

Viridor

Transforming waste™

**The Environmental Permitting
(England and Wales) Regulations 2010**

**Permit: EPR/LP3030XA
Cardiff Energy Recovery Facility**

**Environmental Monitoring Report
Q3 2021**

1 July – 30 September 2021

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Version: 1.0
Issue Date: 29 October 2021



Quality Assurance

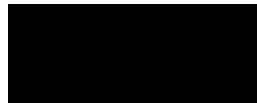
This report has been prepared with all reasonable skill, care and diligence. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

Report Details

Report Title:	Cardiff Energy Recovery Facility – Environmental Report
Report Date:	29 October 2021
Version:	1

Report Generated By

Name:



EHS Manager

1. Introduction

Cardiff Energy Recovery Facility is located immediately north of Cardiff Docks. The facility has an annual throughput of up to 425,000 tonnes per year of residual municipal and Commercial and Industrial (C&I) waste. Due to the building of an electrical sub-station during 2020 the site now has the capability of exporting approximately 34 MW of electrical power from the process.

In accordance with the requirements of Condition 4.2.3, Schedule 4 and table S4.1 of Permit EPR/LP3030XA issued by Natural Resources Wales to Viridor Trident Park Limited (Viridor).

This report summarises the environmental data collected at the site during the third quarter calendar period of 2021, between 1st July and 30th September.

The report will cover the following areas of environmental monitoring:

- Section 2 – Point Source Emissions to Air
 - Section 3 – Point Source Emissions to Water
 - Section 4 – Residue Quality Monitoring Requirements
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2. Point Source Emissions to Air

2.1. Introduction

Permit Condition 3.5.1(a) and Tables S3.1 and S3.1(a) require Viridor to undertake performance monitoring of the point source emissions to air arising at sample points A1 and A2 on a continuous and periodic basis.

A summary of the continuous point source emissions to air monitoring data at sample point A1 and A2, for the period, is included as Table 1.

The measurement frequency for periodic point source emissions to air monitoring data at sample point A1 and A2 is on a bi-annual basis, after 12 months of operation. Periodic monitoring data is not included in this report but will be included in the next quarterly report.

2.2 Commentary on Data

The concentrations recorded under normal operation during the review period remained compliant with the limits set out in the Permit, except for the events listed in 2.3. Line 1 was in operation for 1,762 hours (92 days x 24 hours = 2208 hours therefore 79.8%) of the quarter and Line 2 for 2,202 hours (99.7%).

This installation generated 70,657MWh of electricity during the period.

2.3 Schedule Notices Issued

Schedule 5 Notifications were submitted to NRW for events on,

6 August 2021 Parts A and B Small fire in bulky bay quickly extinguished.

12 September 2021 Parts C Temporary Comms failure between analyser and master CDAS.

Table 1: Emissions to Air from A1 and A2 (CEMS)

Releases to Air from Incinerators – Continuous Monitoring – Air 2								
Parameter	Limit	Reference Period	A1		A2		Test Method	Uncertainty**
			Max	Avg	Max	Avg		
Oxides of nitrogen	200 mg/m ³	Daily mean	192	179.55	188	184.5	BS EN 15267-3	
	400 mg/m ³	½ hourly mean	286		272			
Particulate Matter	10 mg/m ³	Daily mean	1	0.1	1	0.1		
	30 mg/m ³	½ hourly mean	2		1			
Total Organic Carbon (TOC)	10 mg/m ³	Daily mean	1	0.1	1	0.03		
	20 mg/m ³	½ hourly mean	2		4			
Hydrogen chloride	10 mg/m ³	Daily mean	9	8.1	10	8.4		
	60 mg/m ³	½ hourly mean	44		31			
Sulphur dioxide	50 mg/m ³	Daily mean	39	18.2	34	19.5		
	200 mg/m ³	½ hourly mean	82		59			
Carbon monoxide	50 mg/m ³	Daily mean	7	0.3	24	0.7		

*Note. ½ hourly monitoring for CO is no longer required in the current version of the permit. Permit now states “95%ile 10 minute average in any 24 hour period”.

**Note. CEMS data figures are adjusted for the method uncertainty

3. Point Source Emissions to Water

3.1. Introduction

Permit Condition 3.5.1(a) and Table S3.2 requires Viridor to ensure sample point W1 is free of oil, grease and visible solids.

3.2 Commentary on Data

During the quarter monitoring point W1 has remained free of oil and grease.

3.3 Schedule Notices Issued

No Permit limit exceedances were recorded during the review period for emissions to water.

4. Residue Quality Monitoring Requirements

4.1. Introduction

Permit Condition 3.5.1(c) and Table S3.5 require Viridor to undertake residue quality monitoring at quarterly intervals following the first year of operation. This applies for both bottom ash and air pollution control residues.

4.2 Commentary on Data

Incinerator Bottom Ash

Figures shown in Table 2 detail the quarterly analysis undertaken in line with the criteria laid out in the ESA protocol (i.e. 24 samples per year).

Air Pollution Control Residues

Figures shown in Table 2 detail the analysis of samples collected during July 2021.

Table 2: Residue Quality

Residue quality					
Parameter	Limit	Normal Operation			
		Bottom ash		APC Residues	
		Quarter		Quarter	Quarter
			Line 1 Received at lab 22/7/2021 Date reported 2/8/2021	Line 2 Received at lab 22/7/2021 Date reported 2/8/2021	
Total Organic Carbon	3%	Line 1 Received at lab 22/7/2021 Date reported 26/7/2021 0.9%	Line 2 Received at lab 22/7/2021 Date reported 26/7/2021 1.1%	X	X
		Composite Sample. Received at lab 22/7/2021 Data reported 4/8/2021			
Antimony (mg/kg)	---	124	1140	940	
Cadmium (mg/kg)	---	12.6	325	294	
Thallium (mg/kg)	---	<0.1	1.0	1.0	
Mercury (mg/kg)	---	<0.5	4.58	5.03	

Lead (mg/kg)	---	445.4	1974	1970
Chromium (mg/kg)	---	112	56.8	39.8
Copper (mg/kg)	---	1949	667	605
Manganese (mg/kg)	---	801	389	360
Nickel (mg/kg)	---	94.9	23.5	16.2
Arsenic (mg/kg)	---	15.3	91.9	84.1
Cobalt (mg/kg)	---	44.8	6.3	4.6
Vanadium (mg/kg)	---	22	<10	<10
Zinc (mg/kg)	---	2382.9	17,380	14,890
Dioxins / Furans (WHO 2005 TEQ) (ng/kg)	---	Dioxins = 1.4859 Furans = 1.5965	Dioxins = 108.28 Furans = 156.38	Dioxins = 74.87 Furans = 129.75
PCB (WHO 2005 TEQ) (ng/kg)	---	0.1137	9.55	4.79
