Environmental Performance Report
Bridgend Paper Mill
2021

Reporting Condition 4.2.2

Name: Richard Lewis

Position: Energy & Environment Manager

Date: 31st Jan 2022

Wepa UK Ltd
Bridgend Paper Mill
Llangynwyd
Bridgend
CF34 9RS

Permit Number: EP3738NG

Contents

1.0 Introduction

The production of this report is a requirement of the Mill's EPR Permit section 4.2.2.

The aim of this document is to provide a summary report of Bridgend Paper Mill's performance for the calendar year 2021.

The report identifies performance parameters, emissions to air and water, waste disposal, water consumption and energy use information.

2.0 Summary

2021 continued to be dominated by Wepa's management team seeking to align the site with the other 13 mills in their European organisation. There has been considerable investment in people, equipment and infrastructure as the mill not only optimises the existing equipment but prepares for the proposed major capital investment with the new paper machine (namely Neptune) due to begin operations in Q2 2022 with up to an additional 75,000 tonnes being produced.

Specifically, 2021 was again a challenging year because of interruptions caused by the global pandemic however the demand for hygiene products has been little effected throughout this period. Paper reel outputs from Jupiter machine have been sustained whilst achieving cost reduction with better use of chemical packages and pulp changes.

Logistics have continued importing paper reels from other Wepa plants. Jumbo paper reels have been transported by ship to Swansea docks and transported to the mill from dockside warehouses. This has eliminated the large number of European lorries arriving at the mill often in convoy, which caused problems in offloading and storage.

Converting outputs have been consistent all year and with the new Neptune machine being introduced will result in the site becoming self-sufficient with little to no reliance on outside sources of parent reels.

Converting output was approx. 78473 tonnes (gross) and papermaking approx. 47175 tonnes (gross). The paper balance was filled by importing paper from sister mills in Europe and mills from some of our competitors.

General environmental performance from the site has been maintained throughout 2021 with no breaches of consent limits with data showing a performance well below those limits.

The site was audited against its ISO 14001 environmental management system during the year and received an external verification audit for the Greenhouse Gas (GHG) permit. No significant non-conformances were raised against these requirements.

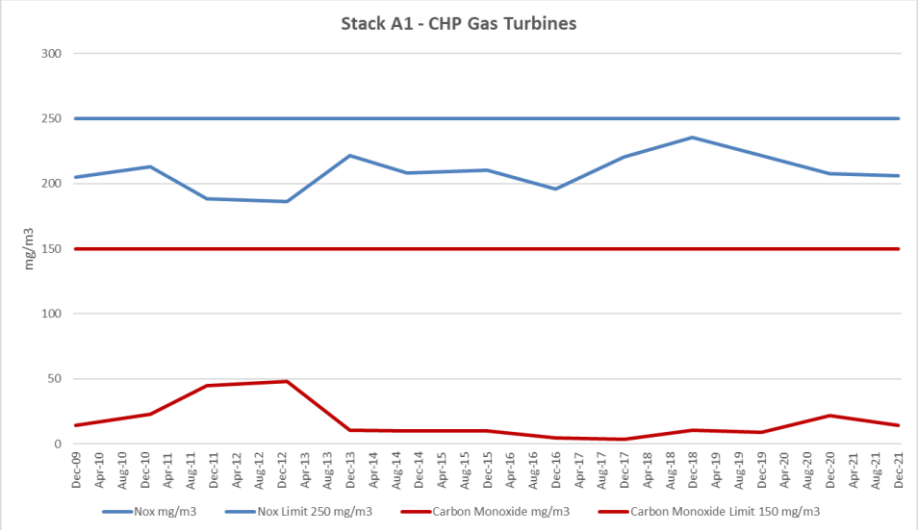
3.0 Performance Parameters

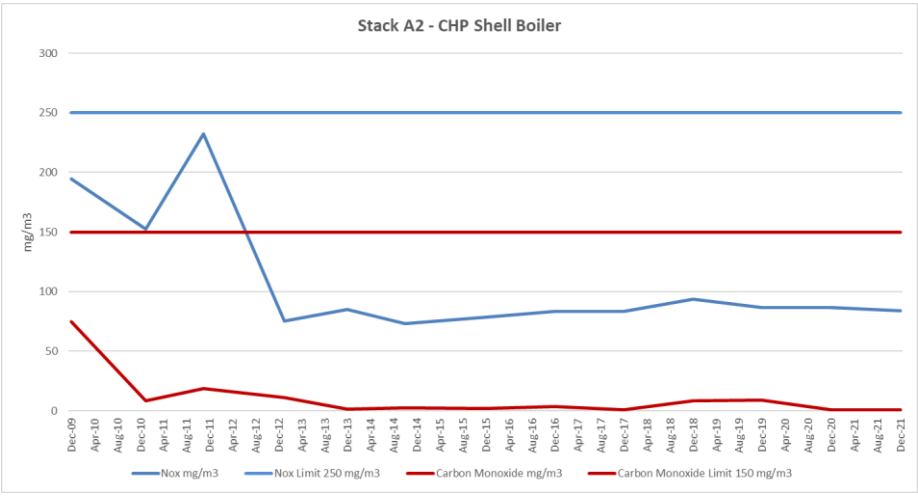
The quarterly returns for the performance parameters remained stable for all parameters throughout 2021.

Parameter	Unit	Q1 2021	Q2 2021	Q3 2021	Q4 2021
Nox/ADT	Tonnes/ADT	0.003	0.003	0.003	0.003
CO_2/ADT	Tonnes/ADT	0.833	0.877	0.721	0.731
BOD/ADT	kg/ADT	0.014	0.017	0.016	0.011
Suspended Solids/ADT	kg/ADT	0.103	0.122	0.096	0.069
Nitrogen nutrient (N) / ADT	kg/ADT	0.044	0.073	0.077	0.046
Phosphorus nutrient (P) / ADT	kg/ADT	0.002	0.002	0.005	0.003
COD / ADT	kg/ADT	0.386	0.356	0.406	0.397
AOX / ADT	kg/ADT	0.004	0.004	0.002	0.005

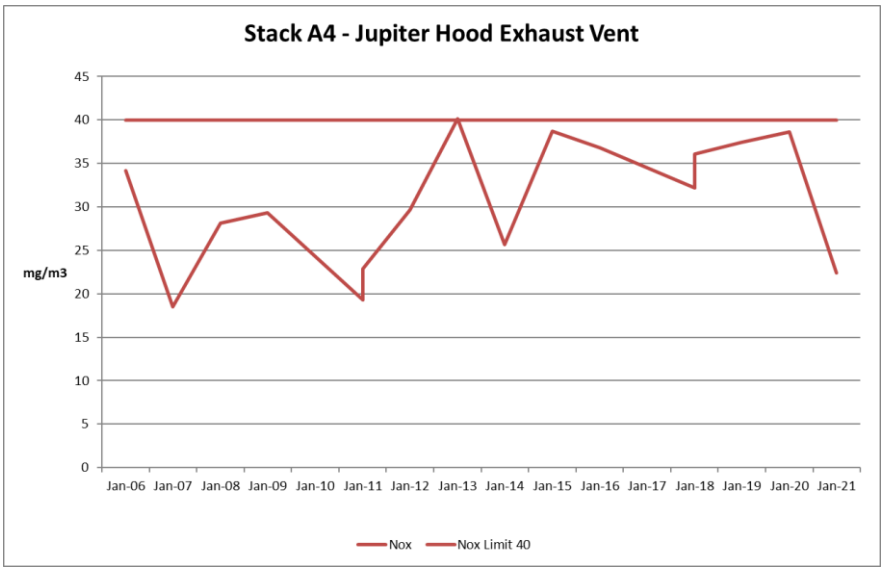
4.0 Emissions to Air

Annual emissions test results for Stack A1 (HRSG 1 & HRSG 2), which is contained within the CHP plant on site, were below permit limits as per previous years testing. All parameters for the CHP shell boiler (Stack A2) remain stable.



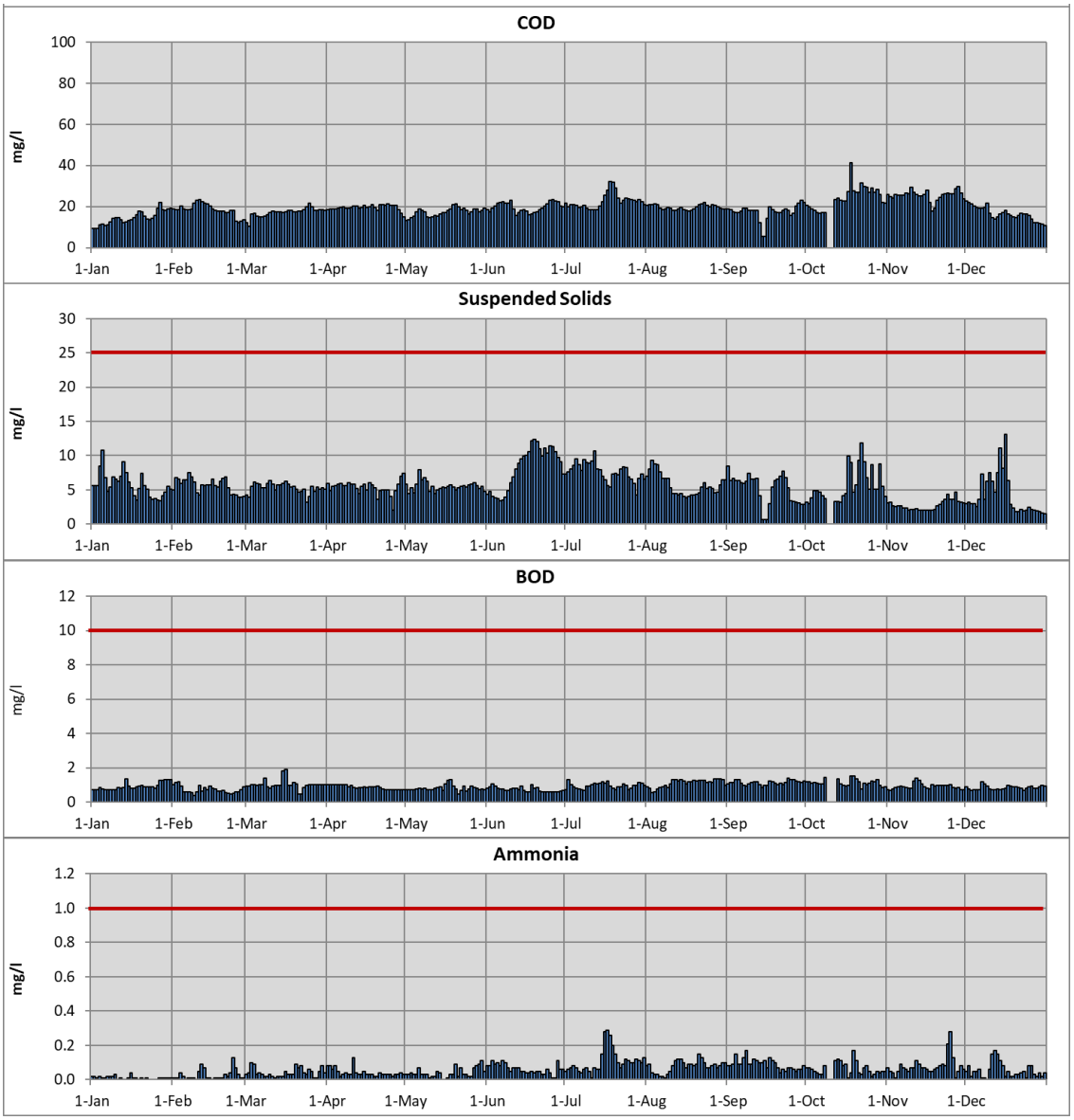


The NO_x emissions test result for Stack A4 (Jupiter Hood Exhaust Vent) was below the consent limit at 22.4mg/m3.

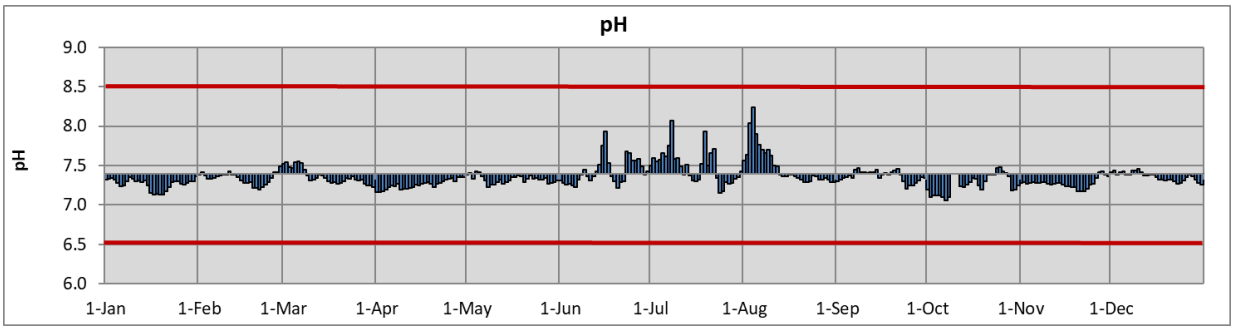


5.0 Emissions to Water

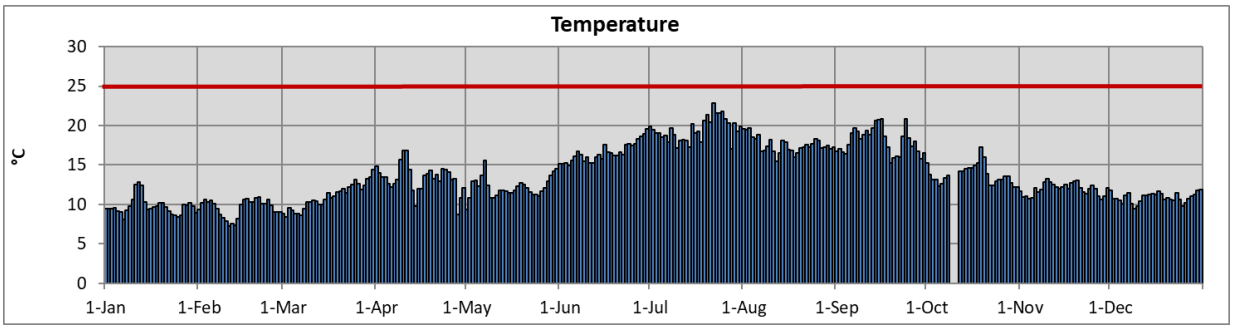
Emissions to water results for 2021 were all compliant with parameters being well below permit limits. This is evident in the graphs below:



The pH of the effluent discharge to the River Llynfi was within the permit limits for 2021, as is shown in the graph below:

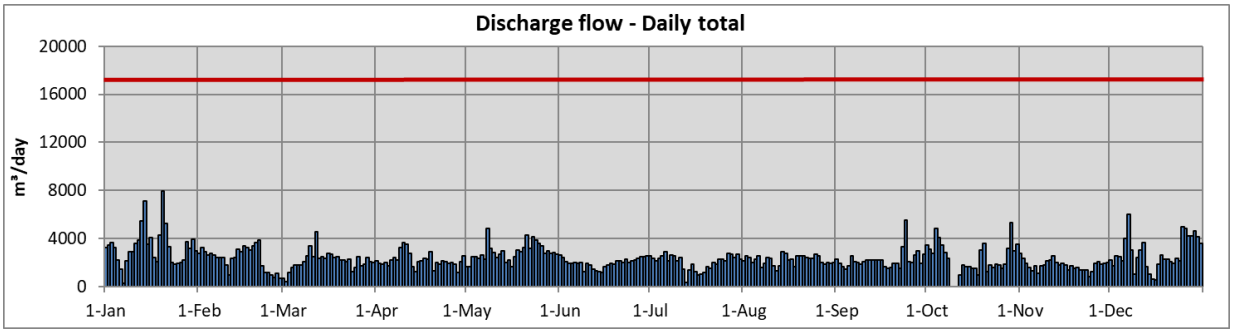


The discharge temperature has consistently been below the permit limit of 25°C.



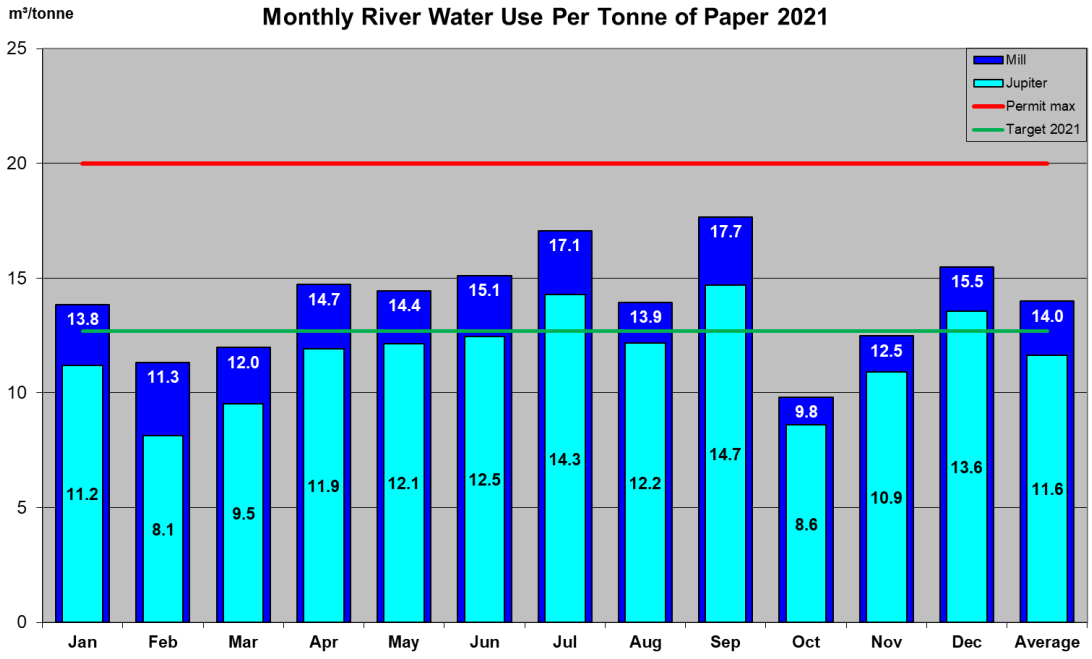
The daily effluent volumes discharged in 2021 were significantly below the permit limit of 17,500m^3 per day and apart from the odd spike, typically less than 4,000m^3 per day.

.

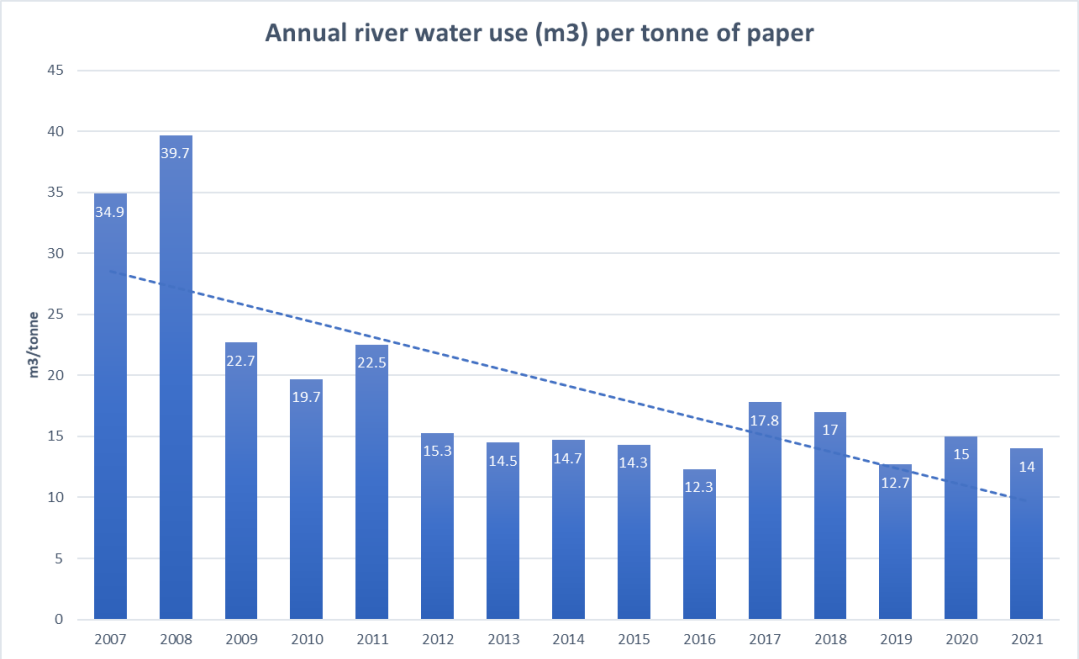


WATER USE CHARTS

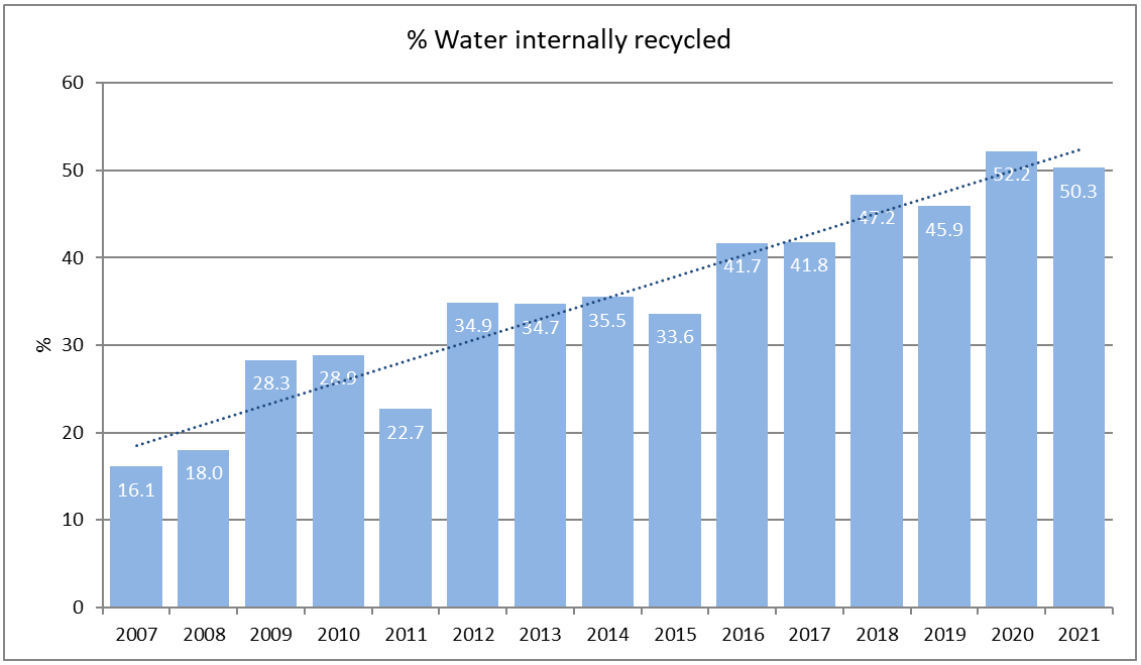
The trend in water use per air-dried tonne of paper (ADT) was consistently below the revised 2014 BREF target of 20m^3/ADT, with the exception of August which was on the border of the target.



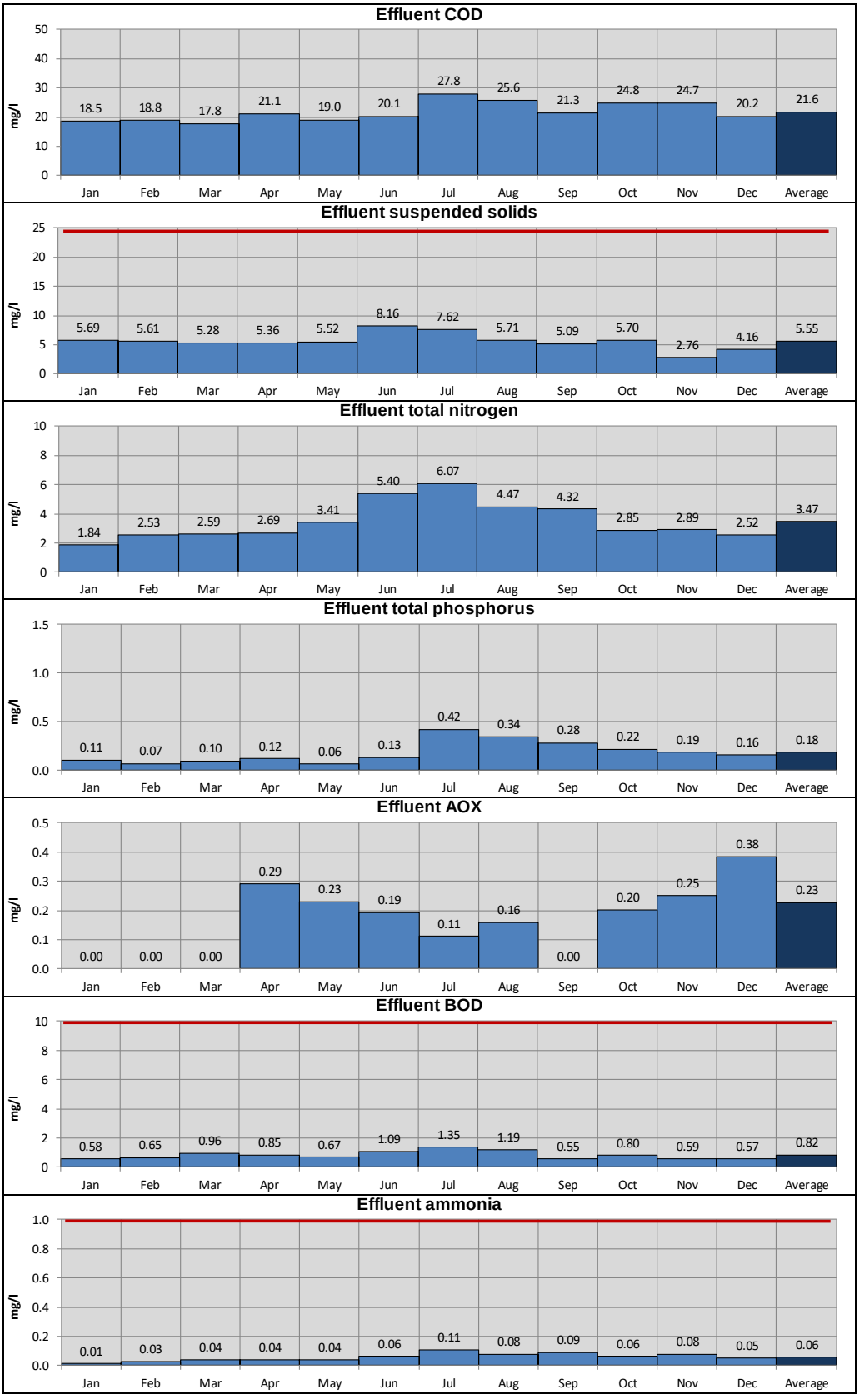
Historic trend demonstrates a downward curve, as can be seen from the graph below despite a slight upward movement in 2017 during commissioning on the new water plant. This downward trend is expected to continue with the introduction of the new (more efficient) Neptune machine.



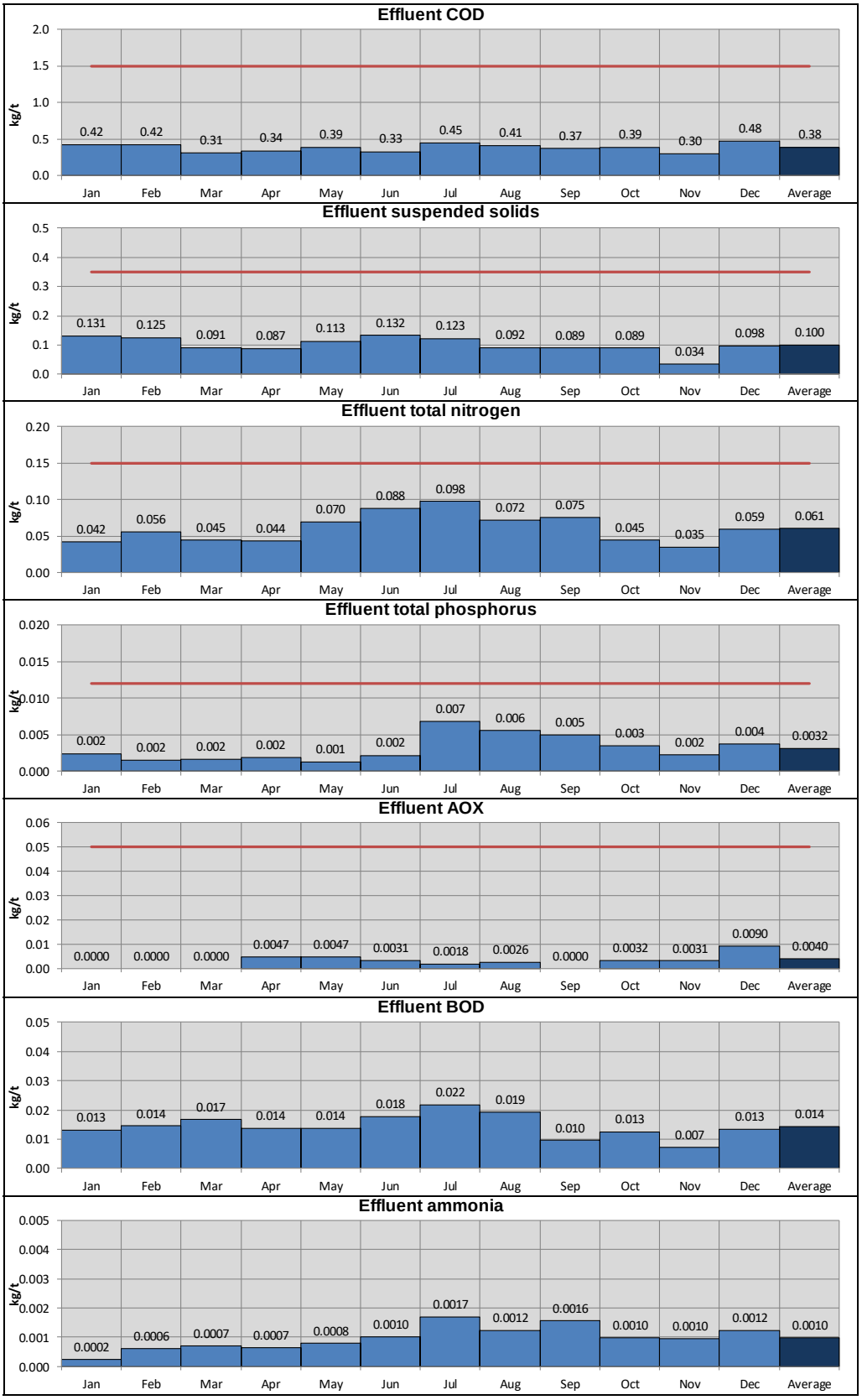
The declining trend in water usage is reflected in the quantity of water that is recycled as shown in the graph below.



EMISSIONS TO WATER (mg/l)



EMISSIONS TO WATER (monthly kg/tonne)

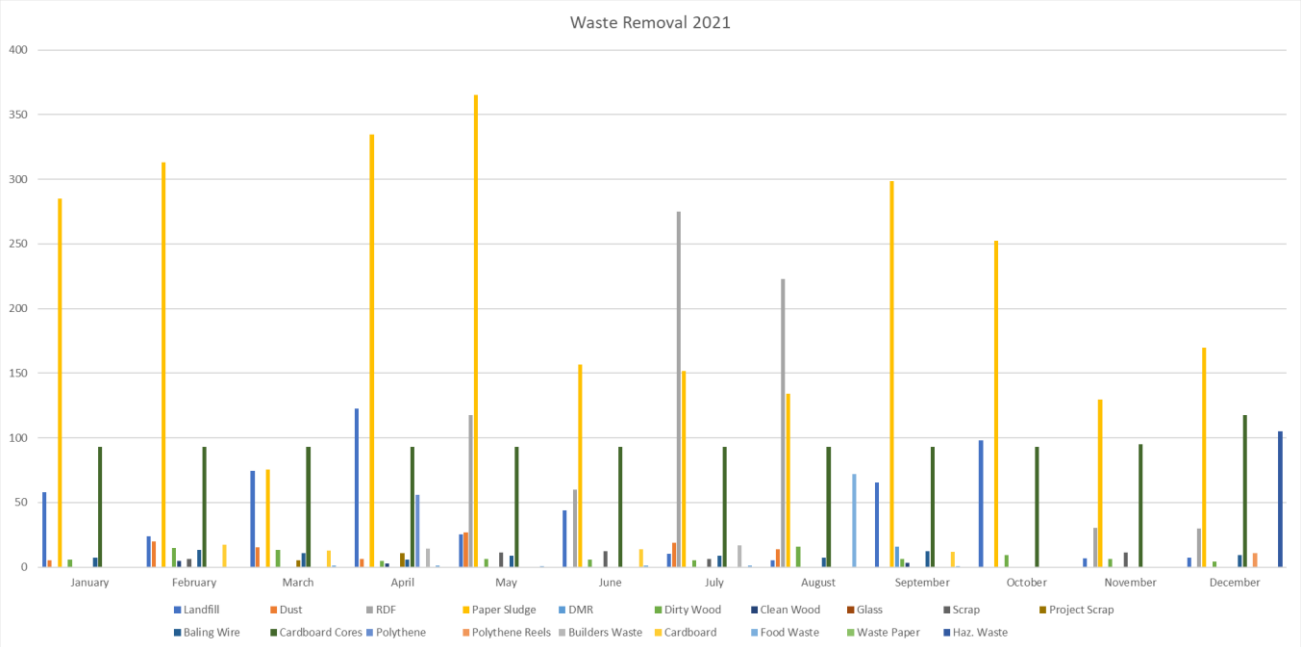


6.0 Waste

The following list is typical of waste streams emanating at Bridgend mill and their respective disposal routes:

1. Paper sludge – primarily cattle bedding
2. General Waste – Treated (Recyclables segregated from general waste) or Recovered (Refuse Derived Fuel Plant)
3. Metals – Recycled
4. Oils – Recovered
5. Cardboard and Polythene – Recycled following separation.
6. Building rubble – Recycled
7. Polythene – Recycled
8. Wood –Recycled
9. Non-standard waste, which includes both hazardous and non-hazardous and have varying disposal routes. These wastes typically include:

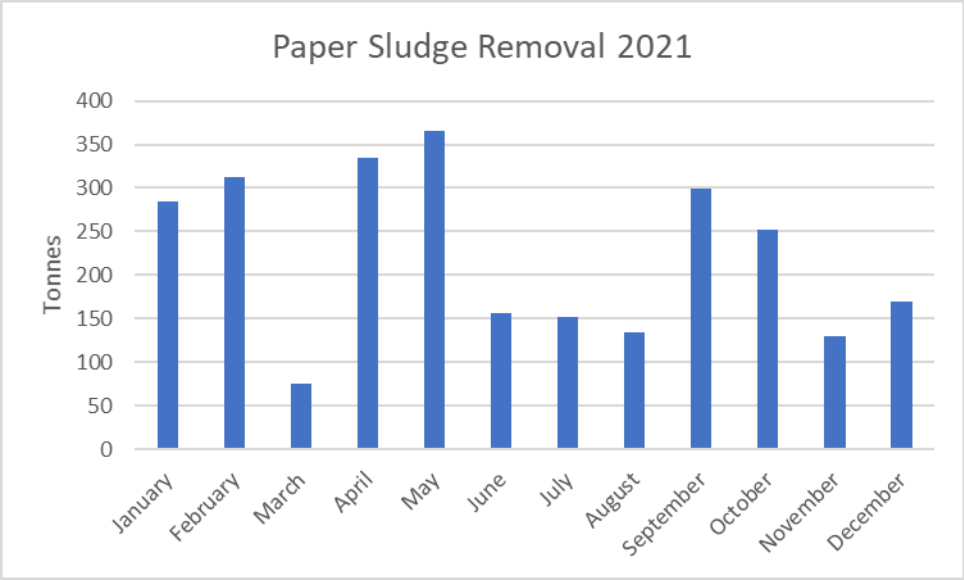
   Batteries
   Hazardous wastes
   Paints and solvents
   Process and other chemicals
   PC monitors (W.E.E.E Waste)
   Fluorescent tubes etc. etc.

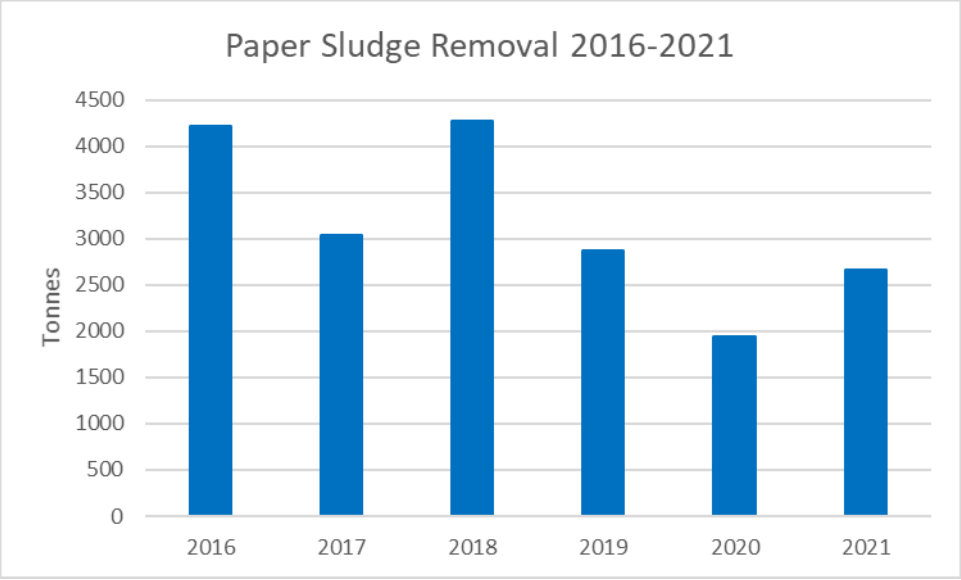


The above graph depicts the annual trend of wastes generated at the Bridgend site during 2021.

7.0 Sludge removal

The graph below shows the amount of sludge removed from site in 2021 per month and the graph below that shows sludge removal over the last 6 years.

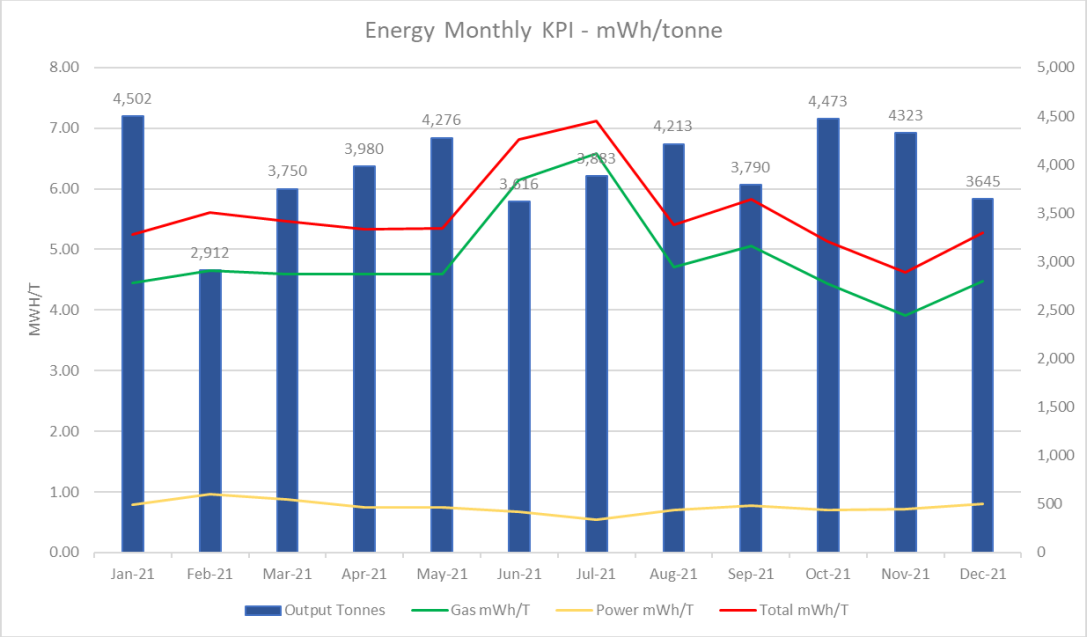




8.0 Energy

Bridgend Paper Mill is a member of a Climate Change Levy Agreement negotiated scheme (Confederation of Paper Industries).

The mill is also registered with the EU Emissions Trading Scheme. This is verified by the Natural Resources Wales through the Mill's Greenhouse Gas (GHG) Emissions Permit as well as the online ETSWAP reporting system. No major non-conformances have been reported in this calendar year.



Energy consumption per tonne of paper was pretty consistent throughout the year with the exception of June and July where both GT's were run together whilst the free standing boiler had a statutory inspection.