tilbury greenpower

# Annual Performance Report 2024

## Permit EPR/KP3936ZB

## Tilbury Green Power Plant

## other name of facility (if applicable)

## Tilbury Green Power Ltd.

| | | | |
|---|---|---|---|
| Year: | 2024 | | |
| Address: | Tilbury Green Power, Port of Tilbury, Tilbury, Essex, RM18 7NU | | |
| Tel: | [redacted] | | |
| Email: | [redacted] | | |
| Prepared by: | [redacted] | Position: | QHSE Advisor |
| Approved by: | [redacted] | Position: | Senior General Manager |
| Version: | 1 | | |
| Issue Date: | 31/01/2025 | | |

**Contents**



**Version Control**

| Section | Information | Date |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

**Distribution**

| Copy | Name, Role | No. |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

This report is required under the Industrial Emissions Directive's Article 55(2) requirements on reporting and public information on waste incineration plants and co-incineration plants, which require the operator to produce an annual report on the functioning and monitoring of the plant and make it available to the public.

**Plant Description and Design**

The Woodchip Storage Building receives woodchip from the Wood Processing Building via an enclosed Woodchip Transfer Conveyor, or directly by road trailer via the Woodchip Storage Building's Woodchip Reception Bays, and feeds woodchip to the boiler via the Boiler Feed Conveyor. The Woodchip Storage Building stores up to 14,400 m3 (3,025 tonnes) of woodchip, sufficient to supply the boiler for around 3.5 days. Processed woodchip is held within the Woodchip Storage Building for a maximum of 8 weeks. The boiler requires around 1,381,000 m3/year (290,000 tonnes/year) of woodchip and produces around 40.3 MWe.

**Summary of Operational Processes and Procedures**

Waste wood is received and processed on site. The combustion process employs a single travelling grate system, with the hot combustion gases passing through a boiler. The steam generated in the boiler is fed to a steam turbine which in turn drives a generator to produce electricity. Equipment within the Flue Gas Treatment Area is provided to minimise emissions to air, and comprises of selective non-catalytic reduction for control of oxides of nitrogen (by injection of urea into the furnace chamber); a multi-compartment fabric filter (for particulate matter (i.e. dust) control); dry lime (for control of acid gases by injection of lime into the exhaust gas stream prior to the fabric filters); and activated carbon (for control of dioxins, furans and metals by injection of activated carbon into the exhaust gas stream prior to the fabric filters) Whilst activated carbon has been available on site to date there has not been a need to use it in order to control dioxins, furans and metals within the exhaust gas stream. Treated flue gases are monitored and released via a 100 metre high stack.

Solid residues in the form of bottom ash (from the boiler) and fly ash (from the flue gas treatment system) are stored on site (within the Bottom Ash Store and Fly Ash Silo respectively) for subsequent removal off-site to an appropriately licence waste management facility. Process effluents are generated from boiler blow down and the water treatment plant and equipment, are collected and treated in the sedimentation tank. Treatment provides acid dosing for pH adjustment and settlement of solids prior to discharge to sewer under a trade effluent consent. Uncontaminated surface water run-off will be collected in the surface water drainage system. Where possible it will be harvested for domestic use within the Power Plant Facility, with the remainder being discharged to the Botney Channel watercourse.

## Operational Data

| | | | | | | |
|---|---|---|---|---|---|---|
| Plant Size | | 320,000 | tonnes pa | 116 | MWth | 40 |
| No. of combustion lines | 1 | | No. of Turbines: | | 1 | |

| **Waste types received** | Unit | Q1 | Q2 | Q3 | Q4 | **Year Total** |
|---|---|---|---|---|---|---|
| Household / Local Authority | tonnes | | | | | **-** |
| Commercial & Industrial | | | | | | **-** |
| Hazardous | | | | | | **-** |
| Clinical | | | | | | **-** |
| Waste wood (biomass) | | 72,284 | 63,711 | 36,997 | 55,200 | **228,192** |
| Refuse Derived Fuel * - H'hold/LA | | | | | | **-** |
| Refuse Derived Fuel * - C&I | | | | | | **-** |
| Other [Please specify] | | | | | | **-** |
| Other [Please specify] | | | | | | **-** |
| Other [Please specify] | | | | | | **-** |
| **Total waste received** | | **72,284** | **63,711** | **36,997** | **55,200** | **228,192** |
| Rejected Waste | | 21 | 11 | 8 | 11 | **52** |
| Unprocessed waste transferred out | | | | | | **-** |
| **Total waste combusted **** | | **72,284** | **63,711** | **36,997** | **55,200** | **228,192** |

| **Energy Usage / Export** | Unit | Q1 | Q2 | Q3 | Q4 | **Year Total** |
|---|---|---|---|---|---|---|
| Power Generated | MWh | 90,733 | 81,887 | 48,086 | 70,322 | **291,028** |
| Power Exported | | 85,071 | 76,737 | 45,055 | 65,935 | **272,797** |
| Power Used on site | | 5,662 | 5,150 | 3,031 | 4,387 | **18,231** |
| Power Imported | | 45 | 208 | 552 | 480 | **1,285** |
| Parasitic Load | % | 6.3% | 6.5% | 7.4% | 6.9% | 6.7% |
| Thermal Energy Produced *** | MWh | | | | | **-** |
| Thermal Energy Exported *** | | | | | | **-** |
| R1 value (if applicable) | R1 | | | | | |

| **Waste Disposal & Recovery** | Unit | Q1 | Q2 | Q3 | Q4 | **Year Total** |
|---|---|---|---|---|---|---|
| APC Residues - produced | tonnes | 1,543 | 1,360 | 790 | 1,066 | **4,758** |
| IBA - produced | | 4,483 | 3,951 | 2,294 | 3,432 | **14,160** |
| Metals recycling | | 41 | 38 | 19 | 33 | **131** |
| Other | | - | - | - | - | **-** |
| Other | | - | - | - | - | **-** |
| Other | | - | - | - | - | **-** |

| **Raw Material Usage** | Unit | Q1 | Q2 | Q3 | Q4 | **Year Total** |
|---|---|---|---|---|---|---|
| Mains Water | ltrs | 13,687,000 | 13,669,000 | 12,238,000 | 8,915,000 | **48,509,000** |
| Other Water | ltrs | | | | | **-** |
| Ammonia | kgs | | | | | **-** |
| Urea | kgs | 66,412 | 55,942 | 40,614 | 67,471 | **230,439** |
| Activated Carbon | kgs | | | | | **-** |
| Lime / hydrated lime | kgs | 872,461 | 611,814 | 322,629 | 558,227 | **2,365,131** |
| Fuel oil | ltrs | 210,217 | 225,184 | 220,504 | 272,194 | **928,099** |
| Gas | cuf | | | | | **-** |
| Other | | | | | | **-** |

| **Summary** | Line/Unit | Q1 | Q2 | Q3 | Q4 | **Year Total** |
|---|---|---|---|---|---|---|
| Availability of waste combustion by line, hrs **** | 1 | 2,076 | 1,914 | 1,145 | 1,702 | **6,837** |
| | 2 | | | | | |
| | 3 | | | | | |
| | 4 | | | | | |
| | 5 | | | | | |
| Overall Availability, mean avg. of all lines, hrs | | **2,076** | **1,914** | **1,145** | **1,702** | 6,837 |
| Hours of turbine operations, hrs | 1 | 2,045 | 1,995 | 1,152 | 1,734 | **6,926** |
| Hours of turbine operations, hrs | 2 | | | | | **-** |
| Hours of heat / steam export | | | | | | **-** |
| Net Calorific Value of waste | MJ/kg | | | | | |
| Abnormal Events | qty. | | | | | **-** |
| Abnormal operation | hours | | 3 | | | **3** |
| Permit Breaches | qty. | | 1 | 1 | 2 | **4** |

| MWe |
|---|
| |

| % |
|---|
| - |
| - |
| - |
| - |
| 100.0% |
| - |
| - |
| - |
| - |
| - |
| |
| 0.0% |
| - |
| |

| KWh/te |
|---|
| 1,275 |
| 1,195 |
| 80 |
| 6 |
| |
| - |
| - |
| |

| % inputs |
|---|
| 2.1% |
| 6.2% |
| 0.1% |
| - |
| - |
| - |

| kg or Ltr /te |
|---|
| 212.58 |
| - |
| - |
| 1.01 |
| - |
| 10.36 |
| 4.07 |
| |

| |
|---|
| 78.0% |
| 0.0% |
| 0.0% |
| 0.0% |
| 0.0% |
| **78.0%** |
| 79.1% |
| 0.0% |
| n/a |
| |
| no |
| 0.0% |
| yes |

**Summary of Plant Operations and Maintenance during the reporting year**

The plant entered 2024 in full commercial operation following the O&M contract guidelines. During 2024 the focus was to plan and execute a major maintenance outage during September as two large projects were required to replace the furnace grate and superheater bundles 1B and 2A within the superheater section of the boiler. Following a challenging year in 2023 with boiler tube leaks, plant reliability was seen to improve during Q1 of 2024, following the detailed boiler inspection and repairs conducted in 2023.

During Q1 the plant operated very well, achieving high availability or the first two and half months of the year with only minor load losses due to fuel related issues and some minor plant problems, however the first tube leak event of 2024 occurred during March in the superheater caused a three day shutdown event, with further tube leak events each month thereafter. It was apparent that superheaters 1B and 2A due for replacement were starting to deteriorate significantly, as during July three tube leak events occurred during the month with the final event of the month rolling into August and a further two leak events occurring during August.

The annual outage in September was split into two separate critical paths to accommodate the WBOC scope of works and the TGP improvement works to replace superheaters 1B and 2A, the WBOC scope of work duration was set at 20 days and the overall outage duration to replace the two superheaters was set at 34 days inclusive of the WBOC scope of work. The outage was completed successfuly but was delayed following a boiler inspection that identified some thin tubes were identified which slowed the progress of the superheater installation as the connection points to superheater 1B had to be replaced. There were also some other challenges with the superheater installation which slowed progress, so the overall installation time was extended by six days.

After completion of the outage the plant was restarted successfully, however following restart several grate bars detached from the grate due to not being secured correctly which required a 24 hour stop to rectify.

After completion of the outage and returning to normal operation the plant struggled to achieve maximum output for a short period of time due to a very clean boiler (lack of fouling) and the grate being replaced, which required detailed air flow/combustion tuning. AET supported the site post outage to optimize combustion so full load could be achieved as quickly as possible.

Following combustion optimisation, the plant started to operate reliably and some steady state operation was

**Summary of Residue Handling for the reporting year**

Both IBA and APCR have been handled as hazardous waste. IBA has been sent to Augean ENRMF Kings Cliffe, or Augean Thornhaugh Landfill Site. APCR has been sent to OCO Technology in Thetford or OCO Technology Avonmouth who have a carbon capture utilisation process which treats and stabilises the APCR which can then be used as sustainable construction products. Full details can be found in the quarterly waste returns which have been completed and submitted throughout 2024.

## 2024 Annual Reporting Performance Form 1

Permit EPR/KP3936ZB
Facility: Tilbury Green Power Plant

Operator: Tilbury Green Power Ltd.
Form: Performance 1

Reporting Period from: 01 January 2024 to: 31 December 2024

### 2024 Annual Reporting of Waste Disposal and Recovery

| Waste Description | Disposal Route(s) | Disposal Tonnes | Recovery Tonnes | % / tonne of waste incinerated |
|---|---|---|---|---|
| 1) Hazardous Wastes | | | | |
| APC Residues | R05 | 0.0 | 5,333.6 | 2.3% |
| IBA | D01 | 15,061.4 | 0.0 | 6.6% |
| | | | | - |
| | | | | - |
| Total Hazardous Waste | | 15,061.4 | 5,333.6 | 8.9% |
| | | | | |
| 2) Non-Hazardous Wastes | | | | |
| IBA | | | | - |
| Ferrous Metal | | | | - |
| Process Water | | | | - |
| | | | | - |
| | | | | - |
| Total Non-Hazardous Waste | | 0.0 | 0.0 | - |
| **TOTAL WASTE** | | **15,061.4** | **5,333.6** | 8.9% |

**Operator's comments :**

Ferrous metal is now transferred to Eskens Renewables foronward disposal/recycling and is included within the relevant reports submitted by Eskens Renewables.

### 2024 Annual Reporting of Water and Other Raw Material Usage

| Raw Material | Usage | Unit | Specific Usage | Unit |
|---|---|---|---|---|
| Mains Water | 48509 | $m^3$ | 0.21 | $m^3$/te |
| Total Water | 48509 | $m^3$ | 0.21 | $m^3$/te |
| Urea / Ammonia | 0 | kg | - | kg/te |
| Activated Carbon | 0 | kg | - | kg/te |
| Lime / hydrated lime / Sodium Bicarb. | 2365131 | kg | 10.36 | kg/te |
| | | | | |

**Operator's comments :**

### 2024 Annual Reporting of other performance indicators

| Parameter | Results by Line A1 | A2 | A3 | A4 | A5 | | Turbine 1 | Turbine 2 |
|---|---|---|---|---|---|---|---|---|
| Operating hours for the year, hours | 6837 | | | | | | 6926 | |
| Number of periods of abnormal operation, qty. | 1 | | | | | | | |
| Cumulative hours of abnormal operation for this year, hours | 2.5 | | | | | | | |

**Operator's comments :**

Abnormal operating period took place on 19/05/2024 and a scehdule 5 part A & B previously submitted

Signed: _____ Date: _____

## 2024 Annual Reporting of Energy Usage/Export

Permit EPR/KP3936ZB Operator: Tilbury Green Power Ltd.

Facility: Tilbury Green Power Plant Form: Energy 1

Reporting Period from: 01 January 2024 to: 31 December 2024

| Energy Source | Energy Usage | Unit | Specific Usage (KWh/tonne incinerated |
|---|---|---|---|
| Electricity Produced | 291,028 | MWh | 1275 |
| Electricity Imported | 1285.33 | MWh | 6 |
| Electricity Exported | 272,797 | MWh | 1195 |
| Gas Oil | | tonnes | |
| Steam/hot water exported | 0 | GWh | - |
| | | | |
| | | | |

| **Operator's comments :** |
|---|
| |

Signed: _____ Date: _____

## Summary of Permit Compliance

### Compliance with permit limits for continuously monitored pollutants

The plant met its emission limits as shown in the table below:

| Substance | Percentage time compliant during operation[Not | |
|---|---|---|
| | Half-hourly limit | Daily lim |
| Particulates | 100% | 100% |
| Oxides of nitrogen | 100% | 100% |
| Sulphur dioxide | 100% | 100% |
| Carbon monoxide | 100% | 99% |
| Total organic carbon | 100% | 100% |
| Hydrogen chloride | 100% | 100% |
| Hydrogen fluoride | 100% | 100% |
| | xx.xx % | xx.xx % |

**Summary of non-compliances under the permit** [Note 2]

| Date | Summary of non-compliance [Note 3] | Reason | Measures taken to prevent reoccurrence | CC |
|---|---|---|---|---|
| | | | | Impact |
| CAR Report 31/03/2024 | None | N/A | N/A | N/A |
| CAR 30/09/2024 | IBA result for TOC was in exceedance at 4.91% | Sample taken from startup ash and not during steady state operation | Sampling only to be done on ash from steady state operation (base load) | C4 |
| CAR 30/09/2024 | Failure to submit schedule 5 in aacordance with timescale required | Internal review of lab report for IBA sampling was not undertaken and therefore breach was not identified. | Internal management review of lab reports and quarterly reports prior to submission to the EA. | C4 |
| CAR 30/09/2024 | Failure to follow management system in respect of reporting non compliances and IBA sampling & Testing Protocol V2.1 June 2023 | Human error and refamililarisation of associated protocol required | Personnel responsible for collecting IBA samples and reporting both results and/or breaches, retrained on the 'IBA Sampling & Testing Protocol - V2.1 June 2023. | C4 |

| | | | | |
|---|---|---|---|---|
| Limit Breach TOC 27/09/2024 | IBA result for TOC was in exceedance at 4.91% | Sample taken from startup ash and not during steady state operation | Sampling only to be done on ash from steady state operation (base load) | - |
| ELV Breach CO 11/10/2024 | Exceedance of CO daily average at 96.07 mg/nm3 | Missing travelling grate elements resulting in unstable combustion and CO spikes | The grate will be overhauled every 5-6 years so to prevent recurrence next replacement of grate elements to include a final QA check on the grate bar split pins to ensure all the grate bars have been secured properly and are secure for operation. | - |
| ELV Breach CO 21/11/2024 | Exceedance of CO daily average at 94.2 mg/nm3 | Multiple CO spikes when co-firing on aux burners and further spikes during the day resulting in overall daily average exceedance | DCS software modified so the fuel trimmer corrects itself automatically when a plant start is initiated to eliminate human error | - |
| CAR Report 26/11/2024 | None | N/A | N/A | N/A |
| ELV Breach CO 22/12/2024 | Exceedance of CO daily average at 99.9 mg/nm3 | Multiple CO spikes when co-firing on aux burners and further spikes during the day resulting in overall daily average exceedance | DCS software modified so the fuel trimmer corrects itself automatically when a plant start is initiated to eliminate human | - |

*If the Environment Agency (EA) has given a Compliance Classification Scheme (CCS) score due to a
should be entered here (CCS4 = No impact; CCS3 = Minor impact; CCS2 = Significant impact; CCS1 =
has not yet assessed a non-compliance which you have notified to them, these columns should be left

| **Summary of any complaints received and actions to taken to resol** | | | |
|---|---|---|---|
| **Date** | **Summary of complaint [including Line/Reference]** | **Reason (including whether substantiated by the operator or the EA)** | **Mea** |

| | | | |
|---|---|---|---|
| 24 July 2024 | Received through EA officer Gail Harvey. Dust reported to be clogging filter on rooves and covering cars. | The caller described the dust as a brown/beige colour. More like a fibre but can vary, particle size can be different.<br>Caller stated this is not just a cost to them but raised concerns they are breathing it in. It was first noticed yesterday evening (23rd July) but reported as an ongoing issue. | Investiga<br>Operator<br>dust sup<br>It was no<br>of the du<br>bowser v<br>improve<br>cannon v<br>maintena<br>now fully<br>The Ope<br>major ou<br>During th<br>system w<br>perimete<br>control. |
| | | | |
| | | | |
| | | | |
| | | | |

| te 1 |
|---|
| it |
| |
| |
| |
| |
| |
| |
| |
| |

| CS score if applicable* |
|---|
| Root cause |
| N/A |
| Sample taken from non steady state operation IBA |
| Lab reports were not subject to internal management review prior to inclusion in the associated quarterly report to the EA |
| Periodic refamiliarisation of associated IBA Sampling & Testing Protocol V2.1 June 2023. |

| |
|---|
| Sample taken from non steady state operation IBA |
| Grate element's split pins not fully QA inspected |
| Fuel feed trimmer adjusting incorrectly and feeding around 35% more fuel than required resulting in iunstable combustion, until it ramped down in automatic control, |
| N/A |
| Fuel feed trimmer adjusting incorrectly and feeding around 35% more fuel than required resulting in iunstable combustion, until it ramped down in automatic control, |

permit non-compliance it
= Major impact). If the EA
blank.

**ve them.**

**asures taken to prevent reoccurrence**

| |
|---|
| ıtion completed on the<br>. It was observed that the<br>pression equipment was on.<br>ıted that the water flow to one<br>st cannons was poor. A<br>vas brought to site to help<br>dust control while the faulty<br>vas undergoing<br>ance. The misting cannon is<br>back in service.<br>rator will be shut down for a<br>tage in September 2024.<br>ıis outage a full fogging<br>vill be installed on the<br>r walls to improve dust |
| |
| |
| |
| |

## Summary of Plant Improvements

| Summary of any efficiency improvements that have been completed within the year. |
| --- |
| Throughout 2024 the plant has continued to improve the combustion within the boiler, for the purposes of increasing efficiency, reducing fouling and decreasing emissions.<br><br>Identified passing valves and repaired them during the annual maintenance outage to improve water consumption and reduce energy loss.<br><br>Travelling grate within the boiler replaced during September 2024 maintenance outage, improving combustion back to as new standard. |

| Summary of any permit improvement conditions that have been completed within the year and the resulting environmental benefits. |
| --- |
| All permit improvement conditions completed and submitted successfully. Ongoing environmental benefits to be monitored. |

| Summary of any changes to the plant or operating techniques which required a variation to the permit and a summary of the resulting environmental impact. |
| --- |
| N/A |

| Summary of any other improvements made to the plant or planned to be made and a summary of the resulting environmental benefits. |
| --- |
| Sediment filters have been installed on surface water drains across site to reduce blockages and risk of site flooding. |

**Details of Public & Stakeholder Liaison**

| **Summary of events held during the reporting year.** | |
|---|---|
| **Date** | **Description** |
| Apr-24 | A newsletter was issued to the local residents and identified local stakeholder groups. |
| | |
| | |
| | |

| **List of events planned for next year** | |
|---|---|
| **Date** | **Description** |
| | |
| | |
| | |
| | |
| | |

**If you wish to be involved in the public liaison programme, please contact _____**

ual Performance Report 2024 Name of Facility as per Permit

## ɔon dioxide emissions and biogenic content of waste inputs

### ɔon dioxide emissions (all types of plant)

| | |
|---|---|
| Annual mass of carbon dioxide released | 353,897 tonnes |
| Annual mass of carbon dioxide released per tonne of waste burned | 1.55 t $CO_2$ / t waste |
| Annual mass of carbon dioxide released per MWh of energy exported | 1.29 t $CO_2$ / MWh export |
| Description of how annual carbon dioxide mass emission has been calculated.<br>See Note 1 | 1. Calculate total hourly flow rate.<br>2. Divide average CO2 percentage by 10<br>3. Calculate grams of CO2 using avogad<br>4. Convert total to tonnes by dividing by 1 |

### ɔus oxide emissions (only plants which use ammonia or urea to abate NOx emission

| | |
|---|---|
| Annual mass emissions of nitrous oxide | 0.706 tonnes $N_2O$ |
| Description of how annual nitrous oxide mass emission has been calculated<br>See Note 2 | 1. Sum of all 30 minute values for 2024, (<br>kg,<br>2. Divide result by 1000 to convert to tonn |
| **l annual carbon dioxide + nitrous e emissions.**<br>Note 3. | 354,084.09 tonnes $CO_2e$ |

### ɟenic CO2 emissions (See Note 4)

| | |
|---|---|
| Percentage of total carbon dioxide emissions arising from biogenic waste | % |
| No. of measurements undertaken | Number |
| Description of how percentage biogenic carbon dioxide emissions have been measured or calculated.<br>See Note 5 | |

### ɟenic fraction of waste feedstock (See Note 4)

| | |
|---|---|
| Yearly average biogenic percentage of the waste by net calorific value (NCV) | % |

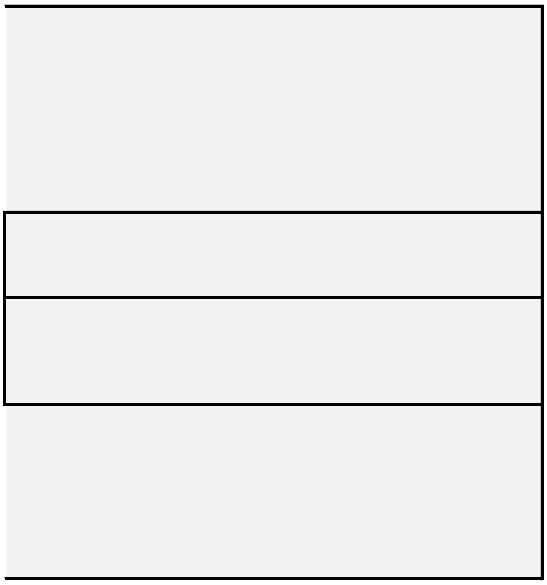
| | |
|---|---|
| Description of how biogenic percentage (by NCV) has been calculated or estimated.<br>See Note 6 | |
| Yearly average biogenic percentage of the waste by mass | % |
| If waste sampling undertaken, no. of samples used to ascertain average biogenic percentages above | Number |
| Description of how biogenic percentage (by mass) has been calculated or estimated.<br>See Note 7 | |

0 and multiply by total hourly flow rate.
ros law.
,000,000.

s)

divided by 2 to provide annual emission in

nes.



## Residue Quality Monitoring Requirements

| Summary of monitoring undertaken and compliance |
|---|
| Quarterly samples of incinerator bottom ash and fly ash collected and sent for lab analysis |
| Biannual onsite monitoring undertaken by SOCOTEC. |
| |

| Commentary on any specific events | |
|---|---|
| **Date & Event** | **Description** |
| | |
| | |
| | |
| | |
| | |

| Residue Quality Monitoring Results | | | |
|---|---|---|---|
| **Parameter (unit)** | **Limit*** | **Normal Operation** | |
| | | **Bottom ash** | **APC Residues** |
| Loss on Ignition (average %) | <5% | 2.42 | |
| Total Organic Carbon (average %) | <3% | 2.85 | |
| No. of Assessments Undertaken | --- | Quarterly when in operation | |
| No. of Hazardous Results | --- | N/A | |

* The permit will specify a limit of either 5% loss on ignition or 3% total organic carbon. If both are measured anyway, please enter the results here, even where the limit does not apply.

| Comments : |
|---|
| Bottom Ash quarterly results for loss on ignition:<br>Q1 - 3.3<br>Q2 - 2.0<br>Q3 - 3.2<br>Q4 - 1.2 |

## Emissions to Water

| Summary of monitoring undertaken and compliance |
|---|
| There is no environmental permit conditions for trade effluent. A trade effluent consent is in place with Anglian wate |
| Anglian Water attend site on a quarterly basis to conduct sampling and testing of the trade effluent. |
| WBOC undertake sampling of the neutralisation pit (trade effluent water) on a weekly basis to create a monthly composite sample which is then sent to an accredited lab to ensure it is compliant with the consent. |

| Commentary on any specific events | |
|---|---|
| **Date & Event** | **Description** |
| | |
| | |
| | |

**Emissions to Water / Sewer**

| Parameter | Monitoring Frequency | Limit | Target | Max. | Average |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**Emissions to Air (periodically monitored)**

| **Summary of monitoring undertaken, standards used and compliance** |
|---|
| Biannual MCERTS accredited monitoring undertaken by Socotec. |

| **Results of emissions to air that are periodically monitored - oxygen reference 6%** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Substance** | **Ref. Period** | **Emission Limit Value** | **Average** | | | | |
| | | | **A1** | **A2** | **A3** | **A4** | **A5** |
| Hydrogen fluoride | 1 hr | 1.5 mg/m$^3$ | 0.081 | | | | |
| Cd and Tl and their compounds | 0.5-8hrs | 0.03 mg/m$^3$ | 0.00081 | | | | |
| Hg and its compounds | 0.5-8hrs | 0.03 mg/m$^3$ | 0.00044 | | | | |
| Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V and their compounds | 0.5-8hrs | 0.45 mg/m$^3$ | 0.017 | | | | |
| Dioxins & Furans (I-TEQ) | 6-8hrs | 0.09 ng/m$^3$ | 0.00095 | | | | |
| PCBs (WHO-TEQ Humans / Mammals) | 6-8hrs | None set ng/m$^3$ | 0.00017 | | | | |
| PCBs (WHO-TEQ Fish) | 6-8hrs | None set ng/m$^3$ | 0.000012 | | | | |
| PCBs (WHO-TEQ Birds) | 6-8hrs | None set ng/m$^3$ | 0.00069 | | | | |
| Dioxins & Furans (WHO-TEQ Humans / Mammals) | 6-8hrs | None set ng/m$^3$ | 0.00091 | | | | |
| Dioxins & Furans (WHO-TEQ Fish) | 6-8hrs | None set ng/m$^3$ | 0.0085 | | | | |
| Dioxins & Furans (WHO-TEQ Birds) | 6-8hrs | None set ng/m$^3$ | 0.0016 | | | | |
| Anthanthrene | 6-8hrs | None set µg/m$^3$ | 0.0013 | | | | |
| Benzo(a)anthracene | 6-8hrs | None set µg/m$^3$ | 0 | | | | |
| Benzo(a)pyrene | 6-8hrs | None set µg/m$^3$ | 0.0013 | | | | |
| Benzo(b)fluoranthene | 6-8hrs | None set µg/m$^3$ | 0 | | | | |
| Benzo(b)naptho(2,1-d) thiophene | 6-8hrs | None set µg/m$^3$ | 0 | | | | |
| Benzo(c)phenanthrene | 6-8hrs | None set µg/m$^3$ | 0.0013 | | | | |
| Benzo(ghi)perylene | 6-8hrs | None set µg/m$^3$ | 0.0013 | | | | |
| Benzo(k)fluoranthene | 6-8hrs | None set µg/m$^3$ | 0.0013 | | | | |
| Cholanthrene | 6-8hrs | None set µg/m$^3$ | 0.0013 | | | | |
| Chrysene | 6-8hrs | None set µg/m$^3$ | 0.01 | | | | |
| Cyclopenta(cd)pyrene | 6-8hrs | None set µg/m$^3$ | 0.0013 | | | | |
| Dibenzo(ai)pyrene | 6-8hrs | None set µg/m$^3$ | 0.0013 | | | | |
| Dibenzo(ah)anthracene | 6-8hrs | None set µg/m$^3$ | 0.0013 | | | | |
| Fluoranthene | 6-8hrs | None set µg/m$^3$ | 0.09 | | | | |
| Indeno(123-cd) pyrene | 6-8hrs | None set µg/m$^3$ | 0.0013 | | | | |
| Naphthalene | 6-8hrs | None set µg/m$^3$ | 0.07 | | | | |
| **Comments :** | | | | | | | |
| | | | | | | | |

**Emissions to Air (continously monitored)**

| **Summary of monitoring undertaken, standards used and compliance** |
|---|
| |
| |

**Results of emissions to air that are continuously monitored (maximum and average values for each line) - oxygen reference 6%**

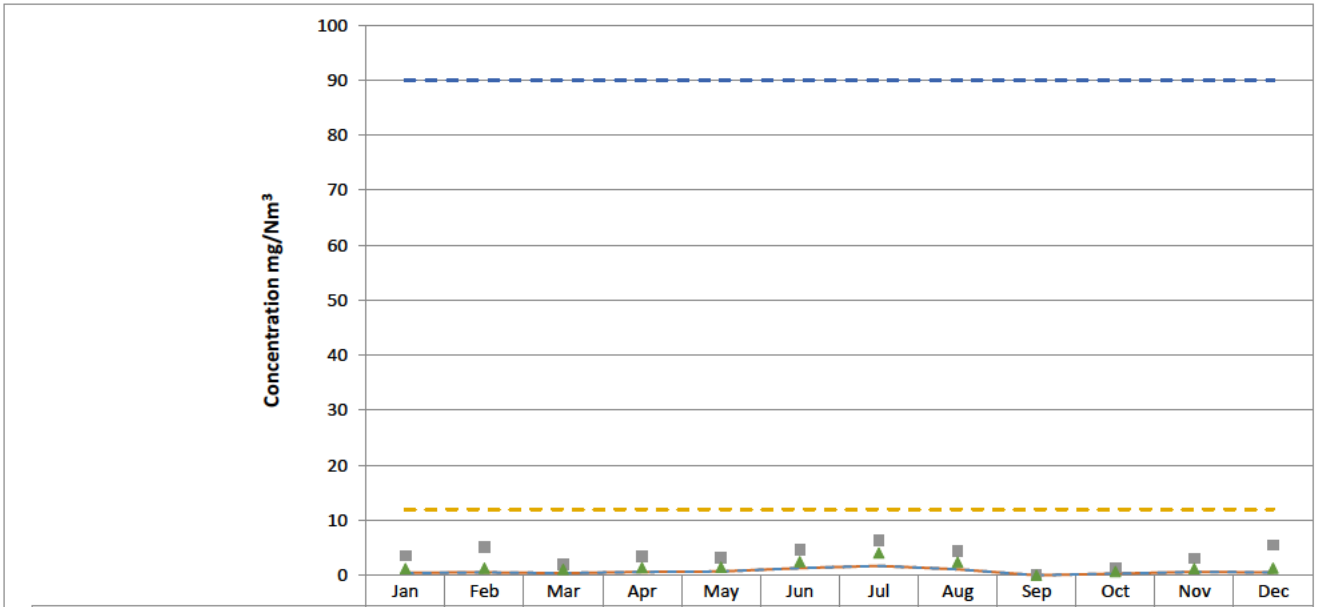
| **Substance** | **Reference Period** | **Emission Limit Value** | **A1** | | **A2** | | **A3** | | **A4** | | **A5** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Max.** | **Avg.** | **Max.** | **Avg.** | **Max.** | **Avg.** | **Max.** | **Avg.** | **Max.** | **Avg.** |
| Oxides of nitrogen | Daily mean | 270 mg/m$^3$ | 228.3 | 199.9 | | | | | | | | |
| | ½ hourly mean* | 600 mg/m$^3$ * | 307.07 | 201.8 | | | | | | | | |
| Particulates | Daily mean | 7.5 mg/m$^3$ | 5.5 | 0.1 | | | | | | | | |
| | ½ hourly mean* | 45 mg/m$^3$ * | 40.9 | 0.08 | | | | | | | | |
| Total Organic Carbon | Daily mean | 15 mg/m$^3$ | 1.5 | 0.6 | | | | | | | | |
| | | | | | | | | | | | | |
| Hydrogen chloride | Daily mean | 12 mg/m$^3$ | 4.07 | 0.7 | | | | | | | | |
| | ½ hourly mean* | 90 mg/m$^3$ * | 6.4 | 0.8 | | | | | | | | |
| Sulphur dioxide | Daily mean | 60 mg/m$^3$ | 57.9 | 46.4 | | | | | | | | |
| | ½ hourly mean* | 300 mg/m$^3$ * | 182.9 | 47.4 | | | | | | | | |
| Carbon monoxide | Daily mean | 75 mg/m$^3$ | 99.9 | 41.6 | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Ammonia | Daily mean | 22.5 mg/m$^3$ | 21.1 | 1.4 | | | | | | | | |

* = delete if your plant does not have these limits

| Comments : |
| --- |
| |

**Monitoring of Hydrogen Chloride emissions** **Whole Installation** *See Notes in Cell Q3*

| 2024 | 1/2 Hourly Reference Periods | | | Daily Reference Periods | | |
|---|---|---|---|---|---|---|
| mg/Nm³ | 1/2 hourly HCl ELV | Monthly mean of half-hourly averages | Highest half-hourly average | Daily HCl ELV | Monthly mean of daily averages | Highest daily average |
| Jan | 90 | 0.46 | 3.6 | 12 | 0.4 | 1.2 |
| Feb | 90 | 0.5 | 5.1 | 12 | 0.5 | 1.3 |
| Mar | 90 | 0.4 | 2.05 | 12 | 0.4 | 1.1 |
| Apr | 90 | 0.6 | 3.5 | 12 | 0.6 | 1.4 |
| May | 90 | 0.7 | 3.2 | 12 | 0.7 | 1.5 |
| Jun | 90 | 1.3 | 4.6 | 12 | 1.3 | 2.5 |
| Jul | 90 | 1.7 | 6.4 | 12 | 1.7 | 4.07 |
| Aug | 90 | 1.1 | 4.4 | 12 | 1.1 | 2.4 |
| Sep | 90 | 0 | 0 | 12 | 0 | 0 |
| Oct | 90 | 0.3 | 1.4 | 12 | 0.3 | 0.7 |
| Nov | 90 | 0.6 | 3.1 | 12 | 0.6 | 1.2 |
| Dec | 90 | 0.5 | 5.5 | 12 | 0.5 | 1.3 |

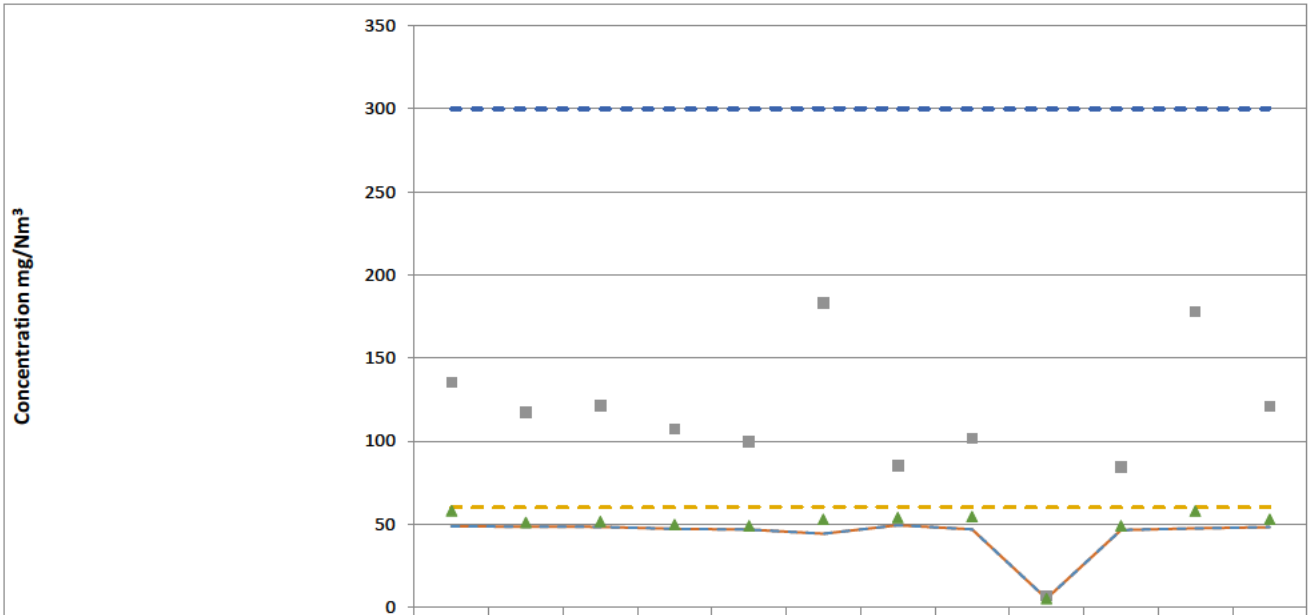



| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2 hourly HCl ELV | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Monthly mean of half-hourly averages | 0.46 | 0.5 | 0.4 | 0.6 | 0.7 | 1.3 | 1.7 | 1.1 | 0 | 0.3 | 0.6 | 0.5 |
| Highest half- hourly average | 3.6 | 5.1 | 2.05 | 3.5 | 3.2 | 4.6 | 6.4 | 4.4 | 0 | 1.4 | 3.1 | 5.5 |
| Daily HCl ELV | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Monthly mean of daily averages | 0.4 | 0.5 | 0.4 | 0.6 | 0.7 | 1.3 | 1.7 | 1.1 | 0 | 0.3 | 0.6 | 0.5 |
| Highest daily average | 1.2 | 1.3 | 1.1 | 1.4 | 1.5 | 2.5 | 4.07 | 2.4 | 0 | 0.7 | 1.2 | 1.3 |

**Comments :**

**Monitoring of Sulphur dioxide emissions** **Whole Installation** *See Notes in Cell Q3*

| 2024 | 1/2 Hourly Reference Periods | | | Daily Reference Periods | | |
|---|---|---|---|---|---|---|
| mg/Nm$^3$ | 1/2 hourly SO2 ELV | Monthly mean of half-hourly averages | Highest half-hourly average | Daily SO2 ELV | Monthly mean of daily averages | Highest daily average |
| Jan | 300 | 48.5 | 135.3 | 60 | 48.5 | 57.9 |
| Feb | 300 | 48.4 | 117.4 | 60 | 48.4 | 50.9 |
| Mar | 300 | 48.2 | 121.1 | 60 | 48.2 | 51.4 |
| Apr | 300 | 47.1 | 107.1 | 60 | 47.1 | 49.6 |
| May | 300 | 46.6 | 99.7 | 60 | 46.6 | 48.8 |
| Jun | 300 | 44.1 | 182.9 | 60 | 44.1 | 52.7 |
| Jul | 300 | 49.2 | 85.1 | 60 | 49.2 | 53.8 |
| Aug | 300 | 46.7 | 101.5 | 60 | 46.7 | 54.3 |
| Sep | 300 | 5.01 | 6.7 | 60 | 5.01 | 5.01 |
| Oct | 300 | 46.3 | 84.3 | 60 | 46.3 | 48.8 |
| Nov | 300 | 47.3 | 177.8 | 60 | 47.3 | 57.7 |
| Dec | 300 | 48.1 | 120.8 | 60 | 48.1 | 52.8 |




| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2 hourly SO2 ELV | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Monthly mean of half-hourly averages | 48.5 | 48.4 | 48.2 | 47.1 | 46.6 | 44.1 | 49.2 | 46.7 | 5.01 | 46.3 | 47.3 | 48.1 |
| Highest half- hourly average | 135.3 | 117.4 | 121.1 | 107.1 | 99.7 | 182.9 | 85.1 | 101.5 | 6.7 | 84.3 | 177 8 | 120.8 |
| Daily SO2 ELV | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| Monthly mean of daily averages | 48.5 | 48.4 | 48.2 | 47.1 | 46.6 | 44.1 | 49.2 | 46.7 | 5.01 | 46.3 | 47.3 | 48.1 |
| Highest daily average | 57.9 | 50.9 | 51.4 | 49 6 | 48.8 | 52.7 | 53.8 | 54.3 | 5.01 | 48.8 | 57.7 | 52 8 |

**Comments :**

**Monitoring of Oxides of Nitrogen emissions** **Whole Installation** *See Notes in Cell Q3*

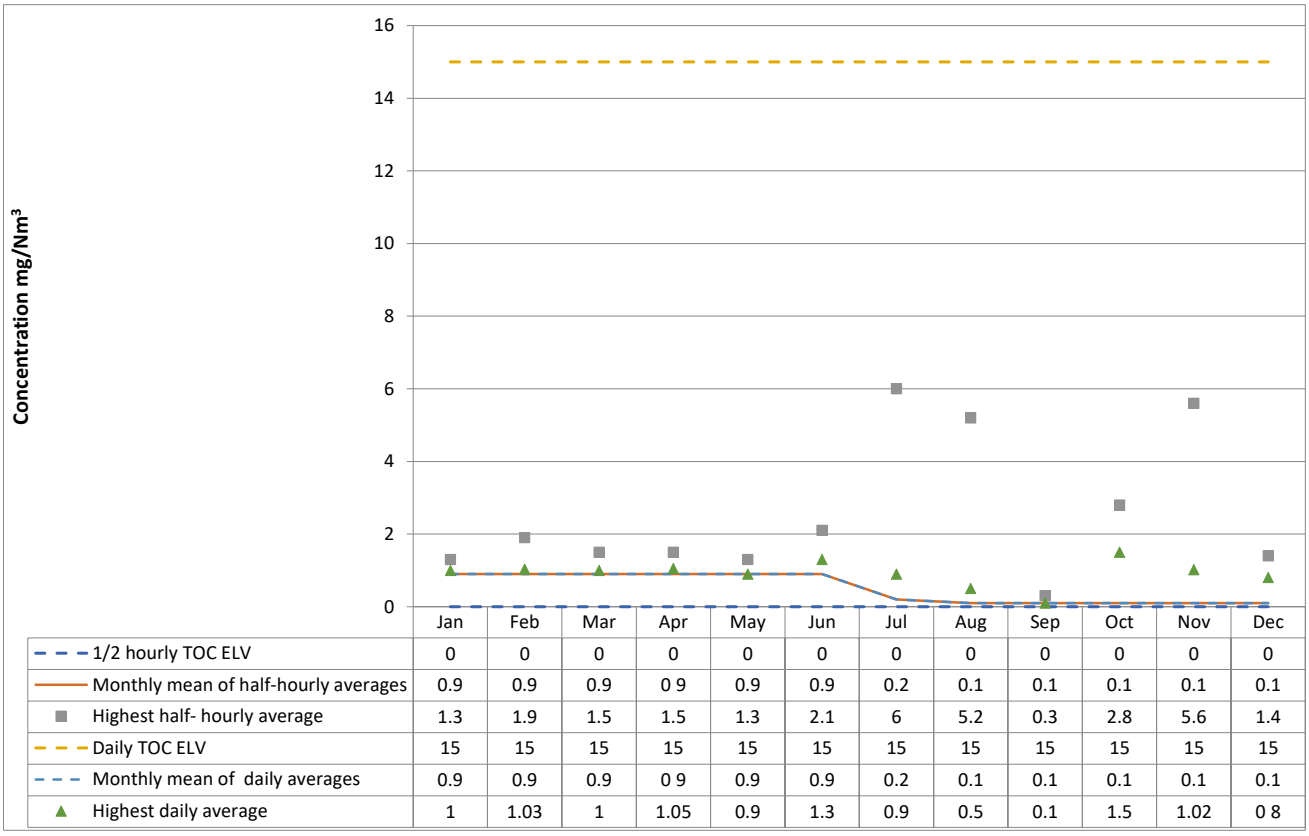
| 2024 | 1/2 Hourly Reference Periods | | | Daily Reference Periods | | |
|---|---|---|---|---|---|---|
| mg/Nm$^3$ | 1/2 hourly NOx ELV | Monthly mean of half-hourly averages | Highest half-hourly average | Daily NOx ELV | Monthly mean of daily averages | Highest daily average |
| Jan | 600 | 201.3 | 247.1 | 270 | 201.3 | 225.7 |
| Feb | 600 | 205.9 | 264.7 | 270 | 205.9 | 215.6 |
| Mar | 600 | 207.8 | 233.09 | 270 | 207.8 | 214.4 |
| Apr | 600 | 193.6 | 242.7 | 270 | 193.6 | 212.6 |
| May | 600 | 202.8 | 248.9 | 270 | 202.8 | 212.7 |
| Jun | 600 | 185.5 | 244.3 | 270 | 185.5 | 207.6 |
| Jul | 600 | 206.07 | 261.7 | 270 | 206.08 | 228.3 |
| Aug | 600 | 208.5 | 266.7 | 270 | 208.5 | 218.2 |
| Sep | 600 | 208.2 | 244.5 | 270 | 208.2 | 208.2 |
| Oct | 600 | 190.1 | 307.07 | 270 | 190.1 | 213.6 |
| Nov | 600 | 204.3 | 251.6 | 270 | 204.3 | 215.2 |
| Dec | 600 | 204.9 | 245.6 | 270 | 204.9 | 214.7 |


| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2 hourly NOx ELV | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Monthly mean of half-hourly averages | 201.3 | 205.9 | 207.8 | 193.6 | 202.8 | 185.5 | 206.07 | 208.5 | 208.2 | 190.1 | 204 3 | 204.9 |
| Highest half- hourly average | 247.1 | 264.7 | 233.09 | 242.7 | 248.9 | 244.3 | 261.7 | 266.7 | 244.5 | 307.07 | 251 6 | 245.6 |
| Daily NOx ELV | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 |
| Monthly mean of daily averages | 201.3 | 205.9 | 207.8 | 193.6 | 202.8 | 185.5 | 206.08 | 208.5 | 208.2 | 190.1 | 204 3 | 204.9 |
| Highest daily average | 225.7 | 215.6 | 214.4 | 212.6 | 212.7 | 207.6 | 228.3 | 218.2 | 208.2 | 213.6 | 215 2 | 214.7 |

**Comments :**

**Monitoring of Total organic carbon emissions** **Whole Installation** *See Notes in Cell Q3*

| 2024 | 1/2 Hourly Reference Periods | | | Daily Reference Periods | | |
|---|---|---|---|---|---|---|
| mg/Nm$^3$ | 1/2 hourly TOC ELV | Monthly mean of half-hourly averages | Highest half-hourly average | Daily TOC ELV | Monthly mean of daily averages | Highest daily average |
| Jan | None | 0.9 | 1.3 | 15 | 0.9 | 1 |
| Feb | None | 0.9 | 1.9 | 15 | 0.9 | 1.03 |
| Mar | None | 0.9 | 1.5 | 15 | 0.9 | 1 |
| Apr | None | 0.9 | 1.5 | 15 | 0.9 | 1.05 |
| May | None | 0.9 | 1.3 | 15 | 0.9 | 0.9 |
| Jun | None | 0.9 | 2.1 | 15 | 0.9 | 1.3 |
| Jul | None | 0.2 | 6 | 15 | 0.2 | 0.9 |
| Aug | None | 0.1 | 5.2 | 15 | 0.1 | 0.5 |
| Sep | None | 0.1 | 0.3 | 15 | 0.1 | 0.1 |
| Oct | None | 0.1 | 2.8 | 15 | 0.1 | 1.5 |
| Nov | None | 0.1 | 5.6 | 15 | 0.1 | 1.02 |
| Dec | None | 0.1 | 1.4 | 15 | 0.1 | 0.8 |

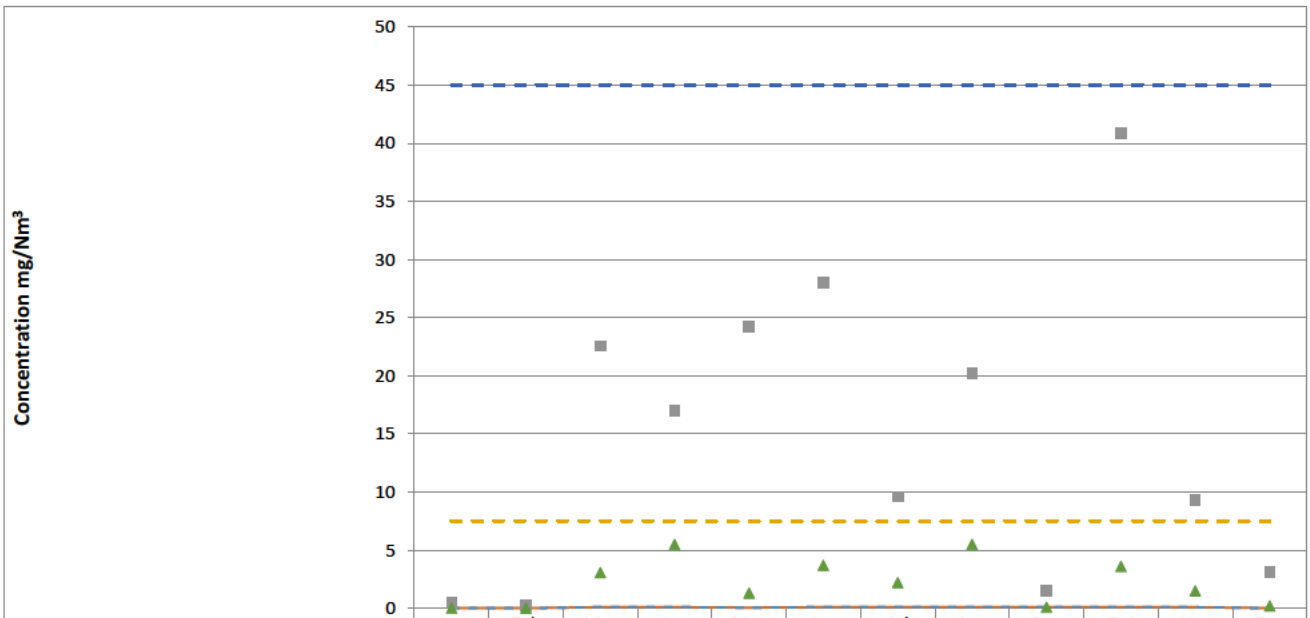



| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2 hourly TOC ELV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Monthly mean of half-hourly averages | 0.9 | 0.9 | 0.9 | 0 9 | 0.9 | 0.9 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Highest half- hourly average | 1.3 | 1.9 | 1.5 | 1.5 | 1.3 | 2.1 | 6 | 5.2 | 0.3 | 2.8 | 5.6 | 1.4 |
| Daily TOC ELV | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Monthly mean of daily averages | 0.9 | 0.9 | 0.9 | 0 9 | 0.9 | 0.9 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Highest daily average | 1 | 1.03 | 1 | 1.05 | 0.9 | 1.3 | 0.9 | 0.5 | 0.1 | 1.5 | 1.02 | 0 8 |

**Comments :**

**Monitoring of Particulate matter emissions** **Whole Installation** *See Notes in Cell Q3*

| 2024 | 1/2 Hourly Reference Periods | | | Daily Reference Periods | | |
|---|---|---|---|---|---|---|
| mg/Nm$^3$ | 1/2 hourly PM ELV | Monthly mean of half-hourly averages | Highest half-hourly average | Daily PM ELV | Monthly mean of daily averages | Highest daily average |
| Jan | 45 | 0.01 | 0.5 | 7.5 | 0.01 | 0.03 |
| Feb | 45 | 0.006 | 0.28 | 7.5 | 0.006 | 0.01 |
| Mar | 45 | 0.1 | 22.6 | 7.5 | 0.1 | 3.07 |
| Apr | 45 | 0.1 | 17.04 | 7.5 | 0.1 | 5.5 |
| May | 45 | 0.05 | 24.2 | 7.5 | 0.05 | 1.3 |
| Jun | 45 | 0.1 | 28.01 | 7.5 | 0.1 | 3.7 |
| Jul | 45 | 0.1 | 9.6 | 7.5 | 0.1 | 2.2 |
| Aug | 45 | 0.1 | 20.2 | 7.5 | 0.1 | 5.5 |
| Sep | 45 | 0.1 | 1.5 | 7.5 | 0.1 | 0.1 |
| Oct | 45 | 0.1 | 40.9 | 7.5 | 0.1 | 3.6 |
| Nov | 45 | 0.09 | 9.3 | 7.5 | 0.09 | 1.5 |
| Dec | 45 | 0.02 | 3.1 | 7.5 | 0.02 | 0.2 |



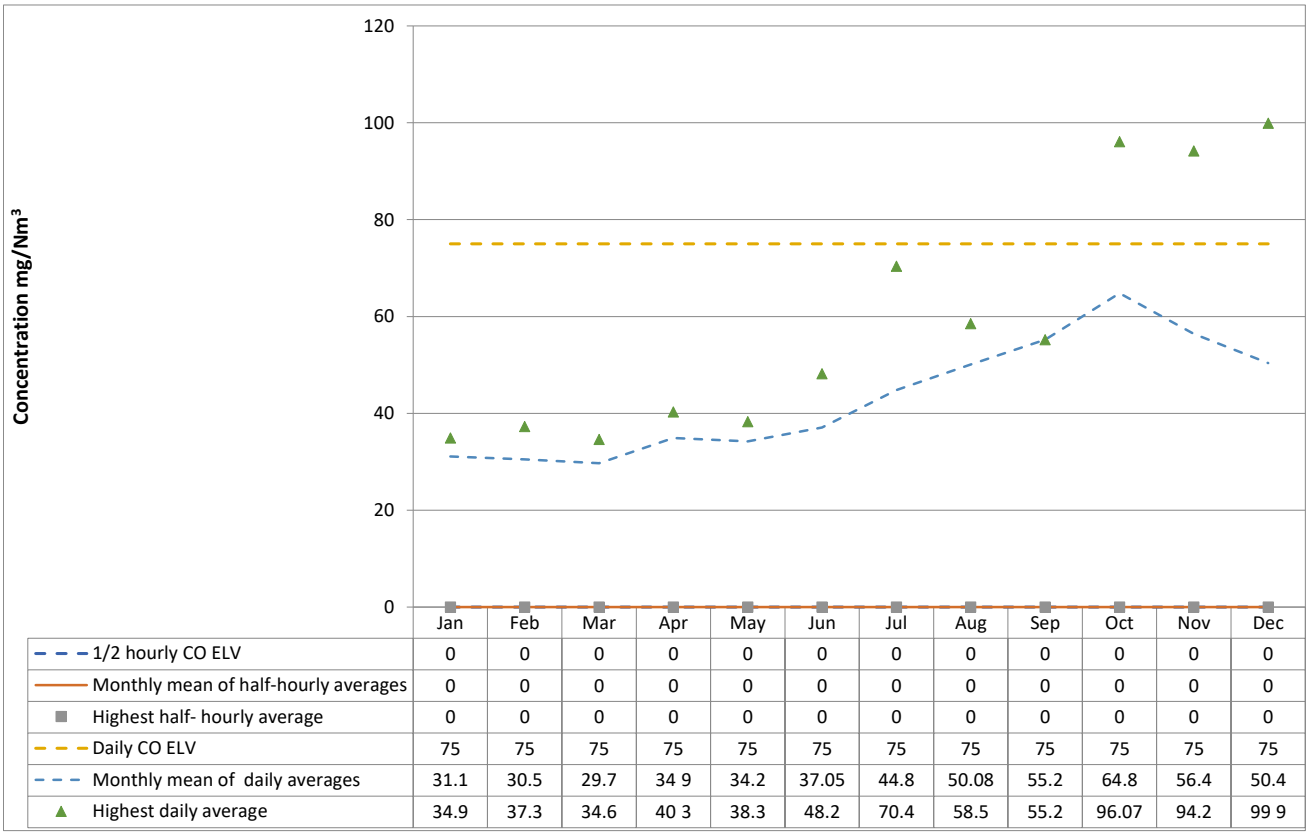

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2 hourly PM ELV | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| Monthly mean of half-hourly averages | 0.01 | 0.006 | 0.1 | 0.1 | 0.05 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.09 | 0.02 |
| Highest half- hourly average | 0.5 | 0.28 | 22.6 | 17.04 | 24.2 | 28.01 | 9.6 | 20.2 | 1.5 | 40.9 | 9.3 | 3.1 |
| Daily PM ELV | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| Monthly mean of daily averages | 0.01 | 0.006 | 0.1 | 0.1 | 0.05 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.09 | 0.02 |
| Highest daily average | 0.03 | 0.01 | 3.07 | 5.5 | 1.3 | 3.7 | 2.2 | 5.5 | 0.1 | 3.6 | 1.5 | 0 2 |

**Comments :**

**Monitoring of Carbon Monoxide (half hourly)** **Whole Installation** *See Notes in Cell Q3*

**If your plant has no short-term (half-hourly or 10-minute) CO ELVs, please complete this tab (stating "none" in the 1/2 hourly CO column) and ignore the CO 95% 10 min tab; otherwise, complete the relevant CO tab for your plant**

| 2024 | 1/2 Hourly Reference Periods | | | Daily Reference Periods | | |
|---|---|---|---|---|---|---|
| mg/Nm$^3$ | 1/2 hourly CO ELV | Monthly mean of half-hourly averages | Highest half-hourly average | Daily CO ELV | Monthly mean of daily averages | Highest daily average |
| Jan | None | - | - | 75 | 31.1 | 34.9 |
| Feb | None | - | - | 75 | 30.5 | 37.3 |
| Mar | None | - | - | 75 | 29.7 | 34.6 |
| Apr | None | - | - | 75 | 34.9 | 40.3 |
| May | None | - | - | 75 | 34.2 | 38.3 |
| Jun | None | - | - | 75 | 37.05 | 48.2 |
| Jul | None | - | - | 75 | 44.8 | 70.4 |
| Aug | None | - | - | 75 | 50.08 | 58.5 |
| Sep | None | - | - | 75 | 55.2 | 55.2 |
| Oct | None | - | - | 75 | 64.8 | 96.07 |
| Nov | None | - | - | 75 | 56.4 | 94.2 |
| Dec | None | - | - | 75 | 50.4 | 99.9 |




| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2 hourly CO ELV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Monthly mean of half-hourly averages | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Highest half- hourly average | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Daily CO ELV | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| Monthly mean of daily averages | 31.1 | 30.5 | 29.7 | 34 9 | 34.2 | 37.05 | 44.8 | 50.08 | 55.2 | 64.8 | 56.4 | 50.4 |
| Highest daily average | 34.9 | 37.3 | 34.6 | 40 3 | 38.3 | 48.2 | 70.4 | 58.5 | 55.2 | 96.07 | 94.2 | 99 9 |

**Comments :**

**Monitoring of Carbon Monoxide (10-minute avg)** **Whole Installation** *See Notes in Cell S3*

**If your plant has no short-term (half-hourly or 10-minute) CO ELVs, please ignore this tab and instead complete the CO 0.5 hourly tab; otherwise, please complete the relevant CO tab for your plant**

| 2024 | 10-minute Reference Periods | | | | Daily Reference Periods | | |
|---|---|---|---|---|---|---|---|
| mg/Nm$^3$ | 95%ile 10-min avg CO ELV | Highest daily 95%ile 10-min average | Monthly mean of 10-min averages | Highest 10-min average | Daily CO ELV | Monthly mean of daily averages | Highest daily average |
| Jan | ELV or none | | | | 75 | | |
| Feb | ELV or none | | | | 75 | | |
| Mar | ELV or none | | | | 75 | | |
| Apr | ELV or none | | | | 75 | | |
| May | ELV or none | | | | 75 | | |
| Jun | ELV or none | | | | 75 | | |
| Jul | ELV or none | | | | 75 | | |
| Aug | ELV or none | | | | 75 | | |
| Sep | ELV or none | | | | 75 | | |
| Oct | ELV or none | | | | 75 | | |
| Nov | ELV or none | | | | 75 | | |
| Dec | ELV or none | | | | 75 | | |

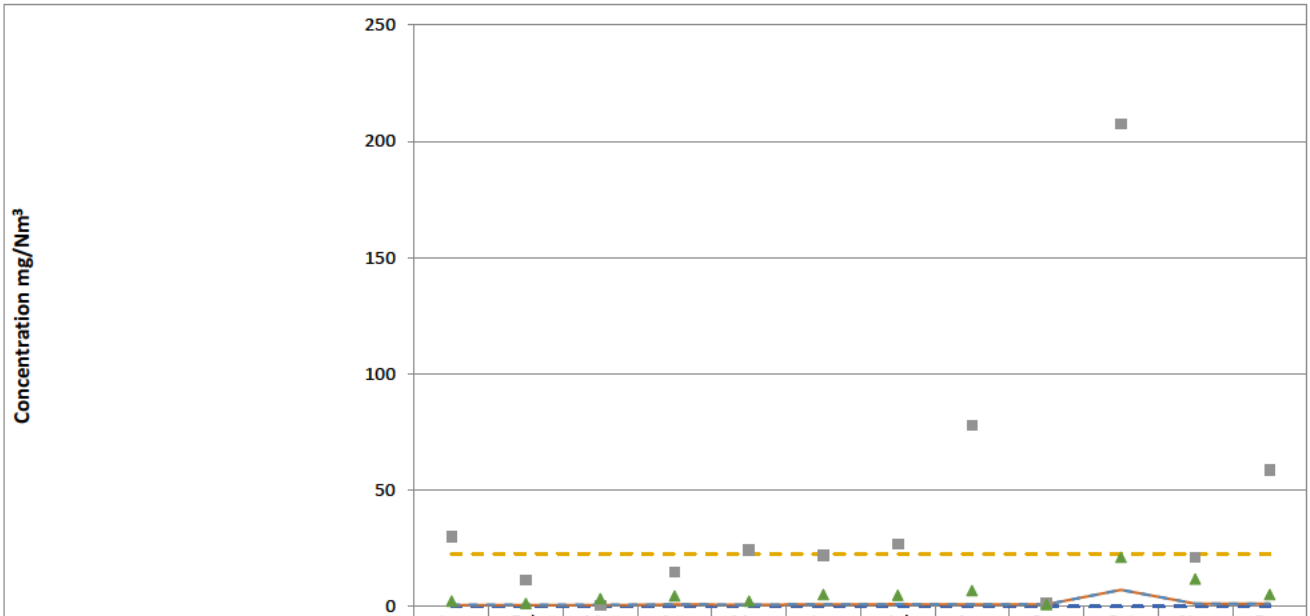

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 95%ile 10-min avg CO ELV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Highest daily 95%ile 10-min average | | | | | | | | | | | | |
| Highest 10-min average | | | | | | | | | | | | |
| Daily CO ELV | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| Monthly mean of daily averages | | | | | | | | | | | | |
| Highest daily average | | | | | | | | | | | | |

**Comments :**

Environment Agency explanatory note: The 10-minute average ELV is based on the “95th percentile”. In this case this means that 95% of the 10 minute averages in the relevant 24-hour period (i.e. 137) must be below 150 mg/Nm3, and 5% (i.e. 7) are allowed to be any value above 150 mg/Nm3. Whilst we expect operators to minimise CO emissions at all times, it is perfectly acceptable for the value of the maximum 10-minute average to be above 150 mg/Nm3, provided the 95th percentile ELV has been met for that period.

**Monitoring of Ammnonia emissions** **Whole Installation** *See Notes in Cell Q3*

| 2024 | 1/2 Hourly Reference Periods | | | Daily Reference Periods | | |
|---|---|---|---|---|---|---|
| mg/Nm$^3$ | 1/2 hourly NH3 ELV | Monthly mean of half-hourly averages | Highest half-hourly average | Daily NH3 ELV | Monthly mean of daily averages | Highest daily average |
| Jan | None | 0.6 | 30.01 | 22.5 | 0.6 | 2.3 |
| Feb | None | 0.6 | 11.4 | 22.5 | 0.6 | 1.2 |
| Mar | None | 0.44 | 0.5 | 22.5 | 0.6 | 3.3 |
| Apr | None | 0.8 | 14.8 | 22.5 | 0.8 | 4.4 |
| May | None | 0.7 | 24.3 | 22.5 | 0.7 | 2.3 |
| Jun | None | 0.8 | 21.9 | 22.5 | 0.8 | 5.1 |
| Jul | None | 0.9 | 26.8 | 22.5 | 0.9 | 4.8 |
| Aug | None | 0.8 | 77.9 | 22.5 | 0.8 | 6.8 |
| Sep | None | 0.8 | 1.07 | 22.5 | 0.8 | 0.8 |
| Oct | None | 7.06 | 207.5 | 22.5 | 7.06 | 21.1 |
| Nov | None | 1.1 | 21.1 | 22.5 | 1.1 | 11.8 |
| Dec | None | 1.05 | 58.6 | 22.5 | 1.05 | 5.1 |




| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2 hourly NH3 ELV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Monthly mean of half-hourly averages | 0.6 | 0.6 | 0.44 | 0 8 | 0.7 | 0.8 | 0.9 | 0.8 | 0.8 | 7.06 | 1.1 | 1.05 |
| Highest half- hourly average | 30.01 | 11.4 | 0.5 | 14 8 | 24.3 | 21.9 | 26.8 | 77.9 | 1.07 | 207.5 | 21.1 | 58 6 |
| Daily NH3 ELV | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| Monthly mean of daily averages | 0.6 | 0.6 | 0.6 | 0 8 | 0.7 | 0.8 | 0.9 | 0.8 | 0.8 | 7.06 | 1.1 | 1.05 |
| Highest daily average | 2.3 | 1.2 | 3.3 | 4.4 | 2.3 | 5.1 | 4.8 | 6.8 | 0.8 | 21.1 | 11.8 | 5.1 |

**Comments :**

An indicated ELV value of zero in the table above means that no ammonia limit is/was set in the permit.

**Log of changes to t**

| Date |
|---|
| 23/09/2024 |
| 23/09/2024 |
| 23/09/2024 |
| 23/09/2024 |
| 23/09/2024 |
| 23/09/2024 |
| 08/11/2024 |
| 08/11/2024 |
| 08/11/2024 |
| 08/11/2024 |
| 27/11/2024 |
| |

**template (Environment Agency use only)**

| Description of change |
| --- |
| Air (periodic) tab: corrected symbol for Thallium to Tl |
| Air (periodic) tab: removed last year's references to different emission limit values applying from 03/12/23 and updated all relevant ELVs |
| Tabs for continuously monitored pollutants (HCl, SO2 etc.): changed terminology in table headings to improve clarity |
| Tabs for continuously monitored pollutants (HCl, SO2 etc.): removed last year's references to different emission limit values applying from 03/12/23 and updated all relevant ELVs |
| Perf 1 tab: updated formula for water usage to report m3 rather than litres and corrected error with formula copying operator name |
| CO2 N2O tab: various changes made to notes to reflect the fact that most plants should now have calibrated CEMS and flow meters + some have C14 samplers and more up to date industry data |
| CO2 N2O tab: Changed the N2O CO2 equivalence factor from 298 to 265 in line with recently updated government greenhouse gas figures: https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2024 |
| CO2 N2O tab: Added an additional requirement for municipal EfW plants to state the yearly average biogenic percentage of the waste by mass, and reference to a document which sets out a methodology for calculating NCV of waste from the results of C14 sampling. |
| Permit Compliance tab: Two additional columns added + explanatory notes to the table entitled "Summary of non-compliances under the permit" to allow CCS scores to be stated where relevant. |
| Residue Quality tab: Note added explaining application of TOC and LOI limits and asking operators to report both metrics where measured. |
| Operational Summary tab: table added on start-ups and shut-downs |
| |

| New version number and date |
| --- |
| |
| |
| |
| |
| |
| Version 24b (for co-incinerators) - 23/09/24 |
| |
| |
| |
| Version 24.1b (for co-incinerators) - 08/11/24 |
| Version 24.2b (for co-incinerators) -27/11/24 |
| |