



**ENVIRONMENTAL PERMIT APPLICATION –  
APPLICATION SITE CONDITION REPORT**

**CARDIFF WASTE MANAGEMENT RESOURCE CENTRE  
WATERSIDE BUSINESS PARK  
LAMBY WAY  
RUMNEY  
CARDIFF  
CF3 2EQ**

**Document Reference: BF5023/08  
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**Project Quality Assurance  
Information Sheet**

**ENVIRONMENTAL PERMIT APPLICATION – APPLICATION SITE CONDITION REPORT  
CARDIFF WASTE MANAGEMENT RESOURCE CENTRE, WATERSIDE BUSINESS  
PARK, LAMBY WAY, RUMNEY, CARDIFF, CF3 2EQ**

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**Prepared for** : Biffa Waste Services Limited  
**Prepared by** : Sirius Environmental Limited  
The Beacon Centre for Enterprise  
Dafen  
Llanelli  
SA14 8LQ

**Written by** : 

**Michael Knott BSc (Hons) MSc FGS AIEMA AssocMCIWM  
Environmental Consultant**

**Reviewed by** : 

**Dylan Thomas BSc (Hons) PGDip MCIWM  
Principal Environmental Consultant**

**Approved by** : 

**Mark Griffiths BSc (Hons) MSc CEnv MCIWM CGeol  
Environmental Director**

Revision	Date	Amendment Details	Author	Reviewer

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WATERSIDE BUSINESS PARK  
LAMBY WAY  
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**ENVIRONMENTAL PERMIT APPLICATION**

**SUPPORTING STATEMENT**

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## 1.0 APPLICATION SITE CONDITION REPORT CONTEXT:

Sirius Environmental Limited (Sirius) has been commissioned by Biffa Waste Services Ltd, to prepare and submit a Site Condition Report to support an Environment Permit Application for a Waste Transfer Station Facility, Waterside Business Park, Lamby Way, Rumney, Cardiff. The relevant documentation is submitted in accordance with the Environmental Permitting (England and Wales) Regulations 2016 (referred to hereafter as the EP Regulations).

The Site Condition Report has been compiled in accordance with the EP Regulations and with Horizontal Guidance Note 5, Site Condition Reports - Guidance and Templates. Information has been gathered based on a desk study review of publicly available information.

The purpose of the initial Site Condition Report is to provide a factual statement of the condition of the site at the time of the Environmental Permit Application. The Site Condition Report must describe the nature and distribution of potentially polluting substances in the ground and groundwater at the site prior to the commencement of operations under the Environmental Permit, and those handled during the course of activities on the site. The potentially polluting substances of interest are those which are to be handled at the site under the Permit.

Furthermore, it is important to highlight that due to the nature of the proposed wastes to be accepted onto the proposed site, the state of the soil and groundwater contamination at the proposed site needed to be established to ensure that the proposed installation does not deteriorate the existing baseline conditions. In accordance with Article 22 of the Industrial Emissions Directive, an investigation into the baseline conditions of the proposed site has been undertaken, with the findings of this baseline report used to inform the preparation of this Application Site Condition Report. Full copies of the Phase 1 Geo-Environmental Desk-Based Risk Assessment and the subsequent Phase 2 Geo-Environmental Intrusive Investigation Risk Assessment are provided in **Appendix SCR1** and **Appendix SCR2** respectively.

<b>2.0 SITE DETAILS</b>	
<b>Name of the applicant</b>	Biffa Waste Services Limited
<b>Activity address</b>	Waterside Business Park, Lamby Way, Rumney, Cardiff, CF3 2EQ
<b>National grid reference</b>	ST 22019 78619
<b>Document reference and dates for Site Condition Report at permit application and surrender</b>	<p>This Application Site Condition Report (Doc. Ref.: BF5023/08) has been prepared to support an Environment Permit Application to operate a waste management facility at Waterside Business Park, Lamby Way, Rumney. The format of this report follows the H5 SCR template (v2.0; 4 August 2008).</p> <p>The baseline conditions have been derived from desk study information and the results of a site investigation collated August 2017. Whilst the desk-based assessment (<b>Doc. Ref.: LWC-BWB-00-XX-EN-RP-0001_DS_P2</b>) and intrusive site investigations (<b>Doc. Ref.: LWC-BWB-00-EN-RP-0002_PH2_P2</b>) were carried in 2016 prior to the preparation of this Application Site Condition Report, no further contaminative land uses have been conducted at the site since these investigations were completed. Consequently, it is considered that the results of the 2017 investigations continue to represent an accurate reflection of baseline conditions for the site at the time of application (i.e. March 2020).</p> <p>For the avoidance of doubt, this Application Site Condition Report also encompasses the requirement to prepare a “Baseline Report” in accordance with the Article 22 of the Industrial Emissions Directive.</p>
<b>Document references for site plans (including location and boundaries)</b>	<p><b>BF5023/09/01</b> – Site Location Plan  <b>BF5023/09/02</b> – Site Boundary Plan  <b>BF5023/09/03</b> – Indicative Operational Layout  <b>BF5023/09/04</b> – Indicative Drainage Layout</p>

### 3.0 CONDITION OF THE LAND AT PERMIT ISSUE

#### Environmental setting including:

- **Geology**

#### **Made Ground:**

Made ground encountered at the proposed site during intrusive site investigations ranged between 1.90m and 3.50m in thickness. Examination of the made ground confirmed that this comprised of dark brownish black clayey sandy gravel of fine to coarse, angular to subrounded brick, concrete, metal, mudstone, sandstone, plastic, glass, organic material, ash, coal, clinker, slag, ceramic and tile. Additionally, a moderate cobble content of angular to subangular brick and concrete and occasional boulders of concrete.

#### **Geology:**

The superficial deposits underlying comprise of Tidal Flat Deposits comprising of soft/firm gravelly clay. The bedrock geology at the site is recorded by the BGS as comprising of both the Cae Castell Formation and the Cardiff Group.

The BGS Lexicon database describes the Tidal Flat Deposits as a consolidated soft silty clay, with layer of sand, gravel and peat. The Castell Formation is described as sandstones, siltstones and subordinate mudstones, with the Cardiff Group described as interbedded mudstones and thin siltstones with subordinate thin sandstones and bioclastic limestones.

- **Hydrogeology**

#### **Hydrogeology:**

The superficial Tidal Flat deposits at the site are designated as a Secondary Undifferentiated Aquifer, with both the Cae Castell Formation and the Cardiff Group designated as Secondary 'B' Aquifers.

The site is not situated within a groundwater source protection zone.

There are no records of active groundwater abstraction licences within 500m of the site.

The site and the surrounding area are not situated within a groundwater Nitrate Vulnerable Zone or a groundwater Drinking Water Safeguard Zone.

It is considered that the site is not in a sensitive location with respect to groundwater receptors.

- **Surface waters**

#### **Surface Waters:**

The site is located on the edge of the Rhosog Fach Reen Catchment with the closest named surface water features to the site are a Primary River named Rhosog Fach Reen, approximately 300m east of the site and an unnamed tertiary river approximately 310m north-east and a

	<p>secondary river, noted to be a drain approximately 315m north-east. Lamby Lake is also noted 50m southwest of the site.</p> <p>It is considered that groundwater is likely to flow towards the east, in continuity with the Rhosog Fach Reen.</p> <p>In terms of Flood Risk, NRW data has been reviewed and found that the site sits within an area where flood alerts are issued and there is a low risk of flooding from rivers and sea. The site is wholly located within an area assigned a “Low Risk Designation”, which is classed as an area where land and property has a less than &lt;0.1% probability of flooding.</p> <p>Further review of the available data indicates that the entrance to the proposed site is situated in close proximity to an area of land with a “Medium Risk” of flooding from rivers and sea which is classed as an area where land and property has a chance of flooding between 1-3.3%. Additionally, land to the west of the application site (situated within Parc Tredelerch) is assigned a “Low” Surface Water Risk which is classified as an area where land and property has a less than &lt;0.1% probability of flooding.</p> <p>The site will be covered by impervious concrete surfacing and the surface water drainage system will drain into a SUDS drainage system. This drainage system discharges the collected surface water run-off into a public surface water sewer via a discharge point with an emergency shut-off valve.</p> <p>No surface water or potable water abstraction licences are noted to be within 500m of the site. One current licenced discharge consent, noted to be site drainage for trade discharges, is recorded approximately 325m east of the site.</p>
<p><b>Pollution history including:</b></p> <ul style="list-style-type: none"> <li><b>pollution incidents that may have affected land</b></li> </ul>	<p>There are six records of pollution incidents having occurred at the site or within 500m of the site.</p> <p>In June 2001, three incidents are recorded approximately 130m south-east of the site, pertaining to inorganic chemical, oils and fuel (including diesel) pollutants are recorded, with the only impact reported as Category 3 (Minor) water impact. Also, in June 2001, a pollution incident of biodegradable materials and wastes with a Category 3 (Minor) land impact is recorded approximately 145m south of the site. An incident of Category 2 (Significant) water impact is recorded approximately 190m south of the site, with the pollutant described as contaminated water – urban run-off. The final incident is recorded approximately 445m south-east of the site in January 2002 as a Category 3 (Minor) water impact due to unidentified oils. Given the historic nature of these events and/or the distance from site, they are not considered to have any significant impact on the site.</p>

- historical land-uses and associated contaminants**

Based on the historic Ordnance Survey mapping and plans of the proposed site dating from 1881, it has been observed that the proposed site location remained undeveloped between 1881 and 1993. In 1994, an electricity substation was installed along the south-eastern boundary of the proposed site.

The area to the northwest of the application site was largely undeveloped until 1973 with the exception of a sewage pumping station located approximately 400m to the north west and a railway line running southeast/northwest approximately 200m southwest of the proposed site.

The earliest maps/plans indicate the area surrounding the proposed site information, to be largely agricultural, with various residential dwellings present in Rumney up to approximately 750m to the north of the site. The Great Western Railway is present approximately 20m to the north-east of the site. The Rhymney River is noted to be approximately 250m to the southwest of the site and the Rhosog Fach Reen approximately 500m to the southeast. Several brickworks are mapped over 750m to the west and south-west of the site.

Between 1899 and 1942 the development of residential properties is observed c.100m to the north of the site. A sewage pipe is mapped approximately 50m south west of the site, with a sewage pumping station mapped approximately 600m north-east of the site from 1916. A quarry is mapped approximately 500m north-west of the site. Additionally, several clay pits are mapped over 750m to the west and south-west of the site, adjacent to the brickworks, which are no longer mapped from 1916.

From 1947, engineering works are mapped approximately 800m south-west of the site, on the site of the former brickworks. Allotments are mapped approximately 750m south-west of the site, associated with ongoing residential development over 1.5km south-west of the site in Pengam. A small pond was indicated to be located approximately 75m northeast of the site and an area of boggy ground is indicated to be present approximately 100m to the northwest from 1952, with similar ground indicated to run along the northern boundary of the site, adjacent to the railway from 1961. A warehouse was mapped approximately 110m east of the site from 1952.

From 1987, the land surrounding the works approximately 800m south-west of the site, had been extensively developed, including factories, warehouse, workshops, garages, depots and a dairy, mapped as Senlan Industrial Estate.

From 1966, the warehouse approximately 110m to the east of the site was labelled as a vehicle spares and repair depot (mapped as Lamby Industrial from 1988), forming part of an industrial estate, with an Electrical Store and Scaffolding Depot adjacent. The Quarry is mapped as disused from 1973.

From 1987, several Works were mapped approximately 500m to the northeast and southeast of the site, extending

<ul style="list-style-type: none"> <li>• any visual/olfactory evidence of existing contamination</li>   <li>• evidence of damage to pollution prevention measures</li> </ul>	<p>over the mapping period. From 2002, the land adjacent to the site has been developed into a Business Park, with a Pumping Station approximately 100m to the south of the site.</p> <p>During the intrusive site investigation undertaken at the proposed site, no visual or olfactory evidence of contamination was identified within any exploratory hole positions, with the exception of DS02. Within DS02, a faint hydrocarbon odour was noted to be present between 1.30mbgl to 1.60mbgl. Screening of volatile vapour concentrations at this depth, recorded using a Photo Ionisation Detector (PID) noted a reading of 0.1ppm.</p> <p>A standalone odour assessment was undertaken to identify and pre-existing contamination at the proposed Lamby Way Site. A copy of this assessment is presented in <b>Appendix SCR3</b>. The olfactory assessment identified no evidence of existing contamination at the proposed site.</p> <p>No prevention measures present at the time of preparation of this report.</p>
<p><b>Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)</b></p>	<p>A Phase 2 Geo-Environmental Assessment undertaken in November 2016 and presented in a report produced in August 2017 (<b>Appendix SCR2</b>). The geo-environmental assessment identified the following:</p> <p>“Ground gas monitoring has identified elevated concentrations of methane and marginally elevated concentrations of carbon dioxide at the site.</p> <p>The results of soil chemical analysis have identified generally low levels of heavy metals and PAHs within both the Made Ground and Tidal Flat Deposits. When the results are screened against the Generic Site Assessment Criteria developed using the CLEA model 1.07 for a commercial development. All the contaminants assessed as part of the Phase 2 intrusive geo-environmental assessment were found to have concentrations below their respective screening criteria. Asbestos was identified within all Made Ground samples tested.</p> <p>The baseline conditions identified during the Phase 2 intrusive geo-environmental assessment are presented below.</p> <p>Groundwater analysis identified marginally elevated concentrations of several heavy metals, cyanide, phenol and PAHs.”</p>
<p><b>Baseline soil and groundwater reference data</b></p>	<p>Site-specific data is available for the proposed site. The intrusive geo-environmental investigation undertaken in November 2016 collected soil and groundwater samples for environmental testing.</p> <p>The laboratory results from the intrusive site investigation are presented in <b>Appendix SCR2</b>.</p>

<b>Summary</b>	<p>The areas surrounding the site have a long and established industrial history dating back to the 1880's.</p> <p>The site comprises made ground, which are most likely to have been deposited in the 20<sup>th</sup> Century, as part of industrial activities located adjacent to the surrounding areas. These deposits overlay Tidal Flat deposits associated with the flood plain of both the Rhymney River and the Severn Estuary.</p> <p>Given the industrial legacy surrounding the proposed site, there is a historical risk of potential spills/leaks associated with these activities. Intrusive site investigations have identified that the environmental baseline of the proposed site consists of elevated methane and carbon dioxide concentrations. Additionally, the site investigation identified the presence of asbestos within the on-site made ground and elevated concentration of several heavy metals (incl. arsenic, barium and lead), cyanide, phenol and PAHs in groundwater. Due to the low permeability of the underlying Tidal Flat Deposits, there is limited potential for existing contaminants contained within the Tidal Flat Deposits to have percolated into the underlying geology or having been transported via groundwater.</p> <p>The operator of the proposed site has ensured that appropriate engineered containment infrastructure will be constructed and installed to provide adequate protection of the land from potential contamination associated with the permitted activities. These containment systems will be appropriately maintained throughout the operational life of the facility, with details of any maintenance requirements logged to support future surrender of the site permit.</p> <p>All wastes will be fully characterised prior to acceptance at the facility, with appropriate compliance/verification tests carried out by the operator, as detailed in the site Waste Acceptance Procedures presented in the Supporting Statement (<b>Document Reference BF5023/05</b>).</p> <p>Accidents and Fugitive Emissions risk assessments prepared for the facility (refer to Appendices 5 and 6 of the Supporting Statement <b>Document Reference BF5023/05</b>) conclude that the application of the abovementioned operational measures will provide adequate protection to the land from the potential hazards associated with the proposed waste operations.</p> <p>Going forward, records of all environmental incidents on and off site which are likely to have an impact on the condition of the land will be maintained for the life of the Permit, with appropriate investigations implemented to determine the extent of any such incidents.</p>
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<b>4.0 PERMITTED ACTIVITIES</b>	
<b>Permitted activities</b>	<p>The site requires an Environmental Permit to undertake activities at the proposed Lamby Way Waste Transfer Station.</p> <p>The proposed operations at the Lamby Way Waste Transfer Station will mirror those currently permitted to be carried out at their existing facility at Curran Embankment (Permit Ref.: EPR/SP3031SL/V002). These operations consist of the acceptance, storage, blending, bulking, mixing and repackaging of specific hazardous and non-hazardous wastes for onward transfer.</p> <p>The storage and processing of accepted waste will be undertaken internally within engineered bay located in designated buildings. Engineered sealed drainage systems will be installed across the proposed site to contain any surface water run-off from external areas of the site and direct it to a designated surface water sewer discharge point with a SUDS network fitted with oil/fuel interceptors. In addition to the site drainage system collecting surface water each storage bay will be fitted with a designated storage tank to collect any liquid generated by the waste during storage/processing and prevent the contamination of external surface water run-off.</p> <p>External operations will solely consist of the unloading and loading of waste upon its arrival/departure from the proposed site.</p> <p>All fuel stored at the site will be appropriately stored in bunded tanks situated on a dedicated fuel pad and the entirety of the site will be engineered with impermeable surfacing to prevent the run-off infiltration.</p>
<b>Non-permitted activities undertaken</b>	<p>Ancillary operations to support daily running of the proposed site, including:</p> <ul style="list-style-type: none"> <li>• The operation of site offices, weighbridge and welfare facilities;</li> <li>• Staff Parking; and</li> <li>• Discharges from site offices to Foul Water Sewer.</li> </ul>
<b>Document references for:</b>	<p>BF5023/09/02 – Indicative Operational Layout BF5023/05/App5 – Accidents Risk Assessment BF5023/05/App6 – Fugitive Risk Assessment</p>
<ul style="list-style-type: none"> <li>• <b>plan showing activity layout; and</b></li> <li>• <b>environmental risk assessment.</b></li> </ul>	