

Northern Bus Garage

Noise, Vibration, and Dust Monitoring Report (December 2025)

Noise, Vibration, and Dust levels were monitored as part of the reconstruction of Northern Bus Garage, 4615 14th Street, NW, Washington, DC, for the month of December 2025.

The following memorandum identifies the monitoring points and instruments, presents the data, and provides a brief analysis of the results per monthly monitoring report attached by Geo Instruments for Clark Construction. The report is organized by medium: noise, vibration, and dust. Figures and graphs are attached. The red dashed line on each of the graphs represents the monitoring thresholds, which are summarized below for each instrument.

Noise Monitoring

Five noise monitors are positioned around the perimeter of the project site. (See Figure 1) Under DC regulations, the regulatory standard is 80 dBA, measured 25 ft from the property line (20 DCMR 2802.1). Because the noise monitoring devices are placed on the property line (rather than a 25 ft offset), the monitoring threshold for site activities is adjusted to 85 dBA (assuming the noise level will dissipate). Noise levels and vibration levels were measured automatically with Micromate and Geophone Instrument.

Numerous noise level exceedances at all hours of the day and all days of the week. Mic1, Mic3, and Mic5 recorded over 40% of their exceedances out of working hours. Mic1, Mic3, and Mic4 all had their loudest exceedances outside of working hours.

Please see Table 1 (The “Work Hours” category includes all weekend shifts and evening shifts that were worked during the month).

Vibration Monitoring

Five vibration monitors are positioned around the perimeter of the project site (See Figure 1). Vibration thresholds are based the WMATA Design Criteria. Monitors VM-1 and VM-2 are set at a lower vibration threshold due to their proximity to the historic façade, which is more sensitive to any movement. Noise levels and vibration levels were measured automatically with Micromate and Geophone Instrument.

Table 2

Instrument Type	Monitoring Threshold
Vibration Monitor (VM-1)	0.2 in/sec
Vibration Monitor (VM-2)	0.2 in/sec
Vibration Monitor (VM-3)	2.0 in/sec
Vibration Monitor (VM-4)	2.0 in/sec
Vibration Monitor (VM-5)	2.0 in/sec

Graphs showing monitoring results are presented in Graphs 1 to 5.

Vibration exceedances for the month of December are listed below. These exceedances at VM2 all align with the removal of facade bracing along 14th Street in the vicinity of VM2.

- VM2 – Exceedance with a reading of 0.288 in/sec on December 15 at 08:03.
- VM2 – Exceedance with a reading of 0.229 in/sec on December 15 at 08:12.
- VM2 – Exceedance with a reading of 0.223 in/sec on December 15 at 09:24.
- VM2 – Exceedance with a reading of 0.218 in/sec on December 15 at 10:18.
- VM2 – Exceedance with a reading of 0.326 in/sec on December 15 at 13:39.
- VM2 – Exceedance with a reading of 0.302 in/sec on December 18 at 10:39.

Dust Monitoring Threshold Values and Exceedances:

Three dust monitors are positioned at the project site. (See Figure 2) EPA regulatory thresholds are based on a 24-hour monitoring period; the project has adopted thresholds to monitor site levels and provide an indication of when EPA standards might be exceeded. (See Table 3) Dust measurements were monitored using Aeroqual Dust Sentry Pro.

Table 3

Dust Monitoring Measurement	Monitoring Threshold
Particulates (PM2.5)	40 µg/m ³
Particulates (PM10)	50 µg/m ³

No operating issue with the monitoring instruments was identified.

Graphs showing monitoring results are presented in Graphs 6 to 11.

Twelve air quality exceedances occurred during the month of December 2025. Details of these air quality exceedances can be found below.

- DM1 – Exceedance of the PM10 limit with a reading of 55 $\mu\text{g}/\text{m}^3$ on December 16 at 14:40.
- DM1 – Exceedance of the PM2.5 limit with a reading of 57 $\mu\text{g}/\text{m}^3$ on December 17 at 12:10.
- DM1 – Exceedance of the PM10 limit with a reading of 60 $\mu\text{g}/\text{m}^3$ on December 17 at 12:10.
- DM1 – Exceedance of the PM2.5 limit with a reading of 42 $\mu\text{g}/\text{m}^3$ on December 19 at 09:10.
- DM1 – Exceedance of the PM10 limit with a reading of 71 $\mu\text{g}/\text{m}^3$ on December 19 at 09:10.
- DM1 – Exceedance of the PM2.5 limit with a reading of 44 $\mu\text{g}/\text{m}^3$ on December 22 at 14:40.
- DM1 – Exceedance of the PM10 limit with a reading of 74 $\mu\text{g}/\text{m}^3$ on December 22 at 14:40.
- DM1 – Exceedance of the PM10 limit with a reading of 53 $\mu\text{g}/\text{m}^3$ on December 24 at 07:25.
- DM2 – Exceedance of the PM2.5 limit with a reading of 64 $\mu\text{g}/\text{m}^3$ on December 17 at 15:44.
- DM2 – Exceedance of the PM10 limit with a reading of 68 $\mu\text{g}/\text{m}^3$ on December 17 at 15:44.
- DM2 – Exceedance of the PM2.5 limit with a reading of 57 $\mu\text{g}/\text{m}^3$ on December 18 at 15:37.
- DM2 – Exceedance of the PM10 limit with a reading of 58 $\mu\text{g}/\text{m}^3$ on December 18 at 15:37.

Figure 1: Vibration and Noise Monitor Location Plan

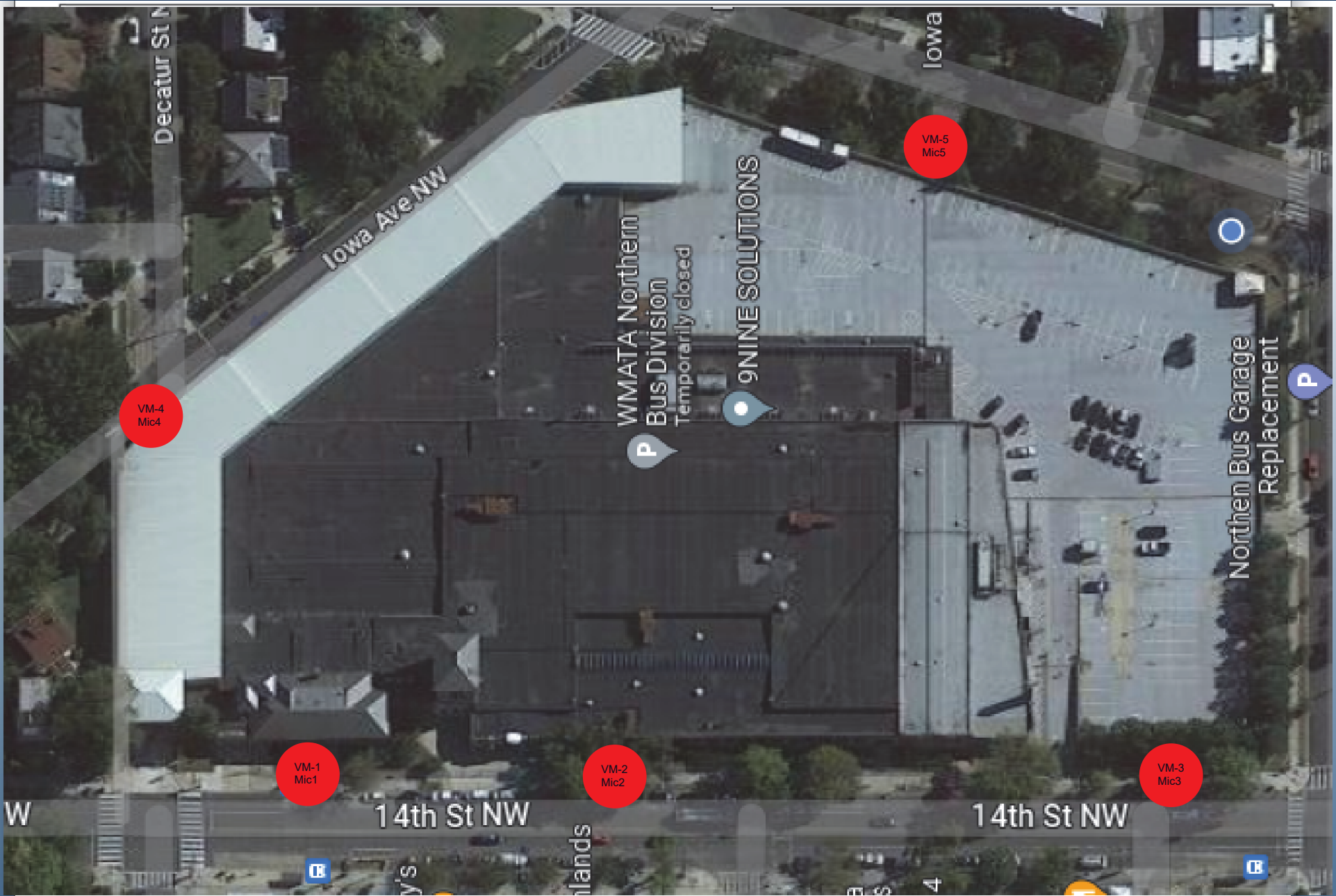


Figure 2: Dust Monitor Location Plan

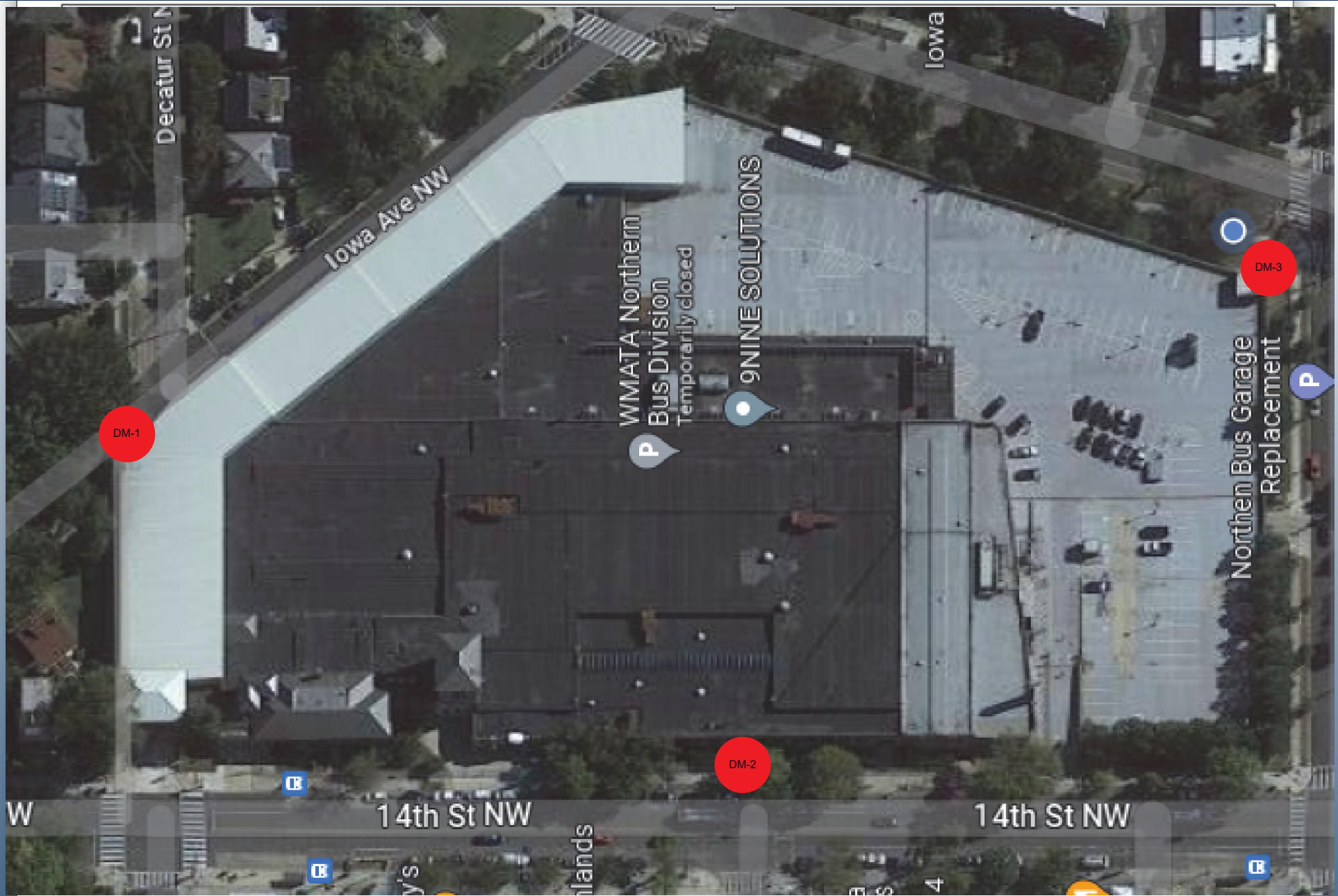


Table 1: Noise Summaries

These observations were made from the maximum values given in the following summary tables.

VM1-MIC		
	Exceedance	Percentage
Work hours	477	51.79%
After hours	244	26.49%
Weekends	200	21.72%
Total	921	100%

VM1-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	107.3	110	111.5
Lmin (dBA)	74	74.1	50.5
L10 (dBA)	84	76	74
L90 (dBA)	75	75	54
Leq (dBA)	79.1	80.7	81.2

VM2-MIC		
	Exceedance	Percentage
Work hours	423	72.56%
After hours	78	13.38%
Weekends	82	14.07%
Total	583	100%

VM2-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	116.7	106.1	106.6
Lmin (dBA)	78.1	60.6	53.8
L10 (dBA)	103	70	77
L90 (dBA)	82	62	56
Leq (dBA)	96.9	77.1	75.5

VM2-MIC		
	Exceedance	Percentage
Work hours	457	53.76%
After hours	213	25.06%
Weekends	180	21.18%
Total	850	100%

VM2-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	110	113	110.4
Lmin (dBA)	70.1	61.2	60.9
L10 (dBA)	79	71	77
L90 (dBA)	72	66	65
Leq (dBA)	79.1	80.8	78.4

VM4-MIC		
	Exceedance	Percentage
Work hours	316	87.53%
After hours	29	8.03%
Weekends	16	4.43%
Total	361	100%

VM4-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	101.4	93.3	106.3
Lmin (dBA)	70	42.8	51.2
L10 (dBA)	88	64	75
L90 (dBA)	72	48	63
Leq (dBA)	81.4	64.2	73

VM5-MIC		
	Exceedance	Percentage
Work hours	138	51.69%
After hours	60	22.47%
Weekends	69	25.84%
Total	267	100%

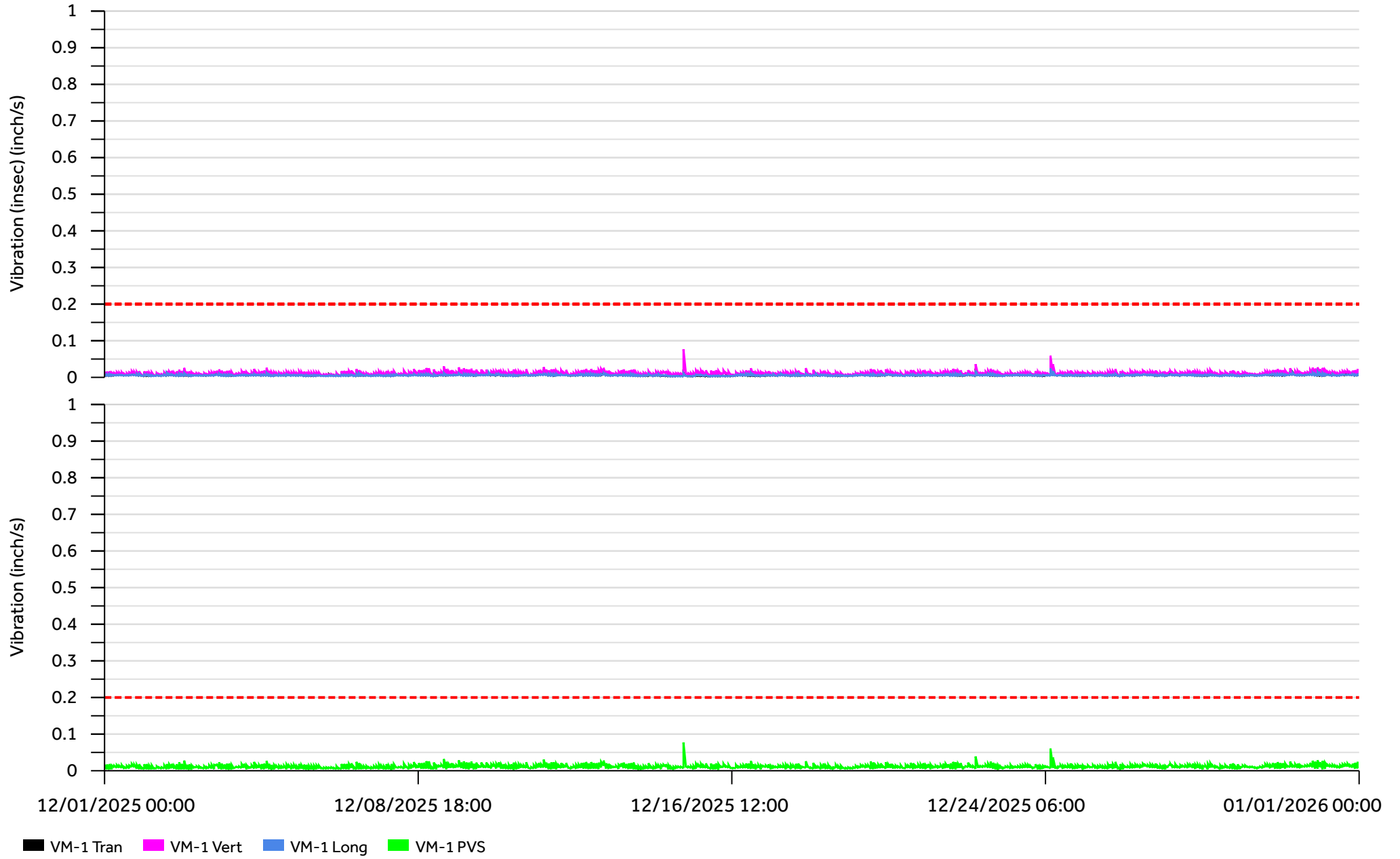
VM5-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	115.4	111.3	111.7
Lmin (dBA)	60.9	48.1	43.8
L10 (dBA)	83	69	70
L90 (dBA)	63	52	51
Leq (dBA)	86.2	80.1	82.1

Summary tables contain values for working hours, after hours, and weekend time periods:

- Lmax: Highest Maximum Noise Level recorded for the month, in dBA.
- Lmin: Highest Minimum Noise Level recorded for the month, in dBA.
- L10: Highest noise level that was exceeded 10% of the time of all recording periods this month, in dBA.

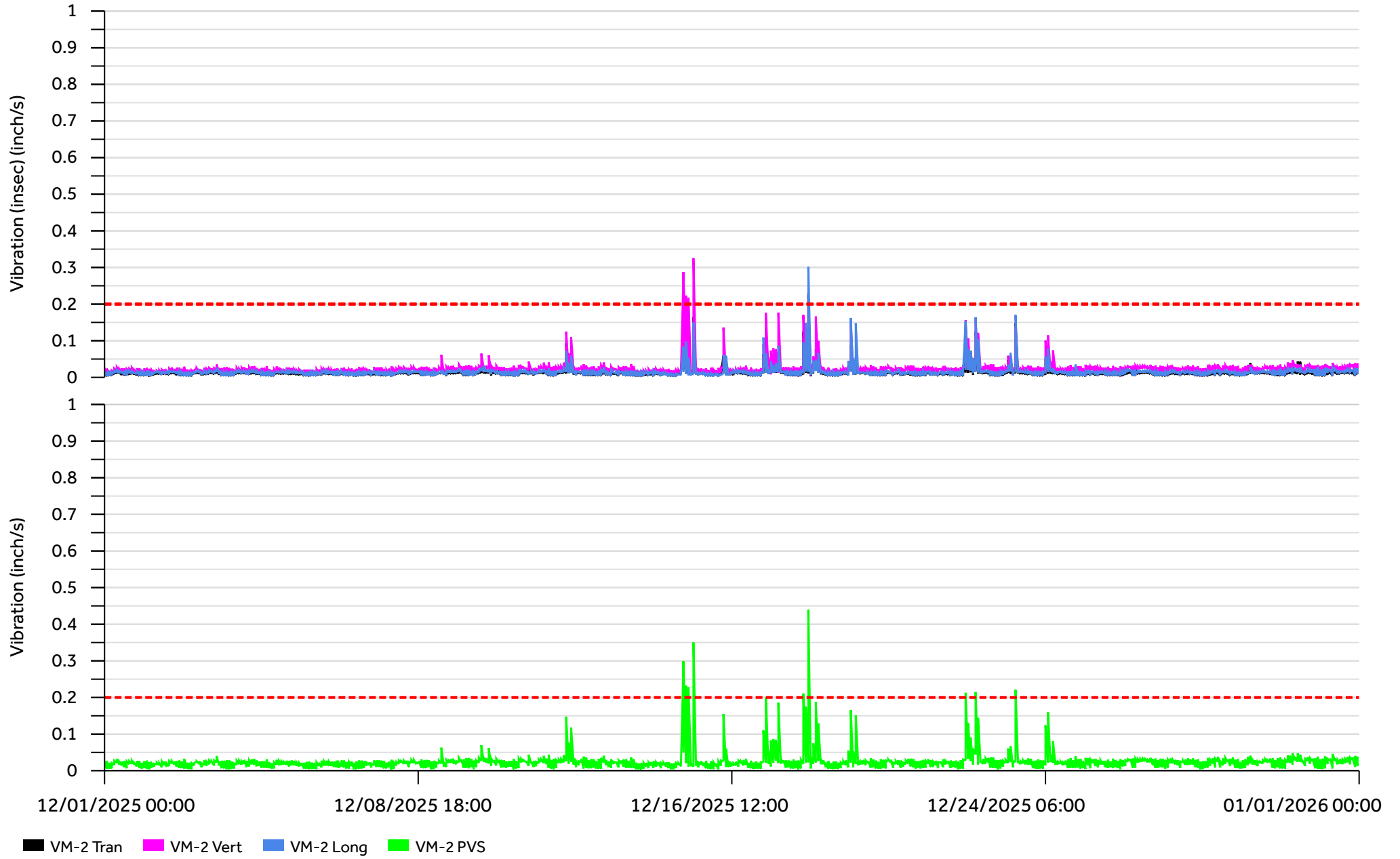
Graph 1

VM-1- Vibration Monitor



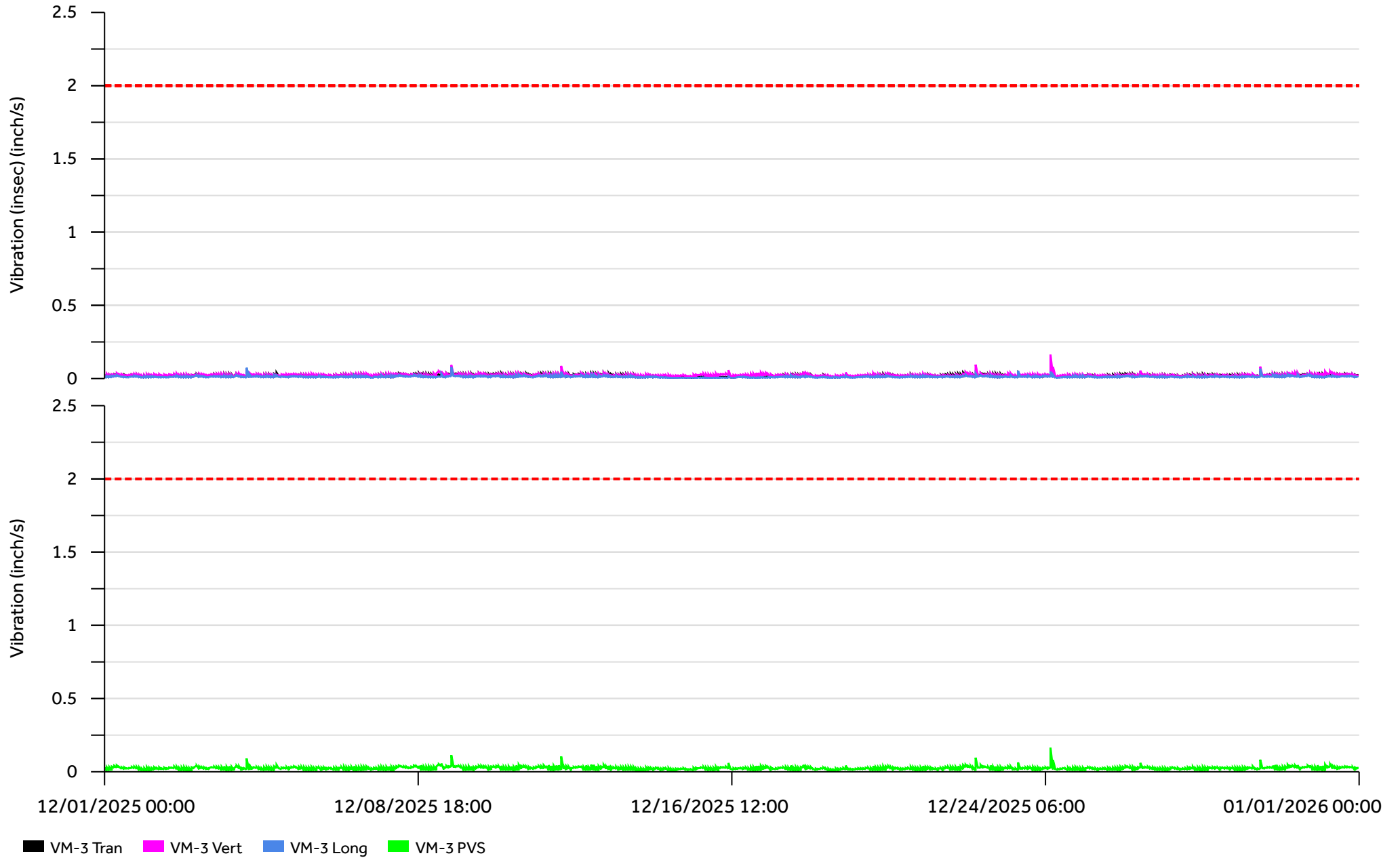
Graph 2

VM-2- Vibration Monitor



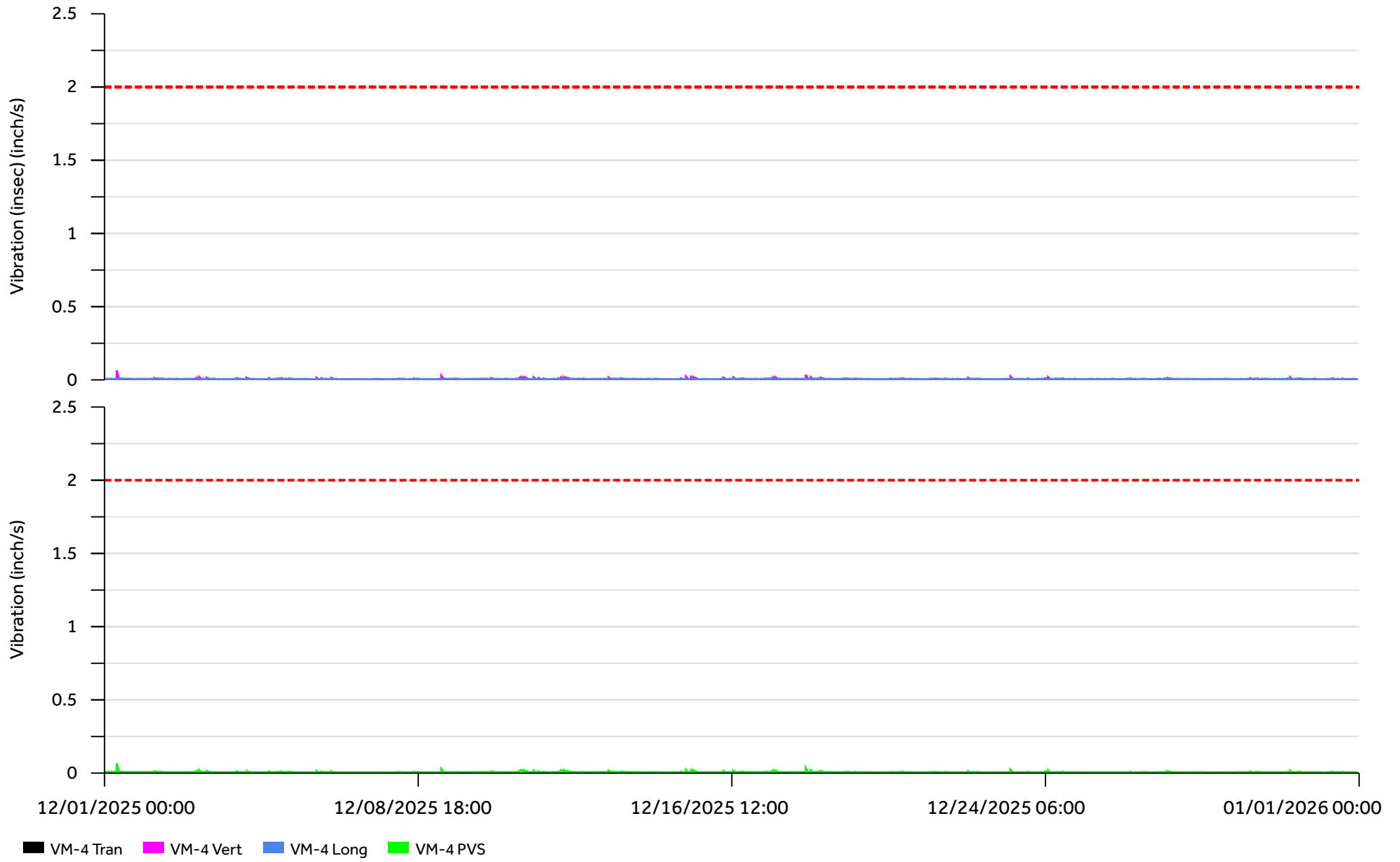
Graph 3

VM-3- Vibration Monitor



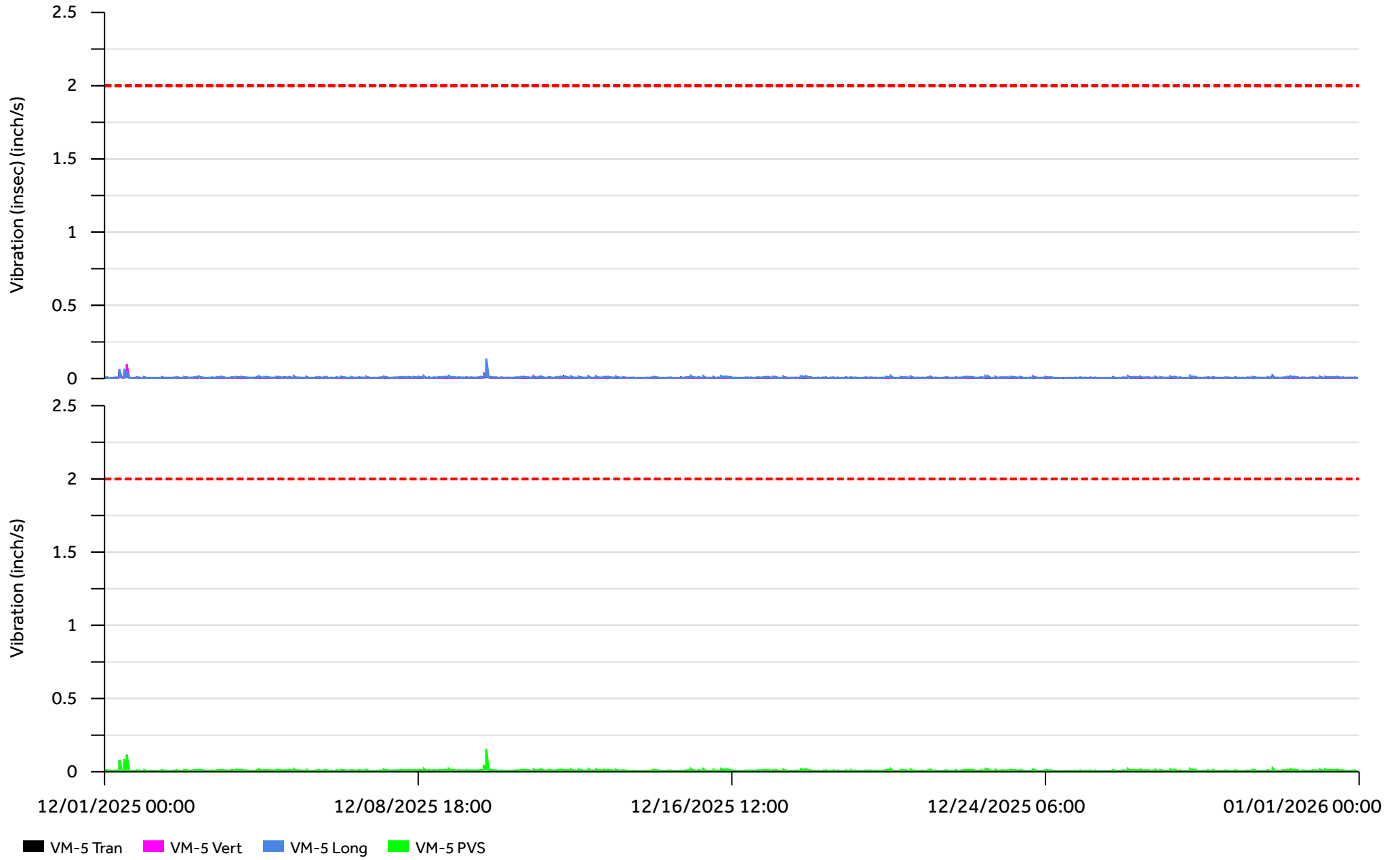
Graph 4

VM-4- Vibration Monitor



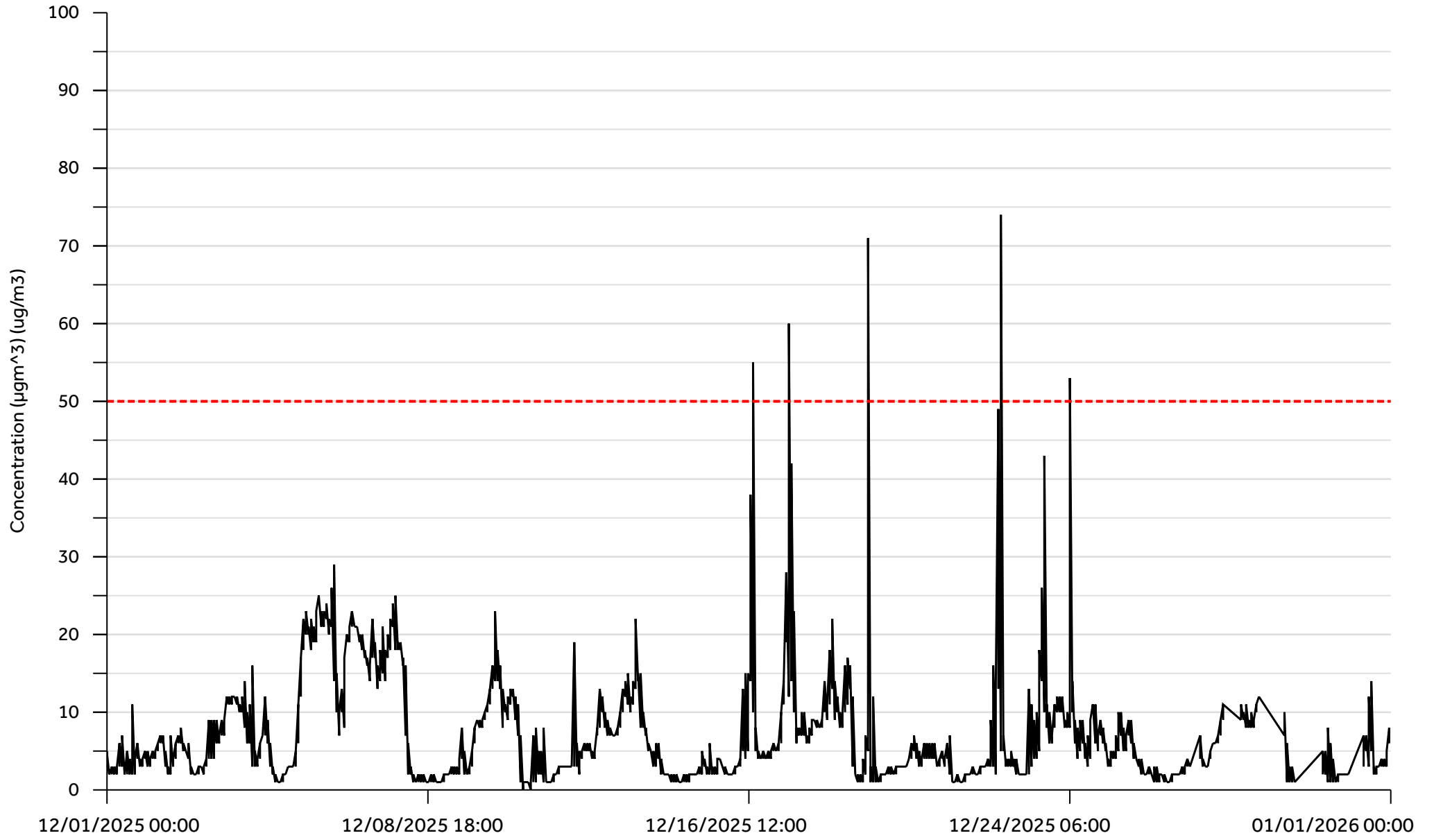
Graph 5

VM-5- Vibration Monitor



Graph 6

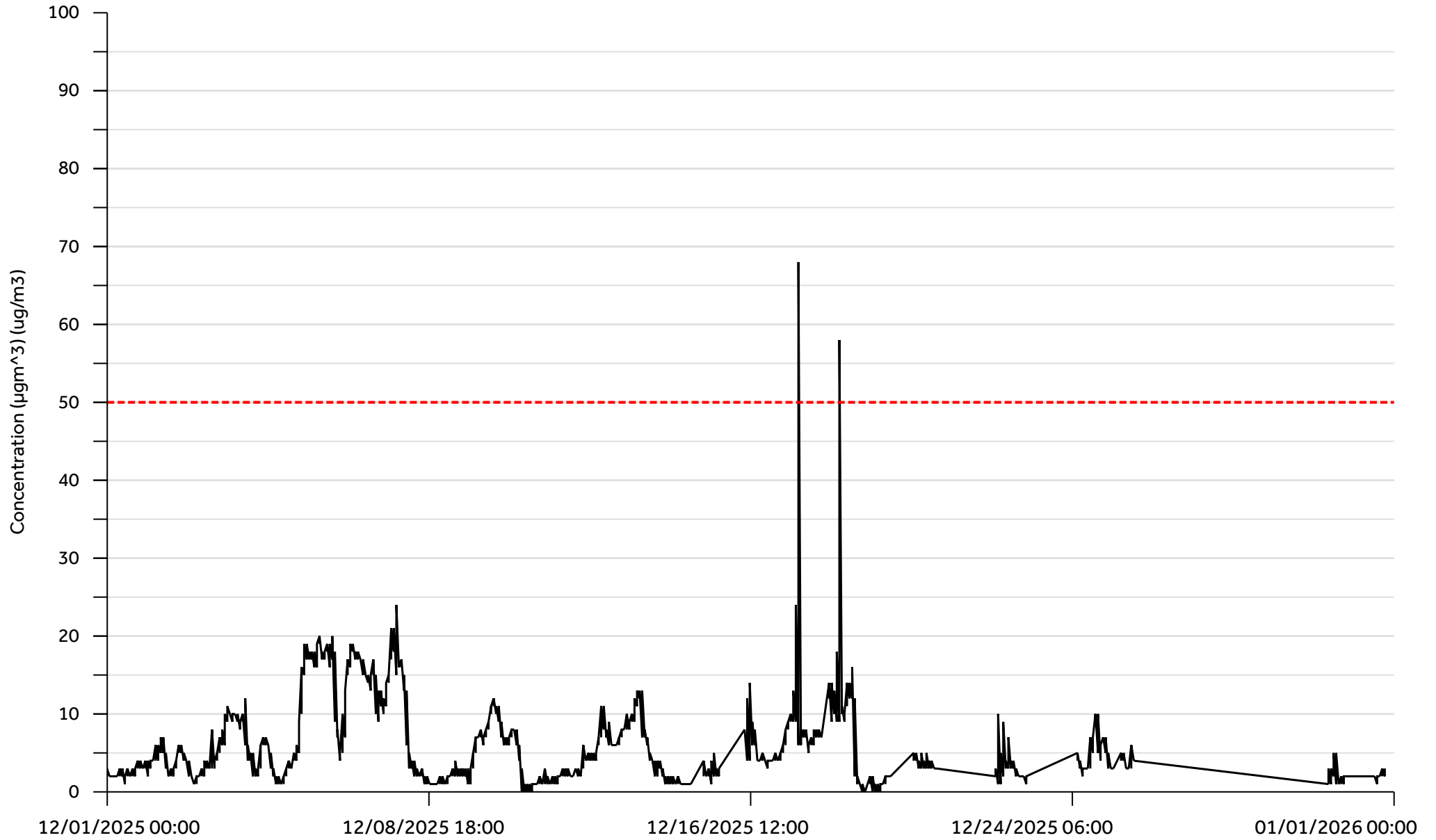
DM1 - PM10



■ DM1_PM10

Graph 7

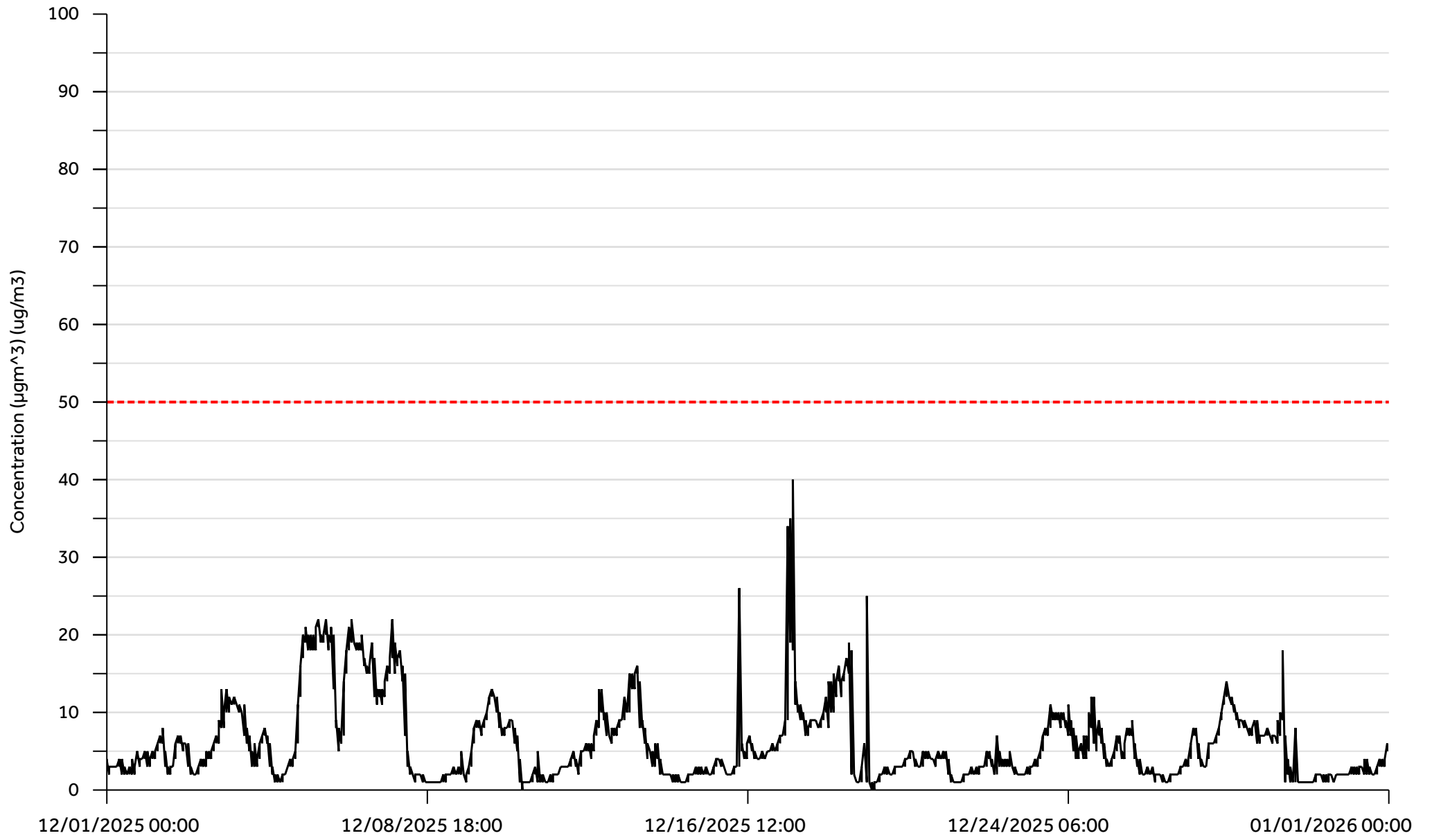
DM2-PM10



■ DM2_PM10

Graph 8

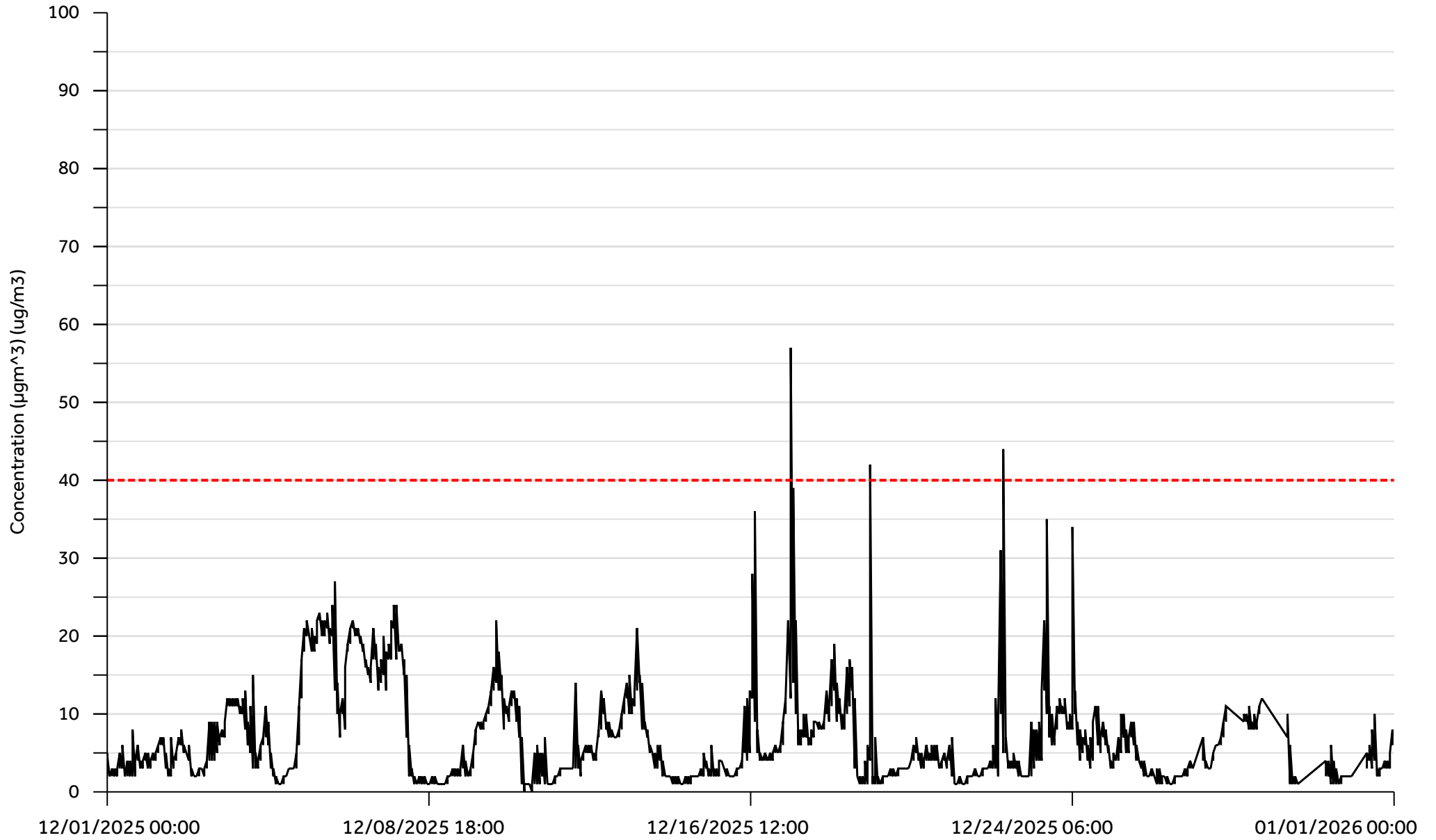
DM3-PM10



■ DM3_PM10

Graph 9

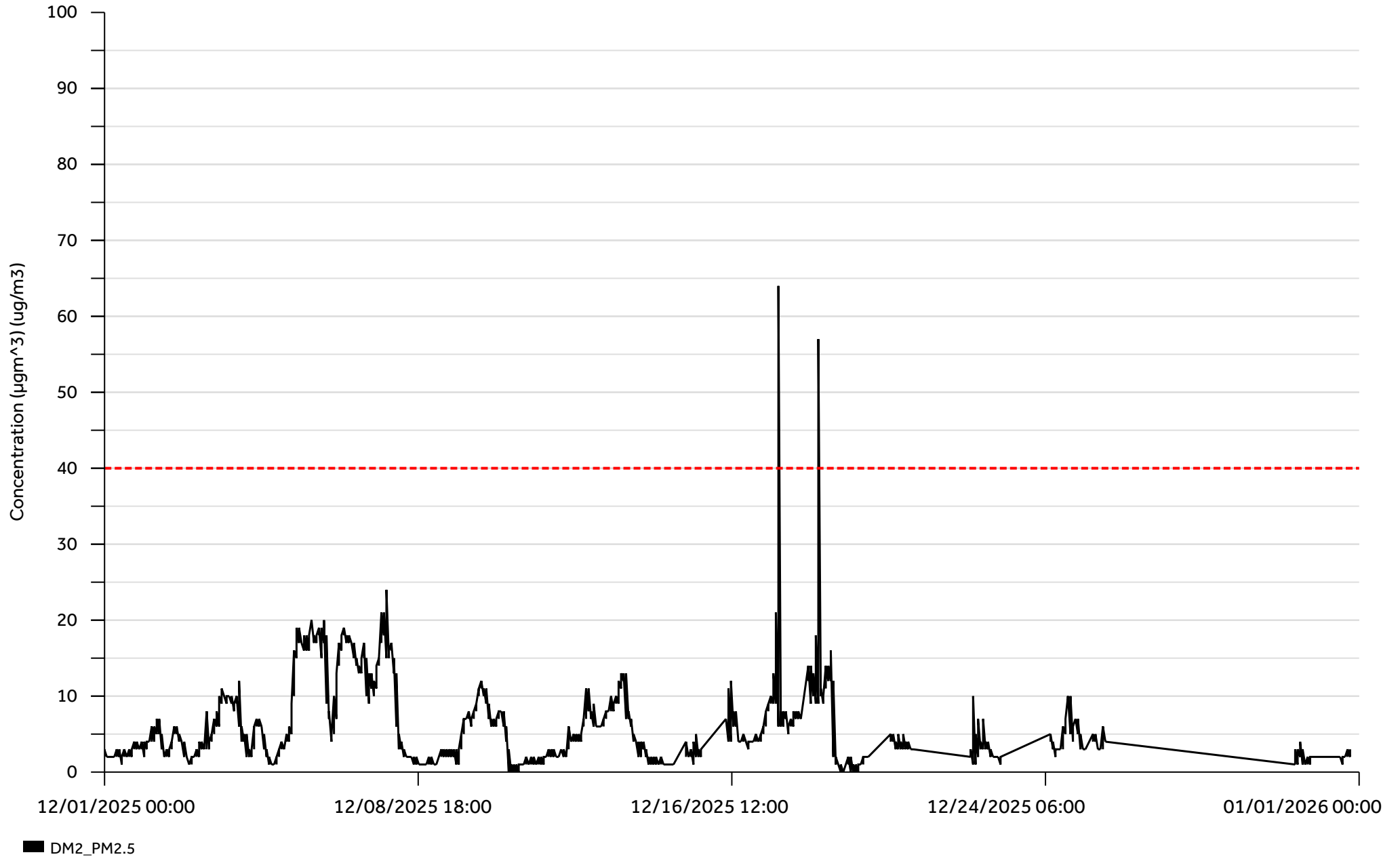
DM1-PM2.5



■ DM1_PM2.5

Graph 10

DM2-PM2.5



Graph 11

DM3-PM2.5

