



ENVIRONMENT
AGENCY

Variation Notice with introductory note

Pollution Prevention and Control (England & Wales) Regulations 2000

Great Westwood Landfill
Cemex UK Materials Limited
Fir Tree Hill
Chandlers Cross
Hertfordshire
WD3 4LY

Variation Notice number
YP3233MX

Permit number
ZP3832SQ

Great Westwood Landfill

Permit Number ZP3832SQ

Introductory note

This introductory note does not form a part of the permit

The following notice is issued under regulation 17 of The Pollution Prevention and Control (England and Wales) Regulations 2000 (S.I.2000 No. 1973 (as amended) (the Regulations) to vary the conditions of a permit issued under the Regulations to operate part of an installation. The notice comprises schedule 1 containing conditions to be deleted, schedule 2 conditions to be amended and schedule 3 conditions to be added.

The variation is Agency initiated and has been undertaken as part of a review of the Landfill Permit Template. The original technical decisions made during determination of the application have not been revisited other than the requirement for surface water monitoring and revision of the carbon dioxide limits.

The effect of this variation is to delete all the existing conditions attached to the permit (ZP3832SQ) and to replace these with the set of conditions in line with the new PPC Template Permit for Landfill (Version 5).

There are no substantial changes to the installation as a result of this variation.

A non-technical description of the installation is given in the Permit and is repeated here and updated for the sake clarity, but the main features of the installation are as follows:

The Great Westwood Quarry / Landfill is located 1km to the north east of Chandlers Cross and 5km to the north west of Watford in Hertfordshire. The maximum capacity of the installation is 1.8 million cubic metre of inert waste and using the conversion figure provided by the applicant (1m³ equals 1.5 tonnes) equates to 2.7 million tonnes. The applicant has proposed maximum filling rate of 200,000 tonnes per annum. The site is approximately 12 metres deep and has a plan area of 45,000 square metres.

Operations commenced in September of 2000 under the terms and conditions of waste management licence number WML 80169.

The installation will be operated and managed in accordance with a certified Environmental Management System (EMS) that has been developed in accordance with ISO 14001. The EMS is used to control and mitigate the impact of the site on the wider environment and will be regularly audited to ensure compliance.

The objectives of the PPC and Landfill Regulation will be achieved through the use of the waste acceptance and control procedures, environmental monitoring procedures and operational procedures to control environmental nuisance. An assessment of the European Sites that could be affected by the landfill installation has been undertaken and none were found. The assessment has highlighted that there are two SSSI located within 2km of the site. The type of waste accepted at the installation, with control measures contained in the site operational plan show there should be a negligible impact on these sites.

Monitoring of emissions of landfill gas and emission to groundwater is undertaken from six boreholes located around the perimeter of the site. These boreholes were installed since prior to the issue of the waste management licence and are of the combined type (gas and groundwater). Two of these are up-gradient and at least two of the other four are down gradient to comply with the relevant Landfill Technical guidance notes. Trigger levels for Groundwater have been set at the four downstream boreholes. These levels for groundwater have been set using the knowledge of the Area ground water team and data supplied, assimilated before and after the issue of the WML. As inert waste does not generate leachate no monitoring will be required.

The site is located above the water table, with the base of the installation consisting of sand and gravel deposits overlying chalk, which is defined as a major aquifer. The nearest public water supply is 1200 metres away from the centre of the site. Through the Conceptual model contained in the ESID report and the hydrogeological risk assessment, which has used available on site data, it has been determined that no List 1 substances are likely to be present in the groundwater.

Three Rivers District Council is the responsible local authority, with the jurisdiction of the waste planning authority residing with Hertfordshire County Council, who determined the planning application number 8/0503-90(122) permission 8 October 1999.

Status Log of the Permit		
Detail	Date	Response Date
Application ZP3832SQ	Received 31/03/2005	
Duly made	27/04/2007	
Response to Schedule 4 request for information	Request dated 20/05/2005	Response received 13/06/2005
Response to Schedule 4 request for information	Request dated 27/09/2005	Response received 03/10/2005
Request to extend determination	Request dated 10/08/2005	Response received 22/09/2005
Permit determined	08/11/2005	
Request by Operator to amend CO ₂ trigger levels WWD/IPPC/LFG/Re02	11/10/2006	
Variation Determined (YP3233MX)	29/10/2007	

Superseded or partially superseded licences/authorisations/consents relating to this installation			
Holder	Reference Number	Date of Issue	Fully or Partially Superseded
RMC Aggregates (Greater London) Limited	EAWML 80169	08/09/2000	Fully

End of introductory Note

Variation Notice

Pollution Prevention and Control
(England and Wales) Regulations 2000



**ENVIRONMENT
AGENCY**

Variation Notice

Permit number

ZP3832SQ

Variation Notice number

YP3233MX

The Environment Agency in exercise of its powers under regulation 17 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (S.I. 2000 No. 1973) (as amended), hereby varies the permit (ZP3832SQ) held by you.

Cemex UK Materials Limited ("the Operator"), whose registered office is

**Cemex House
Coldharbour Lane
Thorpe
Egham
Surry
TW12 8TD**

Company registration number 4895833

to operate an installation at

**Great Westwood Landfill
Fir Tree Hill
Chandlers Cross
Hertfordshire
WD3 4LY**

to the extent set out in schedules 1 to 3 of this variation notice.

This notice shall take effect from 30/10/2007 at 00.01 hours

Signed	Date
	29/10/2007

Roy Thompson, Team Leader Bedford Strategic Permitting Group

Authorised to sign on behalf of the Environment Agency

SCHEDULE 1 - CONDITIONS TO BE DELETED

All existing conditions and schedules for permit ZP3832SQ

SCHEDULE 2 - CONDITIONS TO BE AMENDED

No conditions to be amended.

SCHEDULE 3 - CONDITIONS TO BE ADDED

The following conditions and schedules are added to the permit:

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 08/11/2005 shall be maintained by the operator throughout the subsistence of this permit and the operator shall produce evidence of such provision whenever required by 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 the estimated costs for the closure and aftercare of the landfill.

1.4 Site security

1.4.1 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 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

There are no pre-operational conditions in this permit.

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) 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) they are wastes which have been treated, except for wastes for which treatment is not technically feasible.
- 2.8.2 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.

- 2.8.3 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.
- 2.8.4 The operator on accepting each delivery of waste shall provide a receipt to the person delivering it.
- 2.8.5 The total quantity of waste that shall be deposited in the landfill shall be limited by the pre-settlement levels shown on Drawing ESID5.
- 2.8.6 The quantity of waste that is deposited in the landfill in any year shall not exceed the limits in schedule 1 table S1.4.
- 2.8.7 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

No condition applies.

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 and any other actions 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) the specification and as built drawings of the basal, sidewall and capping engineering systems

4.1.2. Any records required to be made by this permit shall be supplied to the Agency within 14 days where the records have been requested in writing by the Agency.

4.1.3 All records required to be held by this permit shall be held on site and shall be available for inspection by the Agency at any reasonable time, other than records relating to condition 3.6 of this Permit, which shall be kept at CEMEX House, Coldharbour Lane, Thorpe, Egham, Surrey, TW20 8TD. Records kept under condition 3.6 shall be available for inspection on site on the next working day following a request by Agency.

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 The Agency shall be given at least 14 days notice before implementation of any part of the site closure plan in respect of any activities other than the disposal of waste in the landfill.
- 4.3.5 Where the Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Agency when the relevant monitoring is to take place. The operator shall provide this information to the Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.6 The Agency shall be notified within 7 days of any changes in technically competent management and the name of any incoming person together with evidence that such person has the required technical competence.
- 4.3.7 The Agency shall be provided, within 14 days of the operator or any relevant person being convicted of a relevant offence, (unless such information has already been notified to the Agency), with details of the nature of the offence, the place and date of conviction, and the sentence imposed.
- 4.3.8 The Agency shall be notified within 14 days of the operator and/or any relevant person lodging an appeal against a conviction for any relevant offence and of the outcome when the appeal is decided.
- 4.3.9 The Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- (a) any change in the operator's trading name, registered name or registered office address;
 - (b) any change to particulars of the operator's ultimate holding company (including details of an ultimate holding company where an operator has become a subsidiary); and
 - (c) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

4.4 Interpretation

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

Schedule 1 - Operations

Table S1.1 Activities		
Activity listed in schedule 1 of the PPC Regulations	Description of specified activity	Limits of specified activity
Section 5.2 Part A(1) (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.

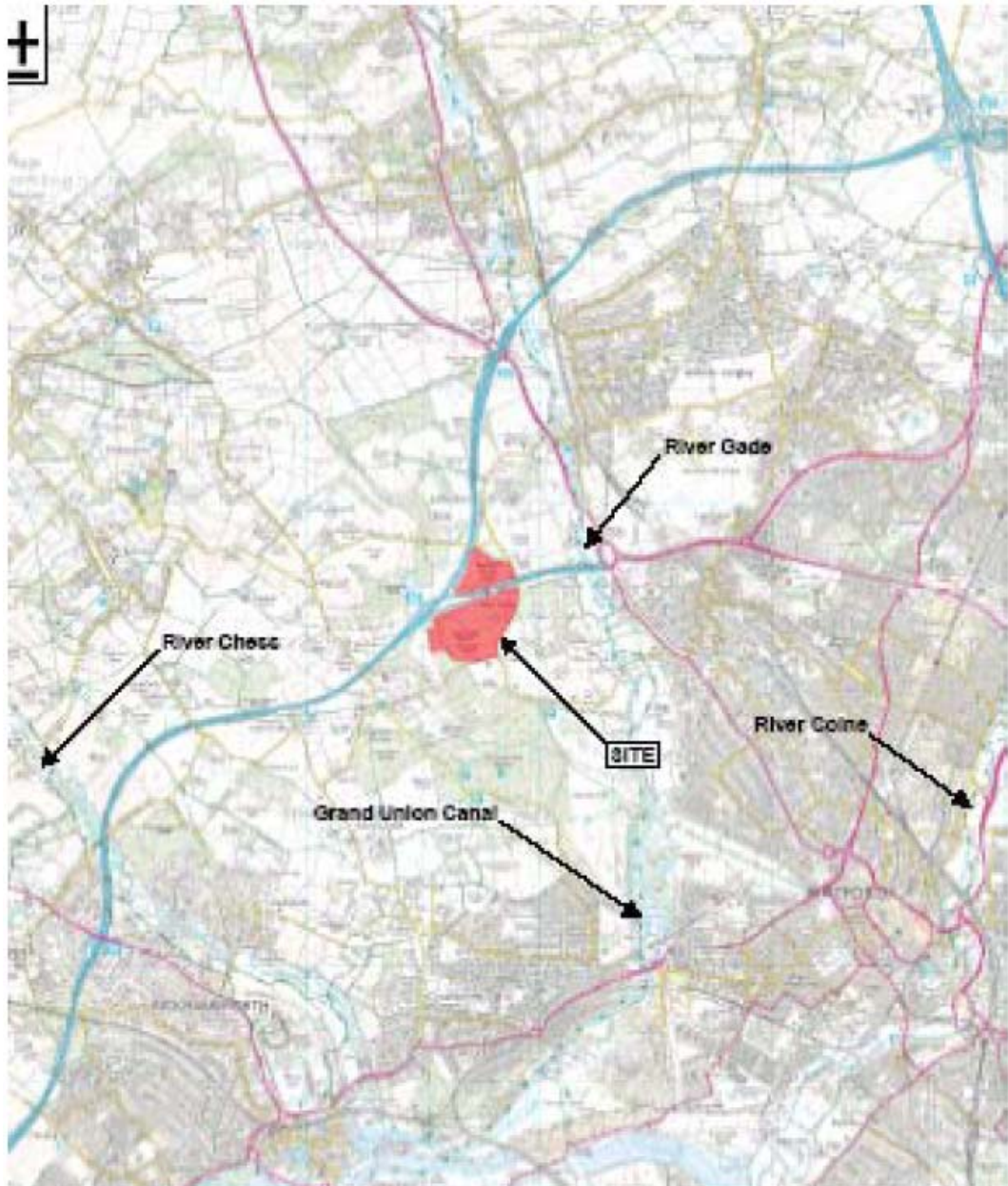
Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The response to questions 2.1, 2.2, 2.3, 2.4 and 2.5 given in part B of the Application and the documents referred to in the response including the Site operating plan {excluding section B2.2.4 and B2.1.8 given in Report WWD IPPC Volume 2 Section 3.2 Table 4}.	30/03/2005
	Response to request for information made on 27/09/2005 regarding the trigger levels for extra parameters for groundwater monitoring. Revision of answer to question 2.2.42 of the application form.	03/10/2005
Letter to the Agency from ARUP	The letter to the Agency dated the 2 nd October 2006 regarding the landfill gas monitoring. Revision of answer to question 2.2.43 of the application form.	11/10/2006

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
1	<p>The operator shall submit to the Agency for written approval a formalised surface water monitoring plan in line with the Agency's guidance for monitoring landfills (LFTGN02 <i>Guidance on Monitoring of Landfill. Leachate, Groundwater and. Surface Water</i>).</p> <p>The report should detail but not be exclusive to the monitoring locations, the monitoring regime and the surface water assessment and compliance levels and shall ensure that the requirements of the Landfill Regulation with regard to monitoring of surface water upstream and downstream of the landfill are complied with.</p> <p>Once approved the surface water monitoring plan shall form part of the site's operational procedures and the monitoring points, schedules and compliance levels shall form part of the relevant tables in Schedule 4.</p>	30 April 2008

Table S1.4 Annual waste input limits	
Category	Limit Tonnes/ Year
Inert Waste	200,000

Schedule 2 - Site plan

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Schedule 3 - List of permitted wastes

Wastes that may be accepted without testing at a landfill for inert waste

EWC 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

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	Limit (incl unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
As per improvement condition 1	As per improvement condition 1	As per improvement condition 1	As per improvement condition 1	As per improvement condition 1	As per improvement condition 1	As per improvement condition 1

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	
WG02, WG04 and WG05 (Previously WG02P1, WG04P1 and WG05P1)	Chloride	100mg/l	Spot Sample	Quarterly	To be agreed in writing with the Environment Agency	
WG03 (Previously WG03P1)	Chloride	150mg/l				
WG02, WG03, WG04 and WG05 (Previously WG02P1, WG03P1, WG04P1 and WG05P1)	Calcium	500mg/l				
WG02, WG03, WG04 and WG05 (Previously WG02P1, WG03P1, WG04P1 and WG05P1)	Ammoniacal Nitrogen	0.5mg/l				
WG02, WG03, WG04 and WG05 (Previously WG02P1, WG03P1, WG04P1 and WG05P1)	Sulphate	100mg/l				
WG02, WG03, WG04 and WG05 (Previously WG02P1, WG03P1, WG04P1 and WG05P1)						

Table S4.3 Landfill gas in external monitoring boreholes – limits and monitoring requirements				
Monitoring point Ref./ Description	Parameter	Trigger %v/v	Monitoring frequency	Monitoring standard or method
Perimeter monitoring boreholes*1 GM02, GM03, WG01, WG02, WG03, WG04, WG05, WG06	Methane	1%	Monthly during operational phase, Quarterly during post closure.	In accordance with the Agency Guidance on the Management of Landfill Gas, LFTGN03
Perimeter monitoring boreholes*1 & *2 GM02, GM03, WG01, WG02, WG03, WG04, WG05, WG06	Carbon Dioxide	7.5% 8.7% 7.1% 6.1% 8.9% 11.6% 16.6% 6.7%		

*1 these are the new/ revised borehole numbers as supplied in the ARUP report WWD/IPPC/LFG/Re02

*2 each borehole has a set trigger level as supplied in the ARUP report WWD/IPPC/LFG/Re02

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
All in waste monitoring boreholes as Shown on drawing number ESID 8 and Numbered GF1 to GF7 inclusive.	Methane Carbon Dioxide Oxygen Atmospheric pressure Differential Pressure Meteorological data	Monthly until completion Quarterly during post closure	To be agreed in writing with the Environment Agency	None
Perimeter monitoring boreholes WG01, WG02, WG03, WG04, WG05, WG06, GM02 and GM03 (Previously WG1/95 , WG2/95 , WG3/95, WG4/95 WG5/95 , WG6/95 PG1/95 , PG2/95 , PG3/95)	Oxygen Atmospheric pressure	Monthly during operational Phase Quarterly during post closure	To be agreed in writing with the Environment Agency	None

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
As per improvement condition 1	As per improvement condition 1	As per improvement condition 1	As per improvement condition 1	As per improvement condition 1

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
Perimeter monitoring boreholes Quarterly WG01, WG02, WG03, WG04, WG05 and WG06 (Previously WG1/95 , WG2/95 , WG3/95, WG4/95, WG5/95 and WG6/95) as detailed in Table 1 of Section 2.1 of the Site Monitoring Plan, Report reference WWD IPPC Volume 3	Water level, pH, EC, NH4-N, TON (oxidised-N), TOC, Ca, Mg, Na, K, Alk, SO ₄ , Cl and Fe.	Monthly	To be agreed in writing with the Environment Agency	None
	Mn, Cd, Cr, Cu, Ni, Pb and Zn	Annually	To be agreed in writing with the Environment Agency	None
Any new or replacement Boreholes	Water level, pH, EC, NH4-N, TON (oxidised-N), TOC, Ca, Mg, Na, K, Alk, SO ₄ , Cl and Fe.	Monthly	To be agreed in writing with the Environment Agency	None
	Mn, Cd, Cr, Cu, Ni, Pb and Zn	Annually	To be agreed in writing with the Environment Agency	None

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	As per Improvement Condition 1	As per Improvement Condition 1	30/10/07 or as otherwise agreed in writing with the Environment Agency
Groundwater Parameters as required by condition 3.6.1	WG01 to WG06	Annually	30/10/07 or as otherwise agreed in writing with the Environment Agency
Landfill gas lateral migration Parameters as required by condition 3.6.1	Perimeter monitoring boreholes, GM02, GM03, WG01, WG02, WG03, WG04, WG05, WG06*1	Quarterly	30/10/07 or as otherwise agreed in writing with the Environment Agency
Other Landfill gas monitoring Parameters as required by condition 3.6.1	Perimeter monitoring boreholes, GM02, GM03, WG01, WG02, WG03, WG04, WG05, WG06*1	Annually	30/10/07 or as otherwise agreed in writing with the Environment Agency
Other surface water monitoring Parameters as required by condition 3.6.1	As per Improvement Condition 1	As per Improvement Condition 1	30/10/07 or as otherwise agreed in writing with the Environment Agency

*1 these are the new/ revised borehole numbers as supplied in the ARUP report WWD/IPPC/LFG/Re02

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

Table S5.3 Reporting forms		
Media/parameter	Reporting Format	Date of Form
Controlled water	Form water 1 or other reporting format to be agreed in writing with the Agency	
Groundwater	Form groundwater 1 or other reporting format to be agreed in writing with the Agency	
Landfill gas	Form Gas 1 or other reporting format to be agreed in writing with the Agency	
Waste Return	Waste Return Form RATS2E	
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	

Drafting Note: The time periods for notification should be based on the site specific risk and deviations from 24 hours should be justified.

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 Cemex UK Materials Limited

Schedule 7 - Interpretation

“*Accident*” means an accident that may result in pollution.

“*Annually*” means once every Year.

“*Application*” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under schedule 4 to the PPC Regulations

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

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

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

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

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

- The results of all testing required by the CQA programme - this must include the records of any failed tests with a written explanation, details of the remedial action taken, referenced to the appropriate secondary testing;
- Plans showing the location of all tests;
- “As-built” plans and sections of the works;
- Copies of the site engineer’s daily records;
- Records of any problems or non-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, List of Wastes (Northern Ireland) Regulations 2005 (as amended), or The Special Waste Amendment (Scotland) Regulations 2004 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