



## **Contaminated Land Inspection Report**

Feltwell Landfill,  
Feltwell,  
King's Lynn

**October 2017**

**Reference no. CL135**

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## **Executive Summary**

The Borough Council of King's Lynn and West Norfolk (BCKLWN) has a statutory duty to inspect its district for potentially contaminated land under Part 2A of the Environmental Protection Act 1990. The Contaminated Land inspection strategy has identified a landfill at Lodge Road, Feltwell, Norfolk as a site which requires detailed inspection.

Given the former site usage as quarry and landfill an initial assessment of the site has been undertaken to assess the potential for harm to human health, property, ground/surface water and the environment under Part 2A.

To gather information of the site's history and potential risks a desk study, site visit and preliminary risk assessment has been carried out by the Environmental Quality Team. From the evidence gathered the following can be stated.

- The area occupied by the former quarry which was operated under planning permission from Norfolk County Council which was then used as a landfill.
- The Environment Agency website indicates that the landfill is operated by Anti-Waste Limited in accord with the environmental permit number EPR/BW2838IN.
- The site has finished being landfilled and is partially restored.
- Landfill Gas is being extracted and used in a landfill engine to produce energy.
- Leachate extraction and monitoring is being undertaken on the site.
- The site was authorised and is regulated by the Environment Agency.

Following the desk study it was concluded that the site does not represent a potential risk to human health, the environment or property under Part 2A of the Environmental Protection Act 1990. The land does not meet the definition of contaminated land and has been classified into category 4 for human health. No evidence was found of significant pollution or significant possibility of such pollution of controlled waters. Therefore the site is not considered to be contaminated land under Part 2a of the Environmental Protection Act 1990.

However, should any additional information associated with the site come to the attention of the council in due course then the site may need to be reassessed in light of this additional information.

## **1. Introduction**

This report details a review of information about a landfill at Feltwell, King's Lynn and provides a conclusion on the risk to human health, property, groundwater and the wider environment.

The Contaminated Land Statutory Guidance (DEFRA, 2012) suggests that where the authority has ceased its inspection and assessment of land as there is little or no evidence to suggest that it is contaminated land the authority should issue a written statement to that effect. This document provides that written statement.

## **2. Desk Study Information**

### **Location**

The site's location is shown in Appendix B. The grid reference for the centre of the site is 573986, 292315 and the nearest postcode is IP26 4DR.

### **Initial Prioritisation Score**

The site was initially assessed as having a 'Very High' Potential Hazard Rating, due to the risk to groundwater.

### **Previous Site Usage**

The site (drawing CL135/101) was a mineral extraction pit, which has been used as a landfill.

### **Present Site Usage**

Its present use comprises a closed landfill. Open fields are to the north, east and west. This is depicted on the plan in Appendix B.

### **Ownership**

Enquiries have been made to establish land ownership. This report will be made available to the site owners.

## **Environmental Setting**

### **Geology**

The Solid and Drift Geology Sheet 160, 1:50,000, 1999 and Regional Hydrological Characteristics Sheet 1 1:125 000 shows the site elevation is approximately 25 meters above ordnance datum (maOD).

The bedrock geology is the Holywell Nodular Chalk Formation and New Pit Chalk Formation (undifferentiated) - Chalk. The superficial geology is the Ingham Sand and Gravel Formation - Sand and Gravel.<sup>1</sup>

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<sup>1</sup> BGS website: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>.

### ***Hydrogeology***

The bedrock is classified as a Principal Aquifer with High Vulnerability. The Superficial Deposits are classified as a Secondary A Aquifers. Both the superficial deposits and the bedrock are highly permeable and would allow rapid transmission of potential contaminants.

The site is not within a Source Protection Zone (SPZ)<sup>2</sup>.

### ***Hydrology***

Various ditches and ponds lie within 1km of the centre of the site, but no main water courses are present. The nearest major water feature is the 'Cut-off Channel' 3.8km east of the site.

No private water abstraction or Environment Agency (EA) licenced abstraction points exist within 1000m.

### ***Local Authority Pollution Prevention and Control Regulations***

One LAPPC processes exists on site associated with the energy generation from landfill gas on the site.

### ***The Environment Agency Web site records***

The Environment Agency Web site records the following:

- The site is a Priority Water under the Farmers Assessment Tool.
- The site is part of a Nitrate Vulnerable Zone.
- The site is a Priority Water under the Rivers at risk from agricultural phosphates.
- The eastern part of the site is within the outer zone of a source protection zone.
- The site is registered as being occupied by 1No. Landfill.
  - Feltwell Landfill, EPR/BW2838IN. The Oakery, Lodge Road, Feltwell, Thetford, Norfolk. IP24 4DR. Operated by Anti-waste Limited. Status - Effective. LAPPC Reference Number JP3938RD.
- The site has a very good compliance rating.
- One significant Pollution incident to air is recorded as occurring at the landfill, incident number 9407, dated 27<sup>th</sup> May 2001.

### ***MAGIC website records***

MAGIC website records the following

- The site is covered by the MMO Marine Areas (England)
- Methwold Warren to the north and east is designated a Site of Special Scientific Interest, a Special Protection Area, is on the National Inventory and is an Important Bird Area.
- Part of the southern and eastern site boundaries are covered by the Priority Habitat Inventory (Deciduous Woodland).

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<sup>2</sup> Environment Agency Website <https://www.gov.uk/check-local-environmental-data>

- The site is covered by the Phosphate Issues Priority (England) (Medium Priority).
- The site is covered by the Countryside Stewardship Water Quality Priority Area (England) (Medium Priority).
- The western half of the site is covered by the Woodland – water quality (England)(Lower Spatial Priority)
- The site is part of an Environmental Sensitive Area (England)
- The site is designated as a Nitrate Vulnerable Zone for Surface and Groundwater.
- The site is covered by the Arable Assemblage Farmland birds (England) (Zone 4).
- The site is covered by the Grassland Assemblage Farmland Birds (England) (Zone 3)
- The site forms habitat for:
  - Corn Bunting
  - Curlew
  - Lapwing
  - Stone Curlew
  - Turtle Dove
  - Yellow Wagtail
- The site is part of the Higher Level Stewardship Theme.

## **Historic Maps**

### ***E-map Explorer***

Enclosure Map 1800 – 1850 – The site was shown as being owned by James Denton Esq. and depicted as a large wooded area and a series of regular areas which are assumed to be fields.

Tithe map circa 1840 – Not Available.

Ordnance Survey 1st Ed. 1879-1886 – The site was generally as depicted on the enclosure map with the exception that there was a depression in the south eastern corner adjacent to what appears to be a building.

### ***Historic Maps on file at the Borough Council of King's Lynn and West Norfolk***

Historic maps are presented in Appendix B and summarised below.

1843 – 1893: The site was as depicted on the Ordnance Survey 1st Edition. Drawing CL153/102

1891 – 1912: The site was as depicted above with the exception that the wooded area in the north was labelled as 'The Oakery'. Drawing CL153/103

1904 – 1939: Not available.

1919 – 1943: Not available.



1945 – 1970: The site was shown as being sparsely wooded and the depression is not depicted. The building was now depicted as Feltwell Lodge Gate. Drawing CL153/104

1970 – 1996: Not available.

### **Aerial Photographs**

Aerial photographs are presented in Appendix B and summarised below.

1945 – 1946 MOD Aerial Photograph – The site was segregated into two areas along a line running southwest to northeast. The northern area appears to be scrub heathland while the southern area appears to have been excavated or was undergoing excavation. There was building in the centre of the site on the boundary between the north-western section and the south-eastern. Drawing CL153/105

1988 Aerial Photograph – The area to the northwest has reduced and was now wooded, a series of tracks are noted to the south of this area, to the south and southeast the site has become wooded and covered in scrub vegetation.

1999 Aerial Photograph – The site is in the process of being excavated. The northern end of the site was being prepared as a landfill. To the south of this there are tailing lagoons and stockpiles of minerals. The eastern corner of site does not appear to have been worked at this time. Drawing CL153/106

2006-09 Aerial Photograph – The landfill to the north has been filled, restored and a landfill gas/leachate system has been installed. The central part of the site appears to be being used as a landfill and a processing area for excavations which are occurring on a field to the east. A landfill gas engine is located in the south western corner of the site. Drawing CL51/107

### **Planning History**

Eight planning applications exist on the site on the borough councils planning system. These were responses to planning applications received by Norfolk County Council as they are the planning authority for waste and mineral operations. These are discussed further below in the Norfolk County Council Records section.

### **Environment Agency Records**

There one registered landfill at the location on the Environment Agency website. This is:

- Feltwell Landfill EPR/BW2838IN, The Oakery, Lodge Road, Feltwell, Thetford, Norfolk, IP24 4DR. Anti-Waste Limited. WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE. Licence Status – Effective. Integrated Pollution Prevention Control Reference number - JP3938RD

### **Norfolk County Council Records**

Nineteen planning applications exist on site on Norfolk County Councils planning system. These comprised initially the operation of the site as a mineral extraction facility and then as a landfill with subsequent variations of the planning permission and the discharge of some of the conditions. A list of the Borough Councils and the County Councils planning records for this site are presented in Appendix D.

### **3. Site Walkover**

A site visit was carried out by an Environmental Quality Officer of the Borough Council of King's Lynn and West Norfolk on 09/05/2017 in the presence of FCC Environment, who oversee the maintenance of the closed landfill and the following was noted. Photographs are presented in the Appendix A.

The site was entered from the south via a gated entrance, to the east of which was an enclosure for a landfill gas engine. To the north was a weighbridge and site office in what is assumed to be the base of the quarry. Beyond the weighbridge to the north a path sloped up towards the summit of the landfill.

At the top of the slope an area to the west was noted a stockpile of soil in front of the landfill. The leading edge of the landfill was covered with a black landfill liner, which I was informed was awaiting restoration with the stockpiles of soil. To the north was a grassed area which had landfill gas and leachate collection systems across it. The path angled eastwards across the top of the landfill and then turned to the south here it sloped down into the base of the old quarry. The site was surrounded by a fence and no sign of people accessing the site for recreation purposes were noted. During the site walkover no signs of contamination or waste material were notice on the surface of the landfill.

### **4. Assessment of Site Use**

From the assessment of the site using County Council data, historic maps, aerial photography and a site walk over it has been possible to conclude that the site has been used for mineral extraction and as a landfill under an Environmental Permit. The landfill accepted non-hazardous industrial wastes and no hazardous materials should have been placed in the landfill. The landfill is of a modern design and as such has inbuilt leachate and ground gas extraction systems, and has been designed to prevent the percolation of rainwater into the landfill.

#### **Assessment of probability of a contamination event**

The site was a quarry which has ceased being used for mineral extraction and has been used to landfill non-hazardous wastes and is the process of being restored. Given the non-contaminative nature of the material used to landfill the quarry the probability of a contamination event effecting human health (via direct contact or inhalation), property or groundwater is considered UNLIKELY.

#### **Assessment of Hazard**

The risks posed by the site have been assessed under the Contaminated Land Statutory Guidance. This is discussed further below:

#### ***Human Health***

The site has been used as a landfill, for non-hazardous waste and is in the process of being restored. Therefore no hazardous material should have been present to affect human health (via direct contact, ingestion or inhalation) and therefore the hazard is considered LOW.

### ***Property***

The site is a landfill operating under a permit granted by the Environment Agency, landfilling non-hazardous material waste. No property as defined in table 2 of the Contaminated Land Statutory Guidance is present on site and the nearest property to the landfill is a residential property approximately 300m from the landfill. This is beyond the 250m range which is considered to be the lateral migration extent of any migrating ground gases. Therefore the hazard is considered to be LOW.

### ***Environment***

The site and area does not contain any of the receptors stipulated in Table 1, Ecological system effects of the Statutory Guidance, presented in Appendix E and was an inert landfill. Therefore the hazard is considered to be LOW.

### ***Controlled Water***

#### *Groundwater*

The landfill is on the Holywell Nodular Chalk Formation and New Pit Chalk Formation (undifferentiated) which is a Principal Aquifer with a High Vulnerability but is not within a Source Protection Zone (SPZ). As no contamination is considered to be present due to the nature of the materials permitted to be landfilled, the hazard to groundwater is considered to be LOW.

#### *Surface waters*

No surface waters are present on the site. As such the potential impact on the surface water is considered to be LOW.

### **Conceptual site model**

The conceptual site model (Table 1) shows the sources, pathways and receptors identified and the subsequent risk classification.

Table 1: Preliminary conceptual site model

Source	Pathway	Receptor	Probability	Hazard	Risk
Metals and metalloids within waste material	Direct contact	Humans	Unlikely	Low	Very Low
	Inhalation				
Metals and metalloids within waste material	Direct Contact	Property	Unlikely	Low	Very Low
	Inhalation				
Metals and metalloids within waste material	Direct contact	Environment	Unlikely	Low	Very Low
Metals and metalloids within waste material	Direct contact	Controlled water	Unlikely	Low	Very Low

**Outcome of Preliminary Risk Assessment**

No plausible source pathway receptor linkage was identified as no receptors sources of contamination have been identified. Therefore further investigation is not considered necessary.

## **Conclusion**

From the information gathered and the site walkover it is apparent that the site was excavated for sand and gravel and is the process of being backfilled with inert waste material under an environmental permit.

No evidence was noted of significant harm and there is not a strong case to consider that the risks from the land are of sufficient concern that the land poses a significant possibility of significant harm to Humans (via direct contact or inhalation), Property, Environmental Receptors or Controlled Water as defined in the statutory guidance. CIRIA C552 states that on a site with a low risk classification 'There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.'<sup>3</sup>

## **Human Health**

Following the above assessment the site is assessed as Category 4: Human Health<sup>4</sup> as set out in the Statutory Guidance, therefore no further assessment is considered necessary with regards to the risk to human health.

## **Controlled Waters**

No further inspection is considered to be required with regards to controlled waters as it is considered that there is no reasonable possibility that a significant contaminant linkage exists as set out in the Statutory Guidance<sup>5</sup>. This assessment applies to the site's current use.

No further assessment of the site is considered necessary unless additional information is discovered or if the site is considered for redevelopment.

## **Part 2A status of the site**

The site is not considered to be contaminated land under part 2A of the Environmental Protection Act 1990 and no further assessment of the site is considered necessary unless additional information is discovered or if the site is considered for redevelopment.

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<sup>3</sup> Contaminated land risk assessment. A guide to good practice. CIRIA C552, ISBN 0860175529.

<sup>4</sup> (Contaminated Land Statutory Guidance April 2016) Category 4: Human Health.

4.20 The local authority should not assume that land poses a significant possibility of significant harm if it considers that there is no risk or that the level of risk posed is low. For the purposes of this Guidance, such land is referred to as a "Category 4: Human Health" case. The authority may decide that the land is a Category 4: Human Health case as soon as it considers it has evidence to this effect, and this may happen at any stage during risk assessment including the early stages.

4.21 The local authority should consider that the following types of land should be placed into Category 4: Human Health:

- (a) Land where no relevant contaminant linkage has been established.
- (b) Land where there are only normal levels of contaminants in soil, as explained in Section 3 of this Guidance.
- (c) Land that has been excluded from the need for further inspection and assessment because contaminant levels do not exceed relevant generic assessment criteria in accordance with Section 3 of this Guidance, or relevant technical tools or advice that may be developed in accordance with paragraph 3.30 of this Guidance.
- (d) Land where estimated levels of exposure to contaminants in soil are likely to form only a small proportion of what a receptor might be exposed to anyway through other sources of environmental exposure (e.g. in relation to average estimated national levels of exposure to substances commonly found in the environment, to which receptors are likely to be exposed in the normal course of their lives).

<sup>5</sup> (Contaminated Land Statutory Guidance April 2016)

2.13. If at any stage the local authority considers, on the basis of information obtained from inspection activities, that there is no longer a reasonable possibility that a significant contaminant linkage exists on the land, the authority should not carry out any further inspection in relation to that linkage.

## **Appendices**



***Appendix A Site Photographs***



Photograph 1.



Photograph 2.





Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



Photograph 8



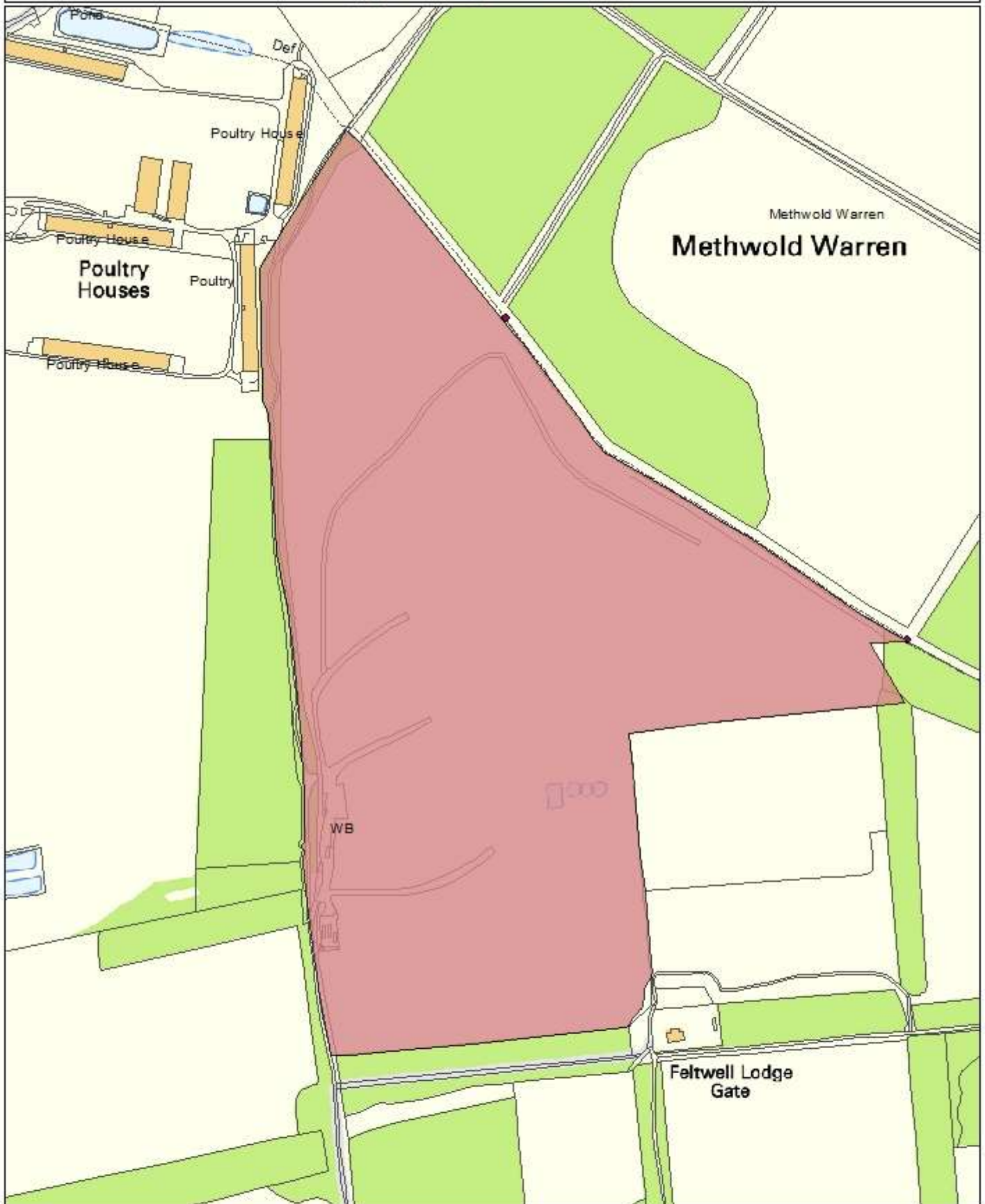


Photograph 9



Photograph 10

## ***Appendix B Drawings***



Borough Council of  
**King's Lynn &  
West Norfolk**



Tel. 01553 616200 - Fax. 01553 691663

Title  
**Site Plan**

Project / Details

**Feltwell Land fill, Lodge Road,  
Feltwell, Norfolk.**



Scale  
**1:5,000**

Date  
**June 2017**

Drawn by  
**EH&H**

Drawing / Reference Number  
**CL153/101**





Borough Council of  
King's Lynn &  
West Norfolk



Tel. 01553 616200 - Fax. 01553 691663

Title  
Historic Plan 1843-1893

Project / Details  
Feltwell Land fill, Lodge Road,  
Feltwell, Norfolk.

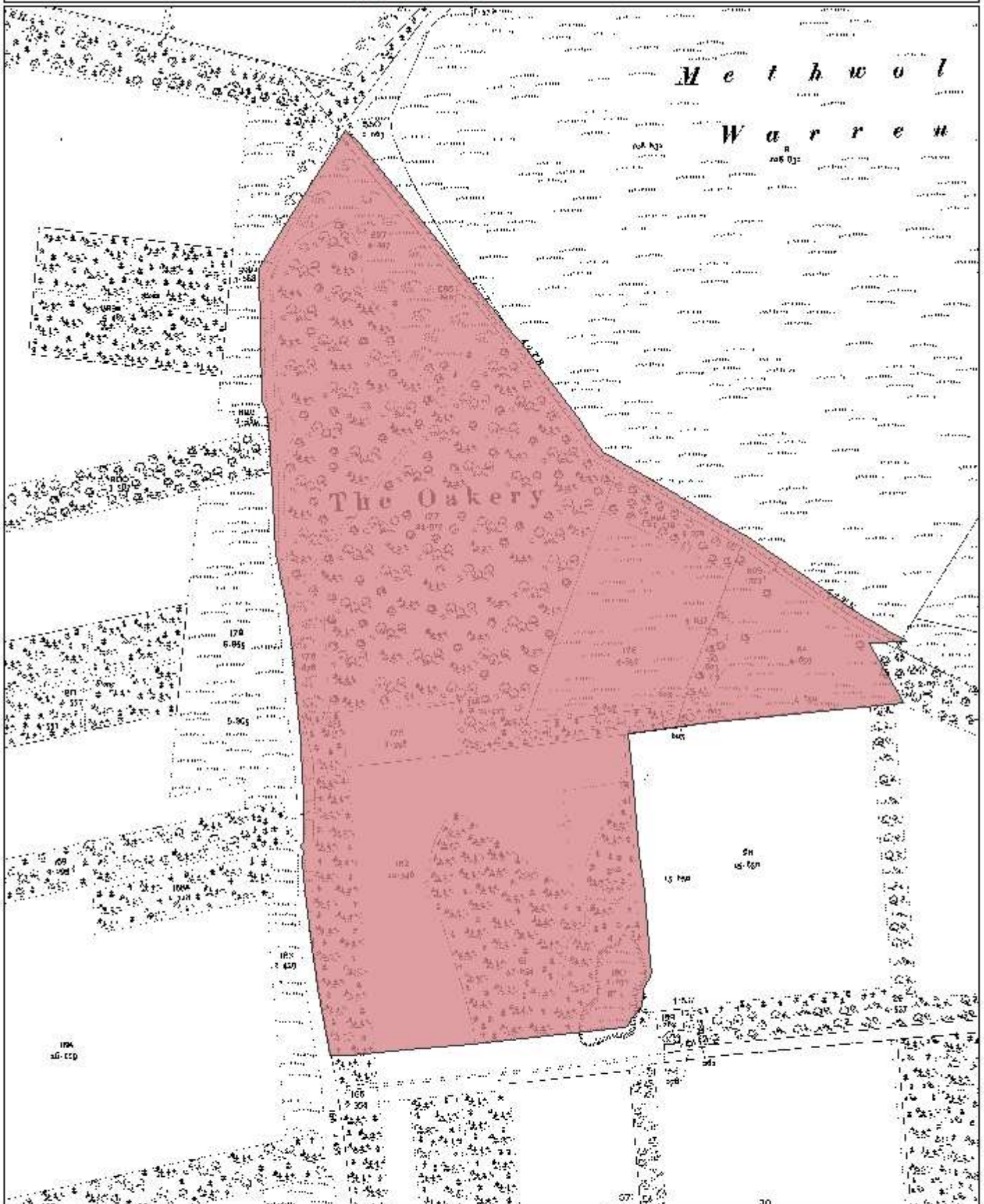


Scale  
1:5,000

Date  
June 2017

Drawn by  
EH&H

Drawing / Reference Number  
CL153/102



Borough Council of  
**King's Lynn &  
West Norfolk**



Tel. 01553 616200 - Fax. 01553 691663

Title  
**Historic Plan 1891-1912**

Project / Details  
**Feltwell Land fill, Lodge Road,  
Feltwell, Norfolk.**



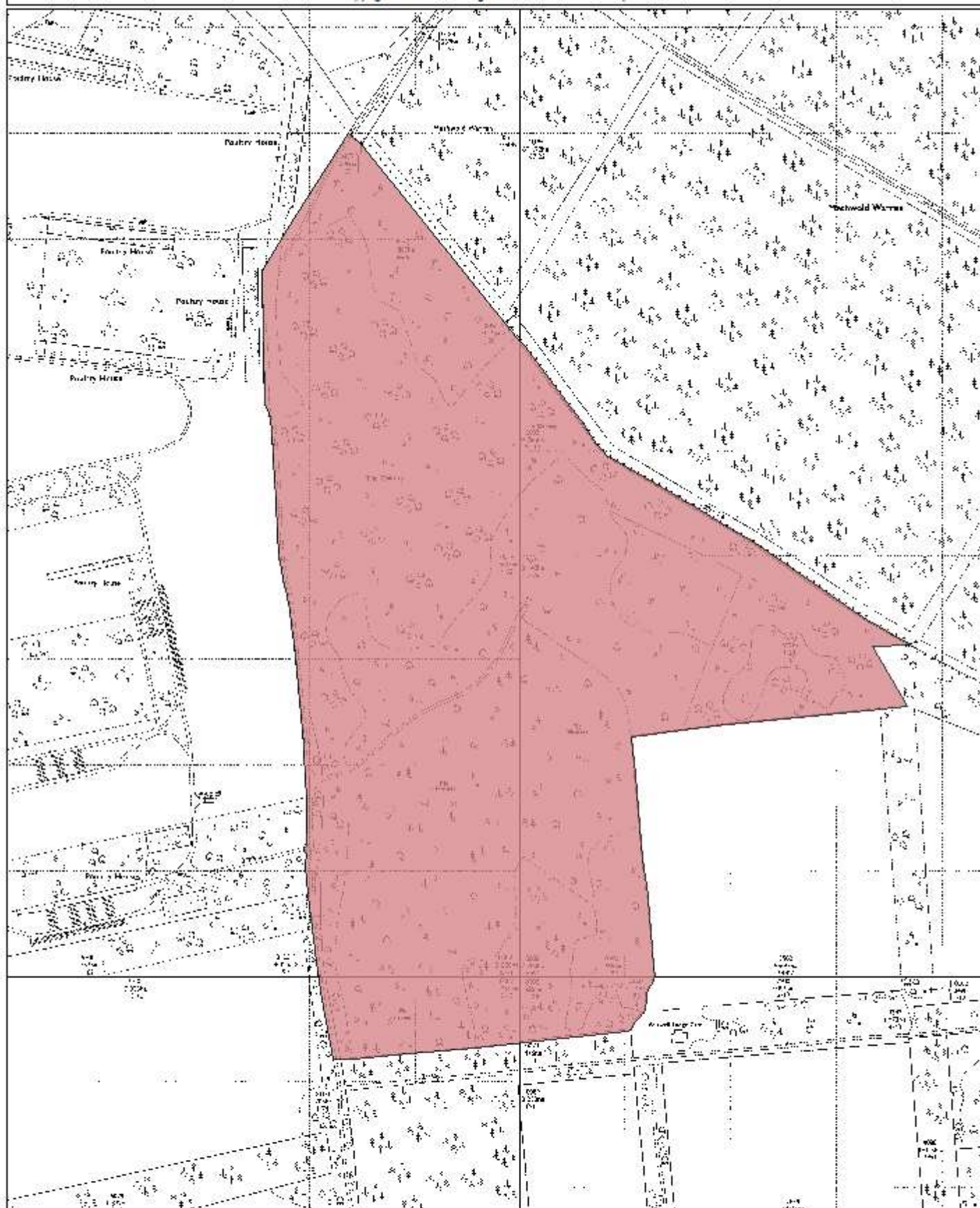
Scale  
**1:5,000**

Date  
**June 2017**

Drawn by  
**EH&H**

Drawing / Reference Number  
**CL153/103**





Borough Council of  
**King's Lynn &  
West Norfolk**



Tel. 01553 616200 - Fax. 01553 691663

Title  
**Historic Plan 1945-1970**

Project / Details  
**Feltwell Land fill, Lodge Road,  
Feltwell, Norfolk.**



Scale  
**1:5,000**

Date  
**June 2017**

Drawn by  
**EH&H**

Drawing / Reference Number  
**CL 153/104**





Borough Council of  
**King's Lynn &  
West Norfolk**



Tel. 01553 616200 - Fax. 01553 691663

Title  
**Aerial Photograph 1940s**

Project / Details  
**Feltwell Land fill, Lodge Road,  
Feltwell, Norfolk.**



Scale  
**1:5,000**

Date  
**June 2017**

Drawn by  
**EH&H**

Drawing / Reference Number  
**CL153/105**





Borough Council of  
**King's Lynn &  
West Norfolk**



Tel. 01553 616200 - Fax. 01553 691663

Title  
**Aerial Photograph 1999**

Project / Details  
**Feltwell Land fill, Lodge Road,  
Feltwell, Norfolk.**



Scale  
**1:5,000**

Date  
**June 2017**

Drawn by  
**EH&H**

Drawing / Reference Number  
**CL153/106**





Borough Council of  
**King's Lynn &  
West Norfolk**



Tel. 01553 616200 - Fax. 01553 691663

Title  
**Aerial Photograph 2007**

Project / Details  
**Crimplesham Landfill**



Scale  
**1:5,000**

Date  
**April 2017**

Drawn by  
**EH&H**

Drawing / Reference Number  
**CL51/108**

***Appendix C – Environmental Permit for Feltwell Landfill***



## **Notice of variation and consolidation with introductory note**

**The Environmental Permitting (England & Wales) Regulations 2010**

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Anti-Waste Limited

Feltwell Landfill Site  
The Oakery, Lodge Road  
Feltwell  
Thetford  
Norfolk  
IP26 4DR

**Variation application number**

EPR/BW2838IN/V004

**Permit number**

EPR/BW2838IN

Variation and consolidation  
application number  
EPR/BW2838IN/V004

1

## Feltwell Landfill Site

### Permit number EPR/BW2838IN

#### Introductory note

##### **This introductory note does not form a part of the notice.**

The following gives notice of the variation and consolidation of this environmental permit. We have issued this variation to consolidate the original permit and subsequent variations and to update some of the conditions following a statutory review of permits in the landfill sector. We have also converted the permit into the current EPR permit format using modern conditions.

The Environment Agency has a duty, under the Environmental Permitting (England and Wales) Regulations 2010, regulation 34(1), to periodically review permits. As a result of that review we have identified a number of necessary changes we must make to your permit to reflect current legislation and best practice. These changes principally relate to:

- The addition of a standard condition for landfill gas management at landfills that accept biodegradable waste;
- A change to the hydrogeological risk assessment condition so that reviews are undertaken every 6 years rather than every 4 years;
- Standard leachate and groundwater quality monitoring tables (schedule 3); and
- A standard reporting table (schedule 4).

The operator has also applied for a variation to remove CO<sub>2</sub> limits in accordance with the ICoP on perimeter soil gas monitoring.

Schedule 1 to this notice summarises the changes we have made to this permit.

Status log of the permit		
Description	Date	Comments
Application received BW2838IN (EPR/BW2838IN/A001)	Duly made 07/05/04	Application for landfill.
Additional information received	20/12/04	
Additional information received	14/01/05	
Permit determined BW2838IN (EPR/BW2838IN/A001)	28/04/05	Permit issued to Anti-Waste Limited
Environment Agency Variation determined DP3937LX (EPR/BW2838IN/V001)	08/08/07	Varied and consolidated permit issued in modern condition format.
Application for Variation UP3031XU (EPR/BW2838IN/V002)	10/10/07	
Variation determined UP3031XU (EPR/BW2838IN/V002)	10/06/08	Variation to financial provision condition 1.3.1
Environment Agency Variation determined EPR/BW2838IN/V003	28/05/13	Environment Agency Variation to implement the changes introduced by IED

Variation and consolidation  
application number  
EPR/BW2838IN/V004

2

Status log of the permit		
Description	Date	Comments
Environment Agency Landfill Sector Review 2013 Permit reviewed Variation determined EPR/BW2838IN/V004 Permit EPR/BW2838IN Billing ref: JP3938RD	10/03/16	Variation to remove CO2 limits in accordance with the ICoP on perimeter soil gas monitoring. Varied and consolidated permit issued in modern condition format.

End of introductory note



## Notice of variation and consolidation

### The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

#### Permit number

EPR/BW2838IN

#### Issued to

Anti-Waste Limited ("the operator")

whose registered office is

Ground Floor West  
900 Pavillion Drive  
Northampton Business Park  
Northampton  
NN4 7RG

company registration number 01569257

to operate a regulated facility at

Feltwell Landfill Site  
The Oakery, Lodge Road  
Feltwell  
Thetford  
Norfolk  
IP26 4DR

to the extent set out in the schedules.

The notice shall take effect from 10/03/16

Name	Date
Anne Nightingale	10/03/2016

Authorised on behalf of the Environment Agency

## Schedule 1

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation. The following table summarises the latest changes to the landfill permit template, however your permit may contain more changes than this where your permit has not been varied to recent template conditions.

Condition	Description of change
1.5	Generic condition to reflect the requirements of the Waste Framework Directive.
2.6.1(a)	Added reference to a specific table to clarify what wastes are permitted by which permitted activity.
2.6.2	Added to separately identify the waste types and quantities that can be accepted for restoration.
2.9	Revised gas management condition imposed for all landfills.
3.1.1	Generic condition imposed on all activities to simplify sub-conditions
3.1.4 to 3.1.5	Revised conditions to reflect the terminology used by the Groundwater Directive for 'hazardous substances' and to require hydrogeological risk assessment reviews are submitted every 6 years rather than every 4 years.
	Sub-condition that referred to emission of 'non-hazardous pollutants' deleted. Such emissions are regulated by condition 3.2.
	Two sub-conditions that referred to limits in specific tables in schedule 3 deleted as they are now covered by 3.1.1.
3.6	Revised generic pests condition imposed on all activities.
4.2.2	Amended to ensure that information on 'annual production/ treatment' (Schedule 4, Table S4.2) is provided in February each year where annual reports may be submitted at other times of the year.
4.2.2(a)	Text expanded to clarify the details we require in an annual report.
4.2.2(h)	New condition requiring annual submission of a plan of monitoring and extraction locations with reference to monitoring tables in schedule 3
4.3.1	Generic notifications condition added.
Schedules	
Table S1.1	Amended description of the landfill activity to clarify that this includes restoration. Activity references amended to reflect changes introduced by Industrial Emissions Directive (2010/75/EU).
	Leachate storage moved from a specified activity to Directly Associated Activities.
Table S1.5	Amended to clarify that restoration is a separate part of the activity unrelated to landfill cover.
Schedule 2	Standard list of wastes added.
Schedule 3	Monitoring and compliance tables have been re-ordered so that those with compliance limits appear first. Standard monitoring frequency and parameters have been included for certain routine monitoring requirements
Table S4.1	Amended to only require regular reports of information that relate to compliance limits.
Table S4.2	Additional details of landfill gas extracted required to improve climate change data quality.
Table S4.3	Amended to include natural gas as an energy source for consistency with other sectors.
Schedule 6	Definitions added to clarify meaning of: Inert waste

Condition	Description of change
	Exceeded
	Hazardous substance
	Medicinal product
	Previous year
	Waste acceptance criteria
	Waste acceptance procedure

#### **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

## Permit

### The Environmental Permitting (England and Wales) Regulations 2010

#### Permit number

EPR/BW2838IN

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BW2838IN/V004 authorising,

**Anti-Waste Limited** ("the operator"),

whose registered office is

**Ground Floor West**  
**900 Pavillion Drive**  
**Northampton Business Park**  
**Northampton**  
**NN4 7RG**

company registration number 01569257

to operate an installation at

**Feltwell Landfill Site**  
**The Oakery, Lodge Road**  
**Feltwell**  
**Thetford**  
**Norfolk**  
**IP26 4DR**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
Anne Nightingale	10/03/16

Authorised on behalf of the Environment Agency

## **Conditions**

### **1 Management**

#### **1.1 General management**

- 1.1.1 The operator shall manage and operate the activities:
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances and those drawn to the attention of the operator as a result of complaints; and
  - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.
- 1.1.4 The operator shall comply with the requirements of an approved competence scheme.

#### **1.2 Finance**

- 1.2.1 The financial provision for meeting the obligations under this permit shall be as set out in the Deed of Performance dated 17 October 2007 between the Waste Recycling Group Limited (now known as FCC Environment (UK) Limited) and the Environment Agency as varied by a Deed of Variation dated 15 October 2010 (as varied by further Deeds of Variation from time to time). The operator shall accordingly ensure that the Permit is and remains throughout its subsistence a Permit to which the Deed relates and the operator shall produce evidence of such provision whenever required by the Environment Agency.
- 1.2.2 The operator shall ensure that the charges it makes for the disposal of waste in the landfill cover all of the following:
- (a) the costs of setting up and operating the landfill;
  - (b) the costs of the financial provision required by condition 1.2.1; and
  - (c) the estimated costs for the closure and aftercare of the landfill.

#### **1.3 Energy efficiency**

- 1.3.1 The operator shall:
- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
  - (b) Review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
  - (c) Implement any appropriate measures identified by a review.

#### **1.4 Efficient use of raw materials**

- 1.4.1 The operator shall:
- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
  - (b) maintain records of raw materials and water used in the activities;

- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

## **1.5 Avoidance, recovery and disposal of wastes produced by the activities**

### **1.5.1 The operator shall:**

- (a) take appropriate measures to ensure that waste produced by the activities is avoided or reduced, or where waste is produced it is recovered wherever practicable or otherwise disposed of in a manner which minimises its impact on the environment;
- (b) review and record at least every four years whether changes to those measures should be made; and
- (c) take any further appropriate measures identified by a review.

## **2 Operations**

### **2.1 Permitted activities**

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

### **2.2 The site**

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

### **2.3 Operating techniques**

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **2.4 Improvement programme**

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

## 2.5 Landfill Engineering

- 2.5.1 No construction of any new cell of the landfill shall commence until the operator has submitted construction proposals and the Environment Agency has confirmed that it is satisfied with the construction proposals.
- 2.5.2 Where the operator proposes to construct any new cell other than the first cell, but proposes no change from the design of the most recently approved cell which could have any impact on the performance of any element of the design, no construction of the new cell shall commence until the operator has submitted a cell layout drawing and the Environment Agency has confirmed that it is satisfied with the cell layout drawing.
- 2.5.3 The construction of a new cell shall take place only in accordance with the approved construction proposals unless:
- (a) any change to the approved construction proposals would have no impact on the performance of any element of the design; or
  - (b) a change has otherwise been agreed in writing by the Environment Agency.
- 2.5.4 No disposal of waste shall take place in a new cell until the operator has submitted a CQA Validation Report and the Environment Agency has confirmed that it is satisfied with the CQA Validation Report.
- 2.5.5 No construction of landfill infrastructure shall commence until the operator has submitted relevant construction proposals or a written request to use previous construction proposals and the Environment Agency has confirmed that it is satisfied with the construction proposals.
- 2.5.6 The construction of the landfill infrastructure shall take place only in accordance with the approved construction proposals unless:
- (a) any change to the approved construction proposals would have no impact on the performance of any element of the design; or
  - (b) a change has otherwise been agreed in writing by the Environment Agency.
- 2.5.7 The operator shall submit a CQA Validation Report as soon as practicable following the construction of the relevant landfill infrastructure.
- 2.5.8 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.5.5 and 2.5.6 do not apply and the relevant landfill infrastructure may be constructed, provided that the construction proposals are submitted to the Environment Agency as soon as practicable.
- 2.5.9 For the purposes of conditions 2.5.1, 2.5.2, 2.5.4 and 2.5.5, the Environment Agency shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the relevant construction proposals or CQA Validation Report, either:
- (a) confirmed whether or not it is satisfied; or
  - (b) informed the operator that it requires further information.
- 2.5.10 Where the Environment Agency has required further information under condition 2.5.9(b), the Environment Agency shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the further information, either:
- (a) confirmed whether or not it is satisfied; or
  - (b) informed the operator that it requires further information.

## 2.6 Waste acceptance

- 2.6.1 Wastes shall only be accepted for disposal if:
- (a) they are listed in schedule 2, table S2.1 and

- (b) they are non- hazardous waste and
  - (c) they are not whole used tyres (other than bicycle tyres and tyres with an outside diameter of more than 1400mm), and
  - (d) they are not shredded used tyres, and
  - (e) they are not liquid waste (including waste waters but excluding sludge), and
  - (f) they are not chemical substances from research and development or teaching activities, for example laboratory residues, which are unidentified and/or which are new and whose effects on man and/or the environment are unknown, and
  - (g) all the relevant waste acceptance procedures have been completed, and
  - (h) they fulfil the relevant waste acceptance criteria; and
  - (i) they have not been diluted or mixed solely to meet the relevant waste acceptance criteria, and
  - (j) they are wastes which have been treated, except for: inert wastes for which treatment is not technically feasible; or it is waste other than inert waste and treatment would not reduce its quantity or the hazards which it poses to human health or the environment, [or liquid waste accepted for treatment at a permitted leachate treatment activity], and
  - (k) they are wastes with a code beginning with 07 05 and 16 03, they shall exclude waste medicinal products and pharmaceutically active waste materials arising from their manufacture.
- 2.6.2 Wastes shall only be accepted for restoration where:
- (a) they are listed in schedule 2, table S2.2 and
  - (b) they are accepted in accordance with a restoration plan approved in writing by the Environment Agency.
- 2.6.3 The operator shall:
- (a) visually inspect without unloading it, waste that is not in an enclosed container or enclosed vehicle on arrival at the landfill and waste at the point of deposit; and
  - (b) be satisfied that the waste conforms to the requirements of condition 2.6.1.
- 2.6.4 Where the operator has taken samples to establish that the waste is in conformity with the documentation submitted by the holder then the samples taken shall be retained for at least one month and results of any analysis for at least two years.
- 2.6.5 The operator on accepting each delivery of waste shall provide a receipt to the person delivering it.
- 2.6.6 The total quantity of waste that shall be deposited or recovered in the landfill shall be limited by the pre-settlement levels shown on drawing ESID4.
- 2.6.7 The quantity of waste that is deposited or recovered in the landfill in any year shall not exceed the limits in schedule 1 table S1.5.
- 2.6.8 The operator shall maintain and implement a system which ensures that a record is made of the quantity, characteristics, date of delivery and, where practicable, origin of any waste that is received for disposal or recovery and of the identity of the producer, or in the case of municipal waste and multiple collection vehicles, of the collector of such waste. Any information regarded by the operator as commercially confidential shall be clearly identified in the record.

## 2.7 Leachate levels

- 2.7.1 The limits for the level of leachate listed in schedule 3 table S3.1 shall not be exceeded.

## 2.8 Closure and aftercare

- 2.8.1 The operator shall maintain a closure and aftercare management plan.



## **2.9 Landfill gas management**

- 2.9.1 The operator shall take appropriate measures, including, but not limited to, those specified in any approved landfill gas management plan, to:
- (a) collect landfill gas; and
  - (b) control the migration of landfill gas.
- 2.9.2 The operator shall use the collected landfill gas to produce energy. If the collected landfill gas cannot be used to produce energy, the operator shall use appropriate measures to flare or treat the gas in accordance with an approved landfill gas management plan.
- 2.9.3 The operator shall:
- (a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a revised landfill gas management plan;
  - (b) implement the revised landfill gas management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

## **3 Emissions and monitoring**

### **3.1 Emissions to water, air or land**

- 3.1.1 The limits in Schedule 3 shall not be exceeded.
- 3.1.2 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 table S3.2.
- 3.1.3 The limits given in Table S3.2 shall not be exceeded, save that compliance with an emission limit in that table shall include incorporation of the uncertainty allowance stated in Environment Agency guidance LFTGN 05 and LFTGN 08.
- 3.1.4 The operator shall prevent the input of any hazardous substances from the activities into groundwater.
- 3.1.5 The operator shall submit to the Environment Agency a review of the Hydrogeological Risk Assessment:
- (a) between nine and six months prior to the fourth anniversary of the granting of the permit, and
  - (b) between nine and six months prior to every subsequent six years after the fourth anniversary of the granting of the permit.

### **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

### **3.3 Odour**

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
  - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **3.4 Noise and vibration**

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

### **3.5 Monitoring**

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring and any other actions specified in the following tables in schedule 3 to this permit:
- (a) Leachate specified in tables S3.1 and S3.8;
  - (b) Point source emissions specified in table S3.2;
  - (c) Groundwater specified in tables S3.3 and S3.6; and
  - (d) Landfill gas specified in tables S3.4, S3.5 and S3.7.
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 A topographical survey of the site referenced to ordnance datum shall be carried out and shall be used to produce a plan of a scale adequate to show the surveyed features of the site:
- (a) annually, and
  - (b) prior to the disposal of waste in any new cell or new development area of the landfill, and
  - (c) following closure of the landfill or part of the landfill.

### **3.6 Pests**

- 3.6.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.

## **4 Information**

### **4.1 Records**

4.1.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
  - (i) the results of groundwater monitoring;
  - (ii) sub-surface landfill gas monitoring;
  - (iii) leachate levels, quality and quantities;
  - (iv) landfill gas generation and collection;
  - (v) waste types and quantities;
  - (vi) the specification and as built drawings of the basal, sidewall and capping engineering systems.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

### **4.2 Reporting**

4.2.1 The operator shall send reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 A report or reports on the performance of the activities over the previous year ('the annual report') shall be submitted to the Environment Agency by 31st January each year or such other date as may be agreed in writing by the Agency, with the exception of 4.2.2(c) that must be provided by the end of February each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with this permit against the relevant assumptions, parameters and results in the risk assessments submitted in relation to this installation and any agreed amendments thereto. The review will include written descriptions of the improvements made to operational performance during the year, action plans developed and planned improvements for the coming year;
- (b) the energy consumed at the site, reported in the format set out in schedule 4 table S4.3
- (c) the annual production/treatment set out in schedule 4 table S4.2;
- (d) the topographical surveys required by condition 3.5.3 other than those submitted as part of a CQA validation report;
- (e) the volumetric difference (reported in cubic metres) between the most recent topographical survey and the previous annual topographical survey i.e. the additional volume of the landfill void that is occupied by waste;
- (f) an assessment of the settlement behaviour of the landfill body based on the difference between the most recent topographical survey and previous annual topographical survey for the areas of the landfill which did not receive waste between the surveys;

- (g) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey;
  - (h) a plan(s) (the monitoring and extraction point plan – MEPP) showing the locations of leachate and landfill gas extraction and all monitoring points.
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
  - (b) using the forms specified in schedule 4 table S4.4 or other reporting format as agreed in writing with the Environment Agency; and
  - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.4 Within one month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.
- 4.2.5 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

### 4.3 Notifications

- 4.3.1 (a) In the event that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
- (i) inform the Environment Agency,
  - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
  - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) in the event of a breach of any permit condition the operator must immediately—
- (i) inform the Environment Agency, and
  - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) in the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1 (a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
  - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.
- Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and
- (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.4 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) the Environment Agency shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

#### **4.4 Interpretation**

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

## Schedule 1 – Operation

Table S1.1 activities				
Activity reference	WFD Annex I and II operations (where applicable)	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A1	D5 –Specially engineered landfill; R5 - the recycling or reclamation of inorganic material and R10 – Land treatment resulting in benefit to agriculture or ecology	Section 5.2 Part A(1) (a) . The disposal of waste in a landfill.	Landfill for non-hazardous waste and landfill restoration	Receipt, handling, storage and disposal of wastes, consisting of the types and quantities specified in conditions 2.6, as an integral part of landfilling.
<b>Directly Associated Activities</b>				
A2	R1 – use principally as a fuel to generate energy		Pre-treatment and utilisation of landfill gas for energy recovery in an appliance with a rated thermal input < 50MW	Treatment and utilisation of landfill gas arising from the landfill.
A4	N/A		Temporary storage of waste (leachate)	Leachate arising from the landfill.
A5	N/A		Flaring of landfill gas for disposal in an appliance.	Landfill gas arising from the landfill.
A7	N/A		Storage of fuel for operation of plant and equipment.	Fuel storage tank.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The responses to questions, 2.1 to 2.5 inclusive in part B of the Application Form, excluding the responses to questions 2.1.4 to 2.1.6, and 2.2.10.	05 May 2004
Response to Request for Information	All	20 December 2004
Response to Request for Information	All	14 January 2005
Site Protection and Monitoring Plan	All	12 October 2005
Leachate Management Plan	Leachate Management Plan dated 13 April 2006 and subsequent annual reviews as agreed in writing.	13 April 2006
Noise Monitoring Plan	All	13 April 2006
Particulate Monitoring Plan	All	13 April 2006
Groundwater Monitoring Plan	All	03 May 2006
Landfill Gas Management Plan	All	03 May 2006
Litter, Birds, Vermin, and Flies Monitoring Programme	All	07 June 2006
Application documents for EPR/BW2838IN/V004	Variation to remove CO2 limits in accordance with the ICoP on perimeter soil gas monitoring. Varied and consolidated permit issued in modern condition format including Landfill Gas Management Plan	04 November 2015
Methane action plan (part of LFGMP)	Submitted with Schedule 5 response	1 February 2016

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational Measures
1	Waste disposal in all future phases of the Installation	The operator shall conduct a geophysical survey to determine the presence of any cavities and shall submit a report on the survey findings to the Agency at least 28 days prior to the proposed start of cell construction. Cell construction shall not commence until the Agency has approved the results of the geophysical survey. Should the survey detect the presence of cavities, the operator shall provide details of remedial measures to be undertaken which shall also be subject to written approval by the Agency. No construction work shall proceed unless or until such approved remedial measures have

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Table S1.4 Pre-operational measures for future development

Table 5-11: Pre-operational measures for future development		
Reference	Operation	Pre-operational Measures
		been demonstrated to be effective by subsequent risk assessment.
2	Waste disposal in all future phases of the Installation	Lining clay and restoration soil parameters shall be confirmed prior to cell construction. If the clay source and restoration soil source strength and classification parameters differ significantly from those utilised in the Stability Risk Assessment the stability analyses shall be re-run and the assessment presented to the Agency for approval. If the $k_d$ , $f_{oc}$ and effective porosity values vary from those utilised in the Hydrogeological Risk Assessment, then the HRA modelling shall be re-run and the assessment presented to the Agency for approval.
3	Waste disposal in all future phases of the Installation	The sensitivity of the stability of the waste and lining systems shall be assessed using site specific interface parameters for the geosynthetics and soils to be used and the sensitivity of stability to more conservative waste parameters of $c'=5kPa$ and $\phi'=25^\circ$ as suggested in the EA draft guidance shall be determined. These analyses shall be submitted with the detailed design information accompanying the CQA Plan prior to engineering of future cells.
4	Waste disposal in all future phases of the Installation	The bearing capacity and Factor of Safety of the leachate well foundation shall be assessed by further analysis and shall be submitted with the detailed design information accompanying the CQA Plan prior to engineering of future cells. The Factor of Safety used in the analysis shall be justified taking into account recognised values of Factor of Safety for structural foundations. Alternatively designs shall be submitted for telescopic wells to minimise the generation of loads due to down-drag forces.
5	Waste disposal in all future phases of the Installation	Detailed designs and stability analyses shall be submitted with the CQA plan for future cells accompanied by cross sectional information confirming the subgrade composition. The designs shall include where appropriate the methods of construction to deal with the presence of former settlement lagoons.
6	Waste disposal in all future phases of the Installation	The CQA Plan shall include inspections of the sub-grade to ensure that soft areas are excavated and replaced using suitable fill material prior to cell construction, and to identify seepages in side slopes. Appropriate measures to drain any seepages identified shall be undertaken and reported in the CQA report for cell construction.
7	Waste disposal in all future phases of the Installation	The CQA Plan thus submitted shall incorporate the following minimum engineering standards (all tested in accordance with BS812 where appropriate): - The leachate drainage layer shall have a minimum thickness of 300mm; be comprised of (<10% carbonate) stone aggregate only; with a minimum 10% fines value at 100kN or at any higher pressure that may be anticipated by greater depths of landfilling; and with a particle size distribution as follows: Sieve size      Percentage Passing

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Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational Measures
		<p>63mm 100%  37.5mm 85-100%  20mm 0-25%  10mm 0-5%</p> <p>Unless otherwise agreed in writing, the leachate drainage pipework shall comprise straight pipe runs with no herringbone system; main runs having a minimum internal diameter of 160mm; branches having a minimum internal diameter of 120mm; a maximum distance between pipe runs of 30 metres; a minimum fall of 1 in 50; be covered by a minimum depth of aggregate equivalent to 2x pipe diameter; be accessible to jetting units and CCTV cameras; and be designed to have no more than 5% deflection or 5% deflection at pressure relevant to the depth of waste.</p> <p>Unless otherwise agreed in writing, the leachate collection system shall incorporate vertical extraction wells designed to avoid lateral or vertical movement; founded on a 225mm thick 40N concrete pad with 15% fabric reinforcement. The HDPE pipe within the shaft shall be a minimum diameter of 600mm and be solid to avoid air ingress. A system shall be provided in the base of the well shaft to provide a method of feeding a jetting unit and CCTV into the collection pipework. Up slope risers shall comprise of solid shafts to avoid air ingress. Lateral support shall be provided for the full height pipe. Air tight seals must be provided at the top of each extraction well.</p>

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
1	The operator shall submit to the Environment Agency in writing for approval a restoration plan for the site which includes the waste types and waste acceptance criteria and procedures for wastes for restoration (condition 2.6.2).	10/06/16

Table S1.5 Annual waste input limits	
Category	Limit Tonnes/ Year
Non-hazardous waste	135,000
Waste for restoration	15,000

## Schedule 2 – List of permitted waste

Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
<b>01</b>	<b>Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals</b>
<b>01 01</b>	<b>wastes from mineral excavation</b>
01 01 01	wastes from mineral metalliferous excavation
01 01 02	wastes from mineral non-metalliferous excavation
<b>01 03</b>	<b>wastes from physical and chemical processing of metalliferous minerals</b>
01 03 06	tailings other than those mentioned in 01 03 04 and 01 03 05
01 03 08	dusty and powdery wastes other than those mentioned in 01 03 07
01 03 09	red mud from alumina production other than the wastes mentioned in 01 03 10
<b>01 04</b>	<b>wastes from physical and chemical processing of non-metalliferous minerals</b>
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	waste sand and clays
01 04 10	dusty and powdery wastes other than those mentioned in 01 04 07
01 04 11	wastes from potash and rock salt processing other than those mentioned in 01 04 07
01 04 12	tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11
01 04 13	wastes from stone cutting and sawing other than those mentioned in 01 04 07
<b>01 05</b>	<b>drilling muds and other drilling wastes</b>
01 05 04	freshwater drilling muds and wastes
01 05 07	barite-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06
01 05 08	chloride-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06
<b>02</b>	<b>Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing</b>
<b>02 01</b>	<b>wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing</b>
02 01 01	sludges from washing and cleaning

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**Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste**

<b>Waste code</b>	<b>Description</b>
02 01 02	animal-tissue waste
02 01 03	plant-tissue waste
02 01 04	waste plastics (except packaging)
02 01 06	animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site
02 01 07	wastes from forestry
02 01 09	agrochemical waste other than those mentioned in 02 01 08
02 01 10	waste metal
<b>02 02</b>	<b>wastes from the preparation and processing of meat, fish and other foods of animal origin</b>
02 02 01	sludges from washing and cleaning
02 02 02	animal-tissue waste
02 02 03	materials unsuitable for consumption or processing
02 02 04	sludges from on-site effluent treatment
<b>02 03</b>	<b>wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation</b>
02 03 01	sludges from washing, cleaning, peeling, centrifuging and separation
02 03 02	wastes from preserving agents
02 03 03	wastes from solvent extraction
02 03 04	materials unsuitable for consumption or processing
02 03 05	sludges from on-site effluent treatment
<b>02 04</b>	<b>wastes from sugar processing</b>
02 04 01	soil from cleaning and washing beet
02 04 02	off-specification calcium carbonate
02 04 03	sludges from on-site effluent treatment
<b>02 05</b>	<b>wastes from the dairy products industry</b>
02 05 01	materials unsuitable for consumption or processing

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Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
02 05 02	sludges from on-site effluent treatment
<b>02 06</b>	<b>wastes from the baking and confectionery industry</b>
02 06 01	materials unsuitable for consumption or processing
02 06 02	wastes from preserving agents
02 06 03	sludges from on-site effluent treatment
<b>02 07</b>	<b>wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)</b>
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials
02 07 02	wastes from spirits distillation
02 07 03	wastes from chemical treatment
02 07 04	materials unsuitable for consumption or processing
02 07 05	sludges from on-site effluent treatment
<b>03</b>	<b>Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard</b>
<b>03 01</b>	<b>wastes from wood processing and the production of panels and furniture</b>
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
<b>03 03</b>	<b>wastes from pulp, paper and cardboard production and processing</b>
03 03 01	waste bark and wood
03 03 02	green liquor sludge (from recovery of cooking liquor)
03 03 05	de-inking sludges from paper recycling
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
03 03 09	lime mud waste
03 03 10	fibre rejects, fibre-, filler- and coating-sludges from mechanical separation
03 03 11	sludges from on-site effluent treatment other than those mentioned in 03 03 10

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Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
<b>04</b>	<b>Wastes from the leather, fur and textile industries</b>
<b>04 01</b>	<b>wastes from the leather and fur industry</b>
04 01 01	fleshings and lime split wastes
04 01 02	liming waste
04 01 06	sludges, in particular from on-site effluent treatment containing chromium
04 01 07	sludges, in particular from on-site effluent treatment free of chromium
04 01 08	waste tanned leather (blue sheetings, shavings, cuttings, buffing dust) containing chromium
04 01 09	wastes from dressing and finishing
<b>04 02</b>	<b>wastes from the textile industry</b>
04 02 09	wastes from composite materials (impregnated textile, elastomer, plastomer)
04 02 10	organic matter from natural products (for example grease, wax)
04 02 15	wastes from finishing other than those mentioned in 04 02 14
04 02 17	dye stuffs and pigments other than those mentioned in 04 02 16
04 02 20	sludges from on-site effluent treatment other than those mentioned in 04 02 19
04 02 21	wastes from unprocessed textile fibres
04 02 22	wastes from processed textile fibres
<b>05</b>	<b>Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal</b>
<b>05 01</b>	<b>wastes from petroleum refining</b>
05 01 10	sludges from on-site effluent treatment other than those mentioned in 05 01 09
05 01 13	boiler feedwater sludges
05 01 14	wastes from cooling columns
05 01 16	sulphur-containing wastes from petroleum desulphurisation
05 01 17	bitumen
<b>05 06</b>	<b>wastes from the pyrolytic treatment of coal</b>

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Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
05 06 04	waste from cooling columns
<b>05 07</b>	<b>wastes from natural gas purification and transportation</b>
05 07 02	wastes containing sulphur
<b>06</b>	<b>Wastes from inorganic chemical processes</b>
<b>06 03</b>	<b>wastes from the MFSU of salts and their solutions and metallic oxides</b>
06 03 14	solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13
06 03 16	metallic oxides other than those mentioned in 06 03 15
<b>06 05</b>	<b>sludges from on-site effluent treatment</b>
06 05 03	sludges from on-site effluent treatment other than those mentioned in 06 05 02
<b>06 06</b>	<b>wastes from the MFSU of sulphur chemicals, sulphur chemical processes and desulphurisation processes</b>
06 06 03	wastes containing sulphides other than those mentioned in 06 06 02
<b>06 09</b>	<b>wastes from the MFSU of phosphorous chemicals and phosphorous chemical processes</b>
06 09 02	phosphorous slag
06 09 04	calcium-based reaction wastes other than those mentioned in 06 09 03
<b>06 11</b>	<b>wastes from the manufacture of inorganic pigments and opacifiers</b>
06 11 01	calcium-based reaction wastes from titanium dioxide production
<b>06 13</b>	<b>wastes from inorganic chemical processes not otherwise specified</b>
06 13 03	carbon black
<b>07</b>	<b>Wastes from organic chemical processes</b>
<b>07 01</b>	<b>wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals</b>
07 01 12	sludges from on-site effluent treatment other than those mentioned in 07 01 11
<b>07 02</b>	<b>wastes from the MFSU of plastics, synthetic rubber and man-made fibres</b>
07 02 12	sludges from on-site effluent treatment other than those mentioned in 07 02 11
07 02 13	waste plastic



Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
07 02 15	wastes from additives other than those mentioned in 07 02 14
07 02 17	waste containing silicones other than those mentioned in 07 02 16
<b>07 03</b>	<b>wastes from the MFSU of organic dyes and pigments (except 06 11)</b>
07 03 12	sludges from on-site effluent treatment other than those mentioned in 07 03 11
<b>07 04</b>	<b>wastes from the MFSU of organic plant protection products (except 02 01 08 and 02 01 09), wood preserving agents (except 03 02) and other biocides</b>
07 04 12	sludges from on-site effluent treatment other than those mentioned in 07 04 11
<b>07 05</b>	<b>wastes from the MFSU of pharmaceuticals</b>
07 05 12	sludges from on-site effluent treatment other than those mentioned in 07 05 11
07 05 14	solid wastes other than those mentioned in 07 05 13
<b>07 06</b>	<b>wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics</b>
07 06 12	sludges from on-site effluent treatment other than those mentioned in 07 06 11
<b>07 07</b>	<b>wastes from the MFSU of fine chemicals and chemical products not otherwise specified</b>
07 07 12	sludges from on-site effluent treatment other than those mentioned in 07 07 11
<b>08</b>	<b>Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks</b>
<b>08 01</b>	<b>wastes from MFSU and removal of paint and varnish</b>
08 01 12	waste paint and varnish other than those mentioned in 08 01 11
08 01 14	sludges from paint or varnish other than those mentioned in 08 01 13
08 01 16	aqueous sludges containing paint or varnish other than those mentioned in 08 01 15
08 01 18	wastes from paint or varnish removal other than those mentioned in 08 01 17
<b>08 02</b>	<b>wastes from MFSU of other coatings (including ceramic materials)</b>
08 02 01	waste coating powders
08 02 02	aqueous sludges containing ceramic materials
<b>08 03</b>	<b>wastes from MFSU of printing inks</b>

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Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
08 03 07	aqueous sludges containing ink
08 03 13	waste ink other than those mentioned in 08 03 12
08 03 15	ink sludges other than those mentioned in 08 03 14
08 03 18	waste printing toner other than those mentioned in 08 03 17
<b>08 04</b>	<b>wastes from MFSU of adhesives and sealants (including water proofing products)</b>
08 04 10	waste adhesives and sealants other than those mentioned in 08 04 09
08 04 12	adhesive and sealant sludges other than those mentioned in 08 04 11
08 04 14	aqueous sludges containing adhesives or sealants other than those mentioned in 08 04 13
<b>09</b>	<b>Wastes from the photographic industry</b>
<b>09 01</b>	<b>wastes from the photographic industry</b>
09 01 07	photographic film and paper containing silver or silver compounds
09 01 08	photographic film and paper free of silver or silver compounds
09 01 10	single-use cameras without batteries
09 01 12	single-use cameras containing batteries other than those mentioned in 09 01 11
<b>10</b>	<b>Wastes from thermal processes</b>
<b>10 01</b>	<b>wastes from power stations and other combustion plants (except 19)</b>
10 01 01	bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)
10 01 02	coal fly ash
10 01 03	fly ash from peat and untreated wood
10 01 05	calcium-based reaction wastes from flue-gas desulphurisation in solid form
10 01 07	calcium-based reaction wastes from flue-gas desulphurisation in sludge form
10 01 15	bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14
10 01 17	fly ash from co-incineration other than those mentioned in 10 01 16
10 01 19	wastes from gas cleaning other than those mentioned in 10 01 05, 10 01 07 and 10 01 18

Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste

Waste code	Description
10 01 21	sludges from on-site effluent treatment other than those mentioned in 10 01 20
10 01 23	aqueous sludges from boiler cleansing other than those mentioned in 10 01 22
10 01 24	sands from fluidised beds
10 01 25	wastes from fuel storage and preparation of coal-fired power plants
10 01 26	wastes from cooling-water treatment
<b>10 02</b>	<b>wastes from the iron and steel industry</b>
10 02 01	wastes from the processing of slag
10 02 02	unprocessed slag
10 02 08	solid wastes from gas treatment other than those mentioned in 10 02 07
10 02 10	mill scales
10 02 12	wastes from cooling-water treatment other than those mentioned in 10 02 11
10 02 14	sludges and filter cakes from gas treatment other than those mentioned in 10 02 13
10 02 15	other sludges and filter cakes
<b>10 03</b>	<b>wastes from aluminium thermal metallurgy</b>
10 03 02	anode scraps
10 03 05	waste alumina
10 03 16	skimmings other than those mentioned in 10 03 15
10 03 18	carbon-containing wastes from anode manufacture other than those mentioned in 10 03 17
10 03 20	flue-gas dust other than those mentioned in 10 03 19
10 03 22	other particulates and dust (including ball-mill dust) other than those mentioned in 10 03 21
10 03 24	solid wastes from gas treatment other than those mentioned in 10 03 23
10 03 26	sludges and filter cakes from gas treatment other than those mentioned in 10 03 25
10 03 28	wastes from cooling-water treatment other than those mentioned in 10 03 27
10 03 30	wastes from treatment of salt slags and black drosses other than those mentioned in 10 03 29

Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
<b>10 04</b>	<b>wastes from lead thermal metallurgy</b>
10 04 10	wastes from cooling-water treatment other than those mentioned in 10 04 09
<b>10 05</b>	<b>wastes from zinc thermal metallurgy</b>
10 05 01	slags from primary and secondary production
10 05 04	other particulates and dust
10 05 09	wastes from cooling-water treatment other than those mentioned in 10 05 08
10 05 11	dross and skimmings other than those mentioned in 10 05 10
<b>10 06</b>	<b>wastes from copper thermal metallurgy</b>
10 06 01	slags from primary and secondary production
10 06 02	dross and skimmings from primary and secondary production
10 06 04	other particulates and dust
10 06 10	wastes from cooling-water treatment other than those mentioned in 10 06 09
<b>10 07</b>	<b>wastes from silver, gold and platinum thermal metallurgy</b>
10 07 01	slags from primary and secondary production
10 07 02	dross and skimmings from primary and secondary production
10 07 03	solid wastes from gas treatment
10 07 04	other particulates and dust
10 07 05	sludges and filter cakes from gas treatment
10 07 08	wastes from cooling-water treatment other than those mentioned in 10 07 07
<b>10 08</b>	<b>wastes from other non-ferrous thermal metallurgy</b>
10 08 04	particulates and dust
10 08 09	other slags
10 08 11	dross and skimmings other than those mentioned in 10 08 10
10 08 13	carbon-containing wastes from anode manufacture other than those mentioned in 10 08 12

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**Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste**

<b>Waste code</b>	<b>Description</b>
10 08 14	anode scrap
10 08 16	flue-gas dust other than those mentioned in 10 08 15
10 08 18	sludges and filter cakes from flue-gas treatment other than those mentioned in 10 08 17
10 08 20	wastes from cooling-water treatment other than those mentioned in 10 08 19
<b>10 09</b>	<b>wastes from casting of ferrous pieces</b>
10 09 03	furnace slag
10 09 06	casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05
10 09 08	casting cores and moulds which have undergone pouring other than those mentioned in 10 09 07
10 09 10	flue-gas dust other than those mentioned in 10 09 09
10 09 12	other particulates other than those mentioned in 10 09 11
10 09 14	waste binders other than those mentioned in 10 09 13
10 09 16	waste crack-indicating agent other than those mentioned in 10 09 15
<b>10 10</b>	<b>wastes from casting of non-ferrous pieces</b>
10 10 03	furnace slag
10 10 06	casting cores and moulds which have not undergone pouring, other than those mentioned in 10 10 05
10 10 08	casting cores and moulds which have undergone pouring, other than those mentioned in 10 10 07
10 10 10	flue-gas dust other than those mentioned in 10 10 09
10 10 12	other particulates other than those mentioned in 10 10 11
10 10 14	waste binders other than those mentioned in 10 10 13
10 10 16	waste crack-indicating agent other than those mentioned in 10 10 15
<b>10 11</b>	<b>wastes from manufacture of glass and glass products</b>
10 11 03	waste glass-based fibrous materials
10 11 05	particulates and dust
10 11 10	waste preparation mixture before thermal processing, other than those mentioned in 10 11 09

Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
10 11 12	waste glass other than those mentioned in 10 11 11
10 11 14	glass-polishing and -grinding sludge other than those mentioned in 10 11 13
10 11 16	solid wastes from flue-gas treatment other than those mentioned in 10 11 15
10 11 18	sludges and filter cakes from flue-gas treatment other than those mentioned in 10 11 17
10 11 20	solid wastes from on-site effluent treatment other than those mentioned in 10 11 19
<b>10 12</b>	<b>wastes from manufacture of ceramic goods, bricks, tiles and construction products</b>
10 12 01	waste preparation mixture before thermal processing
10 12 03	particulates and dust
10 12 05	sludges and filter cakes from gas treatment
10 12 06	discarded moulds
10 12 08	waste ceramics, bricks, tiles and construction products (after thermal processing)
10 12 10	solid wastes from gas treatment other than those mentioned in 10 12 09
10 12 12	wastes from glazing other than those mentioned in 10 12 11
10 12 13	sludge from on-site effluent treatment
<b>10 13</b>	<b>wastes from manufacture of cement, lime and plaster and articles and products made from them</b>
10 13 01	waste preparation mixture before thermal processing
10 13 04	wastes from calcination and hydration of lime
10 13 06	particulates and dust (except 10 13 12 and 10 13 13)
10 13 07	sludges and filter cakes from gas treatment
10 13 10	wastes from asbestos-cement manufacture other than those mentioned in 10 13 09
10 13 11	wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10
10 13 13	solid wastes from gas treatment other than those mentioned in 10 13 12
10 13 14	waste concrete and concrete sludge
<b>11</b>	<b>Wastes from chemical surface treatment and coating of metals and other materials; non-ferrous hydro-metallurgy</b>

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Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
<b>11 01</b>	<b>wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)</b>
11 01 10	sludges and filter cakes other than those mentioned in 11 01 09
11 01 14	degreasing wastes other than those mentioned in 11 01 13
<b>11 02</b>	<b>wastes from non-ferrous hydrometallurgical processes</b>
11 02 03	wastes from the production of anodes for aqueous electrolytical processes
11 02 06	wastes from copper hydrometallurgical processes other than those mentioned in 11 02 05
<b>11 05</b>	<b>wastes from hot galvanising processes</b>
11 05 01	hard zinc
11 05 02	zinc ash
<b>12</b>	<b>Wastes from shaping and physical and mechanical surface treatment of metals and plastics</b>
<b>12 01</b>	<b>wastes from shaping and physical and mechanical surface treatment of metals and plastics</b>
12 01 01	ferrous metal filings and turnings
12 01 02	ferrous metal dust and particles
12 01 03	non-ferrous metal filings and turnings
12 01 04	non-ferrous metal dust and particles
12 01 05	plastics shavings and turnings
12 01 13	welding wastes
12 01 15	machining sludges other than those mentioned in 12 01 14
12 01 17	waste blasting material other than those mentioned in 12 01 16
12 01 21	spent grinding bodies and grinding materials other than those mentioned in 12 01 20
<b>15</b>	<b>Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified</b>
<b>15 01</b>	<b>packaging (including separately collected municipal packaging waste)</b>
15 01 01	paper and cardboard packaging
15 01 02	plastic packaging

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Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
15 01 03	wooden packaging
15 01 04	metallic packaging
15 01 05	composite packaging
15 01 06	mixed packaging
15 01 07	glass packaging
15 01 09	textile packaging
<b>15 02</b>	<b>absorbents, filter materials, wiping cloths and protective clothing</b>
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
<b>16</b>	<b>Wastes not otherwise specified in the list</b>
<b>16 01</b>	<b>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)</b>
16 01 03	end-of-life tyres
16 01 12	brake pads other than those mentioned in 16 01 11
16 01 17	ferrous metal
16 01 18	non-ferrous metal
16 01 19	plastic
16 01 20	glass
<b>16 02</b>	<b>wastes from electrical and electronic equipment</b>
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13
16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15
<b>16 03</b>	<b>off-specification batches and unused products</b>
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
<b>16 08</b>	<b>spent catalysts</b>
16 08 01	spent catalysts containing gold, silver, rhenium, rhodium, palladium, iridium or platinum (except 16 08 07)

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Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
16 08 03	spent catalysts containing transition metals or transition metal compounds not otherwise specified
<b>16 11</b>	<b>waste linings and refractories</b>
16 11 02	carbon-based linings and refractories from metallurgical processes others than those mentioned in 16 11 01
16 11 04	other linings and refractories from metallurgical processes other than those mentioned in 16 11 03
16 11 06	linings and refractories from non-metallurgical processes others than those mentioned in 16 11 05
<b>17</b>	<b>Construction and demolition wastes (including excavated soil from contaminated sites)</b>
<b>17 01</b>	<b>concrete, bricks, tiles and ceramics</b>
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
<b>17 02</b>	<b>wood, glass and plastic</b>
17 02 01	wood
17 02 02	glass
17 02 03	plastic
<b>17 03</b>	<b>bituminous mixtures, coal tar and tarred products</b>
17 03 02	bituminous mixtures other than those mentioned in 17 03 01
<b>17 04</b>	<b>metals (including their alloys)</b>
17 04 01	copper, bronze, brass
17 04 02	aluminium
17 04 03	lead
17 04 04	zinc
17 04 05	iron and steel
17 04 06	tin

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Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
17 04 07	mixed metals
17 04 11	cables other than those mentioned in 17 04 10
<b>17 05</b>	<b>soil (including excavated soil from contaminated sites), stones and dredging spoil</b>
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 08	Track ballast other than those mentioned in 17 05 07
<b>17 06</b>	<b>insulation materials and asbestos-containing construction materials</b>
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03
<b>17 09</b>	<b>other construction and demolition wastes</b>
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
<b>18</b>	<b>Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)</b>
<b>18 01</b>	<b>wastes from natal care, diagnosis, treatment or prevention of disease in humans</b>
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)
<b>18 02</b>	<b>wastes from research, diagnosis, treatment or prevention of disease involving animals</b>
18 02 03	wastes whose collection and disposal is not subject to special requirements in order to prevent infection
18 02 06	chemicals other than those mentioned in 18 02 05
<b>19</b>	<b>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</b>
<b>19 01</b>	<b>wastes from incineration or pyrolysis of waste</b>
19 01 02	ferrous materials removed from bottom ash
19 01 12	bottom ash and slag other than those mentioned in 19 01 11
19 01 14	fly ash other than those mentioned in 19 01 13
19 01 16	boiler dust other than those mentioned in 19 01 15

Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
19 01 18	pyrolysis wastes other than those mentioned in 19 01 17
19 01 19	sands from fluidised beds
<b>19 02</b>	<b>wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)</b>
19 02 03	premixed wastes composed only of non-hazardous wastes
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09
<b>19 03</b>	<b>stabilised/solidified wastes</b>
19 03 05	stabilised wastes other than those mentioned in 19 03 04
19 03 07	solidified wastes other than those mentioned in 19 03 06
<b>19 04</b>	<b>vitrified waste and wastes from vitrification</b>
19 04 01	vitrified waste
<b>19 05</b>	<b>wastes from aerobic treatment of solid wastes</b>
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
<b>19 06</b>	<b>wastes from anaerobic treatment of waste</b>
19 06 04	digestate from anaerobic treatment of municipal waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste
<b>19 08</b>	<b>wastes from waste water treatment plants not otherwise specified</b>
19 08 01	screenings
19 08 02	waste from desanding
19 08 05	sludges from treatment of urban waste water
19 08 09	grease and oil mixture from oil/water separation containing only edible oil and fats
19 08 12	sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11

Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13
<b>19 09</b>	<b>wastes from the preparation of water intended for human consumption or water for industrial use</b>
19 09 01	solid waste from primary filtration and screenings
19 09 02	sludges from water clarification
19 09 03	sludges from decarbonation
19 09 04	spent activated carbon
19 09 05	saturated or spent ion exchange resins
19 09 06	solutions and sludges from regeneration of ion exchangers
<b>19 10</b>	<b>wastes from shredding of metal-containing wastes</b>
19 10 01	iron and steel waste
19 10 02	non-ferrous waste
19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03
19 10 06	other fractions other than those mentioned in 19 10 05
<b>19 11</b>	<b>wastes from oil regeneration</b>
19 11 06	sludges from on-site effluent treatment other than those mentioned in 19 11 05
<b>19 12</b>	<b>wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified</b>
19 12 01	paper and cardboard
19 12 02	ferrous metal
19 12 03	non-ferrous metal
19 12 04	plastic and rubber
19 12 05	glass
19 12 07	wood other than that mentioned in 19 12 06
19 12 08	textiles
19 12 09	minerals (for example sand, stones)

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**Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste**

Waste code	Description
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
<b>19 13</b>	<b>wastes from soil and groundwater remediation</b>
19 13 02	solid wastes from soil remediation other than those mentioned in 19 13 01
19 13 04	sludges from soil remediation other than those mentioned in 19 13 03
19 13 06	sludges from groundwater remediation other than those mentioned in 19 13 05
<b>20</b>	<b>Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions</b>
<b>20 01</b>	<b>separately collected fractions (except 15 01)</b>
20 01 01	paper and cardboard
20 01 02	glass
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 28	paint, inks, adhesives and resins other than those mentioned in 20 01 27
20 01 30	detergents other than those mentioned in 20 01 29
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 40	metals
20 01 41	wastes from chimney sweeping
<b>20 02</b>	<b>garden and park wastes (including cemetery waste)</b>
20 02 01	biodegradable waste
20 02 02	soil and stones

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Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste	
Waste code	Description
20 02 03	other non-biodegradable wastes
<b>20 03</b>	<b>other municipal wastes</b>
20 03 01	mixed municipal waste
20 03 02	waste from markets
20 03 03	street-cleaning residues
20 03 04	septic tank sludge
20 03 06	waste from sewage cleaning
20 03 07	bulky waste

Table S2.2 Permitted waste types for restoration	
Waste code	Description
To be agreed in accordance with table S1.3, improvement condition 1	

### Schedule 3 – Emissions and monitoring

Table S3.1 Leachate level limits and monitoring requirements			
Monitoring point reference/Description	Limit	Monitoring frequency	Monitoring standard and method
<b>Operational Cells or Phases</b> (Any cells or phases that do not have a final engineered cap agreed in accordance with the landfill engineering condition, 2.5)			
Leachate compliance and monitoring points 1A, 1AA, , as shown on Drawing ESID7 (dated 23/02/2004).	2 m above cell base for Leachate Collection Points and 1 m above cell base for Leachate Monitoring Points	Monthly	As specified in Environment Agency Guidance TGN02 (February 2003) or such other subsequent guidance as may be agreed in writing with the Environment Agency. Or as otherwise agreed with the Agency as part of a leachate monitoring plan.
<b>Non Operational Cells or Phases</b> (Any cells or phases that have a final engineered cap agreed in accordance with the landfill engineering condition, 2.5)			
Leachate compliance and monitoring points 1B, 1BA, 1C, 1CA, 1D, 1DA, 1E, 1EA 1FR, 1FA/R, 1G, 1GA, 1GB, 2A, 2AA, 2AB, 2B, 2BA, 2BB, 2C, 2CA, as shown on Drawing ESID7 (dated 23/02/2004).	-	Quarterly	As specified in Environment Agency Guidance TGN02 (February 2003) or such other subsequent guidance as may be agreed in writing with the Environment Agency. Or as otherwise agreed with the Agency as part of a leachate monitoring plan.

Table S3.2 Point source emissions to air – emission limits and monitoring requirements						
Emission point Ref. & Location	Parameter	Source	Limit (including unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
A1 and A2 (Landfill Gas Engines) as shown on Drawing ESID8 (dated 23/02/2004).	Oxides of Nitrogen	Gas utilisation plant	650 mg/m <sup>3</sup>	Hourly mean	Annually	As per M2 or such other subsequent guidance as may be agreed in writing with the Environment Agency
	CO		1500 mg/m <sup>3</sup>			
	Total VOCs		1750 mg/m <sup>3</sup>			
A3 (Landfill Gas Flare) as shown on Drawing ESID8 (dated 23/02/2004).	Oxides of Nitrogen	Landfill Gas Flares	150 mg/m <sup>3</sup>	Hourly mean	Annually	As per M2 or such other subsequent guidance as may be agreed in writing with the Environment Agency. Monitoring is unnecessary where the flare is active for <10% of the year.
	CO		100 mg/m <sup>3</sup>			
	Total VOCs		10 mg/m <sup>3</sup>			

Table S3.3 Groundwater – emission limits and monitoring requirements					
Monitoring point reference	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
GW04, as shown on Drawing ESID8 (dated 23/02/2004).	Chloride	48mg/l	Spot Sample	Monthly	As specified in Environment Agency Guidance TGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), Horizontal Guidance Note H1 – Environmental Risk Assessment for permits, Annex J3, version 2.1, Dec 2011 or such other subsequent guidance as may be agreed in writing with the Environment Agency.
	Nickel	0.04mg/l			
	Cadmium	1µg/l	Spot Sample	Quarterly	
	Mecoprop	0.04µg/l			
	Napthalene	10µg/l			
	Phenol	0.5µg/l			
GW05, as shown on Drawing ESID8 (dated 23/02/2004).	Chloride	60mg/l	Spot Sample	Monthly	
	Nickel	0.05mg/l			
	Cadmium	1µg/l	Spot Sample	Quarterly	
	Mecoprop	0.04µg/l			
	Napthalene	10µg/l			
	Phenol	0.5µg/l			

Table S3.4 Landfill gas in external monitoring boreholes – limits and monitoring requirements				
Monitoring point Ref. /description	Parameter	Limit (including units)	Monitoring frequency	Monitoring standard or method
LFG01, LFG02, LFG03, LFG04, LFG05, LFG06, LFG07, LFG08, LFG09, LFG10, LFG11, LFG12, LFG13, LFG14, LFG15, LFG16, LFG17, LFG18, LFG19, LFG20, LFG21, LFG22, LFG23, LFG24, LFG25 on drawing ref: 606M230	Methane	1 %w/v	Monthly	As per LFTGN03 (Sept 2004) or such other subsequent guidance as may be agreed in writing with the Environment Agency.  Record whether the ground is: waterlogged frozen snow covered
	Carbon Dioxide	no limit		
	Oxygen	no limit		
	Atmospheric pressure	no limit		
	Differential Pressure	no limit		



Table S3.5 Landfill gas emissions from capped surfaces for cells that have accepted non hazardous biodegradable waste – monitoring requirements			
Monitoring point Ref. /description	Parameter	Monitoring frequency	Monitoring Standard or method
Permanently capped zone	Methane concentration	Every 12 months	As per LFTGN 07 (v2 2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency.
Temporarily capped zone	Methane concentration	Every 12 months	As per LFTGN 07 (v2 2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency.
Whole site	Total methane emission	As agreed with the Environment Agency	As per LFTGN 07 (v2 2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency.
Uncapped areas	Methane concentration	Every 12 months	As agreed with the Environment Agency based on the wording of revised LFTGN 07 or landfill sector guidance or such other subsequent guidance as may be agreed in writing with the Environment Agency.

Table S3.6 Groundwater – other monitoring requirements			
Monitoring Point Ref./Description	Parameter	Monitoring frequency	Monitoring standard or method
Up gradient MEPP	Water level, electrical conductivity, chloride, ammoniacal nitrogen, pH,	Quarterly	As specified in Environment Agency Guidance TGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), Horizontal Guidance Note H1 – Environmental Risk Assessment for permits, Annex J3, version 2.1, Dec 2011), or such other subsequent guidance as may be agreed in writing with the Environment Agency.
	total alkalinity, magnesium, potassium, total sulphates, calcium, sodium, chromium, copper, iron, lead, nickel, zinc, manganese	Annually	
	Hazardous substances	Annually for first six years of operation	
Down or cross gradient MEPP	Water level, electrical conductivity, chloride, ammoniacal nitrogen, pH,	Quarterly	As specified in Environment Agency Guidance TGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), Horizontal Guidance Note H1 – Environmental Risk Assessment for permits, Annex J3, version 2.1, Dec 2011), or such other subsequent guidance as may be agreed in writing with the Environment Agency.  After the initial 6 year monitoring period for hazardous substances, if the results of quarterly or annual monitoring suggest an increase in contamination, the operator shall also undertake a full leachate hazardous substances screen.
	total alkalinity, magnesium, potassium, total sulphates, calcium, sodium, chromium, copper, iron, lead, nickel, zinc, manganese	Annually	
	Hazardous substances detected in leachate	Annually for first six years of operation then every two years	
MEPP	Base of monitoring point (mAoD)	Annually	

Table S3.7 Landfill gas – other monitoring requirements				
Monitoring Point Ref. /Description	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
In waste gas monitoring boreholes or sealed leachate wells or sacrificial gas extraction system	Methane Carbon Dioxide Oxygen Carbon Monoxide Differential pressure Atmospheric pressure	Monthly until gas extraction commences	Calibrated handheld monitoring instrument	For cells or phases which have no active gas extraction. Gas extraction system shall be installed and extraction commenced once monitoring shows onset of methane production in waste at a rate that can be sustainably extracted. Once gas extraction has commenced in a particular cell or phase, there is no longer a requirement to carry out this monitoring.
	Hydrogen sulphide	Quarterly	Calibrated handheld monitoring instrument or Tedlar Bag sample in accordance with LFTGN04 (v3, 2010) or other such subsequent guidance as may be agreed in writing with the Environment Agency or a method agreed with the Environment Agency.	For cells or phases which have no active gas extraction. Once gas extraction has commenced in a particular cell or phase, there is no longer a requirement to carry out this monitoring. Concentrations of hydrogen sulphide shall be assessed in accordance with the gas and odour management plans

Table S3.7 Landfill gas – other monitoring requirements				
Monitoring Point Ref. /Description	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Gas collection system at well control valve, manifolds (if applicable) and strategic points on gas system	Methane Carbon Dioxide Oxygen Carbon Monoxide Atmospheric pressure Gas flow rate or suction % Balance Gas (calculated as the difference between the sum of measured gases and 100%)	Monthly or at such other frequency as may be agreed in writing with the Environment Agency.	Calibrated handheld monitoring instrument	Where the oxygen concentration exceeds 5% or the % balance gas is greater than 20% an assessment of air ingress into the system shall be undertaken. Where the concentration of carbon monoxide exceeds 100ppm then further investigation shall be undertaken Record the ambient air temperature and whether the ground is: waterlogged frozen snow covered
Gas collection system at well control valve	Hydrogen sulphide	Six monthly	Calibrated handheld monitoring instrument or Tedlar Bag sample in accordance with LFTGN04 (v3, 2010) or other such subsequent guidance as may be agreed in writing with the Environment Agency or a method agreed with the Environment Agency.	Concentrations of hydrogen sulphide shall be assessed in accordance with the gas and odour management plans
Output to flare or LFG Utilisation Compound	Trace gas	Annually	Trace gas analysis in accordance with LFTGN04 (v3, 2010) or other subsequent guidance as may be agreed in writing with the Environment Agency.	The concentration of trace gas components shall be assessed against the assumptions made in the Landfill gas risk assessment and dispersion modelling.

Table S3.7 Landfill gas – other monitoring requirements				
Monitoring Point Ref. /Description	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Output to flare or LFG Utilisation Compound	Methane Carbon Dioxide Oxygen Gas flow rate Suction % Balance Gas (calculated as the difference between the sum of measured gases and 100%)	Weekly		Where the oxygen concentration exceeds 5% or the % balance gas is greater than 20% an assessment of air ingress into the system shall be undertaken.
Flares A3 shown on Plan ESID 8 dated 23/02/04	Temperature	As per LFTGN05 (v2, 2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency.	As per M2 or such other subsequent guidance as may be agreed in writing with the Environment Agency.	
A1 and A2 Gas engine, post turbo	NOx and CO	Quarterly	In accordance with Appendix C of LFTGN08, (v2,2010) or such other subsequent guidance as may be agreed in writing with the Environment Agency.	Where monitoring using hand-held, electrochemical equipment indicates an exceedance of the emissions standards specified in Table S3.2, these shall be used as action levels and the operator shall investigate the cause and take appropriate measures to reduce emissions.

Table S3.8 Leachate – other monitoring requirements				
Monitoring point reference or description	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Operational Cells or Phases (Any cell or phases that do not have a final engineered cap agreed in accordance with condition 2.5)			At leachate compliance point as listed in table S3.1. As specified in Environment Agency Guidance TGN02 (February 2003) and Horizontal Guidance Note H1 – Environmental Risk Assessment for permits (Annex J3, version 2.1, Dec 2011) with one sampling point per cell / phase or such other subsequent guidance as may be agreed in writing with the Environment Agency.	
MEPP	pH, EC, total alkalinity, ammoniacal nitrogen, Chloride, COD, BOD, cadmium, chromium, copper, lead, nickel, iron, arsenic, magnesium, potassium, total sulphates, calcium, sodium, zinc, manganese	Quarterly		None
MEPP	Hazardous substances	Annually		None
MEPP	Depth to base (mAoD)	Annually		None
Non Operational Cells or Phases (Any cell or phases that have a final engineered cap agreed in accordance with condition 2.5)				
MEPP	pH, EC, total alkalinity, ammoniacal nitrogen, Chloride, COD, BOD, cadmium, chromium, copper, lead, nickel, iron, arsenic, magnesium, potassium, total sulphates, calcium, sodium, zinc, manganese,	Annually		
MEPP	Hazardous substances	Once every four years		None
MEPP	Depth to base (mAoD)	Annually		

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## Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data		
Parameter	Reporting period	Period ends
Leachate and/ or groundwater level As specified by schedule 3, table S3.1	Every 3 months	31 March, 30 June, 30 September, 31 December
Point source emission to air As specified by schedule 3, table S3.2	Every 12 months	31 December
Emission to groundwater As specified by schedule 3, table S3.3	Every 3 months	31 March, 30 June, 30 September, 31 December
Landfill gas in external monitoring boreholes As specified by schedule 3, table S3.4	Every 3 months	31 March, 30 June, 30 September, 31 December
Emission of landfill gas from capped surfaces As specified by schedule 3, table S3.5	Every 12 months	31 December
Other groundwater monitoring As specified by schedule 3, table S3.6	Every 3 months	31 March, 30 June, 30 September, 31 December
Other Landfill gas monitoring As specified by schedule 3, table S3.7	Every 3 months	31 March, 30 June, 30 September, 31 December
Trace gas monitoring	Every 12 months	31 December
Other leachate monitoring As specified by schedule 3, table S3.8	Every 12 months	31 December
Meteorological data Landfill Directive, annex III, section 2	Every 12 months	31 December

\* - where the reporting period is 12 months, you may submit this information as part of the 'annual report' required by condition 4.2.2.

**Table S4.2: Annual production/treatment**

Leachate: Disposed of off site; Disposed of to any onsite effluent treatment plant; Recirculated into the waste mass; Accepted from offsite for treatment at any onsite effluent treatment plant.	Cubic metres/year
Landfill gas: combustion in flares; combustion in gas engines; Other methods of gas utilisation. Average methane content entering the landfill gas utilisation or treatment compound (based on the annual average of Table S3.7 monitoring) Methane generation rate (50%ile from a representative model)	Normalised cubic metres/year  % methane v/v  m3 /hr

**Table S4.3 Performance Parameters**

Parameter	Frequency of assessment	Annual total	Unit
Energy used (including for leachate treatment)	Annually		MWh of electricity or natural gas

Table S4.4 Reporting Forms		
Media/parameter	Reporting Format	Date of Form
Leachate	Form leachate 1 or other reporting format to be agreed in writing with the Environment Agency	10/03/16
Air	Form Air 1 or other reporting format to be agreed in writing with the Environment Agency	10/03/16
Groundwater	Form Groundwater 1 or other reporting format to be agreed in writing with the Environment Agency	10/03/16
Landfill gas	Form LFG 1 or other reporting format to be agreed in writing with the Environment Agency	10/03/16
Particulate matter	Form Particulate 1 or other reporting format to be agreed in writing with the Environment Agency	10/03/16
Waste Return	Waste Return Form RATS2E	
Landfill topographical surveys and interpretation	Reporting format to be agreed in writing with the Environment Agency	

## Schedule 5 – Notification

This page outlines the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

### Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

**(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution**

**To be notified within 24 hours of detection**

Date and Time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

**(b) Notification requirements for the breach of a limit**

**To be notified within 24 hours of detection unless otherwise specified below**

Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be	

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## Schedule 5 – Notification

This page outlines the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

### Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

**(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution**

**To be notified within 24 hours of detection**

Date and Time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

**(b) Notification requirements for the breach of a limit**

**To be notified within 24 hours of detection unless otherwise specified below**

Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be	

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<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
taken, to stop the emission	

<b>Time periods for notification following detection of a breach of a limit</b>	
<b>Parameter</b>	<b>Notification period</b>

<b>(c) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

### **Part B to be supplied as soon as practicable**

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

<b>Name*</b>	
<b>Post</b>	
<b>Signature</b>	
<b>Date</b>	

\* authorised to sign on behalf of the operator

## Schedule 6 – Interpretation

"accident" means an accident that may result in pollution.

"annually" means once every year.

"application" means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

"authorised officer" means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

"Background concentration" means such concentration of that substance as is present in:

- For emissions to surface water, the surface water quality up-gradient of the site; or
  - For emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge; or
  - For emissions of landfill gas, the ground or air outside the site and not attributable to the site.
- (a) "Cell layout drawing" means: A drawing or drawings of the proposed new cell that illustrate(s) in sufficient detail:
- (i) the location of the new cell on the site;
  - (ii) the proposed level (Above Ordnance Datum) of the base of the excavation;
  - (iii) the proposed finished levels of all containment and leachate drainage layers;
  - (iv) the positions of leachate management infrastructure; and
  - (v) the positions of landfill gas infrastructure (if appropriate).
- (b) A detailed written explanation of any minor design changes from the most recently approved cell that result from the new cell layout. This would include, for example:
- (i) changes to slope length and gradient within the cell;
  - (ii) new leachate or landfill gas infrastructure construction design;
  - (iii) slope stability issues such as new basal excavation level; and/or
  - (iv) depth of waste.

"Construction Proposals" means written information, at a level of detail appropriate to the complexity and pollution risk, on the design, specifications of materials selected, stability assessment (where relevant) and the construction quality assurance (CQA) programme in relation to the New Cell or Landfill Infrastructure.

"CQA Validation Report" means the final "as built" construction and engineering details of the New Cell or of the Landfill Infrastructure. It must provide a comprehensive record of the construction and must include, where relevant:

- The results of all testing required by the CQA programme - this must include the records of any failed tests with a written explanation, details of the remedial action taken, referenced to the appropriate secondary testing;
- Plans showing the location of all tests;
- "As-built" plans and sections of the works;
- Copies of the site engineer's daily records;
- Records of any problems or non-compliances and the solution applied;



- Any other site specific information considered relevant to proving the integrity of the New Cell or Landfill Infrastructure;
- Validation by a qualified person that all of the construction has been carried out in accordance with the Construction Proposals.

"emissions to land" includes emissions to groundwater.

"EP Regulations" means The Environmental Permitting (England and Wales) Regulations 2010, SI 2010 No.675. Words and expressions used in this permit which are also used in those Regulations have the same meanings as in those Regulations.

"emissions of substances not controlled by emission limits" means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

"exceeded" means that a value is above a permitted limit, or where a range of values or a minimum value is set as a permitted limit it means a value outside that range or below the minimum value, whichever is applicable.

"Hazardous property" has the meaning in Annex III of the Waste Framework Directive.

"Hazardous substances" as defined by the Environmental Permitting (England and Wales) Regulations 2010, SI 2010 No.675, schedule 22 and listed in our Hydrogeological risk assessment guidance, annex J to our H1 risk assessment guidance.

"Hazardous waste" has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended).

"Landfill Infrastructure" means any specified element of the:

- permanent capping;
- temporary capping (i.e. engineered temporary caps not cover materials);
- leachate abstraction systems;
- leachate transfer, treatment and storage systems;
- surface water drainage systems;
- leachate monitoring wells;
- groundwater monitoring boreholes;
- landfill gas monitoring boreholes;
- landfill gas management systems;
- lining within the installation.

within the site.

"List of Wastes" means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

"Liquids" means any liquid other than leachate within the engineered landfill containment system.

"LFTGN 05" means Environment Agency Guidance for monitoring enclosed landfill gas flares.

"LFTGN 07" means Environment Agency Guidance on monitoring landfill gas surface emissions.

"LFTGN 08" means Environment Agency Guidance for monitoring landfill gas engines.

"groundwater" means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

"Inert waste" means waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater

"Medicinal product" means any medicine licensed by the Medicines and Healthcare products Regulatory Agency (MHRA) or their predecessors under the Medicines Act 1968, section 130.

"M2" means Environment Agency Guidance Monitoring of stack emissions to air.

"New Cell" means any new cell, part of a cell or other similar new area of the site where waste deposit is to commence after issue of this permit and can comprise:

- groundwater under-drainage system;
- permanent geophysical leak location system;
- leak detection layer;
- sub-grade;
- barriers;
- liners;
- leachate collection system;
- leachate abstraction system;
- separation bund/layer;
- cell or area surface water drainage system;
- side wall subgrade and containment systems;

for the New Cell.

"MEPP" Monitoring and extraction point plan, required by condition 4.2.2(h) to specify extraction points and routine monitoring locations.

"No impact" means that the change made to the construction process will not affect the agreed design criteria, specification or performance in a way that has a negative effect.

"Pests" means Birds, Vermin and Insects.

"Previous year" means the 12 month period preceding the month the annual report is submitted in.

"quarter" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

"Relevant waste acceptance procedures" means the procedure for the acceptance of waste at landfills and the associated sampling and test methods specified in the Council Decision Annex (2003/33/EC, European Council of 19 December 2002).

"Relevant waste acceptance criteria" means the waste acceptance criteria and the associated sampling and test methods specified in the Council Decision Annex (2003/33/EC, European Council of 19 December 2002).

"Review of the Hydrogeological Risk Assessment" means a written review of the hydrogeological risk assessment included in the Application, together with any other parts of the Application that addressed the requirements of the EP Regulations. The review shall assess whether the activities of disposal or tipping for the purpose of disposal of waste authorised by the permit continue to meet the requirements of the EP Regulations.

"Sustainably extracted" means where suction can be applied to the extraction wells such that a flow rate of landfill gas, with a methane content capable of either being combusted, or treated by bio-oxidation, can be

extracted without increasing the risk of air ingress to the waste or inducing aerobic degradation within the waste.

"Waste code" means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means the standards included in Environment Agency Guidance for Monitoring Enclosed Landfill Gas Flares LFTGN 05 or Guidance for Monitoring Landfill Gas Engine Emissions LFTGN 08

Where the following terms appear in the waste code list in Tables S2.1 & S2.2, they have the meaning given below:

'hazardous substance' means a substance classified as hazardous as a consequence of fulfilling the criteria laid down in parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008;

'heavy metal' means any compound of antimony, arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, selenium, tellurium, thallium and tin, as well as these materials in metallic form, as far as these are classified as hazardous substances;

'polychlorinated biphenyls and polychlorinated terphenyls' ('PCBs') means PCBs as defined in Article 2(a) of Council Directive 96/59/EC.

Article 2(a) says that 'PCBs' means:

- polychlorinated biphenyls
- polychlorinated terphenyls
- monomethyl-tetrachlorodiphenyl methane, Monomethyl-dichloro-diphenyl methane, Monomethyldibromo-diphenyl methane
- any mixture containing any of the above mentioned substances in a total of more than 0,005 %by weight;

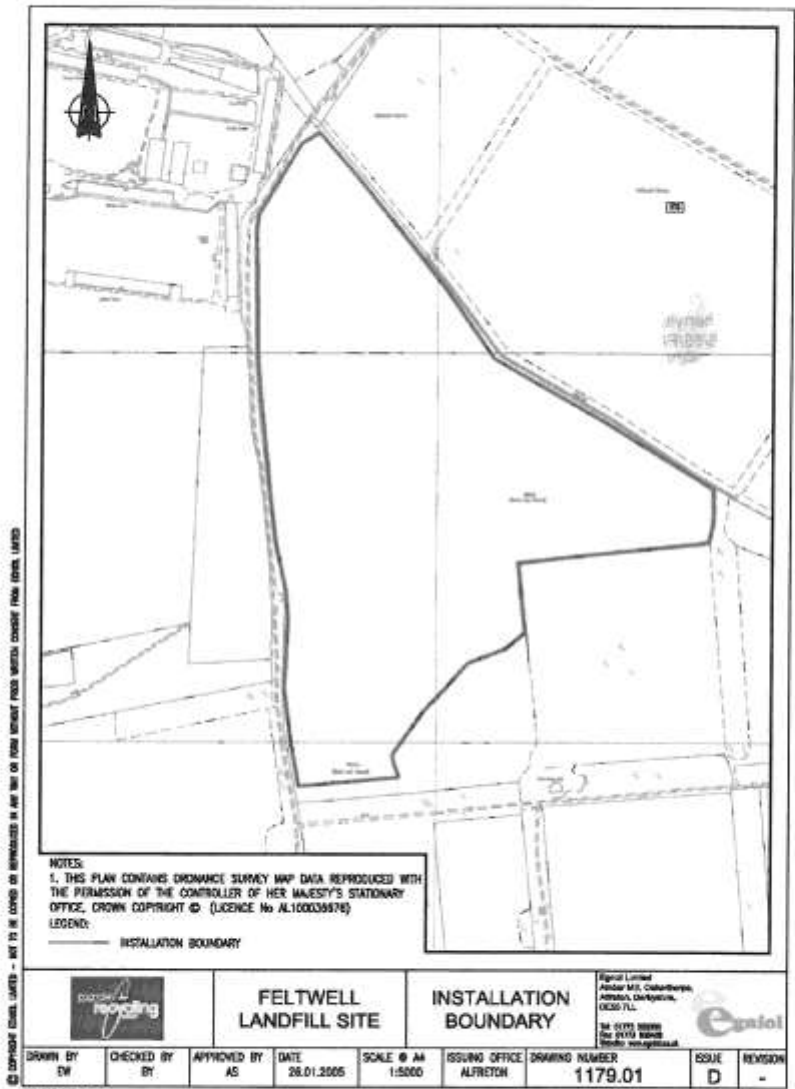
'transition metals' means any of the following metals: any compound of scandium, vanadium, manganese, cobalt, copper, yttrium, niobium, hafnium, tungsten, titanium, chromium, iron, nickel, zinc, zirconium, molybdenum and tantalum, as well as these materials in metallic form, as far as these are classified as hazardous substances;

'stabilisation' means processes which change the hazardousness of the constituents in the waste and transform hazardous waste into non-hazardous waste;

'solidification' means processes which only change the physical state of the waste by using additives without changing the chemical properties of the waste;

'partly stabilised wastes' means wastes containing, after the stabilisation process, hazardous constituents which have not been changed completely into non-hazardous constituents and could be released into the environment in the short, middle or long term.

# Schedule 7 – Site plan



## ***Appendix D - Planning Permissions***

### **Borough Council Planning History**

- 11/01239/CM – COUNTY MATTERS APPLICATION: Variation of condition nos. 7, 17 and 19 of PP C/2/97/2024 and discharge of condition no.8
- 10/00797/CM – COUNTY MATTERS APPLICATION: Discharge of condition 8 and variation of conditions 7, 17, and 19 of PP C/2/97/2024 07/01472/CM – Erection of portacabin
- 04/01943/CM – Retrospective application for erection of portacabin building to provide mess facilities and erection of leachate storage tank ancillary to landfill site operations
- 2/00/1664/CM – Composting operation to provide restoration soils and daily cover material
- 2/98/0139/CM – Variation of condition 1 on planning permission 2/91/3218 to extend time limit
- 2/97/1365/CM – Determination of new conditions under Environment Act 1995
- 2/96/1567/CM – Revision of infill scheme
- 2/96/0673/CM – Revision of infill scheme.

### **Norfolk County Council Planning History**

- C/2/2010/2004 – Variation of condition nos. 7, 17 and 19 of PP C/2/97/2024 and discharge of condition no.8
- C/2/2007/2017 – Scoping Opinion - Proposed Extension to Quarry Informative Decision
- C/2/2007/2015 – Scoping opinion: Proposed extension to quarry. Informative Decision
- C/2/2007/2008 – Retrospective application for the erection of portacabin office. Application Approved
- C/2/2006/2003 – Importation of construction and demolition materials for recycling. Application Approved
- C/2/2004/2023 – Retrospective application for erection of portacabin building to provide mess facilities and erection of leachate storage tank ancillary to landfill site operations. Application Approved
- C/2/2003/2009 – New Location for an Enlarged Power Generation Compound. Application Approved.
- C/2/2003/2003 – Fenced compound housing two containerised generator sets and various ancillaries. Application Approved.
- C/2/2002/2001 – Variation of Condition 1 on PP C/2/01/2017 to extend time limit to 30 June 2018. Application Approved.

- C/2/2001/2017 – A fenced compound housing a containerised engine/generator set and relevant ancillaries. Application Approved.
- C/2/2001/2015 – Aerated Static Pile Composting of MSW Fines to provide Restoration and Cover Materials until 31 March 2002. Application Withdrawn.
- C/2/2000/2020 – Composting Operation to Provide Restoration Soils and Daily Cover Material. Appeal Lodged.
- C/2/1998/2003 – Variation of Condition 1 on PP 2.91.3218 to extend time limit. Application Approved
- C/2/1997/2024 – Application for determination of new conditions under Environment Act 1995. Application Approved.
- C/2/1996/2023 – Revision of scheme for infill, pursuant to condition iv of planning permission 2/DM/965 dated 22nd October 1964. Application Approved.
- C/2/1996/2005 – Revision of scheme for infill, pursuant to condition iv of planning permission No. 2/DM/965 dated 22nd October 1954. Application Withdrawn.
- C/2/1995/2018 – Importation, storage and crushing of building aggregates. Application Withdrawn.
- C/2/1991/3218 – Plant and Machinery. Application Approved.
- C/2/1954/0965 – Extraction of sand and gravel. Application Approved

## ***Appendix E. Risk Assessment Methodology.***

CLR11 outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. Under CLR11 three stages of risk assessment exist: Preliminary, Generic Quantitative and Detailed Quantitative. As the list of potential Part 2a sites have been constructed as a mapping exercise, a Preliminary Risk Assessment has been conducted to ascertain its correct risk rating. Dependent upon the results of the Preliminary Risk Assessment a detailed assessment will be undertaken (Desk Study, Site investigation) which will collate all the existing information pertaining to the site and construct a Conceptual Site Model. Both the Preliminary Risk Assessment and the outline conceptual model will identify potentially complete pollutant linkages (source-pathway-receptor) and is used as the basis for design of the site investigation. The outline Conceptual Site Model (CSM) is updated as further information becomes available, for example as a result of the site investigation. Production of a CSM requires an assessment of risk to be made. Risk is a combination of the probability of an event occurring and the magnitude of its hazard.

Therefore, in order to assess risk both the probability and the hazard of an event must be taken into account. The Council has adopted guidance provided in CIRIA C552 for use in the production of Conceptual Models. The probability of an event can be classified on a four point system using the following terms and definitions based on CIRIA C552:

- Highly likely: The event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- Likely: It is probable that an event will occur, or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;
- Low probability: Circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term;
- Unlikely: Circumstances are such that it is improbably the event would occur even in the long term.

The severity of the hazard can be classified using a similar system also based on CIRIA C552. The terms and definitions relating to severity are:

- High: Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Contaminated Land Statutory Guidance, April 2012');
- Medium: Chronic damage to human health ('significant harm' as defined in 'Contaminated Land Statutory Guidance, April 2012'), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Contaminated Land Statutory Guidance, April 2012');
- Low: Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in



'Contaminated Land Statutory Guidance, April 2012'). Damage to sensitive buildings, structures or the environment.

As this report is to assess contaminated land under Part 2a of the Environmental protection Act 1990 the fourth category has been removed as the consequences do not fit with the test for 'significant' harm as designated within Contaminated Land Statutory Guidance, April 2012.

Once the probability of an event occurring and its severity have been classified, a risk category can be assigned from the table below.

		Hazard		
		High	Medium	Low
Probability	High Probability	Very High Risk	High Risk	Moderate Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk
	Low Probability	Moderate risk	Moderate/Low Risk	Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk
Very High Risk	<p>There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening</p> <p>This risk, if realised, is likely to result in a substantial liability.</p> <p>Urgent investigation (if not undertaken already) and remediation are likely to be required.</p>			
High Risk	<p>Harm is likely to arise to a designated receptor from an identified hazard.</p> <p>Realisation of the risk is likely to present a substantial liability.</p> <p>Urgent investigation (if not undertaken already) if required to clarify the risk and to determine the potential liability. Some remedial work may be required in the longer term.</p>			
Moderate risk	<p>It's possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that harm would be relatively mild.</p>			
Moderate/Low risk	<p>It is possible that harm could arise to a designated receptor from an identified hazard. However, if any harm were to occur it is more likely that harm would be relatively mild.</p>			
Low Risk	<p>It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.</p>			
Very Low Risk	<p>There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is unlikely to be severe.</p>			

**Appendix F. Determination of contaminated land – Contaminated Land  
Statutory Guidance, April 2012.**

**Human Health**

<b>Category</b>	
<b>1</b>	<p>The local authority should assume that a significant possibility of significant harm exists in any case where it considers there is an unacceptably high probability, supported by robust science-based evidence that significant harm would occur if no action is taken to stop it. For the purposes of this Guidance, these are referred to as “Category 1: Human Health” cases.</p> <p>Land should be deemed to be a Category 1: Human Health case where:</p> <ul style="list-style-type: none"> <li>(a) The authority is aware that similar land or situations are known, or are strongly suspected on the basis of robust evidence, to have caused such harm before in the United Kingdom or elsewhere; or</li> <li>(b) The authority is aware that similar degrees of exposure (via any medium) to the contaminant(s) in question are known, or strongly suspected on the basis of robust evidence, to have caused such harm before in the United Kingdom or elsewhere;</li> <li>(c) The authority considers that significant harm may already have been caused by contaminants in, on or under the land, and that there is an unacceptable risk that it might continue or occur again if no action is taken. Among other things, the authority may decide to determine the land on these grounds if it considers that it is likely that significant harm is being caused, but it considers either: (i) that there is insufficient evidence to be sure of meeting the “balance of probability” test for demonstrating that significant harm is being caused; or (ii) that the time needed to demonstrate such a level of probability would cause unreasonable delay, cost, or disruption and stress to affected people particularly in cases involving residential properties.</li> </ul>
<b>2</b>	<p>Land should be placed into Category 2 if the authority concludes, on the basis that there is a strong case for considering that the risks from the land are of sufficient concern, that the land poses a significant possibility of significant harm, with all that this might involve and having regard to Section 1. Category 2 may include land where there is little or no direct evidence that similar land, situations or levels of exposure have caused harm before, but nonetheless the authority considers on the basis of the available evidence, including expert opinion, that there is a strong case for taking action under Part 2A on a precautionary basis.</p>
<b>3</b>	<p>Land should be placed into Category 3 if the authority concludes that the strong case described in 4.25(a) does not exist, and therefore the legal test for significant possibility of significant harm is not met. Category 3 may include land where the risks are not low, but nonetheless the authority considers that regulatory intervention under Part 2A is not warranted. This recognises that placing land in Category 3 would not stop others, such as the owner or occupier of the land, from taking action to reduce risks outside of the Part 2A regime if they choose. The authority should consider making available the results of its inspection and risk assessment to the owners/occupiers of Category 3 land.</p>

## Category

- 4** The local authority should consider that the following types of land should be placed into Category 4: Human Health:
- (a) Land where no relevant contaminant linkage has been established.
  - (b) Land where there are only normal levels of contaminants in soil, as explained in Section 3 of this Guidance.
  - (c) Land that has been excluded from the need for further inspection and assessment because contaminant levels do not exceed relevant generic assessment criteria in accordance with Section 3 of this Guidance, or relevant technical tools or advice that may be developed in accordance with paragraph 3.30 of this Guidance.
  - (d) Land where estimated levels of exposure to contaminants in soil are likely to form only a small proportion of what a receptor might be exposed to anyway through other sources of environmental exposure (e.g. in relation to average estimated national levels of exposure to substances commonly found in the environment, to which receptors are likely to be exposed in the normal course of their lives).

## Ecological system effects

Relevant types of receptor	Significant harm	Significant possibility of significant harm
<p>Any ecological system, or living organism forming part of such a system, within a location which is:</p> <ul style="list-style-type: none"> <li>• A site of special scientific interest (under section 28 of the Wildlife and Countryside Act 1981)</li> <li>• A national nature reserve (under s.35 of the 1981 Act)</li> <li>• A marine nature reserve (under s.36 of the 1981 Act)</li> <li>• An area of special protection for birds (under s.3 of the 1981 Act)</li> <li>• A "European site" within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010</li> <li>• Any habitat or site afforded policy protection under paragraph 6 of Planning Policy Statement (PPS 9) on nature conservation (i.e. candidate Special Areas of Conservation, potential Special Protection Areas and listed Ramsar sites); or</li> <li>• Any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949.</li> </ul>	<p>The following types of harm should be considered to be significant harm:</p> <ul style="list-style-type: none"> <li>• Harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or</li> <li>• Harm which significantly affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location.</li> </ul> <p>In the case of European sites, harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there. In deciding what constitutes such harm, the local authority should have regard to the advice of Natural England and to the requirements of the Conservation of Habitats and Species Regulations 2010.</p>	<p>Conditions would exist for considering that a significant possibility of significant harm exists to a relevant ecological receptor where the local authority considers that:</p> <ul style="list-style-type: none"> <li>• Significant harm of that description is more likely than not to result from the contaminant linkage in question; or</li> <li>• There is a reasonable possibility of significant harm of that description being caused, and if that harm were to occur, it would result in such a degree of damage to features of special interest at the location in question that they would be beyond any practicable possibility of restoration.</li> </ul> <p>Any assessment made for these purposes should take into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.</p>

## Property effects

Relevant types of receptor	Significant harm	Significant possibility of significant harm
<p>Property in the form of:</p> <ul style="list-style-type: none"> <li>• Crops, including timber;</li> <li>• Produce grown domestically, or on allotments, for consumption;</li> <li>• Livestock;</li> <li>• Other owned or domesticated animals;</li> <li>• Wild animals which are the subject of shooting or fishing rights.</li> </ul>	<p>For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage.</p> <p>The local authority should regard a substantial loss in value as occurring only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a contaminant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss.</p> <p>In this section, this description of significant harm is referred to as an “animal or crop effect”.</p>	<p>Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question, taking into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.</p>
<p>Property in the form of buildings. For this purpose, “building” means any structure or erection, and any part of a building including any part below ground level, but does not include plant or machinery comprised in a building, or buried services such as sewers, water pipes or electricity cables.</p>	<p>Structural failure, substantial damage or substantial interference with any right of occupation. The local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended.</p> <p>In the case of a scheduled Ancient Monument, substantial damage should also be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled.</p> <p>In this Section, this description of significant harm is referred to as a “building effect”.</p>	<p>Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question during the expected economic life of the building (or in the case of a scheduled Ancient Monument the foreseeable future), taking into account relevant information for that type of contaminant linkage.</p>

## Controlled waters

### Significant pollution of controlled waters

The following types of pollution should be considered to constitute significant pollution of controlled waters:

- (a) Pollution equivalent to “environmental damage” to surface water or groundwater as defined by The Environmental Damage (Prevention and Remediation) Regulations 2009, but which cannot be dealt with under those Regulations.
- (b) Inputs resulting in deterioration of the quality of water abstracted, or intended to be used in the future, for human consumption such that additional treatment would be required to enable that use.
- (c) A breach of a statutory surface water Environment Quality Standard, either directly or via a groundwater pathway.
- (d) Input of a substance into groundwater resulting in a significant and sustained upward trend in concentration of contaminants (as defined in Article 2(3) of the Groundwater Daughter Directive (2006/118/EC)5).

### Significant possibility of significant pollution of controlled waters

#### Category

<b>1</b>	This covers land where the authority considers that there is a strong and compelling case for considering that a significant possibility of significant pollution of controlled waters exists. In particular this would include cases where there is robust science-based evidence for considering that it is likely that high impact pollution (such as the pollution described in paragraph 4.38) would occur if nothing were done to stop it.
<b>2</b>	This covers land where: (i) the authority considers that the strength of evidence to put the land into Category 1 does not exist; but (ii) nonetheless, on the basis of the available scientific evidence and expert opinion, the authority considers that the risks posed by the land are of sufficient concern that the land should be considered to pose a significant possibility of significant pollution of controlled waters on a precautionary basis, with all that this might involve (e.g. likely remediation requirements, and the benefits, costs and other impacts of regulatory intervention). Among other things, this category might include land where there is a relatively low likelihood that the most serious types of significant pollution might occur
<b>3</b>	This covers land where the authority concludes that the risks are such that (whilst the authority and others might prefer they did not exist) the tests set out in Categories 1 and 2 above are not met, and therefore regulatory intervention under Part 2A is not warranted. This category should include land where the authority considers that it is very unlikely that serious pollution would occur; or where there is a low likelihood that less serious types of significant pollution might occur.
<b>4</b>	This covers land where the authority concludes that there is no risk, or that the level of risk posed is low. In particular, the authority should consider that this is the case where: <ul style="list-style-type: none"> <li>(a) No contaminant linkage has been established in which controlled waters are the receptor in the linkage; or</li> <li>(b) The possibility only relates to types of pollution described in paragraph 4.40 above (i.e. types of pollution that should not be considered to be significant pollution); or</li> <li>(c) The possibility of water pollution similar to that which might be caused by “background” contamination as explained in Section 3.</li> </ul>