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Resources**  
Wales

## **Permit with introductory note**

The Environmental Permitting (England & Wales) Regulations 2016

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Gwynedd Council

Ffridd Rasus Landfill  
Morfa Road  
Harlech  
Gwynedd  
LL46 2UW

Permit number  
EPR/GP3330BY

# Ffridd Rasus Landfill

## Permit number EPR/GP3330BY

### Introductory note

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

The main features of the permit are as follows.

Ffridd Rasus landfill site ceased accepting waste for disposal on 6<sup>th</sup> January 2014. Capping was completed on 2<sup>nd</sup> April 2014. The conditions of this permit reflect that the landfill site will now be operated and maintained in accordance with the agreed closure plan during the aftercare phase.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application GP3330BY	Received 8/11/2004	
Request to extend determination	Requested 24/05/2005	Response 06/06/2005
Response to Schedule 4 Notice	Requested 04/07/2005	Response 10/08/2005
Response to request for information	Requested 04/07/2005	Response 21/07/2005
Revised Surface water management plan	Requested 10/08/2005	Plan 9/08/2005
Request to extend determination	Requested 30/09/2005	Response 04/10/2005
Permit GP3330BY determined	31/10/2005	
Variation notice QP3134LY issued (variation & consolidation)	14/03/2007	
Application EPR/GP3330BY/V003	Duly made 22/7/2011	Application for increase in annual throughput to 49,000 tonnes.
Additional information received	16/08/2011	Confirmation of landfill stability and management system update
Variation determined EPR/GP3330BY/V003	18/08/2011	Varied permit issued
Agency variation determined EPR/GP3330BY/V004	21/03/2013	Agency variation to implement the changes introduced by IED
Variation Application EPR/GP3330BY/V005 received	01/12/2014	Variation application to place landfill into closure and aftercare
Request for further information	13/03/2014	Request for 6 yearly Hydrogeological Risk Assessment Review
Schedule 5 Notice	26/10/2015	Request for further information relating to Groundwater Compliance Limits
Response to Schedule 5 Notice	26/11/2015	

**Status log of the permit**

<b>Description</b>	<b>Date</b>	<b>Comments</b>
Variation Application EPR/GP3330BY/V005 issued	01/04/2016	Consolidated permit issued to incorporate closure and aftercare requirements.
Variation application EPR/GP3330BY/V006 received	30/11/2016	Variation to include a micro turbine and the utilisation of landfill gas as a directly associated activity to the landfill
Schedule 5 Notice	26/01/2017	Request for further information relating to the Air Quality Screening Assessment
Response to Schedule 5 Notice	02/02/2017	
Variation EPR/GP3330BY/V006 issued	13/03/2017	
Variation application EPR/GP3330BY/V007 received (PAN-018716)	20/07/2022	Application to reduce frequency of monitoring
Additional information received	Duly made 01/02/2023	Groundwater elevation maps, contamination plume maps and EMS certification received.
Additional information received	15/08/2023	Consisting of amended site boundary, moving the closed landfill activity into the permit boundary of EPR/GP3330BY
Additional information received	11/10/2023	Site plan received
Variation application EPR/GP3330BY/V007 determined	16/11/2023	Consolidated permit issued

End of introductory note

# Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number  
**EPR/GP3330BY**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/GP3330BY/V007 authorising,

**Gwynedd Council** (“the operator”),

of

**Council Offices**  
**Caernarfon**  
**Gwynedd**  
**LL55 1SH**

to operate an installation at

**Ffridd Rasus Landfill**  
**Morfa Road**  
**Harlech**  
**Gwynedd**  
**LL46 2UW**

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

Name	Date
<b>Holly Noble</b>	<b>16/11/2023</b>

Authorised on behalf of Natural Resources Wales

# Conditions

## 1. Management

### 1.1 General management

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

### 1.2 Finance

- 1.2.1 For the following activities referenced in schedule 1, table S1.1 (A1 to A6). The financial provision for meeting the obligations under this permit, set out in the agreement made between the operator and the Environment Agency and since adopted by Natural Resources Wales dated 31<sup>st</sup> October 2005 shall be maintained by the operator throughout the subsistence of this permit and the operator shall produce evidence of such provision whenever required by Natural Resources Wales.

## 2 Operations

### 2.1 Permitted activities

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

### 2.2 The site

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

### 2.3 Operating techniques

- 2.3.1 (a) 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 Natural Resources Wales.

- (b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.

## **2.4 Landfill Engineering**

- 2.4.1 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 Natural Resources Wales has confirmed that it is satisfied with the construction proposals.
- 2.4.2 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 Natural Resources Wales.
- 2.4.3 The operator shall submit a CQA Validation Report as soon as practicable following the construction of the landfill infrastructure.
- 2.4.4 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.4.1 and 2.4.2 do not apply and the relevant landfill infrastructure may be constructed, provided that the construction proposals are submitted to Natural Resources Wales as soon as practicable.
- 2.4.5 For the purpose of conditions 2.4.1, Natural Resources Wales shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the relevant construction proposals or CQA Validation Report, either:
  - (a) confirmed whether or not it is satisfied; or
  - (b) informed the operator that it requires further information.
- 2.4.6 Where Natural Resources Wales has required further information under condition 2.4.5(b), Natural Resources Wales shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the further information, either:
  - (a) confirmed whether or not it is satisfied; or
  - (b) informed the operator that it requires further information.

## **2.5 Waste acceptance**

- 2.5.1 No waste shall be accepted for disposal at the site.

## **2.6 Leachate levels**

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

## **2.7 Closure and aftercare**

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

## **2.8 Landfill Gas Management**

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

# **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 schedule 3 tables S3.2 and S3.3.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 The limits given in Table S3.2 shall not be exceeded, save that compliance with an emission limit in that table shall include incorporation of the uncertainty allowance stated in Environment Agency guidance LFTGN 05 and LFTGN 08.
- 3.1.4 There shall be no emission from the activities into groundwater of any hazardous substances contrary to the EP Regulations.
- 3.1.5 There shall be no emission from the activities into groundwater of any non-hazardous pollutants so as to cause pollution.
- 3.1.6 The compliance limits for emissions into groundwater for the parameters and monitoring points set out in schedule 3 table S3.4 (or as otherwise agreed in writing in accordance with annual monitoring report to be carried out in accordance with condition 4.2.1 (b)) shall not be exceeded
- 3.1.7 The operator shall submit to Natural Resources Wales a review of the Hydrogeological Risk Assessment:
- (a) between nine and six months prior to the sixth anniversary of the granting of the permit, and
  - (b) between nine and six months prior to every subsequent six years after the sixth anniversary of the granting of the permit.

- 3.1.8 The limits for landfill gas arising from the installation set out in schedule 3, tables S3.5 shall not be exceeded.

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

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

## **3.3 Odour**

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



### **3.4 Noise and vibration**

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

### **3.5 Monitoring**

- 3.5.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring and any other actions specified in the following tables in schedule 3 to this permit:
- (a) Leachate specified in tables S3.1 and S3.8;
  - (b) Point source emissions specified in tables S3.2 and S3.3;
  - (c) Groundwater specified in tables S3.4 and S3.9;
  - (d) Landfill gas specified in tables S3.5, S3.6 and S3.7;
  - (e) Surface water specified in table S3.10.
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 A topographical survey of the site referenced to ordnance datum shall be carried out:
- (a) annually, and
  - (b) 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.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 [,S3.3 etc.] unless otherwise agreed in writing by Natural Resources Wales.

## 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 Natural Resources Wales, 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) off-site environmental effects; and
  - (ii) matters which affect the condition of the land and groundwater.
  - (iii) the results of groundwater monitoring;
  - (iv) sub-surface landfill gas monitoring;
  - (v) leachate levels, quality and quantities;
  - (vi) landfill gas generation and collection;
  - (vii) waste types and quantities;
  - (viii) the location of hazardous waste deposits; and
  - (ix) the specification and as built drawings of the basal, sidewall and capping engineering systems.

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

### 4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to Natural Resources Wales using the contact details supplied in writing by Natural Resources Wales.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) each year. The reports shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with this permit against the relevant assumptions, parameters and results in the risk assessments submitted in relation to this installation and any agreed amendments thereto;
- (b) a review and where appropriate, revision of the groundwater compliance limits set in Table S3.4 shall be carried out as part of the annual monitoring report. This shall instead be included with the 6-yearly HRA review.;
- (c) the energy consumed at the site, reported in the format set out in schedule 4 table S4.3

- (d) the annual production/treatment set out in schedule 4 table S4.2;
  - (e) the topographical surveys required by condition 3.5.3 other than those submitted as part of a CQA validation report;
  - (f) an assessment of the settlement behaviour of the landfill body based on the difference between the most recent topographical survey and previous annual topographical survey for the areas of the landfill which did not receive waste between the surveys;
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by Natural Resources Wales, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
  - (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
  - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to Natural Resources Wales, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

## 4.2 Notifications

- 4.3.1 (a) In the event that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
- (i) inform Natural Resources Wales,
  - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
  - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) in the event of a breach of any permit condition the operator must immediately—
- (i) inform Natural Resources Wales, and
  - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) in the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where Natural Resources Wales has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.

4.3.4 Natural Resources Wales shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

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

In any other case:

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

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

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

## **4.4 Interpretation**

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "without delay", in which case it may be provided by telephone.

# Schedule 1 - Operations

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity and WFD Annex I and II operations	Limits of specified activity
A1	S5.2 A1 (a) The Disposal of waste in a landfill	Landfill for non-hazardous waste (D5 –Specially engineered landfill). Landfill is closed and not accepting waste.	Management and Monitoring of emissions of closed landfill (including leachate and landfill gas)
Directly Associated Activity			
A2	Leachate Management	Storage of leachate	Leachate arising from the Permitted landfill.
A3	Flaring of landfill gas	Flaring of landfill gas in an appliance for disposal	Landfill gas arising from the landfill
A4	Water discharges to controlled waters	Discharge of site drainage from Area 1.	Drainage from hardstanding in Area 1 to point of entry to controlled waters.
A5	Fuel Storage	Storage of fuel	Fuel for operation of plant and equipment required to operate the landfill.
A6	Gas utilisation	Utilisation of landfill gas for energy recovery	Landfill gas arising from the landfill
Description of activities for waste operations			Limits of activities
A7	D1: Deposit into or onto land (e.g. landfill)		Management and monitoring of emissions from the closed landfill (e.g. Leachate and landfill gas).

**Table S1.2 Operating techniques**

<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to questions 2.1, 2.2, 2.3, 2.4, 2.5, 2.7, 2.8, 2.9, and 2.11 of Part B of the Landfill Application Form excluding the answers to the following questions: 2.1.5, 2.2.16, 2.2.17, 2.2.46, 2.2.47, 2.2.49, 2.2.50, 2.2.53 and 2.2.57.	8/11/2004
Pulveriser Application	The responses to all questions in Part B of the Pulveriser Application Form	8/11/2004
Response to Schedule 4 Notice Dated 4/07/2005	All parts of letter and enclosures	10/8/2005
Response to letter requesting further information dated 04/07/2005	All parts of letter and enclosures excluding revised drawings and revised surface water management plan.	21/07/2005
Revised Surface Water Management Plan	All parts of letter and enclosures.	Letter dated 10/08/2005
Letter containing proposals meeting the requirements of improvement condition 1.4.1.1 (original permit) – dated 10/08/2006	All parts including plan (Figure 1)	Received 11/08/2006
Variation application EPR/GP3330BY/V0 03	Response to form C2, questions 1b, 2b and 5c: 28587N202 technical note and 28587N202 Annex A Non Technical Summary	22/07/2011
	Email about stability and management systems.	16/08/2011
Landfill Closure Report dated 22/03/2012 (from EPR/PP3294FJ)	All	22/03/12
Closure report	All	01/12/14
Hydrogeological Risk Assessment Review	All	04/06/15
Schedule 5 Response	All	26/10/15
Variation application EPR/GP3330BY/V0 06	Technical note, specifying that only one of the landfill gas flare and landfill gas micro turbine will be used at any one time	30/11/2016

## **Schedule 2 - List of permitted wastes**

No waste accepted for disposal

## Schedule 3 – Emissions and monitoring

**Table S3.1 Leachate level limits and monitoring requirements**

Monitoring point reference/ Description	Limit	Monitoring frequency	Monitoring method
LCP1, LCP2, LCP3, LCP4/2, LCP4/B, LW4A, LW5A, LW6A and LW13	1.5 m above cell base	6-monthly	As per LFTGN 02, February 2003

**Table S3.2 Point source emissions to air – emission limits and monitoring requirements**

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
Landfill gas flare	Gas utilisation plant	Oxides of Nitrogen	150 mg/m <sup>3</sup>	Hourly mean	Annual	As per LFTGN 05 'Guidance for monitoring enclosed landfill gas flares' unless otherwise agreed in writing with NRW
		CO	50 mg/m <sup>3</sup>			
		Total VOCs	10 mg/m <sup>3</sup>			
Landfill gas micro turbine engine	Gas utilisation plant	Oxides of Nitrogen	500 mg/m <sup>3</sup>	Hourly mean	Annual	As per LFTGN 08 'Guidance for monitoring landfill gas engine emissions'
		CO	1400 mg/m <sup>3</sup>			
		Total VOCs	1000 mg/m <sup>3</sup>			



**Table S3.3 Point source emissions to water (other than sewer) – emission limits and monitoring requirements**

<b>Emission point Ref. &amp; Location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl unit)</b>	<b>Reference Period</b>	<b>Monitoring Frequency</b>	<b>Monitoring Standard or Method</b>
Emission point marked 'Discharge point from oil/petrol interceptor' on drawing number HRA02 (August 2005) - monitoring point SW1	oil and grease	Site Drainage from Area 1 via interceptor	None visible	Spot Sample	6 monthly	Visual
SW3 as shown on drawing number HRA02 (August 2005)	oil and grease	Site drainage from area 1 via interceptor and unnamed watercourse that runs along the northern and western boundaries of the installation	None visible	Spot Sample	6 monthly	Visual

**Table S3.4 Trigger levels for emissions into groundwater and monitoring requirements**

Monitoring point reference	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
BH19A	Chloride	500 mg/l		6-monthly	As per LFTGN 02, February 2003 unless otherwise agreed in writing with NRW.
BH19C					
BH20A					
BH20B					
BH21A					
BH21B					
BH29					
BH30					
BH31					
BH19A	Ammoniacal Nitrogen	150 mg/l		6-monthly	
BH19C					
BH20A					
BH20B					
BH21A					
BH21B					
BH29					
BH30					
BH31					
BH19A, BH19C, BH20A, BH20B, BH21A, BH21B, BH29, BH30, BH31	Cadmium	5.5 µg/l		Annually	
BH19A, BH19C, BH20A, BH20B, BH21A, BH21B, BH29, BH30, BH31	Naphthalene	2 µg/l		Annually	

**Table S3.5 Landfill gas in external monitoring boreholes – limits and monitoring requirements**

Monitoring point Ref. /description	Parameter	Limit (including units)	Monitoring frequency	Monitoring standard or method
Peripheral gas monitoring boreholes BHG01	Methane	1%v/v	Six monthly	As per LFTGN 03 V2 2010, unless otherwise agreed in writing with NRW.
	Carbon Dioxide	1.5 %v/v		
Peripheral gas monitoring boreholes BHG02	Methane	1 %v/v	Six monthly	
	Carbon Dioxide	1.6%v/v		
Peripheral gas monitoring boreholes BHG03	Methane	1 %v/v	Six monthly	
	Carbon Dioxide	5.1 %v/v		
Peripheral gas monitoring boreholes BHG04	Methane	14.8%v/v	Six monthly	
	Carbon Dioxide	11.1%v/v		

**Table S3.6 Landfill gas from capped surfaces – limits and monitoring requirements**

Monitoring point Ref. /description	Parameter	Limit (including unit)	Monitoring frequency	Monitoring Standard or method
Permanently capped zone	Average methane flux and total methane emission	Average zone emission rate of 0.001 mg/m <sup>2</sup> /second	Annually	As per LFTGN 07 V2 2010, unless otherwise agreed in writing with NRW.

If a cap has previously been shown compliant and there have been no significant physical changes in the gas management during the year, a detailed walkover survey with an FID can be used to demonstrate that the surface emissions are under control. If this survey shows no change in the pattern of methane emission, it may be used as the annual survey. The values for flux and total methane emissions measured in the previous year may be reported and a fresh flux box survey is not necessary. If the zone remains stable, the results of a full walkover survey may be accepted as the site report for a period of four years before a further quantitative flux box survey is required.

**Table S3.7 Landfill gas – other monitoring requirements**

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method
In waste monitoring boreholes in phase 3	Methane Carbon Dioxide Oxygen Carbon Monoxide Hydrogen sulphide Atmospheric pressure Differential pressure Meteorological Data	Six Monthly	As per LFTGN 03 V2 2010, unless otherwise agreed in writing with NRW.

**Table S3.7 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>
Internal Landfill gas boreholes BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, BH8A, BH9, BH10, BH11, BH12, BH13, BH14, BH15, BH16, /bh17, BH18, BH19, BH20, BH21, BH22 and BH23. GW1, GW2, GW3, GW4, GW5, GW6, GW7, GW8, GW9, GW10, GW11, GW12, GW13 and GW14	Methane Carbon Dioxide Oxygen Carbon Monoxide Atmospheric pressure Differential pressure Meteorological Data	6-monthly	In accordance with Environment Agency Document "Guidance on Management of Landfill Gas" (LFTGN03), unless otherwise agreed in writing with Natural Resources Wales.
Input to LFG Utilisation Compound	Trace gas analysis in accordance with LFTGN04	Annually	As per LFTGN 04 V3 2010, unless otherwise agreed in writing with NRW.

**Table S3.8 Leachate– 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>
LCP1, LCP2, LCP3, LCP4/2, and LCP4/B	Level, pH, EC, NH <sub>4</sub> -N, TON, TOC, BOD, COD, Ca, Mg, K, Na, Cd, Alk, SO <sub>4</sub> , Phenol, Napthalene, mecoprop, toluene.	6-Monthly	As per LFTGN02, February 2003, unless otherwise agreed in writing with NRW.
LW4A, LW5A., LW6A and LW13	Level, Temperature, Cl, pH, EC, NH <sub>4</sub> , Ca, Mg, K, Na, Alkalinity, TOC, SO <sub>4</sub> , TON, phenol, COD, BOD.	Six Monthly	In accordance with Environment Agency document “Guidance on monitoring of landfill leachate, Groundwater and Surface Water (LFTGN02), unless otherwise agreed in writing with Natural Resources Wales.
LCP1, LCP2, LCP3, LCP4/2, and LCP4/B	As six monthly plus: Fe, Pb, Mn, Ni, Zn and Hazardous substance screen	Annually	As per LFTGN02, February 2003, unless otherwise agreed in writing with NRW.
LW4A, LW5A., LW6A and LW13	Cd, Cr, Cu, Fe, Pb, Mn, Ni, Zn and Hazardous Substances	Annually	Appendix 6 of H1 – Annex J3 “Additional guidance for hydrogeological risk assessments for landfills and the derivation of groundwater control levels and compliance limits”

**Table S3.9 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>
BH1, BH15, BH18A, , BH19A, BH19C, BH20A, BH20B, BH21A, BH21B, BH23, BH24, BH27-BH36 and NRA3	Water level, pH, Cl, EC, NH <sub>4</sub> -N, DO, Ca, Mg, K, Na, Cd, Alk, TOC, SO <sub>4</sub> , TON	Six-monthly	As per LFTGN02, February 2003, unless otherwise agreed in writing with NRW.
	Cr, Cu, Fe, Pb, Mn, Ni, Zn, Phenol and Napthalene	Annually	

**Table S3.10 Surface water – 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>
Monitoring points SW1, SW2 and SW3 as shown on drawing HRA02 (August 2005)	pH,	6-monthly	As per LFTGN 02, February 2003, unless otherwise agreed in writing with NRW.
	Temperature,		
	EC		
	DO (field)		
	DO (laboratory)		
	COD		
	NH4		
	Cl		

## Schedule 4 - Reporting

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

**Table S4.1 Reporting of monitoring data**

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Leachate levels As required by condition 3.5.1	LCP1, LCP2, LCP3, LCP4/2, and LCP4/B LW4A, LW5A, LW6A and LW13	Every 12 months	1 January
Emissions to air Parameters as required by condition 3.5.1	Landfill gas flare Landfill gas micro turbine engine	Every 12 months	1 January
Emissions to water Parameters as required by condition 3.5.1	SW1, SW2, SW3	Every 12 months	1 January
Groundwater Parameters as required by condition 3.5.1	BH1, BH15, BH18A, BH18B, BH19A, BH19C, BH20A, BH20B, BH21A, BH21B, BH23, BH24, BH27-BH36 and NRA3 BH1, BH15, BH18A, BH18B, BH19A, BH19C, BH20A, BH20B, BH21A, BH21B, BH23, BH24, BH27-BH36 and NRA3	Every 12 months	1 January
Landfill gas surface emissions Parameters as required by condition 3.5.1	Permanently capped zone	Every 12 months	1 January
Landfill gas lateral migration Parameters as required by condition 3.5.1	BHG01 - BHG04	Every 12 months	1 January
Other Landfill gas monitoring Parameters as required by condition 3.5.1	In waste monitoring boreholes Landfill surface Input to LFG utilisation compound Landfill gas flare	Every 12 months	1 January
Other leachate monitoring Parameters as required by condition 3.5.1	LCP1, LCP2, LCP3, LCP4/2, and LCP4/B LW4A, LW5A., LW6A and LW13	Every 12 months	1 January
Hazardous substance screen	LCP1, LCP2, LCP3, LCP4/2, and LCP4/B LW4A, LW5A., LW6A and LW13	Every 12 months	1 January
A review and where appropriate, revision of the groundwater compliance limits set in Table S3.4 shall be carried out as part of the annual monitoring report. This shall instead be included with the 6-yearly HRA review.		Every 6 years	1 January

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

<b>Leachate:</b>	<b>Cubic metres/year</b>
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<b>Disposed of off site;</b>	
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<b>Disposed of to any onsite effluent treatment plant;</b>	
--	--

<b>Recirculated into the waste mass.</b>	
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<b>Surface water and/ or groundwater:</b>	<b>Cubic metres/year</b>
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<b>Disposed of off site;</b>	
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<b>Disposed of to any onsite effluent treatment plant.</b>	
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<b>Landfill gas:</b>	<b>Normalised cubic metres/year</b>
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<b>combustion in flares;</b>	
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<b>combustion in gas engines;</b>	
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<b>Other methods of gas utilisation.</b>	
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**Table S4.3 Performance Parameters**

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

**Table S4.4 Reporting Forms**

Media/parameter	Reporting Format	Date of Form
Leachate	Form leachate 1 or other reporting format to be agreed in writing with Natural Resources Wales	14/03/07
Air	Form Air 1 or other reporting format to be agreed in writing with Natural Resources Wales	14/03/07
Controlled water	Form Water 1 or other reporting format to be agreed in writing with Natural Resources Wales	14/03/07
Groundwater	Form Groundwater 1 or other reporting format to be agreed in writing with Natural Resources Wales	14/03/07
Sewer	Form Sewer 1 or other reporting format to be agreed in writing with Natural Resources Wales	14/03/07
Landfill gas	Form LFG 1 or other reporting format to be agreed in writing with Natural Resources Wales	14/03/07
Particulate matter	Form Particulate 1 or other reporting format to be agreed in writing with Natural Resources Wales	14/03/07
Landfill topographical surveys and interpretation	Reporting format to be agreed in writing with Natural Resources Wales	



# Schedule 5 - Notification

This page outlines the information that the operator must provide.

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

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

## Part A

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

<b>(a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment</b>	
<b>To be notified Immediately</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>(b) Notification requirements for the breach of a permit condition</b>	
<b>To be notified immediately</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	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

<b>(c) In the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment:</b>	
<b>To be notified immediately</b>	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

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

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

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

\* authorised to sign on behalf of the operator

# Schedule 6 - Interpretation

*“annually”* means once every year.

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

*“Background concentration”* means such concentration of that substance as is present in:

- For emissions to surface water, the surface water quality up-gradient of the site; or
- For emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge; or
- For emissions of landfill gas, the ground or air outside the site and not attributable to the site.

*“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 Landfill Infrastructure.

*“CQA Validation Report”* means the final “as built” construction and engineering details of the Landfill Infrastructure. It must provide a comprehensive record of the construction and must include, where relevant:

- The results of all testing required by the CQA programme - this must include the records of any failed tests with a written explanation, details of the remedial action taken, referenced to the appropriate secondary testing;
- Plans showing the location of all tests;
- “As-built” plans and sections of the works;
- Copies of the site engineer’s daily records;
- Records of any problems or non-compliances and the solution applied;
- Any other site specific information considered relevant to proving the integrity of the Landfill Infrastructure;
- Validation by a qualified person that all of the construction has been carried out in accordance with the Construction Proposals.

*“Landfill Infrastructure”* means any specified element of the:

- permanent capping;
- 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.

*“Liquids”* means any liquid other than leachate within the engineered landfill containment system.

*“LFTGN 05”* means Environment Agency Guidance for monitoring enclosed landfill gas flares.

*“LFTGN 07”* means Environment Agency Guidance on monitoring landfill gas surface emissions.

*“LFTGN 08”* means Environment Agency Guidance for monitoring landfill gas engines.

*“M2”* means Environment Agency Guidance Monitoring of stack emissions to air.

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

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

for the New Cell.

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

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

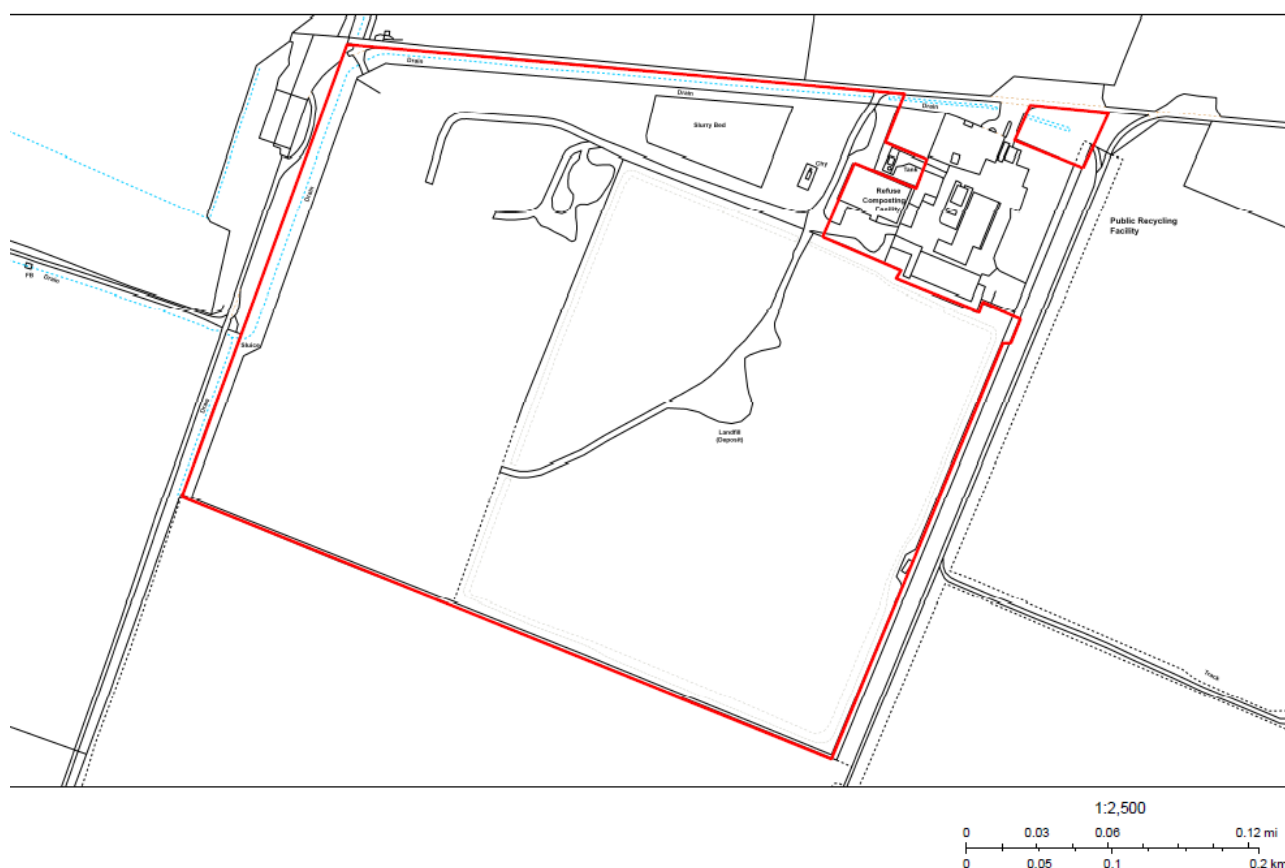
*"Waste code"* means the six digit code referable to a type of waste in accordance with the list of wastes established by Commission Decision 2000/532/EC as amended from time to time (the 'List of Wastes Decision') and in relation to hazardous waste, includes the asterisk.

*"Waste Framework Directive"* or *"WFD"* means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste.

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.

## Schedule 7 - Site plan



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