

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Skanska Construction UK Limited, Costain Limited and Strabag AG-UK Branch

Southern Sustainable Placement Area Copthall South Compound Gate 1 Harvil Road Ickenham Uxbridge UB9 6JL

Permit number EPR/WP3029SW

Southern Sustainable Placement Area Permit number EPR/WP3029SW

Introductory note

This introductory note does not form a part of the notice.

The main features of the permit are as follows:

This permit is for disposal of non-hazardous waste at Ruislip Southern Sustainable Placement (RSSP) generated from High Speed 2 (HS2) Phase One by landfilling the waste into three mounds:Mound 1, Mound 2, and Mound 3. In total, the detailed design volumes indicate that 533,000m³ of material arisings from the Northolt Tunnels tunnel boring machine (TBM) will be placed to make the mounds.

Status log of the permit				
Description	Date	Comments		
Application EPR/LB3308GV/A001	Duly made 21/06/2022	Application for inert landfill.		
Further information provided	26/09/2022	WM3 waste assessment report.		
Schedule 5 Notice Response	24/10/2022	SSPA ecology report.		
Schedule 5 Notice Response	11/11/2022	Further information received including groundwater quality data.		
Change of application from an inert landfill to non-hazardous landfill	31/01/2023	Following the outcome of the WM3 report assessment application changed from an inert landfill to non- hazardous landfill. Further fee received and application reference changed from EPR/LB3308GV/A001 to EPR/WP3029SW/A001		
Further information provided	08/02/2023	Updated design and drainage proposals.		
Permit determined EPR/WP3029SW	26/05/2023	Permit issued to Skanska Construction UK Limited, Costain Limited and Strabag AG-UK Branch.		

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/WP3029SW

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

Skanska Construction UK Limited company registration number 00191408 whose registered office is

1 Hercules Way Leavesden Watford WD25 7GS

and

Costain Limited company registration number 00610201 whose registered office is

Costain House Vanwall Business Park Maidenhead Berkshire SL6 4UB

and

Strabag AG-UK Branch company registration number FC030275, with UK establishment number BR015270 and whose UK establishment office address is

The Tower 3rd Floor 65 Buckingham Gate London SW1E 6AS

("the operators") to operate an installation activity at

Southern Sustainable Placement Area, Copthall South Compound, Gate 1, Harvil Road, Ickenham, Uxbridge, UB9 6JL.

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

Name	Date
Claire Roberts	26/05/2023

Authorised on behalf of the Environment Agency

Conditions

Management

1.1 General management

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

1.2 Finance

- 1.2.1 The financial provision for meeting the obligations under this permit set out in the agreement made between the operator and the Environment Agency dated 26/05/2023 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 Environment Agency.
- 1.2.2 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 1.2.1; and
 - (c) the estimated costs for the closure and aftercare of the landfill.

1.3 Energy efficiency

- 1.3.1 The operator shall:
 - (a) take appropriate measures to ensure that energy is used efficiently in the activities;
 - (b) Review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
 - (c) Implement any appropriate measures identified by a review.

1.4 Multiple operator installations

1.4.1 Where the operator notifies the Environment Agency under condition 4.3.1(a) or 4.3.1(c), the operator shall also notify without delay the other operator(s) of the installation of the same information.

1.5 Efficient use of raw materials

- 1.5.1 The operator shall:
 - (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
 - (b) maintain records of raw materials and water used in the activities;
 - (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
 - (d) take any further appropriate measures identified by a review.

1.6 Avoidance, recovery and disposal of wastes produced by the activities

- 1.6.1 The operator shall:
 - (a) take appropriate measures to ensure that waste produced by the activities is avoided or reduced, or where waste is produced it is recovered wherever practicable or otherwise disposed of in a manner which minimises its impact on the environment;
 - (b) review and record at least every four years whether changes to those measures should be made; and
 - (c) take any further appropriate measures identified by a review.

Operations

2.1 Permitted activities

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

2.2 The site

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

2.3 Operating techniques

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

2.4 Improvement programme

- 2.4.1 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 Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Landfill Engineering

- 2.5.1 No construction of any new cell of the landfill shall commence until the operator has submitted construction proposals and the Environment Agency has confirmed that it is satisfied with the construction proposals.
- 2.5.2 Where the operator proposes to construct any new cell other than the first cell, but proposes no change from the design of the most recently approved cell which could have any impact on the performance of any element of the design, no construction of the new cell shall commence until the operator has submitted a cell layout drawing and the Environment Agency has confirmed that it is satisfied with the cell layout drawing.
- 2.5.3 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 Environment Agency.
- 2.5.4 No disposal of waste shall take place in a new cell until the operator has submitted a CQA Validation Report and the Environment Agency has confirmed that it is satisfied with the CQA Validation Report.
- 2.5.5 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 Environment Agency has confirmed that it is satisfied with the construction proposals.
- 2.5.6 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 Environment Agency.
- 2.5.7 The operator shall submit a CQA Validation Report within four weeks of the completion of the construction of the relevant landfill infrastructure, or other time period agreed in writing with the Environment Agency.
- 2.5.8 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.5.5 and 2.5.6 do not apply and the relevant landfill infrastructure may be constructed, provided that the construction proposals are submitted to the Environment Agency as soon as practicable.
- 2.5.9 For the purposes of conditions 2.5.1, 2.5.2, 2.5.4 and 2.5.5, the Environment Agency shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the relevant construction proposals or CQA Validation Report, either:
 - (a) confirmed whether or not it is satisfied; or
 - (b) informed the operator that it requires further information.

- 2.5.10 Where the Environment Agency has required further information under condition 2.5.9(b), the Environment Agency shall be deemed to be satisfied where it has not, within the period of four weeks from the date of receipt of the further information, either:
 - (a) confirmed whether or not it is satisfied; or
 - (b) informed the operator that it requires further information.

2.6 Waste acceptance

- 2.6.1 Wastes shall only be accepted for disposal if:
 - (a) they are listed in schedule 2, table S2.1; and
 - (b) they are non-hazardous waste; and
 - (c) they are not liquid waste (including waste waters but excluding sludge); and
 - (d) they are not chemical substances from research and development or teaching activities, for example laboratory residues, which are unidentified and/or which are new and whose effects on man and/or the environment are unknown; and
 - (e) all the relevant waste acceptance procedures have been completed; and
 - (f) they fulfil the relevant waste acceptance criteria; and
 - (g) they have not been diluted or mixed solely to meet the relevant waste acceptance criteria; and
 - (h) they are wastes which have been treated, except for: inert wastes for which treatment is not technically feasible; or it is waste other than inert waste and treatment would not reduce its quantity or the hazards which it poses to human health or the environment, and
 - (i) they are wastes with a code beginning with 17 05 and 19 03, they shall exclude waste medicinal products and pharmaceutically active waste materials arising from their manufacture; and
 - (j) they are not waste paper, metal, plastic or glass if that waste has been separately collected for the purpose of preparing for re-use or recycling.
- 2.6.2 Gypsum-based and other high sulphate bearing waste shall not be deposited in cells used or intended to be used for the disposal of biodegradable non-hazardous waste. Wastes disposed of in a cell with gypsum-based and other high sulphate bearing wastes must meet the relevant waste acceptance criteria.
- 2.6.3 The operator shall visually inspect waste at the point of dispatch and shall be satisfied that the waste conforms to the requirements of condition 2.6.1.
- 2.6.4 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.
- 2.6.5 For the following activities referenced in schedule 1, table S1.1 A1. The operator on accepting each delivery of waste shall provide a receipt to the person delivering it.
- 2.6.6 The total quantity of waste that shall be deposited in the landfill shall be limited by the pre-settlement levels shown on drawing reference pre-settlement contours drawings ref 2.6.6_710004-5711012-13 712020-21.
- 2.6.7 The quantity of waste that is disposed of at the regulated facility in any year shall not exceed the limits in schedule 1, table S1.4.
- 2.6.8 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.

2.7 Leachate levels

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

2.8 Closure and aftercare

2.8.1 The operator shall maintain a closure and aftercare management plan.

2.9 Landfill gas management

- 2.9.1 The operator shall take appropriate measures, including, but not limited to, those specified in any approved landfill gas management plan, to:
 - (a) collect landfill gas; and
 - (b) control the migration of landfill gas.
- 2.9.2 The operator shall use the collected landfill gas to produce energy. If the collected landfill gas cannot be used to produce energy, the operator shall use appropriate measures to flare or treat the gas in accordance with an approved landfill gas management plan.

Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 The limits in schedule 3 shall not be exceeded.
- 3.1.2 The operator shall prevent the input of any hazardous substances from the activities into groundwater.
- 3.1.3 The operator shall submit to the Environment Agency a review of the Hydrogeological Risk Assessment:
 - (a) between nine and six months prior to the sixth anniversary of the granting of the permit; and
 - (b) between nine and six months prior to every subsequent six years after the sixth anniversary of the granting of the permit

3.2 Emissions of substances not controlled by emission limits

3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.3 Odour

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

3.4 Noise and vibration

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

3.5 Pests

- 3.5.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.
- 3.5.2 The operator shall:
 - (a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution hazard or annoyance from pests;
 - (b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.6 Monitoring

- 3.6.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring and any other actions specified in the following tables in schedule 3 to this permit:
 - (a) Leachate specified in tables S3.1 and S3.4;
 - (b) Groundwater specified in tables S3.2 and S3.3;
 - (c) Landfill gas specified in tables S3.5;
 - (d) Surface water specified in table S3.6; and
 - (e) Particulate matter specified in table S3.7.
- 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 and shall be used to produce a plan of a scale adequate to show the surveyed features of the site:
 - (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.

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 Environment 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) leachate levels, quality and quantities;
 - (iv) landfill gas generation and collection;
 - (v) waste types and quantities;
 - (vi) the specification and as built drawings of the basal, sidewall and capping engineering systems.
- 4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

- 4.2.1 The operator shall send reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 A report or reports on the performance of the activities over the previous year ('the annual report') shall be submitted to the Environment Agency by 31st January each year or such other date as may be agreed in writing by the Agency, with the exception of 4.2.2(c) that must be provided by the end of February 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. The review will include written descriptions of the improvements made to operational performance during the year, action plans developed and planned improvements for the coming year;
 - (b) the energy consumed at the site, reported in the format set out in schedule 4 table S4.3;
 - (c) the annual production/treatment set out in schedule 4, table S4.2;
 - (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 behaviour of the landfill body based on the difference between the most recent topographical survey and previous annual topographical survey for the areas of the landfill which did not receive waste between the surveys;

- (g) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey; and
- (h) a plan(s) ('the monitoring and extraction point plan MEPP') showing the locations of existing and any new leachate and landfill gas extraction and monitoring points.
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment 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 4, table S4.1;
 - (b) using the forms specified in schedule 4, table S4.4 or other reporting format as agreed in writing with the Environment Agency; and
 - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.4 Within one month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.
- 4.2.5 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.3 Notifications

- 4.3.1 In the event:
 - (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
 - (i) inform the Environment Agency;
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident; and
 - (iii) take the measures necessary to prevent further possible incidents or accidents.
 - (b) of a breach of any permit condition the operator must immediately-
 - (i) inform the Environment Agency; and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time.
 - (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

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

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

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.
- 4.3.4 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
 - (a) the Environment Agency shall be notified at least 14 days before making the change; and
 - (b) the notification shall contain a description of the proposed change in operation.

4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities				
Activity reference	WFD Annex I and II operations (where applicable)	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A1	D5 – Specially engineered landfill	Section 5.2 Part A(1)(a), The disposal of waste in a landfill.	Landfill for non-hazardous waste	Receipt, handling, storage and disposal of wastes, consisting of the types and quantities specified in conditions 2.6, as an integral part of landfilling.

Table S1.2 Operating techniques				
Description	Parts	Date Received		
Application	Environmental Risk Assessment (ERA) – Ruislip Southern Sustainable Placement S2 – reference: 1MC04-SCJ_SDH-EV-ASM-SS05_SL07-000021	18/05/2022		
Application	Management Systems and Procedures - Ruislip Southern Sustainable Placement S2 – reference: 1MC04-SCJ_SDH-EV-PRO-SS05_SL07-000003	18/05/2022		
Application	Site Operating Plan (SOP) - Ruislip Southern Sustainable Placement S2 – reference: 1MC04-SCJ_SDH-EV-PLN-SS05_SL07-000012	18/05/2022		
Request for information response	Dust and Emissions Management Plan - Ruislip Southern Sustainable Placement S2 – reference: 1MC04-SCJ_SDH-EV-PLN-SS05_SL07-000009	19/05/2023		
Request for information response	Environmental Setting and Site Design Report (ESSD) - Ruislip Southern Sustainable Placement S2 - reference: 1MC04-SCJ_SDH-EV-REP- SS05_SL07-000008 – Version number C03.1	19/05/2023		
Request for information response	Environmental Monitoring Plan (MEPP) - Ruislip Southern Sustainable Placement S2 - reference: 1MC04-SCJ_SDH-EV-PLN-SS05_SL07-000010 – Version number C02.5	19/05/2023		
Request for information response	Closure and Aftercare Management Plan (CAMP) - Ruislip Southern Sustainable Placements S2 – reference: 1MC04-SCJ_SDH-EV-PLN- SS05_SL07-000022 – Version number C02.2	19/05/2023		

Table S1.2 Operating techniques				
Description Parts		Date Received		
Request for information response	Hydrogeological Risk Assessment (HRA) - Ruislip Southern Sustainable Placement S2 – reference: 1MC04-SCJ_SDH-GT-REP-SS05_SL07-000034	19/05/2023		
Request for information response	Stability Risk Assessment - Ruislip Southern Sustainable Placement S2 – reference 1MC04-SCJ_SDH-EV-ASM-SS05_SL07-000009	19/05/2023		
Request for information response	Waste Assessment for Treated Soils - Ruislip Southern Sustainable Placement S2 – reference: 1MC04-SCJ_SDH-EV-REP-SS05_SL07-000022	19/05/2023		
Request for information response	Ruislip Sustainable Placements-Southern Landfill Permit Application Site Location Plan D-SCR1 – reference: 1MC04-SCJ_SDH-LS-DGA-SS05_SL07- 711022	19/05/2023		
Request for information response	Pre-settlement contours drawings ref 2.6.6_710004-5711012-13 712020-21 24/05/2023			

Reference	Requirement	Date	
IC1	Following placement of the restoration layer for each mound, the operator shall progressively install in-waste gas monitoring points at a minimum density of 2 points per hectare as part of the restoration of each mound and commence routine in-waste gas monitoring unless otherwise agreed in writing in advance with the Environment Agency.	Within 6 months of the placement of the restoration layer of each mound.	
	The landfill gas monitoring boreholes shall be constructed and recorded in accordance with a Construction Quality Assurance (CQA) Plan covering all elements of the landfill gas monitoring system in compliance with the Environment Agency Guidance: LFTGN03 'Management of Landfill Gas'.		
IC2	 Following final placement of the landfill restoration layer across each mound, the operator shall prepare and submit to the Environment Agency a report summarising the: Observed production and management rates for leachate volumes at the site through the site's operational period Observed quality and stability of leachate within the site Updated proposals – where appropriate - for leachate management, removal and monitoring through the site's remaining operational / aftercare period for approval by the Environment Agency. 	Within 6 months of the placement of the restoration layer of each mound.	

Table S1.3 Improvem	Table S1.3 Improvement programme requirements				
Reference	erence Requirement				
IC3a	 The operator shall: Begin to monitor, on a monthly interval, the new groundwater monitoring point (ML025-RC403) and collect a statistically significant data set covering a minimum period of 12 months for both levels and quality data. Undertake the monitoring in accordance with Environment Agency Guidance: LFTGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), Horizontal Guidance Note H1 – Environmental Risk Assessment for permits, Annex J3, version 2.1, Dec 2011 or such other subsequent guidance as may be agreed in writing in advance with the Environment Agency. 	Within 18 months from the date of permit issue.			
IC3b	 The operator shall: Establish the baseline concentrations and propose / update the compliance limits for ML024-RC015 and ML025-RC403 for the parameters specified in schedule 3, table S3.2 and the corresponding action levels. Submit a written report on the proposed compliance limits and action levels to the Environment Agency for approval. 	Within 18 months of the commencement of monitoring under condition IC3a, above			

Table S1.4 Annual waste input limits		
Category Limit Tonnes/ Year		
Non-hazardous waste 900,000		
Total	900,000	

Schedule 2 – List of permitted wastes

Table S2.1 Per	Table S2.1 Permitted waste types for disposal at a landfill for non-hazardous waste		
Waste code	Description		
19	Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use		
19 03	stabilised/solidified wastes		
19 03 07	solidified wastes other than those mentioned in 19 03 06 (TBM arisings solidified with lime)		
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)		
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil		
17 05 04	soil and stones (excluding topsoil and peat) (TBM arisings)		

Schedule 3 – Emissions and monitoring

Monitoring point ref:	Limit	Monitoring frequency	Monitoring standard and method
Operational Cells or Phases (A	ny cells or phases that do not h	nave a final cap agreed in a	ccordance with the landfill engineering condition, 2.5)
MH01 – MH05*	1.0m	Weekly**	In accordance with Environment Agency document LFTGN02 (February 2003) 'Guidance on Monitoring of Landfill Leachate Groundwater and Surface Water' or such other subsequent guidance as may be agreed in writing with the Environment Agency.
Non Operational Cells or Phase	es (Any cell or phases that hav	e a final cap agreed in acco	ordance with the landfill engineering condition, 2.5)
-	1.0m	Quarterly	In accordance with Environment Agency document LFTGN02 (February 2003) 'Guidance on Monitoring of Landfill Leachate Groundwater and Surface Water' or such other subsequent guidance as may be agreed in writing with the Environment Agency.
*: Leachate points to be progress Table S1.3.	ively installed on a mound by r	nound basis. Non-operatio	nal monitoring requirements to be determined through IC2 of
**. Frequency of level monitoring	set as weekly unless otherwis	e agreed in writing with the	Environment Agency through IC2.

Monitoring point ref:	Parameter	Limit (mg/l)*	Reference period	Monitoring frequency	Monitoring standard or method
ML024-RC015	Ammoniacal Nitrogen Arsenic Benzene Chloride Selenium Sulphate	2.4 0.0033 0.001 328 0.0028 960	Spot Sample	Quarterly	As specified in Environment Agency Guidance TGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), <u>risk assessments for your</u> <u>environmental permit</u> (www.gov.uk) or such other subsequent guidance as may be agreed in writing with the Environment Agency
ML025-RC403 (Lambeth and Chalk installations)	Ammoniacal Nitrogen Arsenic Benzene Chloride Selenium Sulphate	2.4 0.0095 0.001 700 0.0042 2,750	Spot Sample	Quarterly	As specified in Environment Agency Guidance TGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), <u>risk assessments for your</u> <u>environmental permit</u> (www.gov.uk) or such other subsequent guidance as may be agreed in writing with the Environment Agency

Monitoring Point Ref./Description	Parameter	Monitoring	Monitoring standard or method
Up gradient MEPP (ML025-RC050 and	Water level, electrical conductivity, chloride, ammoniacal nitrogen, sulphate, pH, arsenic, benzene and selenium.	frequency Quarterly	As specified in Environment Agency Guidance TGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), <u>risk assessments</u> <u>for your environmental permit</u> (<u>www.gov.uk</u>) or such other subsequent guidance as may be agreed in writing with the Environment Agency
ML024-RC013)	Alkalinity, Total Organic Carbon, Dissolved Organic Carbon, nitrate, nitrite arsenic, aluminium, antimony, beryllium, barium, boron cadmium, chromium (III and VI), copper, lead, nickel, iron, arsenic, magnesium, mercury, potassium, selenium, vanadium, calcium, sodium, zinc, manganese, cyanide (total and free)	Annually	
	Hazardous substances including: alcohols and acetates screen, acrylamide, VOC screen (including BTEX), SVOC screen.	Annually for first six years of operation	
Down or cross gradient MEPP (ML024-RC015 and ML025-RC403 (Lambeth Gp and Chalk)	Water level, electrical conductivity, chloride, ammoniacal nitrogen, sulphate, pH, arsenic, benzene and selenium.	Quarterly	As specified in Environment Agency Guidance TGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), <u>risk assessments</u> <u>for your environmental permit</u> (<u>www.gov.uk</u>) or such other subsequent guidance as may be agreed in writing with the Environment Agency
	Alkalinity, Total Organic Carbon, Dissolved Organic Carbon, nitrate, nitrite arsenic, aluminium, antimony, beryllium, barium, boron	Annually	After the initial 6 year monitoring period for hazardous substances, if the results of quarterly or annual monitoring suggest an increase in contamination, the operator shall also undertake a full leachate hazardous substances screen.

	cadmium, chromium (III and VI), copper, lead, nickel, iron, arsenic, magnesium, mercury, potassium, selenium, vanadium, calcium, sodium, zinc, manganese, cyanide (total and free)	
	Hazardous substances detected in leachate (alcohols and acetates screen, acrylamide, VOC screen (including BTEX), SVOC screen).	Annually for first six years of operation then every two years
MEPP (all groundwater wells)	Base of monitoring point (mAoD)	Annually

Monitoring point reference or description	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Operational Cells or Phases (Any cell or phases that do not ha with condition 2.5)	ve a final engineered cap agreed in ac			
MEPP (MH01 – MH05 and LST_01 and LST02)	Level, volume discharged, pH, EC, ammoniacal nitrogen, chloride, sulphate, alkalinity, total organic carbon, dissolved organic carbon, sodium, potassium, calcium, magnesium, arsenic, lead, selenium, manganese, alcohols and acetates in waters, BTEX suite.	Monthly	As specified in Environment Agency Guidance TGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), risk assessments for your environmental permit (www.gov.uk) or such other subsequent guidance as may be agreed in writing with the Environment Agency	None
MEPP (MH01 – MH05 and LST_01 and LST02)	As above plus: barium, beryllium, cadmium, chromium (total, III and VI), copper, iron, mercury, nickel, tin, zinc.	Quarterly		
MEPP (MH01 – MH05 and LST_01 and LST02)	VOC suite, acrylamide and SVOC suite	Quarterly for 12 months then annually		
МЕРР (MH01 – MH05)	Depth to base (mAoD)	Annually		

on Operational Cells or Phases ny cell or phases that have a final engir ndition 2.5)	ineered cap agreed in accordanc	ce with
EPP H01 – MH05 and LST_01 and T02) H01 – MH05 and LST_01 and EC, chlc orga cart calc lead acry in w ber (tota	evel, volume discharged, pH, C, ammoniacal nitrogen, nloride, sulphate, alkalinity, total ganic carbon, dissolved organic arbon, sodium, potassium, alcium, magnesium, arsenic, ad, selenium, manganese, crylamide, alcohols and acetates waters, BTEX suite, barium, eryllium, cadmium, chromium otal, III and VI), copper, iron, ercury, nickel, tin, zinc.	Six monthly
EPP Dept H01 – MH05)	pth to base (mAoD)	Annually

Note: Leachate monitoring schedules set out above to be updated through IC2

Monitoring Point Ref. /Description	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
In-waste wells*:	Methane Carbon Dioxide Oxygen Balance gas Gas flow Atmospheric pressure Relative pressure	Quarterly	Calibrated handheld monitoring instrument	Record the ambient air temperature and whether the ground is: waterlogged frozen snow covered

Monitoring Point Ref. /Description	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
MEPP (all gas monitoring points / wells)	Base of monitoring point (mAoD)	Annually		

Table S3.6 Surface water -	- other monitoring require	ements		
Monitoring Point Ref. /Description	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
MEPP (SW_Outlet 1 and Outlet 2; SWN-I, SWN-H, SWN-G)	Ammoniacal nitrogen, chloride, sulphate, suspended solids, visual oil and grease, pH, electrical conductivity, alkalinity, total organic carbon, dissolved organic carbon, arsenic, aluminium, barium, beryllium, boron cadmium, chromium (III and VI), copper, lead, nickel, iron, arsenic, magnesium, mercury, potassium, selenium, vanadium, calcium, sodium, zinc, manganese, cyanide (total), acrylamide, alcohols and acetates	Monthly	Spot sample	As specified in Environment Agency Guidance TGN02 'Monitoring of Landfill Leachate, Groundwater and Surface Water' (February 2003), <u>risk assessments for your</u> <u>environmental permit</u> (www.gov.uk) or such other subsequent guidance as may be agreed in writing with the Environment Agency

Table S3.6 Surface water – other monitoring requirements					
Monitoring Point Ref. /Description	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications	
	in waters, BTEX suite and phenols				

Table S3.7 Particulate Matter in Ambient Air – Limits and Monitoring Requirements					
Monitoring point ref:	Parameter	Limit (incl unit)*	Reference Period	Monitoring Frequency	Monitoring Standard or Method
AQ052 and AQ053	Particulate PM ₁₀	75 ug/m ³ (above background)	24 hours	5 minutes	In accordance with Environment Agency Guidance M17 – "monitoring of particulate matter in ambient air" or such other subsequent guidance as may be agreed in writing with the Environment Agency

Schedule 4 – Reporting

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

Parameter	Reporting period	Period ends
Leachate level	Every 3 months	31 March, 30 June, 30
As specified by schedule 3, table S3.1		September, 31 December
Emission to groundwater	Every 3 months	31 March, 30 June, 30
As specified by schedule 3, table S3.2		September, 31 December
Other groundwater monitoring	Every 3 months	31 March, 30 June, 30
As specified by schedule 3, table S3.3		September, 31 December
Other leachate monitoring	Every 3 months	31 March, 30 June, 30
As specified by schedule 3, table S3.4		September, 31 December
Other Landfill gas monitoring	Every 3 months	31 March, 30 June, 30
As specified by schedule 3, table S3.5		September, 31 December
Other surface water monitoring	Every 12 months	31 December
As specified by schedule 3, table S3.6		
Particulate matter in ambient air	Every 12 months	31 December
As required by schedule 3, table S3.7		
Meteorological data	Every 12 months	31 December
Landfill Directive, annex III, section 2		

* - where the reporting period is 12 months, you may submit this information as part of the 'annual report' required by condition 4.2.2.

Table S4.2: Annual production/treatment				
Leachate:	Cubic metres/year			
Disposed of off site;				
Disposed of to any onsite effluent treatment plant;				
Recirculated into the waste mass;				
Accepted from offsite for treatment at any onsite effluent treatment plant.				

Table S4.4 Reporting Forms				
Media/parameter	Reporting Format	Date of Form		
Leachate	Form leachate 1 or other reporting format to be agreed in writing with the Environment Agency	DD/MM/YY		
Air	Form Air 1 or other reporting format to be agreed in writing with the Environment Agency	DD/MM/YY		
Groundwater	Form Groundwater 1 or other reporting format to be agreed in writing with the Environment Agency	DD/MM/YY		

Table S4.4 Reporting Forms					
Media/parameter	Reporting Format	Date of Form			
Landfill gas	Form LFG 1 or other reporting format to be agreed in writing with the Environment Agency	DD/MM/YY			
Particulate matter	Form Particulate 1 or other reporting format to be agreed in writing with the Environment Agency	DD/MM/YY			
Waste Return	E-waste Return Form	-			
Landfill topographical surveys and interpretation	Reporting format to be agreed in writing with the Environment Agency	DD/MM/YY			

Schedule 5 – Notification

This page outlines the information that the operator must provide.

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

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

Part A

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

(a) Notification requirements for any incident or accident which significantly affects or may significantly affect the environment	
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		

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
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 breach of permit conditions not related to limits	
To be notified within 24 hours of detection	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

(d) Notification requirements in the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment	
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	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – 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 5 to the EP Regulations.

"authorised officer" means any person authorised by the Environment 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; or
- For emissions of landfill gas, the ground or air outside the site and not attributable to the site.

"cell layout drawing" means:

- (a) A drawing or drawings of the proposed new cell that illustrate(s) in sufficient detail:
 - (i) the location of the new cell on the site;
 - (ii) the proposed level (Above Ordnance Datum) of the base of the excavation;
 - (iii) the proposed finished levels of all containment and leachate drainage layers;
 - (iv) the positions of leachate management infrastructure; and
 - (v) the positions of landfill gas infrastructure (if appropriate).
- (b) A detailed written explanation of any minor design changes from the most recently approved cell that result from the new cell layout. This would include, for example:
 - (i) changes to slope length and gradient within the cell;
 - (ii) new leachate or landfill gas infrastructure construction design;
 - (iii) slope stability issues such as new basal excavation level; and/or
 - (iv) depth of waste.

"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.

"emissions to land" includes emissions to groundwater.

"EP Regulations" means The Environmental Permitting (England and Wales) Regulations 2016, SI 2016 No.1154 and words and expressions used in this permit which are also used in those Regulations have the same meanings as in those Regulations.

"emissions of substances not controlled by emission limits" means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit.

"exceeded" means that a value is above a permitted limit, or where a range of values or a minimum value is set as a permitted limit it means a value outside that range or below the minimum value, whichever is applicable.

"groundwater" means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

"hazardous substances" as defined by the Environmental Permitting (England and Wales) Regulations 2016, SI 2016 No.1154, schedule 22 and listed in our Hydrogeological risk assessment guidance.

"inert waste" means waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater

"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;
- lining within the installation.

within the site.

"LFTGN 05" means Environment Agency Guidance for monitoring enclosed landfill gas flares.

"LFTGN 07" means Environment Agency Guidance on monitoring landfill gas surface emissions.

"LFTGN 08" means Environment Agency Guidance for monitoring landfill gas engines.

"liquids" means any liquid other than leachate within the engineered landfill containment system.

"List of Wastes" means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on

waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

"M2" means Environment Agency Guidance Monitoring of stack emissions to air.

"medicinal product" means any medicine licensed by the Medicines and Healthcare products Regulatory Agency (MHRA) or their predecessors under the Medicines Act 1968, section 130.

"MEPP" Monitoring and extraction point plan, required by condition 4.2.2(h) to specify extraction points and routine monitoring locations.

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

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

for the New Cell.

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

"pests" means Birds, Vermin and Insects.

"previous year" means the 12 month period preceding the month the annual report is submitted in.

"quarter" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

"relevant waste acceptance procedures" means the procedure for the acceptance of waste at landfills and the associated sampling and test methods specified in the Council Decision Annex (2003/33/EC, European Council of 19 December 2002).

"relevant waste acceptance criteria" means the waste acceptance criteria and the associated sampling and test methods specified in the Council Decision Annex (2003/33/EC, European Council of 19 December 2002).

'sustainably extracted' means where suction can be applied to the extraction wells such that a flow rate of landfill gas, with a methane content capable of either being combusted, or treated by bio-oxidation, can be extracted without increasing the risk of air ingress to the waste or inducing aerobic degradation within the waste.

'waste code' - See 'List of Wastes'.

"Waste Framework Directive" or *"WFD"* means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste, as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

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.

Where the following terms appear in the waste code list in Tables S2.1, they have the meaning given below:

'hazardous substance' means a substance classified as hazardous as a consequence of fulfilling the criteria laid down in parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008;

'heavy metal' means any compound of antimony, arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, selenium, tellurium, thallium and tin, as well as these materials in metallic form, as far as these are classified as hazardous substances;

'polychlorinated biphenyls and polychlorinated terphenyls' ('PCBs') means PCBs as defined in Article 2(a) of Council Directive 96/59/EC'.

Article 2(a) says that 'PCBs' means:

- polychlorinated biphenyls
- polychlorinated terphenyls
- monomethyl-tetrachlorodiphenyl methane, Monomethyl-dichloro-diphenyl methane, Monomethyldibromo-diphenyl methane
- any mixture containing any of the above mentioned substances in a total of more than 0,005 % by weight;

'transition metals' means any of the following metals: any compound of scandium, vanadium, manganese, cobalt, copper, yttrium, niobium, hafnium, tungsten, titanium, chromium, iron, nickel, zinc, zirconium, molybdenum and tantalum, as well as these materials in metallic form, as far as these are classified as hazardous substances;

'stabilisation' means processes which change the hazardousness of the constituents in the waste and transform hazardous waste into non-hazardous waste;

'solidification' means processes which only change the physical state of the waste by using additives without changing the chemical properties of the waste;

'partly stabilised wastes' means wastes containing, after the stabilisation process, hazardous constituents which have not been changed completely into non-hazardous constituents and could be released into the environment in the short, middle or long term.

Schedule 7 – Site plan



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END OF PERMIT