



**ENVIRONMENT
AGENCY**

Permit with introductory note

Pollution Prevention and Control (England & Wales) Regulations 2000

Cranebrook Quarry Landfill

Walsall Concrete Ltd
A5 Watling Street
Brownhills
Staffordshire
WS14 0BD

Permit number

AP3636MD

Cranebrook Quarry Landfill

Permit Number AP3636MD

Introductory note

This introductory note does not form a part of the permit

The main features of the installation are as follows.

This is a permit to operate a landfill situated near A5, Watling Street, Brownhills, Staffordshire (Grid reference SK 407030 306450). The Operator of this landfill is Walsall Concrete Limited. The site has valid planning permission for the infill of the quarry with inert waste.

Cranebrook Quarry Landfill site is an operational quarry for extraction and sale of sand. The area covers approximately 3.6ha, with 1.75 ha already extracted. This area forms Phase 1 of landfilling. A further 1.85 ha will be extracted in the future, east of Phase 1 to form Phase 2 of landfilling.

Phase 1 is underlain by Wildmoor Sandstone Formation and Phase 2 by Wildmoor Sandstone and Bromsgrove Sandstone Formation. The whole site requires an engineered geological barrier and this will be constructed using imported material to produce a 1 metre thick barrier with a permeability of 1×10^{-7} m/s.

Groundwater flow is north westerly and there is 2-5 metre unsaturated zone beneath the site. To ensure the integrity of the site groundwater monitoring is required in 5 boreholes.

Crane Brook runs 10 metres away from the installation boundary and therefore surface water monitoring is a requirement of the permit.

The waste disposed of at Cranebrook Quarry Landfill do not contain any biodegradable matter and therefore landfill gas generation is unlikely. However, gas monitoring is required to ensure that the site is only receiving waste acceptable for inert landfill. This is also ensured by the waste acceptance criteria and testing for an inert landfill.

The waste has the potential to generate dust emissions, but this is minimised by dampening and other measures. The site is also surrounded by hills and trees that make effective dust screening. Dust is monitored on a daily basis.

There are no Habitats or SSSI sites within 2 km of the site.

Status log of the permit

Detail	Date	Response Date
Application AP3636MD	Received 23/07/07	
Response to request for information	Request dated 10/01/08	Response dated 23/01/08
	Request dated 06/02/08	Response dated 06/02/08
Request to extend determination	Request dated 29/11/07	Request accepted 04/12/07
	Request dated 04/04/08	Request accepted 07/04/08
Permit determined	19/06/08	

End of Introductory Note

Permit

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

Permit

Permit number
AP3636MD


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 **Walsall Concrete Ltd** ("the Operator"),

whose Registered Office is
Friary Court
St John Street
Lichfield
Staffordshire
WS13 6NU

Company registration number 5851648

to operate an installation at
Cranebrook Quarry Landfill
A5 Watling Street
Muckley Corner
Brownhills
Staffordshire
WS14 0BD

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

Signed	Date
	19 June 2008

Tom Ruffell - Permitting Team Leader, National Permitting Service, Nottingham

Authorised to sign on behalf of the Agency

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 19 June 2008 shall be maintained by the operator throughout the subsistence of this permit and the operator shall produce evidence of such provision whenever required by the Agency.
- 1.3.2 The operator shall ensure that the charges it makes for the disposal of waste in the landfill cover all of the following:
- (a) the costs of setting up and operating the landfill;
 - (b) the costs of the financial provision required by condition 1.3.1; and
 - (c) the estimated costs for the closure and aftercare of the landfill.

1.4 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 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

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 ESID4.
- 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.
- 2.9.2 The operator shall maintain a site closure plan which demonstrates how the activities can be decommissioned to avoid any pollution risk and return the site of operation to a satisfactory state.
- 2.9.3 The operator shall carry out and record a review of the site closure plan at least every 4 years.
- 2.9.4 The site closure plan (or relevant part thereof) shall be implemented on final cessation or decommissioning of the activities or part thereof.

2.10 Site protection and monitoring programme

- 2.10.1 The operator shall, within 2 months of the issue of this permit, submit a Site Protection and Monitoring Programme.
- 2.10.2 The operator shall implement and maintain the Site Protection and Monitoring Programme in relation to all areas which will not comprise permanent deposits of waste and shall carry out and record a review of it at least every 4 years commencing from the date the Site Protection and Monitoring Programme was received.

3. Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land.

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 parameters and monitoring points set out in schedule 4 table S4.1 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, tables S4.2, shall not be exceeded.

3.4 Odour

- 3.4.1 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) Groundwater specified in tables S4.1 and S4.3; and
- (b) Landfill gas specified in tables S4.2;

3.6.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.6.3 A topographical survey of the site referenced to Ordnance Datum shall be carried out:

- (a) annually, and
- (b) prior to the disposal of waste in any new cell or new development area of the landfill, and
- (c) following closure of the landfill or part of the landfill.

The topographical survey shall be used to produce a plan of a scale adequate to show the surveyed features of the site.

3.6.4 Within 6 months of the issue of this permit (unless otherwise agreed in writing by the Agency) the site reference data identified in the Site Protection and Monitoring Programme shall be collected and submitted to the Agency.

4. Information

4.1 Records

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

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) the results of groundwater monitoring;
 - (ii) the Site Protection and Monitoring Programme;
 - (iii) sub-surface landfill gas monitoring;
 - (iv) waste types and quantities;
 - (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 held on site and shall be available for inspection by the Agency at any reasonable time.

4.2 Reporting

- 4.2.1 A report or reports on the performance of the activities over the previous year shall be submitted to the Agency by 31 January (or other date agreed in writing by the Agency) each year. The report(s) shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with this permit against the relevant assumptions, parameters and results in the risk assessments submitted with the Application;
 - (b) where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;
 - (c) details of any contamination or decontamination of the site which has occurred;
 - (d) the topographical surveys required by condition 3.6.3 other than those submitted as part of a CQA validation report;
 - (e) the volumetric difference (reported in cubic metres) between the most recent topographical survey and the previous annual topographical survey i.e. the additional volume of the landfill void that is occupied by waste;
 - (f) an assessment of the settlement 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;
 - (g) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey;
 - (h) a 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 S5.2;
 - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.3 A summary report of the waste types and quantities accepted and removed from the site shall be made for each quarter. It shall be submitted to the Agency within one month of the end of the quarter and shall be in the format required by the Agency.

- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding 4 years, submit to the Agency, within 6 months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.
- 4.2.5 All reports and notifications required by the permit shall be sent to the Agency using the contact details supplied in writing by the Agency
- 4.2.6 The results of reviews and any changes made to the Site Protection and Monitoring Programme shall be reported to the Agency, within 1 month of the review or change.

4.3 Notifications

- 4.3.1 The Agency shall be notified without delay following the detection of:
- (a) any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution;
 - (b) the breach of a limit specified in the permit;
 - (c) any significant adverse environmental effects.
- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 6 to this permit within the time period specified in that schedule.
- 4.3.3. Prior written notification shall be given to the Agency of the following events and in the specified timescales:
- (a) as soon as practicable prior to the permanent cessation of any of the permitted activities;
 - (b) as soon as practicable prior to the cessation of the landfill disposal activities, for a period likely to exceed 1 month; and
 - (c) at least 7 days prior to the resumption of the landfill disposal activities after a cessation notified under (b) above.
- 4.3.4 The Agency shall be given at least 14 days notice before 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.
Directly Associated Activity		
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 2.1 and 2.2 of the Application excluding sections B2.1.8, B2.2.4, B2.2.5 and B2.2.35-B2.2.38 and excluding first bullet point of section 2.2.2 'Basal Lining System' and second bullet point of section 2.2.3 'Side Slope Lining System' of ESID/Cranebrook report	23/07/07
Response to request for information	The response to the Environment Agency's letter dated 10/01/08 requesting further information excluding the answer to question 3. The response to the Environment Agency's letter dated 06/02/08 requesting further information excluding the answer to question 2.	25/01/08 06/02/08

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IC1	The Operator shall submit to the Environment Agency a revised monitoring plan to show the following: i) The new proposed location of groundwater monitoring point BH4, downgradient of Phase 1, in accordance with the Enviroarm Ltd letter dated 23 January 2008 (ref: ARM/SCM/Cranebrook/ppc1.2008) ii) The location and identification of upstream and downstream surface water monitoring points in the Crane Brook	19/07/08
IC2	The Operator shall install groundwater monitoring boreholes BH4 and BH5 as identified on the revised groundwater monitoring plan submitted under the IC1 and on Drawing Number 10 entitled 'Local Hydrogeology and Hydrology' respectively. On completion, the Operator shall submit details to include but not to be limited to the following: Borehole design, depth, log, construction detail and headwork detail	19/09/08
IC3	The Operator shall submit a surface water monitoring programme including parameters and frequency for monitoring in the Crane Brook to the Environment Agency for approval.	19/07/08
IC4	A written report shall be submitted to the Environment Agency for approval. The report shall contain a review of all groundwater monitoring data and proposals for revised control and trigger levels in accordance with Agency Guidance document 'LFTGN01 – Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control and Trigger Levels'. Groundwater trigger levels shall be proposed for all relevant downgradient boreholes, including BH1, BH3 and the new BH4 installed under the IC2.	19/06/09

Table S1.4 Annual waste input limits

Category	Limit Tonnes/ Year
Inert Waste	25 000

Schedule 2 - Site plan



A plan is taken from Cranebrook Quarry Landfill PPC application plan DESID 2A titled 'Installation Boundary'

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

- (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.

Wastes that may be accepted following testing at a landfill for inert waste

EWC Code	Description	Restrictions
10 12 08	Waste ceramics, bricks, tiles and construction products (after thermal processing)	Limit values for leaching and for organic parameters ^(b)
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	Limit values for leaching and for organic parameters ^(b)
01 01 01	Wastes from mineral metalliferous excavation	Limit values for leaching and for organic parameters ^(b)
01 01 02	Wastes from mineral non-metalliferous excavation	Limit values for leaching and for organic parameters ^(b)
01 04 08	Waste gravel and crushes rocks other than those mentioned in 01 04 07	Limit values for leaching and for organic parameters ^(b)
01 04 09	Waste sand and clays	Limit values for leaching and for organic parameters ^(b)
19 12 09	Minerals (for example sand and stones)	Limit values for leaching and for organic parameters ^(b)

- (b) In accordance with Table 2 and Table 3 of the Appendix 1 of the Landfill (England and Wales) (Amendment) Regulations 2004

Schedule 4 – Emissions and monitoring

Table S4.1 Trigger levels for emissions into groundwater and monitoring requirements

Monitoring point reference	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
BH1 as identified on Drawing Number 10 entitled 'Local Hydrogeology and Hydrology'	Ammoniacal-nitrogen	0.5 mg/l	Spot Sample	Quarterly	In accordance with Agency Guidance LFTGN 02 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'
	Chloride	20 mg/l			
	Sulphate	69 mg/l			
	Zinc	0.7 mg/l			
	Cadmium	0.1 µg/l			
BH3 as identified on Drawing Number 10 entitled 'Local Hydrogeology and Hydrology'	Ammoniacal-nitrogen	0.5 mg/l			
	Chloride	43 mg/l			
	Sulphate	93 mg/l			
	Zinc	0.03mg/l			
	Cadmium	0.1 µg/l			

Table S4.2 Landfill gas in monitoring boreholes – limits and monitoring requirements

Monitoring point Ref. /description	Parameter	Limit (including units) ^{*)}	Monitoring frequency	Monitoring standard or method
BH1, BH2, BH3 as identified on Drawing Number 10 entitled 'Local Hydrogeology and Hydrology'	Methane	1 %v/v	Quarterly	In accordance with Agency Guidance LFTGN03 – 'Guidance on the Management of Landfill Gas'
	Carbon Dioxide	1.5 %v/v		
	Oxygen	no limit		
	Atmospheric pressure	no limit		
	Differential Pressure	no limit		
	Temperature	no limit		
	Meteorological data			

* - The limits specified take account of the agreed background concentrations as detailed in Cranebrook Quarry Landfill permit application Volume 1: risk assessments

Table S4.3 Groundwater – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
BH1, BH2, BH3 as identified on Drawing Number 10 entitled 'Local Hydrogeology and Hydrology'	pH, Temperature, EC, Ammoniacal-nitrogen, Chloride, Sulphate	Quarterly	In accordance with Agency Guidance LFTGN 02 'Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water'	
	Alkalinity, Sodium, Potassium, Calcium, Magnesium, Iron, Manganese, Cadmium, Copper, Chromium, Lead, Nickel, Zinc, Groundwater level			
	List 1 GCMS scan	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
Groundwater Parameters as required by condition 3.6.1	BH1, BH2, BH3 BH4, BH5	Every 3 Months	19/06/08 From the date of installation of BH4 and BH5
Other Landfill gas monitoring Parameters as required by condition 3.6.1	BH1, BH2, BH3	Every 3 months	19/06/08

Table S5.2 Reporting forms

Media/parameter	Reporting Format	Date of Form
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	

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 *Walsall Concrete Ltd*

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