

# Permit with introductory note

Pollution Prevention and Control (England and Wales) Regulations 2000  
Landfill (England and Wales) Regulations 2002

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Withyhedge Landfill Site (Phase 2)  
Resources Management U.K. Limited  
Bowling Farm  
Rudbaxton  
Haverfordwest  
Pembrokeshire  
SA62 4DB

Permit number

**BP3131SG**

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Introductory note

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# Withyhedge Landfill

## Permit Number BP3131SG

### Introductory note

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

The main features of the installation are as follows:

Withyhedge Landfill Phase 2 is located approximately 5.5km north of Haverfordwest in Pembrokeshire at National Grid Reference SM 970 217. The landfill is situated within the shallow valley of the Rudbaxton Water, a Site of Special Scientific Interest (SSSI) and a Special Area of Conservation (SAC). Haverfordwest Airport is also situated nearby. The site is classified as a non-hazardous landfill site and will only accept non-hazardous wastes. The site is operated by Resources Management UK Limited.

The installation lies directly adjacent phase 1 of the landfill, which was largely operated on the principle of 'dilute and disperse' under the terms of a Waste Management Licence. Phase 2 will be fully engineered to meet the requirements of the Landfill Regulations by the construction of a geological barrier and artificial sealing liner over the base and side walls of the site. Leachate and landfill gas generated at the site will be collected, with gas being extracted and utilised to generate electricity. A non-technical summary of the activities covered by the application is contained within Section B0.2 of the application.

<b>Status Log of the Permit</b>		
<b>Detail</b>	<b>Date</b>	<b>Response Date</b>
Application BP3131SG	Received 21/06/05	Duly Made 22/06/05
Response to request for information by Schedule 4 Notice	Request dated 20/12/05	Response dated 31/01/06
Response to request for information	Request dated 6/02/06	Response dated 14/02/06
Addendum: Application for the gas utilisation plant	27/03/06	None
Permit determined	Issued 08/09/06	

<b>Superseded or Partially Superseded Licences/Authorisations/Consents relating to this installation</b>			
<b>Holder</b>	<b>Reference Number</b>	<b>Date of Issue</b>	<b>Fully or Partially Superseded</b>
Resources Management UK Limited	SWW163L (EAWML34147)	19 May 1997	Partially superseded

End of Introductory Note

## Permit

Pollution Prevention and Control (England and Wales) Regulations 2000  
Landfill (England and Wales) Regulations 2002

## Permit

Permit number

**BP3131SG**

The Environment Agency (the Agency) in exercise of its powers under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No 1973) and Regulation 6 of the Landfill (England and Wales) Regulations 2002 (SI 2002 No.1559) hereby authorises

**Resources Management U.K. Limited** ("the Operator"),

of/ whose Registered Office (or principal place of business) is

**Witherley House**

**Hazell Way**

**Bermuda Road**

**Nuneaton**

**Warwickshire**

**CV10 7QG**

**Company registration number 02046398**

to operate an installation at

**Withy hedge Landfill Phase 2**

**Bowling Farm**

**Rudbaxton**

**Haverfordwest**

**Pembrokeshire**

**SA62 4DB**

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

Signed

Date

	8 September 2006
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Luke Prazsky, Strategic Permitting Group Team Leader, Aust, Bristol

Authorised to sign on behalf of the Agency

Permit Number BP3131SG

# Conditions

## 1. Management

### 1.1 General management

- 1.1.1 The Activities shall be managed and operated:
- (a) in accordance with a management system, which identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents and non-conformances and those drawn to the attention of the Operator as a result of complaints; and
  - (b) by sufficient persons who are competent in respect of the responsibilities to be undertaken by them in connection with the operation of the Activities.
- 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.

### 1.2 Accidents that may cause pollution

- 1.2.1 The Operator shall:
- (a) maintain and implement an accident management plan;
  - (b) review and record at least every 4 years or as soon as practicable after an accident, (whichever is the earlier) whether changes to the plan should be made;
  - (c) make any appropriate changes to the plan identified by a review.

### 1.3 Finance

- 1.3.1 The financial provision for meeting the obligations under this Permit set out in the Agreement made between the Operator and the Agency dated 8 September 2006 shall be maintained by the Operator throughout the subsistence of this Permit and the Operator shall produce evidence of such provision whenever required by the Agency.
- 1.3.2 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 1.3.1; and
  - (c) the estimated costs for the closure and aftercare of the landfill.

### 1.4 Energy efficiency

- 1.4.1 The Operator shall:
- (a) Review and record at least every 4 years whether there are suitable opportunities to improve the energy efficiency of the Activities; and

(b) Implement any appropriate measures identified by a review.

## **1.5 Site security**

1.5.1 Site security measures shall prevent unauthorised access to the Site, as far as practicable.

## **2. Operations**

### **2.1 Permitted activities**

2.1.1 The Operator is 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 2 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 Agency.

### **2.4 Off-site conditions**

2.4.1 There are no conditions in this Permit to which Regulation 12(12) of the PPC Regulations apply.

### **2.5 Improvement programme**

2.5.1 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 Agency.

2.5.2 Except in the case of an improvement which consists only of a submission to the Agency, the Operator shall notify the Agency within 14 days of completion of each improvement.

### **2.6 Pre-operational conditions**

2.6.1 The Activities shall not be brought into operation until the measures specified in Schedule 1 Table S1.4A have been completed.

2.6.2 The operations specified in Schedule 1 Table S1.4B shall not commence until the measures specified in that table have been completed.

## **2.7 Engineering**

- 2.7.1 No construction of any New Cell shall commence until the Operator has submitted Construction Proposals and the Agency has confirmed that it is satisfied with the Construction Proposals.
- 2.7.2 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 Agency.
- 2.7.3 No disposal of waste shall take place in a New Cell until the Operator has submitted a CQA Validation Report and the Agency has confirmed that it is satisfied with the CQA Validation Report.
- 2.7.4 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 Agency has confirmed that it is satisfied with the Construction Proposals.
- 2.7.5 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 Agency.
- 2.7.6 The Operator shall submit a CQA Validation Report as soon as practicable following the construction of the relevant Landfill Infrastructure.
- 2.7.7 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.7.4 and 2.7.5 do not apply and the relevant Landfill Infrastructure may be constructed, provided that the Construction Proposals are submitted to the Agency as soon as practicable.
- 2.7.8 For the purposes of conditions 2.7.1, 2.7.3 and 2.7.4, the Agency shall be deemed to be satisfied where it has not, within the period of 4 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.

## **2.8 Waste acceptance**

- 2.8.1 Wastes shall only be accepted for disposal if:
- (a) they are listed in Schedule 3, and
  - (b) they are non- hazardous waste, and
  - (c) from 16<sup>th</sup> July 2006 they are not whole used tyres (other than bicycle tyres and tyres with an outside diameter of more than 1400mm), and
  - (d) from 16<sup>th</sup> July 2006 they are not shredded used tyres, and

- (e) from 30<sup>th</sup> October 2007 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 set out in Schedule 1 of the Landfill Regulations 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) from 30<sup>th</sup> October 2007 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.
- (k) any code beginning with 07 05 and 16 03 shall exclude waste medicinal products and pharmaceutically active waste materials arising from their manufacture.

2.8.2 Gypsum and other high sulphate bearing waste shall only be disposed of in cells where no biodegradable waste is accepted. Wastes disposed of in a cell with gypsum and other high sulphate bearing wastes must meet the relevant waste acceptance criteria.

2.8.3 The Operator shall visually inspect:

- (a) without unloading it, waste that is not in an enclosed container or enclosed vehicle on arrival at the landfill; and
- (b) waste at the point of deposit;

and shall satisfy itself that it conforms to the basic characterisation documentation submitted by the holder.

2.8.4 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.

2.8.5 The Operator on accepting each delivery of waste shall provide a receipt to the person delivering it.

2.8.6 The total quantity of waste that shall be deposited in the landfill shall be limited by the pre-settlement levels shown on drawing ESID5 of the application.

2.8.7 The quantity of waste that is deposited in the landfill in any year shall not exceed the limits in Schedule 1 Table S1.5.

2.8.8 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.

## **2.9 Leachate levels**

- 2.9.1 The limits for the level of leachate listed in Table S4.1 of Schedule 4 shall not be exceeded.

## **2.10 Closure, aftercare and decommissioning**

- 2.10.1 The Operator shall maintain and operate the Activities so as to prevent or where that is not practicable, to minimise, any pollution risk on closure and decommissioning.
- 2.10.2 The Operator shall maintain a Site Closure Plan which demonstrates how the Activities can be decommissioned to avoid any pollution risk and return the site of operation to a satisfactory state.
- 2.10.3 The Operator shall carry out and record a review of the Site Closure Plan at least every 4 years.
- 2.10.4 The Site Closure Plan (or relevant part thereof) shall be implemented on final cessation or decommissioning of the Activities or part thereof.

## **2.11 Site protection and monitoring programme**

- 2.11.1 The Operator shall, within 2 months of the issue of this Permit, a minimum of 3 months prior to undertaking the relevant Activity, submit a Site Protection and Monitoring Programme.
- 2.11.2 The Operator shall implement and maintain the Site Protection and Monitoring Programme in relation to all areas which will not comprise permanent deposits of waste and shall carry out and record a review of it at least every 4 years commencing from the date the Site Protection and Monitoring Programme was received.

# **3. Emissions and monitoring**

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

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in Tables S4.2, S4.3 and S4.4 of Schedule 4.
- 3.1.2 The limits given in that Schedule shall not be exceeded, save that compliance with an emission limit shall include incorporation of the uncertainty allowance stated in Agency guidance LFTGN 05 and LFTGN 08.

## **3.2 Emissions to groundwater**

- 3.2.1 There shall be no emission from the Activities into groundwater of any substance in List I (as defined by the Groundwater Regulations) contrary to those Regulations.
- 3.2.2 There shall be no emission from the Activities into groundwater of any substance in List II (as defined in the Groundwater Regulations) so as to cause pollution (as defined in those Regulations).
- 3.2.3 The trigger levels for emissions into groundwater for the parameter(s) and monitoring point(s) set out in Table S4.5 of Schedule 4 shall not be exceeded.

- 3.2.4 The Operator shall submit to the Agency a review of the Hydrogeological Risk Assessment:
- (a) between 9 and 6 months prior to the fourth anniversary of the granting of the Permit, and
  - (b) between 9 and 6 months prior to every subsequent 4 years after the fourth anniversary of the granting of the Permit.

### **3.3 Fugitive emissions of substances**

- 3.3.1 Fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution. The Operator shall not be taken to have breached this condition if appropriate measures have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.3.2 Litter or mud arising from the Activities shall not cause pollution. The Operator shall not be taken to have breached this condition if appropriate measures have been used to prevent or where that is not practicable to minimise, the litter and mud.
- 3.3.3 Litter or mud arising from the Activities shall be cleared from affected areas outside the Site as soon as practicable.
- 3.3.4 All liquids, 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.
- 3.3.5 The limits for landfill gas set out in schedule 4, table S4.6 shall not be exceeded.

### **3.4 Odour**

- 3.4.1 Emissions from the Activities shall be free from odour at levels likely to cause annoyance outside the Site, as perceived by an Authorised Officer of the Agency, unless the Operator has used appropriate measures to prevent or where that is not practicable to minimise the odour.

### **3.5 Noise and vibration**

- 3.5.1 Emissions from the Activities shall be free from noise and vibration at levels likely to cause annoyance outside the Site, as perceived by an Authorised Officer of the Agency, unless the Operator has used appropriate measures, to prevent or where that is not practicable to minimise the noise and vibration.

### **3.6 Monitoring**

- 3.6.1 The Operator shall, , unless otherwise agreed in writing by the Agency, undertake the monitoring specified in the following tables in schedule 4 to this permit:
- (a) Leachate specified in Tables S4.1 and S4.9;
  - (b) Point source emissions specified in Tables S4.2, S4.3 and S4.4;
  - (c) Groundwater specified in Tables S4.5 and S4.11;

- (d) Landfill gas specified in Tables S4.6 and S4.8;
  - (e) Surface water specified in Table S4.10;
- 3.6.2 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.
- 3.6.3 A topographical survey of the Site referenced to Ordnance Datum shall be carried out:
- (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.
- The topographical survey shall be used to produce a plan of a scale adequate to show the surveyed features of the Site.
- 3.6.4 Within 6 months of the issue of this Permit (unless otherwise agreed in writing by the Agency) the site reference data identified in the Site Protection and Monitoring Programme shall be collected and submitted to the Agency.

## **3.7 Transfers off-site**

- 3.7.1 Records of all the wastes sent off site from the activities, for either disposal or recovery, shall be maintained.

# **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 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) the Site Protection and Monitoring Programme;
    - (iii) sub-surface landfill gas monitoring;
    - (iv) leachate levels, quality and quantities;
    - (v) landfill gas generation and collection;
    - (vi) waste types and quantities;
    - (vii) topographical surveys;

- (viii) the specification and as built drawings of the basal, sidewall and capping engineering systems
- 4.1.2. Any records required to be made by this permit shall be supplied to the Agency within 14 days where the records have been requested in writing by the Agency.
- 4.1.3. All records required to be held by this permit shall be held on site and shall be available for inspection by the Agency at any reasonable time.

## 4.2 Reporting

- 4.2.1 A report or reports on the performance of the Activities over the previous year shall be submitted to the Agency by 31 January (or other date agreed in writing by the Agency) 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 with the Application;
  - (b) where the Operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;
  - (c) the energy consumed at the Site, reported in the format set out in Schedule 5 Table S5.3
  - (d) the water consumed at the Site, reported in the format set out in Schedule 5 Table S5.3;
  - (e) the annual production/treatment set out in Schedule 5 Table S5.2.
  - (f) details of any contamination or decontamination of the Site which has occurred;
  - (g) the topographical surveys required by condition 3.6.3 other than those submitted as part of a CQA validation report;
  - (h) 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;
  - (i) an assessment of the settlement behavior 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;
  - (j) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey;
  - (k) the compliance testing undertaken in the period;
- 4.2.2 Within 28 days of the end of the reporting period the Operator shall, unless otherwise agreed in writing by the 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 Table S5.1 of Schedule 5;

- (b) for the reporting periods specified in Table S5.1 of Schedule 5 and using the forms specified in Table S5.4 of Schedule 5; and
  - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.3 A summary report of the waste types and quantities accepted and removed from the site shall be made for each quarter. It shall be submitted to the Agency within one month of the end of the quarter and shall be in the format required by the Agency.
- 4.2.4 The Operator shall, unless notice under this condition has been served within the preceding 4 years, submit to the Agency, within 6 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.
- 4.2.5 All reports and notifications required by the permit shall be sent to the Agency using the contact details supplied in writing by the Agency.
- 4.2.6 The results of reviews and any changes made to the Site Protection and Monitoring Programme shall be reported to the Agency, within 1 month of the review or change.

### **4.3 Notifications**

- 4.3.1 The Agency shall be notified without delay following the detection of:
- (a) any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution;
  - (b) the breach of a limit specified in the Permit;
  - (c) any significant adverse environmental effects.
- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in Schedule 6 to this Permit within the time period specified in that schedule.
- 4.3.3. Prior written notification shall be given to the Agency of the following events and in the specified timescales:
- (a) as soon as practicable prior to the permanent cessation of any of the permitted activities;
  - (b) as soon as practicable prior to the cessation of the landfill disposal activities, for a period likely to exceed 1 month; and
  - (c) at least 7 days prior to the resumption of the landfill disposal activities after a cessation notified under (b) above.
- 4.3.4 The Agency shall be given at least 14 days notice before implementing any part of the Site Closure Plan in respect of any activities other than the disposal of waste in the landfill.
- 4.3.5 Where the Agency has requested in writing that it shall be notified when the Operator is to undertake monitoring and/or spot sampling, the Operator shall inform the Agency when the relevant monitoring is to take place. The Operator shall provide this information to the Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.6 The Agency shall be notified within 7 days of any changes in technically competent management and the name of any incoming person together with evidence that such person has the required technical competence.

- 4.3.7 The Agency shall be provided, within 14 days of the Operator or any relevant person being convicted of a relevant offence, (unless such information has already been notified to the Agency), with details of the nature of the offence, the place and date of conviction, and the sentence imposed.
- 4.3.8 The Agency shall be notified within 14 days of the Operator and/or any relevant person lodging an appeal against a conviction for any relevant offence and of the outcome when the appeal is decided.
- 4.3.9 The Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- (a) any change in the Operator's trading name, registered name or registered office address;
  - (b) any change to particulars of the Operator's ultimate holding company (including details of an ultimate holding company where an Operator has become a subsidiary); and
  - (c) any steps taken with a view to the Operator going into administration, entering into a company voluntary arrangement or being wound up.

## **4.4 Interpretation**

- 4.4.1 In this Permit the expressions listed in Schedule 7 shall have the meaning given in that schedule.

# Schedule 1 - Operations

**Table S1.1 Activities**

Activity listed in Schedule 1 of the PPC Regulations	Description of specified activity	Limits of specified activity
Section 5.2 Part A(1) (a), the disposal of waste in a landfill.	Landfill for non-hazardous waste (landfill classification under the Landfill Regulations 2002)	Receipt, handling, storage and disposal of wastes, consisting of the types and quantities specified in condition 2.8, as an integral part of landfilling.
Section 1.1, Part A(1)(b)(iii), Burning of waste as a fuel	Utilisation of landfill gas for energy recovery in an appliance with a rated thermal input of $\geq 3$ MW, but $< 50$ MW.	Landfill gas arising from the permitted landfill and Withyhedge Phase 1.
<b>Directly Associated Activities</b>		
Leachate management	Storage of leachate in a facility with a capacity of $< 50$ t/day, pre disposal or recovery.	Leachate arising from the permitted landfill and Withyhedge Phase 1.
Landfill gas management.	Flaring of landfill gas	Landfill gas arising from the permitted landfill and Withyhedge Phase 1.
Water discharges to controlled waters.	Discharges of site drainage from the landfill.	From surface water management system to point of entry to controlled waters.
Fuel storage.	Storage of fuel for operation of plant and equipment.	Fuel storage tank / bowser.

**Table S1.2 Operating Techniques**

Description	Parts	Date Received
Application	The response to questions 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.7, 2.8, 2.9, 2.11 and 3.1 in Part B of the Application Form.	21 June 2005
Response to Schedule 4 Notice	Correspondence from Golders Associates (UK) Ltd. Reference: 04529421.518/A.0 dated 31 January 2006. Answers to questions 1 to 17 in response to the Schedule 4 notice dated 20 December 2005.	2 February 2006
Further Information	Correspondence from Golders Associates (UK) Ltd. Reference 04529421.250 dated 14 February 2006.	15 February 2006
Addendum: Application for the gas utilisation plant	Correspondence from Golders Associates (UK) Ltd including the contents of all attachments. Reference 04529421.250 dated 27 March 2006. This includes the response to questions B1, B2, B3, B4 and B5 of the Generic Part B Application Form provided as attachment 1.	28 March 2006
Improvement Programme	All reports and plans submitted and agreed with the Environment Agency as part the Improvement Programme detailed in Table S1.3 shall form part of the sites operating techniques.	See Improvement Programme Requirements detailed in Table S1.3

**Table S1.3 Improvement Programme Requirements**

Reference	Requirement	Date
1	<p>For all groundwater boreholes identified in Reference 1 of Table S1.4B (pre-operational measures) the operator shall submit to the Agency, for approval, a CQA plan detailing the:</p> <ul style="list-style-type: none"> <li>• Design and specification, scale drawings and locations for each proposed monitoring borehole; and</li> <li>• Maintenance programme and deadlines for its repair and replacement.</li> </ul> <p>The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>	At least 14 days prior to the proposed date of borehole installation.
2	<p>Following completion of improvement condition 1 of Table S1.3, the operator shall provide to the Agency a CQA report that includes the following details:</p> <ul style="list-style-type: none"> <li>• As built drawings of the groundwater monitoring boreholes.</li> <li>• As built location plan of groundwater monitoring boreholes. All boreholes must be surveyed to Ordnance Datum</li> </ul> <p>All new boreholes installed shall be incorporated into the site monitoring plan and monitored and reported in accordance with the requirements of tables S4.5, S4.11 and Schedule 5. The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>	No later than 28 days after the date of borehole installation.
3	<p>The operator shall submit to the Environment Agency a leachate management plan which shall include, but not be limited to, the following issues:</p> <ul style="list-style-type: none"> <li>• Volume of leachate to be recirculated including an assessment of the potential impact of such activity to ground and surface waters and the generation of odours.</li> <li>• Evidence that any proposed recirculation system is designed to minimise air ingress in to the landfill.</li> <li>• Rainfall and other meteorological data;</li> <li>• Volume of leachate to be removed;</li> <li>• Volume to be disposed off-site;</li> <li>• Details of the extraction plan;</li> <li>• Any pre-treatment of leachate prior to disposal and/or recirculation;</li> <li>• Any additional abstraction and storage infrastructure required;</li> <li>• Integrity testing of leachate storage infrastructure.</li> </ul> <p>The extraction plan shall include:</p> <ul style="list-style-type: none"> <li>• A plan showing the spatial distribution of extraction points;</li> <li>• Consideration of the zone of influence of each well;</li> <li>• Full well design and specification;</li> <li>• Proposed pumping regime including written justification;</li> <li>• Contingency action plan.</li> </ul> <p>The operator shall implement any measures as agreed in writing by the Environment Agency.</p>	08 June 2007
4	<p>In accordance with condition 2.11.1 the operator shall submit a Site Protection and Monitoring Programme written in accordance with Agency guidance entitled 'H7 Guidance - Application Site Report and Site Protection and Monitoring Programme'. This programme must cover all the areas of the landfill installation which do not consist of permanent deposits of waste forming part of the stationary technical unit.</p>	As per Condition 2.11.

**Table S1.3 Improvement Programme Requirements**

5	<p>The operator shall review the surface water management plan (Volume 3, Appendix 4 of the application). The review shall include, but not be limited to, the following issues :</p> <ul style="list-style-type: none"><li>• Demonstration by the use of rainfall and other meteorological data that the surface water drainage system is designed to cope with storm events;</li><li>• Details of the volume of surface water to be controlled;</li><li>• Construction details for proposed lagoons, discharge and sampling points;</li><li>• Drawings of the location of existing and proposed drainage channels and temporary lagoons;</li><li>• Measures to ensure rainwater running off areas outside the landfill is intercepted and channelled away from construction, operational and post-closure phases;</li><li>• Review of existing infrastructure and where applicable a timetable for necessary improvements to be made.</li><li>• The setting/review of control and compliance levels for all surface water management monitoring points for those determinands identified in table SWMP1 of the Surface Water Management Plan VA.0 dated 8 June 2005.</li><li>• Review of the location and number of monitoring points.</li><li>• Maintenance and repair schedules for all drainage works.</li><li>• A Contingency Plan in the event of an emergency.</li></ul> <p>The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>	08 March 2007
6	<p>The operator shall agree the format and content of reporting forms required to be submitted under condition 4.2.2.</p>	08 October 2006
7	<p>The operator shall review all available groundwater monitoring data and produce a written report which shall include, but not be limited to, the following issues:</p> <ul style="list-style-type: none"><li>• An assessment and review of the trigger levels detailed in Table S4.5 of this permit.</li><li>• An assessment of the choice of substances used to derive control and trigger levels.</li><li>• The setting of specific trigger and control levels for all down gradient boreholes. Trigger and control levels shall be derived in accordance with Agency guidance document 'Hydrogeological Risk Assessment for Landfills' (LFTGN01).</li><li>• Details of any variations between the site conceptual model and observed groundwater conditions.</li><li>• A timetable for the setting of specific trigger and control levels for boreholes identified in table S4R3 of the Schedule 4 response dated 31 January 2006.</li></ul> <p>The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>	08 April 2008
8	<p>The operator shall review the effectiveness of bird controls employed at the site and produce a bird management plan. The plan should detail how the specific bird control techniques employed will ensure that gull and corvid numbers at the permitted Installation are minimised. The plan should include the operational hours of bird control employed and an action plan to be implemented in the event of excessive bird numbers on site. The plan must have due regard to the proximity of Withybush Airport and be reviewed on an annual basis. The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>	08 October 2006

**Table S1.3 Improvement Programme Requirements**

9	<p>The operator shall undertake complex emission modelling in accordance with Agency guidance "Guidance on the management of landfill gas LFTGN03" for those substances that are shown to be significant at the site boundary as detailed in the Tier 1 Gas Risk Assessment Screening (Appendix GRA1A of the Landfill Gas Risk Assessment dated 8 June 2005). The modelling data and assessment of the results shall be incorporated in to the site specific Gas Risk Assessment and submitted to the Agency. The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>	08 November 2006
10	<p>The operator shall submit to the Agency for approval a Landfill Gas Management Plan prepared in accordance with LFTGN03 "Guidance on the Management of Landfill Gas". The management plan shall also include but not be limited to, the following issues:</p> <ul style="list-style-type: none"><li>• Confirmation that the design and specification of the plant has been modelled within the Landfill Gas Risk assessment submitted under improvement condition Reference 9 of Table S1.3.</li><li>• Evidence that the capacity of the treatment system is sufficient to deal with the volume of gas generated at the landfill. The flaring capacity should be sufficient to treat all the gas when utilisation equipment is off line.</li><li>• Manufacturers specification of engine(s) and flare(s) to be installed.</li><li>• Construction specification and Quality Assurance procedures.</li><li>• Timetable for installation and construction of gas utilisation plant and flare. The flare and utilisation plant (if appropriate) must be operational within six months of waste being accepted into the site unless otherwise justified and agreed with the Agency.</li><li>• Site specific procedures for the operation, monitoring and maintenance of all plant and carrier pipework to ensure optimum performance.</li><li>• Emergency procedures and protocols.</li><li>• A plan showing all emission points to be monitored and proposed location and configuration of carrier pipework.</li><li>• Timetable of installation of any new boreholes.</li><li>• Background monitoring plan for Areas B, C, D and E. The frequency of monitoring must be sufficient to enable the characterisation of seasonal and other environmental influences (i.e. 12 months).</li><li>• A full justification for the spacing of perimeter landfill gas boreholes identifying the location, design and monitoring regime of any additional boreholes found to be necessary.</li><li>• A detailed plan of suitable scale indicating existing and proposed monitoring points.</li><li>• A review of all available gas monitoring data.</li></ul> <p>The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>	08 March 2007
11	<p>The operator shall revise drawing ESID5 to include details of waste pre-settlement levels.</p>	08 November 2006

**Table S1.4A Pre-operational Measures**

<b>Reference</b>	<b>Pre-operational Measures</b>
1	<p>Prior to the construction of any cells within Areas A, B, C, D or E as detailed in drawing ESID6A of the application the operator shall undertake a site investigation as specified within the response to Question 1 of the Schedule 4 notice dated 31 January 2006. The investigation shall include, but not be limited to the following issues:</p> <ul style="list-style-type: none"><li>• Groundwater elevation and seasonal fluctuations.</li><li>• Groundwater flow direction.</li><li>• Interaction between groundwater and surface water.</li><li>• Review of the obtained data and update the conceptual site model.</li></ul> <p>Following the investigation the operator shall submit a written report detailing the revised site conceptual model and provide evidence that there a minimum of a 1m thick unsaturated zone as per the proposed landfill design. In the event that the unsaturated zone is less than 1m thick the operator shall provide a revised hydrogeological risk assessment and, if required, a revised landfill design. The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>
2	<p>Prior to the construction of any cells within Areas A, B, C, D or E as detailed in drawing ESID6A of the application the operator shall provide in writing details of site specific control measures that will be undertaken to ensure that the required minimum unsaturated zone assessed as part of pre-operational condition 1 will be maintained. The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>
3	<p>Prior to the construction of any cells within Areas B, C, D or E as detailed in drawing ESID6A of the application the operator shall provide a report detailing a site specific design for the spring diversion. The report shall include details of construction quality assurance procedures and any other control measures that will be required as part of these works. The report shall take in to account the available results of the site investigation undertaken as part of pre-operational measure reference 1 of table S1.4A. The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>
4	<p>The operator shall submit to the Agency for approval, a report describing the security arrangements at the installation. The report shall include, but not be limited to the following issues:</p> <ul style="list-style-type: none"><li>• type of security;</li><li>• design standards for physical security, detailing design and specification, including access;</li><li>• operational standards for security, including operational and out-of-hours provisions, and</li><li>• maintenance and repair schedules.</li></ul> <p>The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>

**Table S1.4B Pre-operational Measures for Future Development**

Reference	Operation	Pre-operational Measures
1	Prior to the acceptance of any waste with area A and prior to the construction of any cells within areas B, C, D or E	<ol style="list-style-type: none"> <li>The following groundwater monitoring boreholes shall be installed at least two months prior to the acceptance of any waste within area A: BH1, BH2, BH3, BH20, BH21, BH22, BH23 and BH18 as identified on plan HRA3. These boreholes shall be sampled on a monthly basis for the complete suite of determinands listed in table S4R4 of the response to question 14 of the Schedule 4 notice dated 31 January 2006 for a minimum of twelve months.</li> <li>The operator shall install groundwater monitoring boreholes in accordance with the timetable detailed in table S4R3 of the Schedule 4 notice response dated 31 January 2006 unless otherwise agreed in writing with the Environment Agency. These boreholes shall be sampled on a monthly basis for the complete suite of determinands listed in table S4R4 of the response to question 14 of the Schedule 4 notice dated 31 January 2006 for a minimum of twelve months.</li> <li>All new monitoring points shall be installed in accordance with improvement condition 1 of table S1.3 and any additional monitoring points shall be agreed in writing with the Agency.</li> </ol>
2	Prior to the acceptance of any waste with area A and prior to the construction of any cells within areas B, C, D or E	The operator shall construct a surface water management system in accordance with the Surface Water Management Plan (Version A.0, dated 8 June 2005) to ensure that contaminated surface waters are intercepted and channelled away from construction and operational areas. Interim control and trigger levels for monitoring points D2 and D3 (plan ESID6A) shall be derived for those determinands identified in table SWMP1 of the Surface Water Management Plan prior to any discharge to Rudbaxton Water. These interim control and trigger levels will be subject to review by the operator in accordance with improvement condition 5 of Table S1.3 of this permit.
3	Prior to the construction of the inert wedge between Phase 1 and 2 of Withyhedge Landfill Site.	<p>The operator shall provide written details of :</p> <ul style="list-style-type: none"> <li>Detailed design drawings detailing the precise area to be infilled.</li> <li>Estimation of quantity of material required.</li> <li>Timetable and phasing of works.</li> <li>Specification of all materials to be used in the construction of the inert wedge.</li> <li>Proposed Construction Quality Assurance procedures.</li> <li>Surface water management proposals for these works.</li> </ul> <p>The operator shall implement any improvements or measures as agreed in writing with the Environment Agency.</p>
4	Prior to the recirculation of any leachate within cells within Areas A, B, C, D or E	<p>The operator shall not undertake leachate recirculation until:</p> <ul style="list-style-type: none"> <li>The leachate management plan (Table S1.3, Reference 3) has been agreed in writing with the Agency.</li> <li>The landfill gas extraction system is installed to collect and treat any gas generated as a result of recirculation (Table S1.3, Reference 10).</li> </ul>

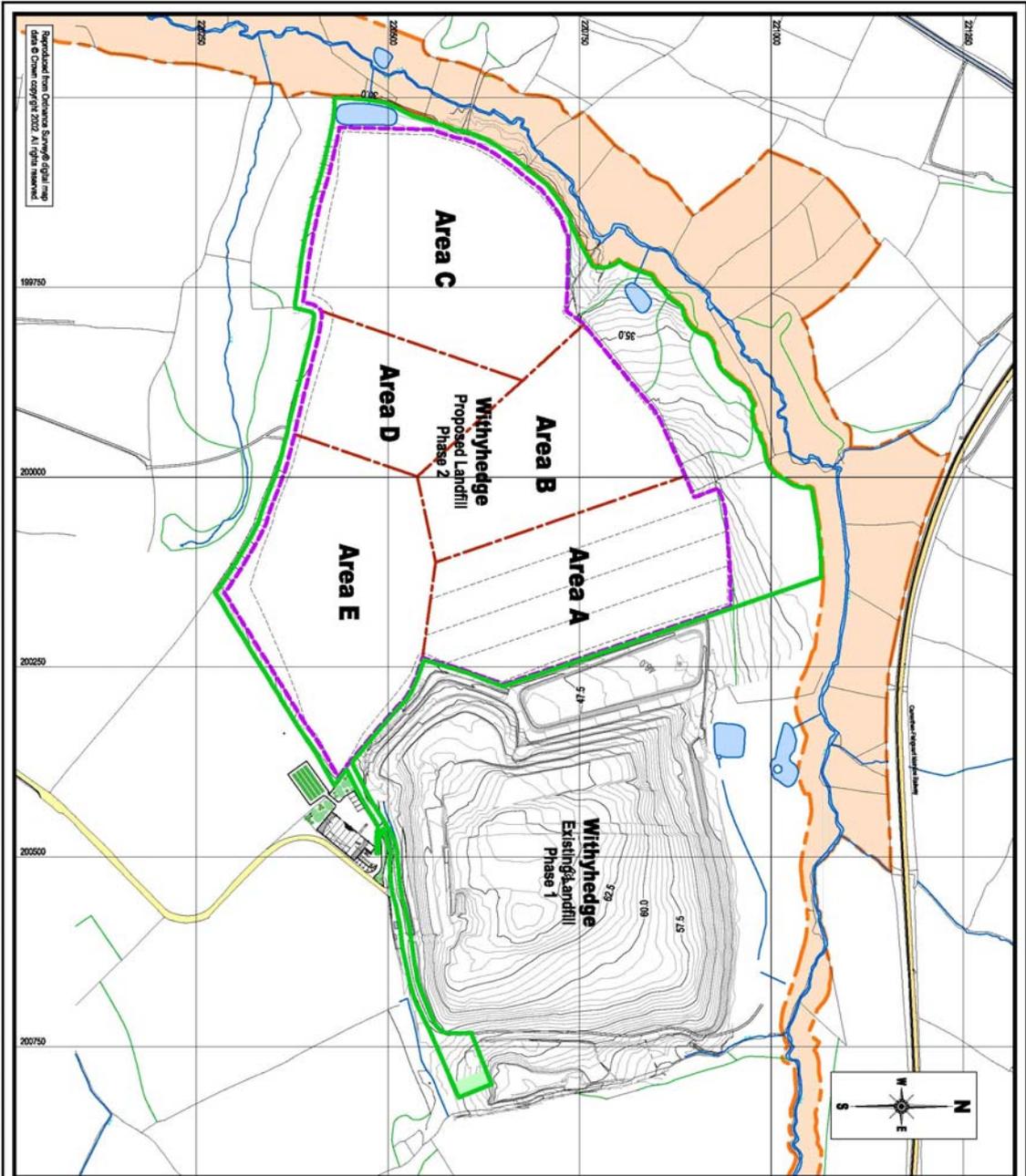
**Table S1.5 Annual Waste Input Limits**

Category	Limit Tonnes/ Year
Non-hazardous Waste	150,000
Inert Waste	



## Schedule 2 - Site plan





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- LEGEND**
- Installation boundary
  - Limit of waste disposal
  - Alonged Caeddu SAc boundary
  - Ground contour (m.AOD)
  - Break of slope



**Resources Management UK Limited**  
 Withyhedge Landfill, Bowling Farm  
 Rudston, Beverfordwaik SA02 0DB

**Project**  
 Withyhedge Landfill Phase 2

**Installation Boundary**

Project No.	04030421	Engineer		Drawing No.	
File No.	023440	Drawn by			<b>IB 1</b>
Client by	A.B.	Date	7th March 2006		
Scale	1:5,000				



# Schedule 3 - List of permitted wastes

<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 07
<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
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 suitable 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
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
<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 examples grease, wax)
04 02 15	Wastes from finishing other than those mentioned in 04 02 14
04 02 17	Dyestuffs 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
<b>05 06</b>	<b>Wastes from the Pyrolytic Treatment of Coal</b>
05 06 04	Waste from cooling columns
<b>07</b>	<b>WASTES FROM ORGANIC CHEMICAL PROCESSES</b>
<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
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>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 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
<b>08 03</b>	<b>Wastes from MFSU of Printing Inks</b>
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 waterproofing 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
<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 from 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
10 01 21	Sludges from on-site effluent treatment other than those mentioned in 10 01 20
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
<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	Tar-containing wastes from anode manufacture other than those mentioned in 10 08 12
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	<b>Casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05</b>
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	<b>Casting cores and moulds which have not undergone pouring other than those mentioned in 10 10 05</b>
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</b>	<b>WASTES FROM THERMAL PROCESSES</b>
<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
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	Sludges from on-site effluent treatment
<b>10 13</b>	<b>Wastes from Manufacture of Cement, Lime, Plaster and Articles and Products made from them</b>
10 13 01	Waste preparation mixture before thermal processing
10 13 04	Wastes from calcinations 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>
<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
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 12	Brake pads other than those mentioned in 16 01 11
16 01 16	Tanks for liquefied gas
16 01 17	Ferrous metal
16 01 18	Non-ferrous metal
16 01 19	Plastic
16 01 20	Glass
16 01 22	Components not otherwise specified

- 16 WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
- 16 02 Wastes from Electrical and Electronic Equipment**  
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
- 16 03 Off-Specification Batches and Unused Products**  
16 03 04 Inorganic wastes other than those mentioned in 16 03 03  
16 03 06 Organic wastes other than those mentioned in 16 03 05
- 16 05 Gases in Pressure Containers and Discarded Chemicals**  
16 05 09 Discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
- 16 08 Spent Catalysts**  
16 08 01 Spent catalysts containing gold, silver, rhenium, rhodium, palladium, iridium or platinum (except 16 08 07)
- 16 11 Waste Linings and Refractories**  
16 11 02 Carbon-based linings and refractories from metallurgical processes other 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 other than those mentioned in 16 11 05
- 17 CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**
- 17 01 Concrete, Bricks, Tiles and Ceramics**  
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
- 17 02 Wood, Glass and Plastic**  
17 02 01 Wood  
17 02 02 Glass  
17 02 03 Plastic
- 17 03 Bituminous Mixtures, Coal Tar and Tarred Products**  
17 03 02 Bituminous mixtures other than those mentioned in 17 03 01
- 17 04 Metals (including their alloys)**  
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  
17 04 07 Mixed metals  
17 04 11 Cables other than those mentioned in 17 04 10
- 17 05 Soil (including excavated soil from contaminated sites), Stones and Dredging Spoil**  
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
- 17 06 Insulation Materials and Asbestos-Containing Construction Materials**  
17 06 04 Insulation materials other than those mentioned in 17 06 01 and 17 06 03
- 17 08 Gypsum-Based Construction Material**  
17 08 02 Gypsum-based construction materials other than those mentioned in 17 08 01
- 17 09 Other Construction and Demolition Wastes**  
17 09 04 Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
- 18 WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (except kitchen and restaurant wastes not arising from immediate health care)**
- 18 01 Wastes from Natal Care, Diagnosis, Treatment or Prevention of Disease in Humans**  
18 01 04 Wastes whose collection and disposal is subject to special requirements in order to prevent infection (for example dressings, plaster cases, linen, disposable clothing, diapers)
- 18 02 Wastes from Research, Diagnosis, Treatment or Prevention of Disease involving Animals**  
18 02 03 Wastes whose collection and disposal is not subject to special requirements in order to prevent infection
- 19 WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE**
- 19 01 Wastes from Incineration or Pyrolysis of Waste**  
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  
19 01 18 Pyrolysis wastes other than those mentioned in 19 01 17  
19 01 19 Sands from fluidised beds
- 19 02 Wastes from Physico/Chemical Treatments of Waste (including dechromatation, decyanidation, neutralisation)**  
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 03 Stabilised/Solidified Wastes**  
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
- 19 04 Vitrified Waste and Wastes from Vitrification**

<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>
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 02 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 edible oil and fats
19 08 12	Sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11
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 examples sorting, crushing, compacting, palletising) 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)
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
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**            **MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**  
20 03 07      Bulky waste

## Schedule 4 – Emissions and monitoring

**Table S4.1 Leachate level limits and monitoring requirements**

Monitoring point reference/ Description	Limit	Monitoring frequency	Monitoring method
L1 to L4 (inclusive) as identified on plan ESID7A.	1 m above the base of the cell	Weekly, reducing to monthly once the cell has been finally capped.	1. Accurate to $\pm 0.01$ m relative to Ordnance Datum.
LM1 to LM8 (inclusive) as identified on plan ESID7A.			2. Unless otherwise agreed in writing with the Agency, monitoring methods used shall be in accordance with Environment Agency document 'Guidance on monitoring of landfill leachate, groundwater and surface water' (LFTGN02)
All subsequent new leachate monitoring points within cells constructed in Areas B, C, D or E as detailed in drawing ESID7A and any additional monitoring points agreed in writing with the Environment Agency.			

**Table S4.2 Point Source Emissions to Air – emission limits and monitoring requirements**

Emission point Ref. & Location	Parameter	Source	Limit	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Landfill Gas Engine emission points to be agreed in writing with the Agency prior to commissioning of the gas utilisation plant and flare(s).	Oxides of Nitrogen	Gas utilisation plant	500 mg/m <sup>3</sup>	Hourly mean	Annually	ISO 10849: 1996
	CO	Gas utilisation plant	1400 mg/m <sup>3</sup>	Hourly Mean	Annually	ISO 12039: 2001
	Total VOCs	Gas utilisation plant	1000 mg/m <sup>3</sup>	Hourly Mean	Annually	BS EN 12619: 1999 or BS EN 13526: 2002
	NM VOC	Gas utilisation plant	75 mg/m <sup>3</sup>	Hourly Mean	Annually	BS EN 13649:2002
Landfill Gas Flare emission points to be agreed in writing with the Agency prior to commissioning of the gas utilisation plant and flare(s).	Oxides of Nitrogen	Landfill Gas Flares	150 mg/m <sup>3</sup>	Hourly mean	Annually	ISO 10849
	CO	Landfill Gas Flares	50 mg/m <sup>3</sup>	Hourly mean	Annually	ISO 12039
	Total VOCs	Landfill Gas Flares	10 mg/m <sup>3</sup>	Hourly mean	Annually	BS EN 12619 or BS EN 13526
	NM VOC	Landfill Gas Flares	5 mg/m <sup>3</sup>	Hourly mean	Annually	BS EN 13649

**Table S4.3 Point Source Emissions to Water (Other than Sewer) – emission limits and monitoring requirements**

Emission point Ref. & Location	Parameter	Source	Limit (incl. unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
D2 and D3 as identified on plan ESID6A	pH	Settlement Lagoons	To be agreed with the Agency under pre-operation condition Reference 2, Table S1.4B	Spot Sample	Monthly	Unless otherwise agreed in writing with the Agency, monitoring methods used shall be in accordance with Environment Agency document 'Guidance on monitoring of landfill leachate, groundwater and surface water' (LFTGN02)
	Ammoniacal Nitrogen;					
	Chloride;					
	Total Suspended Solids					
	Temperature					
	Electrical Conductivity 20°C					
	Dissolved Oxygen					
	Biochemical Oxygen Demand					
	Chemical Oxygen Demand					
	Flow Rate					

**Table S4.4 Point Source Emissions to Sewer, Effluent Treatment Plant or by Tankering or other transfer Off-Site– emission limits and monitoring requirements**

Emission point Ref. & Location	Parameter	Source	Limit (incl. unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Leachate storage tank as identified on plan ESID6A.	Volume transferred off-site	Leachate from the permitted landfill	No limit	Spot Sample	Volume of each load shall be recorded	None Specified

**Table S4.5 Trigger levels for emissions into groundwater and monitoring requirements**

Monitoring point reference	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
1. AIGBH101, AIGBH102, AIGBH103, AIGBH105 as shown on drawing MON1 dated 14 February 2006.	Ammoniacal Nitrogen	0.5 mg/l or other limit agreed writing in accordance with improvement condition reference 7 of Table S1.3	Spot Sample	Monthly unless otherwise agreed in writing with the Agency	Unless otherwise agreed in writing with the Agency, monitoring methods used shall be in accordance with Environment Agency document 'Guidance on monitoring of landfill leachate, groundwater and surface water' (LFTGN02)
	Chloride	75 mg/l or other limit agreed writing in accordance with improvement condition reference 7 of Table S1.3			
2. All subsequent down gradient monitoring points installed in accordance with pre-operational measure, reference 1 of Table S1.4B and any additional monitoring points agreed in writing with the Environment Agency.	Cadmium	0.1 ug/l or other limit agreed writing in accordance with improvement condition reference 7 of Table S1.3		Quarterly	
	Mecoprop	0.01 ug/l or other limit agreed writing in accordance with improvement condition reference 7 of Table S1.3			
	Naphthalene	1 ug/l or other limit agreed writing in accordance with improvement condition reference 7 of Table S1.3			
	Nickel	20 ug/l or other limit agreed writing in accordance with improvement condition reference 7 of Table S1.3			
	Phenol	1 ug/l or other limit agreed writing in accordance with improvement condition reference 7 of Table S1.3			
	Additional parameters identified as a result of improvement programme requirement reference 7 of Table S1.3	To be agreed in writing with the Agency in writing	To be agreed in writing with the Agency.	To be agreed in writing with the Agency.	

**Table S4.6 Landfill gas in external monitoring boreholes – limits and monitoring requirements**

<b>Monitoring point Ref. /description</b>	<b>Parameter</b>	<b>Limit (including units)</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
1. BH1 to BH23 (inclusive) as identified on plan ESID 11. 2. All subsequent new monitoring points installed in accordance with improvement condition reference 10 of Table S1.3 and any additional monitoring points agreed in writing with the Environment Agency.	Methane	1% v/v above background concentrations unless otherwise agreed in writing with the Agency.	Monthly unless otherwise agreed in writing with the Environment Agency	Unless otherwise agreed in writing with the Agency, monitoring methods used shall be in accordance with Environment Agency document "Guidance on the management of landfill gas. LFTGN03".
	Carbon Dioxide	1.5% v/v above background concentrations unless otherwise agreed in writing with the Agency.		
	Oxygen	No Limit		
	Atmospheric pressure	No Limit		
	Differential Pressure	No Limit		
	Temperature	No Limit		
	Meteorological data	No Limit		

**Table S4.8 Landfill Gas – other monitoring requirements**

<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
All in waste monitoring boreholes.	Methane	Monthly unless otherwise agreed in writing with the Environment Agency	v/v ± 0.1%	On an annual basis the operator shall submit an up to date scale plan detailing the locations of all in waste monitoring boreholes installed at the installation. Each borehole shall be referenced with a unique identifier
	Carbon Dioxide		v/v ± 0.1%	
	Oxygen		v/v ± 0.1%	
	Atmospheric pressure		± 1mb	
	Differential pressure		± 1mb	
	Temperature		± 1°C	
	Meteorological Data		As per LFTGN03	
All gas collection wells	Carbon Monoxide	Fortnightly unless otherwise agreed in writing with the Environment Agency	v/v ± 0.1%	On an annual basis the operator shall submit an up to date scale plan detailing the locations of all gas collection wells installed at the installation. Each well shall be referenced with a unique identifier.
	Methane		v/v ± 0.1%	
	Carbon Dioxide		v/v ± 0.1%	
	Oxygen		v/v ± 0.1%	
	Atmospheric pressure		± 1mb	
	Differential pressure		± 1mb	
	Temperature		± 1°C	
A sample of the source gas taken at a location agreed in writing with the Environment Agency.	Trace Gas Analysis	Annually	To be agreed in writing with the Environment Agency at least 14 days prior to taking the sample	The selection of sample point and monitoring method shall be justified in writing with reference to Agency guidance entitled ' Guidance for monitoring trace components in landfill gas' (LFTGN04)
Gas input to flare(s)	Methane	Continuous	v/v ± 0.1%	Where the oxygen level exceeds 5% or where the addition of the Carbon Dioxide and Methane percentages is less than 80%, an assessment of air ingress in to the system shall be undertaken and the Environment Agency notified in writing.
	Carbon Dioxide		v/v ± 0.1%	
	Oxygen		v/v ± 0.1%	
	Gas Flow Rate		To be agreed in writing with the Environment Agency.	

**Table S4.9 Leachate– other monitoring requirements**

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
All leachate monitoring wells installed per cell.	Leachate level	Weekly	Unless otherwise agreed in writing with the Agency, monitoring methods used shall be in accordance with Environment Agency document 'Guidance on monitoring of landfill leachate, groundwater and surface water' (LFTGN02)	1. The operator shall supply in writing details of List I substances to be analysed one month prior to undertaking annual monitoring. This shall include all parameters used in the Hydrogeological Risk Assessment.
At least one monitoring point per cell.	As per table LMP1 entitled 'Leachate Monitoring Frequency and Analytical Determinands' of Volume 3, Appendix 2 of the application.	As per table LMP1 entitled 'Leachate Monitoring Frequency and Analytical Determinands' of Volume 3, Appendix 2 of the application.		2. In the event that the action levels detailed in the response to question 16 of the Schedule 4 response are exceeded the Agency shall be notified in writing within seven days of the result being received by the operator.

**Table S4.10 Surface water – other monitoring requirements**

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
1. SP5, SP6, SP7, SP8 as identified on plan ESID6A	pH	Monthly	Unless otherwise agreed in writing with the Agency, monitoring methods used shall be in accordance with Environment Agency document 'Guidance on monitoring of landfill leachate, groundwater and surface water' (LFTGN02)	
2. All subsequent new surface water monitoring points installed in accordance with improvement condition reference 5 of Table S1.3.	Ammoniacal Nitrogen; Chloride; Total Suspended Solids Temperature Electrical Conductivity 20°C Dissolved Oxygen Biochemical Oxygen Demand Chemical Oxygen Demand	Monthly unless otherwise agreed in writing with the Agency.		

**Table S4.11 Groundwater – other monitoring requirements**

<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
All installed groundwater monitoring points as detailed on site plan ESID8, and clarified in Golder Associates' letter dated 14 February 2006, including and any additional monitoring points agreed in writing with the Environment Agency.	As per the response to question 14 of the Schedule 4 notice dated 31 January 2006.	As per table S4R4 of response to question 14 of the Schedule 4 response dated 31 January 2006.	Unless otherwise agreed in writing with the Agency, monitoring methods used shall be in accordance with Environment Agency document 'Guidance on monitoring of landfill leachate, groundwater and surface water' (LFTGN02)	The operator shall supply in writing details of List I and II substances to be analysed one month prior to undertaking annual monitoring. This shall include all parameters used in the Hydrogeological Risk Assessment.
	Monitoring Point base	Annually		
	List I and II substances	Annually		

## Schedule 5 - Reporting

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

<b>Table S5.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Leachate levels As required by condition 3.6.1	All leachate monitoring points	Every 3 months	Date of issue of the permit
Emissions to air Parameters as required by condition 3.6.1	All monitoring points as identified in table S4.2.	Every 12 months	Date of installation of the flare / engine
Emissions to water Parameters as required by condition 3.6.1	All monitoring points as identified in table S4.3	Every 3 months	Date of issue of the permit
Groundwater Parameters as required by condition 3.6.1	All monitoring points as identified in table S4.5 and 4.11	Every 3 Months	Date of issue of the permit
Landfill gas lateral migration Parameters as required by condition 3.6.1	All monitoring points as identified in table S4.6	Every 3 months	Date of installation of the boreholes.
Other Landfill gas monitoring Parameters as required by condition 3.6.1	All monitoring points as identified in table S4.8	Every 3 months	Date of installation of the boreholes.
Other leachate monitoring Parameters as required by condition 3.6.1	All monitoring points as identified in table S4.9	Every 3 months	Date of issue of the permit
List I and II Substances as per table LMP1 entitled 'Leachate Monitoring Frequency and Analytical Determinands' of Volume 3, Appendix 2 of the application.	All monitoring points as identified in table S4.9	Every 12 months	Date of issue of the permit
Other surface water monitoring Parameters as required by condition 3.6.1	All monitoring points as identified in table S4.10	Every 3 months	Date of issue of the permit

<b>Table S5.2: Annual Production/Treatment</b>	
<b>Leachate:</b> <b>Disposed of off site;</b> <b>Disposed of to any onsite effluent treatment plant;</b> <b>Recirculated into the waste mass.</b>	<b>Cubic metres/year</b>
<b>Surface water and/ or groundwater:</b> <b>Disposed of off site;</b> <b>Disposed of to any onsite effluent treatment plant.</b>	<b>Cubic metres/year</b>
<b>Landfill gas:</b> <b>combustion in flares;</b> <b>combustion in gas engines;</b> <b>Other methods of gas utilisation.</b>	<b>Normalised cubic metres/year</b>

<b>Table S5.3 Performance Parameters</b>			
<b>Parameter</b>	<b>Frequency of assessment</b>	<b>Annual total</b>	<b>Unit</b>
Potable water use	Annually		Cubic metres
Energy used	Annually		MW of electricity
Non potable water use	Annually		Cubic metres

**Table S5.4 Reporting Forms**

<b>Media/parameter</b>	<b>Reporting Format</b>	<b>Date of Form</b>
Controlled water	Reporting format to be agreed in writing with the Agency	
Surface water	Reporting format to be agreed in writing with the Agency	
Groundwater	Reporting format to be agreed in writing with the Agency	
Landfill gas	Reporting format to be agreed in writing with the Agency	
Waste summary	Reporting format to be agreed in writing with the Agency	
Landfill topographical surveys and interpretation	Reporting format to be agreed in writing with the Agency	

## Schedule 6 - 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 PPC Regulations.

### Part A

Permit Number	
Name of Operator	
Location of Installation	
Time and date of the detection	

#### **(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution**

<b>To be notified within 24 hours of detection</b>	
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**

<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be 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>
All to be notified within 24 hours.	

<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**

<b>Any more accurate information on the matters for notification under Part A.</b>	
<b>Measures taken, or intended to be taken, to prevent a recurrence of the incident</b>	
<b>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</b>	
<b>The dates of any unauthorised emissions from the installation in the preceding 24 months.</b>	

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

\* authorised to sign on behalf of Resources Management UK Limited

## Schedule 7 - 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 4 to the PPC Regulations

### *“Authorised Officer”*

means any person authorised by the 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.
- For emissions of landfill gas, the ground or air outside the site and not attributable to the site.

### *“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-compliance’s 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.

### *“Fugitive emission”*

means an emission to air, water or land from the Activities which is not controlled by an emission or background concentration limit.

### *“Groundwater Regulations”*

means the Groundwater Regulations SI 1998 No. 2746, and words and expressions used in this Permit which are also used in the Regulations shall have the same meanings as in those Regulations.

*“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;

within the Site.

*“Landfill Regulations”*

means the Landfill (England and Wales) Regulations SI 2002 No. 1559, and words and expressions used in this Permit which are also used in the Regulations shall have the same meanings as in those Regulations.

*“Land Protection Guidance”*

means Agency guidance “H7 - Guidance on the protection of land under the PPC Regime: Application site report and site protection monitoring programme”.

*“Liquids”*

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

*“LFTGN01”*

means Environment Agency Guidance Hydrogeological risk assessment for landfills and the derivation of control and trigger levels, March 2003

*“LFTGN02”*

means Environment Agency Guidance for monitoring of landfill leachate, groundwater and surface water, February 2003

*“LFTGN03”*

means Environment Agency Guidance on the management of landfill gas, September 2004

*“LFTGN 04”*

means Environment Agency Guidance for monitoring trace components in landfill gas, September 2004

*“LFTGN 05”*

means Environment Agency Guidance for monitoring enclosed landfill gas flares, September 2004.

*“LFTGN 08”*

means Environment Agency Guidance for monitoring landfill gas engines, September 2004.

*“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.

*“No impact”*

means that the change made to the construction process will not alter the agreed design criteria, specification or performance.

*“notify without delay” and “notified without delay”*

means that a telephone call can be used, whereas all other reports and notifications must be supplied in writing, either electronically or on paper.

*“PPC Regulations”*

means the Pollution, Prevention and Control (England and Wales) Regulations SI 2000 No.1973 and words and expressions used in this Permit which are also used in the Regulations have the same meanings as in those Regulations.

*“Quarter”*

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

*“Relevant person” and “relevant conviction”*

shall have the meanings given to them in the Environmental Protection Act 1990

*“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 Groundwater 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 Groundwater Regulations

*“Site Protection and Monitoring Programme”*

means a document which meets the requirements for Site Protection and Monitoring Programmes described in the Land Protection Guidance.

*“Technically competent management” and “technical competence”*

shall have the meanings given to them in the Environmental Protection Act 1990.

*“Waste code”*

means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

*“Year”*

means calendar year ending 31 December.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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.

**END OF PERMIT**