



**ENVIRONMENT
AGENCY**

Permit with introductory note

Pollution Prevention and Control (England & Wales) Regulations 2000

Nant Newydd Quarry Landfill Site

**J.T. Owen & G.T. Owen
Nant Newydd Quarry Landfill Site
Brynteg
Anglesey
LL78 7JJ**

Permit number

RP3337SE

Nant Newydd Quarry Landfill Site

Permit Number RP3337SE

Introductory note

This introductory note does not form a part of the permit

The main features of the installation are as follows:

Nant Newydd Quarry Landfill Site is an inert landfill in Brynteg, Anglesey, North Wales.

Landfilling of wastes is taking place in an operational limestone quarry, which is within 500m of Anglesey Fens SAC.

The previously deposited wastes were placed directly onto the base and sides of the quarry. The potential impacts from these wastes have been assessed in the application and permit conditions have been imposed where necessary.

Future deposits of waste will have to comply with the requirements of the Landfill Regulations 2002 (as amended). The main requirements that apply here are the stricter inert waste acceptance criteria and the establishment of a geological barrier (e.g. clay) between the waste and the limestone bedrock.

Landfill gas, groundwater and surface water monitoring requirements are included in permit conditions which will ensure that the landfill operation does not pose a risk to the environment.

Status log of the permit		
Detail	Date	Response Date
Application RP3337SE	Received 18 th November 2005	
Response to Schedule 4 Notice	Request dated 3 rd April 2006	Response dated 11 th May 2006
Response to letter requesting further information	Request dated 24 th May 2006	Response dated 27 th July 2006
Results of waste characterisation requested in the Schedule 4 Notice and letter requesting further information.	Requests dated 3 rd April & 24 th May 2006	Responses dated 8 th September, 20 th September, 27 th October & 6 th October 2006
Submission of relevant WAMITAB Certificate	Requests dated 30 th October 2006 & 13 th December 2006	Response dated 20 th December 2006.
Permit determined	30 th March 2007	

Superseded or partially superseded licences/authorisations/consents relating to this installation			
Holder	Reference Number	Date of Issue	Fully or Partially Superseded
W.J. Owen & Sons	EAWML37144	19/07/1996	Fully Superseded

End of Introductory Note

Permit Number RP3337SE

Nant Newydd Quarry Landfill Site

Permit

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

Permit

Permit number

RP3337SE

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 Mrs J.T. Owen & Mr G.T. Owen ("the Operator")**,

whose principal office is

Nant Newydd Quarry

Brynteg

Anglesey

LL78 7JJ

Company registration number **N/A**

to operate an installation at

Nant Newydd Quarry Landfill Site

Brynteg


Anglesey

LL78 7JJ

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

Signed

Date

	30 th March 2007
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Martin Jenkins

Authorised to sign on behalf of the Agency

Permit Number **RP3337SE**

Nant Newydd Quarry Landfill Site

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 30th March 2007 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 the cost of operating the landfill, as far as possible the cost of the financial provision required by condition 1.3.1 and thus the estimated costs for the closure and aftercare of the landfill.

1.4 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 red 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

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.

2.7 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 inert waste, and
 - (c) from 30th October 2007 they are not liquid waste (including waste waters but excluding sludge), and
 - (d) all the relevant waste acceptance procedures set out in schedule 1 of the Landfill Regulations have been completed, and
 - (e) they fulfil the relevant waste acceptance criteria, and
 - (f) they have not been diluted or mixed solely to meet the relevant waste acceptance criteria, and
 - (g) from 30th October 2007 they are wastes which have been treated, except for wastes for which treatment is not technically feasible.
- 2.8.5 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.

- 2.8.6 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.
- 2.8.7 The operator on accepting each delivery of waste shall provide a receipt to the person delivering it.
- 2.8.8 The total quantity of waste that shall be deposited in the landfill shall be limited by the pre-settlement levels shown on drawing ESID4 (dated September 2005).
- 2.8.9 The quantity of waste that is deposited in the landfill in any year shall not exceed the limits in schedule 1 table S1.5.
- 2.8.10 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 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 Closure, aftercare and decommissioning

- 2.9.1 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.

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 4 table S4.1.

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 schedule 4 table S4.2 of 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 arising from the installation set out in schedule 4, table S4.3, 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 for the parameters, specified in the following tables in schedule 4 to this permit:
- (a) Point source emissions specified in table S4.1;
 - (b) Groundwater specified in tables S4.2 and S4.6;
 - (c) Landfill gas specified in tables S4.3 and S4.4; and
 - (d) Surface water specified in table S4.5.
- 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.

3.7 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) sub-surface landfill gas monitoring;
 - (iii) waste types and quantities;
 - (iv) topographical surveys; and
 - (v) 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 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 in relation to this installation and any agreed amendments thereto;
 - (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 annual production/treatment set out in schedule 5 table S5.2.
 - (d) details of any contamination or decontamination of the site which has occurred;
 - (e) the topographical surveys required by condition 3.6.3 other than those submitted as part of a CQA validation report;
 - (f) 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;
 - (g) 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;
 - (h) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey;
 - (i) a summary of the WAC 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 schedule 5 table S5.1;
 - (b) for the reporting periods specified in schedule 5 table S5.1 and using the forms specified in schedule 5 table S5.3; 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

4.3 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 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.
- 4.3.5 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) 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.

4.4 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) (b), The disposal of waste in a landfill.	Landfill for inert waste (landfill classification under the Landfill Regulations 2002)	Receipt, handling, storage and disposal of wastes, consisting of the types and quantities specified in conditions 2.8, as an integral part of landfilling.
Directly Associated Activities		
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.

Table S1.2 Operating techniques

Description	Parts	Date Received
Application	The response to questions B2.1, B2.2, B2.3, B2.5, B2.7, B2.8, B2.9, B2.11 and B3.1 of the Application excluding the answers to the following questions: B2.2.1 to B2.2.6 B2.2.38 B2.2.39 B2.2.41 B2.2.42 B2.2.46 B2.2.47 B2.2.52 B2.2.57 B3.1.2	18 th November 2005
Response to Schedule 4 Notice dated 3 rd April 2006	All Parts	11 th May 2006
Additional information submitted following analysis of existing wastes	All Parts	8 th September 2006
Additional information submitted following analysis of existing wastes	All Parts	20 th September 2006
Additional information submitted following analysis of existing wastes	All Parts	27 th September 2006
Additional information submitted following analysis of existing wastes	All Parts	6 th October 2006
Submission of relevant WAMITAB Certificate	All Parts	20 th December 2006.

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
1.3.1	<p>The Operator shall submit to the Agency for approval, revised Interim Groundwater Monitoring and Contingency Action Plans for the boreholes installed in accordance with pre-operational condition Table S1.4A - reference 3. These plans shall be based on the Environment Agency guidance LFTGN01 'Hydrogeological Risk Assessment for Landfills' and LFTGN02 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'.</p> <p>The plans shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	1 st June 2007
1.3.2	<p>The Operator shall obtain 12 months of new groundwater monitoring data at the frequencies specified for the substances listed in tables S4.2 and S4.6 from all monitoring boreholes required under Table S1.3 reference 1.3.1 and Table S1.4A reference 3.</p> <p>A report shall be submitted to the Agency for approval that:</p> <ul style="list-style-type: none"> fully characterises the groundwater regime at the site. This shall include all groundwater level and quality data; characterises variations in groundwater levels; determines the groundwater flow direction; provides a fully annotated, scaled, contoured plan of groundwater contours within in the Carboniferous Limestone aquifer across the site; provides full characterisation and interpretation of groundwater quality in the inflow and outflow zones. The report shall also include a plan/ drawing indicating all groundwater and other monitoring points; reviews the 12 months of new groundwater monitoring data from the monitoring boreholes; undertakes a detailed review of the Control Levels and Trigger Limits included in this Permit. The review shall include revised post-interim Control Levels and Trigger Limits derived in accordance with Agency guidance document LFTGN01 'Hydrogeological Risk Assessments for landfills'; Considers the need for the installation of additional groundwater monitoring boreholes to demonstrate compliance with the requirements of the Groundwater Regulations and the Landfill Regulations; Includes a revised and updated Site Conceptual Model including detailed, appropriately-scaled and fully annotated cross-section drawing(s) that includes detailed information required under other improvement conditions and pre-operational conditions to fully revise the understanding and interactions of the groundwater regime, the geology and the wastes at the site; Includes revised numerical modelling demonstrating that the site complies with the Groundwater Regulations. This modelling shall include containment engineering that complies with the requirements of the Landfill Regulations and fully justified modelled contaminant Source Terms. <p>The proposals and plans in the report shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	<p>Within 15 months following installation of groundwater monitoring boreholes required under pre-operational condition Table S1.4A reference 3.</p>
1.3.3	<p>Following approval of the report submitted under improvement programme reference 1.3.2, the Operator shall submit to the Agency for approval, revised post-interim Groundwater Monitoring and Contingency Action Plans. These plans shall include all other appropriate information as required under improvement conditions under Table S1.3 reference 1.3.2 and Table S1.4A reference 3.</p> <p>The plans shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	<p>Within 2 months of the completion of improvement programme reference 1.3.2.</p>

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
1.3.4	<p>The Operator shall carry out a survey of all existing gas monitoring boreholes G1, G2 and G3 (as indicated on Drawing LO6 of the existing Working Plan, Appendix 2, submitted with the PPC Application) to demonstrate that they are fit-for-purpose. A report on the results of this survey shall be submitted to the Agency for approval. The survey shall:</p> <ul style="list-style-type: none"> • Confirm the depth / level to which the borehole extends beneath the existing waste/ ground surface; • Confirm that the installation details of these boreholes is adequate, including construction materials, slotted and plain casings, grouting materials with the depths/ elevations of these materials, and borehole security measures; • Confirm whether these boreholes are blocked, and, if blocked, provide mitigation measures; • Propose additional measures to ensure that the existing gas monitoring boreholes are secure; • If the above cannot be fully completed, the operator shall submit proposals to install new gas monitoring points to comply with the requirements of the Landfill Regulations and LF TGN03 'Guidance on the Management of Landfill Gas'. Once approved by the Agency, proposed gas monitoring locations shall be installed / commissioned within the agreed time period, and included immediately into the agreed interim and post-interim revised Landfill Gas Management and Contingency Action plans. <p>The proposals in the report shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	1 st July 2007
1.3.5	<p>The Operator shall submit to the Agency for approval revised interim Landfill Gas Management and Contingency Action plans. These plans shall incorporate detailed written proposals for the design, construction and installation of gas monitoring locations and infrastructure in accordance with the Agency guidance document LF TGN03 'Guidance on the Management of Landfill Gas'. These plans shall ensure that representative sampling of gas concentrations within the waste mass and gas concentrations beyond the site boundary resulting from potential lateral gas migration is completed in accordance with the Landfill Regulations.</p> <p>Gas monitoring locations shall include, as a minimum, an adequate number of locations:</p> <ul style="list-style-type: none"> • within the waste mass to ensure compliance with in-waste monitoring requirements; • beyond the site boundary to ensure compliance with requirements for the monitoring of lateral emissions. <p>Once approved by the Agency, the gas monitoring locations shall be installed / commissioned within the agreed time period, and included immediately into the agreed and revised Landfill Gas Management and Contingency Action plans.</p> <p>These proposals shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	1 st July 2007

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
1.3.6	<p>The Operator shall acquire 12 months of monthly gas monitoring data for all external locations beyond the site boundary required under improvement condition reference 1.3.5 in Table S1.3 (above).</p> <p>A written report shall be submitted to the Agency for approval that:</p> <ul style="list-style-type: none"> • undertakes a review of the Control Levels and Compliance Limits in this Permit; • includes, where justified, revised post-interim Control Levels and Compliance Limits for Agency approval. <p>The proposals in the report shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	<p>Within 15 months of the completion of improvement programme reference 1.3.5.</p>
1.3.7	<p>Following approval of the report submitted under improvement programme reference 1.3.6, The Operator shall submit to the Agency for approval, revised post-interim Landfill Gas Management and Contingency Action Plans. These plans shall include all other appropriate information as required under improvement conditions under Table S1.3 references 1.3.4, 1.3.5 and 1.3.6.</p> <p>The plans shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	<p>Within 2 months of the completion of improvement programme reference 1.3.6</p>
1.3.8	<p>The Operator shall submit to the Agency for approval interim Surface Water Management and Contingency Action Plans. These plans shall be based on the Environment Agency guidance LFTGN02 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'.</p> <p>These plans shall include additional measures to mitigate against the potential for pollution to the adjacent surface water regime. This includes potential pollution arising from runoff that flows through and from the existing waste materials already deposited under the Waste Management Licence, and from liquids accumulated within and pumped from the quarry sump. The need for additional monitoring points shall be reviewed.</p> <p>The proposals shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	<p>1st June 2007</p>
1.3.9	<p>The Operator shall:</p> <ul style="list-style-type: none"> • acquire 12 months of new surface water monitoring data at the frequencies specified in Tables S4.1 and S4.5 for locations W1, W1a, W2, W3 and W4 as indicated on drawing LOG of the existing Working Plan (PPC Application, Appendix 2) and described in Appendix HRA4 and using this new data; • undertake a review of the quality determinands for surface water Control Levels and Compliance Limits where included in this Permit; • provide a report to the Agency including, where justified, revised post-interim Control Levels and Compliance Limits with appropriately justified determinands at each appropriately justified compliance monitoring points for Agency approval. <p>The proposals set out in the report shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	<p>1st July 2008</p>
1.3.10	<p>Following approval of the report submitted under improvement programme reference 1.3.9, the Operator shall submit revised post-interim Surface Water Management and Contingency Action Plans. These plans shall include all other appropriate information as required under improvement condition under Table S1.3 reference 1.3.8 and 1.3.9.</p> <p>These plans shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	<p>Within 2 months of the completion of improvement programme reference 1.3.9.</p>

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
1.3.11	<p>The Operator shall submit a drawing / plan to the Agency confirming all monitoring locations. This drawing / plan shall be scaled, and annotated with clear and consistent nomenclature for all monitoring locations. This drawing / plan shall also include local features such as haulage and other roads, field boundaries, surface water features, indicated map north, ground elevation information, buildings, services & infrastructures, completed / restored parts of the landfill and security fencing details.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the drawing / plan.</p>	1 st July 2007
1.3.12	<p>The Operator shall submit a report to the Agency regarding nitrate concentrations in the surface water regime. For this report, the Operator shall investigate and determine the source(s) of the observed high concentrations of nitrate in the surface water regime. The Operator shall submit the results of this investigation, and include proposals to mitigate against future potentially-polluting releases of nitrate from the site to the surface water regime.</p> <p>The proposals shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	1 st October 2007

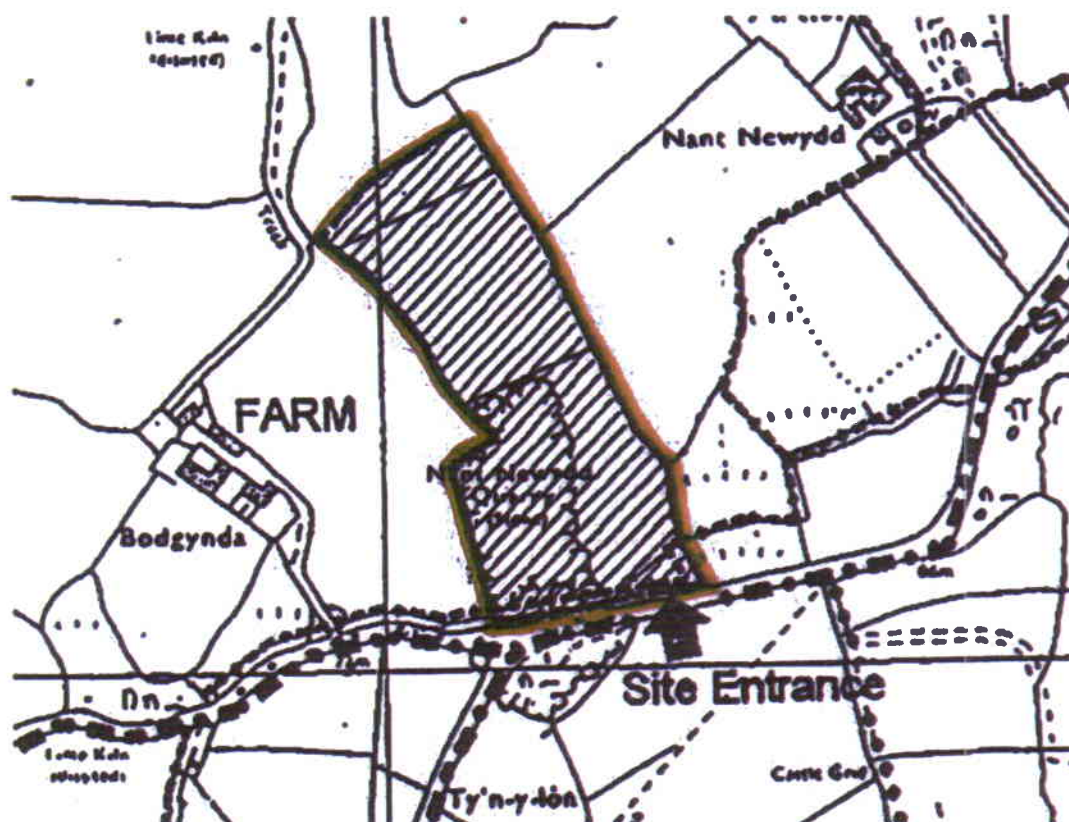
Table S1.4A Pre-operational measures

Reference	Pre-operational measures
1	<p>The Operator shall submit to the Agency for approval details for a Landfill Regulations-compliant engineered geological barrier to be installed onto the quarry base and full height of the sidewalls in any unfilled area where new landfilling is proposed. Where the newly constructed geological barrier is to be constructed adjacent to existing waste deposits, provision shall be made for an extension of the barrier over the lower section of the existing waste slope. The submitted details shall include a plan clearly identifying where engineered basal and sidewall geological barrier is required.</p> <p>A revised Stability Risk Assessment shall be submitted to the Agency for approval. This Stability Risk Assessment shall adequately investigate and include details of the engineered geological barrier installed onto the quarry base and sidewalls. Account shall be taken of any required groundwater control systems and potential groundwater pressures acting behind the constructed geological barrier.</p> <p>Following Agency approval, the operator shall install the geological barrier in accordance with the agreed design. A full construction quality assurance (CQA) programme shall be completed and a CQA Validation Report provided to the Agency following engineering installation prior to waste infilling in accordance with the requirements of section 2.7 of this permit.</p>
2	<p>Prior to construction of the sidewall geological barrier the Operator shall ensure that the basal and sidewall subgrade is stable and free from loose or significantly jointed/fractured rock which may displace under loading from the landfilled waste, thereby resulting in integrity failure of the barrier. Any such remedial measures shall be required and reported through the Construction Quality Assurance procedures for the lining works as detailed above in pre-operational condition reference 1.</p>
3	<p>The Operator shall submit to the Agency for approval written proposals, including timescales, for the installation of groundwater monitoring boreholes. A minimum of four boreholes shall be included. These shall be located and installed within the Carboniferous Limestone aquifer adjacent to the PPC Site Boundary and beyond areas of existing or proposed waste infilling. The boreholes shall not be installed into the existing wastes. The boreholes shall be designed and installed so as to enable adequate monitoring of the groundwater inflow (or hydraulically-upgradient) and outflow (or downgradient) regions to demonstrate that the site fully complies with the requirements of the Groundwater Regulations and the Landfill Regulations. The proposals shall include appropriately detailed construction and installation information, and a suitably scaled and annotated drawing / plan showing the locations and survey levels of all groundwater monitoring installations.</p> <p>The proposals shall include the location and installation details, and be designed and installed in accordance with Environment Agency documents LFTGN01 'Hydrogeological Risk Assessment for Landfills' and LFTGN02 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'.</p> <p>Once approved, the boreholes shall be installed and commissioned within the agreed time period, and included immediately into the agreed Groundwater Monitoring and Contingency Action plans required under Table S1.3 references 1.3.1 and 1.3.3.</p>

Table S1.5 Annual waste input limits

Category	Limit Tonnes/ Year
Inert Waste	5000

Schedule 2 - Site Plan



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Schedule 3 - List of permitted wastes

Wastes that may be accepted without testing at Nant Newydd Quarry Landfill Site

EWG Code	Description	Restrictions
10 11 03	Waste glass based fibrous materials	Only without organic binders
15 01 07	Glass packaging	
17 01 01	Concrete	Selected C&D waste only ^(a)
17 01 02	Bricks	Selected C&D waste only ^(a)
17 01 03	Tiles and ceramics	Selected C&D waste only ^(a)
17 01 07	Mixtures of concrete, bricks, tiles and ceramics	Selected C&D waste only ^(a)
17 02 02	Glass	
17 05 04	Soil and stones	Excluding topsoil, peat; excluding soil and stones from contaminated sites
19 12 05	Glass	
20 01 02	Glass	Separately collected glass only
20 02 02	Soil and stones	Only from garden and parks waste; Excluding top soil, peat

- (a) Selected construction and demolition waste (C & D waste): with low contents of other types of materials (like metals, plastic, organics, wood, rubber, etc). The origin of the waste must be known.

No C & D waste from constructions, polluted with inorganic or organic dangerous substances, e.g. because of production processes in the construction, soil pollution, storage and usage of pesticides or other dangerous substances, etc., unless it is made clear that the demolished construction was not significantly polluted.

No C & D waste from constructions, treated, covered or painted with materials, containing dangerous substances in significant amounts.

Schedule 4 – Emissions and monitoring

Table S4.1 Point source emissions to water (other than sewer) – emission limits and monitoring requirements

Emission point Ref. & Location	Parameter	Source	Limits – maximum (Incl unit)	Limits – other (Incl unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Interim period only:							
Surface water monitoring points W1, W1a, W3 & W4 (as indicated on Drawing LO6 of the existing Working Plan, Appendix 2, and as described in Appendix HRA4 (submitted with the PPC Application)	Suspended Solids	Surface water runoff and surface water courses	628 mg/l	50 mg/l on any 2 consecutive occasions.	Spot Sample	Monthly	To be agreed under the requirements of Table S1.3, condition reference 1.3.8.
	Sulphate		327 mgSO ₄ /l	250 mgSO ₄ /l on any 2 consecutive occasions.			
	Phosphate (as phosphorus)		1.2 mgPO ₄ -P/l	0.1 mgPO ₄ -P/l on any 2 consecutive occasions.			
	Oil & grease		None visible	-			
	Mineral oil (C ₆ -C ₄₀)		0.01 mg/l	-			
	PAH	0.0001 mg/l	-	Quarterly			

Table S4.2 Trigger levels for emissions into groundwater and monitoring requirements

Monitoring point reference	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
Interim period only:					
Groundwater monitoring points to be installed in accordance with Table S1.4A, condition reference 3.	Chloride	15.10 mg/l	Spot Sample	Monthly	In accordance with the application unless otherwise agreed in writing with the Environment Agency
	Sulphate	18.09 mgSO ₄ /l			
	Cadmium	0.0001 mg/l			
	Nickel	0.02 mg/l			
	Zinc	0.1305 mg/l			
	Ammoniacal Nitrogen	0.39 mgNH ₄ -N/l			
	Mineral Oil (C ₆ -C ₄₀)	0.01 mg/l		Quarterly	
	PAH	0.0001 mg/l			
	MTBE	0.01 mg/l			

Table S4.3 Landfill gas in external monitoring boreholes – limits and monitoring requirements

Monitoring point Ref. /description	Parameter	Limit (including units)	Monitoring frequency	Monitoring standard or method
Interim period only:				
Existing gas monitoring boreholes G1 and G2 (as indicated on Drawing LO6 of the existing Working Plan, Appendix 2, submitted with the PPC Application)	Methane	1 %v/v	Monthly unless otherwise agreed in writing with the Agency.	In accordance with the application and the requirements of Table S1.3, condition references 1.3.4 and 1.3.5, unless otherwise agreed in writing with the Environment Agency.
	Carbon Dioxide	1.5 %v/v		
	Oxygen	No limit		
	Atmospheric pressure	No limit		
	Differential Pressure	No limit		
	Temperature	No limit		
New landfill gas monitoring points to be installed beyond the site boundary in accordance with Table S1.3, condition reference 1.3.5.	Meteorological data	No limit		
Note: Limits in the interim-only period are based on assumed background concentrations of 0 %v/v.				

Table S4.4 Landfill gas – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Existing in-waste monitoring borehole G3 (as indicated on Drawing LO6 of the existing Working Plan, Appendix 2, submitted with the PPC Application)	Methane	Monthly, unless otherwise agreed in writing with the Agency.	In accordance with the application and the requirements of Table S1.3, condition reference 1.3.7, unless otherwise agreed in writing with the Environment Agency.	No other specifications.
	Carbon Dioxide			
	Oxygen			
	Atmospheric pressure			
	Differential pressure			
	Temperature			
Landfill gas monitoring points to be installed beyond the site boundary in accordance with Table S1.3, condition reference 1.3.5.	Meteorological Data			

Table S4.5 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
Interim period only:				
Surface water monitoring points W1, W1a, W2, W3 & W4 (as indicated on Drawing LO6 of the existing Working Plan, Appendix 2, and as described in Appendix HRA4 (submitted with the PPC Application))	pH, Oil & Grease, Temperature, Electrical Conductivity, Ammoniacal Nitrogen, Chloride, Dissolved Oxygen, BOD, COD, Total Suspended Solids, TOC, Fe, Cr, Mn, Ni, Pb, Phosphate as P, SO ₄ , Nitrate (for TON) and Nitrite (for TON).	Monthly	In accordance with the application unless otherwise agreed in writing with the Environment Agency.	No other specifications.
	Total Oxidised Nitrogen, Ca, Cd, Hg, Mg, Na, K, Alkalinity (CaCO ₃), Cu, Zn, Mineral oil (C ₆ -C ₄₀), PAH, MTBE.	Quarterly		All List I substances shall be screened to the MRV limits unless otherwise agreed in writing with the Environment Agency. These substances include Cd, Hg, Mineral Oils (C ₆ -C ₄₀) and PAHs, as identified from inert WAC and other testing results, April 2006 and/ or October 2006.
	Full List I screening	Annually		
		Quarterly		
		Annually		

Table S4.6 Groundwater – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Interim period only:				
Groundwater monitoring points to be installed in accordance with Table S1.4A, condition reference 3.	Water level, Temperature, pH, Electrical Conductivity, Dissolved Oxygen, Chloride, Sulphate, Cadmium, Nickel, Zinc, Ammoniacal Nitrogen.	Monthly	Spot Sample	All List I substances shall be screened to the MRV limits unless otherwise agreed in writing with the Environment Agency. These substances include Cd, Hg, Mineral Oils (C ₆ -C ₄₀) and PAHs, as identified from inert WAC and other testing results, April 2006 and/ or October 2006.
	Alkalinity, Arsenic, Calcium, Chromium, COD, Copper, ionic balance, Iron, Magnesium, Manganese, Lead, Mercury, Nitrate (for TON), Nitrite (for TON), Phenols Monohydric, Phosphate as P, Potassium, Selenium, Sodium, TOC, Mineral Oil (C ₆ -C ₄₀), PAH, MTBE.	Quarterly		
	Full List I screening	Annually		
		Quarterly		
		Annually		

Schedule 5 - Reporting

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

Table S5.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to water Parameters as required by condition 3.6.1	Surface water monitoring points W1, W1a, W2 & W4 (as indicated on Drawing LO6 of the existing Working Plan, Appendix 2, and as described in Appendix HRA4 (submitted with the PPC Application))	Quarterly	30 th March 2007
Groundwater Parameters as required by condition 3.6.1	Groundwater monitoring points to be installed in accordance with Table S1.4A, condition reference 3.	Quarterly	30 th March 2007
List I screening		Annually	
Landfill gas lateral migration Parameters as required by condition 3.6.1	Existing gas monitoring boreholes G1 and G2 (as indicated on Drawing LO6 of the existing Working Plan, Appendix 2, submitted with the PPC Application)	Quarterly	30 th March 2007
	New landfill gas monitoring points to be installed beyond the site boundary in accordance with Table S1.3, condition reference 1.3.5.		After date of installation.
Other Landfill gas monitoring Parameters as required by condition 3.6.1	Existing in-waste monitoring borehole G3 (as indicated on Drawing LO6 of the existing Working Plan, Appendix 2, submitted with the PPC Application)	Quarterly	30 th March 2007
	Landfill gas monitoring points to be installed beyond the site boundary in accordance with Table S1.3, condition reference 1.3.5.		After date of installation.
Other surface water monitoring Parameters as required by condition 3.6.1	Surface water monitoring points W1, W1a, W2, W3 & W4 (as indicated on Drawing LO6 of the existing Working Plan, Appendix 2, and as described in Appendix HRA4 (submitted with the PPC Application))	Quarterly	30 th March 2007
List I screening		Annually	

Table S5.2: Annual production/treatment

Surface water and/ or groundwater: Disposed of off site; Disposed of to any onsite effluent treatment plant.	Cubic metres/year
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Table S5.3 Reporting forms

Media/parameter	Reporting Format	Date of Form
Controlled water	Form Leachate 1 or other reporting format to be agreed in writing with the Agency.	30 th March 2007
Groundwater	Form Groundwater 1 or other reporting format to be agreed in writing with the Agency.	30 th March 2007
Landfill gas	Form Air 1 or other reporting format to be agreed in writing with the Agency.	30 th March 2007
Waste Return	Waste Return Form RATS2E	30 th March 2007
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

To be notified within 24 hours of detection	
Date and Time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit

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

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

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
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 installation in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of J.T Owen & G.T. Owen

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-compliances and the solution applied;
- Any other site specific information considered relevant to proving the integrity of the new cell or Landfill Infrastructure;
- Validation by a qualified person that all of the construction has been carried out in accordance with the construction proposals.

"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.

"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 in a way that has a negative effect.

"notify without delay" or **"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