# Unit 41 Pembroke Dock

Application for Environmental Permit

Odour Management Plan

# 1.0 Introduction

This odour management plan seeks to identify the source, pathway and receptors of potential odour release as a result of the acceptance of municipal waste at Unit 41 Pembroke Dock.

The site will operate primarily as a waste transfer station with some low level waste treatment taking place on site prior to onward transport.

The waste delivered will be treated through low levels of treatment, through shredding with some metal extraction to separate high value recyclate, before being baled and wrapped for temporary storage prior to being moved off site for further treatment/incineration. It is the intention that the site will initially take acceptance of up to 30,000tpa of residual waste. It is anticipated that, under normal operational conditions, unprocessed waste will not be stored inside for longer than 48 hours and therefore there will be approximately 230 tonnes of unprocessed waste stored internally at any one time. At maximum capacity (74,000tpa) this will rise to 570 tonnes of residual waste stored internally at any one time. It should be noted that it is unlikely that the site will reach this maximum permitted capacity. There is sufficient internal storage capacity to allow for this and provide contingency storage should there be any processing failure.

The site is located close to residential properties, South Pembrokeshire Hospital, industrial units, sewage treatment plant, and a ferry terminal. It is therefore necessary to consider the potential for the proposed activities to result in an odour nuisance; especially beyond the site boundary.

# 2.0 Source-Pathway-Receptor Analysis

Due to the nature of the waste to be accepted at the site and its operations, there is the potential for odour to be released from the site. Figure 1 shows the potential sources of odour and release, the pathway by which odours are released and identified groups of sensitive receptors.

Figure 1: Source-Pathway-Receptor Analysis

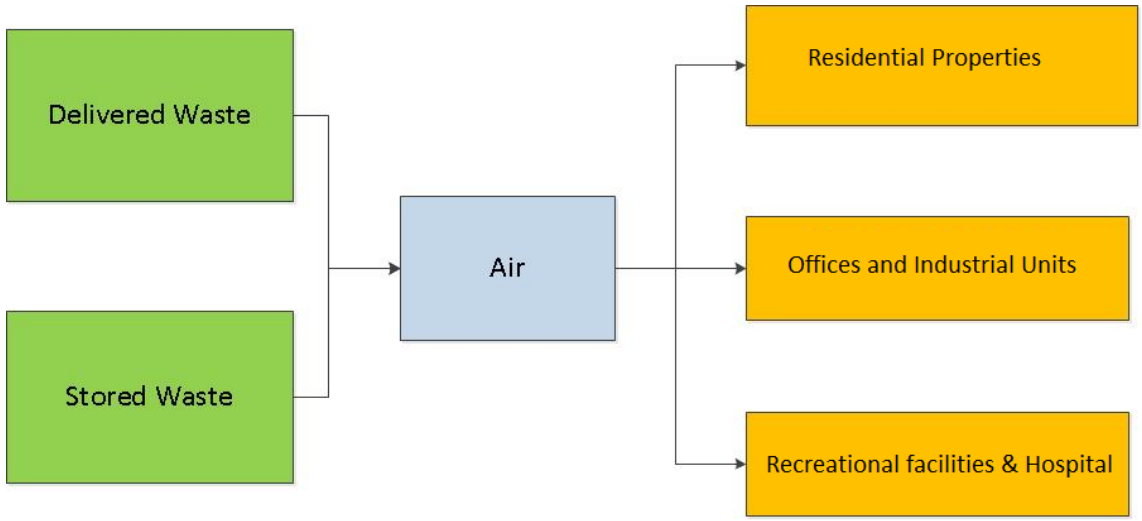



Table 1 identifies the nearest sensitive receptors, grouped into the different types indicated in Figure 1. The distance shown is approximate, measured from the centre location of the transfer; to the nearest boundary of the sensitive receptor (e.g. back gardens of residential buildings, and car parks of hospital etc.). It should be noted that Table 1 only notes the receptors in closest proximity to the site; there are large areas of residential properties to the North and North East beyond the distances shown in Table 1. These receptors and their sensitivity are discussed further in Section 3.0.

Table 1: Identification and Proximity of Sensitive Receptors

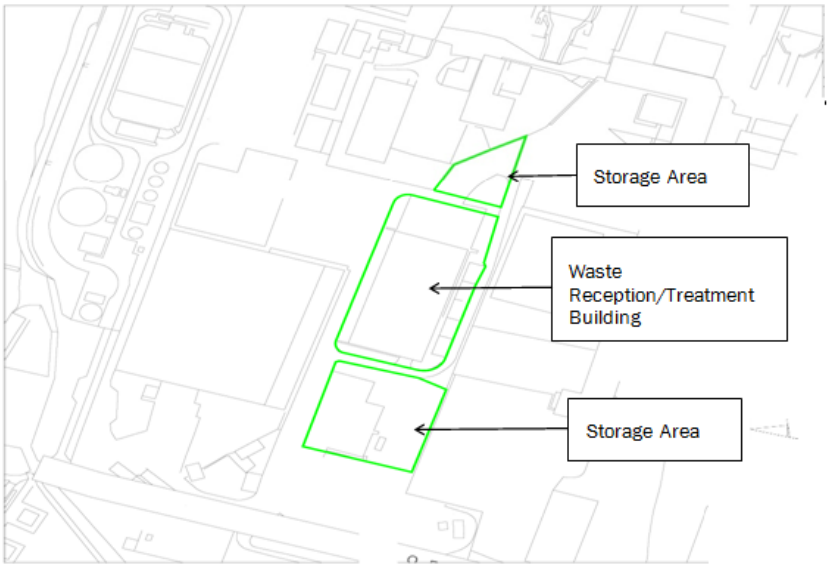
| Receptor Type | Location | Proximity to Source (meters) |
|---|---|---|
| Offices and Industrial Buildings | Mustang Marine | 40m |
| | Williams Shipping | 80m |
| | Sewage Treatment Plant | 130m |
| | Redhall Engineering Ltd | 169m |
| | Consumer Bubble | 197m |
| Recreational facilities & Hospital | Irish Ferries - Ferry Terminal | 100m |
| | South Pembrokeshire Hospital | 175m |
| Residential Properties | St Patricks Hill | 146m |
| | Victoria Road | 170m |
| | Southampton Row | 200m |
| | Orielton Terrace | 269m |
| | Neyland – Promenade | 1,290m |

# 3.0 Management of Odours

## 3.1 Sources

The facility at Unit 41 comprises a waste transfer station with some low level waste treatment. The source of odour at the site will be the waste arriving to be processed. The waste will be mixed municipal waste, which is European Waste Catalogue code 20 03 01. The definition of this waste stream, found in the Landfill Directive, is 'waste from households, as well as other waste which, because of its nature and composition, is similar to waste from households'. The definition is now

Figure 2: Site Plan



accepted by DEFRA.[1] For this facility, the waste will be residual waste, i.e. that waste which is not separated for reuse, recycling or composting. For local authority collected waste, whether from the kerbside or from household waste recycling centres, this means that it is the waste that has not been put into the recycling containers or separate food waste containers that the council provides. The characterisation of the waste from the different sources (kerbside from households, HWRC from households) is identical – it is household or similar waste that has not been separated for recycling or composting.

Waste will arrive at the facility in a number of ways:

1. Refuse Collection Vehicles (RCVs) will collect residual waste at the Kerbside from households; these RCVs will direct deliver the waste into the treatment facility once it has reached the maximum load capacity or once the route is finished. The direct delivered waste will be received at Unit 41 within a maximum of 8 hours from being collected at the Kerbside.
2. Residual Waste collected at the kerbside will be delivered to a bulking facility by the RCVs; from here an ejector trailer will be loaded with the waste for transportation onto Unit41. It is envisaged that this proportion of the waste will be delivered to Unit41 within 24 hours of collection from the Kerbside.
3. Residual Waste from Household Waste Recycling Centres will be delivered to Unit41 once the residual waste receptacle at the site has reached capacity. It is envisaged that the waste will be delivered within a maximum of 48hours of being received at a HWRC.

As part of the operational plan of the facility it is stated that all waste will be processed and wrapped on the same day it is received into Unit 41. No waste will remain on the floor within the "treatment building" overnight. This waste will undergo low level treatment and metal extraction; the residual element will then be baled and wrapped with a minimum of 8-10 layers of plastic film.

Under the lease agreement with the Port of Pembroke it is stipulated that all baled and wrapped waste will remain on site for a maximum of 6 weeks. This waste will then be transported to the end destination for disposal/recovery.

## 3.2 Releases

Due to the nature of the site operations, it is likely that both waste delivered to the site and waste stored onsite prior to transportation off site will be potential sources of odour release. Any odour release from either source may reach receptors via air.

Site operations will seek to minimise the release of odours by requiring all pre-treated waste to be delivered and deposited on site within the waste treatment building (see figure 2). To limit the emissions to air (e.g. odours, dust, VOCs) all waste will be deposited directly within the fully enclosed waste reception building. Doors can be closed between deliveries of waste to minimise release of odour.

[1] From the following website: https://www.gov.uk/local-authority-collected-waste-definition-of-terms accessed 17 December 2014.

A number of direct external vents will be in operation within the waste reception building. All side vents will remain closed during operations; the vents that are to be utilised for dispersal are located on the roof of the building, to ensure effective dispersion and dilution of odour. The management of the vents will be the responsibility of the Site Manager or Supervisor. Vents will be utilised at points during the day that best exploit dispersal conditions and at times which will have the least impact upon the residential receptors. Opening the vents during periods of likely temperature inversion will be avoided as far as possible. The operator will monitor weather forecasts to help decide when opening the vents is appropriate

Figure 3: Proposed Bales

To minimise any impact on operational staff from odour release within the site boundary, appropriate training and protective clothing will be provided in line with Health and Safety Executive Guidance[2].

Following treatment, waste will be baled and wrapped in a minimum of 8-10 layers of tough waterproof plastic film packaging in accordance with Waste Treatment Industries BAT 35b to reduce the release of odour. Baled and wrapped waste will be stored externally on hard standing prior to onward transportation.

Any baled waste which is identified as odorous will be investigated as to the cause; it will then either be brought into the treatment building to be re-wrapped if appropriate or if no remedial action will be effective then it will be removed from site for disposal.

## 3.3 Impacts

A number of vulnerable receptors have been identified:

- Settlement of Neyland – located 0.8 miles to the North across Milford Haven estuary;
- Settlement of Pembroke Dock – located 0.2 miles to the East;
- South Pembrokeshire Hospital – located 0.15 miles to the South; and
- Site operational staff

It is expected that there will be a certain amount of air dispersion of any odorous release, particularly with regard to receptors at Pembroke Dock and South Pembrokeshire Hospital, although detailed dispersal modelling has not been undertaken at this stage.

It is recognised that the site is in close proximity to residential developments for which the release of odours could potentially be a cause for concern. Given the prevailing wind direction and proximity to the site, the settlements of Neyland are potentially vulnerable to odorous release. However, the settlement of Neyland is situated across a busy estuary, with steady maritime traffic and busy port operations taking place. This should reduce the impact of any odour release onto the residents.

In addition the nearest receptors to the facility are industrial units in which their operations take place within closed units; the nature of the surrounding heavy industrial units should not have much impact from the odorous materials emanating from this facility.

## 3.4 Accidents

Accidents that would potentially increase the likelihood of odour releases include:

- Breakdown in the processing (shredding, metal extraction, baling and wrapping); or

[2] Health and Hazardous Substances in Waste and Recycling Guidance; http://www.hse.gov.uk/pubns/waste27.pdf; Health and Safety Executive; accessed on 06/08/2014

- Spill of waste, either from a faulty bale or from incorrect tipping procedure.

In the case of a breakdown, equipment repair service providers will be used to effect repairs. Waste due to be received can be temporarily diverted to a different (appropriately permitted) site to regulate the volume of unprocessed waste on site and if necessary replacement mobile processing plant can be brought in to complete the processing.

If a spill of waste should occur, then it will be promptly moved to the waste reception hall and the affected area washed down. Note that the wash water (which may be odorous) will drain to foul sewer.

All such incidents and the remedial actions taken will be recorded in the site diary

## 3.5 Monitoring

In addition to encouraging neighbours to provide comment and feedback about off-site odours, an odour monitoring routine will be put in place to ensure on a daily basis that any problems are remedied immediately.

Manual monitoring of odour emissions from the site shall be carried out by the site manager or supervisor on a daily basis at the site boundary situated downwind of the waste operations, and shall be recorded in the site diary. The daily monitoring will consist of a 'sniff test' an example of the methodology and odour reporting form to be undertaken is included at Appendix 1. Site staff supervising individual waste handling operations, during the carrying out of those operations will also manually monitor site odour levels and use the odour reporting form if required.

On detection or notification of aerial emissions of odour that could reasonably be expected to be transported beyond the site boundary at such levels that they are expected to cause pollution of the environment, harm to human health or serious detriment to the amenity of the locality, immediate action shall be taken to identify the odorous waste or stop the waste handling operations giving rise to the emission and to suppress the aerial emission from the waste. An investigation into the odour detection or notification will be undertaken by the Site Manager. Operations will only resume once the investigation into the cause of odour emissions has taken place and any short-comings in operations that are believed to have contributed to the odour issue have been rectified; the odorous waste may either be removed from site or taken into the processing facility to be re-wrapped. The incident and the remedial action shall be recorded in the site diary.

A complaints system will be put in place to address any complaints in relation to odour. A complaints escalation procedure will also be in place as part of the complaints system. If the Operator, or the Environment Agency, receives a complaint alleging potential odour from the site, the first stage in the process will be to ascertain whether the odour complaint is associated with the activities at the site and what action may be taken to prevent or minimise the probability of recurrence.

To facilitate the investigation of complaints both local receptors and Natural Resources Wales will be encouraged to contact the site operator directly at the time that any off-site complaint odours are detected or arise so that the circumstances leading to off-site odours can be investigated as soon as practicable.

Where possible the Site Manager will respond as rapidly as possible after an odour complaint is received so that they may be able to carry out effective appraisal of the complaint by subjective assessment. If possible, this will be conducted at the location of the complaint to improve the identification of the odour in terms of waste material types and/or site operations.

Any complainant will be asked to give as much detail as possible about the type, strength, intensity, duration and time of off-site odours to help identify the source or sources of odours. All complaints will be logged in the site diary and along with details of weather conditions (wind strength and direction) at the time of the complaint, where possible, and the details of investigations into complaint odours will be recorded. The complainant will be informed of any remedial action where such measures are taken.

An odour complaint report form, in line with H1 Guidance is included as Appendix 3. The complaint details and investigation shall be recorded in the site diary. Any complaints will be listed on a separate odour complaints form detailing date, time, and address of the complainant, and the area to which the

complaint relates. The investigation procedure will take into account wind direction, machinery failure, and traffic route if applicable.

Follow up communication with the complainant will be taken to ensure a satisfactory outcome. This will also form part of the site odour monitoring procedures. All complaints and remedial action taken to resolve the complaint will be logged.

# 4.0 Conclusion

Due to the waste being delivered directly into the reception facility, the standard of the baled waste being stored at the site, and the odour control procedures put in place it is concluded that the release of significant odours that have the potential to cause an odour nuisance to nearby receptors can be sensibly discounted. In summary, this odour management plan puts in place a number of measures, including tipping of the waste only inside the building, control of the doors and vents, and wrapping of the baled waste. It identifies that the source of odour will be contained sufficiently so that it will not enter the potential pathway in a way that could cause a nuisance to the local community. Notwithstanding the above, a monitoring and complaints procedure is proposed to ensure the odour management plan works as intended.

## Appendix 1: Sniff Test Methodology

### Purpose

- The purpose of this procedure is to define the process of monitoring potential odours leaving the site boundary.

### Scope

- This procedure shall apply to all staff at the facility, however the recorded inspection will be completed by one of the following:
    - Site Chargehand;
    - Site Supervisor; or
    - Site Manager.

### Methodology

- A subjective assessment of any odour leaving the site boundary will be undertaken at regular intervals throughout the day.
- As a minimum one 'sniff test' odour assessment will be undertaken in the morning and a second odour assessment will be undertaken in the afternoon.
- The odour assessments will be undertaken by the Site Manager or the Site Supervisor both of which a primarily office based, preventing adaptation to any malodours.
- If the Site Manager or Site Supervisor is not available or suffering from a cold, sinusitis or a sore throat the duty Chargehand will complete the odour assessment.
- Where practicable the odour assessor will be accompanied by a site operative to improve and validate data quality.
- The route of the odour assessment comprises of a circuit of the inside perimeter of the site boundary and a circuit of the food waste storage area.
- Where an odour is perceived to be leaving the site boundary an 'Odour Report Form' must be completed and detailed in the site diary.
- Where appropriate surrounding receptors may be odour assessed should a perceived odour be recorded leaving site in a certain direction or as a result of weather conditions.
- Remedial steps other than those detailed within the Odour Management Plan will be discussed and implemented by the site manager. Following remediation of any potential odour sources a record will be kept in the site diary.

| Appendix 2 : Odour Assessment Report Form | | | |
|---|---|---|---|
| Assessment Date | | Time of Perceived Odour | |
| Assessment carried out by: | | | |

| | |
|---|---|
| Location of Perceived Odour | |
| Weather Conditions (dry, rain, fog, snow etc.) | |
| Temperature (very warm, warm, mild, cold, or degrees if known) | |
| Wind Strength (none, light, steady, strong, gusting) | |
| Wind Direction (e.g. from NE) | |
| Any Potential Receptors in Prevailing Wind (If Yes name receptors) | |
| Intensity (see below) | |
| Duration of Assessment at Odour Location | |
| Is the Odour Constant or Intermittent? | |
| Describe the Odour | |
| Location Sensitivity (see below) | |
| Is the Source of the Odour Evident? | |
| Are there any External Contributors to the Perceived Odour? | |
| Any Comments or Observations | |

## Appendix 3: Odour Complaint Report Form

| | |
|---|---|
| Time and date of complaint: | Name and address of complainant: |
| Telephone number of complainant: | |
| Date of odour: | |
| Time of odour: | |
| Location of odour, if not at above address: | |
| Weather conditions (i.e., dry, rain, fog, snow): | |
| Temperature (very warm, warm, mild, cold or degrees if known): | |
| Wind strength (none, light, steady, strong, gusting): | |
| Wind direction (eg from NE): | |
| Complainant's description of odour:<br>○ What does it smell like? | |
| ○ Intensity (see below): | |
| ○ Duration (time): | |
| ○ Constant or intermittent in this period: | |
| ○ Does the complainant have any other comments about the odour? | |
| Are there any other complaints relating to the installation, or to that location? (either previously or relating to the same exposure): | |
| Any other relevant information: | |
| Do you accept that odour likely to be from your activities? | |
| What was happening on site at the time the odour occurred? | |
| Operating conditions at time the odour occurred | |
| Actions taken: | |

| | | |
|---|---|---|
| Form completed by: | Date | Signed |

**Intensity**

| | | |
|---|---|---|
| 0 No odour | 3 Distinct odour | 5 Very strong odour |
| 1 Very faint odour | 4 Strong odour | 6 Extremely strong odour |