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Consulting Engineers Limited

Port of Tilbury IWMTS

Cory Environmental Holdings Limited

Odour Management Plan

ENGINEERING CONSULTING

Document approval

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Contents

1 Introduction

Cory Environmental Holdings Limited (Cory) is applying to the Environment Agency (EA) for an Environmental Permit (EP) to construct and operate an Integrated Waste Management Transfer Station (IWMTS) (the 'Facility') at the Port of Tilbury

The aim of this Odour Management Plan (OMP) is to detail the provisions which have been incorporated into the design phase of the Facility to manage the risk of odour nuisance during operations.

This report identifies the odour management controls included in the design for the Facility and will be subject to review following completion of detailed design of the Facility; therefore, this report should be regarded as being a preliminary OMP, and subject to review following completion of detailed design.

During the operational lifespan of the Facility, this OMP will be a working document and will be used as a reference document for operational staff on a day-to-day basis. It will be subject to regular review at a frequency of no greater than 12-monthly intervals.

The Facility has been designed in accordance with the requirements of the current odour management guidance, including the following:

- Sector Guidance Note IPPC S5.06: Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste, Environment Agency;
- IPPC Reference Document on the Best Available Techniques for the Waste Treatments Industries (Waste Treatments BREF);
- Guidance Note H4: Odour Management, Environment Agency; and
- Odour Guidance for Local Authorities, DEFRA, March 2010[1].

1.1 Report Structure

In accordance with the requirement of the EA's H4 guidance, this report has the following structure:

- Section 2: A description of the Facility and the operations to be undertaken.
- Section 3: A review of potential odour sources, pathways and receptors.
- Section 4: The odour management and control measures.
- Section 5: Abnormal events and appropriate response measures.
- Section 6: Complaints and contingency procedures.
- Section 7: Timescales for review of this OMP.

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2 Site Location and Description

2.1 The Site

A site location plan is presented in Appendix A. The Facility will process up to 450,000 tonnes of waste per annum.

The nearest receptors that are highly sensitive to odour are the residential properties north east of the A126 Dock Road, located approximately 550 m north-east of the site boundary. The nearest receptors that are of medium sensitivity to odour are the neighbouring industrial premises which lie within 50 m of the site boundary. The location of each receptor in relation to the site boundary is identified in Table 4 and Appendix C.

2.1.1 Site address

Port of Tilbury IWMTS,

Port of Tilbury,

Tilbury Docks,

Tilbury,

RM18 7LA

2.2 Summary of Operations

The Facility will have a capacity to process up to 450,000 tonnes per annum (tpa) of municipal and commercial and industrial (C&I) waste.

The Facility will operate for around 22 hours in a 24-hour period during weekdays, and during weekends will have reduced operations for approximately 6 hours per day on Saturdays and Sundays. Therefore, the Facility will operate for approximately 6,400 hours per annum. The purpose of the Facility will be the compacting and bulking of waste for transport via barge to Cory's Riverside Resource Recovery Facility (RRRF) and the Riverside Energy Park (REP) (once this is operational) for treatment. A detailed description of each part of the process is provided below.

2.2.1 Waste types

The Facility will accept predominantly municipal solids wastes (MSW) in addition to small amounts of commercial and industrial (C&I) waste.

Waste will be sourced from kerbside Local Authority collections (households, flats), commercial premises (including shops, schools, offices, hotels etc), materials recycling facilities and potentially other waste transfer stations, and industrial premises (such as industrial estates). Waste will be delivered in a mixture of refuse collection vehicles (RCVs) and articulated lorries.

The proposed list of EWC codes which will be processed at the Facility is presented in Table 1.

Table 1: List of EWC codes

Code	Waste description
02	**Wastes from Agriculture, Horticulture, Aquaculture, Forestry, Hunting and Fishing, Food Preparation and Processing**

Code	Waste description
02 01	**Wastes from agriculture, horticulture, aquaculture, fo-restry, hunting and fishing**
02 01 03	Plant tissue waste
02 01 04	Waste plastics (except packaging)
02 01 07	Waste from forestry
02 02	**Wastes from the preparation and processing of meat, fish and other foods of animal origin**
02 02 03	Materials unsuitable for consumption or processing
02 03	**Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea, and tobacco preparation and processing; converse production, yeast and yeast extract production, molasses preparation and fermentation**
02 03 04	Materials unsuitable for consumption or processing
02 05	**Wastes from the dairy products industry**
02 05 01	Materials unsuitable for consumption or processing
02 06	**Wastes from the baking and confectionery industry**
02 06 01	Materials unsuitable for consumption or processing
02 07	**Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)**
02 07 04	Materials unsuitable for consumption or processing
03	**Wastes from Wood Processing and the Production of Panels and Furniture, Pulp, paper and Cardboard**
03 01	**Wastes from wood processing and the production of panels and furniture**
03 01 01	Waste bark and cork
03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	**Wastes from pulp, paper and cardboard production and processing**
03 03 01	Waste bark and wood
03 01 08	Wastes from sorting of paper and cardboard destined for recycling
04	**Wastes from the Leather, Fur and Textile Industries**
04 02	**Wastes from the textile industry**
04 02 21	Wastes from unprocessed textile fibres
04 02 22	Wastes from processed textile fibres
15	**Waste Packaging; Absorbents, Wiping Cloths, Filter Materials and Protective Clothing not otherwise specified**
15 01	**Packaging (including separately collected municipal packaging waste)**
15 01 01	Paper and cardboard packaging
15 01 02	Plastic packaging
15 01 03	Wooden packaging
15 01 05	Composite packaging
15 01 06	Mixed packaging

Code	Waste description
15 01 09	Textile packaging
15 02	**Absorbents, filter materials, wiping cloths and protective clothing**
15 02 03	Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
16	**Wastes not otherwise specified in the list**
16 01	**End-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)**
16 01 19	Plastic
16 02	**Wastes from electrical and electronic equipment**
16 02 16	Components removed from discarded equipment other than those mentioned in 16 02 15
16 03	**Off-specification batches and unused products**
16 03 04	Inorganic wastes other than those mentioned in 16 03 03
16 03 06	Organic wastes other than those mentioned in 16 03 05
17	**Construction and Demolition Wastes (including excavated soil from contaminated sites**
17 02	**Wood, glass and plastic**
17 02 01	Wood
17 02 03	Plastic
18	**Wastes from Human and Animal Health Care and/or Related Research (except kitchen and restaurant wastes not arising from immediate health care)**
18 01	**Wastes from natal care, diagnosis, treatment or prevention of disease in humans**
18 01 04	Wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)
18 02	**Wastes from research, diagnosis, treatment or prevention of disease involving animals**
18 02 03	Wastes whose collection and disposal is not subject to special requirements in order to prevent infection
19	**Wastes from Waste Management Facilities, Off-site Waste Water Treatment Plants and the Preparation of Water Intended for Human Consumption and Water for Industrial Use**
19 05	**Wastes from aerobic treatment of solid wastes**
19 05 01	Non-composted fraction of municipal and similar wastes
19 05 02	Non-composted fraction of animal and vegetable waste
19 05 03	Off-specification compost
19 06	**Wastes from anaerobic treatment of waste**
19 06 04	Digestate from anaerobic treatment of municipal waste
19 06 06	Digestate from anaerobic treatment of animal and vegetable waste

Code	Waste description
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 01	Paper and cardboard
19 12 04	Plastic and rubber
19 12 07	Wood other than that mentioned in 19 12 06
19 12 08	Textiles
19 12 10	Combustible waste (refuse derived fuel)
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
20	**Municipal Wastes (Household waste and similar commercial, industrial and institutional wastes) Including separately collected fractions**
20 01	**Separately collected fractions (except 15 01)**
20 01 01	Paper and cardboard
20 01 08	Biodegradable kitchen and canteen waste
20 01 10	Clothes
20 01 11	Textiles
20 01 25	Edible oil and fat
20 01 32	Medicines other than those mentioned in 20 01 31
20 01 36	Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35
20 01 38	Wood other than that mentioned in 20 01 37
20 01 39	Plastics
20 01 41	Wastes from chimney sweeping
20 02	**Garden and park wastes (including cemetery waste)**
20 02 01	biodegradable waste
20 02 03	Other non-biodegradable wastes
20 03	**Other municipal wastes**
20 03 01	Mixed municipal waste
20 03 02	Waste from markets
20 03 03	Street-cleaning residues
20 03 07	Bulky waste

2.2.2 Waste reception

Waste will be delivered to site, via road, in refuse collection vehicles (RCVs) and articulated lorries. The vehicles will enter the site via a weighbridge which will be used to record the mass of each incoming load. Weighbridge staff will check the documentation accompanying each incoming load to ensure the load meets the Facility's Waste Acceptance Criteria (WAC) and the list of acceptable wastes, which will be detailed in the EP. Although there is no specific WAC to limit the age of waste

received at the Facility, the municipal residual waste received at the Facility will typically be less than 2 weeks old in accordance with Local Authority waste collection frequency.

Waste delivery vehicles will enter and exit the main building through two roller shutter doors located to the north of the building. Once the vehicles have entered the main building, the vehicles will deposit waste onto a designated conveyor belt system within the main building, before existing the building. The delivery vehicles will then exit the site via the weighbridge, where the mass of the load will be recorded.

The waste will be visually inspected as it is unloaded onto the conveyor system. It is anticipated that between 25 – 30 vehicles will access the site each hour, with each vehicle able to hold an average of 10 tonnes of waste.

2.2.3 Waste processing

Once waste has been deposited onto the conveyor belt system within the main building, the waste will then be fed into the compactors, where the waste will then be compacted into containers. A bag splitter will be installed within the system to split any large bags of waste prior to compaction. There will be sufficient space within the main building for up to 10 compactors. Once a container is full of compacted waste, it will be automatically disconnected from the compactor and transferred from the compaction bays to the quayside using the container transfer system. There will be sufficient space for the storage of empty containers stacked within the main building, to ensure a continued supply of empty containers to be fed to the compactors. Empty containers would be regularly cleaned off-site to reduce the risk of build-up of any odorous materials.

Each container will have the capacity to hold approximately 13 tonnes of waste and will be around 6 m in height. It is anticipated that the Facility will process around 120 – 130 containers each day. Therefore, the Facility will process up to 1,690 tonnes of waste per day.

Taking into consideration, the capacity of the Facility, it is expected that approximately 33,600 containers will be processed each year. Once a container is full of compacted waste, it will be automatically disconnected from the compactor, and the full containers transferred from the compaction bays to the quay via an automated trolley system.

2.2.4 Waste export

Once full, the containers will be lifted into the quayside stack using a retractable crane for storage prior to export off-site via barges. A site layout plan is attached as Appendix B which shows the location of the quayside operations.

Two rail-mounted barge server cranes will facilitate the lifting operations between the trolley, stack and the barges. The barges will subsequently transport the waste along the River Thames to the RRRF and REP. Once containers of waste have been unloaded at their destination and cleaned if required, the empty containers will subsequently be returned to the Facility via barges.

2.2.5 Waste storage arrangements

The maximum quantities (retention capacity) and retention times of waste within the different areas of the site are presented in Table 2.

Table 2: Waste Storage Arrangements

Waste stream	Location	Containment (how it is stored)	Approximate storage capacity	Maximum storage time
Containerised waste	Quayside storage area	Enclosed metal containers, hardstanding	1,950 tonnes	72 hours
Loose waste	Main building	Hardstanding, contained process drainage	<450 m^3	72 hours
Unacceptable waste (loose)	Main building	Quarantine area – concrete walls, hardstanding, contained process drainage	TBC upon completion of detailed design	72 hours

3 Potential Sources, Pathways and Receptors

The potential odour sources, pathways and receptors are detailed below.

3.1 Odour sources

The key aspects of the operation of the Facility associated with the receipt, handling, processing and storage of waste which could lead to emissions of odour are identified in Table 3.

Table 3: Odour Inventory

Process	Location	Activities & Materials	Possible Release Point(s)
Transportation (import and export from the Facility)	Roads on approach to site, site entrance, weighbridge, barges	Emissions from surface of wastes being transported.	Fugitive emissions from bodies and trailers of vehicles, particularly if they are inadequately enclosed or covered.
Unloading of waste	Waste reception areas within main process building	Uncovering of loads and tipping of waste onto conveyor system.	Emissions generated by agitation of waste during tipping. Possible escape from the building though open doors, or other points of air exchange.
Waste processing	Main process building	Emissions from wastes being compacted	Emissions generated through agitation and compaction of waste. Possible escape into the atmosphere through open doors or other points of air exchange.
Waste storage	Quayside	Some emissions may be generated from the surface of compacted waste.	Fugitive emissions from containers, particularly if they are inadequately enclosed or covered.

3.2 Pathways

Odours emitted from the sources identified are emitted to air and have the potential to be conveyed to nearby receptors via transfer through the air.

The extent to which odour is detectable downwind and the intensity and character of such odours is dependent upon the following factors:

- The nature and magnitude of odorous emissions released from the source;
- Wind direction and wind speed; and
- Atmospheric turbulence (vertical and horizontal) and the level of dilution and dispersion odours undergo as they travel downwind.

All of these factors can exhibit substantial variation over time.

3.3 Sensitive receptors

The identification of potentially sensitive receptors has been conducted on the basis that the level of exposure to odour that is likely to generate annoyance in residential properties (i.e. people's homes) tends to be considerably lower than the levels which may generate annoyance at commercial premises where higher tolerance to odour exposure can generally be expected. The sensitivity of receptors has been defined as follows:

- high sensitivity receptors include residential dwellings, hospitals and schools;
- medium sensitivity receptors include places of work, commercial, industrial and retail premises, and playing/recreation fields; and
- low sensitivity receptors include farms, footpaths and roads.

Odour sensitive receptors within 1 km of the Facility are listed in Table 4 and a figure showing the location of receptors in relation to the Facility is presented in Appendix C.

Table 4: Sensitive Receptors

ID	Receptor Name	Sensitivity	Location		Approx. distance from site boundary (m)
			X	Y	
R1	Hughes & Associates	Medium	563043	176097	30
R2	Forest Product	Medium	563119	176093	30
R3	Tilbury Port West	Medium	562904	175638	160
R4	London Tilbury Seafarers	Medium	563195	176256	200
R5	Tilbury Port Central	Medium	563358	175946	180
R6	Tilbury Port South	Medium	563397	175369	360
R7	Dock Road 1	High	563493	176499	580
R8	Dock Road 2	High	563643	176340	610
R9	Dock Road 3	High	563839	176216	730
R10	Dock Road 4	High	563965	176101	800
R11	Landsdowne Primary Academy	High	563828	176325	760
R12	St Mary's Primary School	High	563936	176270	840

4 Odour Management and Control Measures

4.1 Monitoring

Routine olfactory inspection of the site will be conducted during operational hours by trained operators. During the inspection, a walk-around of the site boundary, as shown in Appendix B, will be conducted and observations made concerning the type and nature of any odours detected, including the likely source. The monitoring will be recorded and incorporated into the documented site management systems.

In the unlikely event odour is detected at the site boundary, the source of the odour will be investigated. Once the source and cause of the odour has been identified, appropriate mitigation measures to abate the odour will be implemented.

Full details of the monitoring to be undertaken are provided in section 4.5.

4.2 Waste pre-acceptance

The waste pre-acceptance or 'screening' will involve the provision of information and representative samples of the waste, to allow Cory to initially determine the suitably of the waste before arrangements are made to accept the waste at the site. This will allow Cory to screen for waste streams which could potentially have an unacceptable odour profile.

The screening procedure will include verifying the information provided by the waste producer, sampling of the waste and undertaking a visit to the waste producer if required. Following the overall characterisation of the waste, an assessment will be made of its suitability for processing at the Facility.

4.3 Waste acceptance

The majority of waste characterisation work is undertaken during pre-acceptance checks (refer to section 4.2 above) and the second stage of acceptance checks serve to confirm the characteristics of the waste that have already been identified.

A pre-booking system will be implemented to ensure that waste arrives in scheduled slots. Only waste types detailed within the EP will be accepted at the Facility.

Upon arrival at the site, the date and time of the receipt of waste will be recorded and the waste type/unique identification number confirmed. The accompanying waste transfer note will be reviewed to confirm the waste quantities, producer, EWC codes etc.

Waste deliveries would be supervised by suitably trained staff and will take place within areas covered by CCTV. Inspection, unloading and sampling areas will be marked on the site plan and have suitably contained drainage.

Particularly odorous waste will not be accepted. Should the situation occur where a load does contain particularly odorous wastes and has already been accepted at the Facility, the waste will be immediately placed in the main quarantine area and removed by the end of the working day. A load rejection form will be completed, and a copy of this form will be kept on site. A note of the load rejection will be made in the site diary. Recording of such information will assisting in identifying waste suppliers which persistently do not meet the waste acceptance requirements enabling remedial action to be taken. Should the waste not fall into the approved list of EWC codes within the permit, or otherwise present a significant risk of odour emissions, the EA will be informed.

4.4 Control measures

4.4.1 Waste delivery vehicles

All waste will be delivered to the Facility in covered vehicles, which will contain any fugitive emissions within the delivery vehicles.

4.4.2 Main process building

The main process building is an enclosed area which will be accessed via two roller shutter doors. The doors will be kept closed at all times, except during when waste deliveries are occurring.

Reducing the level of odour emissions within the main process building will improve the working environment and reduce the risk of fugitive emissions. The following control measures have been identified to reduce odour emissions within the building:

- Waste will be confined to designated unloading and stockpiling areas. Continual processing of waste will prevent build-up of odourous material on the floor of the building.
- Waste of any type will not be stored on site for more than 72 hours, and typically for less than 24 hours.
- Waste will be disturbed only when necessary for processing, as disturbance of waste will increase odour emissions.
- Waste that is not covered by the waste codes detailed in the EP will be rejected and removed from site.

4.4.3 Waste export

Once the waste has been compacted into containers, the containers will be sealed and moved by crane to the quayside storage prior to onward transfer via barges. It is anticipated that there will be up to 4 – 5 barges per day, each transporting up to 30 waste containers. The containers will have a metal door which will be shut and locked during transport to prevent fugitive odour emissions.

4.5 Odour monitoring

A programme of periodic odour monitoring will be undertaken. This will include the following:

- Olfactory (sniff) testing at the site boundary; and
- Measurements of wind direction and speed.

Olfactory (sniff) testing will be undertaken around the site boundary. Where odours at the boundary are identified, this will be reported to the site management team. An investigation into the source and root cause of the odours will be undertaken and appropriate actions plans to mitigate the odour impacts from the Facility as explained in section 6.

4.5.1 Competence

In order to ensure repeatability of the odour monitoring results, more than one competent odour assessors/staff will be on-site at all times. This will ensure that odour monitoring will continue if one individual is away or unavailable. Furthermore, as colds, sinusitis or sore throats can affect the sense of smell, having more than one trained individual will allow the monitoring to continue in the event of illness. However, if all individuals are suffering from illness etc then this fact will be

recorded on the odour monitoring forms. Cory will ensure that the number of trained individuals on-site at any one time, will not exceed four people in order to maintain the consistency of the results.

Cory acknowledges that it is important that these individuals do not spend, or have not spent, significant time in waste processing areas, as their sense of smell must not have become accustomed to the odours arising. The individuals undertaking the monitoring should avoid strong foods or drinks (including coffee) for at least half an hour before conducting the monitoring. Furthermore, strongly scented toiletries and the use of deodorisers within vehicles will be avoided.

4.5.2 Monitoring locations

The proposed locations for odour monitoring are presented in Appendix D. The proposed locations will be reviewed prior to commencement of operations to ensure that there are no accessibility constraints associated with them.

4.5.3 Monitoring frequency

In order to generate a detailed odour record, regular monitoring of boundary odour would be carried out. This will ensure a detailed set of data is maintained throughout the year.

Odour monitoring will also be undertaken upon receipt of any complaints in order to identify and record the odours present at the time of the complaint. Refer to section 6 for details of the odour complaint investigation procedure.

The strategy is flexible; therefore, the monitoring will not be conducted at a set time of day. Instead, the monitoring will be conducted when there is a high risk of odour generation, i.e. during peak delivery times where the doors to the main building will be frequently opening.

4.5.4 Data collection and recording

Before starting the odour monitoring the individual will record all pertinent details, such as date, time, weather conditions and activities being undertaken. This has been summarised the monitoring template contained within Appendix E. The use of an anemometer to determine wind direction will be considered during the detailed design phase of the Facility – this would be particularly useful in the event of any odour complaints being received at the site.

To quantify the odour at a specific level the 'Intensity' and 'Offensiveness' are recorded. These are based on a scale of 1 to 5 for 'Intensity' and 1 to 4 for 'Offensiveness', as presented in Table 5 (Odour Intensity) and Table 6 (Odour Offensiveness).

Table 5: Odour Intensity

Scale	Intensity Rating
1	No detectable odour
2	Faint odour (barely detectable, need to stand still and inhale facing into the wind to detect)
3	Moderate odour (easily detectable while walking and breathing normally)
4	Strong odour
5	Very strong odour (probably causing nausea)

Table 6: Odour Offensiveness

Scale	Offensiveness Rating
1	No detectable odour
2	Potentially offensive
3	Moderately offensive
4	Very offensive

As well as recording the odour Intensity and Offensiveness, general comments on the odour will also be recorded, such as persistence, transience and potential source.

4.5.5 Action limits

If a score of 1 is recorded for odour Intensity and Offensiveness at a monitoring location, odour from the Facility cannot be detected and no action is required.

If monitoring locations score a 2 or higher for Intensity or score a 2 or higher for Offensiveness, then a more detailed investigation into the activities being undertaken and the root cause of the odour will be undertaken. This will attempt to identify the source of the odour and possible ways to improve operations at the Facility to prevent odour being generated from on-site activities.

5 Abnormal Events - Contingency and Emergency Plans

This OMP assumes that the site will be running under expected operational conditions. However, there are a limited number of potential events which could result in an odorous emission from the site if not appropriately considered in advance.

5.1 Abnormal events and response measures

The plausible abnormal events, and planned responses in the event of these occurrences are presented in Table 7.

Table 7: Abnormal Events and Response Measures

Event	Location	Likely effect	Response measures
Meteorological conditions			
Temperature inversion (cold odourous air trapped beneath a layer of warm air under still conditions).	Any location	Increased risk of detectable odour outside of the site boundary.	Olfactory monitoring to focus on the down-flow boundaries of the site to monitor for the early signs of low level odour movement
Storm Conditions	Any location	Risk of increased impact from any area of site where normal operations are affected.	Short term (< 24 hours): Risk assess odour generation and impact by increasing frequency of Odour Assessment. Medium/long term (> 24 hours): Temporary suspension of incoming waste, and transfer odorous waste to an alternative waste treatment facility.
Hot conditions	Any location	Increased odour generation.	Risk assess odour generation and impact by increasing frequency of Odour Assessment. Any wastes identified as generating an odour will be prioritised for processing and transfer from the Facility.
Operations and equipment			
Severely odorous wastes received from a waste producer	Main process building	Increase in odour within the building while severely odorous waste is present. Any fugitive emissions become more serious.	Reject any waste which is believed to be severely odorous and does not comply with the waste acceptance procedures. Immediately place severely odorous waste in a designated quarantine area. Transfer of this waste off-site to a suitably licensed

Event	Location	Likely effect	Response measures
			waste management facility at the earliest opportunity. Prioritise processing of this waste to reduce the duration of time it is stored within the tipping area. Additional deliveries of waste from the waste producer may be suspended.
Development of anaerobic conditions in waste storage areas	Main process building	Increase odours within the building.	Waste will typically be stored on site for up to 24 hours, and not for more than 72 hours. Waste will be removed on a first-in, first-out principle.
Plant breakdown	Any location	Risk of increased impact from any area of site where normal operations are affected during and after the breakdown	A supply of critical spares will be maintained on site. If spares and/or a qualified engineer are not available, the relevant operations and their predecessors in the process will be suspended if necessary to prevent significant increase in odour emissions.

5.2 Staffing issues

Human error and accidents may cause elevated levels of odour to be created either through the stopping or breakdown of the process or the failure of equipment. Contingency mitigation measures will be developed as part of the detailed design, construction and commissioning of the Facility. This will include procedures to be implemented in the event of a lack of suitably trained and competent staff to operate the Facility.

5.3 Planned odorous events

If, at any time, it is necessary to undertake temporary actions that are likely to cause elevated levels of odour, Cory will contact the EA and any other relevant stakeholders before such actions are taken to inform them of the operations being undertaken and that the elevated levels of odour will be of a temporary nature.

6 Odour Action Plans/Contingencies

The measures outlined in this OMP are aimed at preventing odour emissions occurring to the extent where complaints may be made regarding odour by nearby sensitive receptors. Nevertheless, Cory considers that having an established complaints procedure is an essential part of implementing a successful OMP.

6.1 Odour complaint investigation

The following actions will be taken on receipt of an external odour complaint or the identification of odour at the site boundary:

- Any complaints received at the Facility will be logged in the site's incident reporting system. The Environment Agency will be informed as soon as possible after a complaint has been received.
- The site management will be given the details of the odour complaint as soon as possible, including the location, nature, time, and date of the complaint.
- If complaints are received, a "sniff test" will be conducted as soon as is practicable by suitably trained personnel in the area from which the complaint is received in order to assess the presence of any odours, and the odour characteristics and intensity. Where possible, the likely cause of the odour will be identified.
- For all complaints, reference will be made to the site activities at the time of the complaints, and further onsite investigations will be conducted to determine whether any abnormal operation are (or were) occurring. The following key potential causes of abnormal odour emissions will be investigated:
  a. Is the waste arriving in appropriate vehicles/containers?
  b. Are there any unusual characteristics evident in the waste on site (composition, age, condition etc.)?
  c. Are operations in 'normal operation'?
  d. Are there any unusual activities taking place off site?
- If the investigations identify that the source of the odour is an off-site source, feedback will be given to the complainant, and a complaint logged with the source of the odorous emissions.
- Once any on-site cause of the odour complaint has been established, any appropriate actions will be immediately implemented (see section 5.1), and actions devised to prevent reoccurrence.
- Feedback will be given to all complainants on the findings of any investigations if they are known, and a summary will be provided of any remedial measures taken to rectify odour problems and ensure that the problem has been suitably resolved. The complainant will be asked if the perceived problem is still occurring to measure any improvement achieved.
- Cory will submit a short factual report to the EA detailing:
  a. the complaint(s) received;
  b. the investigations conducted;
  c. the findings of those investigations;
  d. whether the complaint was substantiated;
  e. any remedial measures implemented; and
  f. any ongoing improvement actions to be implemented.

- Records of all complaints, subsequent investigations, and remedial actions will be retained on site for a minimum of five years. The site management will ensure that records are readily retrievable, and maintained as fit for retention. As applicable, records will be stored in accordance with data protection legislation.

6.2 Action plans

In the event that an odour complaint is proven to be justified and attributable to operations undertaken at the Facility, or a 'non-conformance' occurs, a defined action plan will be implemented. The following potential odour 'non-conformances' have been identified:

- abnormal odour emissions occur;
- significant odour is detected onsite that is believed to pose a risk of offsite odour impact; and
- significant site odour is detected off-site during the "sniff testing" exercise.

In the event that any of the above occurs, the following actions will be taken:

- If not previously undertaken, a walk-around of the entire site and a review of the activities undertaken at the Facility will be conducted in order to identify the likely cause(s) of the odour.
- Upon identification of the likely odour source(s), appropriate corrective and preventative measures will be identified and implemented, depending on the outcome of the investigations. The measures will consider, but not be limited to the following:
  a. Suspension of receipt of highly odorous waste in the relevant waste reception areas and the closure of all doors until excessively odorous wastes are processed or removed from site.
  b. Suspension of future receipt of the odorous waste stream until confirmed acceptable.
  c. Review of the effectiveness of waste acceptance, reception and handling procedures.

Details of any odour 'non-conformances' including the nature of the incident, results of investigations, action taken and any required amendments to the OMP will be made available to the EA on request.

7 Document Review

7.1 Review requirement and timescale

The OMP will initially be formally reviewed by Cory following detailed design of the Facility. Scheduled reviews will then be undertaken six months after the commencement of operations, and on an annual basis thereafter to ensure that the controls described are effective and reflect best available techniques. In addition, the OMP will be reviewed following any relevant changes in site operations or procedures that are likely to have implications from an odour generation/impact perspective.

Any required changes to the conditions set out within this document shall be formally agreed with the Environment Agency prior to their implementation.

Appendices

A Site Location Plan

B Site Layout Plan

C Sensitive Receptor Locations

D Odour Monitoring Locations

E Odour Assessment Report

Site		Date	
Weather		Wind (strength / direction)	
Temperature (°C)		Pressure (mbar if known)	
Ground Conditions		Cloud Cover	
General Air Quality		Time: Start	
		Time: Finish	
Activity on Site			

Plan attached showing location & extent of odour

YES / NO

Complaint Received?

YES / NO

If **YES** complete the following:

Date & time complaint received		Number of complaints which may relate to the same source	
Location of complaint			
Grid Reference (if not a property)		Time odour noticed and duration	

Additional Comments:

Action Required:

Signed: …… **Date: ……**

Test Location & Time	Intensity (1 – 5)	Offensiveness (1 – 4)	"Dilution to Threshold" Ratio	Comments: (including persistence, transience, potential source)

Note: The "Dilution to Threshold" Ratio is obtained from the Nasal Ranger and is only required if an odour is detectable, i.e. a 2 or higher for Intensity.

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