

Form Number: Air 1 / 2017: Particulate matter

Form Number: Air 2 / 2017: Total Organic Carbon (TOC)

Form Number: Air 3 / 2017: Hydrogen Chloride

Form Number: Air 4 / 2017: Hydrogen Fluoride

Form Number: Air 5 / 2017: Carbon Monoxide

Form Number: Air 6 / 2017: Oxides of Nitrogen

Form Number: Air 9 / 2017: Sulphur Dioxide

During Q4 the Thermal Oxidiser was predominantly online with liquid and gaseous waste stream from the Waste Acid Stack (WAS).

There was a shot period (approximately 2 weeks) in early October where the Thermal Oxidiser was offline for maintenance.

Periodic emission monitoring for A14 was undertaken on 13th to 15th November 2023. At the time of the monitoring the Thermal Oxidiser was online with liquid and gaseous waste stream from the WAS. However, the external laboratory reported that they could not analyse for PAHs and would need to return to site to collect a new sample for analysis. This incident was reported to the Environment Agency on 05/01/2024. A new sample to analyse for PAHs was taken on 17th January 2024. On external reporting of the A14 it was also identified that the sulphur dioxide result was also missing a new sample to analyse for sulphur dioxide was taken on 22nd January 2024. Missing results will be included in this report once available, and an updated version of this report issued.

Gaseous waste streams from Low Boiler Stack will be commissioned in February 2024 with operation expected from March 2024.

See CEMS data below for quarterly reporting on Form Numbers identified above.

Signed*: [redacted] [redacted]

Date: 26/01/2024

(*authorised to sign as representative of AGC Chemicals Europe Limited)

Permit Number: EPR/BU5453IY
Operator: AGC Chemicals Europe Limited
Facility: AGC Chemicals Europe, Hillhouse

Form Number: Air 7 / 2017

A14 - Reporting of periodically monitored emissions to air for the period from ...October 2023... to ...December 2023...

Emission Point	Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method	Result Date and Time [2]	Uncertainty [3]	Comments
A14	Total Organic Carbon	No limit applies	Tonnes annually	0	Calculation	-		Calculated as 630g for 2023. CEMS annual mass release data is not released to this resolution.
A14	Sulphur dioxide	100 mg/m ³	Periodic over minimum 1-hour period	0.41 mg/m ³	BS EN 14791	22/01/2024 13:36 – 14:36	0.03 mg/m ³	
A14	Cadmium & thallium and their compounds (total)	0.05 mg/m ³	Periodic over minimum 30 minute, maximum 8 hour period	0.002 mg/m ³	BS EN 14385	15/11/2023 15:42 – 16:12	0.0004 mg/m ³	
A14	Mercury and its compounds	0.05 mg/m ³	Periodic over minimum 30 minute, maximum 8 hour period	<0.0003 mg/m ³	BS EN 13211	15/11/2023 16:20 – 16:50	0.0001 mg/m ³	
A14	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	0.5 mg/m ³	Periodic over minimum 30 minute, maximum 8 hour period	0.029 mg/m ³	BS EN 14385	15/11/2023 15:42 – 16:12	0.006 mg/m ³	
A14	Dioxins / Furans (I-TEQ)	0.1 ng/m ³	Periodic over minimum 6 hour, maximum 8 hour period	0.0005 ng/m ³	BS EN 1948 Parts 1, 2 and 3	14/11/2023 11:09 - 17:09	0.0001 ng/m ³	
A14	Dioxins / furans (WHO-TEQ Humans / Mammals)	No limit applies	Periodic over minimum 6 hour, maximum 8 hour period	0.0004 ng/m ³	BS EN 1948 Parts 1, 2 and 3	14/11/2023 11:09 - 17:09	0.0001 ng/m ³	
A14	Dioxins / furans (WHO-TEQ Fish)	No limit applies	Periodic over minimum 6 hour, maximum 8 hour period	0.0005 ng/m ³	BS EN 1948 Parts 1, 2 and 3	14/11/2023 11:09 - 17:09	0.0001 ng/m ³	
A14	Dioxins / furans (WHO-TEQ Birds)	No limit applies	Periodic over minimum 6 hour, maximum 8 hour period	0.0016 ng/m ³	BS EN 1948 Parts 1, 2 and 3	14/11/2023 11:09 - 17:09	0.0003 ng/m ³	
A14	Dioxin-like PCBs (WHO-TEQ Humans / Mammals)	No limit applies	Periodic over minimum 6 hour, maximum 8 hour period	0.000043 ng/m ³	BS EN/TS 1948-4	14/11/2023 11:09 - 17:09	0.000009 ng/m ³	
A14	Dioxin-like PCBs (WHO-TEQ Fish)	No limit applies	Periodic over minimum 6 hour, maximum 8 hour period	0.000002 ng/m ³	BS EN/TS 1948-4	14/11/2023 11:09 - 17:09	0.000001 ng/m ³	
A14	Dioxin-like PCBs (WHO-TEQ Birds)	No limit applies	Periodic over minimum 6 hour, maximum 8 hour period	0.000278 ng/m ³	BS EN/TS 1948-4	14/11/2023 11:09 - 17:09	0.000058 ng/m ³	

Permit Number: EPR/BU5453IY
Operator: AGC Chemicals Europe Limited
Facility: AGC Chemicals Europe, Hillhouse

Emission Point	Parameter	Emission Limit Value	Reference Period	Result [1]	Test Method	Result Date and Time [2]	Uncertainty [3]	Comments
A14	Specific individual poly-cyclic aromatic hydrocarbons (PAHs)							
A14	Total	No limit applies	Periodic over minimum 6 hour, maximum 8 hour period	<0.520 µg/m ³	BS ISO 11338 Parts 1 and 2	17/01/2024 10:50 – 16:50	0.1075 µg/m ³	
A14	Anthanthrene	No limit applies		<0.001 µg/m ³		17/01/2024 10:50 – 16:50	0.0003 µg/m ³	
A14	Benzo[a]anthracene	No limit applies		0.002 µg/m ³		17/01/2024 10:50 – 16:50	0.0003 µg/m ³	
A14	Benzo[b]fluoranthene	No limit applies		0.002 µg/m ³		17/01/2024 10:50 – 16:50	0.0003 µg/m ³	
A14	Benzo[k]fluoranthene	No limit applies		0.005 µg/m ³		17/01/2024 10:50 – 16:50	0.0011 µg/m ³	
A14	Benzo[b]naph(2,1-d)thiophene	No limit applies		<0.001 µg/m ³		17/01/2024 10:50 – 16:50	0.0003 µg/m ³	
A14	Benzo[c]phenanthrene	No limit applies		<0.001 µg/m ³		17/01/2024 10:50 – 16:50	0.0003 µg/m ³	
A14	Benzo[ghi]perylene	No limit applies		0.002 µg/m ³		17/01/2024 10:50 – 16:50	0.0005 µg/m ³	
A14	Benzo[a]pyrene	No limit applies		<0.001 µg/m ³		17/01/2024 10:50 – 16:50	0.0003 µg/m ³	
A14	Cholanthrene	No limit applies		<0.001 µg/m ³		17/01/2024 10:50 – 16:50	0.0003 µg/m ³	
A14	Chrysene	No limit applies		0.003 µg/m ³		17/01/2024 10:50 – 16:50	0.0006 µg/m ³	
A14	Cyclopenta(c,d)pyrene	No limit applies		0.002 µg/m ³		17/01/2024 10:50 – 16:50	0.0004 µg/m ³	
A14	Dibenzo[ah]anthracene	No limit applies		<0.001 µg/m ³		17/01/2024 10:50 – 16:50	0.0003 µg/m ³	
A14	Dibenzo[a,i]pyrene	No limit applies		<0.001 µg/m ³		17/01/2024 10:50 – 16:50	0.0003 µg/m ³	
A14	Fluoranthene	No limit applies		0.072 µg/m ³		17/01/2024 10:50 – 16:50	0.0148 µg/m ³	
A14	Indo[1,2,3-cd]pyrene	No limit applies		0.02 µg/m ³		17/01/2024 10:50 – 16:50	0.0004 µg/m ³	
A14	Naphthalene	No limit applies		0.420 µg/m ³		17/01/2024 10:50 – 16:50	0.0869 µg/m ³	

- [1] For dioxins and dioxin-like PCBs, the result are to be reported as a range based on: All congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum
- [2] The date and time of the sample that produced the result is given.
- [3] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed*: [REDACTED]

Date: 15/04/2023

(*authorised to sign as representative of AGC Chemicals Europe Limited)

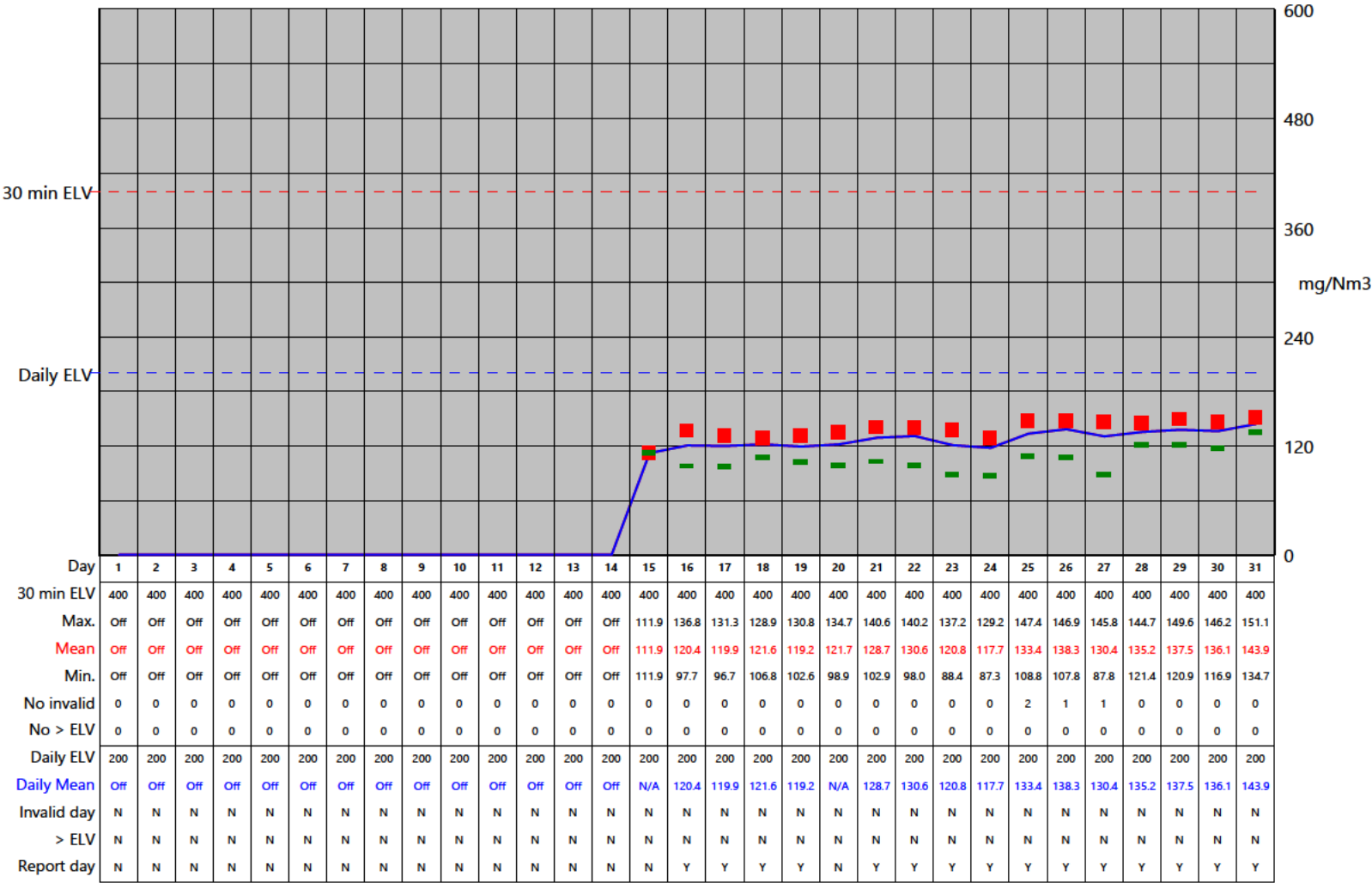
Reporting of Continuously Monitored Emissions to Air for NO_x, Emission Point A14 - TTP for Oct, 2023

Key

- Daily average ELV
- 30 min. average ELV
- Mean 30 min. average
- Max. 30 min average
- Min. 30 min average
- Daily mean

95th Percentile = 145.8
No. of valid averages = 747

Month summary	
30 min ELV	
Monthly max.	151.1
Monthly mean	128.5
Monthly min.	87.3
Total invalid	4
Sum > ELV	0
Daily ELV	
Monthly max	143.9
No. invalid days	0
No. > ELV	0
No. report days	15



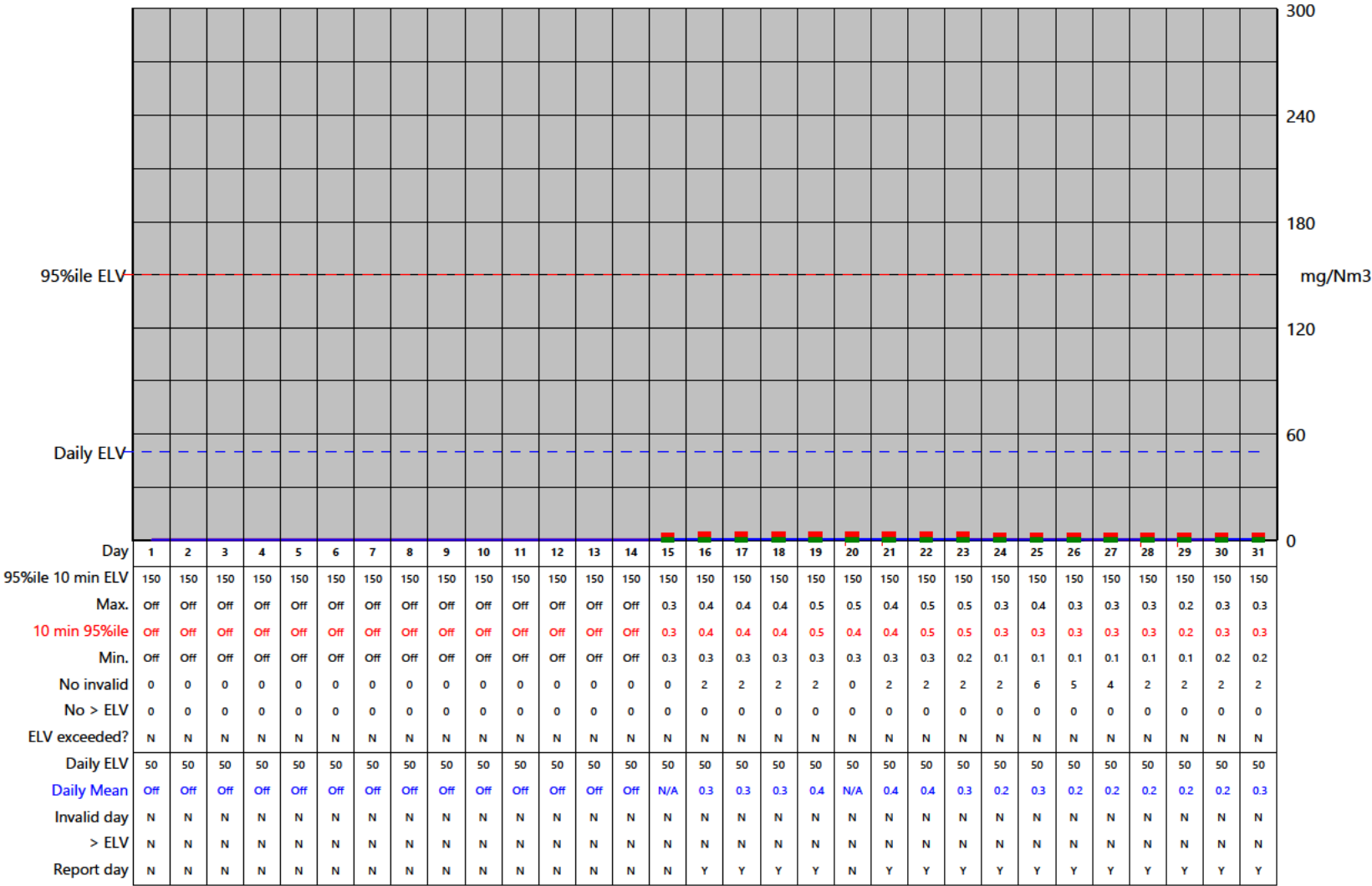
Data is as processed without repairs.

Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for CO, Emission Point A14 - TTP for Oct, 2023

Key

- Daily average ELV
- 95%ile ELV
- 95%ile 10 min average
- Max. 10 min average
- Min. 10min average
- Daily mean

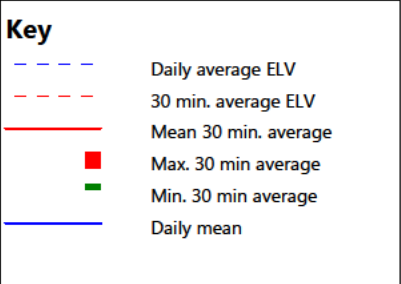


Month summary	
10 minute data	
Monthly max.	0.5
Monthly mean	0.3
Monthly min.	0.1
Total invalid	39
Sum > ELV	0
Total %ile exceed.	0
Daily ELV	
Monthly max	0.4
No. invalid days	0
No. > ELV	0
No. report days	15

Data is as processed without repairs.

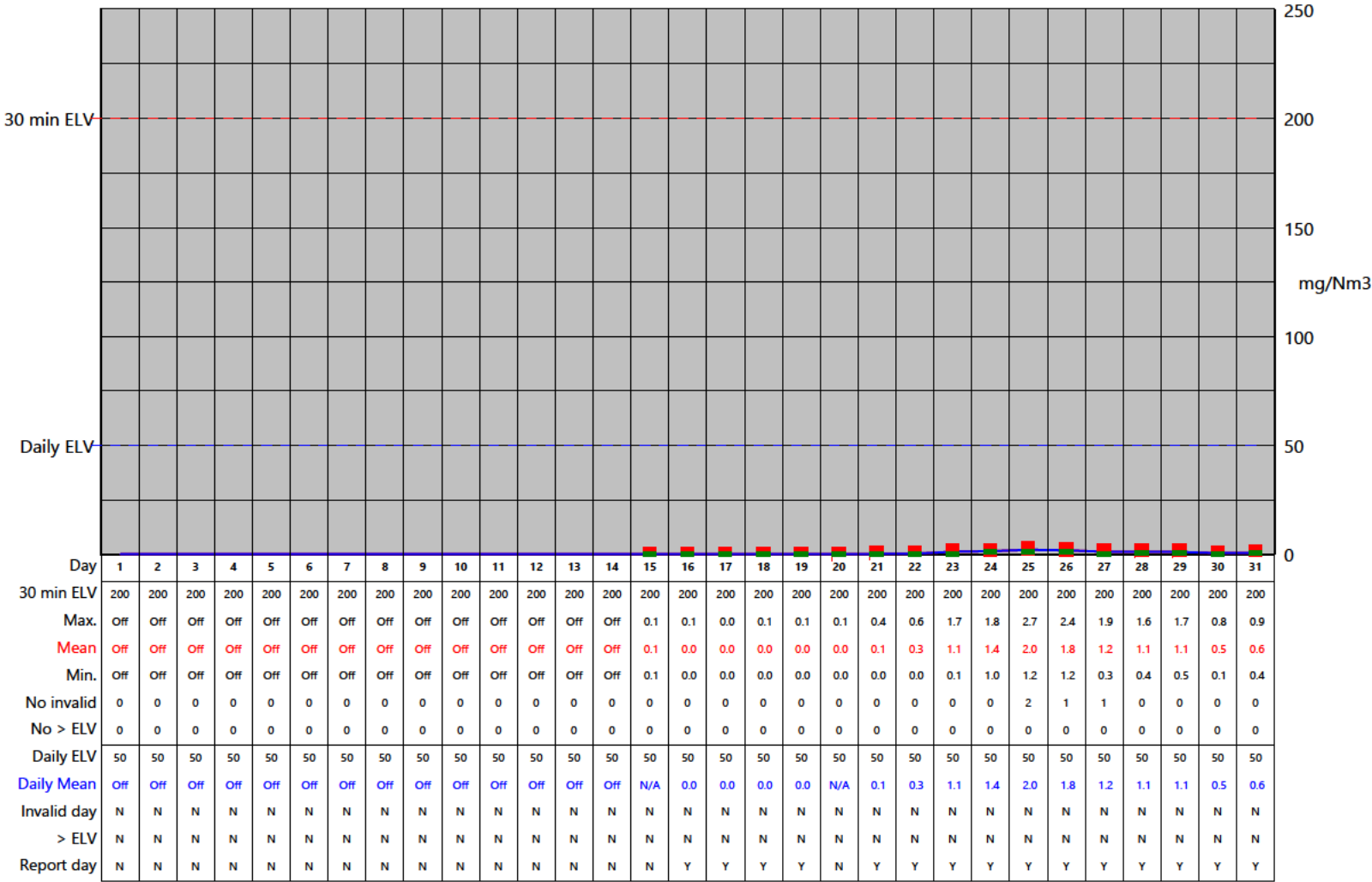
Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for SO₂, Emission Point A14 - TTP for Oct, 2023



95th Percentile = 2.2
No. of valid averages = 747

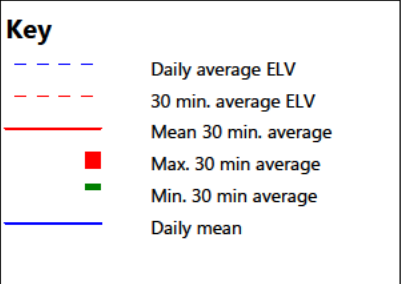
Month summary	
30 min ELV	
Monthly max.	2.7
Monthly mean	0.7
Monthly min.	0.0
Total invalid	4
Sum > ELV	0
Daily ELV	
Monthly max	2.0
No. invalid days	0
No. > ELV	0
No. report days	15



Data is as processed without repairs.

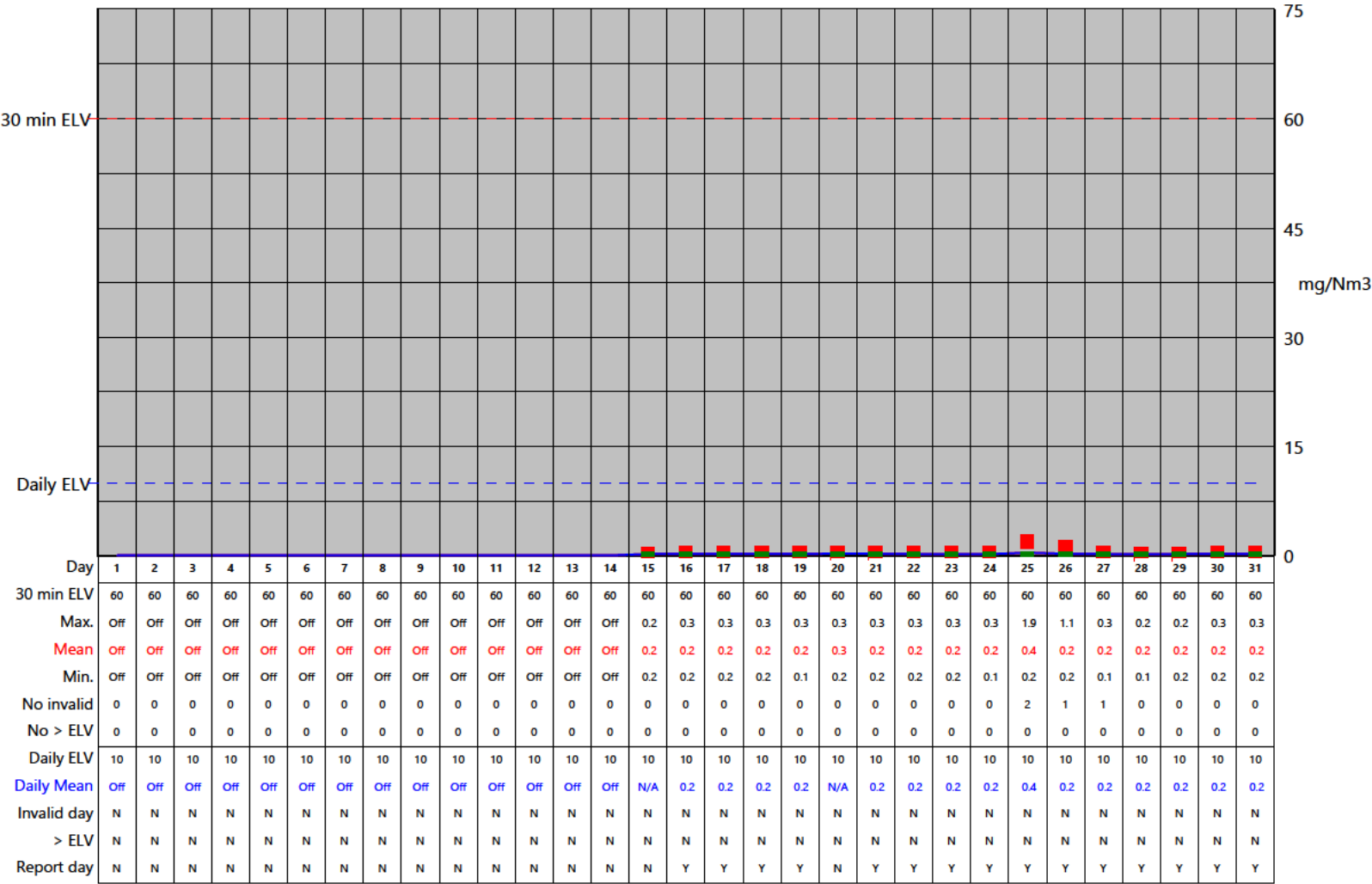
Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for HCl, Emission Point A14 - TTP for Oct, 2023



95th Percentile = 0.3
No. of valid averages = 747

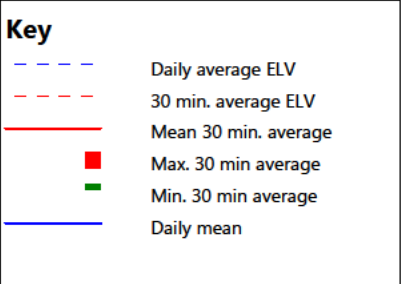
Month summary	
30 min ELV	
Monthly max.	1.9
Monthly mean	0.2
Monthly min.	0.1
Total invalid	4
Sum > ELV	0
Daily ELV	
Monthly max	0.4
No. invalid days	0
No. > ELV	0
No. report days	15



Data is as processed without repairs.

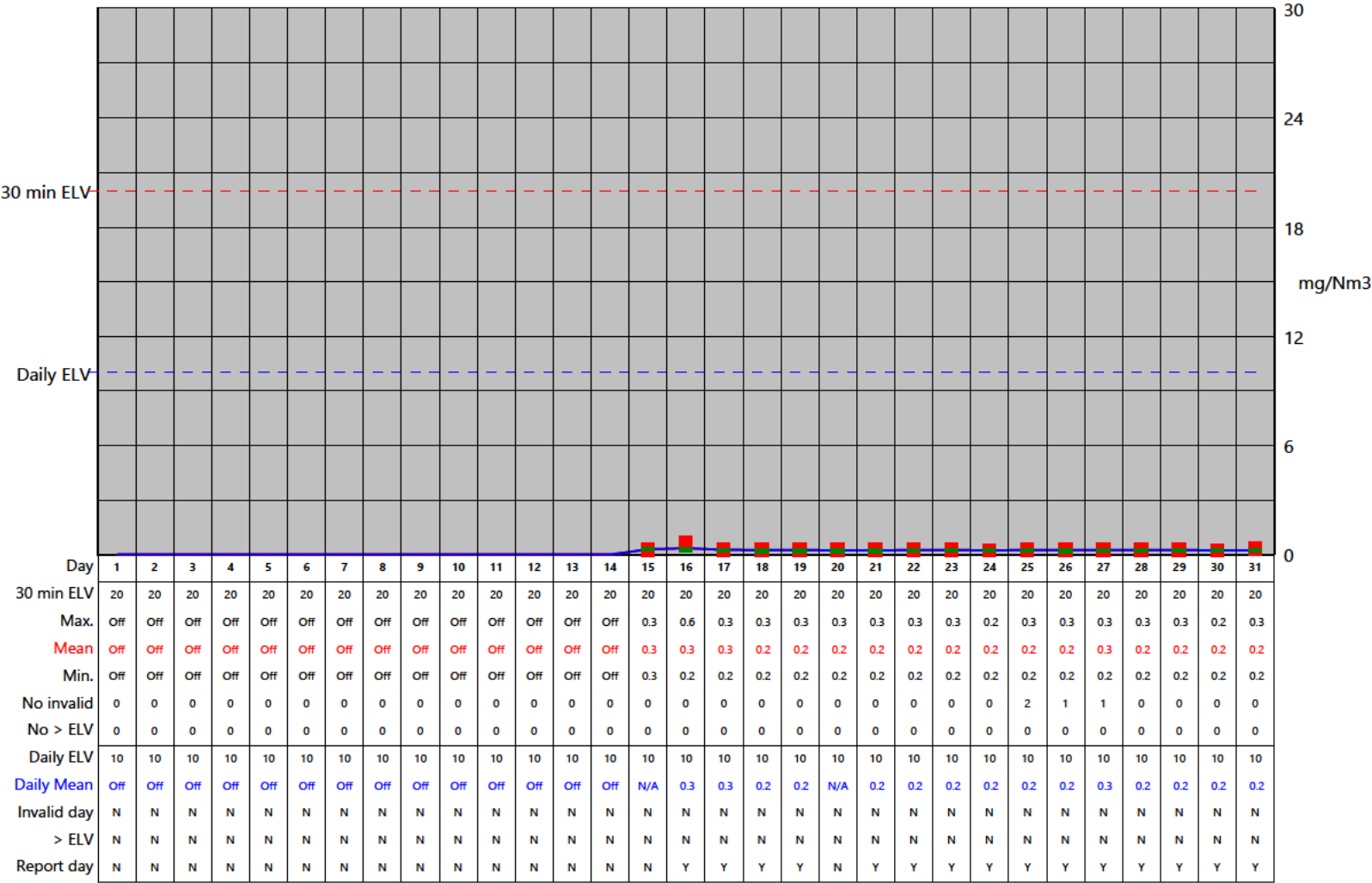
Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for TOC, Emission Point A14 - TTP for Oct, 2023



95th Percentile = 0.3
No. of valid averages = 747

Month summary	
30 min ELV	
Monthly max.	0.6
Monthly mean	0.2
Monthly min.	0.2
Total invalid	4
Sum > ELV	0
Daily ELV	
Monthly max	0.3
No. invalid days	0
No. > ELV	0
No. report days	15



Data is as processed without repairs.

Signature 
Authorised Representative
Date 26/01/2024

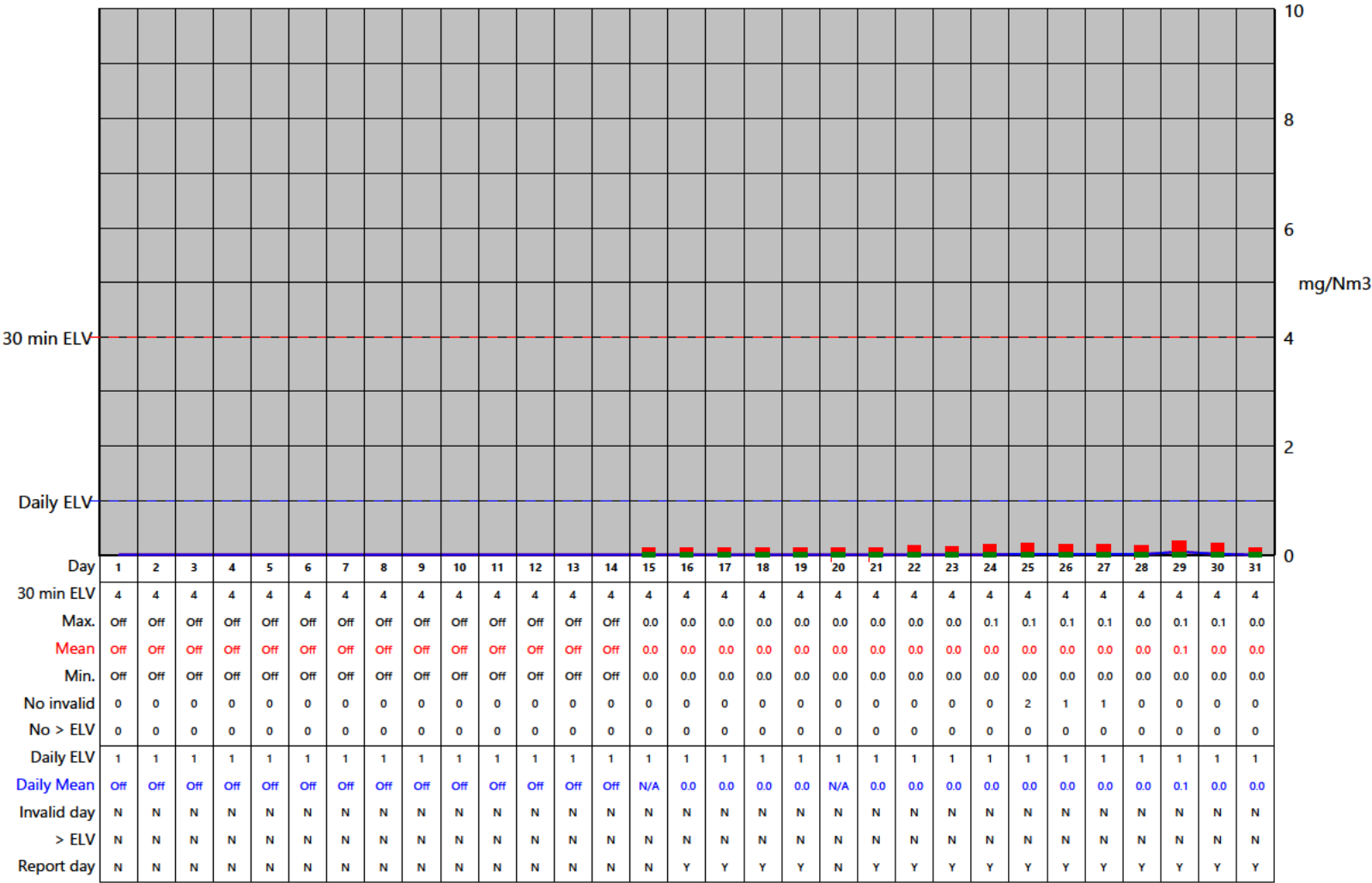
Reporting of Continuously Monitored Emissions to Air for HF, Emission Point A14 - TTP for Oct, 2023

Key

- Daily average ELV
- 30 min. average ELV
- Mean 30 min. average
- Max. 30 min average
- Min. 30 min average
- Daily mean

95th Percentile = 0.1
No. of valid averages = 747

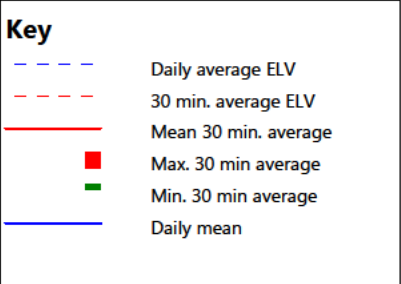
Month summary	
30 min ELV	
Monthly max.	0.1
Monthly mean	0.0
Monthly min.	0.0
Total invalid	4
Sum > ELV	0
Daily ELV	
Monthly max	0.1
No. invalid days	0
No. > ELV	0
No. report days	15



Data is as processed without repairs.

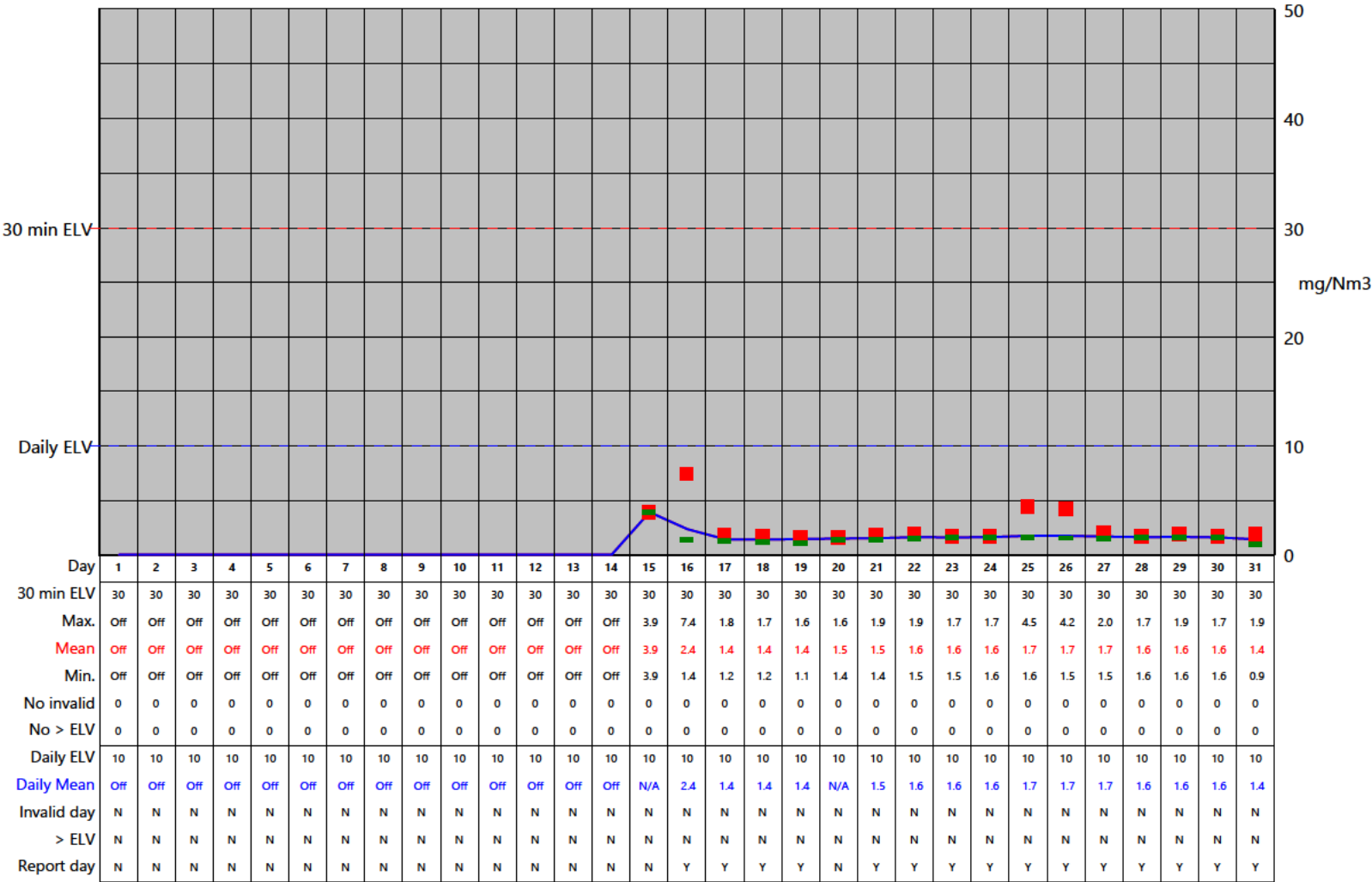
Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for Dust, Emission Point A14 - TTP for Oct, 2023



95th Percentile = 1.7
No. of valid averages = 751

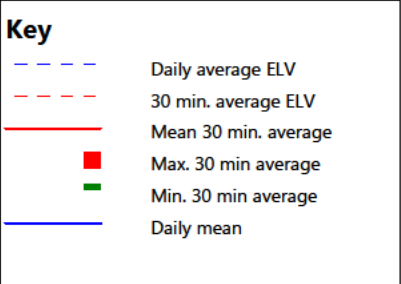
Month summary	
30 min ELV	
Monthly max.	7.4
Monthly mean	1.6
Monthly min.	0.9
Total invalid	0
Sum > ELV	0
Daily ELV	
Monthly max	2.4
No. invalid days	0
No. > ELV	0
No. report days	15



Data is as processed without repairs.

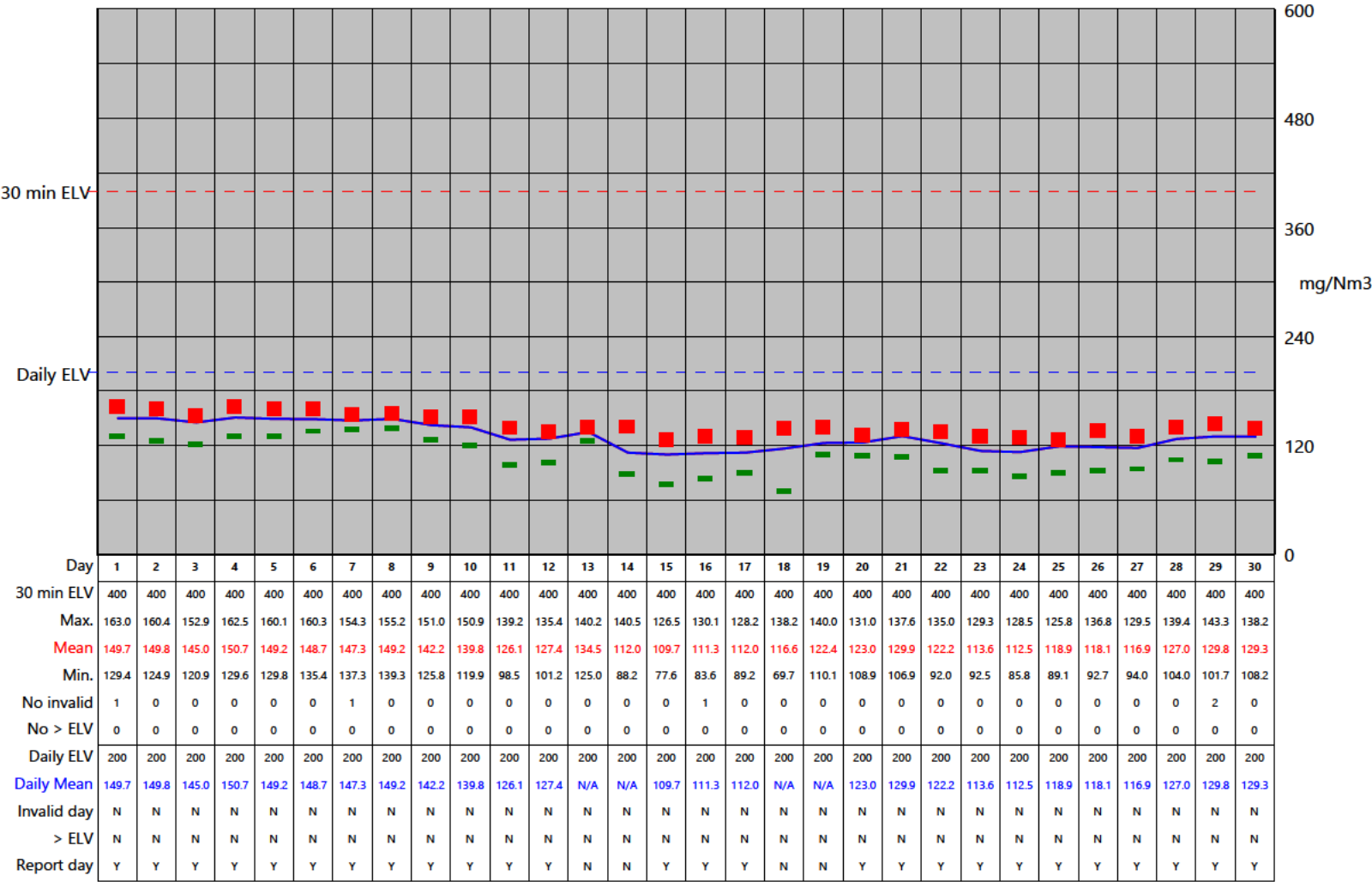
Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for NO_x, Emission Point A14 - TTP for Nov, 2023



95th Percentile = 153.4
No. of valid averages = 1387

Month summary	
30 min ELV	
Monthly max.	163.0
Monthly mean	129.6
Monthly min.	69.7
Total invalid	5
Sum > ELV	0
Daily ELV	
Monthly max	150.7
No. invalid days	0
No. > ELV	0
No. report days	26



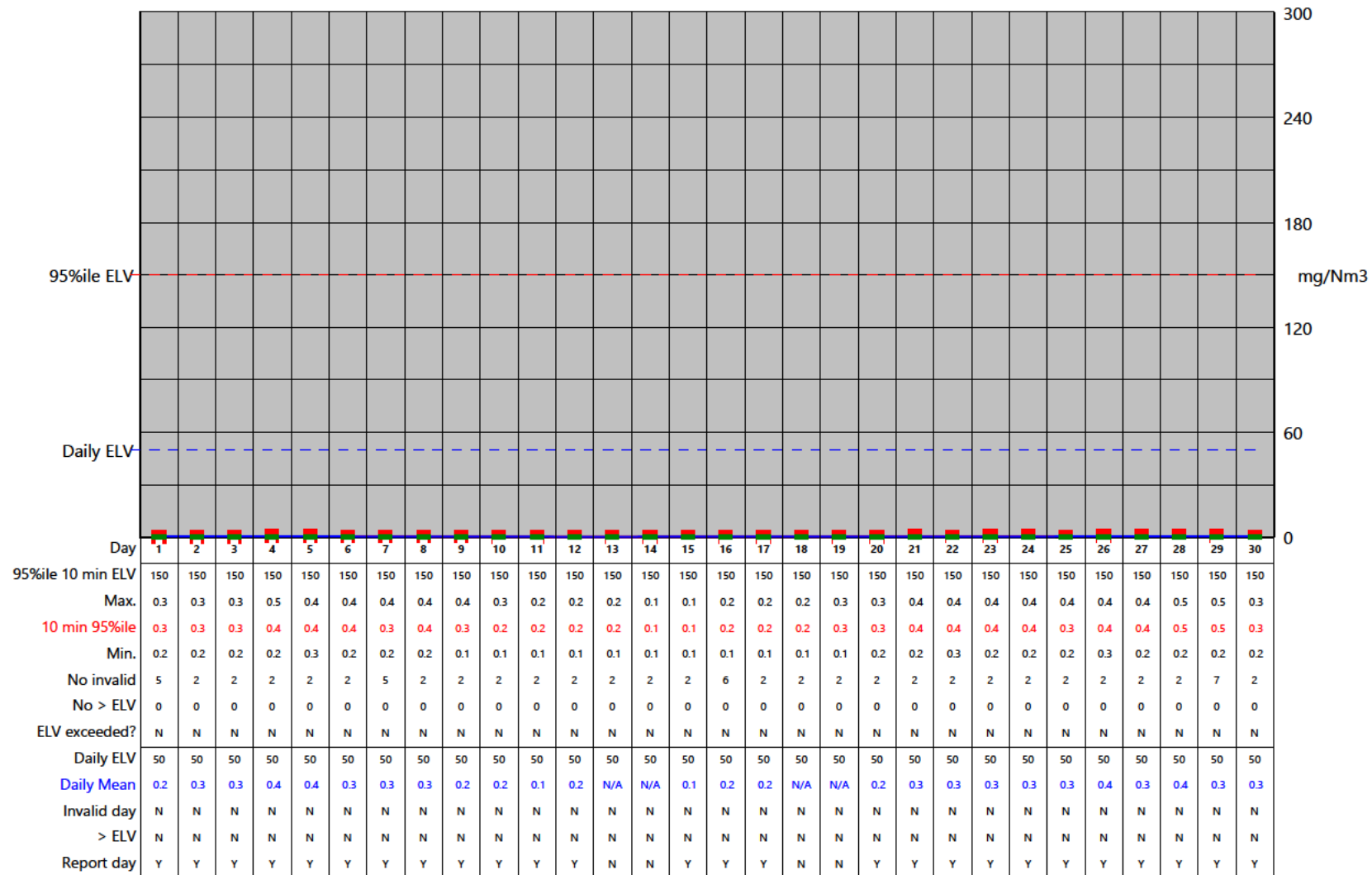
Data is as processed without repairs.

Signature

Authorised Representative

26/01/2024

Date

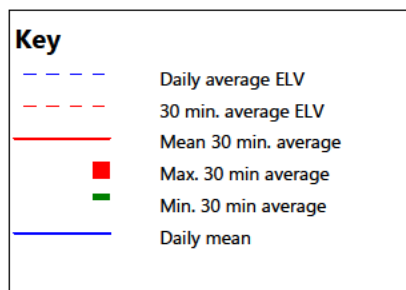


Signature

26/01/2024

Date

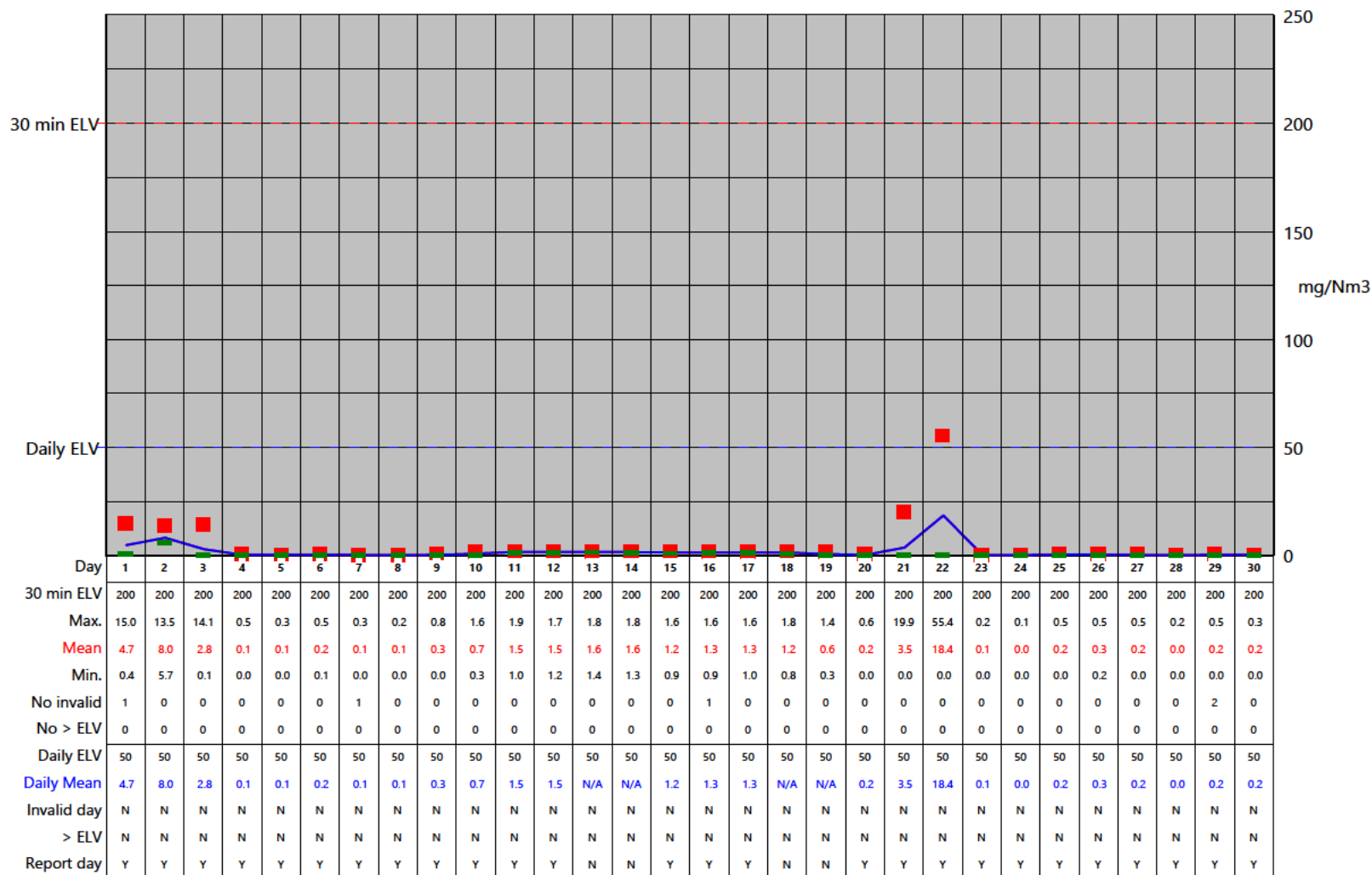
Reporting of Continuously Monitored Emissions to Air for SO₂, Emission Point A14 - TTP for Nov, 2023



95th Percentile = 8.9

No. of valid averages = 1387

Month summary	
30 min ELV	
Monthly max.	55.4
Monthly mean	1.8
Monthly min.	0.0
Total invalid	5
Sum > ELV	0
Daily ELV	
Monthly max	18.4
No. invalid days	0
No. > ELV	0
No. report days	26



Data is as processed without repairs.

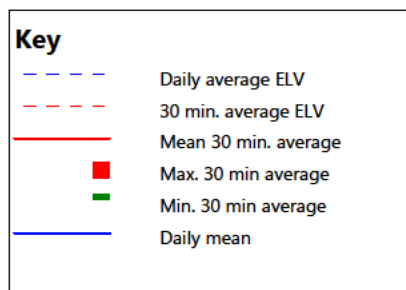
Signature

Authorised Representative

26/01/2024

Date

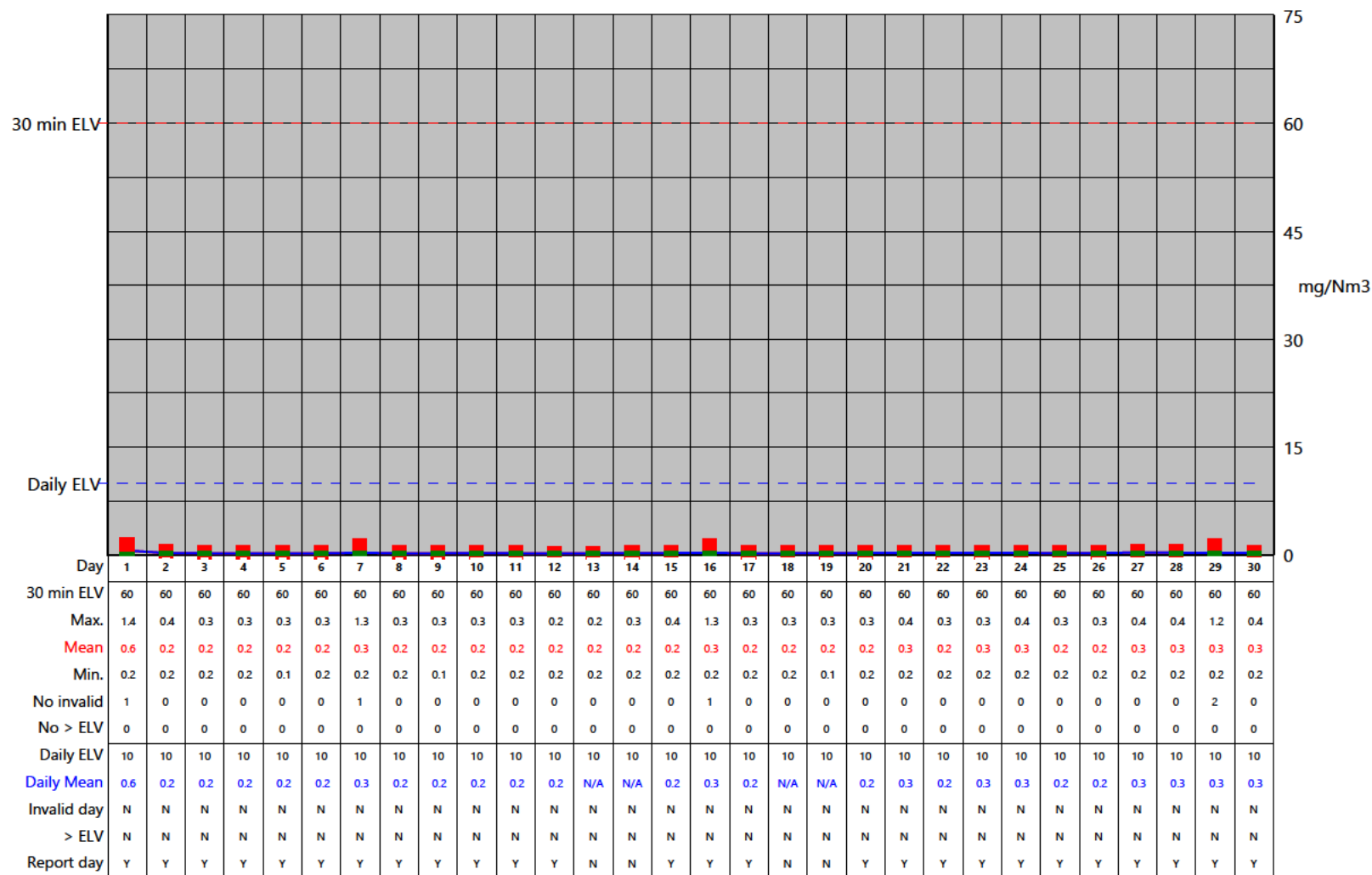
Reporting of Continuously Monitored Emissions to Air for HCl, Emission Point A14 - TTP for Nov, 2023



95th Percentile = 0.3

No. of valid averages = 1387

Month summary	
30 min ELV	
Monthly max.	1.4
Monthly mean	0.2
Monthly min.	0.1
Total invalid	5
Sum > ELV	0
Daily ELV	
Monthly max	0.6
No. invalid days	0
No. > ELV	0
No. report days	26



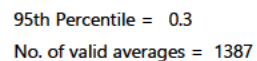
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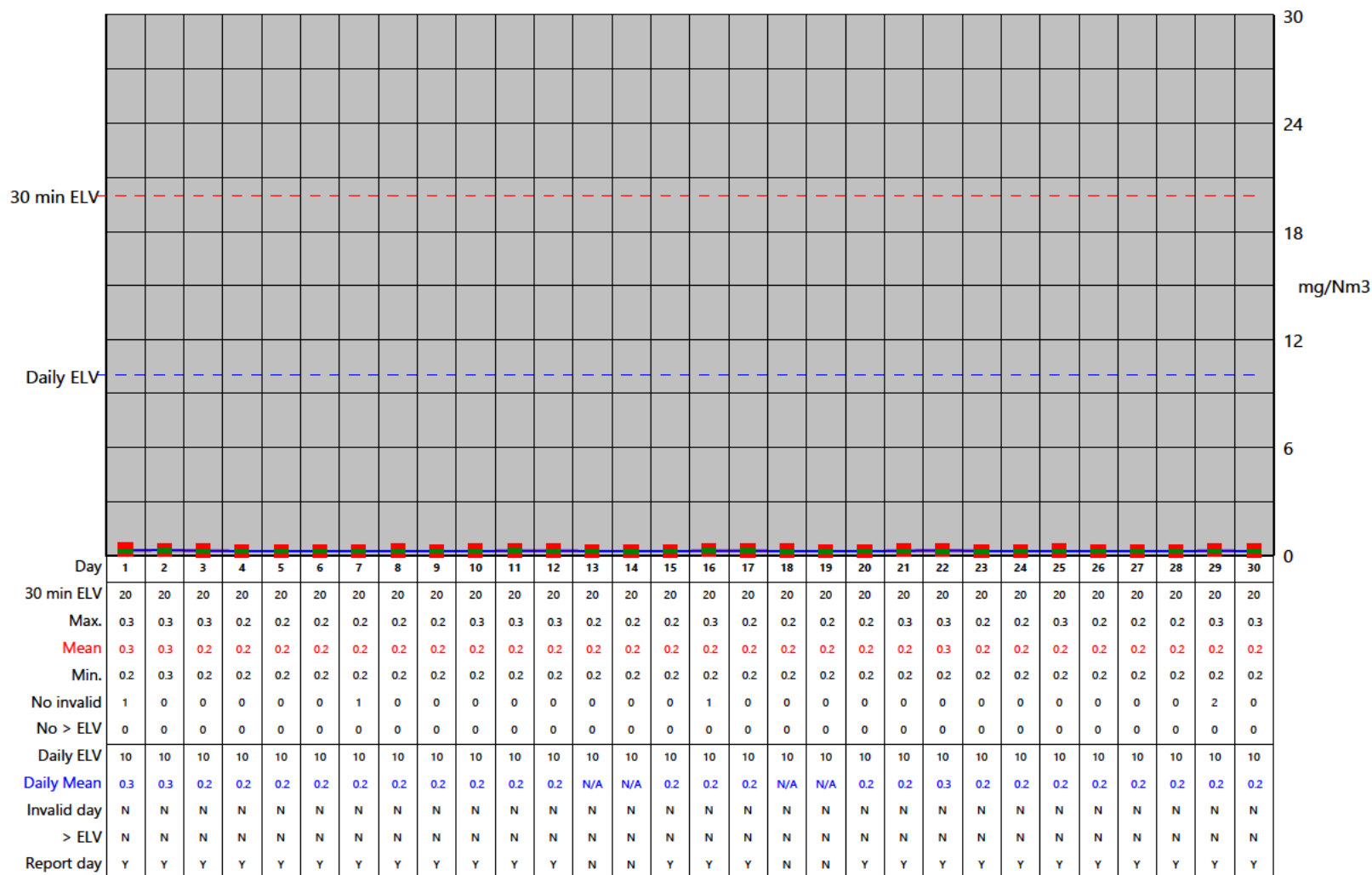
Authorized Representative

26/01/2024

Date _____



Month summary	
30 min ELV	
Monthly max.	0.3
Monthly mean	0.2
Monthly min.	0.2
Total invalid	5
Sum > ELV	0
Daily ELV	
Monthly max	0.3
No. invalid days	0
No. > ELV	0
No. report days	26



Data is as processed without repairs.

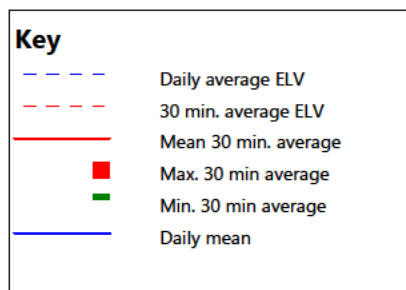
Signature

Authorised Representative

26/01/2024

Date _____

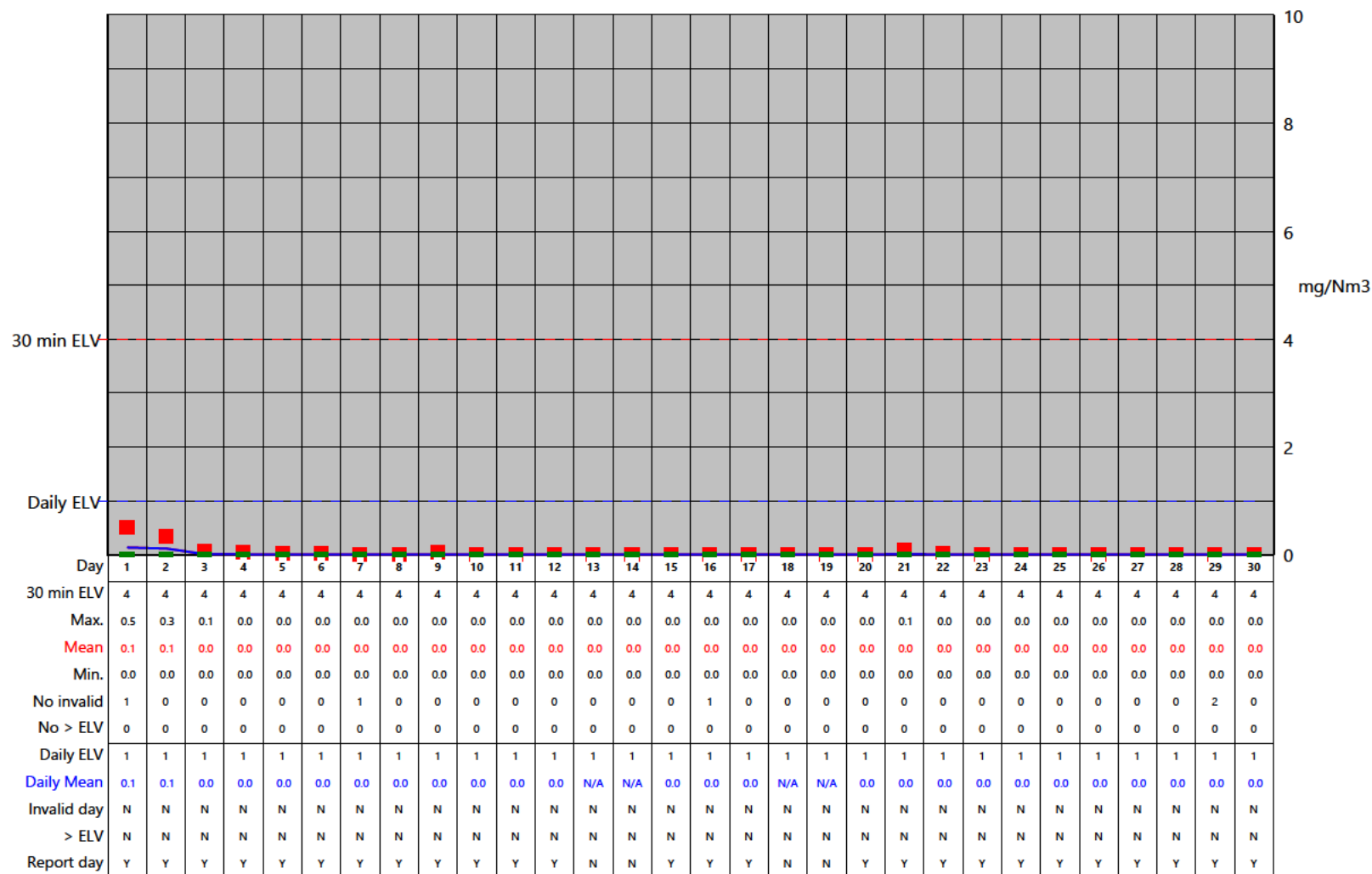
Reporting of Continuously Monitored Emissions to Air for HF, Emission Point A14 - TTP for Nov, 2023



95th Percentile = 0.0

No. of valid averages = 1387

Month summary	
30 min ELV	
Monthly max.	0.5
Monthly mean	0.0
Monthly min.	0.0
Total invalid	5
Sum > ELV	0
Daily ELV	
Monthly max	0.1
No. invalid days	0
No. > ELV	0
No. report days	26



Data is as processed without repairs.

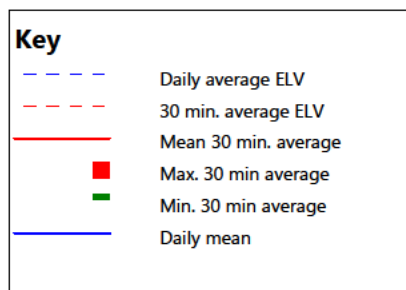
Signature

Authorised Representative

26/01/2024

Date

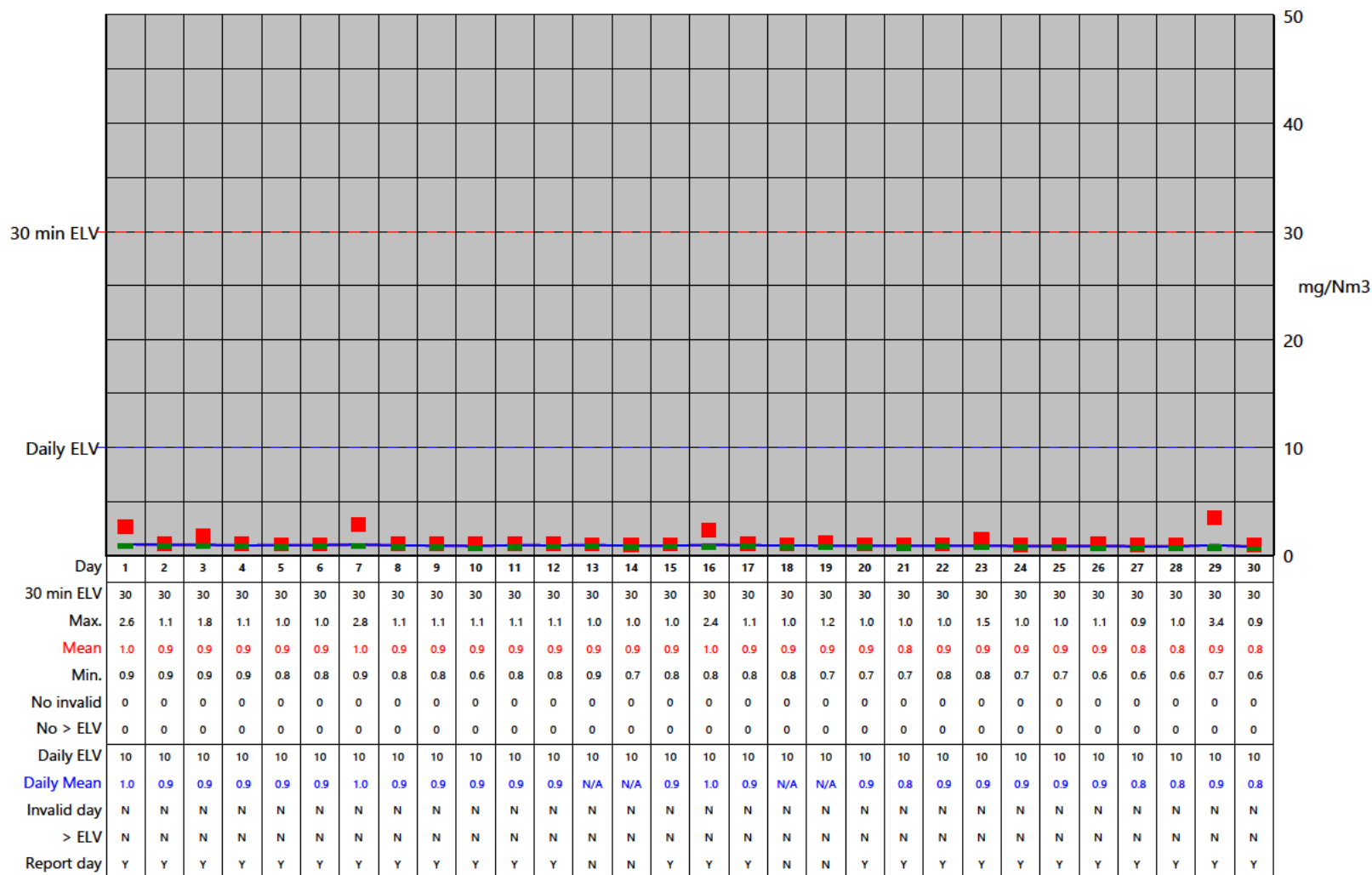
Reporting of Continuously Monitored Emissions to Air for Dust, Emission Point A14 - TTP for Nov, 2023



95th Percentile = 1.0

No. of valid averages = 1392

Month summary	
30 min ELV	
Monthly max.	3.4
Monthly mean	0.9
Monthly min.	0.6
Total invalid	0
Sum > ELV	0
Daily ELV	
Monthly max	1.0
No. invalid days	0
No. > ELV	0
No. report days	26



Data is as processed without repairs.

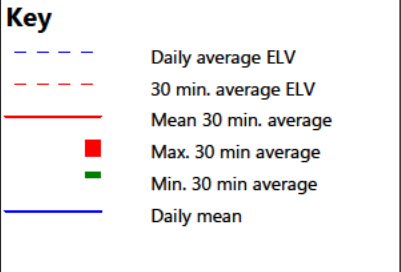
Signature

Authorized Representative

26/01/2024

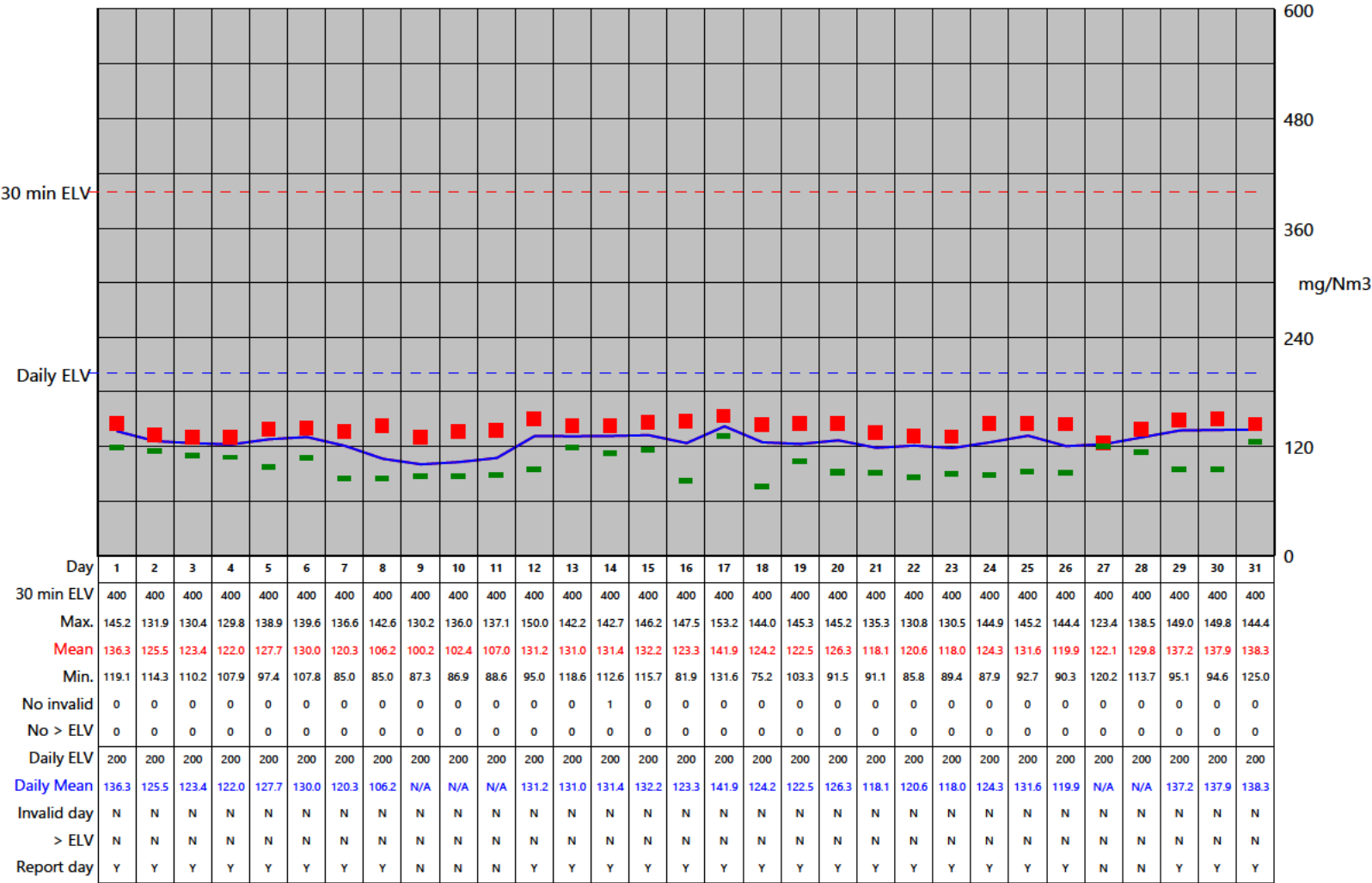
Date

Reporting of Continuously Monitored Emissions to Air for NO_x, Emission Point A14 - TTP for Dec, 2023



95th Percentile = 143.8
No. of valid averages = 1370

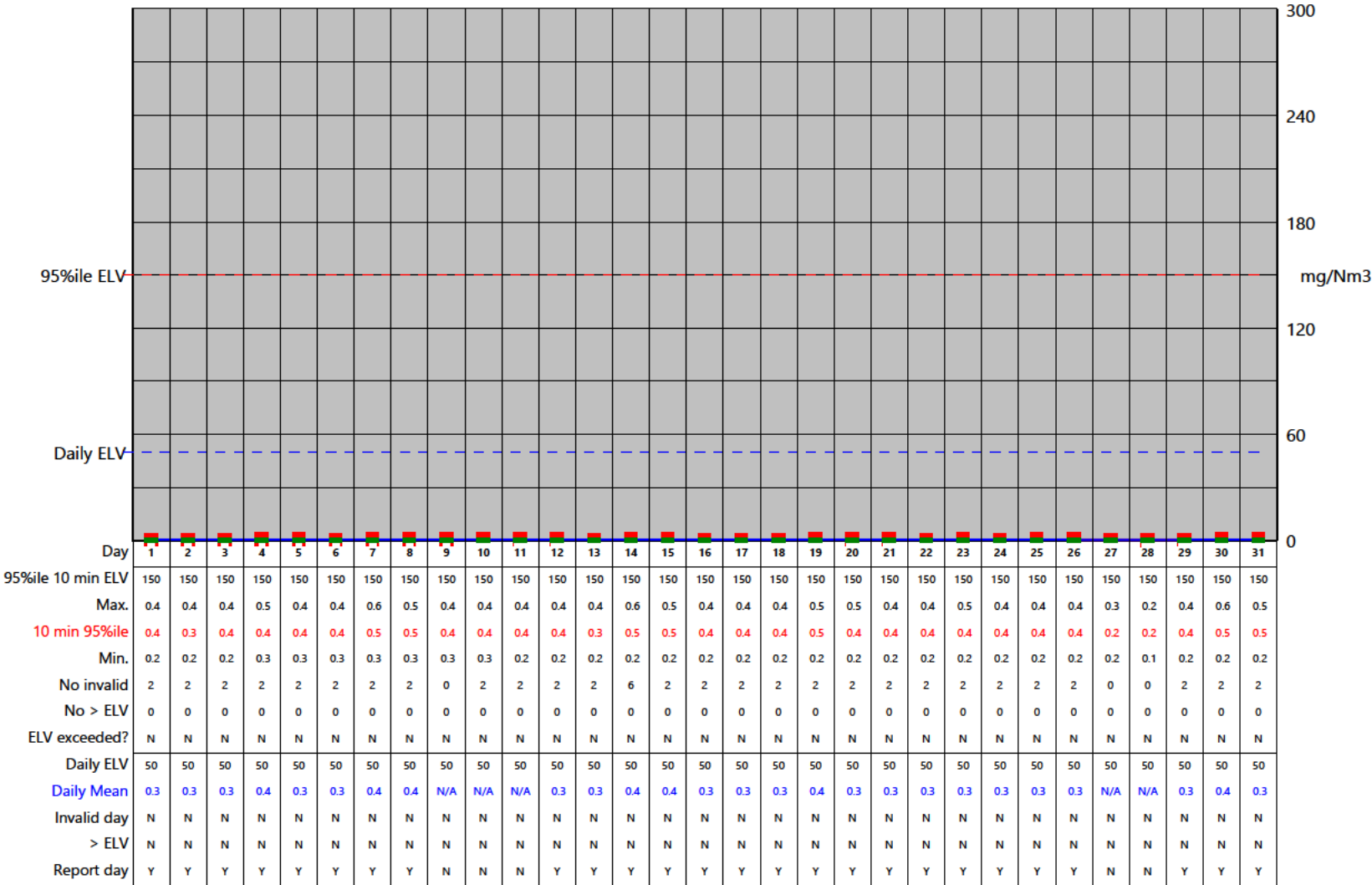
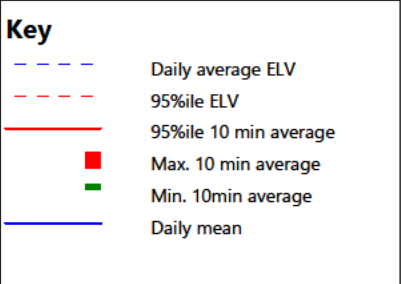
Month summary	
30 min ELV	
Monthly max.	153.2
Monthly mean	125.2
Monthly min.	75.2
Total invalid	1
Sum > ELV	0
Daily ELV	
Monthly max	141.9
No. invalid days	0
No. > ELV	0
No. report days	26



Data is as processed without repairs.

Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for CO, Emission Point A14 - TTP for Dec, 2023

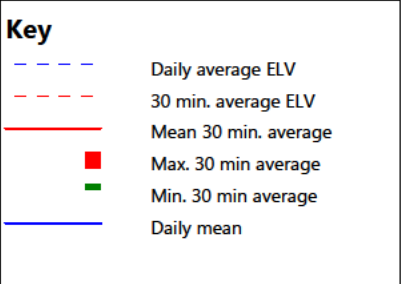


Month summary	
10 minute data	
Monthly max.	0.6
Monthly mean	0.3
Monthly min.	0.1
Total invalid	60
Sum > ELV	0
Total %ile exceed.	0
Daily ELV	
Monthly max	0.4
No. invalid days	0
No. > ELV	0
No. report days	26

Data is as processed without repairs.

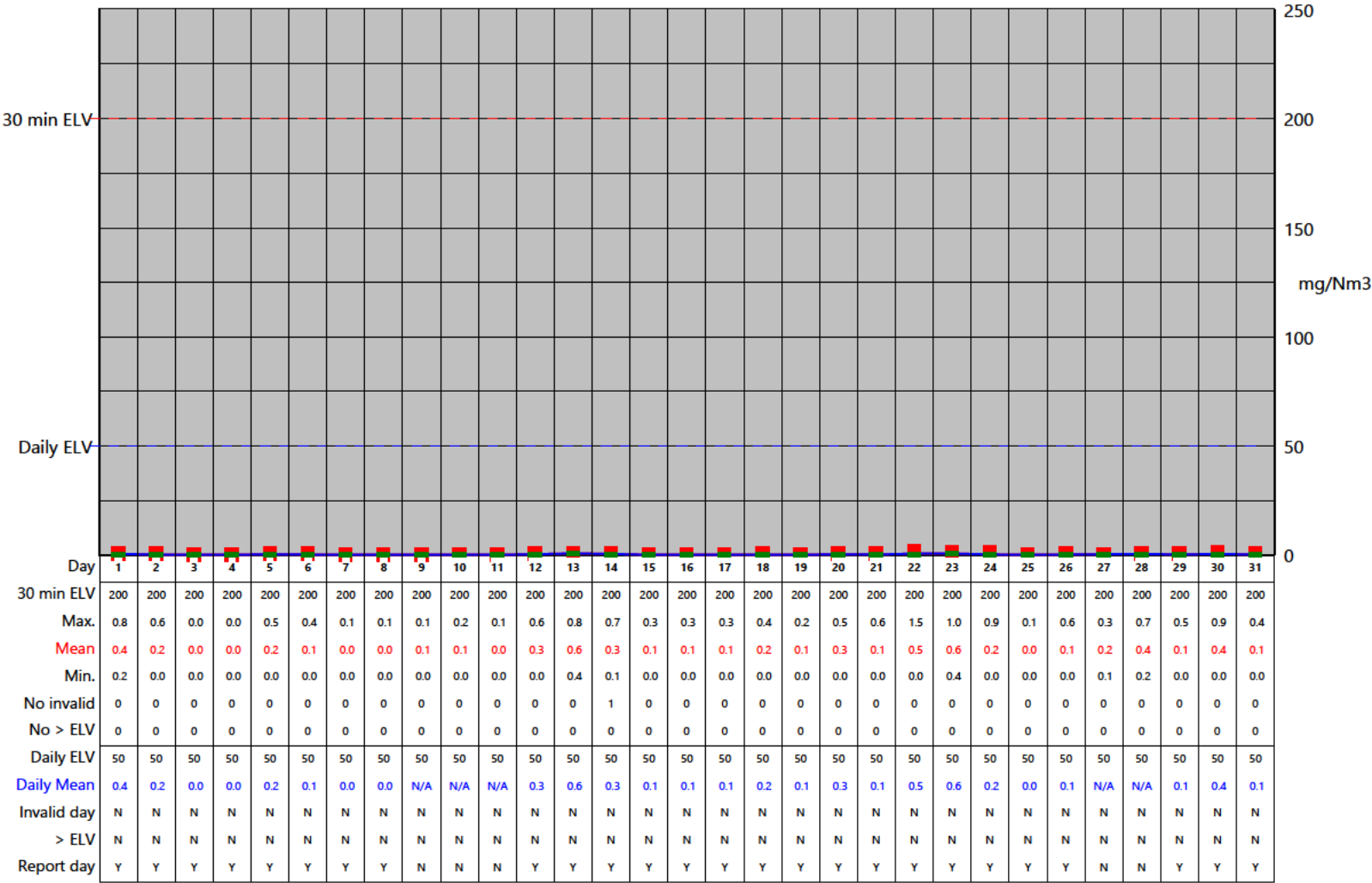
Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for SO₂, Emission Point A14 - TTP for Dec, 2023



95th Percentile = 0.7
No. of valid averages = 1370

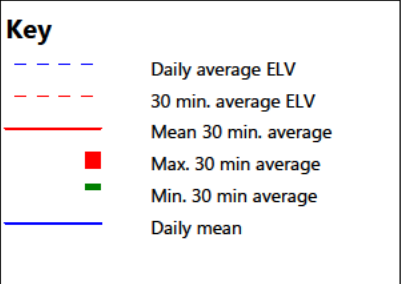
Month summary	
30 min ELV	
Monthly max.	1.5
Monthly mean	0.2
Monthly min.	0.0
Total invalid	1
Sum > ELV	0
Daily ELV	
Monthly max	0.6
No. invalid days	0
No. > ELV	0
No. report days	26



Data is as processed without repairs.

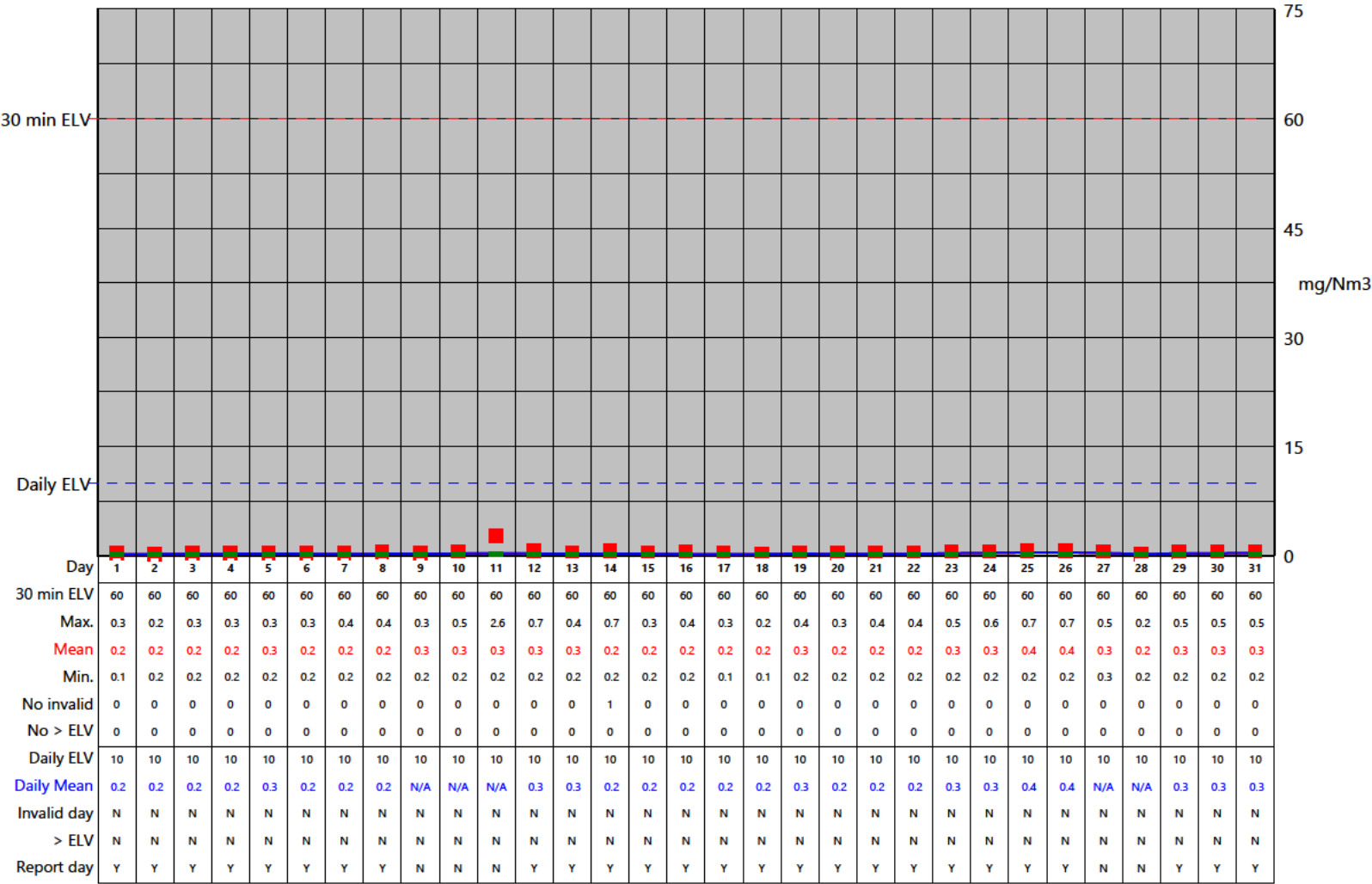
Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for HCl, Emission Point A14 - TTP for Dec, 2023



95th Percentile = 0.5
No. of valid averages = 1370

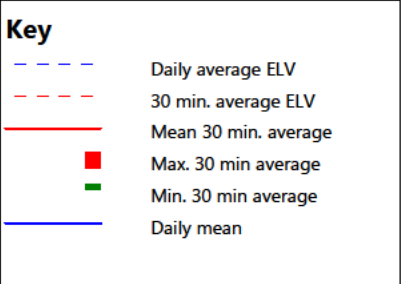
Month summary	
30 min ELV	
Monthly max.	2.6
Monthly mean	0.3
Monthly min.	0.1
Total invalid	1
Sum > ELV	0
Daily ELV	
Monthly max	0.4
No. invalid days	0
No. > ELV	0
No. report days	26



Data is as processed without repairs.

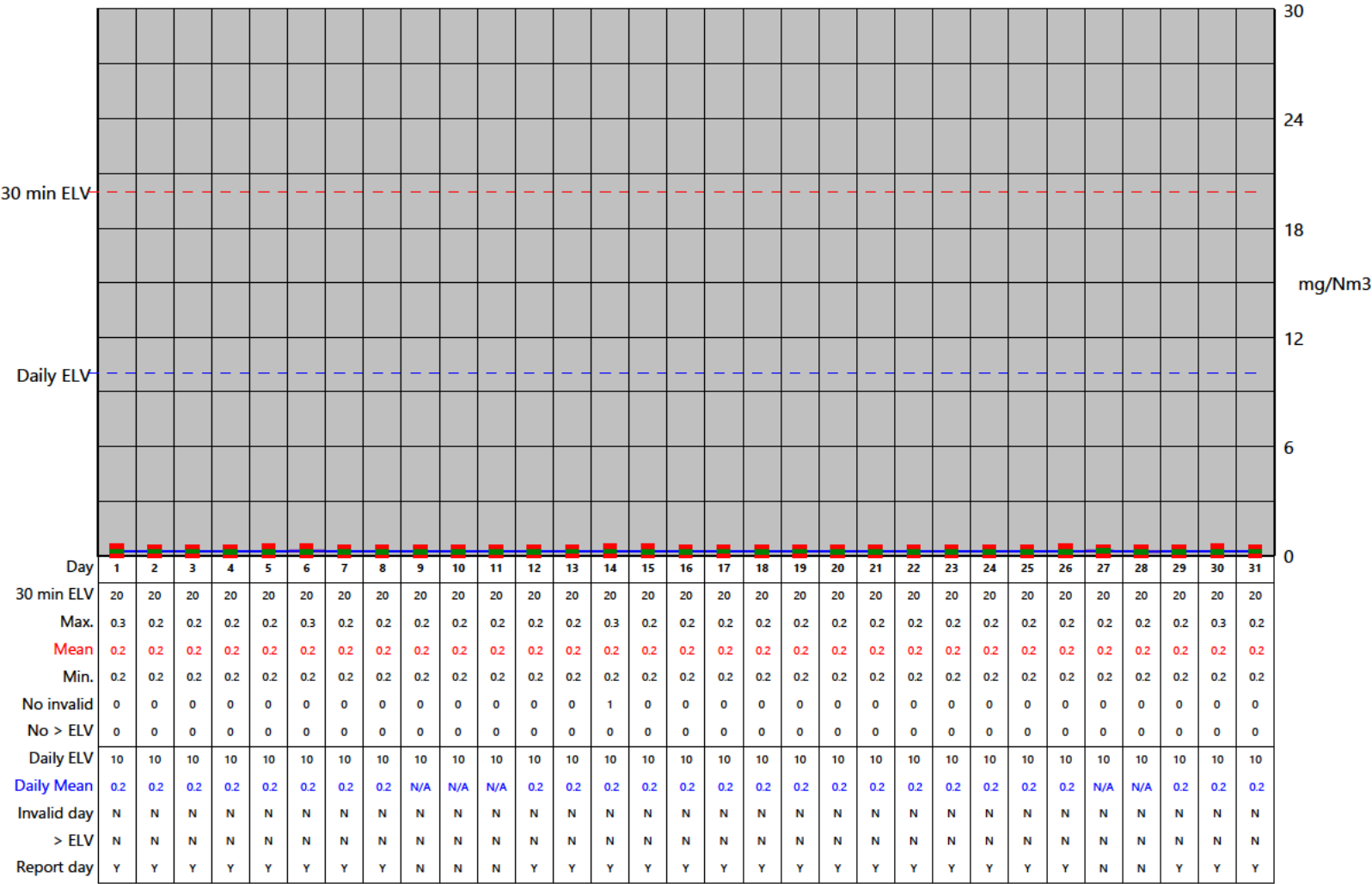
Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for TOC, Emission Point A14 - TTP for Dec, 2023



95th Percentile = 0.2
No. of valid averages = 1370

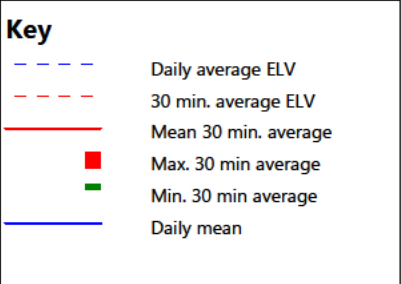
Month summary	
30 min ELV	
Monthly max.	0.3
Monthly mean	0.2
Monthly min.	0.2
Total invalid	1
Sum > ELV	0
Daily ELV	
Monthly max	0.2
No. invalid days	0
No. > ELV	0
No. report days	26



Data is as processed without repairs.

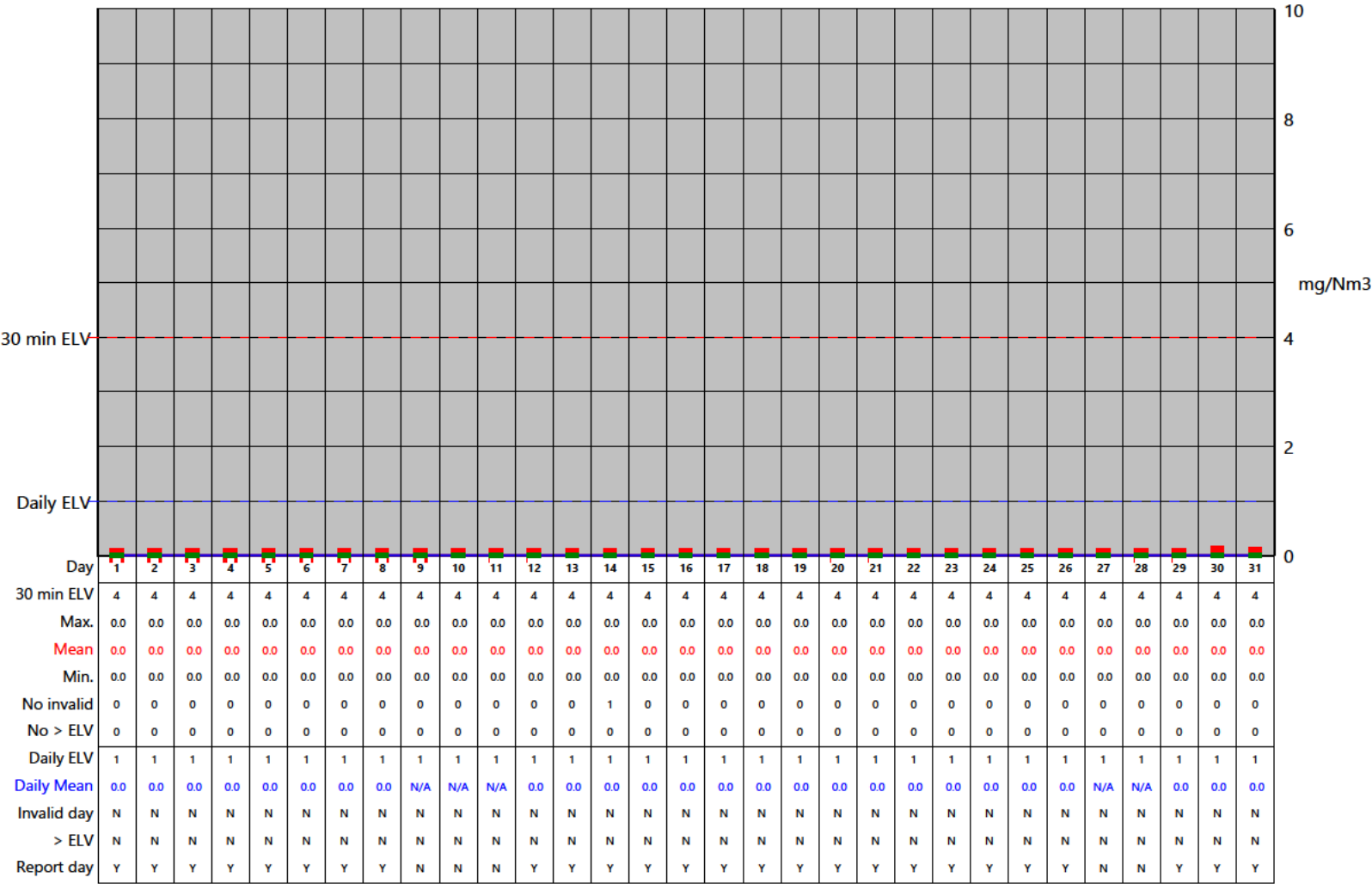
Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for HF, Emission Point A14 - TTP for Dec, 2023



95th Percentile = 0.0
No. of valid averages = 1370

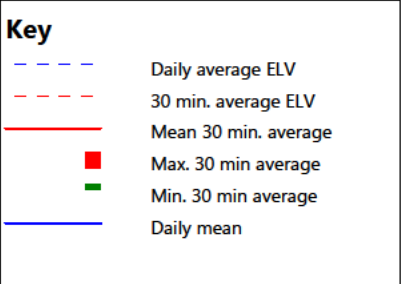
Month summary	
30 min ELV	
Monthly max.	0.0
Monthly mean	0.0
Monthly min.	0.0
Total invalid	1
Sum > ELV	0
Daily ELV	
Monthly max	0.0
No. invalid days	0
No. > ELV	0
No. report days	26



Data is as processed without repairs.

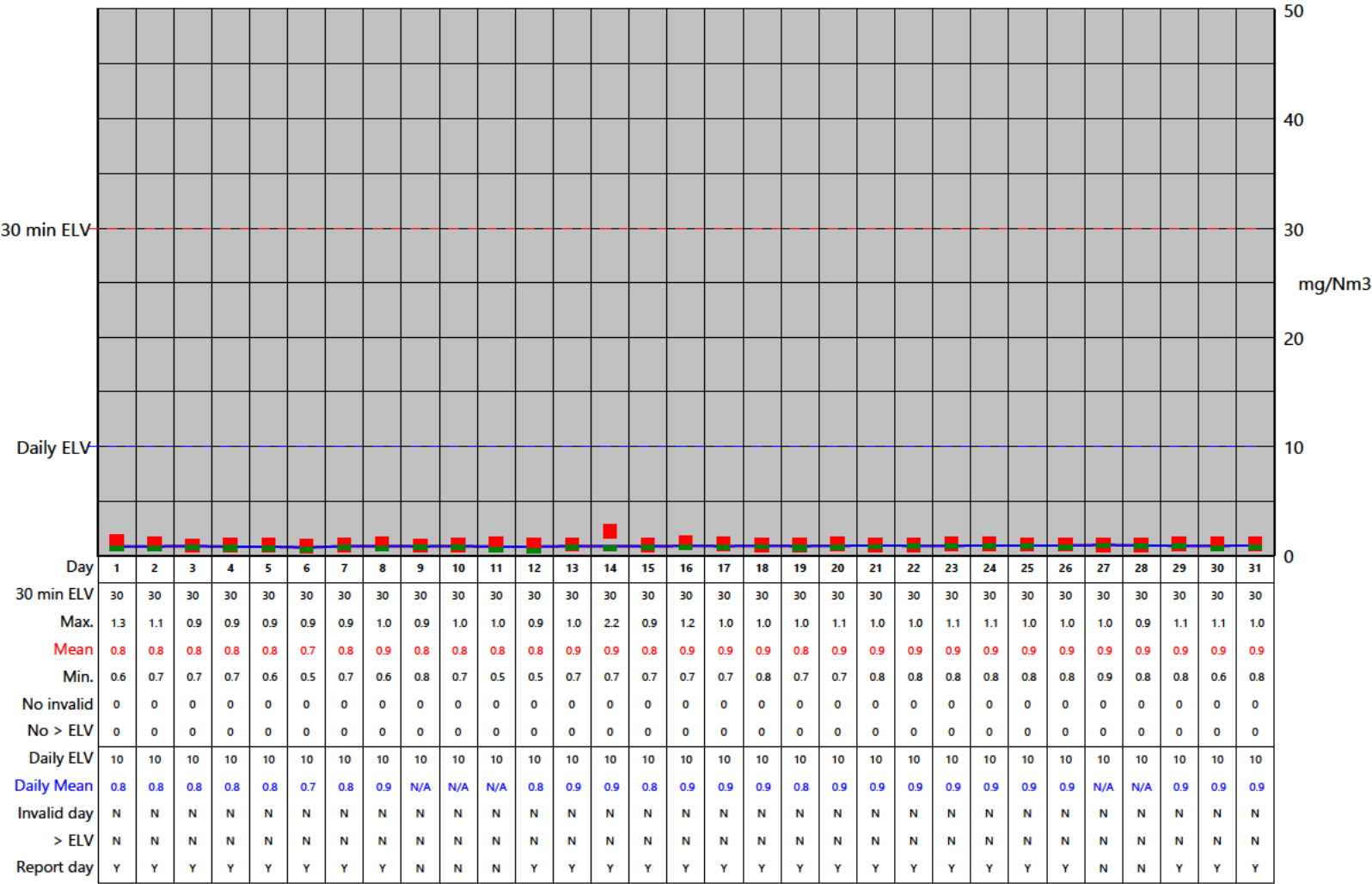
Signature 
Authorised Representative
Date 26/01/2024

Reporting of Continuously Monitored Emissions to Air for Dust, Emission Point A14 - TTP for Dec, 2023



95th Percentile = 1.0
No. of valid averages = 1371

Month summary	
30 min ELV	
Monthly max.	2.2
Monthly mean	0.9
Monthly min.	0.5
Total invalid	0
Sum > ELV	0
Daily ELV	
Monthly max	0.9
No. invalid days	0
No. > ELV	0
No. report days	26



Data is as processed without repairs.

Signature 
Authorised Representative
Date 26/01/2024