



**ENVIRONMENTAL PERMIT VARIATION APPLICATION  
SUPPORTING STATEMENT**

**POPLARS LANDFILL SITE  
LICHFIELD ROAD  
CANNOCK  
STAFFORDSHIRE  
WS11 8NQ**


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**ENVIRONMENTAL PERMIT VARIATION APPLICATION - SUPPORTING STATEMENT  
POPLARS LANDFILL SITE, LICHFIELD ROAD, CANNOCK, STAFFORDSHIRE**

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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** :   
\_\_\_\_\_  
**Lucy J Edds**  
**Environmental Consultant**

**Reviewed by** :   
\_\_\_\_\_  
**Dylan Thomas**  
**Principal Environmental Consultant**

**Approved by** :   
\_\_\_\_\_  
**Mark L Griffiths**  
**Environmental Director**

Revision	Date	Amendment Details	Author	Reviewer

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**POPLARS MAIN & PFA LANDFILL FACILITIES  
LICHFIELD ROAD  
CANNOCK  
STAFFORDSHIRE  
WS11 8NQ**

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## **1.0 INTRODUCTION**

### **1.1 Scope**

1.1.1 Sirius Environmental Limited (Sirius) have been commissioned by Biffa Waste Services Limited ('Biffa') to prepare an application to vary Environmental Permit EPR/BW0584IL held for a non-hazardous waste landfill facility operated at the Poplars waste management complex, that is located off Lichfield Road, Cannock, Staffordshire.

1.1.2 The changes include for the consolidation of the Permit currently held for the 'Main Landfill Facility' and Anaerobic Digestion (AD) Facility (Ref.: EPR/BW0584IL) with that held for the PFA landfill Permit (Ref.: EPR/BP3436VS) in accordance with Regulation 18 of the Environmental Permitting Regulations 2016 (as amended). In addition to this, the operator is also seeking to revise the pre- and post-settlement contours for the site, the discharge of Pre-operational Measure 4 of Table S1.4 to Environmental Permit EPR/BW0584IL in relation to the development of containment area Phase C2 and extend the capping design options currently approved for the site.

### **1.2 Permit History & Background**

1.2.1 The Poplars Landfill Complex is operated by Biffa Waste Services and is located approximately 1.3km southeast of Cannock, Staffordshire. The landfill complex currently consists of two landfill facilities regulated by two separate Environmental Permits, EPR/BW0584IL (the Main Landfill) and EPR/BP3436VS (PFA Landfill).

1.2.2 The permit for the Main Landfill Facility was originally issued to Biffa Waste Services in April 2009, which superseded a Waste Management Licence. A further nine operator and regulator led variations of the permit have been issued between 2010 – 2018, variation V010 being the most recent, having been issued on 19<sup>th</sup> December 2018. Environmental Permit EPR/BW0584IL also regulates the operation of an AD Facility at the complex.

1.2.3 The Pulverised Fuel Ash (PFA) landfill at Poplars waste management facility operates as a standalone landfill installation activity with engineered 'external separation' provided between the adjacent landfill facilities, in accordance with the requirements of the Landfill Directive, although financial provision and perimeter environmental monitoring infrastructure is common to both permits. The Environmental Permit for the PFA site was determined in October 2014, with a subsequent minor variation to extend the list of ash types permitted for deposit. The PFA Landfill Facility comprises a single engineered cell for the deposit of locally derived, source segregated ashes from various energy generation facilities.

1.2.4 The site access, weighbridge, wheel-wash facilities and site management are all shared between the PFA Landfill, the Main Landfill and AD facilities.

1.2.5 A separate standard rules permit also exists for the operation of an aggregate recycling facility under standard rules permit set SR2010No12 (Ref.: EPR/DB3500FR), secured through the consolidation and variation of two separate treatment and transfer permits that previously existed at the site. This occupies the same permit boundary as the Main Landfill Facility, and would also use the same access, weighbridge and wheel wash facilities, although is not currently in operation. It was envisaged that the facility might in the future be constructed above the completed Phase C2 area following landfilling, albeit

activities under the permit(s) prior to consolidation were originally carried elsewhere within the permit boundary prior to landfilling in the same areas.

### 1.3 Site Setting

- 1.3.1 Poplars Main Landfill Site is centred on National Grid Reference (NGR): SJ 99452 09331. Poplars PFA Landfill Site is centred on National Grid Reference (NGR): SJ 99415 09340, approximately 1.3km east-southeast of Cannock, Staffordshire.
- 1.3.2 The PFA landfill covers an area of ~2 Ha. Access to the site is provided by the access road that also services the main Poplars Landfill site. An updated development layout for the site is presented on **Drawing No. BF5036/09/01**. The PFA Landfill Site currently consists of a permitted void capacity of 161,037m<sup>3</sup> or ~241,555 tonnes of ash.
- 1.3.3 The Poplars facility was formerly operated as part of the Poplars Opencast coal site. Mining of coal in this area took place from at least the 1880's, up until 1967. Deep coal mining was undertaken in the installation boundary at Leacroft and Cannock Pit, which was recorded as operational in 1903 and closed in 1954.
- 1.3.4 In 1972, Cannock County Council commenced using the Poplars site for the disposal of household waste from the Cannock District. Staffordshire County Council later developed the wider Poplars Landfill Site to accept household waste for the south of the county of Staffordshire. This site was subsequently operated by PreMCo and then by Biffa Waste Services who currently operate the whole site after acquiring PreMCo from Staffordshire County Council.
- 1.3.5 The main Poplars Landfill Site accepted both hazardous and non-hazardous waste, as a co-disposal landfill site, until July 2004. Subsequently, it has accepted only non-hazardous (and inert) waste and is classified as a non-hazardous landfill.
- 1.3.6 The PFA Landfill received deposits of non-biodegradable non-hazardous wastes, strictly limited to ashes from variously fuelled energy generation facilities and restoration soils.

### 1.4 Variation Overview

- 1.4.1 The principle aims of this variation is as follows:-
- Consolidation of Environmental Permit EPR/BP3436VS (PFA Landfill) with Environmental Permit EPR/BW0584IL (Main Landfill) in accordance with Regulation 18 of the Environmental Permitting Regulations 2016 (as amended);
  - Discharge of Pre-Operational Measure 4 in relation to the construction details for Phase C2;
  - Approval of revised and consolidated pre- and post-settlement contours for the site; and
  - Approval of an additional permanent cap design option.
- 1.4.2 To support the application to consolidate the permits a consolidated review of the Hydrogeological Risk Assessment, which includes the first of the 6-year review of the HRA review required for the PFA landfill site has been prepared (refer to *Doc. Ref.: BF5036/05*).

- 1.4.3 The HRA also supports the application to discharge Pre-Operational Measure 4 listed in Table S1.4 to Environmental Permit EPR/BW0584IL in relation to Phase C2.
- 1.4.4 Revised and consolidated pre- and post-settlement) contours for the site are also being proposed to those currently approved, the revisions specifically within the Phase C2 area. The steepening of final level contours along the southern flank of the Phase C2 area is also supported by an SRA Review (*refer to Appendix 2*).
- 1.4.5 Note, Phase C2 was included within the initial development plans for the site, which were submitted in support of the original PPC Permit application in 2003, and subsequently permitted. The void of the eastern development areas (including Phase C2) of the main landfill facility was originally conceptually designed and assessed on the basis that all cells were to be constructed with a basal elevation (maximum excavation depth) of 132mAOD. To date, the base of the majority of the cells within the eastern development area have been excavated and formed at higher elevations (up to 140mAOD). Consequently, the current development proposals do not result in a net increase in void capacity of the main landfill facility.
- 1.4.6 Based on the above-mentioned scope it is considered that the application constitutes a 'Normal' variation on the basis that the proposals will not result in significant negative environment impacts and they do not result in a net increase in the landfill void in which a Schedule 1 activity threshold will be exceeded. The fee for a Normal Variation against the Main Poplars Non-Hazardous Landfill is £11,388 (in line with 1.17.2 – Section 5.2). Moreover, a 'Minor' variation fee of £6,832 is also included to support the consolidation of the permits.
- 1.4.7 This Supporting Statement has been prepared to provide the required narrative relating to the proposed operations. It has been prepared with cognisance to the relevant Environment Agency (EA) Guidance.
- 1.4.8 The application consists of the following documents:
- Application Forms and Fee;
  - Non-Technical Summary;
  - Supporting Statement;
  - Consolidated Hydrogeological Risk Assessment
  - Stability Risk Assessment Review
  - Supporting Drawings

## 2.0 VARIATION PROPOSALS

### 2.1 Permit Consolidation

2.1.1 This application seeks to consolidate the Environmental Permits EPR/BW0584IL (Poplars Main Landfill) and EPR/BP3436VS (Poplars PFA Landfill) into one permit.

2.1.2 The first 6-yearly review of the PFA Landfill Hydrogeological Risk Assessment has recently been prepared in accordance the Environmental Permit. The HRA Review also extends to a consolidated assessment of the potential risk to groundwater associated with both landfill facilities. The basal footprint of the model will also be updated to include Phase C2, which had previously been removed (from the HRA) on the basis that the operator was not planning to develop this part of the site (this is discussed further in **Section 2.2.** below). The consolidated HRAR is included within **Appendix 1.**

### 2.2 Revised Landfill Development Layout

2.2.1 Biffa are seeking to develop landfill void with the Phase C2 area situated in the south-eastern corner of the site. The PPC application for the site (submitted in 2003), included Phase C2 as a “future development area”. Given that Phase C2 has already been identified for landfill void development in the original PPC application, it is considered that this area is already permitted for landfill development. The operator is not seeking an extension or amendment of the Environmental Permit boundary to account for this variation. The inclusion of Phase C2 will not result in a net increase in the landfill void, as it has already been accounted for within the original void figures and risk assessments, including the updated HRA presented in **Appendix 1.**

2.2.2 In lieu of the Phase C2 development proposals it is necessary to vary the pre- and post-settlement contours associated with this area, although there will again be no net increase in the landfill void.

2.2.3 In order to create the Phase C2 void, it will be necessary to excavate a significant quantity of quarry wastes/overburden, superficial deposits and bedrock (Etruria Marl). Due to the cessation of ash imports to the site, the excavated material will then be utilised to achieve final levels in the PFA landfill by placing it over the existing PFA deposits that are currently in place. It is possible that the resultant material produced as part of the excavation may also be utilised to support daily cover, engineering and restoration requirements at the site. This avoids completing the PFA area with biodegradable non-hazardous wastes, and so minimises potential environmental impact on adjoining domestic receptors in the vicinity.

2.2.4 A revised plan showing the proposed landfill development layout is presented in **Drawing No. BF5036/9/01**, with proposed pre-settlement and post-settlement contours illustrated in **Drawing Nos. BF5036/9/02 and BF5036/9/03** respectively.

2.2.5 A Stability Risk Assessment Review (**Appendix 2**) has also been carried out to address the stability and integrity element associated with the proposed variations. Specifically, the following assessments have been considered:

- The stability of the proposed cell construction works, basal and side-slope lining system, non-hazardous waste infill, capping system, and inert wedge infilling, for each stage of the remaining landfill development and subsequent waste placement;

- The integrity of the compacted clay liner (CCL) during each phase of waste placement at the site;
- The stability of the proposed landfill capping system options (GCL and geomembrane) once final waste placement has taken place; and
- The integrity of the proposed landfill capping system options (GCL and geomembrane) when (initially) trafficked by plant, and (secondly) during placement of inert soils within the valley, between the PFA waste mass and the non-hazardous waste mass.

## **2.3 Discharge of Pre-operational Measure 4 for Future Development, contained within Table S1.4 of Environmental Permit EPR/BW0584IL**

2.3.1 Table S1.4 of Environmental Permit (EPR/BW0584IL) contains a number of pre-operational measures for future development purposes. Reference 4 of Table S1.4 indicates that prior to the construction of Phases G, J and C2, the design of the lining and leachate management systems submitted under condition 2.6.1 (in relation to the approval of any construction proposals for new landfill cells by the Environment Agency) of the Environmental Permit shall be supported by confirmation that the risk assessments supplied in order to discharge pre-operational condition 3 (from EPR/BW0584IL/A001) remain valid or by provision of a detailed revised HRA and SRA.

2.3.2 The engineering design for the base and sidewalls of Phase C2 will mirror that already in place across the wider Main Poplars Landfill site. The base and sidewalls for all future containment cells in the main landfill development area will continue to be engineered with a 1000mm thick Compacted Clay Liner (CCL), as per the current approved design. The engineering design for the base and sidewalls is further described within **Section 2.0** of the updated HRA included within **Appendix 1**. Phase C2 will not be excavated deeper than 132m AOD (top of liner 133mAOD) in line with current planning restrictions for the site.

2.3.3 An updated and consolidated HRA (**Appendix 1**) has also been prepared to account for the revised landfill development proposals together with other updates to the Conceptual Site Model based on an updated review of monitoring data. The assessment concludes that the proposed engineered design for the Phase C2 area will not result in a significant risk to groundwater.

2.3.4 The original Landfill Gas Risk Assessment incorporated the Phase C2 void in its assessment and it is considered that this assessment remains valid.

## **2.4 Additional Permanent Capping Option**

2.4.1 The current approved landfill design allows for the installation of a Geosynthetic Clay Liner (GCL) cap. It is proposed to provide flexibility in the cap design for these remaining areas to include a geomembrane cap option.

2.4.2 The HRA included in **Appendix 1** includes a review of how the installation of a geomembrane cap over the remain areas influences the risk to the hydrogeological environment. The assessment concludes there is no significant increased risk posed by the installation of a plastic cap.

2.4.3 A review of the stability of installing a geomembrane cap at the site is also considered in the SRA that is included in **Appendix 2**. The assessment concludes that appropriate factors of safety are still achieved if this capping option is installed on the worst-case final waste slopes proposed under the revised pre-settlement contours.



### 3.0 OTHER APPLICATION CONSIDERATIONS

#### 3.1 Environmental Setting and Installation Design (ESID)

- 3.1.1 The ESID Report (*Doc. Ref.: 03523506.501*) for the main landfill was originally prepared by Golders in support of the PPC Application submitted in November 2003. The variations proposed under this application are not deemed to require a significant update to the original ESID report.
- 3.1.2 Similarly, the ESID Report (*Doc. Ref.: BF4862/04*) for the PFA Landfill was originally prepared by Stratus Environmental Limited in support of the Environmental Permit application submitted in June 2014. A minor variation was also applied for in November 2014 to add two additional waste codes, which also resulted in a change in the AEGB specified for basal areas underlain by the colliery spoil. The variations proposed under this application are not considered to significantly alter the content of the original ESID Report.
- 3.1.3 It is deemed that the existing ESID Reports prepared for the Main Landfill and PFA Landfill facilities continue to adequately describe the site setting and installation design, except for some minor changes since they were originally prepared. Consequently, it is not deemed necessary to submit a revised report in support of this application.
- 3.1.4 Nonetheless, in light of the changes to the landfill development an updated "Site Layout and Waste Deposition" plan is included in support of this submission, which provides a consolidated cell configuration – refer to **Drawing No. BF5036/9/01**. Revised and consolidated pre-settlement contours are presented in **Drawing No. BF5036/9/02** and revised and consolidated post-settlement contours are presented in **Drawing No. BF5036/9/03**.

#### 3.2 Landfill Gas Risk Assessment & Management Plan

- 3.2.1 The proposed changes do not significantly alter the level of risk posed by the landfill development from landfill gas. The original GasSim model included within the Landfill Gas Risk Assessment, which was submitted as part of the PPC Application in 2003, accounted for development of void capacity in the whole of the eastern development ('Graveyard') area, including the Phase C2 and PFA landfill areas. All cells were also modelled as constructed to their lowest allowable formation level (i.e. 132m AOD). However, it should be noted that most of the containment cells currently constructed in the eastern development area have since been constructed with basal elevations that are above 132mAOD, and therefore the quantity of waste modelled as part of the previously submitted LFGRA would be higher than the current void capacity for this area. Given this, it can be concluded that the LFGRA continues to represent a conservative assessment scenario for the site.
- 3.2.2 The influence on landfill gas emissions from the installation of a geomembrane cap on remaining area of the site will also not significantly increase the risk posed by the site. Moreover, geomembrane caps are generally less permeable than mineral caps (including GCL) and would therefore reduce any potential risk from surface emissions. Whilst geomembrane caps will degrade over time (typically assumed to be over 250 years after installation), this degradation will occur when landfill gas generation will be at a rate that won't present any significant risk to the environment or human health.

### **3.3 Nuisance & Health Risk Assessment Review**

3.3.1 The Nuisance and Health Risk Assessments prepared in 2003 for the main landfill facility, as well as that prepared in 2014 for the PFA landfill facility are not significantly influenced by the revised proposals and remain valid for each regulated landfill facility. Updates to these assessments have not been prepared to support this application.

### **3.4 Financial Provision**

3.4.1 The proposed changes to the landfill will not result in a significant change to the infrastructure requirements for the site that is budgeted for in the current agreed financial provision. A revised financial agreement is not therefore included with this submission. The financial provision agreement already covers both the PFA landfill and main landfill area, and all combined environmental control infrastructure. It will not therefore be necessary to revise the expenditure plan which remains valid. Further, the financial provision was not reduced to reflect the reduction in quantity of biodegradable non-hazardous wastes as a result of permitting of the PFA landfill, and the permit is not being varied to increase the total void permitted.

### **3.5 Environmental Management System Summary**

3.5.1 The proposed variations to the development layout do not necessitate changes to the current management systems.

### **3.6 Monitoring**

3.6.1 There will be no additional monitoring required due to the changes required as part of this variation application. Emissions and monitoring for activities covered by the Environmental Permit are included in Schedule 3 of the permit. A consolidated groundwater monitoring schedule is included in the HRA presented in **Appendix 1**.

### **3.7 Site Closure and Aftercare**

3.7.1 The existing closure and aftercare management plans for the Main Landfill and PFA Landfill remain applicable and will continue to be maintained. These will be implemented when appropriate.

#### **4.0 REPORT CLOSURE**

- 4.1.1 Biffa are seeking to consolidate the Permit for the PFA Monocell landfill site (EPR/BP3436VS) with the Permit held for the Main Poplars Landfill site (EPR/BW0584IL). In addition to this, the operator is proposing to update the development layout of the landfill and develop the void within the Phase C2 area of the site, which formed part of the original development proposals previously permitted for the main landfill. These proposals also seek revisions to the current approved pre-settlement (and post settlement) contours for the consolidated site, but more specifically with reference to Phase C2 area. The operator is also seeking to discharge the pre-operational measure 4 (in relation to phase C2) as contained within Table S1.4 of Environmental Permit (EPR/BW0584IL). An extension to the capping design options is also sought.
- 4.1.2 This document along with its supporting drawings and appendices provides the required level of information to enable determination of the application to be made.