



ENVIRONMENT
AGENCY

Permit with introductory note

Pollution Prevention and Control (England & Wales) Regulations 2000

East Winch Landfill Site

Middleton Aggregates Limited
Mill Drove
Blackborough End
Kings Lynn
Norfolk
PE32 1SW

Permit number

XP3333LX

East Winch Landfill Site

Permit Number XP3333LX

Introductory note

This introductory note does not form a part of the Permit

The main features of the installation are as follows:

The site is located to the south west of the village of East Winch, approximately 7Km south east of Kings Lynn at National Grid Reference TF6814 1569. East Winch Landfill is owned and operated by Middleton Aggregates Limited and the site has planning permission for Carstone mineral extraction and progressive restoration by way of importation of inert waste only.

The site covers an area of approximately 10.9 hectares (ha) with landfilling progressing in an easterly direction through phases 1 to 5. Current landfilling operations are predominantly taking place in phases 1 and 2. Although the maximum quantity of waste input to the site applied for is 75000 tonnes per year, current input rates are in the order of 30 to 40,000 tonnes per year with an estimated 50 to 60 years of void space remaining. Input rates are however expected to increase in future which will have an impact on the sites life span with regard to available void space.

Environmental impacts from landfill gas generation at the site are anticipated to be limited due to the inert nature of waste inputs at the site. Precautionary monitoring points are however proposed within the waste mass in order to determine whether or not more comprehensive landfill gas management measures will be required.

Similarly, there are no leachate management proposals for the site as the expected low permeability and inert nature of incoming waste streams, controlled by a robust waste acceptance procedure for the site, will not result in unacceptable levels of leachate generation.

The installation of groundwater monitoring boreholes are required as part of the permit requirements to assess background concentrations deriving from the historic landfilled areas or potential perched groundwater.

Status Log of the Permit

Detail	Date	Response Date
Application XP3333LX	Received 08/11/05	
Response to request for information	Request dated 08/02/06	Response dated 27/02/06
Request to extend determination	Request dated 30/06/06	Request accepted 01/07/06
Permit determined	16 August 2006	
Permit varied		

Superseded or Partially Superseded Licences/Authorisations/Consents relating to this installation

Holder	Reference Number	Date of Issue	Fully or Partially Superseded
Middleton Aggregates Limited	NFK/LS/055/0	24/01/1991	Fully superseded
Middleton Aggregates Limited	NFK/LS/055/1	07/02/2000	Partially superseded

Other existing Licences/Authorisations/Registrations relating to this site

Holder	Reference Number	Date of issue
Middleton Aggregates Limited	NFK/LS/055/1	07/02/2000

End of Introductory Note

Permit

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

Permit

Permit number

XP3333LX

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

Middleton Aggregates Limited (“the Operator”),

of/ whose Registered Office (or principal office) is

Mill Drove, Blackborough End, Kings Lynn, Norfolk PE32 1SW

Company registration number 2007160

to operate *an installation* at

East Winch Landfill Site

Mill Drove

Blackborough End


Kings Lynn

Norfolk, PE32 1SW

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

Signed

Date

	16 August 2006
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Gavin Waite –Permitting Team Leader, Bedford Strategic Permitting Group

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 16/08/2006 shall be maintained by the Operator throughout the subsistence of this Permit and the Operator shall produce evidence of such provision whenever required by the Agency.
- 1.3.2 The Operator shall ensure that the charges it makes for the disposal of waste in the landfill cover all of the following:
- (a) the costs of setting up and operating the landfill;
 - (b) the costs of the financial provision required by condition 1.3.1; and
 - (c) the estimated costs for the closure and aftercare of the landfill.

1.4 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

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

2.7 Engineering


2.7.1 No construction of any New Cell shall commence until the Operator has submitted Construction Proposals and the Agency has confirmed that it is satisfied with the Construction Proposals.

2.7.2 The construction of a New Cell shall take place only in accordance with the approved Construction Proposals unless:

- (a) any change to the approved Construction Proposals would have no impact on the performance of any element of the design; or
- (b) a change has otherwise been agreed in writing by the Agency.

- 2.7.3 No disposal of waste shall take place in a New Cell until the Operator has submitted a CQA Validation Report and the Agency has confirmed that it is satisfied with the CQA Validation Report.
- 2.7.4 No construction of Landfill Infrastructure shall commence until the Operator has submitted relevant Construction Proposals or a written request to use previous Construction Proposals and the Agency has confirmed that it is satisfied with the Construction Proposals.
- 2.7.5 The construction of the Landfill Infrastructure shall take place only in accordance with the approved Construction Proposals unless:
- (a) any change to the approved Construction Proposals would have no impact on the performance of any element of the design; or
 - (b) a change has otherwise been agreed in writing by the Agency.
- 2.7.6 The Operator shall submit a CQA Validation Report as soon as practicable following the construction of the relevant Landfill Infrastructure.
- 2.7.7 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.7.4 and 2.7.5 do not apply and the relevant Landfill Infrastructure may be constructed, provided that the Construction Proposals are submitted to the Agency as soon as practicable.
- 2.7.8 For the purposes of conditions 2.7.1, 2.7.3 and 2.7.4, the Agency shall be deemed to be satisfied where it has not, within the period of 4 weeks from the date of receipt of the relevant Construction Proposals or CQA Validation Report, either:
- (a) confirmed whether or not it is satisfied; or
 - (b) informed the Operator that it requires further information.

2.8 Waste acceptance

- 2.8.1 Wastes shall only be accepted for disposal if:
- (a) they are listed in Schedule 3, and
 - (b) they are 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 ely 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.
- 2.8.2 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 S1.5.
- 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 municipal waste and multiple collection vehicles, of the collector of such waste. Any information regarded by the Operator as commercially confidential shall be clearly identified in the record.

2.9 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 tables 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 Table S4.2 of Schedule 4 shall not be exceeded.

3.2.4 The Operator shall submit to the Agency a review of the Hydrogeological Risk Assessment:

- (a) between 9 and 6 months prior to the fourth anniversary of the granting of the Permit, and
- (b) between 9 and 6 months prior to every subsequent 4 years after the fourth anniversary of the granting of the Permit.

3.3 Fugitive emissions of substances

3.3.1 Fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution. The Operator shall not be taken to have breached this condition if appropriate measures, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.3.2 Litter or mud arising from the Activities shall not cause pollution. The Operator shall not be taken to have breached this condition if appropriate measures, have been used to prevent or where that is not practicable to minimise, the litter and mud.

3.3.3 Litter or mud arising from the Activities shall be cleared from affected areas outside the Site as soon as practicable.

3.3.4 All liquids, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the Operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3.5 The limits for landfill gas set out in schedule 4, tables S4.3 and S4.5, 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) Groundwater specified in tables S4.2 and S4.6 and
 - (b) Landfill gas specified in tables S4.3 and 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
- (e) 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 the site and shall be available for inspection by the Agency at any reasonable time.

4.2 Reporting

4.2.1 A report or reports on the performance of the Activities over the previous year shall be submitted to the Agency by 31 January (or other date agreed in writing by the Agency) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with this Permit against the relevant assumptions, parameters and results in the risk assessments submitted with the Application;
- (b) where the Operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;
- (c) the 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) the compliance testing undertaken in the period;
- 4.2.2 Within 28 days of the end of the reporting period the Operator shall, unless otherwise agreed in writing by the Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in Table S5.1 of Schedule 5;
 - (b) for the reporting periods specified in Table S5.1 of Schedule 5 and using the forms specified in Table S5.3 of Schedule 5; and
 - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.3 A summary report of the waste types and quantities accepted and removed from the site shall be made for each quarter. It shall be submitted to the Agency within one month of the end of the quarter and shall be in the format required by the Agency.
- 4.2.4 The Operator shall, unless notice under this condition has been served within the preceding 4 years, submit to the Agency, within 6 months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.
- 4.2.5 All reports and notifications required by the permit shall be sent to the Agency using the contact details supplied in writing by the Agency

4.3 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.
- 4.3.6 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.
- 4.3.7 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.
- 4.3.8 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 inert wastes, consisting of the types and quantities specified in condition 2.8, as an integral part of landfilling.
Directly Associated Activity		
None		

Table S1.2 Operating Techniques

Description	Parts	Date Received
The Application	The response to questions B2.1, B2.2, B2.3, B2.5, B2.8 & B2.11 of the Application	8 November 2005
The Application	Excluding the response to question B2.2.6 of the Application concerning the shear strength stability of the Geological Barrier.	8 November 2005
The Application	Excluding the reference to Gas Vents in response to questions B2.2.43 to B2.2.57 of the Application and including those made on Plan Ref: EW/ESID/05 and in the Landfill Gas Risk Assessment Report Ref: EW/GRA Oct 2005.	8 November 2005
Response to additional information letter	Stability Risk Assessment – Addendum AD1 dated 24 February 2006 and Drawing No EW/Proposed BH/01.	28 February 2006

Table S1.3 Improvement Programme Requirements

Reference	Requirement	Date
1	The operator shall submit to the Agency a revised gas monitoring plan (Drwg EW/ESID/05 dated 24/10/2005) which clearly indicates the location and appropriate numbering of the proposed gas monitoring boreholes. The revised monitoring plan shall also include gas monitoring borehole construction proposals and timescales for construction. The Operator shall implement any improvements or measures as approved in writing by the Environment Agency.	16 November 2006
2	The operator shall submit to the Agency revised construction details for the groundwater monitoring borehole/s shown to be installed on drawing EW/ProposedBH/01dated 20/02/2006 for approval in writing by the Agency to confirm that it is satisfied with the construction proposals.	16 November 2006
3	The operator shall install the groundwater monitoring borehole/s as detailed in Improvement Condition 2 above and as approved in writing by the Environment Agency and shall commence monitoring as specified in Table S4.6 of the permit conditions.	16 February 2007
4	The operator shall submit to the Agency, borehole specific trigger levels using the first 12 months data obtained under Table S4.6 and provide a groundwater contingency action plan in accordance with best practice guidance. All monitoring data, methodology and the assessment criteria used to calculate borehole specific trigger levels for all down-gradient groundwater boreholes shall be compiled into a report and submitted to the Agency in writing for agreement. The report shall review the number and spacing of boreholes with regard to determining potential impacts from historic areas, particularly to the West of the site. The Operator shall implement any improvements or measures as approved in writing by the Environment Agency.	16 February 2008
5	The operator shall submit to the Agency site restoration details for approval in writing by the Agency to confirm that it is satisfied with the restoration proposals.	16 November 2006

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

Reference	Operation	Pre-operational Measures
1	Waste deposit	<p>Submit detailed Construction Proposals for an artificially completed geological barrier to the Agency for approval in writing by the Agency to confirm that it is satisfied with the Construction Proposals. The construction proposal shall include details on the suitability of the materials used in terms of WAC criteria.</p> <p>The artificial geological barrier shall as a minimum meet the following requirements: Maximum Gradient of Slope: 1 in 2 Minimum Thickness: 1000mm perpendicular to subgrade Maximum hydraulic conductivity: 1×10^{-7} m/s Undrained Shear strength: $c' = 75$ kN.m⁻² Attenuation Capacity for the Mineral layer: CEC¹=18 meq/100g, Kd² (ammonium 2mg/l) 22-28ml/g Kd² (ammonium 260mg/l) 2- 4 ml/g</p> <p>The Operator shall implement any improvements or measures as approved in writing by the Environment Agency.</p>

Note 1: CEC is the Cation Exchange Capacity.

Note 2: Kd is the distribution coefficient for the specified contaminant.

Table S1.5 Annual Waste Input Limits

Category	Limit Tonnes/ Year
Inert Waste	75,000

Schedule 2 - Site plan



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Schedule 3 - List of permitted wastes

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	
19 12 09	Minerals (for example sand, stones)	Only with pre-testing
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.

The above waste (except for 19 12 09) may be accepted without testing provided that the waste is:

- (a) is from a single stream waste of a single waste type (unless different waste types from the list in Table 1 are accepted together) and;
 (b) is from a single source.

Waste from (a) or (b) above must be tested where there is suspicion of contamination or doubt that the waste meets the definition of inert waste in Regulation 7 (4) of the Landfill regulations 2002 or the limit values shown in Tables 1 and 2 below:

Table 1: Limit values for leaching

Component	Symbol	L/S = 10 l/kg mg/kg dry substance
Arsenic	As	0.5
Barium	Ba	20
Cadmium	Cd	0.04
Total Chromium	Cr _{total}	0.5
Copper	Cu	2
Mercury	Hg	0.01
Molybdenum	Mo	0.5
Nickel	Ni	0.4
Lead	Pb	0.5
Antimony	Sb	0.06
Selenium	Se	0.1
Zinc	Zn	4
Chloride	Cl ⁻	800
Fluoride	F ⁻	10
Sulphate ^(b)	SO ₄ ²⁻	1,000
Phenol index	PI	1
Dissolved Organic Carbon ^(c)	DOC	500
Total Dissolved Solids ^(d)	TDS	4,000

- (b) This limit value for sulphate may be increased to 6,000 mg/kg, provided that the value of C₀ (the first eluate of a percolation test at L/S = 0.1 l/kg) does not exceed 1,500 mg/l. It will be necessary to use a percolation test to determine the limit value at L/S = 0.1 l/kg under initial equilibrium conditions.
- (c) If the waste does not meet this value for Dissolved Organic Carbon (DOC) at its own pH value, it may alternatively be tested at L/S = 10 l/kg and a pH between 7.5 and 8.0. The waste may be considered as complying with the acceptance criteria for DOC, if the result of this determination does not exceed 500 mg/kg.
- (d) The value for Total Dissolved Solids can be used alternatively to the values for Sulphate and Chloride.

Table 2: Limit values for organic parameters

Parameter	Value mg/kg
Total Organic Carbon (TOC) ^(e)	30,000
BTEX compounds (benzene, toluene, ethyl benzene & xylenes)	6
Polychlorinated biphenyls (PCBs) (7 congeners)	1
Mineral oil (C10 to C40)	500
PAH (Poly Aromatic Hydrocarbon – Total of 17) ^(f)	100

- (e) In the case of soils, a higher limit value may be permitted by the Environment Agency, provided a Dissolved Organic Carbon value of 500 mg/kg is achieved at L/S 10 l/kg at the pH of the soil or at a pH value of between 7.5 and 8.0.
- (f) The list of PAHs is defined in Paragraph 8 of Schedule 2 to the Landfill Regulations (as amended).

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
There are no permitted point source discharges to surface water	N/a	N/a	N/a	N/a	N/a	N/a

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
GW3, WRG03 and all additional down-gradient groundwater-monitoring boreholes installed under Improvement Conditions 2 and 4.	Ammoniacal-Nitrogen	0.5mg/l	Spot Sample	Monthly	In accordance with the Environment Agency's Guidance on Monitoring Landfill Leachate, Groundwater and Surface water (2001)
GW3, WRG03 and all additional down-gradient groundwater-monitoring boreholes installed under Improvement Conditions 2 and 4.	Chloride	150mg/l	Spot Sample	Monthly	
GW3, WRG03 and all additional down-gradient groundwater-monitoring boreholes installed under Improvement Conditions 2 and 4.	Cadmium	0.1µg/l	Spot Sample	Quarterly	

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
As identified in gas monitoring review in table S4.5 – Other specifications	Methane	1 %v/v	Monthly during operational phase.	In accordance with the Environment Agency's Guidance on the Management of Landfill Gas (2004).
	Carbon Dioxide	1.5 %v/v		
	Oxygen	no limit	Quarterly during post closure.	
	Atmospheric pressure	no limit		
	Differential Pressure	no limit		
	Temperature	no limit		
	Meteorological data	no limit		

Table S4.4 Landfill gas from capped surfaces - monitoring requirements

Monitoring point Ref. /description	Parameter	Monitoring frequency	Monitoring Standard or method
None required	N/a	N/a	N/a

Table S4.5 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 agreed in improvement condition number 1 above.	Methane	Monthly	In accordance with the Environment Agency's Guidance on the Management of Landfill Gas (2004).	Annual gas monitoring review shall assess need to install peripheral gas monitoring boreholes in line with best practice guidance, considering receptors, if Methane > 1%v/v + background concentration and Carbon Dioxide > 1.5%v/v + background concentration. Monitoring of peripheral gas monitoring borehole/s shall be carried out as set out in table S4.3
	Carbon Dioxide	during operational phase.		
	Oxygen	Quarterly		
	Carbon Monoxide	during post closure.		
	Atmospheric pressure			
	Differential pressure			
	Temperature			
Meteorological Data				

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
GW1, WRG03 and GW3 as agreed in improvement condition number 2 above and any subsequent groundwater monitoring boreholes agreed in improvement condition number 4 above.	Water level, DO, pH, EC, NH4-N, Cl and Temperature.	Monthly	To be agreed with EA	
	Monitoring point base, Eh, Phenol, TON(oxidised-N), TOC, BOD, COD, Ca, Mg, Na, K, Alk, SO4, Fe, Mn, Cd, Cr, Cu, Sn, Ni, Pb and Zn.	Quarterly	To be agreed with EA	
	List I screen	Annually	To be agreed with EA	To MRV ¹

Note 1: Minimum Reporting Value in accordance with Environment Agency's best practice guidance.

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	Groundwater monitoring points identified as GW1, WRG03 and GW3 on plan EW/ProposedBH/01. And as required by improvement condition number 4, schedule 1, table S1.3.	Every 3 Months	From date of issue and/or as agreed with operator.
Landfill gas lateral migration Parameters as required by condition 3.6.1	Perimeter boreholes identified on revised Plan EW/ESID/05 required by improvement condition number 1, schedule 1, table S1.3.	Every 3 months	Following installation of the peripheral gas monitoring boreholes as required by Table S4.5 and as agreed in writing by the Environment Agency.
Other Landfill gas monitoring Parameters as required by condition 3.6.1	In waste boreholes identified on revised Plan EW/ESID/05 required by improvement condition number 1, schedule 1, table S1.3.	Every 3 months	From date of issue and/or as agreed with operator.

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	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period
Carbon Dioxide and or Methane in external boreholes	24 hours
Emissions to Groundwater	24 hours

(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 Middleton Aggregates 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.

"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