

Lower Thames Crossing Tunnels & Approaches Tilbury Landfill Permit Application Non-Technical Summary

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Reviewer list

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Approvals

Name	Signature	Title	Date of issue	Version
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Lower Thames Crossing

Tilbury Landfill Permit Application Non-Technical Summary

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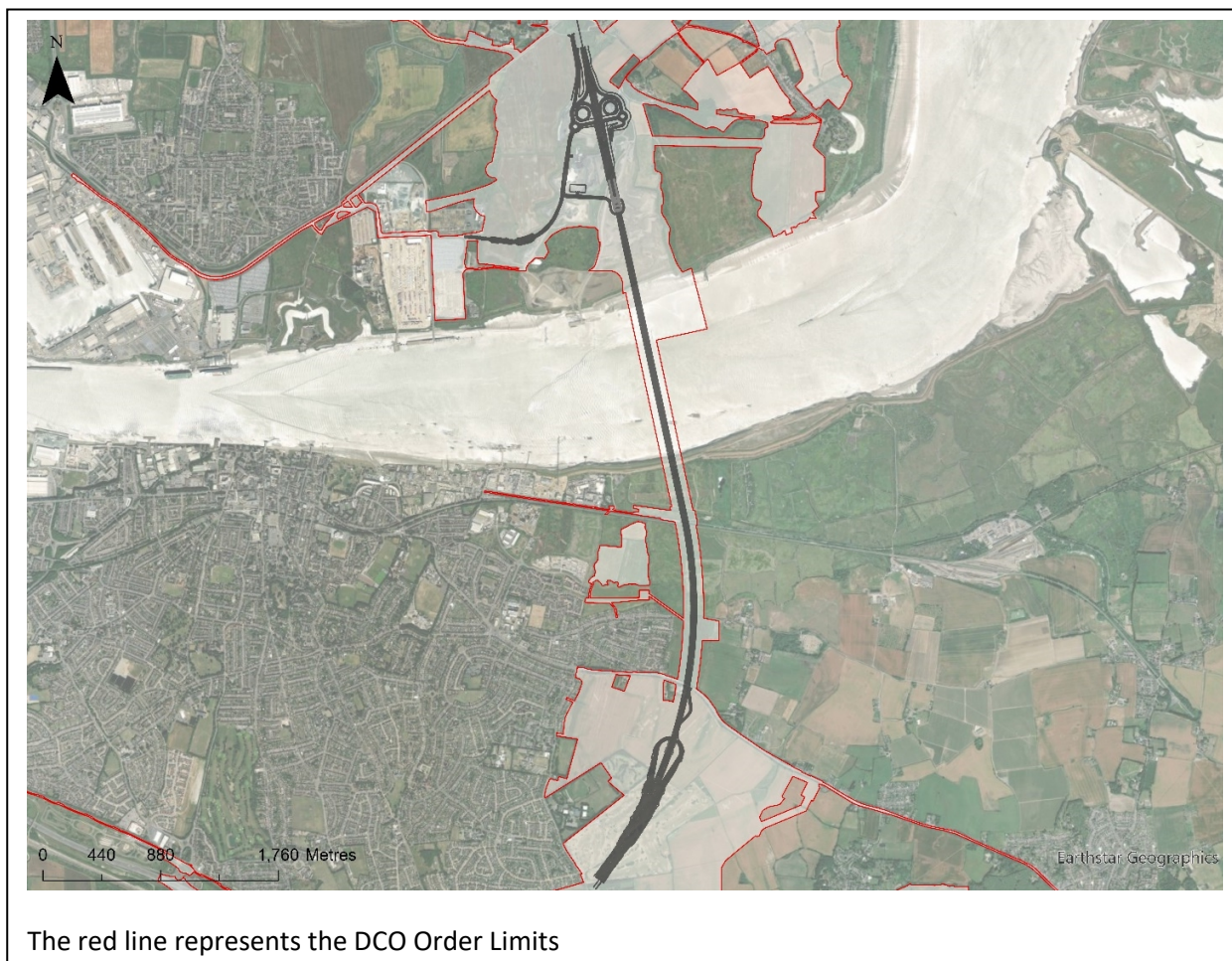
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1 Introduction

1.1 Scope and objectives

- 1.1.1 National Highways is applying for a new Environmental Permit to continue landfilling at the former Tilbury Ash Disposal Site (formerly Environmental Permit EPR/GP3733DZ), now referred to as Tilbury Landfill.
- 1.1.2 The landfill is required to support construction of part of the A122 Lower Thames Crossing (LTC) scheme, enabling waste soils to be used to create the required ground levels for the scheme.
- 1.1.3 LTC is a new road that will connect the A2 and M2 in Kent to the A13 in Thurrock and junction 29 of the M25 in the London Borough of Havering. It will be approximately 23 kilometres long, with approximately 4.2 kilometres of new tunnel under the Thames. The northern tunnel approach is located over the former Tilbury Ash Disposal Site.
- 1.1.4 The scheme is a nationally significant infrastructure project which is authorised by Development Consent Order (DCO), which came into effect on 15 April 2025. The tunnel alignment and portals, together with the DCO Order Limits, are shown in Figure 1-1.

Figure 1-1 Proposed tunnel and portals for Lower Thames Crossing



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1.1.5 Material used to raise ground levels will come from the nearby Goshems Farm Deposit for Recovery site. As this material is legally classed as waste, an Environmental Permit is required to manage its reuse.

1.1.6 This Non-Technical Summary explains:

- What is proposed
- Where the site is located
- How it will operate
- How the environment will be protected

1.1.7 This plan has been prepared by the Arup Mott Joint Venture (AMJV) on behalf of National Highways. National Highways will be the permit holder and legal operator of the landfill site. Day-to-day running of the site will be managed by the Bouygues-Murphy Joint Venture (BMJV).

1.2 Permit application documents

1.2.1 In addition to this Non-Technical Summary document, this application for an Environmental Permit comprises the following documents:

- Environmental Permit Application Form parts A, B2, B4, F1;
- Environmental Setting and Installation Design Report (HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000005) [6];
- Landfill Closure and Aftercare Management Plan (HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000007) [7];
- Management Systems and Procedures (HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000013) [8];
- Dust and Emissions Management Plan (HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000008) [9];
- Hydrogeological Risk Assessment (HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000011) [10];
- Tilbury Landfill Site Operating and Waste Acceptance Procedures (HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000009) [11];
- Stability Risk Assessment (HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000010) [12]; and
- Environmental Risk Assessment (HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000006) [13].

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2 Site details

2.1 Site location and setting

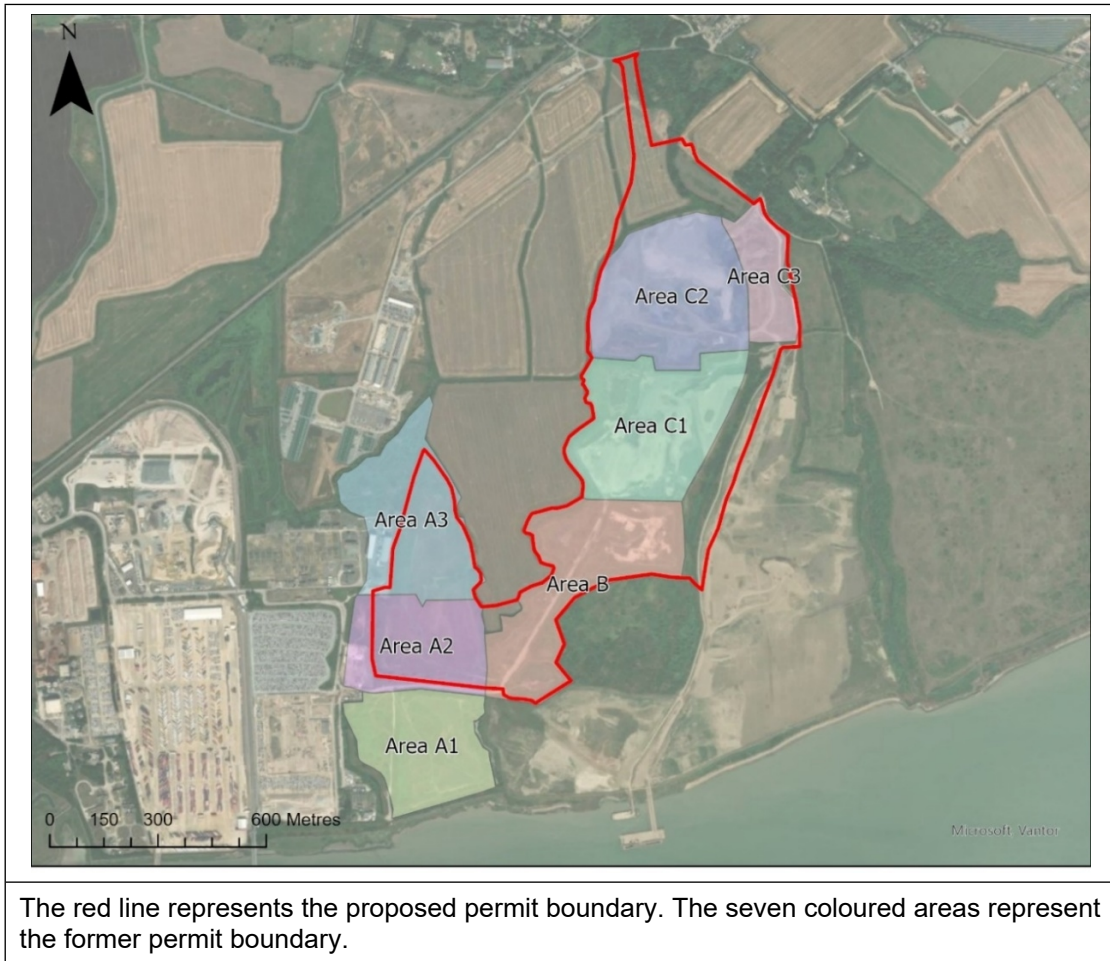
- 2.1.1 The site is located to the east of Tilbury in Essex centred on national grid reference TQ671763. It has a long history of industrial use and was previously permitted as a non-hazardous landfill for pulverised fuel ash (PFA) from Tilbury Power Station.
- 2.1.2 The site was formerly known as Tilbury Ash Disposal Site and the previous permit comprised 80ha spilt into seven areas A1 to A3, B and C1 to C3.
- 2.1.3 This application is for the continuation of landfilling at the site to allow soils to be placed to create the required ground levels for LTC. This new permit application covers the majority of the area included in the previous permit boundary plus additional areas to the north and east.
- 2.1.4 The previous environmental permit boundary (the site) and the proposed permit boundary are shown on Figure 2-1

2.2 Permit history

- 2.2.1 Tilbury Ash Disposal Site was formerly associated with Tilbury B Power Station and was permitted to accept PFA as a land raise. The permitted operation related to the areas shown in Figure 2-1. The site continued to receive PFA until the closure of the power station in 2013.
- 2.2.2 After the closure of the power station, the Environmental Permit for Tilbury Ash Disposal Site was transferred to Ingrebourne Valley Limited (IVL), with a variation which allowed IVL to extract PFA for recovery and restore the site using imported inert wastes to a maximum elevation of 9mOD.
- 2.2.3 To date, landfilling has not been completed in all areas. Area C3 did not receive PFA waste. Area A1 was completed with PFA and restored. Areas A2 and A3 have had the PFA removed and replaced with imported inert wastes and the areas have been restored. Areas B, C1 and C2 were until recently being excavated to recover the PFA.
- 2.2.4 A copy of the previous Environmental Permit is provided in Appendix A.
- 2.2.5 National Highways needs to take over operation of the landfill in order to create the required ground levels for the LTC scheme. National Highways has made an application to the Environment Agency under Article 68 of the DCO to surrender the previous landfill permit for the Tilbury Ash Disposal Site so that a new permit could be issued.

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Figure 2-1 Site location - former permit area overlaid with proposed permit boundary



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3 Proposed activities

- 3.1.1 The new permit will allow:
- Disposal of inert waste (such as clay)
 - Continued excavation and recovery of previously deposited PFA where practical
 - Restoration of the site to levels required for the road scheme
- 3.1.2 No hazardous or new non-hazardous waste will be accepted.
- 3.1.3 Landfilling is expected to take around two years, after which the site will be restored in line with approved plans.
- 3.1.4 This application has been consulted on and agreed with the EA during pre-application discussions carried out under reference ENVTRK/WASTE/00003.

3.2 Amount of waste

- 3.2.1 It is proposed that the new Environmental Permit allows a throughput of waste of up to 750,000m³ per annum, with a total waste deposit over the life of the permit of 1,000,000m³. These quantities have been calculated to meet construction needs only and do not exceed what is necessary.
- 3.2.2 The source of the waste that will be deposited under the new permit will be from the adjacent Goshems Farm Deposit for Recovery site. The waste types accepted at Goshems Farm were also included in the permit for Tilbury Ash Disposal Site; therefore, no changes to the permitted waste types are required.
- 3.2.3 Previously deposited wastes, which comprise PFA and inert waste, will remain within the site. No new PFA will be deposited in the landfill, but PFA will continue to be recovered where possible, for stockpiling and future use in landscaping associated with LTC.

3.3 Permit boundary

- 3.3.1 This new permit application proposes changes to the boundary of the landfill, compared with the previous Tilbury Ash Disposal Site. The new permit application excludes parts of Areas A2 and A3, which have not received waste historically and are not required for LTC. It also excludes Area A1, which is not required for LTC and is separated from Area A2 by an existing access road which has not had waste deposited underneath it.
- 3.3.2 The new permit boundary is extended to the north, east and west compared to the previous Tilbury Ash Disposal Site boundary to allow inert waste to be deposited to raise the ground levels in these areas, so that the land is at the required height for the construction of the new roads associated with LTC.
- 3.3.3 The previous environmental permit boundary (the site) and the proposed permit boundary are shown on Figure 2-1

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4 Environmental protection measures

- 4.1.1 The Environmental Risk Assessment [13] identified the potential environmental effects that might arise from Tilbury Landfill and assessed how these would be managed. It considered possible risks to people, water, wildlife and the surrounding environment arising from landfill activities, including dust, noise, odour, surface water runoff and accidental spills. The assessment focused on the continued placement of inert waste and recovery of historical PFA.
- 4.1.2 The assessment concluded that the risks from the proposed activities are low and can be effectively controlled through established management measures and monitoring. These controls are set out in supporting plans, as discussed below. With these measures in place, the residual environmental risks are not considered significant.

4.2 Discharges to surface or groundwater

- 4.2.1 A Hydrogeological Risk Assessment [10] has been completed to assess whether landfill activities could affect the quality of groundwater or nearby surface waters. It builds on many years of site investigation, monitoring data and previous assessments. The assessment reviews the characteristics of the existing and proposed waste materials and their potential to release contaminants.
- 4.2.2 The assessment concludes that the proposed activities pose a very low risk to groundwater and surface waters. Monitoring results show no evidence of deterioration linked to the previous landfill operations, and the underlying geology provides an effective natural barrier.
- 4.2.3 Ongoing groundwater and surface water monitoring will continue under the new Environmental Permit to confirm that water quality remains protected throughout the life of the site.
- 4.2.4 The site will have a surface water drainage system installed, which collects rainwater that falls on the surface in a series of attenuation ponds. These attenuation ponds will allow sediment to settle out before discharging to surface watercourses. The discharge of water from the landfill’s surface water drainage system will be managed under a separate Environmental Permit.
- 4.2.5 In addition, management measures are recommended to avoid the accidental pollution of surface waters by soil.

4.3 Accidents

- 4.3.1 The Environmental Risk Assessment [13] considered the potential for accidental contamination to occur during the operation of the landfill. For example, the accidental release of fuel or other contaminants into surface water or the ground.
- 4.3.2 The Management Systems and Procedures document [8] submitted with this application sets out the measures to be taken to avoid accidental releases of contamination. For example, the safe storage of fuel and chemicals and routine maintenance of vehicles.

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4.4 Odour

4.4.1 The waste to be disposed of in Tilbury Landfill is not expected to create odour, as it will be mainly clay or clay bound material. No general odour management measures are considered necessary.

4.4.2 The landfill will operate under the strict waste acceptance procedures set out in the Site Operating and Waste Acceptance Procedures document [11] and odourous wastes are not anticipated to be received. However, should any odourous wastes be encountered, they will be managed in accordance with the Site Operating and Waste Acceptance Procedures [11].

4.5 Noise and vibration

4.5.1 The Environmental Risk Assessment [13] considered the potential for noise and vibration during landfilling. To reduce the impact from noise as much as possible, site operations will be restricted to within working hours, which are 08:00 to 18:00 weekdays (excluding bank holidays) and 08:00 to 13:00 on Saturdays. In addition, measures to reduce noise and vibration will be implemented, such as maintaining haul roads in good condition with no potholes; not playing music or radios on site, using hording around areas where noise is likely to affect people offsite and maintaining vehicles in good repair, so they do not rattle or vibrate.

4.6 Emissions

4.6.1 A Dust and Emissions Management Plan (DEMP) [9] has been prepared to evaluate the effect of dust and vehicle emissions and how they will be managed and monitored during landfilling. It identifies activities that could generate dust, such as earthworks and vehicle movements, and explains the practical measures that will be used to prevent dust affecting nearby residents, wildlife sites and the local environment.

4.6.2 The plan sets out a programme of routine inspections, weather monitoring and clear response procedures if dust is observed or complaints are received. Control measures include water suppression, wheel washing, covering of vehicles and good site housekeeping.

4.7 Application forms

4.7.1 Parts A, B2, B4 and F1 have been completed and are enclosed with this permit application.

4.8 Financial provision

4.8.1 National Highways has agreed a value of financial provision for the landfill with the Environment Agency to ensure that funds are available for site management, restoration and aftercare, if required.

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5 Management and monitoring

5.1 Management systems and procedures

- 5.1.1 Tilbury Landfill site will be managed on a day-to-day basis to protect people and the environment. The site will be operated in accordance with the environmental management system set out in the Management Systems and Procedures document [8] to make sure work is carried out safely and consistently. Staff will receive appropriate training and site activities will be planned and supervised so that potential environmental effects, such as dust, noise, water pollution or spills, are prevented or controlled.
- 5.1.2 The site’s environmental performance will be monitored and checked. Regular inspections, audits and monitoring will be carried out to make sure controls are working as intended and permit requirements are met. There are clear procedures for dealing with incidents or complaints, including reporting to the Environment Agency where required, and for reviewing performance so that improvements can be made over time.

5.2 Site operating and waste acceptance procedures

- 5.2.1 The Site Operating and Waste Acceptance Procedures document [11] sets out the strict waste acceptance procedures that will be in place to ensure that the materials accepted, handled and placed at Tilbury Landfill comply with the requirements of the Environmental Permit. Materials will be inspected before and after delivery, and any loads that do not meet the required standards will be set aside, tested if necessary and removed from site if they are not acceptable. Records will be kept of what materials are accepted and how the site is operated, and environmental monitoring results are reported to the regulator. Together, these procedures will ensure the landfill is managed carefully and transparently throughout its operation.
- 5.2.2 The site will be run in a way that avoids nuisance or pollution. Measures will be in place to control dust, noise, mud, spills and flooding, and to keep the site secure.

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6 Conclusion

- 6.1.1 The proposed landfill activities are necessary to deliver the Lower Thames Crossing and will be carried out in a controlled and responsible way.
- 6.1.2 Environmental risks have been carefully assessed and will be managed through established controls, monitoring and regulatory oversight. With these measures in place, the landfill is not expected to cause harm to people or the environment.

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7 Reference documents

Document title	Document number /Link
[1] The Environmental Permitting (England and Wales) Regulations 2016 (as amended)	The Environmental Permitting (England and Wales) Regulations 2016
[2] Environment Agency Landfill Operators: Environmental Permits	Landfill operators: environmental permits - Guidance - GOV.UK
[3] Environment Agency, Landfill Operators: Environmental Permits – accept the right waste	Landfill operators: environmental permits - Accept the right waste - Guidance - GOV.UK
[4] Environment Agency, Landfill Operators: Environmental permits - develop a management system	Develop a management system: environmental permits - GOV.UK
[5] Environment Agency, Landfill Operators: Environmental permits - control and monitor emissions for your environmental permit	Control and monitor emissions for your environmental permit - GOV.UK
[6] Tilbury Landfill Environmental Setting and Installation Design Report	HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000005
[7] Tilbury Landfill Closure and Aftercare Management Plan	HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000007
[8] Tilbury Landfill Management Systems and Procedures	HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000013
[9] Tilbury Landfill Dust and Emissions Management Plan	HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000008
[10] Tilbury Landfill Hydrogeological Risk Assessment	HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000011
[11] Tilbury Landfill Site Operating and Waste Acceptance Procedures	HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000009
[12] Tilbury Landfill Stability Risk Assessment	HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000010

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[13] Tilbury Landfill Environmental Risk Assessment	HE540039-BMJ-EAC-TA_SNZ_ZZ-RP-GS-000006
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8 Abbreviation and Glossary

Abbreviation/Term	Explanation
DCO	Development Consent Order
EA	Environment Agency: The Environment Agency was established under the Environment Act 1995, and is a Non-Departmental Public Body of Defra. The Environment Agency is the leading public body for protecting and improving the environment in England and Wales. The organisation is responsible for wide-ranging matters, including the management of all forms of flood risk, water resources, water quality, waste regulation, pollution control, inland fisheries, recreation, conservation and navigation of inland waterways.
Ha	Hectares, a unit of area
LTC	Lower Thames Crossing: a proposed new crossing of the Thames estuary linking the county of Kent with the county of Essex, at or east of the existing Dartford Crossing.
PFA	Pulverised Fuel Ash, a by-product of the burning of coal
Tpa	Tonnes per annum

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Appendix A – Previous permit

Previous Environmental Permit for Tilbury Ash Disposal Site operation

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Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Ingrebourne Valley Limited

Tilbury Ash Disposal Site

Tilbury Power Station

Fort Road

Tilbury

Essex

RM18 8UJ

Variation application number

EPR/GP3733DZ/V007

Permit number

EPR/GP3733DZ

Tilbury Ash Disposal Site

Permit number EPR/GP3733DZ

Introductory note

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

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. Use the following if you are varying some of the conditions. Only the variations specified in schedule 1 are subject to a right of appeal.

This variation is to amend the compliance limits for groundwater boreholes BHC5D and BHC3D which have been reclassified as control levels as detailed in the Monitoring Management Plan dated 10/11/2025 and the removal of in-waste gas compliance limits as gas boreholes are in waste and compliance limits are not set for in-waste gas boreholes.

The rest of the site will continue to operate as follows:

Site

Tilbury Ash Disposal Site is a non-hazardous landfill site located to the east of Tilbury in Essex. The site lies in a Flood Zone 3 benefiting from flood defences. The River Thames runs parallel to the southern site boundary, approximately 90m away. Access by road is obtained via the Tilbury Power Station to the west or by a jetty on the River Thames.

Regulated history

The disposal of ash to Tilbury Ash Disposal Site commenced shortly after the construction of the power station in 1968 and continued until its closure in 2013. The site was historically covered by four separate Waste Management Licences (WML), as follows:

- Licence EA/WML/71185 for Area A3 (Jan 1978);
- Licence EA/WML/71186 for Area C2 (Nov 1991);
- Licence 193/91 for Areas A1, A2 and C1 (June 2001); and;
- Licence 38/78 for Area B (June 2001)

Tilbury Ash Disposal Site was subsequently granted a PPC Permit (GP3739BQ) in 2007, which incorporated all areas previously authorised through the waste management licensing regime. Tilbury Ash Disposal Site has to date been developed as a land raise for the deposition of Pulverised Fuel Ash (PFA) from the adjacent Tilbury B power station. The site comprises of seven areas; Area A1 – A3, B1 and C1 – C3, located to the north-east of the power station. The site is permitted to be restored to a maximum elevation of 9 metres AOD. At present the site has been filled to an elevation of between 1.5 metres AOD and 6 metres AOD across Areas A1, A2, A3, B, C1 and C2. No filling has taken place across Area C3 to date and A1 has been completed as permitted.

The site has been permitted to complete the remaining fill levels using imported inert wastes instead of the previously permitted pulverised fuel ash. The site will be returned to agricultural use using the topsoils previously stripped from the landfill areas and materials authorised by the restoration plan.

A derogation from the inert landfill waste acceptance criteria required by the Landfill Directive has been approved for this site in respect of London Clay arising from various infrastructure and tunnelling projects. The approved derogation allows the clay to be accepted at the site with naturally elevated concentrations of total dissolved solids. The concentrations can be up to 3 times the leaching limit for an inert landfill set out in Council Decision Annex 2003/33/EC (European Council of 19 December 2002).

Landfill gas boreholes are to be retrospectively drilled for gas monitoring in aftercare post closure in line with the Landfill Directive requirements for inert waste due to their absence in the historic permit.

Due to the non-biodegradable nature of both the previously accepted single sourced PFA and the new waste streams, there will be no or very little leachate generated.

An aftercare plan of three years has been agreed given the limited biodegradable content of the deposited PFA and proposed inert waste codes.

The schedules specify the changes made to the permit.

We consider that in reaching our decision to vary the permit we have taken into account all relevant considerations and legal requirements. We are satisfied that the permit will ensure that a high level of protection is provided for the environment and human health and that the activities will not give rise to any significant pollution of the environment or harm to human health.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	Date	Comments
Application EPR/GP3739BQ/A001	Received 09/11/2004	Application for non-hazardous landfill accepting solely Pulverised Fuel Ash (PFA) produced by Tilbury B Power Station.
Permit determined EPR/GP3739BQ	05/04/2007	Original permit issued to RWE Npower plc
Variation Application EPR/XP3236UR/V002	Duly made 25/07/2007	
Variation Determined XP3236UR	01/06/2009	
Application EPR/GP3739BQ/V003	Duly made 21/07/2009	Increase in final restoration levels from 6m AOD to 9m AOD. Increase of extra 1 million tonnes of PFA.
Variation issued EPR/GP3739BQ	30/03/2010	
Application EPR/GP3739BQ/V004 (variation)	13/11/2014	Name changed to RWE Generation UK Plc.
Variation issued EPR/GP3739BQ	02/12/2014	Varied permit issued to RWE Generation UK Plc.
Application EPR/GP3733DZ/T001 (full transfer of permit EPR/GP3739BQ)	Duly made 31/03/2017	Application to transfer the permit in full from RWE Generation UK Plc to Ingrebourne Valley Limited
Transfer determined EPR/GP3733DZ	19/05/2017	Full transfer of permit complete.
Application EPR/GP3733DZ/V002 (variation and consolidation)	Duly made 24/05/2017	Application to vary waste types from PFA only to inert waste and update the permit to modern conditions.
Schedule 5 information request sent 10/07/17	Received 15/08/2017	Revised Hydrogeological Risk Assessment (HRA) and Stability Risk Assessment (SRA) and landfill gas risk assessment.
Additional information request sent 02/08/2017	06/09/2017	Dust, vegetation and sediment management plans.
2 nd Schedule 5 information request sent 07/09/17	Received 19/09/2017	Revised SRA.
Variation determined EPR/GP3733DZ	13/10/2017	Varied permit issued.

Status log of the permit		
Description	Date	Comments
Application EPR/GP3733DZ/V003 (variation and consolidation)	Duly made 15/10/2018	Application to vary and update the permit to modern conditions.
Response to Schedule 5 Notice dated 26/11/18	10/12/2018	Confirmation of the installation name, quantities of waste, site conceptual model, groundwater levels and flows, analysis of the sulphate levels from borehole BHC4D, further details regarding the drilling additives, and quantitative risk assessment.
Additional information received in response to request for further information dated 30/11/18	18/12/2018	Details concerning the restoration plan.
Additional information received in response to request for further information dated 18/12/18	29/01/2019	Revised Dust and Emissions Management plan.
Response to Schedule 5 notice dated 17/01/19	13/02/2019	Response regarding site conceptual model (relating to the hydrogeology and stability), proposals for borehole BHC4D, and restoration plan.
	11/03/2019	Response regarding site conceptual model and updated version of "Tideway Central, Soil Conditioning Agent and Grease – Spoil Deposition Risk Assessment" (Ferrovial Agroman Laing O'Rourke) (Version 4, dated March 2019)".
	12/03/2019	Response regarding site conceptual model.
Variation determined EPR/GP3733DZ	18/04/2019	Varied permit issued (variation and consolidation).
Application EPR/GP3733DZ/V004 (variation and consolidation)	Duly made 30/08/2019	Application to vary and update the permit to modern conditions.
Response to Schedule 5 Notice dated 03/10/2019	17/10/2019	Response regarding the derivation of Waste Acceptance Criteria.
Response to Schedule 5 Notice dated 26/11/2019	11/12/2019	Response justifying the risk factors and Waste Acceptance Criteria for Antimony, Barium, Chloride, Fluoride, Molybdenum, Phenol, and Selenium.
Additional information in response to a request for clarification dated 13/12/19	23/12/2019	Response regarding the clarifying Waste Acceptance Criteria for Antimony, Barium, Chloride, Fluoride, Molybdenum, Phenol, and Selenium.
Additional information in response to a request response to Schedule 5 Notice dated 26/11/2019	21/01/2020	Revised Waste Acceptance Procedure
Variation determined EPR/GP3733DZ	27/01/2020	Varied permit issued (variation and consolidation).
Application EPR/GP3733DZ/V005 (variation and consolidation)	Duly made 16/04/2020	Application to vary to add waste code
Response to Schedule 5 Notice dated 08/06/20	15/06/2020	Response regarding the derivation of waste acceptance procedures.
Additional information in response to a request response to request for further information dated 14/07/20	24/07/2020	Additional information regarding the assessment of the additives in the waste and revised waste acceptance procedures.

Status log of the permit		
Description	Date	Comments
Letter with additional request	30/07/2020	Requesting the materials to be used for engineering and capping.
Variation determined EPR/GP3733DZ	13/08/2020	Varied and consolidated permit issued.
Application EPR/GP3733DZ/V006 (variation and consolidation)	Duly made 16/06/2021	Application to add waste codes and make amendments to the improvement programme.
Variation determined EPR/GP3733DZ (variation and consolidation)	09/08/2021	Varied and consolidated permit issued.
Application EPR/GP3733DZ/V007 (variation and consolidation)	Duly made 13/08/2024	Application to amend the compliance limits for groundwater boreholes BHC5D and BHC3D which have been reclassified as control levels and removal of in-waste gas compliance limits.
Variation determined and consolidation issued EPR/GP3733DZ	09/12/2025	Varied and consolidated permit issued in modern format issued to Ingrebourne Valley Limited.

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies and consolidates

Permit number

EPR/GP3733DZ

Issued to

Ingrebourne Valley Limited (“the operator”)

whose registered office is

**Cecil House
Foster Street
Harlow Common
Harlow
Essex
CM17 9HY**

company registration number 02848746

to operate a regulated facility at

**Tilbury Ash Disposal Site
Tilbury Power Station
Fort Road
Tilbury
Essex
RM18 8UJ**

to the extent set out in the schedules.

The notice shall take effect from 09/12/2025.

Name	Date
Louise Hann	09/12/2025

Authorised on behalf of the Environment Agency

Schedule 1

The following conditions were varied as a result of the application made by the operator:

Condition 2.6.1 (a) – Removed reference to Table S2.1B as this table refers to waste types previously permitted for disposal

Condition 3.5.1 - Table references updated.

Table S1.2 Operating techniques – updated to include revised Monitoring Management Plan and Schedule 5 response.

Table S3.1 Groundwater – emission limits and monitoring requirements - updated to amend groundwater boreholes. BHC5D and BHC3D reclassified as control levels as detailed in the Monitoring Management Plan dated 10/11/2025

Table S3.4 Landfill gas – other monitoring requirements - (Previously S3.2) updated to reflect boreholes are in-waste and compliance limits are not set for in-waste gas boreholes. Table reference updated.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/GP3733DZ

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/GP3733DZ/V007 authorising,

Ingrebourne Valley Limited (“the operator”),

whose registered office is

**Cecil House
Foster Street
Harlow Common
Harlow
Essex
CM17 9HY**

company registration number 02848746

to operate an installation at

**Tilbury Ash Disposal Site
Tilbury Power Station
Fort Road
Tilbury
Essex
RM18 8UJ**

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

Name	Date
Louise Hann	09/12/2025

Authorised on behalf of the Environment Agency

Conditions

1 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 19 May 2017 as varied on 5 October 2017 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 Efficient use of raw materials

- 1.4.1 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.

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

1.5.1 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.

2 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 green 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 S2.1A; and
 - (b) they are non- hazardous waste; and
 - (c) they are not whole used tyres (other than bicycle tyres and tyres with an outside diameter of more than 1400mm); and
 - (d) they are not shredded used tyres; and

- (e) they are not liquid waste (including waste waters but excluding sludge); and
- (f) 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
- (g) all the relevant waste acceptance procedures have been completed; and
- (h) they fulfil the relevant waste acceptance criteria; and
- (i) they have not been diluted or mixed solely to meet the relevant waste acceptance criteria; and
- (j) 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
- (k) they are wastes with a code beginning with 07 05 and 16 03, they shall exclude waste medicinal products and pharmaceutically active waste materials arising from their manufacture.
- (l) 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 Wastes shall only be accepted for restoration where:

- (a) they are listed in schedule 2, table S2.3; and
- (b) they are accepted in accordance with a restoration plan approved in writing by the Environment Agency.

2.6.3 The operator shall:

- (a) visually inspect without unloading it, waste that is not in an enclosed container or enclosed vehicle on arrival at the landfill and waste at the point of deposit; and
- (b) 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 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 EP5 Restoration Plan, dated May 2017.

2.6.7 The quantity of waste that is disposed of or recovered 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 Closure and aftercare

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

3 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 fourth anniversary of the granting of the permit; and
 - (b) between nine and six months prior to every subsequent six years after the fourth 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.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, 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 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 Monitoring

3.5.1 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) Groundwater specified in tables S3.1 and S3.2;
- (b) Surface water specified in table S3.3; and
- (c) Landfill gas specified in table S3.4.

3.5.2 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.

3.5.3 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.

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 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) waste types and quantities; and
 - (iii) 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 3.5.3 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;
- (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.

In any other case:

- (c) the death of any of the named operators (where the operator consists of more than one named individual);
- (d) any change in the operator's name(s) or address(es); and
- (e) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.4 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 or D1 Deposit into or on to land; and R10 – Land treatment resulting in benefit to agriculture or ecology	Section 5.2 Part A(1) (a), The disposal of waste in a landfill.	Landfill for non-hazardous waste and landfill restoration.	Receipt, handling, storage and disposal of wastes, consisting of the types and quantities specified in conditions 2.6, as an integral part of landfilling.
A2	R5 - the recycling or reclamation of inorganic material	Section 5.4, Part A(1)(b)(iii), Treatment of non-hazardous slags and ashes	Crushing, screening or other physical grading of PFA waste with a capacity >75 tonnes/day prior to export from the site.	Applies to the screening and removal of PFA waste previously deposited at the landfill prior to export for re-use. Waste types are listed in table S2.2

Table S1.2 Operating techniques		
Description	Parts	Date received
Application	Sections 1, 2, 3, and 5 of the Application in response to Appendix 7 – specific question for the landfill sector Part C3 of the application form. <ul style="list-style-type: none"> • ESSD Report • HRA • Stability Risk Assessment 	24/05/2017
Response to Schedule 5 Notice dated 10/07/17	Response to question 3, 4 and 5 detailing the stability risk assessment. Response to question 6 detailing in-waste gas monitoring programme.	15/08/2017
Response to Schedule 5 Notice dated 07/09/17	Response to question 1, part; a), b) and c) detailing waste stability risk assessment.	19/09/2017
Response submitted in response to IC3	Plan showing the location of the landfill gas monitoring wells.	23/04/2018

Table S1.2 Operating techniques		
Description	Parts	Date received
Application	Response to Question 3a Technical Standards of Part C3 of the application and Section 4 of the Non-technical Summary.	Duly Made 15/10/2018
Response to Schedule 5 (1) dated 26/11/18	Response to Question 2 – Quantities and Types of Waste	10/12/2018
Response to Request for Further Information dated 30/11/18	Restoration Plan	18/12/2019
Response to Request for Further Information dated 18/12/18	Dust and Emissions Management Plan	29/01/2019
Response to Schedule 5 (2) dated 17/01/19	Response to Questions 1a),1b), and 2 to 8.	13/02/2019
Additional Information submitted in response to Schedule5 (2) dated 17/01/19	Agreement for the deposit of waste containing tunnelling additives below the cap	13/02/2019
Additional Information submitted in response to Schedule5 (2) dated 17/01/19	Tideway Central, Soil Conditioning Agent and Grease – Spoil Deposition Risk Assessment (Ferrovial Agroman Laing O'Rourke) (Version 4, dated March 2019)	11/03/2019
Additional Information submitted in response to Schedule5 (2) dated 17/01/19	Hydrogeological Risk Proposed Variation Development - HRA2c (dated February 2019)	12/03/2019
Application EPR/GP3733DZ/V004	Response to Question 3a Technical Standards of Part C3 of the application.	Duly Made 30/08/2019
Application EPR/GP3733DZ/V005	Response to Question 3a Technical Standards of Part C3 of the application. Including; "Tideway Central, Tunnelling Products – Spoil Deposition Risk Assessment" (Ferrovial Agroman Laing O'Rourke Joint Venture) (dated February 2020)	Duly Made 16/04/2020
Response to Request for Further Information dated 14/07/20	All parts	24/07/2020
Application EPR/GP3733DZ/V006	Waste Acceptance Procedure Review, ref. 10511_416.01526.00076_Tilbury_WAP_v3_final, dated 3 May 2021	11/05/2021
Application EPR/GP3733DZ/V007	Response to Question 3a Technical Standards of Part C3 of the application and supporting documents.	27/02/2024
Schedule 5 dated 25/09/2025EPR/GP3733DZ/V007	Response to question 1 on reclassification of compliance limits for BHC5D and BHC3D as control levels. Not including Monitoring Management Plan dated 10/10/25	16/10/2025

Table S1.2 Operating techniques		
Description	Parts	Date received
Further Information Received EPR/GP3733DZ/V007	Monitoring Management Plan Final Version dated 10/11/2025	10/11/2025

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	The operator shall submit to the Environment Agency in writing for approval a restoration plan for the site which includes waste quantities, waste types, and waste acceptance criteria for wastes for restoration (2.6.2).	Completed by the submission of Restoration Plan as part of variation V003.
IC2	The operator shall progressively install in-waste gas monitoring points at a minimum density of 2 points per hectare unless otherwise agreed with EA and commence routine in waste gas monitoring. 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. The proposal shall be in accordance with Environment Agency Guidance: LFTGN03 'Management of Landfill Gas'.	On completion of each cell.
IC3	The operator shall submit a gas monitoring layout plan containing unique borehole reference numbers to the Environment Agency for approval.	Completed.
IC4	The operator shall submit a report to the Environment Agency in writing detailing the investigation and sampling of borehole BHC4D. The report shall include the following: <ul style="list-style-type: none"> a. Written details of a programme of investigations to determine the cause of the non-compliance at BHC4D as per response to Schedule question 3 dated 13/02/19 unless otherwise agreed with Environment Agency. b. Based on the investigation undertaken in IC4a, a written, factual report and an interpretation report with conclusions and recommendations to either continue to use as a monitoring point or decommission the borehole. Once approved and from the date stipulated by the Environment Agency, the report outcomes shall be implemented in accordance with the agreed timescales, subject to such amendments or additions as notified by the Environment Agency.	Completed 11/11/20

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC5	<p>The operator shall submit a report to the Environment Agency in writing detailing the following for borehole BHC8D:</p> <ul style="list-style-type: none"> a. Written details of the location, construction and sampling programme for installation of a groundwater compliance monitoring borehole outside the landfilled waste in the groundwater outflow region at the southern boundary of the landfill, and proposals for setting compliance limits. b. The operator must undertake a further six rounds of monthly groundwater sampling at borehole BHC8D. A written report must then be submitted to the Environment Agency recommending groundwater compliance limits for this monitoring well based on the twelve available monitoring rounds. <p>Once approved and from the date stipulated by the Environment Agency, the report outcomes shall be implemented in accordance with the agreed timescales, subject to such amendments or additions as notified by the Environment Agency.</p> <p>When IC5b approved, the approved compliance limits shall be added to the permit Schedule 3 Table S3.1.</p>	<p>IC5a Completed 11/11/20</p> <p>IC5b Completed 14/09/22</p>

Table S1.4 Annual waste input limits	
Category	Limit tonnes/year
Non-hazardous waste	1,500,000
Waste for restoration	1,500,000
Total waste annual tonnage	1,500,000

Schedule 2 – List of permitted wastes

Table S2.1A Permitted waste types for disposal at a landfill for inert waste	
Waste code	Description
01	Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals
01 04	wastes from physical and chemical processing of non-metalliferous minerals
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	waste sand and clays
01 05	Drilling muds and other drilling waste
01 05 04	freshwater drilling muds and wastes
17	Construction and demolition wastes (including excavated soil from contaminated sites)
17 01	concrete, bricks, tiles and ceramics
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 04	soil and stones other than those mentioned in 17 05 03 (Excluding topsoil and peat, excluding soil and stones from contaminated sites)
17 05 04	soil and stones other than those mentioned in 17 05 03 with tunnelling additives ^[Note 1] (Excluding topsoil and peat, excluding soil and stones from contaminated sites)
17 05 04	soil and stones other than those mentioned in 17 05 03 with tunnelling additives ^[Note 2] (Excluding topsoil and peat, excluding soil and stones from contaminated sites)
17 05 06	dredging spoil other than those materials mentioned in 17 05 05
17 09	other construction and demolition wastes
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
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 02	wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)
19 02 03	premixed wastes composed only of non-hazardous wastes (treated chalk arisings only)
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 09	minerals (for example sand, stones)
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (treated chalk arisings only)
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions
20 02	garden and park wastes (including cemetery waste)

Table S2.1A Permitted waste types for disposal at a landfill for inert waste	
Waste code	Description
20 02 02	soil and stones (excluding topsoil and peat)
Note 1: Only additives detailed in report titled "Tideway Central, Soil Conditioning Agent and Grease – Spoil Deposition Risk Assessment (Ferrovial Agroman Laing O'Rourke) (dated March 2019)"	
Note 2: Only additives detailed in report titled "Tideway Central, Tunnelling Products – Spoil Deposition Risk Assessment" (Ferrovial Agroman Laing O'Rourke Joint Venture) (dated February 2020)	

Table S2.1B Waste types previously permitted for disposal	
Waste code	Description
10	WASTES FROM THERMAL PROCESSES
10 01	wastes from power stations and other combustion plants (except 19)
10 01 01	bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)
10 01 02	coal fly ash

Table S2.2 Permitted waste types for treatment (A2)	
Waste code	Description
10	Wastes from thermal processes
10 01	wastes from power stations and other combustion plants (except 19)
10 01 01	bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)
10 01 02	coal fly ash

Table S2.3 Permitted waste types for restoration	
Waste code	Description
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 other than those mentioned in 17 05 03
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions
20 02	garden and park wastes (including cemetery waste)
20 02 02	soil and stones

Schedule 3 – Emissions and monitoring

Table S3.1 Groundwater – emission limits and monitoring requirements						
Monitoring point reference	Parameter	Limit (including unit) mg/l	Reference period	Monitoring frequency	Monitoring standard or method	
BHC1D	Aluminium Nickel Molybdenum Selenium Sulphate Arsenic Chromium	0.052 0.02 0.012 0.020 60 0.026 0.027	Spot Sample	Quarterly	As specified in Environment Agency Guidance LFTGN02 '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.	
BHC2D	Aluminium Nickel Molybdenum Selenium Sulphate Arsenic Chromium	0.054 0.02 0.04 0.040 100 0.029 0.030	Spot Sample	Quarterly	As specified in Environment Agency Guidance LGTGN02 '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.	
BHC3D	Aluminium Nickel Molybdenum Selenium Sulphate Arsenic Chromium	Note 1	Spot Sample	Quarterly	As specified in Environment Agency Guidance LFTGN02 '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.	

Table S3.1 Groundwater – emission limits and monitoring requirements					
Monitoring point reference	Parameter	Limit (including unit) mg/l	Reference period	Monitoring frequency	Monitoring standard or method
BHC5D	Aluminium Nickel Molybdenum Selenium Sulphate Arsenic Chromium	Note 1	Spot Sample	Quarterly	As specified in Environment Agency Guidance LFTGN02 '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.
BHC6D	Aluminium Nickel Molybdenum Selenium Sulphate Arsenic Chromium	0.057 0.01 0.0085 0.016 60 0.013 0.030	Spot Sample	Quarterly	As specified in Environment Agency Guidance LFTGN02 '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.
BHC7D	Aluminium Nickel Molybdenum Selenium Sulphate Arsenic Chromium	0.027 0.02 0.0074 0.021 250 0.017 0.030	Spot Sample	Quarterly	As specified in Environment Agency Guidance LFTGN02 '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.

Table S3.1 Groundwater – emission limits and monitoring requirements					
Monitoring point reference	Parameter	Limit (including unit) mg/l	Reference period	Monitoring frequency	Monitoring standard or method
BHC8D	Aluminium Nickel Molybdenum Selenium Sulphate Arsenic Chromium	0.11 0.02 0.0078 0.06 141 0.01 0.03	Spot Sample	Quarterly	As specified in Environment Agency Guidance LFTGN02 '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.
Note 1: BHC5D and BHC3D reclassified as control levels as detailed in the Monitoring Management Plan dated 10/11/2025.					

Table S3.2 Groundwater – other monitoring requirements			
Monitoring Point Ref./Description	Parameter	Monitoring frequency	Monitoring standard or method
BHC1S BHC2S BHC3S BHC4S BHC5S BHC6S BHC7S	Water level (mAOD), aluminium, antimony, arsenic, boron, chromium, molybdenum, mercury, nickel, selenium, sulphate, vanadium	Quarterly	As specified in Environment Agency Guidance LFTGN02 '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.
BHC1D BHC2D BHC3D	Water level (mAOD), aluminium, antimony, arsenic, boron, chromium, molybdenum, mercury, nickel, selenium, sulphate, vanadium	Quarterly	
BHC4D BHC5D	pH, electrical conductivity, total alkalinity, chloride, fluoride, bromide, calcium, magnesium, barium, sodium, potassium,	Annually	

Table S3.2 Groundwater – other monitoring requirements			
Monitoring Point Ref./Description	Parameter	Monitoring frequency	Monitoring standard or method
BHC6D BHC7D BHC8D	cadmium, copper, lead, zinc, manganese, iron, cobalt, tin, thallium, antimony, ammoniacal nitrogen, TON, TOC, phosphate and phenol Base of monitoring point (mAoD)		

Table S3.3 Surface water – other monitoring requirements				
Monitoring Point Ref./Description	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
SWB	Aluminium Arsenic Boron Cadmium Calcium Chromium Magnesium Nickel Potassium	Quarterly	Spot sample	As specified in Environment Agency Guidance LFTGN02 '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.

Table S3.4 Landfill gas – other monitoring requirements			
Monitoring Point Ref. /Description	Parameter	Monitoring frequency	Monitoring standard or method
In waste gas monitoring boreholes	Methane Carbon Dioxide Oxygen Carbon Monoxide Differential pressure Atmospheric pressure	Quarterly	As specified in Environment Agency Guidance LFTGN03 'Guidance on the management of landfill gas' (September 2004) or such other subsequent guidance as may be agreed in writing with the Environment Agency. Record whether the ground is: waterlogged frozen snow covered

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data		
Parameter	Reporting period	Period ends
Emission to groundwater As specified by schedule 3, table S3.1	Every 3 months	31 March, 30 June, 30 September, 31 December
Other groundwater monitoring As specified by schedule 3, table S3.2	Every 3 months	31 March, 30 June, 30 September, 31 December
Other surface water monitoring As specified by schedule 3, table S3.3	Every 3 months	31 December
Landfill gas in monitoring boreholes As specified by schedule 3, table S3.4	Every 3 months	31 March, 30 June, 30 September, 31 December

* - 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	
Pulverised fuel ash: Treated (by crushing screening or other physical grading). Excavated and treated to meet a Quality Protocol and transferred from disposal site for reuse. Excavated and/or treated and transferred from disposal site for reuse (non Quality Protocol)	Tonnes/year

Table S4.3 Performance parameters			
Parameter	Frequency of assessment	Annual total	Unit
Energy used	Annually		MWh of electricity or natural gas

Table S4.4 Reporting Forms		
Media/parameter	Reporting format	Date of form
Groundwater	Form Groundwater 1 or other reporting format to be agreed in writing with the Environment Agency	18/04/19
Landfill gas	Form LFG 1, or other reporting format to be agreed in writing with the Environment Agency	18/04/19
Waste Return	E-waste Return Form	--
Annual Production/Treatment	Reporting format to be agreed in writing with the Environment Agency	--

Table S4.4 Reporting Forms		
Media/parameter	Reporting format	Date of form
Landfill topographical surveys and interpretation	Reporting format to be agreed in writing with the Environment Agency	--

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 malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit 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	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

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

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B to be supplied as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

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.

(a) “Cell layout drawing” means: 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 2010, SI 2010 No.675. 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 property” has the meaning in Annex III of the Waste Framework Directive.

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

“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.

“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.

“Liquids” means any liquid other than leachate within the engineered landfill containment system.

“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

“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.

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

“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.

“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).

“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 EP 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 EP Regulations.

‘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” means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk.

Where the following terms appear in the waste code list in Tables S2.1A, S2.1B, S2.2 or S2.3 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;

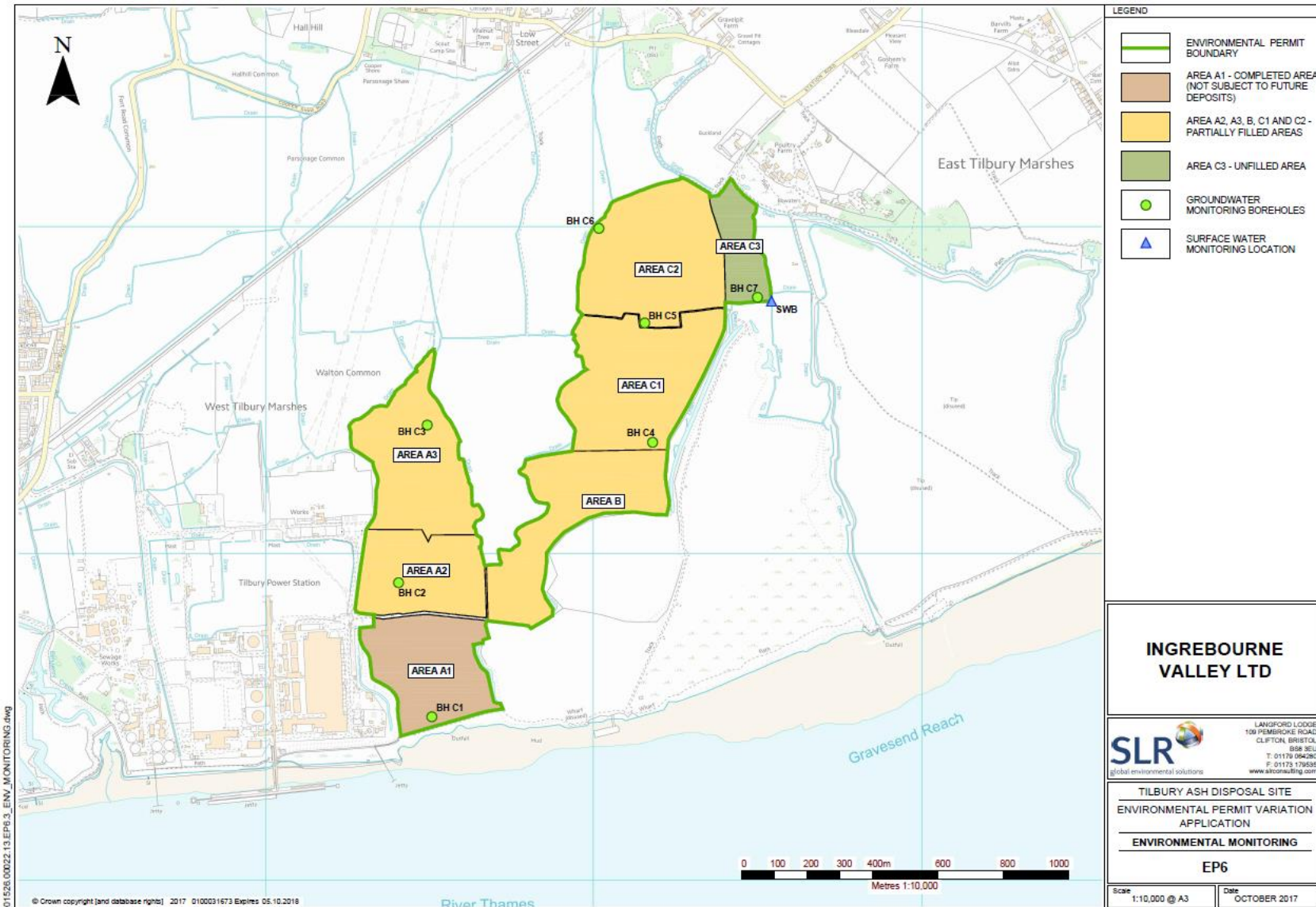
'transition metals' means any of the following metals: any compound of scandium, vanadium, manganese, cobalt, copper, yttrium, niobium, hafnium, tungsten, titanium, chromium, iron, nickel, zinc, zirconium, molybdenum and tantalum, as well as these materials in metallic form, as far as these are classified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



END OF PERMIT

Permit number
EPR/GP3733DZ/V007