Castle Wase Services Ltd
Cardiff Treatment Centre
Old Clipper road
Cardiff Docks
Cardiff
CF10 4LX

Your Ref: LP3439HM

Date: 30/01/2023

Mr Geraint Harris,

Annual Report for 2022 for Castle Waste Services Ltd, Cardiff Treatment Centre, Old Clipper road, Cardiff Docks, Cardiff, CF10 4LX

Please find enclosed our report and associated results for 2022 in accordance with condition 4.2 of Environmental Permit LP3439HM.

Should you have any queries or wish to discuss the matter further, please do not hesitate to contact the undersigned.

Yours faithfully,
for Castle Waste Services Ltd

D Humphriss
Technical Director

Enc.

Castle Environmental 2022 Site Report – Cardiff – PC 4.2.2a

This report is produced to provide an overview of the site performance over the previous 12 months. The statutory reporting forms detailing annual performance are appended to this document for ease of reference. Performance is compared against previous years within this report.

The waste side of the business continues to serve a number of local and national customers. The construction side of the site, which utilises washed fines aggregate has continued to supply local customers.

The average number of staff employed across both businesses in 2022 was 20, (8 staff working on the waste facility).

Input waste volumes were above those from 2021 with the site accepting 17,387 tonnes in 2022, compared to 16,516 Tonnes in 2021.

A variation to the site permit was issued in 2021. The variation was undertaken in order to align the site permit with the requirements of the Waste Treatment Bref. Castle have been working through the Improvement Conditions included within the permit. Good progress been made with a number of actions closed out and a small number of conditions outstanding. Castle are working in co-ordination with NRW to close out the remaining improvements in accordance with a defined timescale.

Performance

Reported primary electricity consumption has decreased by 7% when compared to 2021.

When this is factored against hours worked using he same methodology as 2021 this rate of reduction increases to 35%. However, it was noted that the factor applied in the previous year was incorrect. It is also debatable how good a measure hours worked is in representing the activity of the site.

A further approach to rationalising the primary power consumption is to consider the quantity of waste accepted at the site over the period. As noted above, 2022 saw a small increased in waste tonnages accepted to the site. If power consumption is rationalised using this parameter consumption for the two years is expressed as 65.8 kWh/T (2021) and 58.4 kWh/T (2022). This equates to a 12.7% reduction in power consumption. The consumption per tonne of waste accepted at the site is reported in forms Energy1 and Water

Usage1 and will be used going forward. The rationalised / Tonne of waste accepted is relatively high when compared to other sites within the group. This is due to the power consumed by the concrete products facility which is included in the total site consumption.

It is considered that the reduced power consumption is related to two factors. The installation of the new Aqueous Treat Filter press had it's first full year of operation in 2022. This project has provided improved efficiency by the use of new and improved pumps and filter presses along with delivering general efficiencies in the plant such as removing intermediary holding tanks. Further to that, there has also been a reduction in the number of concrete products generated following the nightshift ending in October 2021. The night shift has not been operated since.

Reported primary energy from gas oil consumption is higher than the previous year. When consumption is rationalised per Tonne of waste accepted, the values (6.5 kWh/T 2021 and 7.1 kWh/T 2022) show an increased consumption rate in 2022 of 9%.

The total quantity of waste removed from the site in 2022 was 6166 Tonnes which is an increase on the 2021 tonnage. This is due to an increase in the volumes of waste accepted at the site in the period.

Water consumption for 2022 is estimated to be 3692.5m^3. This valve has been attained using the same assumptions as previous years. It represents a decrease from the previous year (4477.7m^3). The decrease is effectively due to the reduced operation of the construction business. When expressed per tonne of waste accepted the value falls from 0.271m3/T to 0.212m3/T in 2022. It is considered that this drop may be due to the reduced number of concrete products produced over the period as water is consumed in the production process.

Improvements

The site management systems have been subject to annual internal and external audits with no issues identified.

The desludging of bulk tanks within the process has been further embedded to coincide with the tank inspection regimes. The new filter press has delivered improvements in this area.

The site has continued to operate without the importation of raw material lime.

Bulk storage tanks 1 – 4 have been subject to shot blasting and painting over the year. Improvements have been made to the tank inspection regime at the site with inspections planned over a rolling 5 year period with the inspection regime being in accordance with a written scheme generated by a competent third party.

The site continues to see the benefit of the changes made to the filter press arrangements in 2021 through improved process efficiency and reduced housekeeping demand.

Further improvements will be carried through into 2023.

Continuous Improvements

Improvement works are continuing in 2023. The resurfacing of the old filter press building will commence at the end of February. This will be undertaken in two distinct phases and will also incorporate works to tanker off-loading area. Further to that, the storage tank currently within the press house building will be decommissioning and removed from service as part of these works.

In addition to the civils and surfacing works, one of the large effluent storage tanks will be decommissioned and removed from the Yard 2 press house and two new HDPE tanks will be installed in the footprint along with associated civils to complement the scheme.

Further works are planned for the Yard 2 tank farm which will continue over the 2023 – 2024 period and will encompass the introduction of an effluent polishing plant and associated improvements.

Appendix Reporting forms:

WaterUsage1 / 30/01/2023 (Annual data 2022)

Energy1 / 30/01/2023 (Annual data 2022)

Performance1 / 30/01/2023 (Annual data 2022)

Permit Number: EPR/LP3439HM

Operator: Castle Waste Services Limited

Facility: Roath Dock Transfer Station

Form Number: WaterUsage1 / 30/01/2023

Reporting of Water Usage for the year 2022

Water Source	Usage (m^3/year)	Specific Usage (m^3/unit output)
Mains water	3692.5	0.212m^3/Tonne waste accepted
Site borehole	0	
River abstraction	0	
TOTAL WATER USAGE	3692.5	0.212m^3/Tonne waste accepted

Operator's comments :

Water consumption is estimated based on batch recipes and process records.

Signed …D Humphriss….. Date…30/01/2023…..
(authorised to sign as representative of Operator)

Permit Number: EPR/LP3439HM Operator: Castle Waste Services Limited

Facility: Roath Dock Transfer Station Form Number: Energy1 30/01/2023

Reporting of Energy Usage for the year 2022

Energy Source	Energy Usage Quantity	Primary Energy (MWh)	Specific Usage **(MWh/unit output)**
Electricity	423,373 kWh	1,016.1 MWh	58.4 kWh/ Tonne waste accepted
Natural Gas	0	0	0
Gas Oil	12,735 Litres	123.23 MWh	7.1 kWh/ Tonne waste accepted
Recovered Fuel Oil			
TOTAL		1139.32	65.5 kWh/ Tonne waste accepted

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments :

As of 2010 the density of Fuel/Gas oil is stated to be 0.832kg/l.
IEA/OECD states that 1 Tonne Oil Equivalent (TOE) is equal to 11.63 MWh

Signed …D Humphriss... Date…30/01/2023...
(Authorised to sign as representative of Operator)

Permit Number: EPR/LP3439HM Operator: Castle Waste Services Limited

Facility: Roath Dock Transfer Station Form Number: Performance1 **30/01/2023**

Reporting of other performance indicators for the period 01/01/2022 to 31/12/2022

Parameter	Units
Water Usage	3692.5 cubic metres
Energy Usage	1139.32 MWh (primary energy)
Total Raw Materials Used	0 Tonnes
Waste disposal and/or recovery	6165.96 Tonnes

Operator's comments:

Signed …D Humphriss……. Date…30/01/2023……..
(Authorised to sign as representative of Operator)