



Biffa Waste Services Ltd

Standen Heath Landfill Site

Environmental Permit Variation

Non-Technical Summary

March 2020

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1.0 INTRODUCTION

Island Waste Services Limited have prepared an application to vary the bespoke Environmental Permit for Standen Heath Landfill Site, under the Environmental Permitting (England and Wales) Regulations 2016. The permit holder for the site is Island Waste Services Limited, which is a legal entity of the Biffa Group. Since Island Waste Services (IWS) and Biffa Waste Services (BWS) are both wholly owned subsidiaries of Biffa PLC, this application makes reference to both IWS and BWS, but the Operator and management at the site are the same.

The Environment Agency application forms require a non-technical summary to be submitted in support of any bespoke installation environmental permit variation, which includes the following:

- An explanation of exactly what is being applied for;
- A summary of the regulated facility; and
- A summary of the key technical standards and control measures arising from the risk assessment.

This Non-Technical Summary should be read in conjunction with the rest of this application which comprises:

- Environment Agency application forms A, C2, C3, F1 and Supporting Information;
- Supporting Statement (202003_SS_SH_V007);
- Standen Heath Landfill – Hydrogeological Risk Assessment Review (SLR Ref No.: 200403_416.00034.00566_Standen_Heath_HRAR_Final_inc_Apps, March 2020);
- Site Specific Environmental Monitoring Schedule Version 12 March 2020;
- Site Specific Leachate Management Action Plan dated March 2020;
- Site Monitoring Plan (Ref: SE180600);
- Surface Water Management Plan (Ref: 202003_SWMP_SH_V007)
- Stability Risk Assessment Summary Note dated March 2020 (SLR Ref No.: 416.00034.00566 Standen Heath SRA);
- Perimeter Gas Action Report dated March 2020 (Ref: 202003_PGAR_BHE_SH_V007);
- Landfill Gas Risk Assessment Summary Note (Ref: 202003_LFGRA_SH_V007).

1.1. The Site

Island Waste Services Ltd, a wholly owned subsidiary of the Biffa Group, holds an Environmental Permit for its Standen Heath Landfill Site (the Site), reference EPR/TP3838PS.

Waste disposal at the Site originally commenced under Waste Management Licence (WML) EAWML10203, which was issued by the Environment Agency on 21st October 1999 and permitted the disposal of up to 150,749 tonnes of non-hazardous commercial, industrial and domestic waste per year. A Pollution Prevention and Control (PPC) application was submitted for the Site on the 5th May 2004. The application was for the Site to accept non-hazardous waste as well as stable non-reactive hazardous wastes comprising asbestos waste, non-hazardous waste containing or contaminated with asbestos and suitable cover / separation material only. This waste would be deposited in separated cells. At the time of the PPC application Phases 1 and 2 had been developed. This PPC application was accepted by the Environment Agency (EA) with an Environmental Permit (EP) (No. TP3838PS) issued for the Site on 20th November 2007.

Variation V002 was issued on 15/07/2010 to allow European Waste Code (EWC) 20 01 99 (low grade clinical wastes) to be accepted at the site. Variation V003 issued on 15th April 2013 reflected changes to monitoring requirements and emission limits. Variation V004 was issued on 30/05/2013 to implement the changes introduced by the Industrial Emissions Directive (IED) and was initiated by the Environment Agency. Variation V005 was also initiated by the Environment Agency and made a number of necessary changes to reflect current legislation and best practice. The most current version of the Environmental Permit is variation EPR/TP3838PS/V006 issued on 30/09/2014 this was a variation that removed parameters for GW BH6 from Table S3.4 that had been included in error in the previous permit variation V005.

Island Waste Services Limited also operates an open air windrow composting facility under a separate Environmental Permit EPR/AP3992HR/V005 which is located in close proximity to the main landfill site offices, situated within the wider Standen Heath waste management 'complex'; and is located within the landfill permit boundary. However, this landfill permit variation does not need to consider any of the composting permitted activities.

1.2. Proposed Changes

Island Waste Services Limited is applying to vary the Environmental Permit in relation to the points detailed below:

- i. Proposed increased leachate compliance limits on both the leachate monitoring wells and sumps based on the Hydrogeological Risk Assessment Review (HRAR) completed in March 2020;***

A detailed Hydrogeological Risk Assessment Review (HRAR) report has been prepared by SLR Consulting Ltd report reference 200403_416.00034.00566_Standen_Heath_HRAR_Final_inc_Apps dated March 2020. Section 4.2 and Table 4-1 of the HRAR detail the proposed leachate level compliance limit increases across the site. Table 4-1 is detailed below:

Table 4-1: Current and Proposed Leachate Level Monitoring Schedule

Monitoring Point	Phase	Frequency	Current Compliance Limit	Proposed Compliance Limit (mAOD)	Proposed Limit (m Above base of Well)	Proposed Limit (m Above base of Cell)
Leachate Extraction Well 1 (3001)	Phase 1	Monthly	2m above cell base	63.0	1.30	1.60
Leachate Monitoring Well 1 North (3002)			2m above cell base	63.0	1.20	1.60
Leachate Monitoring Well 1 South (3003)			2m above cell base	71.0	6.56	8.02
Leachate Extraction Well 2 (3004)	Phase 2	Monthly	2m above cell base	73.0	5.50	7.99

Leachate Monitoring Well 2 North (3005)			2m above cell base	73.0	7.08	7.70
Leachate Monitoring Well 3 South (3009)	Phase 3	Monthly	2m above cell base	74.0	4.94	5.12
Proposed Replacement Monitoring Well			-	74.0	TBC	TBC
Note: proposed limit above base of well and base of cell to be set once borehole is installed and basal elevations are known						

The March 2020 HRAR also includes a cross section diagram (Drawing 02 appended to the HRAR) and an up to date LandSim model to support the justification for the increased leachate levels limits for both the sumps and the monitoring points.

An updated Leachate Management Action Plan dated March 2020 has been submitted within this application.

A LFGRA Summary Note (Ref: 202003_LFGRA_SH_V007) has been submitted within this application. This assessment confirms that the gas management system will not be compromised as a result of the proposed increased leachate heads.

A Stability Risk Assessment (SLR Ref No.: 200401 416.00034.00566 Standen Heath SRA) has been submitted with this application, this assessment confirms that the proposed increase in leachate levels will not have a detrimental impact on the stability of the basal liner, cap, waste, landfill infrastructure or landfill gas infrastructure.

ii. Proposed revisions to the groundwater monitoring schedule as justified within the 2020 HRAR;

A detailed HRAR report has been prepared by SLR Consulting Ltd report reference 200403_416.00034.00566_Standen_Heath_HRAR_Final_inc_Apps dated March 2020. The report has reviewed the conceptual model for the site and proposes some changes to the groundwater monitoring schedule for inclusion within V007 of the permit. The proposed revised monitoring schedule can be found within Section 4.3 and Table 4-4 of the report; which is also shown below:

Table 4-4: Proposed Groundwater Monitoring Schedule

Monitoring Points	Measurement	Frequency	Changes Made
Up Gradient Boreholes BHF GW BH1	Water level, electrical conductivity, chloride, ammoniacal nitrogen, pH	Quarterly	None
	Total alkalinity, magnesium, potassium, total, sulphates, calcium, sodium, chromium, copper, iron, lead, nickel, zinc, manganese, arsenic Base of monitoring point (mAOD)	Annually	Addition of arsenic

	Hazardous Substances	Annually for first six years of operation	None
<u>Down Gradient Boreholes</u> Combined BH1 GW BH4 GW BH5 GW BH6	Ammoniacal nitrogen, chloride	Monthly	None
	Water level, electrical conductivity, pH	Quarterly	None
	Total alkalinity, magnesium, potassium, total, sulphates, calcium, sodium, chromium, copper, iron, lead, nickel, zinc, manganese, arsenic, cadmium, mecoprop, BTEX Base of monitoring point (mAOD)	Annually	Addition of arsenic and reduction of cadmium, mecoprop and BTEX to annual
	Hazardous Substances detected in leachate	Annually for first six years of operation then every two years	None
<u>Cross Gradient Boreholes</u> BHG Combined BH2 GW BH2 GW BH7 GW BH8 GW BH9	Water level, electrical conductivity, pH, chloride, ammoniacal nitrogen	Quarterly	None
	Total alkalinity, magnesium, potassium, total, sulphates, calcium, sodium, chromium, copper, iron, lead, nickel, zinc, manganese, arsenic Base of monitoring point (mAOD)	Annually	Addition of arsenic
	Hazardous Substances detected in leachate	Annually for first six years of operation then every two years	None

iii. Proposed revised control levels and compliance limits for groundwater quality as justified within the 2020 HRAR;

A detailed HRAR report has been prepared by SLR Consulting Ltd report reference 200403_416.00034.00566_Standen_Heath_HRAR_Final_inc_Apps dated March 2020. The report has reviewed the conceptual model for the site and proposes some revisions to the groundwater control levels and compliance limits for inclusion within V007 of the permit. The proposed revised limits can be found within Section 4.3 and Table 4-6 of the report; which is also shown below:

Table 4-6: Proposed Groundwater Control Levels and Compliance Limits

Monitoring Point	Parameter	Proposed Control Level ^a	Proposed Compliance Limit ^b
Combined BH1	Ammoniacal Nitrogen [mg/l]	0.80 ^a	2.01
	Chloride [mg/l]	123 ^a	373
	Mecoprop [µg/l]	-	0.0001
	Toluene [µg/l]	-	0.004

GW BH4	Ammoniacal Nitrogen [mg/l]	1.03 ^a	2.01
	Chloride[mg/l]	43 ^a	373
GW BH5	Ammoniacal Nitrogen [mg/l]	0.40 ^a	2.01
	Chloride[mg/l]	45 ^a	373
	Mecoprop [µg/l]	-	0.0001
	Toluene [µg/l]	-	0.004
GW BH6	Ammoniacal Nitrogen [mg/l]	0.47 ^a	2.01
	Chloride[mg/l]	270 ^a	373

Note: ^a Control level set at Average + 2X standard Deviation in monitoring borehole for ammoniacal nitrogen and chloride. No control level has been proposed for mecoprop or toluene as the compliance limit is at or very close to the detection limit

^b Compliance limits have been set at the current limit for toluene and have been set at the EAL as specified within this HRAR for ammoniacal nitrogen, chloride and mecoprop

iv. Proposed revised compliance limits for surface water quality as justified within the 2020 HRAR;

A detailed HRAR report has been prepared by SLR Consulting Ltd report reference 200403_416.00034.00566_Standen_Heath_HRAR_Final_inc_Apps dated March 2020. The report has reviewed the conceptual model for the site and proposes revisions to the surface water compliance limits for inclusion within V007 of the permit. The proposed revised limits can be found within Section 4.4 and Table 4-11 of the report; which is also shown below:

Table 4-11: Proposed Compliance Limits for Surface Water Monitoring Point SW1 – Discharge Point

Monitoring Location	Parameter	Compliance Limit
SW1 - Discharge to tributary of Palmers Brook (NGR SZ 5320 8850)	Volume of Discharge [m ³]	12,000m ³ per 24 hours
	Maximum Rate of Discharge [L/s]	140
	pH [pH Unit]	6 to 9
	Suspended Solids [mg/l]	60
	Ammoniacal Nitrogen [mg/l]	1
	Oil and grease [mg/l]	5
	Visible oil and grease	No visible trace

A Surface Water Management Action Plan dated March 2020 has been submitted within this application.

v. Review of action and compliance limits for methane and carbon dioxide levels for perimeter gas borehole BHE, based on a site specific Perimeter Gas Action Report;

The primary focus of the Perimeter Gas Action Report has been to review the action and compliance limits for perimeter gas boreholes BHE. The Tmax statistical approach has been used to justify the removal of the generic 1% methane limit for BHE (84201007) and Carbon Dioxide limits.

vi. Changes to leachate monitoring infrastructure

Removal of LW7 (84203007) and LW8 (84203008) as these wells are redundant since becoming blocked. LW7 has been blocked since October 2017, and LW8 since October 2018. There are plans to re-drill a replacement well in Phase 3 once final waste placement levels are achieved.

A detailed Hydrogeological Risk Assessment Review (HRAR) report has been prepared by SLR Consulting Ltd report reference 200403_416.00034.00566_Standen_Heath_HRAR_Final_inc_Apps dated March 2020. All changes to the leachate infrastructure have been considered when preparing this document.

The leachate management plan and site monitoring infrastructure drawing have been updated to reflect the removal of these leachate wells from the monitoring schedule.

vii. Propose revision to the monitoring requirements in accordance with the latest landfill permit template, these have been detailed within the site specific environmental monitoring schedule and linked with the acceptance of the HRAR;

A detailed Hydrogeological Risk Assessment Review (HRAR) report has been prepared by SLR Consulting Ltd report reference 200403_416.00034.00566_Standen_Heath_HRAR_Final_inc_Apps dated March 2020. All changes to the leachate, groundwater and surface water monitoring requirements are supported by this document.

A site specific monitoring schedule (document reference: Standen Heath Monitoring Schedule V12 March 2020) has been included within the application which details the proposed revised monitoring. An updated Monitoring and Extraction Point Plan (MEPP) has also been submitted, this illustrates and labels all of the monitoring and extraction locations (Ref: SE180600).

All applicable management plans have been updated to account for the proposed monitoring changes, these are detailed section C3a1 of the supporting statement included as part of this variation application.

viii. Permit consolidation:

Please note that we would request that this normal variation (V007) will be a consolidation variation, and not issued as a stand-alone variation notice.

2.0 ASSESSMENTS

A detailed Hydrogeological Risk Assessment Review (HRAR) report has been prepared by SLR Consulting Ltd report reference 200403_416.00034.00566_Standen_Heath_HRAR_Final_inc_Apps dated March 2020.

A Stability Risk Assessment Summary Note has been prepared by SLR Consulting (SLR Document reference: 200401_416.00034.00566 Standen Heath SRA) to review the impact that the proposed levels will have on the site stability

An updated Leachate Management Action Plan dated March 2020 has been submitted within this application.

A LFGRA Summary Note (Ref: 202003_LFGRA_SH_V007) has been submitted within this application. This assessment confirms that the gas management system will not be compromised as a result of the proposed increased leachate heads.

3.0 CONCLUSION

The overall conclusion of the studies undertaken in support of this permit variation application for Standen Heath Landfill Site is that there is unlikely to be a significant environmental impact.

Island Waste Services Limited are fully committed to ensuring the highest standards are met and will undertake their activities in accordance with the company's integrated management system.