



REPORT

Biffa Waste Service Ltd

Eye Landfill, Eastern Extension

Non-Technical Summary

Submitted to:

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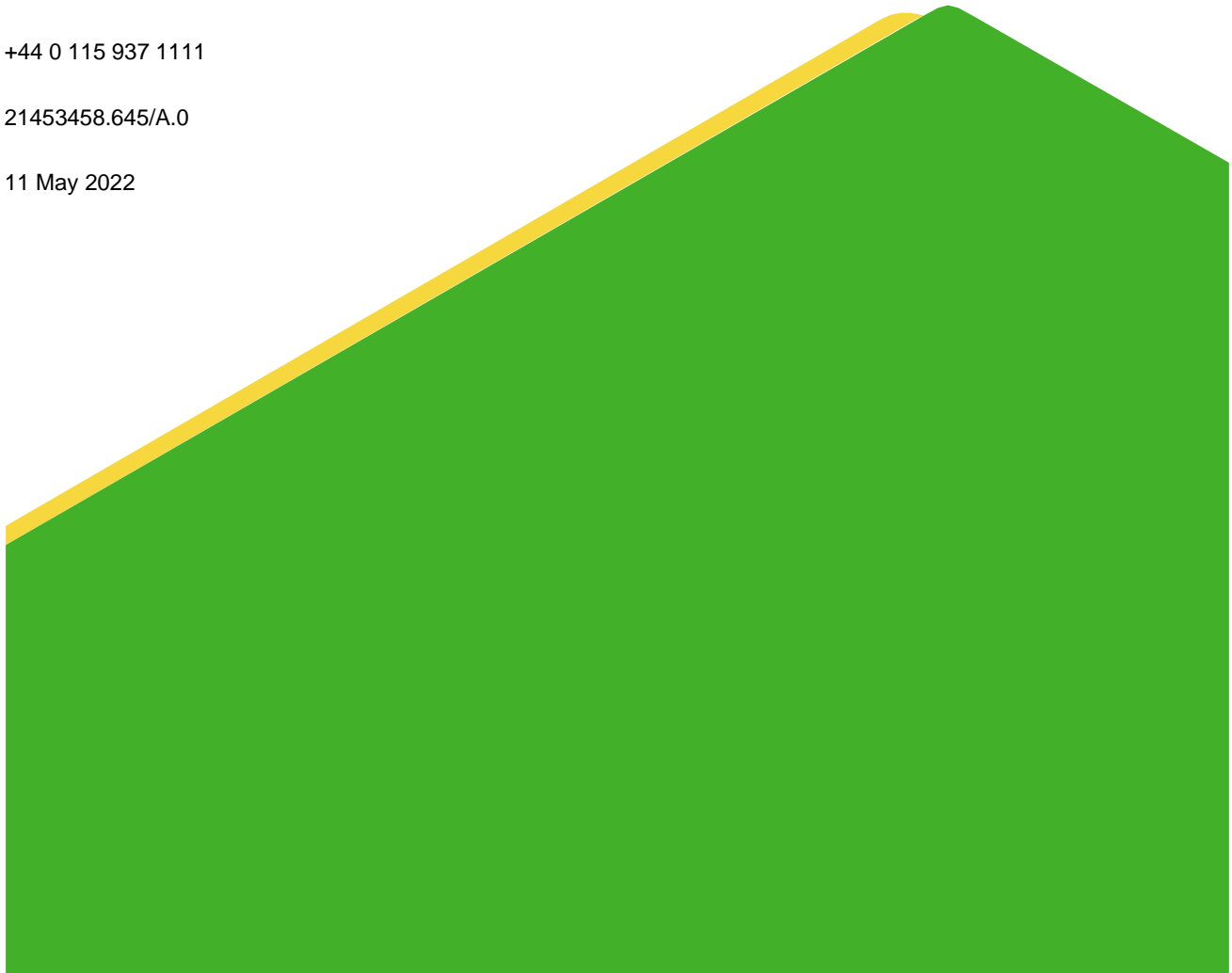
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1.0 INTRODUCTION

1.1 General

This Non-Technical Summary (NTS) is provided in support of an Environmental Permit (EP) variation and partial surrender application submitted by Biffa Waste Services Ltd (Biffa) to the Environment Agency (EA) for the development of an 'Eastern Extension' to Eye Landfill, near Peterborough. The application has been prepared by Golder, member of WSP in UK, at the request and with the support of Biffa.

A Planning application for this development was submitted to Peterborough City Council in April 2022.

1.2 Background

Eye Landfill, operated by Biffa, is located at National Grid Reference TF 235 010, at Eyebury Road, Eye, Peterborough PE6 7TH and has been progressively developed as a sand and gravel quarry with restoration by landfill under a series of planning permissions and environmental permits since 1966. Today, Eye Landfill covers an area of approximately 130 hectares (ha) and includes four areas of landfill which have been progressively filled and restored since 1982, as follows:

- Central Area (filled and restored).
- Northern Extension (filled and restored).
- North-eastern Extension (filled and restored).
- Southern Extension (operational and expected to be full in March 2023).

Access to the Site is along an entrance road connecting from Eyebury Road. Eye Landfill also has the following infrastructure and features:

- A Wildlife Corridor developed by Biffa, and now part of a County Wildlife Site, to the east of the Southern Extension that sits astride the path of a high voltage transmission line passing SSW to NNE.
- The Cat's Water Drain which is a natural watercourse along the eastern boundary which flows southwards. It is maintained by the District Internal Drainage Board (IDB) and has been canalised adjacent to the Site.
- Clear Water Lagoon is a large lake managed by Biffa located between the Central Area and the Southern Extension, and which is also part of the County Wildlife Site.
- The Green Wheel footpath passing west to east, along the northern edge of the Clear Water Lagoon.
- Landfill Gas Compound for the generation of electricity from landfill gas, two Leachate Storage Lagoons, and Miscanthus Beds ('Reed Beds') for the treatment of leachate.
- Site Reception (including office, two weighbridges, welfare facilities and car park).
- Recycling Shed.
- Silt Lagoons to the north and northeast of the Site Reception.

Willow Hall Farm Quarry and Inert Landfill is located immediately to the east of Eye Landfill (on the eastern side of the Cat's Water Drain) and is operated by PJ Thory Ltd (Thory). It is an active sand and gravel quarry which is being restored to a low level, flat lying restoration by the disposal of inert waste. The current mineral workings are shown in **Figure NTS1**.



Figure NTS1: Willow Hall Farm Quarry and Inert Landfill

Biffa and Thory have agreed the feasibility of Biffa utilising void space at Willow Hall Farm Quarry and Inert Landfill for the disposal of non-hazardous waste and have been working collaboratively to this effect. This application is therefore made by Biffa for it to develop parts of Willow Hall Farm Quarry as a non-hazardous landfill (to be called Eye Landfill, Eastern Extension) for continuous and uninterrupted landfilling operations after the current Southern Extension at Eye Landfill is completed in March 2023.

1.3 Summary of Proposed Development Scheme

Biffa would like to extend its existing landfill operations at Eye Landfill by the development of an Eastern Extension and is applying for planning permission and an Environmental Permit variation and partial surrender application to:

- 1) Develop parts of Willow Hall Farm Quarry and Inert Landfill as a non-hazardous landfill (to be called the Eastern Extension) for continuous and uninterrupted landfilling operations after the current Southern Extension at Eye Landfill is completed.

Re-development as a non-hazardous waste landfill requires Biffa to provide a new scheme for the excavation and movement of underlying clay materials, excavation and relocation of inert waste already deposited, and changes to the approved phasing and restoration contours.

The Eastern Extension Landfill will be accessed from Eye Landfill (and not Willow Hall Lane) and so Biffa also proposes to:

- 2) Replace the existing and now old Site Reception at Eye Landfill with a new Site Reception in an adjacent location. The new Site Reception will be similar and will have car park, office, welfare, weighbridge, wheelwash, car park and leachate storage tank facilities. Biffa will decommission and remove the old facilities.

- 3) Re-route the internal haul road, so it passes from the new Site Reception around the west and north of the existing Recycling Shed by re-opening an old haul route originally used in the 1980s/1990s, crosses the Green Wheel path at the existing crossing point, and passes along the southern edge of the Central Area.
- 4) Create a new bridge crossing over the Cat's Water Drain at the southeast corner of the Central Area to serve the Eastern Extension.
- 5) Extend pipework so that infrastructure currently used for the management of leachate and landfill gas can also serve the Eastern Extension.

The location of Eye Landfill, Willow Hall Farm Quarry and Inert Landfill, and the proposed Environmental Permit Application Boundary are shown on **Figure NTS2**.

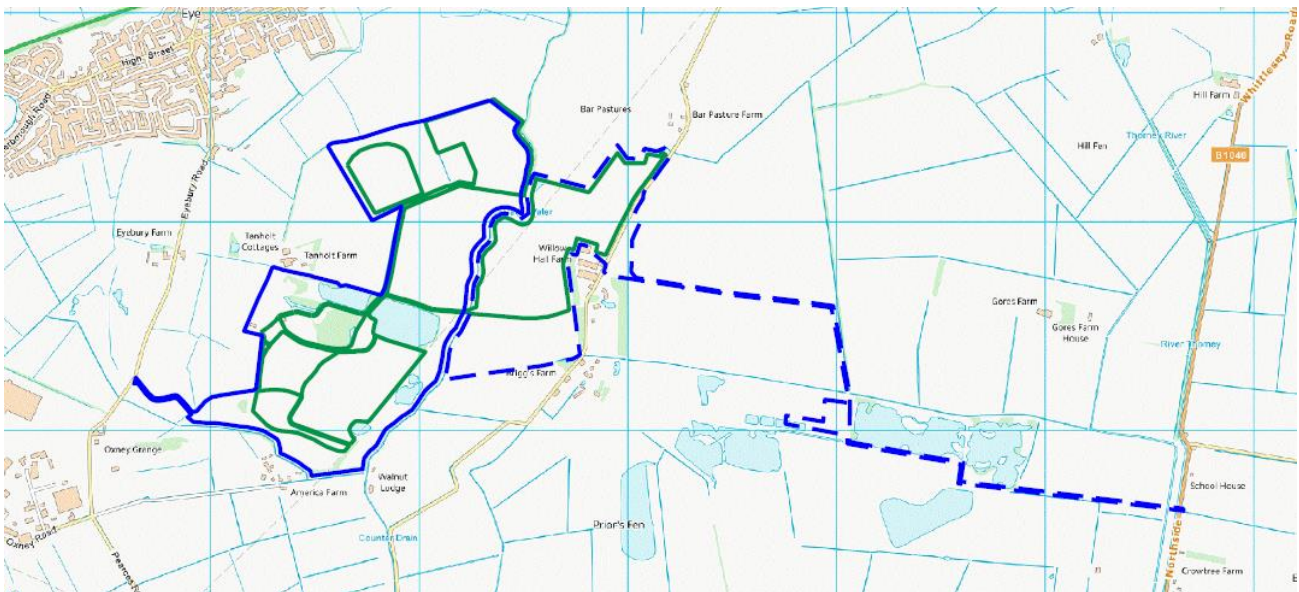


Figure NTS2: Eye Landfill (Blue), Willow Hall Farm Quarry and Landfill (dashed Blue) and Environmental Permit Application Boundary for the Existing Site and Eastern Extension (Green)

This proposed scheme is summarised as follows:

- Ongoing mineral extraction operations at Willow Hall Farm Quarry will continue and be completed by Thory to existing timescales; however, the ongoing restoration by the placement of inert waste would cease subject to approval of Biffa's planning and Environmental Permit variation applications.
- With permissions in place, Biffa proposes to commence preparation works in 2022. Preparation works will include the new Site Reception, haul road, installing a bridge across the Cat's Water Drain and shallow environmental monitoring boreholes. As soon as mineral extraction has been completed in the southeast corner of the Eastern Extension closest to residential properties, Biffa will backfill with clay and complete that area of restoration in advance.
- The existing crossing point in the middle of Eye Landfill where the site haul road crosses the Green Wheel path will be upgraded by Biffa with appropriate gates and signage to ensure ease of use and the safety of walkers, riders, cyclists and site pedestrians and vehicles.
- The Eastern Extension will be divided into ten cells (Cells 9 to 18), **Figure NTS3**. Each cell will be engineered using the natural clays underlying the site with the addition of associated drainage materials and pipework, **Figure NTS4**. Landfilling is proposed to commence in Cell 9 at the southwest corner, starting April 2023.

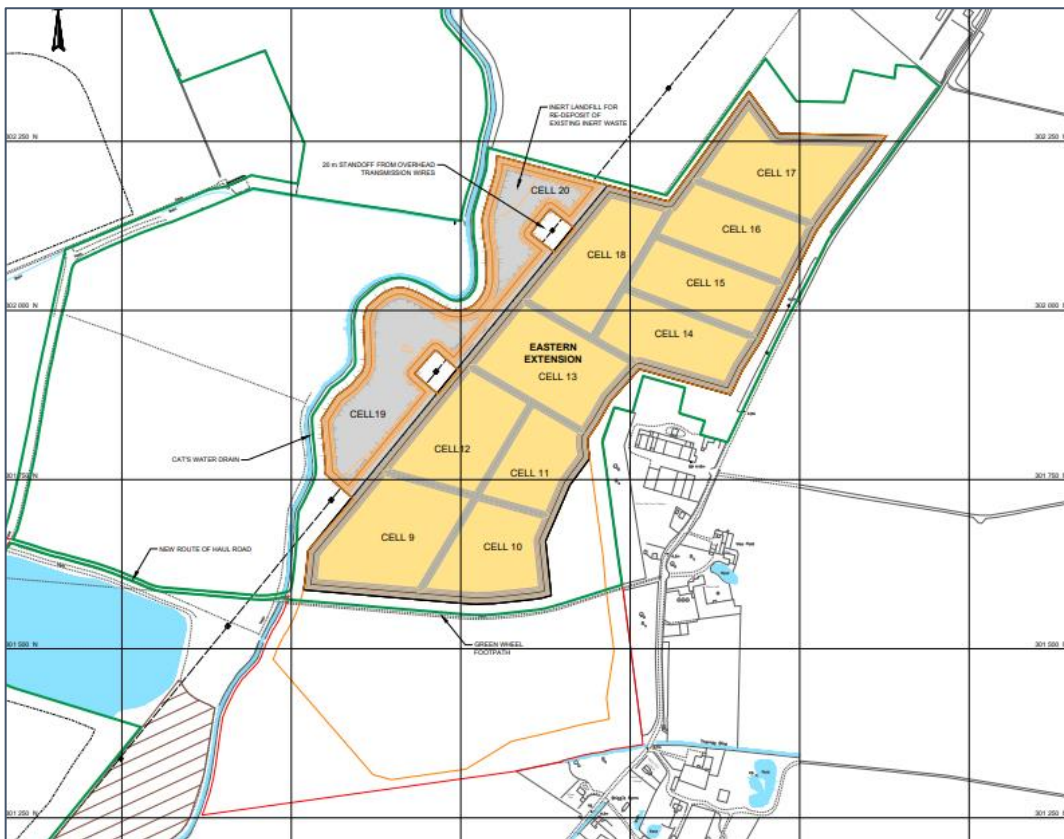


Figure NTS3: Layout of Eastern Extension (Cells 9-18 for Non-hazardous Waste and Cells 19-20 for Inert Waste)



Figure NTS4: Eye Landfill, Southern Extension (Cell 4 prepared prior to landfilling, 2021)

- The Green Wheel path will also be re-instated as soon as mineral workings have been completed and Area 3 has been backfilled. It will be upgraded to a bridleway and set in a 'green corridor' incorporating ponds and native planting, to provide an attractive, ecologically diverse setting to the Green Wheel Path.
- Landfill gas produced by the Eastern Extension will be directed to the existing plant at Eye Landfill for the generation of electricity.

The new restoration scheme will reduce the overall landfill footprint, bring forward and enhance some areas of restoration including the Green Wheel path, and provide an extension to Biffa's existing Wildlife Corridor.

2.0 ENVIRONMENTAL PERMIT VARIATION AND PARTIAL SURRENDER APPLICATION

The existing Northeastern and Southern Extensions at Eye Landfill are authorised by Environmental Permit EPR/BP/3537PP which was issued by the Environment Agency in 2005. The Permit has been varied a number of times since, including to add in the Southern Extension, Miscanthus Beds for leachate treatment, and for the disposal of asbestos. The EP was last varied and consolidated by the Environment Agency in May 2018 (Variation Notice V010). The Site is permitted to accept 400,000 tonnes of non-hazardous waste, and 204,999 tonnes of inert waste per year.

It is proposed to vary this permit to include the Eastern Extension. As part of the permit application process, Biffa is required to demonstrate that Best Available Technique (BAT) will be implemented to prevent and, where this will not be possible, to minimise, risks of pollution to all environmental media. Biffa has been issued with its Environmental Permit indicating that it is able to operate in accordance with BAT for landfill. These operational techniques will be carried forward to operation of the Eastern Extension.

The Environment Agency will regulate the Site under the conditions of the Environmental Permit until its closure, at which time the Site will enter an aftercare period (after restoration has been completed), the length of which could be 60 years or more. During this time period, Biffa will continue to monitor and manage the Site under the conditions of the Permit, regulated by the Environment Agency, in a manner protective of the surrounding environment.

Area 3 will no longer be landfilled or required to hold an Environmental Permit, and Biffa proposes to surrender this area from the Permit as part of its application to the Environment Agency.

3.0 INSTALLATION DETAILS FOR EASTERN EXTENSION

3.1 Access and Waste Acceptance

Biffa will use its existing entrance on Eyebury Road for landfilling at the Eastern Extension. They will continue to use its entrance across Willow Hall Lane until mineral extraction is completed.

Vehicular access to Eye Landfill is via the existing 700 m long entrance road from Eyebury Road to the Site Reception. The entrance road connects to Eyebury Road with a purpose-built T-junction arrangement suitable for Heavy Commercial Vehicles.

All vehicles report to the Site control compound and weighbridge before gaining access to the landfill along the internal access routes. Incoming waste is subject to detailed procedures regarding the checking and acceptance of waste.

3.2 Hours of Operation

The hours of operation for the Eastern Extension will be the same as for the existing Southern Extension, as follows:

- 07.00 to 18.00 Monday to Friday;
- 07.00 to 18.00 Saturdays; and
- At no other times or on Sundays, Public Holidays or Bank Holidays.

3.3 Site Management and Employment

The Site will be managed by a team of staff led by a Site Manager holding the requisite competence qualifications (the requisite qualifications are prescribed by the Waste Management Licensing Regulations 1994 as amended).

The application sets out a programme of environmental management with which to identify, minimise and mitigate potential impacts of the Site and describes a commitment to a programme of continuous improvement in line with best practice available in the waste management industry.

Eye Landfill currently has eight full time equivalent staff which will continue in operation of the Eastern Extension:

- Site Manager;
- Operations Manager;
- Site Foreman;
- Three Machine Operators;
- Weighbridge Clerk; and
- Labourer.

These Biffa staff are supported by visiting managerial and environmental monitoring staff.

3.4 Waste Inputs

The classification of Eastern Extension Landfill will be Non-Hazardous. Only solid non-hazardous and inert wastes will be deposited within the Eastern Extension. Inert wastes will be deposited in designated areas and additionally used for daily cover.

The Southern Extension is anticipated to finish for the disposal of non-hazardous waste at end March 2023 and the Eastern Extension will therefore be proposed to open in April 2023. Small amounts of asbestos waste will continue to be accepted in the Southern Extension until end December 2025 but will not be taken in the Eastern Extension.

The permitted waste list for the Eastern Extension will be the same as that currently approved for the Southern Extension excluding asbestos waste. Waste is proposed to be accepted at a constant rate of 220,000 tonnes per annum (tpa) for all years, at the following breakdown:

- General Industrial and commercial waste – 110,000 tpa.
- Inert materials and cover materials – 90,000 tpa.
- Contaminated soils – 10,000 tpa.
- Difficult – 10,000 tpa.

Wastes may also be received at the landfill for use in restoration, in accordance with the Environmental Permit.

Inert waste already deposited by Thory will be excavated and re-deposited in Cells 19-20. The classification of these areas will be Inert.

Waste will be deposited in the landfill in a series of thin layers and compacted by being repeatedly driven over by a specialised compactor. Deposited waste would be covered on a daily basis using inert materials or soils.

3.5 Landfill Engineering Design

The Eastern Extension will be divided into ten engineered landfill cells (Cells 9 to 18) as shown on **Figure NTS3** for the disposal of non-hazardous waste and development shall proceed in the order of cells in an anti-clockwise manner. This phasing has been developed to mitigate the impacts of the development scheme on ecology and nature conservation and to allow the creation and establishment of a Wildlife Corridor to the west of the existing pylons, that pass across the west of the Site, to compensate those effects.

Progressive capping, restoration and landfill gas management within the Eastern Extension will be carried out as each cell is completed.

Quantitative risk assessments have been carried out for hydrogeology, stability and landfill gas. A qualitative nuisance and health risk assessment and habitats risk assessment have also been carried out. These risk assessments have been completed in accordance with the requirements of the Environmental Permitting Regulations 2016 and therefore also the Landfill Directive.

The base of each future cell will be lined with clay and will be sloped to an engineered sump for the collection of leachate. Leachate comprises mostly rainfall that percolates down through the waste and collects in the bottom of each cell. The cell base will be covered with a drainage blanket and network of pipes to direct leachate towards the sump.

3.6 Leachate Management

Leachate will be managed by extraction from leachate wells serving each sump and transfer via pipeline to the Leachate Storage Tank located adjacent to a new Site Reception prior to removal by road-going tanker to export an appropriately authorised wastewater treatment works.

In order to ensure that leachate does not escape beyond the containment system and ultimately into the groundwater around the Site, the leachate level in the Site will be managed and groundwater outside the Site will be monitored. Details of management and monitoring are provided within the application and all results are submitted to the Environment Agency. The application also provides an action plan in the event of agreed compliance limits being exceeded.

3.7 Landfill Gas Management

Landfill gas control will be based on an active gas extraction system incorporating a network of gas extraction wells and pipework directing gas to the existing flare stack and an electricity generation plant. The gas utilisation plant and flare is located in the Environmental Compound. The active gas extraction system will be progressively installed with the restoration of each cell and will generate electricity for the National Grid.

A number of boreholes will be installed around the boundary of the Site in order to detect any gas escaping from the containment area. Details of management and monitoring are provided within the application and all results are submitted to the Environment Agency. The application also provides an action plan in the event of agreed trigger levels being exceeded.

3.8 Groundwater Management

Groundwater management and discharge is required whilst the Site is under landfill development. Groundwater that discharges into the quarry from the lower parts of the quarry face is pumped to a surface water lagoon in the northwest corner. Water is pumped from the lagoon to the Cat's Water Drain in accordance with an Environmental Permit (EPR/EB3091VZ). During landfill construction back-drains will be installed behind the exterior lining system of Cells 9 to 20, if required, so that groundwater will drain into the undeveloped parts of the quarry from where it will be pumped to the surface water lagoon for discharge to the Cat's Water Drain.

3.9 Surface Water Management

The landform slopes in the final restoration have been designed to shed surface water to the perimeter of the Site. Surface water run-off from areas of non-hazardous landfill will be collected by marginal and perimeter drains to discharge to the Cat's Water Drain. The drains will be installed progressively as each phase of restoration is completed, i.e. as each cell is capped or area of inert waste is completed, the requisite ditches shall be constructed. Ditches will be lined where constructed above waste and unlined where constructed into virgin ground or over restoration backfill material. The unlined sections of the ditches will provide significant soakaway capacity.

Flow will be directed to feed and sustain surface water ponds, ditches and swales created within the extension to the Wildlife Corridor and along the restored corridor either side of the Green Wheel path.

3.10 Capping and Restoration

In order to reduce the amount of precipitation allowed to infiltrate the waste, a low permeability cap will be constructed as the waste in each cell is completed to final pre-settlement levels. The Site will then be restored by the placement of 1 m of subsoil and topsoil. The detailed design and construction details will require Environment Agency approval prior to the capping and restoration works.

Upon restoration, the Site will be returned to agriculture. Landform slopes in the final restoration have been designed to shed water to designated surface water drainage ditches and to the Wildlife Corridor. Details of surface water management and monitoring are provided within the application and all results are submitted to the Environment Agency. The application also provides an action plan in the event of agreed compliance limits being exceeded.

3.11 Pollution Control Measures

Environmental monitoring systems will be installed at the Site to ensure that there are no adverse effects on the surroundings. Details of the proposed environmental monitoring programme, and compliance limits are detailed within the application. Environmental management systems will be implemented, and Biffa will regularly review these systems to ensure that the latest appropriate techniques are being employed.

Signature Page

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