Annual Performance Report 2025

Permit EPR/LP3030XA

Cardiff Energy Recovery Facility

Trident Park ERF

Viridor Energy Limited

Year: 2025

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Plant Description and Design

"Cardiff Energy Recovery Facility is located immediately north of Cardiff Docks. The facility will process approximately 22.96 tonnes of residual municipal and C&I waste per line, per hour and has the capability of exporting approximately 34MW of electrical power.
In accordance with the requirements of Condition 4.2.2, Schedule 4 and Table S4.1 of Permit EPR/LP3030XA issued by Natural Resources Wales to Viridor Waste Management Limited (Viridor) on 21 December 2022, Viridor is required to produce an annual performance report which is to be submitted to Natural Resources Wales by the 31 January (or as agreed in writing with Natural Resources Wales) each year.
Viridor took over the operation of the Plant on 31st January 2015.
This report summarises the environmental and performance data collected at the site 1st January – 31st December 2025 and fulfils the reporting requirement of Chapter IV, Article 55 (2) of the Industrial Emissions Directive.

Summary of Operational Processes and Procedures

Incoming waste is mainly received from local authories that have joined together to form two contract hubs - Prosiect Gwyrdd and Tomorrows Valley, some waste is received from Pembrokeshire County Council and the rest of the waste is received from third party businesses. Waste is received into an enclosed waste bunker. The waste is loaded into one of two furnaces, which combust the waste at >850°C. The hot gases are put through a variety of heat exchangers used to heat demineralised water to create superheated steam which drives a turbine generator. The turbine generator produces around 38MWh and exports around 34MWh. Combusted waste (incinerator bottom ash) is sent to a third party for further processing. The gases are treated with Lime, Activated carbon and Urea to remove potential pollution leaving the stacks. The powder containing reacted gas particulates (APCr) is removed and sent via a third party for reprocessing. Emissions are monitored via Continuous Emissions Monitoring equipment (CEMs) that are serviced by a contractor.

Operational Data

PLEASE ENSURE ALL RELEVANT CELLS ARE COMPLETED!

Plant Size:	425,000	tonnes pa	
Nominal net thermal input:		MWth	
Nominal electrical export capacity*:	34	MWe	
Nominal heat export capacity**:	15	MWth	
No. of combustion lines:	2	No. of steam turbines:	1

Waste types received	Unit	Q1	Q2	Q3	Q4	Year Total	%
Household / Local Authority	tonnes	71,803	52,697	52,354	60,299	**237,153**	66.5%
Commercial & Industrial		27,990	12,482	23,498	49,921	**113,890**	31.9%
Hazardous						-	-
Clinical		1,588	1,255	1,355	1,622	**5,819**	1.6%
Waste wood (biomass)						-	-
Refuse Derived Fuel (incl. SRF) - H'hold/LA						-	-
Refuse Derived Fuel (incl. SRF) - C&I						-	-
Other [Please specify]						-	-
Other [Please specify]						-	-
Other [Please specify]						-	-
Total waste received		**101,381**	**66,433**	**77,206**	**111,841**	**356,862**	
Rejected Waste						-	-
Unprocessed waste transferred out						-	-
Total waste combusted * **		**97,663**	**64,869**	**79,624**	**112,176**	**354,332**	

Energy Usage / Export	Unit	Q1	Q2	Q3	Q4	Year Total	KWh/te
Power generated at generator terminals	MWh	78,887	49,012	53,487	85,086	**266,472**	752
Power exported to grid and other external user(s)	MWh	70,608	42,813	47,115	75,227	**235,763**	665
Power imported	MWh	59	699	1,501	5	**2,264**	6
Indicative parasitic load	%	10.5%	12.6%	11.9%	11.6%	12.3%	
Thermal Energy Exported **	MWh	N/A	N/A	N/A	1,372	**1,372**	4
R1 value (if applicable)	R1	-	-	-	-		

Waste Disposal & Recovery	Unit	Q1	Q2	Q3	Q4	Year Total	% inputs
APC Residues - produced	tonnes	3,231	2,098	2,051	3,063	**10,443**	2.9%
IBA - produced		20,192	15,124	16,138	23,985	**75,439**	21.3%
Metals recycling		164	142	143	230	**678**	0.2%
Trade Effluent		6,314	6,463	7,085	2,969	**22,831**	6.4%
Other		-	-	-	-	-	-
Other		-	-	-	-	-	-

Raw Material Usage	Unit	Q1	Q2	Q3	Q4	Year Total	Qty./te
Mains Water	ltrs	16,614,000	16,847,000	19,626,000	16,388,000	**69,475,000**	196.07
Other Water	ltrs	n/a	n/a	n/a	n/a	-	-
Ammonia	kgs	n/a	n/a	n/a	n/a	-	-
Urea	kgs	144,000	85,991	82,984	120,360	**433,335**	1.22
Activated Carbon	kgs	53,070	45,600	64,690	55,888	**219,248**	0.62
Lime / hydrated lime	kgs	2,257,771	1,351,496	1,015,925	1,229,670	**5,854,862**	16.52
Fuel oil	ltrs	93,838	136,521	246,183	84,741	**561,283**	1.58
Gas	m^3	n/a	n/a	n/a	n/a	-	-
White Diesel	ltrs	42,848	56,819	63,146	66,694	**229,507**	0.65

Summary	Line/Unit	Q1	Q2	Q3	Q4	Year Total	
Availability of waste combustion by line, hrs ****	1	2,137	1,181	2,008	2,205	**7,532**	86.0%
	2	1,998	1,610	1,436	2,118	**7,162**	81.8%
	3	n/a	n/a	n/a	n/a	**-**	0.0%
	4	n/a	n/a	n/a	n/a	**-**	0.0%
	5	n/a	n/a	n/a	n/a	**-**	0.0%
Hours of turbine operations, hrs	1	2,135	1,708	1,656	2,207	**7,706**	88.0%
Hours of turbine operations, hrs	2	n/a	n/a	n/a	n/a	**-**	0.0%
Hours of heat / steam export**	hours	n/a	n/a	n/a	1,042	**1,042**	0.0%
Net calorific value of waste*****	MJ/kg	10.2	10.1	9.9	9.8	**10.0**	
Abnormal operation events	qty.	-	-	-	-	**-**	no
Abnormal operation duration	hours	-	-	-	-	**-**	0.0%
Permit Breaches	qty.	2	2	1	-	**5**	yes

Summary of Plant Operations and Maintenance during the reporting year

The main purpose of the facility is to burn non-hazardous municipal, commercial and industrial waste and to recover energy by producing steam. The steam will be used to produce electricity for export to the local grid and has the potential for further heat export to local consumers. The installation includes waste receipt and storage, two waste combustion units with associated waste heat boilers and exhaust gas abatement systems, on-site storage of residues and all systems for controlling and monitoring incinerator operation. The plant is designed to process approximately 26.48 tonnes per hour in two parallel and identical combustion units. Taking into account the expected long term availability of the facility, the annual permitted throughput of the facility is 425,000 tonnes of waste per annum.

The incoming municipal waste is loaded into the furnace via a feed hopper from the reception hall, where the waste vehicles deposit their loads into the storage bunker. After entering the combustion chamber via the refuse feed ram the waste is allowed to fall onto the grate in a controlled manner. The moving grate mechanisms are used to agitate the waste as it progresses down to the ash discharger. As the waste moves along, primary air is introduced from beneath the grate causing the waste to go through a series of drying and burning areas. Secondary air is introduced from above the grate for combustion control. An auxiliary oil fired burner is located in each combustion chamber to both establish minimum temperature on start up and to maintain the combustion gas temperature at a minimum of 850°C for 2 seconds in the combustion chamber before passing to the boiler, economiser and abatement plant. The furnace is equipped with a water tube boiler raising steam at 60 bar and 400°C. Economisers are fitted down stream of the boiler unit to pre-heat the incoming feed water. Each furnace unit is fitted with an independent dry urea injection system in order to reduce the facility's emissions of Oxides of Nitrogen (NOx) to air through selective non-catalytic reduction. A dry hydrated lime flue gas treatment system is used to neutralise acid flue gases with the injection of lime reagent into the reaction chamber. Activated carbon is injected into the flue gas stream in order to reduce the concentrations of heavy metals and dioxins in the combustion gases emitted to air. Bag filters are used to separate out the resulting particulate matter from the cooled and treated gases. The facility has a 90m stack containing the separate flue gas streams from each combustion unit, via which the combustion gases are released to air. Each flue gas stream is equipped with a Continuous Emission Monitoring System (CEMS) which continuously monitor for particulates, carbon monoxide (CO), ammonia (NH3), sulphur dioxide (SO2), hydrogen chloride (HCl), oxygen (O2), nitrogen oxides (NOx) and volatile organic compounds (VOC's).

There is a discharge of process effluent to sewer in accordance with a Trade Effluent Consent issued by Dwr Cymru Welsh Water. Uncontaminated surface and roof waters are discharged to the surface water drainage system via a series of interceptors, attenuation lagoons and isolation valves.

Trident Park's planned plant maintenance outage was held from 18th May to 29th July 2025. During this period planned maintenance and repair of equipment was undertaken.

Viridor completed the construction works for the on-site element of the district heating scheme in July 2025. A period of cold and hot commissioning has been completed culminating in a two-week reliability test that took place in October 2025. This testing was satisfactorily completed and the Completion Certificate signed on 31st October 2025, with commercial operation starting on 1st November 2025.

Operational hours of heat export and volumes exported will be provided as part of the routine quarterly, annual and R1 reporting requirements.

2025 Annual Reporting Performance Form 1

Permit EPR/LP3030XA
Facility: Cardiff Energy Recovery Facility

Operator: Viridor Energy Limited
Form: Performance 1

Reporting Period from: 01 January 2025 to: 31 December 2025

2025 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 - OCO	0.0	10,443	2.9%
				-
				-
Total Hazardous Waste		0.0	10,443	2.9%
2) Non-Hazardous Wastes				
IBA	R05 - Days Aggregates	0.0	75,439	21.3%
Ferrous Metal	R04 - Cedar House	0.0	678	0.2%
Process Water	Trade effluent discharge to Welsh Water	0.0	22,831	6.4%
				-
				-
Total Non-Hazardous Waste		0.0	98,948	27.9%
TOTAL WASTE		**0.0**	**109,391**	30.9%

Operator's comments :

2025 Annual Reporting of Water and Other Raw Material Usage

Raw Material	Usage	Unit	Specific Usage	Unit
Mains Water	69,475	m^3	0.196	m^3/te
Total Water	69,475	m^3	0.196	m^3/te
Urea / Ammonia	433,335	kg	1.22	kg/te
Activated Carbon	219,248	kg	0.62	kg/te
Lime / hydrated lime / Sodium Bicarb.	5,854,862	kg	16.52	kg/te

Operator's comments :

2025 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	7,532	7,162					7,706	
Number of periods of abnormal operation, qty.	0	0						
Cumulative hours of abnormal operation for this year, hours	0	0						

Operator's comments :

Signed: [redacted] Date: 30/01/2026

2025 Annual Reporting of Energy Usage/Export

Permit EPR/LP3030XA Operator: Viridor Energy Limited

Facility: Cardiff Energy Recovery Facility Form: Energy 1

Reporting Period from: 01 January 2025 to: 31 December 2025

Energy Source	Energy Usage	Unit	Specific Usage (KWh/tonne incinerated
Electricity Produced	266,472	MWh	752
Electricity Imported	2,264	MWh	6
Electricity Exported	235,763	MWh	665
Gas Oil		tonnes	
Steam/hot water exported	1.372	GWh	3.873

Operator's comments :
Operational start date for heat offtake (1st Nov), some commissioning heat sent during October Reported in MWh in Operational Data tab.

Signed: [redacted] Date: 30/01/2026

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[Note 1]	
	Half-hourly limit	Daily limit
Particulates	100.00%	100.00%
Oxides of nitrogen	100.00%	100.00%
Sulphur dioxide	100.00%	100.00%
Carbon monoxide	99.97% of 95% of 10-min averages	100.00%
Total organic carbon	99.99%	100.00%
Hydrogen chloride	100.00%	100.00%
Hydrogen fluoride	100.00%	100.00%

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

Date	Summary of non-compliance [Note 3]	Reason	Measures taken to prevent reoccurrence	CCS score if applicable*	
				Impact	Root cause
03/01/2025	A2 - Loss of TOC readings, Plant did not come off waste feed as per EP condition 2.3.8(h)	Envea found that the analyser had gone into breakdown mode due to low gas sample pressure due to a defective back	Further training of operations staff to ensure consitent understanding of EP condition 2.3.8(h)	2x CCS3	N/A
14/02/2025	A1 - No TOC readings after losing FID analyser	Envea found that CDAS (the CEMS data handling software) was only configured for the analysers to switch if there was a fault on the FTIR but not with the FID.	Correction of CDAS logic to send signal for standy analyser switch.	4x CCS3	N/A
13/04/2025	A1 - 95%ile 10 minute 150 mg/m3 CO ELV breach (237 mg/m3)	Line 1 CO exceedances can be attributed to gas canister explosions.	Continuation of waste inspections to attempt to identify suppliers of gas canisters and prevent them from entering the residual waste stream.	1x CCS3	N/A
27/06/2025	A1 - 20mg/m3 TOC ELV breach (24.41 mg/m3)	Composition of waste stream during early stages of boiler stabilisation following major maintenance shutdown	Investigation into SU/ SD procedures undertaken to control VOC and CO concentrations	2x CCS3	N/A
29/07/2025	A2 - 95%ile 10 minute 150 mg/m3 CO ELV breach (2,582 mg/m3)	Out-of-sync logic signals during early stages of boiler stabilisation following major maintenance shutdown	The out-of-sync logic signals were corrected. The boiler was brought back on line at reduced load and checked with the boiler back in operation to ensure they had been corrected.	1x CCS3	N/A

*If the Environment Agency (EA) has given a Compliance Classification Scheme (CCS) score due to a permit non-compliance it should be entered here (CCS4 = No impact; CCS3 = Minor impact; CCS2 = Significant impact; CCS1 = Major impact). If the EA has not yet assessed a non-compliance which you have notified to them, these columns should be left blank. Enter N/A if no score was given for the root cause.

Summary of any complaints received and actions to taken to resolve them.

Date	Summary of complaint [including Line/Reference]	Reason (including whether substantiated by the operator or the EA)	Measures taken to prevent reoccurrence
12/06/2025	Dust and smell complaint (WIRS Ref: 2505566)	Not substantiated - Weather data for the time of complaint indicated activity on the docks area was the source.	N/A

Summary of Plant Improvements

Summary of any efficiency improvements that have been completed within the year.
Turbine hall high-bay flourescent lighting changed to LED (Feb'25). ID fans replaced with most up-to-date energy efficient motors and VFDs to operate within energy efficient performance zone as part of major maintenance outage - completed July 2025 Boiler feedwater pumps replaced with most up-to-date energy efficient motors and VFDs to operate within energy efficient performance zone as part of major maintenance outage - completed July 2025

Summary of any permit improvement conditions that have been completed within the year and the resulting environmental benefits.
As part of a permit variation dated 21-12-22, Natural Resources Wales initiated a review and variation to vary the permit following the publication of the revised Best Available Techniques (BAT) Reference Document (BRef) for Waste Incineration. As part of this permit variation Table S1.3 has a specific improvement condition (IC10) regarding a local district heating offtake. Viridor submitted a response to IC10 to NRW on 25/3/24 setting out the high-level design and programme for construction and commissioning of the heat offtake system to be installed at the ERF. Progress updates have been provided to NRW at quarterly intervals at the liaison group meetings. Construction works was substantially completed in February 2025, including connection to the existing ERF plant and connection to the off-site network. Further testing took place during the major maintenance outage in July 2025 and then followed a period of cold commissioning. Once the off-site network was completed hot commissioning on steam and testing took place to prove functionality and concluded with a 2-week reliability test in October 2025. This testing was satisfactorily completed and the Completion Certificate signed on 31st October 2025, with commercial operation starting on 1st November 2025. Operational hours of heat export and volumes exported will be provided as part of the routine quarterly, annual and R1 reporting requirements.

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.

Summary of any other improvements made to the plant or planned to be made and a summary of the resulting environmental benefits.

Details of Public & Stakeholder Liaison

Summary of events held during the reporting year.	
Date	**Description**
14/01/2025	Community Liasion Group
08/04/2025	Community Liasion Group
08/07/2025	Community Liasion Group
14/10/2025	Community Liasion Group

List of events planned for next year	
Date	**Description**
20/01/2026	Community Liasion Group
14/04/2026	Community Liasion Group
14/07/2026	Community Liasion Group
13/10/2026	Community Liasion Group

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

on dioxide emissions and biogenic content of waste inputs

on dioxide emissions (all types of plant) PLEASE ENSURE TONNAGES MATCH THOSE THAT WILL E

Annual mass of carbon dioxide released	tonnes	370,009.46
Annual mass of carbon dioxide released per tonne of waste burned	t CO_2 / t waste	1.044
Annual mass of carbon dioxide released per MWh of energy exported	t CO_2 / MWh export	1.569
Description of how annual carbon dioxide mass emission has been calculated. See Note 1	CEMS corrected daily average CO2 (%) * CEMS daily average flow rate * operational hours	

ous oxide emissions (only plants which use ammonia or urea to abate NOx emissions)

Annual mass emissions of nitrous oxide	tonnes N_2O	20.56
Description of how annual nitrous oxide mass emission has been calculated See Note 2	CEMS corrected daily average N2O (mg/m3) * CEMS daily average flow rate * operational hours	
l annual carbon dioxide + nitrous oxide sions. Note 3.	tonnes CO_2e	375,477.21

enic CO2 emissions (See Note 4)

Percentage of total carbon dioxide emissions arising from biogenic waste	%	53.7%
No. of measurements undertaken	Number	10
Description of how percentage biogenic carbon dioxide emissions have been measured or calculated. See Note 5	C14 analyser sampling assessed for 5 months on each incineration line. Average % biogenic CO2 of all samples reported	

enic fraction of waste feedstock (See Note 4)

Yearly average biogenic percentage of the waste by net calorific value (NCV)	%	41.4%

Description of how biogenic percentage (by NCV) has been calculated or estimated. See Note 6	Average from 3 No. RDF samples taken by Marchwood during March 2025 for REGO accreditation.	
Yearly average biogenic percentage of the waste by mass	%	45.7%
If waste sampling undertaken, no. of samples used to ascertain average biogenic percentages above	Number	3
Description of how biogenic percentage (by mass) has been calculated or estimated. See Note 7	Average from 3 No. RDF samples taken by Marchwood during March 2025 for REGO accreditation.	

Comments:

Summary of Residue Handling for the reporting year
Bottom ash from the incinerator grate is quenched with water and then conveyed via a metals extraction system to a cc prior to removal from site. Air pollution control residues (APCr) from the bag filter systems are collected continuously and stored in two dedicated by direct transfer from the on site silos into transport tanker and removed from site either for reprocessing or disposal. ' reprocessing APCr is taken through accelerated carbonation technology. These carbonated wastes are blended with bi pelletised to form an aggregate. If APCr is sent for disposal it is placed within a hazardous waste cell in the landfill.

Residue Quality Monitoring Requirements

Summary of monitoring undertaken and compliance
All IBA samples taken during the review period were reported as non-hazardous and the TOC limit was not breached.

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%	N/A	
Total Organic Carbon (average %)	<3%	<1	
No. of Assessments Undertaken	---	28	8
No. of Hazardous Results	---	0	

* 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 :

Emissions to Water

Summary of monitoring undertaken and compliance

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
Q1 H1 compliance monitoring dated: 17th - 27th March Q2 H1 compliance monitoring dated: 6th - 17th October

Results of emissions to air that are periodically monitored - oxygen reference 11%

Substance	Ref. Period	Emission Limit Value	Average				
			A1	A2	A3	A4	A5
Hydrogen fluoride	1 hr	1 mg/m^3	0.075	0.120			
Cd and Tl and their compounds	0.5-8hrs	0.02 mg/m^3	0.001	0.001			
Hg and its compounds	0.5-8hrs	0.02 mg/m^3	0.011	0.009			
Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V and their compounds	0.5-8hrs	0.3 mg/m^3	0.029	0.036			
Dioxins & Furans (I-TEQ)	6-8hrs	0.06 ng/m^3	0.012	0.054			
PCBs (WHO-TEQ Humans / Mammals)	6-8hrs	None set ng/m^3	0.001	0.005			
PCBs (WHO-TEQ Fish)	6-8hrs	None set ng/m^3	0.0001	0.0003			
PCBs (WHO-TEQ Birds)	6-8hrs	None set ng/m^3	0.003	0.045			
Dioxins & Furans (WHO-TEQ Humans / Mammals)	6-8hrs	None set ng/m^3	0.015	0.049			
Dioxins & Furans (WHO-TEQ Fish)	6-8hrs	None set ng/m^3	0.018	0.057			
Dioxins & Furans (WHO-TEQ Birds)	6-8hrs	None set ng/m^3	0.022	0.102			
Brominated Dioxins	6-8hrs	None set ng/m^3	0.001	0.002			
Anthanthrene	6-8hrs	None set $\mu g/m^3$	<0.0011	<0.0015			
Benzo(a)anthracene	6-8hrs	None set $\mu g/m^3$	<0.0011	<0.0015			
Benzo(a)pyrene	6-8hrs	None set $\mu g/m^3$	<0.0011	<0.0015			
Benzo(b)fluoranthene	6-8hrs	None set $\mu g/m^3$	<0.0011	0.01			
Benzo(b)naptho(2,1-d) thiophene	6-8hrs	None set $\mu g/m^3$	<0.0011	<0.0015			
Benzo(c)phenanthrene	6-8hrs	None set $\mu g/m^3$	<0.0011	<0.0015			
Benzo(ghi)perylene	6-8hrs	None set $\mu g/m^3$	0.015	0.020			
Benzo(k)fluoranthene	6-8hrs	None set $\mu g/m^3$	<0.0011	0.01			
Cholanthrene	6-8hrs	None set $\mu g/m^3$	<0.0011	<0.0015			
Chrysene	6-8hrs	None set $\mu g/m^3$	<0.0011	0.04			
Cyclopenta(cd)pyrene	6-8hrs	None set $\mu g/m^3$	<0.0011	<0.0015			
Dibenzo(ai)pyrene	6-8hrs	None set $\mu g/m^3$	<0.0011	<0.0015			
Dibenzo(ah)anthracene	6-8hrs	None set $\mu g/m^3$	<0.0011	<0.0015			
Fluoranthene	6-8hrs	None set $\mu g/m^3$	0.015	0.020			
Indeno(123-cd) pyrene	6-8hrs	None set $\mu g/m^3$	<0.0011	0.01			
Naphthalene	6-8hrs	None set $\mu g/m^3$	0.150	0.240			
Comments :							

Emissions to Air (continuously 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 11%

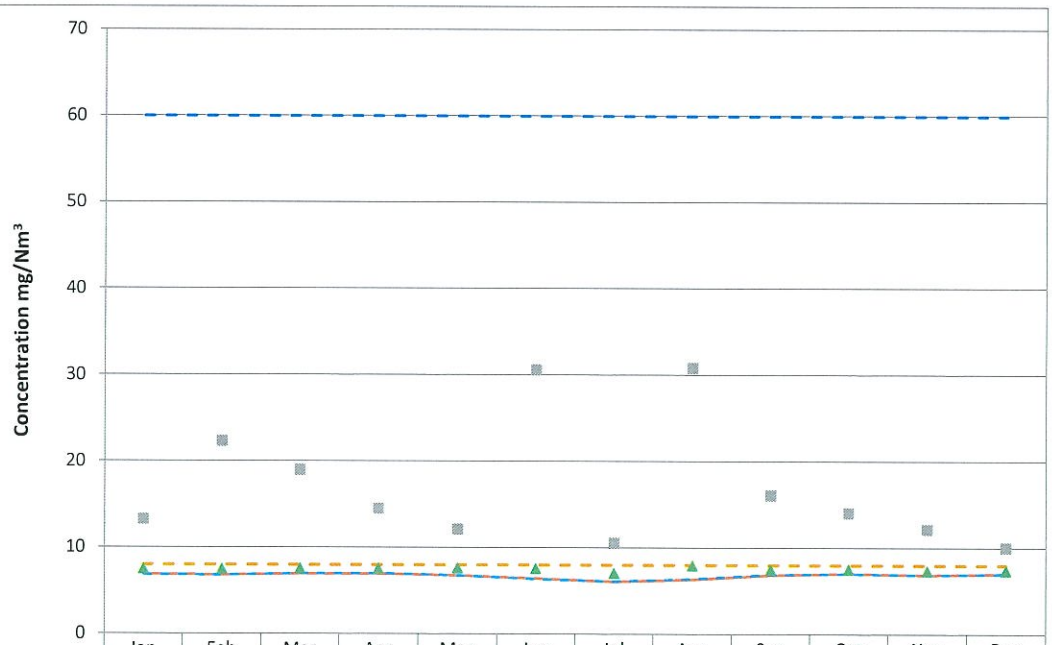
Substance	Reference Period	Emission Limit Value	A1		A2		A3		A4		A5	
			Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.	Max.	Avg.
Oxides of nitrogen	Daily mean	180 mg/m^3	176.4	168.7	178.1	163.7						
	½ hourly mean	400 mg/m^3	330.5	168.8	264.7	163.7						
Particulates	Daily mean	5 mg/m^3	4.0	1.2	4.0	0.6						
	½ hourly mean	30 mg/m^3	8.0	1.2	7.3	0.6						
Total Organic Carbon	Daily mean	10 mg/m^3	2.6	0.3	1.6	0.6						
	½ hourly mean	20 mg/m^3	24.4	0.3	17.7	0.6						
Hydrogen chloride	Daily mean	8 mg/m^3	7.5	6.6	7.9	6.6						
	½ hourly mean	60 mg/m^3	22.3	6.6	30.8	6.6						
Sulphur dioxide	Daily mean	40 mg/m^3	37.2	18.6	27.4	15.5						
	½ hourly mean	200 mg/m^3	131.2	18.6	98.4	15.5						
Carbon monoxide	Daily mean	50 mg/m^3	25.3	6.1	34.7	7.7						
	95%ile 10-min avg *	150 mg/m^3 *	52.8	7.0	96.1	10.5						
Ammonia	Daily mean	15 mg/m^3	8.4	2.6	7.0	2.0						

* = delete as appropriate, depending on whether your plant has half-hourly or 10-min CO ELVs

Comments :

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

2025	1/2 Hourly Reference Periods			Daily Reference Periods		
mg/Nm^3	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	60	6.86	13.24	8	6.88	7.49
Feb	60	6.82	22.28	8	6.82	7.48
Mar	60	6.95	18.96	8	6.98	7.54
Apr	60	6.96	14.49	8	7.00	7.55
May	60	6.80	12.11	8	6.80	7.60
Jun	60	6.44	30.56	8	6.39	7.57
Jul	60	6.06	10.51	8	6.12	7.05
Aug	60	6.34	30.81	8	6.43	7.93
Sep	60	6.84	16.07	8	6.92	7.51
Oct	60	7.03	14.03	8	7.03	7.52
Nov	60	6.90	12.12	8	6.91	7.35
Dec	60	7.03	10.02	8	7.03	7.36

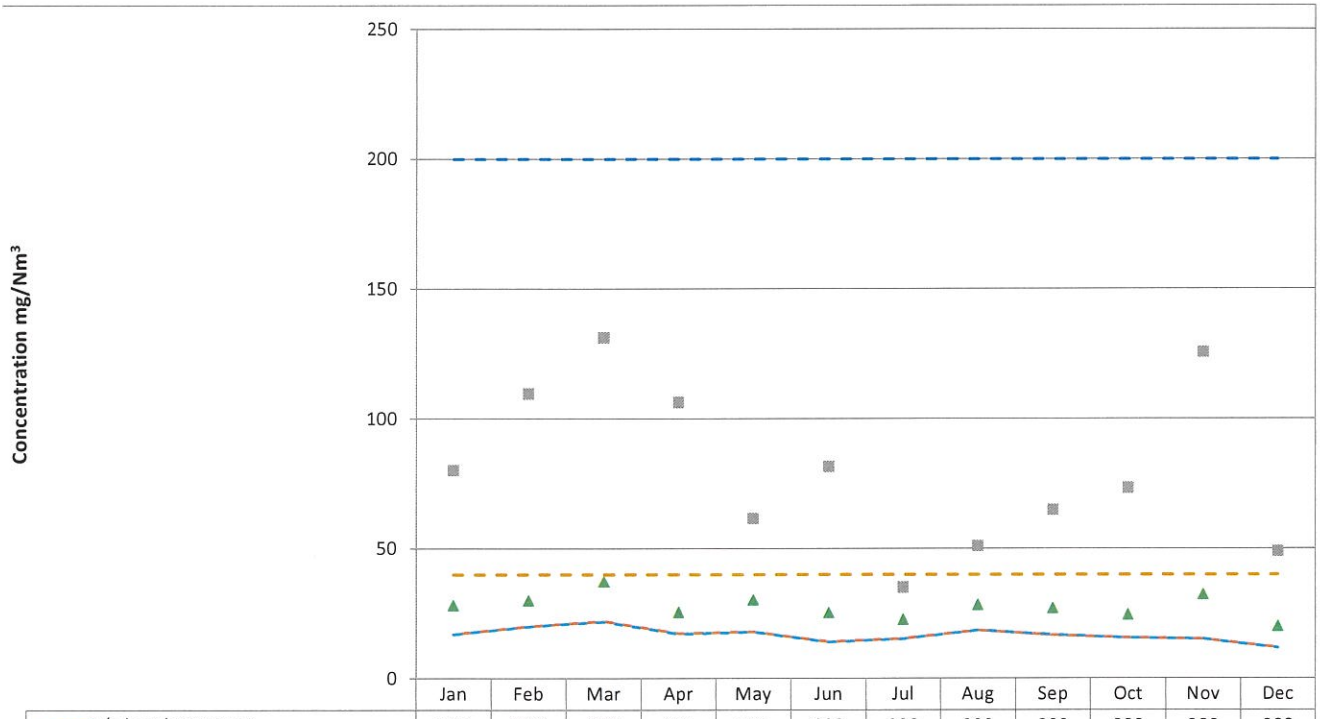


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/2 hourly HCl ELV	60	60	60	60	60	60	60	60	60	60	60	60
Monthly mean of half-hourly averages	6.86	6.82	6.95	6.96	6.80	6.44	6.06	6.34	6.84	7.03	6.90	7.03
Highest half- hourly average	13.24	22.28	18.96	14.49	12.11	30.56	10.51	30.81	16.07	14.03	12.12	10.02
Daily HCl ELV	8	8	8	8	8	8	8	8	8	8	8	8
Monthly mean of daily averages	6.88	6.82	6.98	7.00	6.80	6.39	6.12	6.43	6.92	7.03	6.91	7.03
Highest daily average	7.49	7.48	7.54	7.55	7.60	7.57	7.05	7.93	7.51	7.52	7.35	7.36

Comments :

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

2025	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	200	17.07	80.18	40	17.04	28.1
Feb	200	20.09	109.66	40	20.06	29.91
Mar	200	21.95	131.22	40	21.87	37.21
Apr	200	17.28	106.29	40	17.26	25.52
May	200	17.88	61.53	40	18.01	30.19
Jun	200	14.09	81.59	40	14.14	25.26
Jul	200	15.36	34.97	40	15.37	22.63
Aug	200	18.55	50.91	40	18.63	28.36
Sep	200	16.77	64.86	40	16.95	27.03
Oct	200	15.72	73.26	40	15.75	24.62
Nov	200	15.2	125.56	40	15.32	32.31
Dec	200	11.86	48.86	40	11.85	20.08

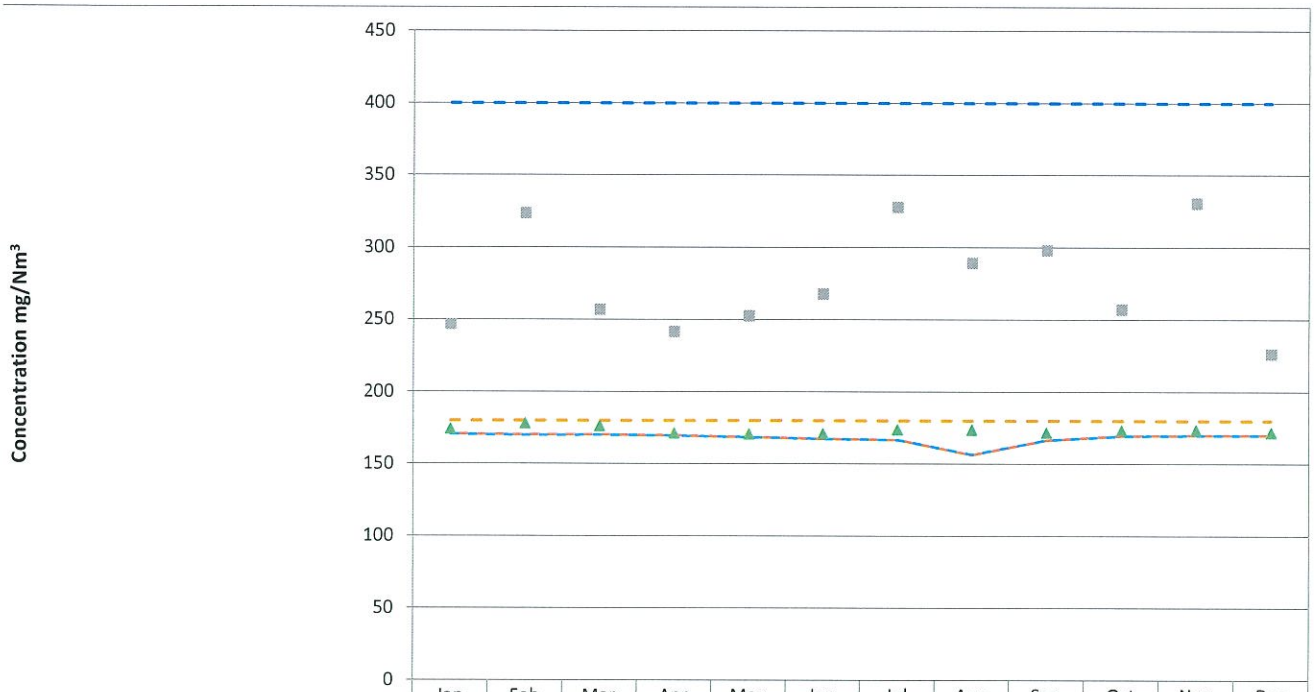


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/2 hourly SO2 ELV	200	200	200	200	200	200	200	200	200	200	200	200
Monthly mean of half-hourly averages	17.07	20.09	21.95	17.28	17.88	14.09	15.36	18.55	16.77	15.72	15.2	11.86
Highest half- hourly average	80.18	109.66	131.22	106.29	61.53	81.59	34.97	50.91	64.86	73.26	125.56	48.86
Daily SO2 ELV	40	40	40	40	40	40	40	40	40	40	40	40
Monthly mean of daily averages	17.04	20.06	21.87	17.26	18.01	14.14	15.37	18.63	16.95	15.75	15.32	11.85
Highest daily average	28.1	29.91	37.21	25.52	30.19	25.26	22.63	28.36	27.03	24.62	32.31	20.08

Comments :

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

2025	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	400	170.64	246.78	180	170.66	174.28
Feb	400	170.14	323.63	180	169.97	178.11
Mar	400	170.22	256.72	180	170.25	176.37
Apr	400	169.57	241.61	180	169.64	171.31
May	400	168.52	252.56	180	168.72	170.95
Jun	400	167.50	267.67	180	167.37	171.00
Jul	400	166.54	327.81	180	166.76	174.00
Aug	400	156.32	289.21	180	156.61	173.71
Sep	400	166.44	298.11	180	166.52	171.97
Oct	400	169.44	257.13	180	169.45	173.53
Nov	400	169.99	330.52	180	169.99	173.83
Dec	400	170.09	226.20	180	170.08	171.85

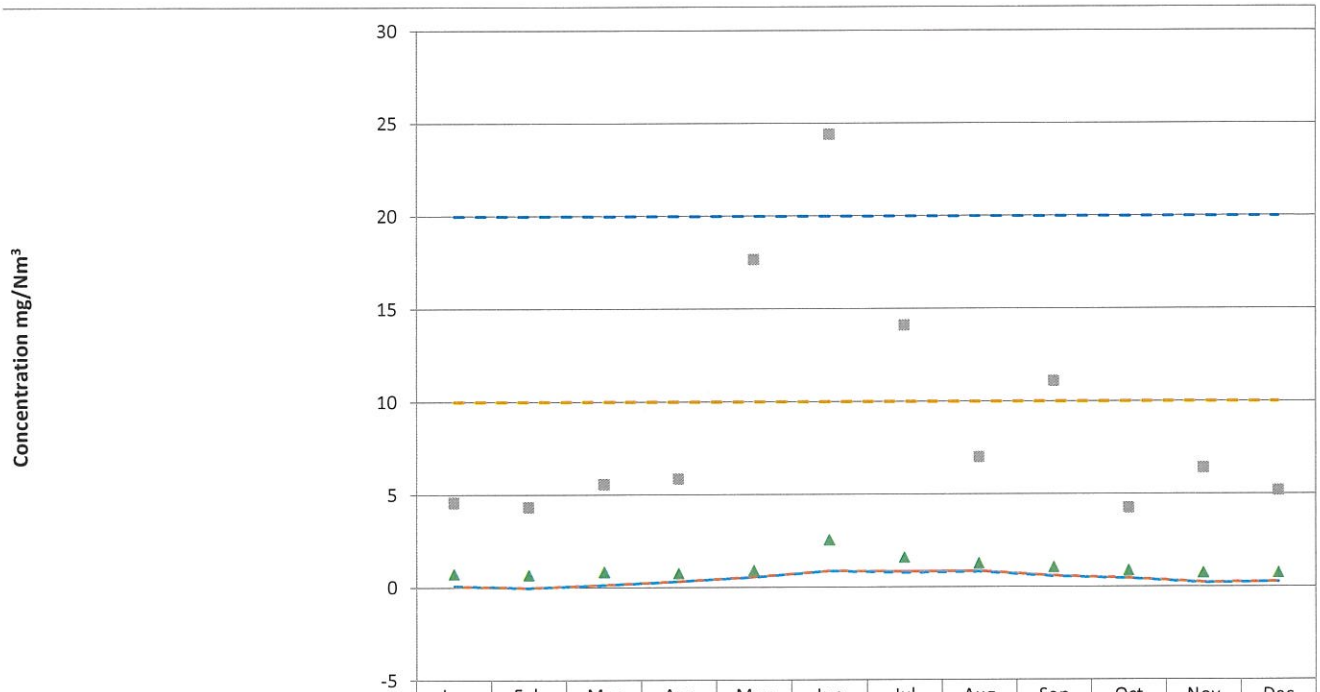


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/2 hourly NOx ELV	400	400	400	400	400	400	400	400	400	400	400	400
Monthly mean of half-hourly averages	170.64	170.14	170.22	169.57	168.52	167.50	166.54	156.32	166.44	169.44	169.99	170.09
Highest half- hourly average	246.78	323.63	256.72	241.61	252.56	267.67	327.81	289.21	298.11	257.13	330.52	226.20
Daily NOx ELV	180	180	180	180	180	180	180	180	180	180	180	180
Monthly mean of daily averages	170.66	169.97	170.25	169.64	168.72	167.37	166.76	156.61	166.52	169.45	169.99	170.08
Highest daily average	174.28	178.11	176.37	171.31	170.95	171.00	174.00	173.71	171.97	173.53	173.83	171.85

Comments :

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

2025	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	20	0.07	4.58	10	0.09	0.74
Feb	20	-0.02	4.33	10	-0.02	0.67
Mar	20	0.13	5.56	10	0.13	0.83
Apr	20	0.33	5.84	10	0.33	0.76
May	20	0.57	17.67	10	0.54	0.92
Jun	20	0.88	24.41	10	0.88	2.55
Jul	20	0.84	14.10	10	0.78	1.60
Aug	20	0.86	7.00	10	0.83	1.28
Sep	20	0.60	11.09	10	0.58	1.08
Oct	20	0.46	4.26	10	0.46	0.89
Nov	20	0.23	6.41	10	0.22	0.76
Dec	20	0.27	5.19	10	0.28	0.76

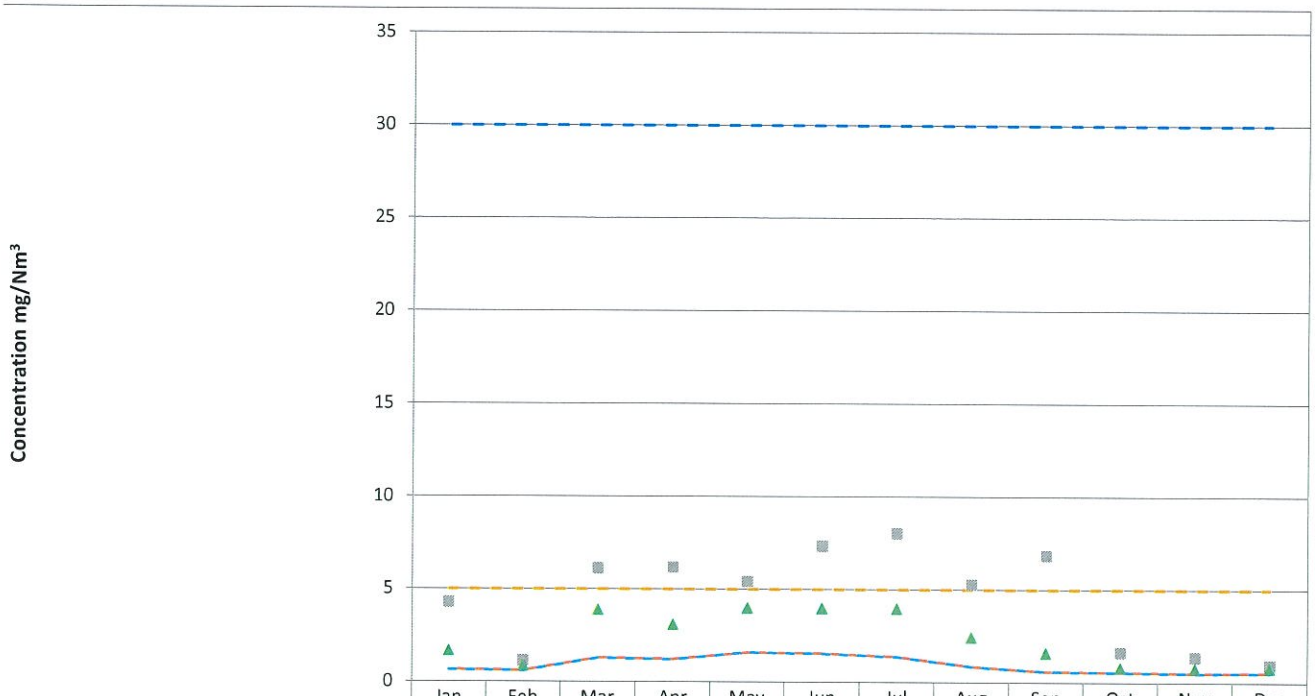


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/2 hourly TOC ELV	20	20	20	20	20	20	20	20	20	20	20	20
Monthly mean of half-hourly averages	0.07	-0.02	0.13	0.33	0.57	0.88	0.84	0.86	0.60	0.46	0.23	0.27
Highest half- hourly average	4.58	4.33	5.56	5.84	17.67	24.41	14.10	7.00	11.09	4.26	6.41	5.19
Daily TOC ELV	10	10	10	10	10	10	10	10	10	10	10	10
Monthly mean of daily averages	0.09	-0.02	0.13	0.33	0.54	0.88	0.78	0.83	0.58	0.46	0.22	0.28
Highest daily average	0.74	0.67	0.83	0.76	0.92	2.55	1.60	1.28	1.08	0.89	0.76	0.76

Comments :

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

2025	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	30	0.66	4.28	5	0.66	1.69
Feb	30	0.61	1.14	5	0.61	0.89
Mar	30	1.30	6.12	5	1.30	3.89
Apr	30	1.24	6.17	5	1.22	3.10
May	30	1.60	5.41	5	1.61	3.99
Jun	30	1.56	7.33	5	1.54	3.98
Jul	30	1.39	8.03	5	1.38	3.97
Aug	30	0.88	5.27	5	0.86	2.45
Sep	30	0.60	6.85	5	0.61	1.61
Oct	30	0.57	1.63	5	0.57	0.82
Nov	30	0.53	1.38	5	0.53	0.79
Dec	30	0.55	0.95	5	0.55	0.81



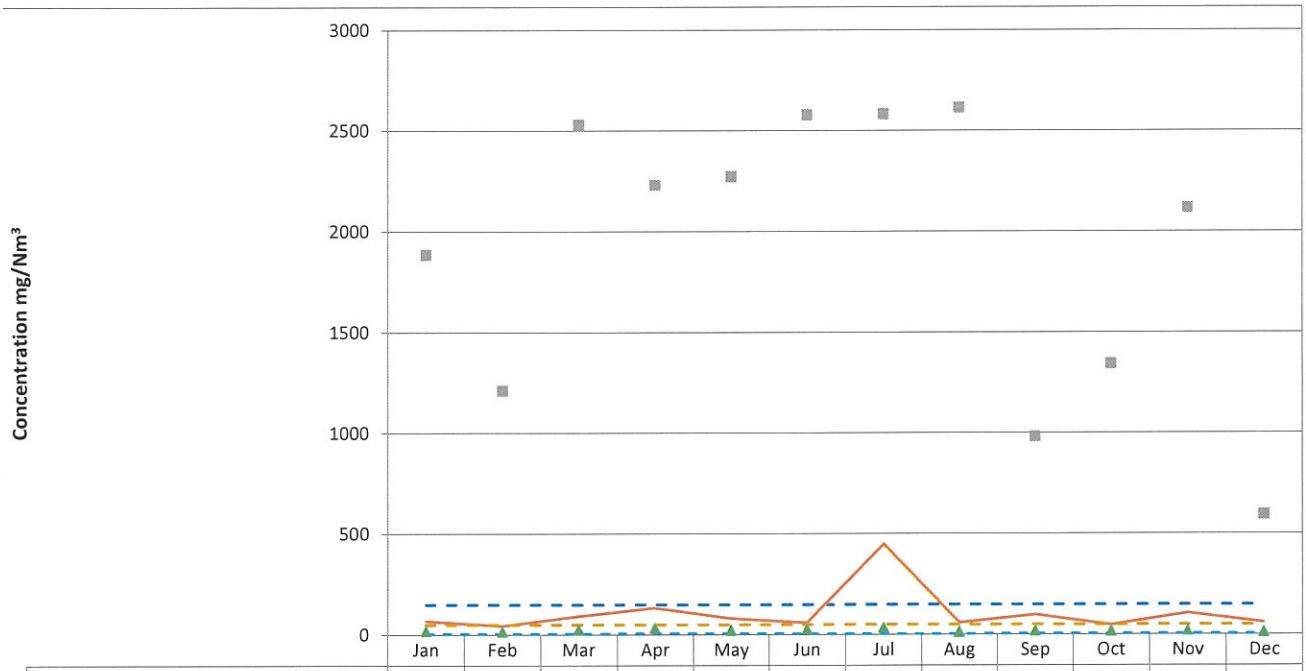
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/2 hourly PM ELV	30	30	30	30	30	30	30	30	30	30	30	30
Monthly mean of half-hourly averages	0.66	0.61	1.30	1.24	1.60	1.56	1.39	0.88	0.60	0.57	0.53	0.55
Highest half- hourly average	4.28	1.14	6.12	6.17	5.41	7.33	8.03	5.27	6.85	1.63	1.38	0.95
Daily PM ELV	5	5	5	5	5	5	5	5	5	5	5	5
Monthly mean of daily averages	0.66	0.61	1.30	1.22	1.61	1.54	1.38	0.86	0.61	0.57	0.53	0.55
Highest daily average	1.69	0.89	3.89	3.10	3.99	3.98	3.97	2.45	1.61	0.82	0.79	0.81

Comments :

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

Please complete this tab for your plant if you have 10-minute average CO ELVs; otherwise, leave it blank and complete the CO 0.5 hourly tab

2025	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	150	67.89	6.02	1,885.32	50	6.04	19.96
Feb	150	44.03	5.09	1,211.00	50	5.10	16.55
Mar	150	92.68	6.90	2,529.60	50	6.70	25.30
Apr	150	132.58	8.23	2,230.91	50	7.93	33.55
May	150	80.61	9.08	2,272.71	50	8.26	23.58
Jun	150	59.23	7.84	2,578.27	50	6.19	29.05
Jul	150	449.55	8.35	2,582.54	50	5.37	34.71
Aug	150	58.75	5.90	2,613.83	50	4.92	13.67
Sep	150	98.39	6.84	982.27	50	6.34	20.04
Oct	150	47.03	5.82	1,343.62	50	5.78	18.87
Nov	150	106.32	6.57	2,117.35	50	6.53	20.59
Dec	150	60.64	5.68	594.87	50	5.59	13.56



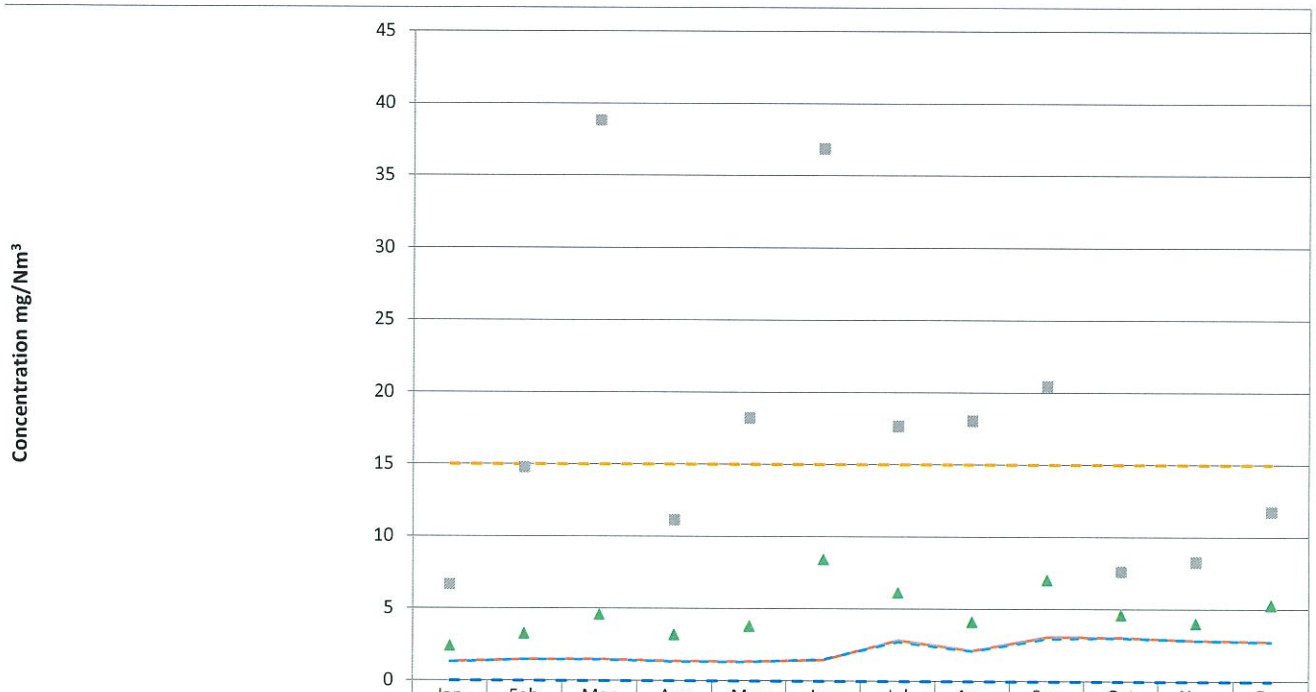
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
95%ile 10-min avg CO ELV	150	150	150	150	150	150	150	150	150	150	150	150
Highest daily 95%ile 10-min average	67.89	44.03	92.68	132.58	80.61	59.23	449.55	58.75	98.39	47.03	106.32	60.64
Highest 10-min average	1,885.32	1,211.00	2,529.60	2,230.91	2,272.71	2,578.27	2,582.54	2,613.83	982.27	1,343.62	2,117.35	594.87
Daily CO ELV	50	50	50	50	50	50	50	50	50	50	50	50
Monthly mean of daily averages	6.04	5.10	6.70	7.93	8.26	6.19	5.37	4.92	6.34	5.78	6.53	5.59
Highest daily average	19.96	16.55	25.30	33.55	23.58	29.05	34.71	13.67	20.04	18.87	20.59	13.56

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*

2025	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	1.32	6.65	15	1.31	2.41
Feb	None	1.47	14.76	15	1.47	3.27
Mar	None	1.49	38.82	15	1.48	4.59
Apr	None	1.35	11.13	15	1.34	3.20
May	None	1.34	18.22	15	1.32	3.80
Jun	None	1.46	36.87	15	1.52	8.43
Jul	None	2.83	17.66	15	2.75	6.14
Aug	None	2.13	18.05	15	2.10	4.12
Sep	None	3.08	20.46	15	2.97	7.02
Oct	None	3.04	7.61	15	3.04	4.61
Nov	None	2.85	8.26	15	2.86	4.04
Dec	None	2.79	11.75	15	2.76	5.29



	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	1.32	1.47	1.49	1.35	1.34	1.46	2.83	2.13	3.08	3.04	2.85	2.79
Highest half- hourly average	6.65	14.76	38.82	11.13	18.22	36.87	17.66	18.05	20.46	7.61	8.26	11.75
Daily NH3 ELV	15	15	15	15	15	15	15	15	15	15	15	15
Monthly mean of daily averages	1.31	1.47	1.48	1.34	1.32	1.52	2.75	2.10	2.97	3.04	2.86	2.76
Highest daily average	2.41	3.27	4.59	3.20	3.80	8.43	6.14	4.12	7.02	4.61	4.04	5.29

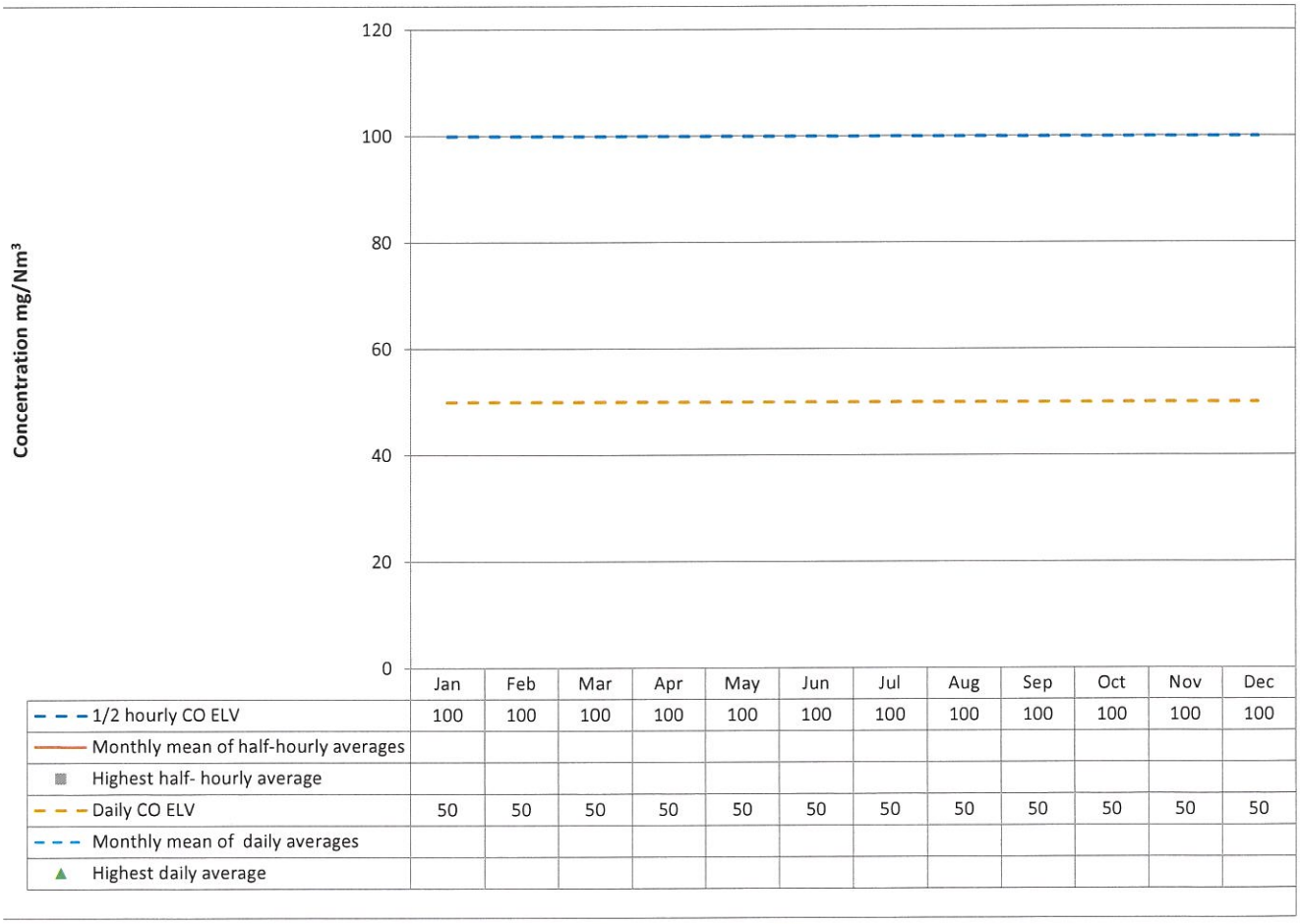
Comments :

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

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

Please complete this tab for your plant if you have 1/2 hourly CO ELVs; otherwise, leave it blank and complete the CO 95% 10 min tab

2025	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	100			50		
Feb	100			50		
Mar	100			50		
Apr	100			50		
May	100			50		
Jun	100			50		
Jul	100			50		
Aug	100			50		
Sep	100			50		
Oct	100			50		
Nov	100			50		
Dec	100			50		



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1/2 hourly CO ELV	100	100	100	100	100	100	100	100	100	100	100	100
Monthly mean of half-hourly averages												
Highest half- hourly average												
Daily CO ELV	50	50	50	50	50	50	50	50	50	50	50	50
Monthly mean of daily averages												
Highest daily average												

Comments :

Log of changes to t

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template (Environment Agency use only)

Description of change
Air (periodic) tab: corrected default O2 reference from 6 to 11%
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
Operational Summary tab: table added on start-ups and shut-downs
Operational Summary tab: table added on dioxins and mercury protocols
Operational Summary tab: table added on AST, QAL 2 and calibration functions
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
Cover Page: Print as PDF and Print Report and pdf buttons deleted and blank columns removed; contents page deleted
Residue Quality tab renamed to "Residues", and Summary of residue handling table moved from Operational Summary tab to Residues tab.
Various changes made to the **Operational Data tab** including •Reformatting of the rows under the Operational data heading (Rows 3-8) to make it clearer what information is required. •Amendment of the rows under the Energy Usage / Export heading (Rows 26-32) to calculate an "indicative parasitic load" (now excluding energy imported) •Amendment of the unit for gas usage from cubic feet to cubic metres (Row 50) •Some amendments to the first 2 notes and other minor edits •Deleted "Overall Availability, mean avg. of all lines, hrs" row
Operational Summary tab: Note added requiring all emergency shut-downs be listed, irrespective of whether or not they were reportable.
CO2 N2O tab: Note added to ask operators to ensure that relevant data reported here matches that which will be submitted under the Pollution Inventory

New version number and date
Version 23.5a (for incinerators) - 16/01/2024
Version 24a (for incinerators) - 23/09/24
Version 24.1a (for incinerators) - 08/11/24
Version 24.2a (for incinerators) - 27/11/24
Version 25.1a (for incinerators) - 27/11/25
Pollution inventory is RAW data, not CORRECTED/CI APPLIED