, even if stored for long periods of time. In the event that there is a shortage of operational staff at the site, alternative staff will be hired in as necessary.	N/A	N/A
Force Majeure and Odour	Unexpected circumstances such as a fire or explosion on site or an act of vandalism could trigger the release of discernible odours. Under these circumstances, odour related contingency measures will be covered under the Odour Action Plan and will be dealt with as promptly as possible. Remediation and reporting procedures will follow the requirements within the Permit.	N/A	N/A

5.2 Meteorological Monitoring

5.2.1 The nearest actively recording weather station will be utilised for meteorological monitoring at the site and will as a minimum include monitoring for wind speed, direction, precipitation/rainfall, and temperature.

5.2.2 If an odour survey is undertaken following a routine site inspection where odour was detected leaving the site boundary, or following an odour complaint, then weather conditions will be noted at the time of the survey and assessed in terms of any odour effects beyond the site boundary. This would indicate which local receptors lie downwind of the site. The following weather conditions are considered to be unfavourable with regard to the effects of the potential odour emissions and should be considered when assessing odour events:

- Weather conditions, especially wind speed and direction, are important factors which influence odour dispersion. Stronger winds (>6 m/s) reduce the impact of odours due to greater dilution and dispersion than lighter winds, whereas wind direction determines the direction of odour dispersion.

- The greatest risk of poor odour dispersion tends to occur on cool nights, with low wind speed, during anti-cyclonal conditions and in the presence of a temperature inversion. These conditions often happen during the cold part of the year and can result in odours being transported over long distances from the source.

- Calm weather spells (wind speed <0.1m/s) results in omni-directional dispersion of odours from the site as it is regulated largely by diffusion in the air. Under such conditions, all locations directly adjacent to the source would be expected to be impacted by fugitive emissions.

- The mean wind direction recorded at the nearest station at, Normanton weather station is recorded as from the west-northwest to the east-southeast.

5.2.3 In the event of odour complaints, the data enables complaints to be assessed against the meteorological conditions for the relevant period. Meteorological information will be recorded and sent to the EA.

5.3 Olfactory Monitoring

5.3.1 As part of the daily site checks, appropriately trained and experienced site personnel will carry out olfactory monitoring on- site. Only if odour is detected as being a potential issue, it will be checked off-site at selected locations.

5.3.2 Additional locations for monitoring may also be included if complaints are received, depending on the frequency and location of any complaints received at the site.

5.3.3 The monitoring results, in particular wind direction, will be recorded on the daily Site Inspection Sheet, which forms part of the Site's Management System.

5.3.4 Olfactory monitoring will be carried out in accordance with the recommendations detailed in the Environment Agency H4 guidance, including avoidance of strong foods or drinks and strongly scented deodorisers or toiletries etc for at least half an hour prior to the monitoring. In addition, individuals suffering from a cold, sore throat, or sinus problems that may impair their ability to detect odours will not undertake the olfactory monitoring.

5.3.5 The designated person will exit their vehicle and remain in the locality for a minimum of 1 minute whilst breathing normally. Any external activities that may contribute to odour generation in the surrounding area will also be noted on the form and an assessment of the intensity of the odour will be made using the key provided. The routine monitoring points have already been assessed for sensitivity, but should any additional locations be used, the sensitivity will be entered using the key provided.

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

5.4 Odour Abatement Monitoring

5.4.1 Emissions to air will not be significant from the repackaging and bulking operations, as an activated carbon filter will be installed in the relevant buildings to capture odours and VOCs from the air leaving the buildings. The carbon filter will be maintained in accordance with manufacturers recommendations and checked as part of daily site checks.

5.5 Complaints Monitoring

5.5.1 Any complaints received directly by the Site or via the Regulatory Bodies, including the EA and Local Authority, will be recorded following the Complaints Procedure. Investigation will then be conducted via olfactory monitoring at the location of the complaint and on-site to substantiate the extent and location of the plume and to identify the source of the odour.

5.5.2 If necessary, odour monitoring will also be carried out at the nearest sensitive receptors to the site and the monitoring results recorded.

5.6 Odour Complaints

5.6.1 Whilst the proposed permit variation involves the addition of new waste management and treatment processes, the Operator has said there has not been any history of previous complaints relating to odour at the Site.

6.0 REMEDIAL ACTION PLAN

6.1 Action Plan

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

- Additional olfactory monitoring, as detailed in Section 5.3 above, to identify the extent of the odour plume and potential cause for the odour i.e. waste material and/or process activity.
- Examination of the operational activities at the site at the time of the odour complaint or odour identification.
- Examination of the meteorological conditions at the time of the complaint or odour identification
- Examination of the process conditions i.e. waste types, length of storage, etc.
- Carry out a review of the operational procedure and process controls and instigate any control measures immediately following identification of the problem.

6.1.2 Further olfactory monitoring will be carried out to ensure the issue has been addressed and to monitor the effectiveness of any control measures undertaken.

7.0 GENERAL SITE PROCEDURES

7.1 Record Keeping and Reporting

7.1.1 The Odour Management Plan will be stored as an electronic copy on the Operator's computer system, available on-site for reading and printing as required.

7.1.2 The procedure for recording via the Complaints Procedure will be undertaken as detailed above. All information is recorded digitally and maintained within a digital database. All information can be accessed via computer within the Site Office and will be made available to the Environment Agency on request. This record keeping already forms part of the Site's Management System.

7.2 Staff Training

7.2.1 The designated person or Site Manager will be responsible for ensuring staff receive proper and adequate training in respect of odour management.

7.2.2 Site staff will undergo training to ensure that they understand how their actions and the site operations can affect odour emissions. Staff will be instructed to not operate unless the site controls are operational and to alert site management at times when the site could potentially cause an odour nuisance.

7.2.3 Staff will be trained to identify offensive odours caused by operations that could potentially leave the site boundary. Staff will be instructed to report odour emissions to the designated person or the Site Manager with immediate effect.

7.2.4 Staff training records will also be updated and stored within the FCC EcoOnline database accessed within the Site Office.

7.3 Odour Management Plan Review

7.3.1 This Odour Management Plan (OMP) will be reviewed on a regular basis, at least annually, or if there are relevant changes in the site operations or procedures, or following receipt of a significant and substantiated complaint that requires a change in management procedures for the site.

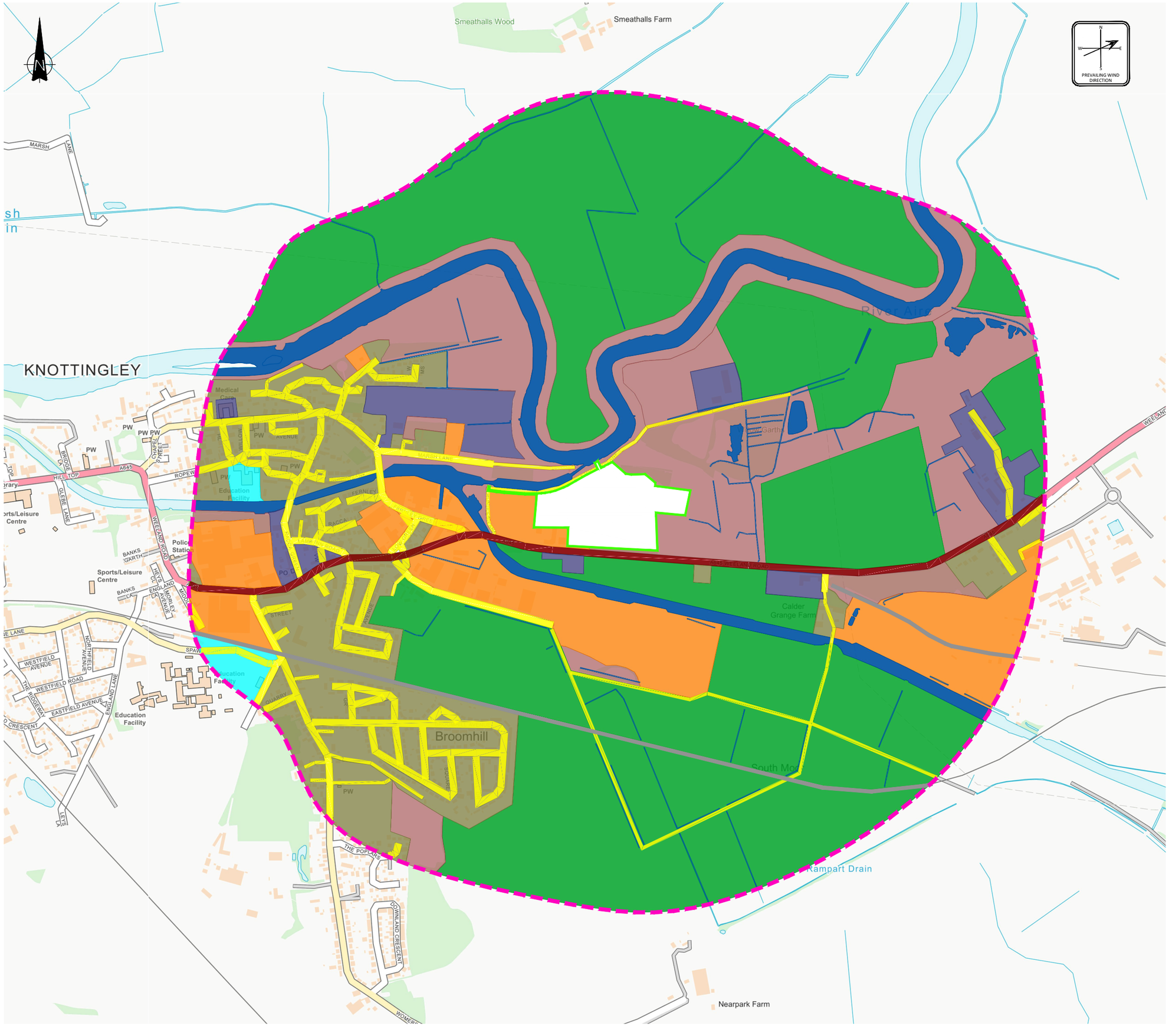
DRAWINGS

5827-CAU-XX-XX-DR-V-1800 Sensitive Receptors Plan

5827-CAU-XX-XX-DR-V-1804 Permit Boundary Plan

5827-CAU-XX-XX-DR-V-1808 Sampling and Emission Point Plan – Waste Processing 06

5827-CAU-XX-XX-DR-V-1809 Sampling and Emission Point Plan – Waste Processing 07



LEGEND

- PERMIT BOUNDARY
- 1000m OFFSET
- SURFACE WATER
- WOODLAND / SCRUBLAND
- COMMERCIAL / LEISURE
- EDUCATIONAL FACILITY
- INDUSTRIAL
- RESIDENTIAL
- MAJOR ROAD
- MINOR ROAD
- RAIL

REV					
P03	LEGEND UPDATED	EJD	JC	JC	06.08.25
P02	PERMIT BOUNDARY UPDATED	EJD	JC	JC	09.07.25
P01	ISSUED FOR INFORMATION	EJD	ER	ER	16.04.24
REV	MODIFICATIONS	BY	RE	AP	DATE

PURPOSE OF ISSUE: FOR INFORMATION

STATUS: S2

CLIENT: FCC Environment

PROJECT:

KNOTTINGLEY WASTE TO RESOURCE FACILITY

TITLE:

SENSITIVE RECEPTOR PLAN

DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY
EJD	EJD	ER	ER

DATE	SCALE @ A3	JOB REF:	REVISION
16.04.2024	1:10000	5827	P03

DRAWING NUMBER: 5827-CAU-XX-XX-DR-V-1800

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RIVER AIRE

DISCHARGE

STOCKING LANE

TRUNDLES LANE

Surface Water Storage

Waste Processing 07

INT 01

EP07

P07-ZP-01

Sewer Connection

Effluent

Waste Processing 02

EP02

P02-ZP-01

Waste Storage 02
(packaged only)

S02-ZS-01

General Storage 01

GS1-OS-01

General Storage 02

GS1-ZS-02

Packaged
Waste
Offloading
Area

Tanker
Holding
Area

Waste Processing 06

INT 02

EP26

EP06

EP16

P06-ZP-11

P06-ZP-21

P06-ZP-31

Surface Water Storage

INT 03

Waste Processing 03

EP03

P03-ZP-01

Waste Storage 01

S01-OS-01

Reception
Area

EP05

Diesel

EP11 EP01

Waste Processing 01

P01-ZP-01

Weighbridge

Waste Processing 05

P05-ZP-01

EP08

B01-ZP-01

EP18

B01-ZP-02

Boiler Complex

FIRE TANK

SUB

SUB

PUMP HOUSE

MANOEUVRING

YE Equipment
Transformer

Switchroom

Weighbridge

Switchroom
Transformer
YE Equipment

Offices and Labs

EP14

EP24

EP04

INT 04

P04-ZP-01

WEELAND ROAD

Gas Main

Water Main

Waste Processing 04

Water Main

NOTES

1. DO NOT SCALE FROM THIS DRAWING, WORK FROM FIGURED DIMENSIONS ONLY. ALL DIMENSIONS ARE IN METRES AND ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM UNLESS NOTED OTHERWISE.

2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS.

LEGEND

- OWNERSHIP BOUNDARY
- PERMIT BOUNDARY
- H — HYDRANT

REV	MODIFICATIONS	BY	RE	AP	DATE
P03	LEGEND AMENDED	EJD	JC	AS	06.08.25
P02	HYDRANTS ADDED TO DRAWING	EJD	JC	AS	28.07.25
P01	ISSUED FOR INFORMATION	EJD	JC	AS	10.07.25

CLIENT: FCC Environment

PROJECT: KNOTTINGLEY WASTE TO RESOURCE FACILITY

TITLE: PERMIT BOUNDARY PLAN

PURPOSE OF ISSUE			STATUS
FOR INFORMATION			S2
DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY
EJD	EJD	JC	AS
DATE	SCALE @ A1	JOB REF:	REVISION
10.07.2025	1:750	5827	P03

DRAWING NUMBER: 5827-CAU-XX-XX-DR-V-1804

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Waste Processing 06

INT 02

EP34 EP35 EP36
P06-TS-1 1 P06-TS-1 2 P06-TS-1 3

EP37
P06-TS-1 4

EP38 EP39 EP40
P06-TS-1 5 P06-TS-1 6 P06-TS-1 7

EP41 EP42 EP43
P06-TS-2 1 P06-TS-2 2 P06-TS-2 3

EP44
P06-TS-2 4

EP45 EP46 EP47
P06-TS-2 5 P06-TS-2 6 P06-TS-2 7

EP48 EP49
P06-TS-3 1 P06-TS-3 2

EP50 EP51 EP52
P06-TS-3 3 P06-TS-3 4 P06-TS-3 5

EP53 EP54 EP55
P06-LS-3 6 P06-LS-3 7 P06-LS-3 8

EP10

P06-TP-1 1
P06-TP-1 2
P06-TP-1 3

P06-TP-2 1
P06-TP-2 2
P06-TP-2 3

P06-TP-3 1

EP06

EP11

P06-ZP-11

P06-AP-0 1

P06-ZP-21

P06-AP-0 2

P06-ZP-31

NOTES

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2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS.

LEGEND

BUILDINGS

REV	MODIFICATIONS	BY	RE	AP	DATE
P01	ISSUED FOR INFORMATION	EJD	JC	AS	17.12.25

PURPOSE OF ISSUE: FOR INFORMATION
STATUS: S2

CLIENT: FCC Environment

PROJECT:
KNOTTINGLEY WASTE
TO RESOURCE FACILITY

TITLE:
SAMPLING AND EMISSIONS
POINT PLAN - WASTE PROCESSING 06

DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY
EJD	EJD	JC	JC
DATE	SCALE @ A2	JOB REF:	REVISION
16.12.2025	1:200	5827	P01

DRAWING NUMBER
5827-CAU-XX-XX-DR-V-1808

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Waste Processing 07

NOTES

1. DO NOT SCALE FROM THIS DRAWING, WORK FROM FIGURED DIMENSIONS ONLY. ALL DIMENSIONS ARE IN METRES AND ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM UNLESS NOTED OTHERWISE.

2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS.

LEGEND

- OWNERSHIP BOUNDARY
- PERMIT BOUNDARY
- BUILDINGS

WS1-TS-0 2

WS1-TS-0 1

WS1-TS-0 1

EP57

P07-TS-0 2

EP59

P07-TP-1 1

EP62

P07-TP-1 2

EP64

P07-TP-1 3

EP66

P07-TP-1 5

EP67

P07-TP-1 4

EP56

P07-TS-0 3

EP60

P07-TP-0 1

EP68

P07-TP-2 4

EP58

P07-TS-0 1

EP61

P07-TP-2 1

EP63

P07-TP-2 2

EP65

P07-TP-2 3

EP69

P07-TP-2 5

EP71

P07-TP-3 1

P07-TP-3 2

P07-TP-3 3

EP70

P07-TS-0 6

EP07

P07-AP-0 1

Door

Roller shutter door

Door

Panel room

Door

Wash pump

Chemicals

Wash and Permeate tank

Ultrafiltration

Nanofiltration

Sandfilter

Sandfilter

Ultrafiltration

Wash and Permeate tank

Wash pump

Chemicals

Acetic acid tank

P07-TS-0 4

Chemicals

P07-TS-0 5

Sulfuric acid tank

Feed pump decanter

Polymere

Polymere make-up station

Dosing pump Polymere

Reverse osmosis pass 2+3

Reverse osmosis pass 2+3

SP2

SP1

Skip

Decanter

P07-ZP-01

Dosing station

Door

Roller shutter door

REV	DESCRIPTION	BY	RE	AP	DATE
P01	ISSUED FOR INFORMATION	EJD	JC	AS	17.12.25

PURPOSE OF ISSUE: FOR INFORMATION

STATUS: S2

CLIENT: FCC Environment

PROJECT: KNOTTINGLEY WASTE TO RESOURCE FACILITY

TITLE: SAMPLING AND EMISSIONS POINT PLAN - WASTE PROCESSING 07

DESIGNED BY	DRAWN BY	REVIEWED BY	AUTHORISED BY
EJD	EJD	JC	JC

DATE	SCALE @ A2	JOB REF:	REVISION
16.12.2025	1:200	5827	P01

DRAWING NUMBER: 5827-CAU-XX-XX-DR-V-1809

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APPENDIX 1

Environment Agency Nature and Heritage Conservation Screening Report

Nature and Heritage Conservation

Screening Report: Bespoke installation

Reference	**EPR/JP3547JL/P001**
NGR	**SE 51142 23864**
Buffer (m)	**120**
Date report produced	**24/05/2024**
Number of maps enclosed	**3**

This nature and heritage conservation report

The nature and heritage conservation sites, protected species and habitats, and other features identified in the table below **must be considered in your application**.

In the further information column, there are links which give more information about the site or feature type and indicate where you are able to self-serve to get the most accurate site boundaries or feature locations.

Most designated site boundaries are available on Magic map. Using Magic map allows you to zoom in and see the site boundary or feature location in detail, Magic map also allows you to measure the distance from these sites and features to your proposed boundary. Help videos are available on Magic map to guide you through.

Where information is not publicly available, or is only available to those with GIS access, we have provided a map at the end of this report.

Sites and Features within screening distance	Screening distance (km)	Further Information
Local Wildlife Sites (LWS) (see map below) **Willowgarths** **Park Baulk Quarry, Knottingley**	2	Appropriate Local Record Centre (LRC) Appropriate Wildlife Trust

Protected Species within screening distance	Screening distance (km)	Further Information
European Eel migratory route **River Lamprey migratory route** (see map below)	up to 2	Natural England Environment Agency. Dial 03708 506 506 for your local Fisheries and Biodiversity team

Protected Habitats within screening distance	Screening distance (km)	Further Information
Reedbeds (see map below)	up to 2	Natural England

Where protected species are present, a licence may be required from Natural England to handle the species or undertake the proposed works.

The relevant Local Records Centre must be contacted for information on the features within local wildlife sites. A small administration charge may also be incurred for this service.

The following nature and heritage conservation sites, protected species and habitats, and other features have been checked for, where they are relevant for the permit type requested, but have not been found within screening distance of your site unless included in the list above.

Special Areas of Conservation (cSAC or SAC), Special Protection Area (pSPA or SPA), Marine Conservation Zone (MCZ), Ramsar, Sites of Special Scientific Interest (SSSI), National Nature Reserve (NNR), Local Nature Reserve (LNR), Local Wildlife Sites (LWS), Ancient Woodland, relevant species and habitats.

Please note we have screened this application for features for which we have information. It is however your responsibility to comply with all environmental and planning legislation, this information does not imply that no other checks or permissions will be required.

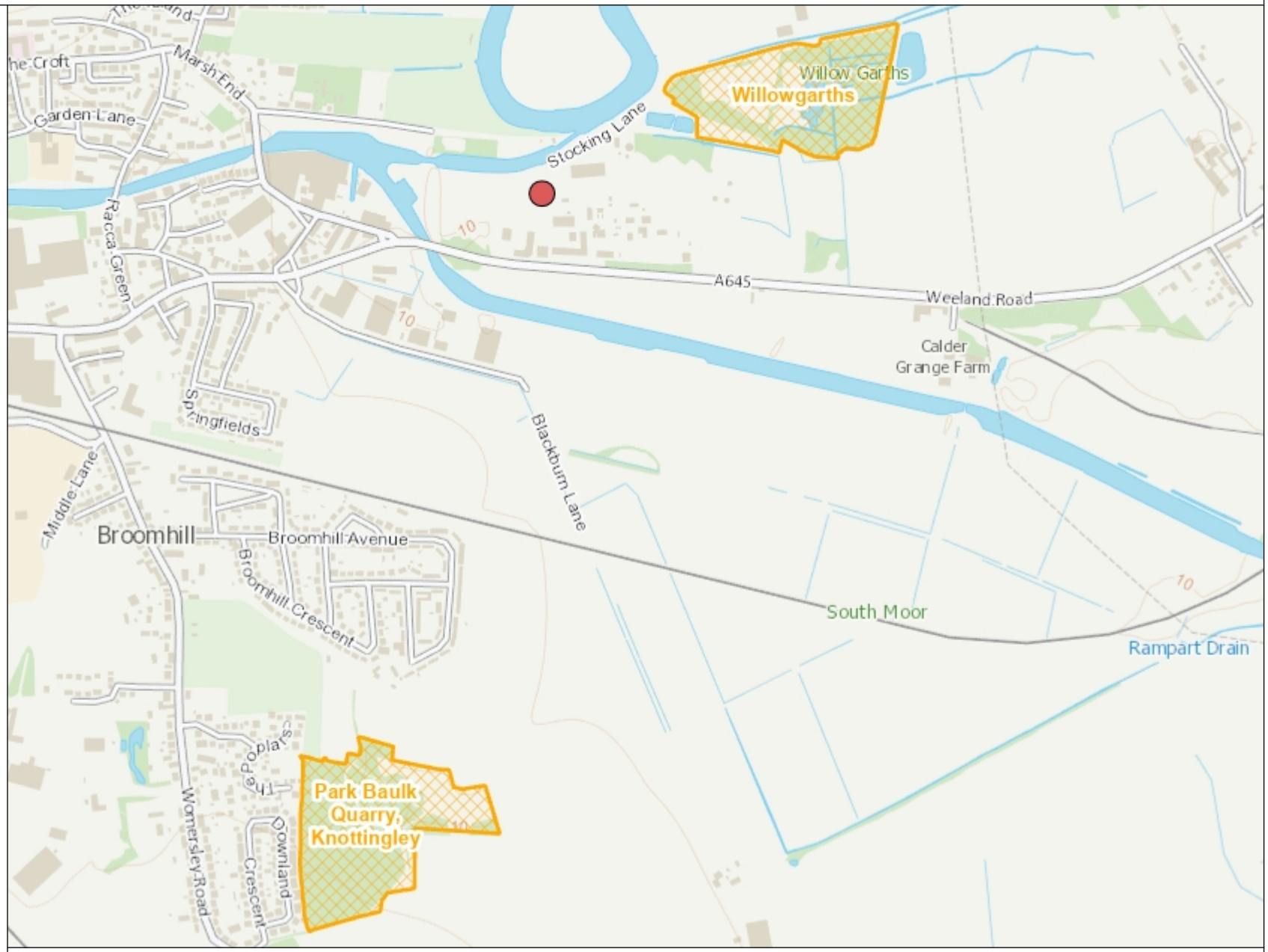
The nature and heritage screening we have conducted as part of this report is subject to change as it is based on data we hold at the time it is generated. We cannot guarantee there will be no changes to our screening data between the date of this report and the submission of the permit application, which could result in the return of an application or requesting further information

Local Wildlife Sites

Environment Agency

Legend

Local Wildlife Sites



1: 10,000

0 250

Metres

N

W E

S

Protected Species

Environment Agency

Legend

Fish migratory routes screened for Environmental Permits

1: 10,000

0 250

Metres

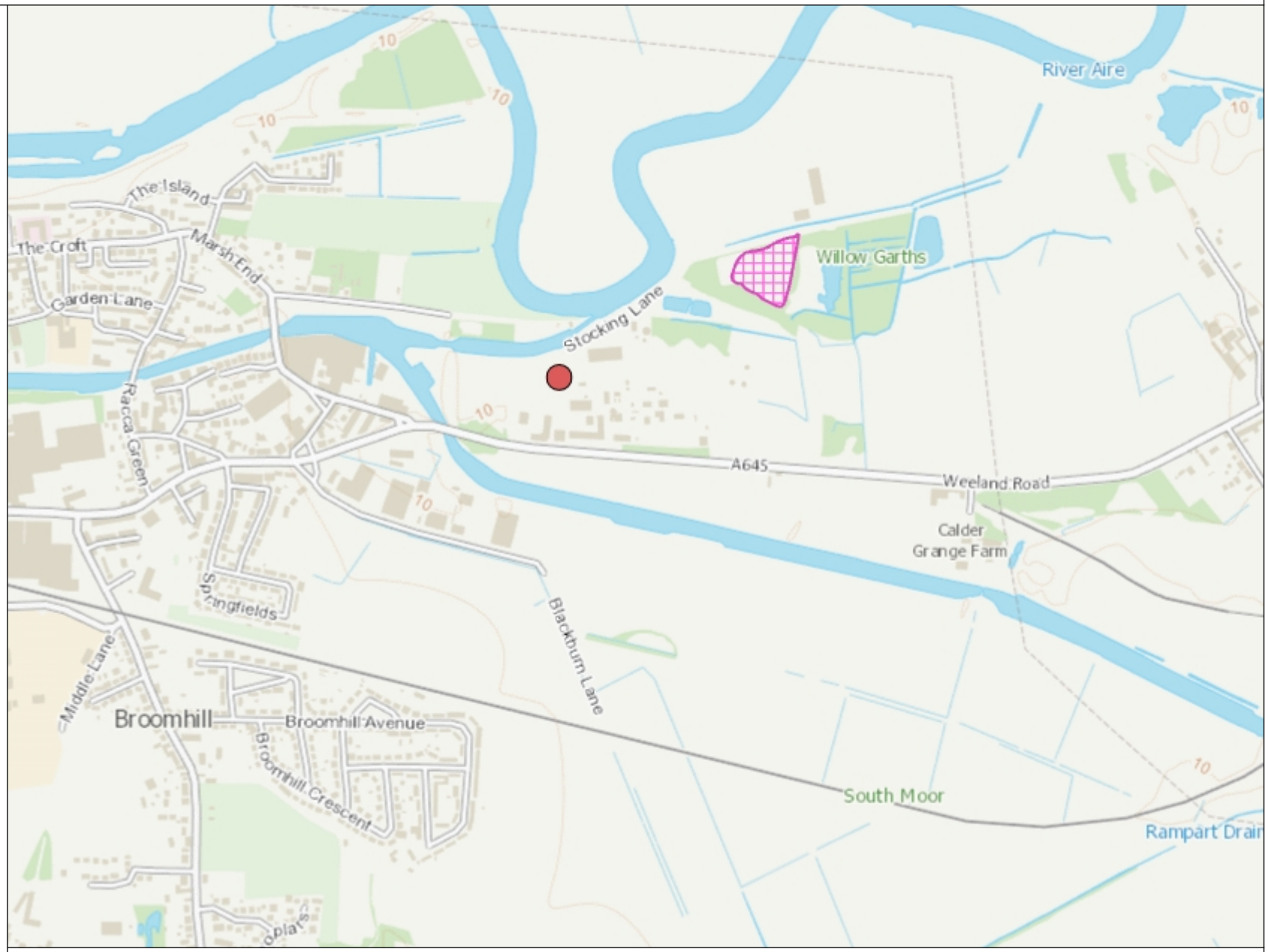
N W E S

Protected Habitats

Environment Agency

Legend

Protected Habitats screened for Env Permits



1: 10,000

0 250

Metres

N W E S

APPENDIX 2

Leak Detection and Repair Protocol

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Tel: 01248 672666
Email: contact@caulmert.com
Web: www.caulmert.com

Leak Detection and Repair Plan

Provisions to prevent accident releases of pollutants to the Environment are described in the BAT document. This document summarises those activities.

Ensuring adequate monitoring and maintenance of equipment forms part of the Integrated Management System and associated procedures to be employed on the site. The application and suitability of these systems are audited both internal and by external auditors to maintain the British Standard certifications issued to the facility.

To mitigate against the risks of leakage of reagents and wastes the Knottingley Waste to Recovery facility provides:

- That operational areas are on impermeable surfaces with kerbing or bunding as appropriate to protect non operational areas. Daily site walkovers will take place to monitor the condition of the impermeable floors, kerbing and bunding to visually identify any wear or damage that may lead to loss of containment and identify any need for remedial action. The need for such action is logged, appropriate immediate action undertaken (e.g. additional temporary containment measures or cessation of activities in an area) and a defect report raised to instigate a suitable repair or modification to ensure the area concerned remains fit for purpose.
- That tanks, process equipment and vessels, ducting and pipework, other than associated with site drainage system and spill collection sumps, are above ground and within the impermeable area. Additional containment is provided within the main process areas with internal bunding of the buildings, including those storing reagents or wastes, tanks either individually bunded or grouped within a specific bunded area. Daily site walkovers will inspect tanks, process vessels, and pipework for signs of damage or leak, or unusual odours or other signs of leakage, and identify any need for remedial action. The need for such action is logged, appropriate immediate action undertaken (e.g. temporary repairs or cessation of use) and a defect report raised to instigate a suitable repair, modification, or replacement to ensure the equipment concerned remains fit for purpose. An Engineering Protocol will be developed and employed to ensure the routine maintenance inspection of tanks, process equipment and vessels and pipework in line with good practice. Engineering works identified, or undertaken as routine servicing and inspection, will be undertaken by suitably qualified staff or contractors.
- That the use of underground sumps will be avoided and limited to blind sumps for the collection of rainwater or spillages in impermeable areas or interceptors for the cleaning of (potentially) contaminated surface waters. Such sumps will be observed as fit for purpose and subject to an annual integrity test.

- That the site drainage system is such that all waters not within a tank or building bunds, are collected at a central point prior to being pumped to surface water or sewer as appropriate. Monitoring of this water provides an additional indication that a leak may have occurred and will prompt an investigation and appropriate action to remedy any relevant issue.
- That in addition to routine monitoring staff are trained in 'near miss and incident reporting' which allows for reporting of issues outside of formal daily or other routine inspections. An electronic incident management system is used to record these reports and instigate action by the relevant individuals– 'see it, say it, sorted' approach. Near miss and incident reports, with associated actions are collated and reviewed monthly to identify any negative trends or learning lessons.
- That the practices and procedures highlighted form part of the Integrated Management System which is subject to internal and external independent audit on an annual basis which may identify correct actions or opportunities for improvement.

APPENDIX 3

Summary of Emission Points and their corresponding grid references.

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Tel: 01248 672666
Email: contact@caulmert.com
Web: www.caulmert.com

ID NEW	ID OLD	TANK ID	Grid References
SW1			SE 51236 23988
S1			SE 50944 23920
SP1			SE 51349 23903
SP2			SE 51345 23903
SITE WIDE			
EP01	EP01	GS1-TS-01	SE 51202 23827
EP02	EP02		SE 51155 23906
EP03	EP03		SE 51074 23822
EP04	EP04		SE 51301 23757
EP05	EP05		SE 51234 23838
EP06	EP06		SE 51292 23832
EP07		P07-AP-0 1	SE 51326 23924
EP08	EP08		SE 51324 23809
EP09	EP11		SE 51193 23826
EP10	EP26		SE 51292 23853
EP11	EP16		SE 51314 23832
EP12	EP18		SE 51333 23792
EP13	EP24	P04-AP-0 3	SE 51355 23764
EP14	EP14	P04-AP-0 2	SE 51349 23764
WASTE PROCESSING 04			
EP15		P04-TS-0 3	SE 51346 23761
EP16		P04-TS-0 1	SE 51339 23758
EP17		P04-TS-0 2	SE 51339 23749
EP18		P04-TS-0 4	SE 51352 23758
EP19		P04-TS-0 5	SE 51350 23751
EP20		P04-TS-0 6	SE 51349 23745
EP21		P04-TS-0 7	SE 51354 23752
EP22		P04-TS-1 1	SE 51360 23761
EP23		P04-TS-1 2	SE 51360 23758
EP24		P04-TS-1 3	SE 51360 23755
EP25		P04-TS-2 1	SE 51359 23752
EP26		P04-TS-2 2	SE 51359 23749
EP27		P04-TS-2 3	SE 51359 23746
EP28		P04-TS-3 1	SE 51366 23760
EP29		P04-TS-3 2	SE 51366 23757
EP30		P04-TS-3 3	SE 51366 23754
EP31		P04-TS-3 4	SE 51365 23751
EP32		P04-TS-3 5	SE 51365 23748
EP33		P04-TS-3 6	SE 51365 23745
WASTE PROCESSING 06			

EP34	P06-TS-1 1	SE 51276 23867
EP35	P06-TS-1 2	SE 51280 23867
EP36	P06-TS-1 3	SE 51285 23867
EP37	P06-TS-1 4	SE 51276 23862
EP38	P06-TS-1 5	SE 51276 23857
EP39	P06-TS-1 6	SE 51280 23857
EP40	P06-TS-1 7	SE 51285 23857
EP41	P06-TS-2 1	SE 51298 23867
EP42	P06-TS-2 1	SE 51303 23867
EP43	P06-TS-2 3	SE 51307 23867
EP44	P06-TS-2 4	SE 51298 23862
EP45	P06-TS-2 5	SE 51298 23857
EP46	P06-TS-2 6	SE 51303 23857
EP47	P06-TS-2 7	SE 51307 23857
EP48	P06-TS-3 1	SE 51320 23867
EP49	P06-TS-3 2	SE 51324 23867
EP50	P06-TS-3 3	SE 51320 23862
EP51	P06-TS-3 4	SE 51324 23862
EP52	P06-TS-3 5	SE 51329 23862
EP53	P06-LS-3 6	SE 51320 23857
EP54	P06-LS-3 7	SE 51324 23857
EP55	P06-LS-3 8	SE 51329 23857

WASTE PROCESSING 07		
EP56	P07-TS-0 3	SE 51279 23922
EP57	P07-TS-0 2	SE 51286 23928
EP58	P07-TS-0 1	SE 51286 23915
EP59	P07-TP-1 1	SE 51295 23929
EP60	P07-TP-0 1	SE 51295 23921
EP61	P07-TP-2 1	SE 51295 23914
EP62	P07-TP-1 2	SE 51303 23928
EP63	P07-TP-2 2	SE 51303 23915
EP64	P07-TP-1 3	SE 51314 23928
EP65	P07-TP-2 3	SE 51314 23915
EP66	P07-TP-1 5	SE 51322 23930
EP67	P07-TP-1 4	SE 51322 23926
EP68	P07-TP-2 4	SE 51322 23918
EP69	P07-TP-2 5	SE 51322 23913
EP70	P07-TS-0 6	SE 51322 23913
EP71	P07-TP-3 2	SE 51314 23902

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