

Northern Bus Garage

Noise, Vibration, and Dust Monitoring Report (June 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 June 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.

Mic1 was temporarily removed on May 23, 2025. The instrumentation was at risk of being damaged due to the work of Pepco's DC Plug Contractors. Mic1 was reinstalled on June 10, 2025.

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. Mic2 and Mic3 recorded 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

VM1 was temporarily removed on May 23, 2025. The instrumentation was at risk of being damaged due to the work of Pepco's DC Plug Contractors. VM1 was reinstalled on June 10, 2025.

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

Twenty-three (23) vibration exceedances were recorded at VM1, and seven (7) more at VM2 during the month of June. These exceedances have been reviewed. The VM1 exceedances contain legitimate vibration measurements that appear to be pavement breaking activities performed by Pepco's DC Plug Contractors. The VM2 exceedances were short events indicative of disturbance near the sensor such as equipment staging or other ancillary activities. Waveform reports may be found in Attachments B and C.

- VM1 – Exceedance with a reading of 1.90 in/sec on June 10 at 10:31. Reinstall. Bump test.
- VM1 – Exceedance with a reading of 0.23 in/sec on June 10 at 10:43.
- VM1 – Exceedance with a reading of 0.25 in/sec on June 13 at 09:07.
- VM1 – Exceedance with a reading of 0.22 in/sec on June 13 at 09:08.
- VM1 – Exceedance with a reading of 0.38 in/sec on June 13 at 09:09.
- VM1 – Exceedance with a reading of 0.25 in/sec on June 13 at 09:10.

- VM1 – Exceedance with a reading of 0.22 in/sec on June 13 at 09:11.
- VM1 – Exceedance with a reading of 0.22 in/sec on June 13 at 09:12.
- VM1 – Exceedance with a reading of 0.25 in/sec on June 13 at 09:13.
- VM1 – Exceedance with a reading of 0.40 in/sec on June 13 at 09:14.
- VM1 – Exceedance with a reading of 0.29 in/sec on June 13 at 09:15.
- VM1 – Exceedance with a reading of 0.22 in/sec on June 13 at 09:16.
- VM1 – Exceedance with a reading of 0.20 in/sec on June 13 at 09:18.
- VM1 – Exceedance with a reading of 0.25 in/sec on June 13 at 09:43.
- VM1 – Exceedance with a reading of 0.38 in/sec on June 13 at 09:44.
- VM1 – Exceedance with a reading of 0.25 in/sec on June 13 at 11:05.
- VM1 – Exceedance with a reading of 0.97 in/sec on June 13 at 14:41.
- VM1 – Exceedance with a reading of 0.38 in/sec on June 16 at 15:24.
- VM1 – Exceedance with a reading of 0.25 in/sec on June 17 at 07:53.
- VM1 – Exceedance with a reading of 0.28 in/sec on June 17 at 08:51.
- VM1 – Exceedance with a reading of 0.28 in/sec on June 21 at 15:28.
- VM1 – Exceedance with a reading of 0.22 in/sec on June 21 at 15:38.
- VM1 – Exceedance with a reading of 0.21 in/sec on June 25 at 16:30.
- VM2 – Exceedance with a reading of 0.21 in/sec on June 3 at 06:44.
- VM2 – Exceedance with a reading of 0.23 in/sec on June 4 at 06:58.
- VM2 – Exceedance with a reading of 0.27 in/sec on June 4 at 07:11.
- VM2 – Exceedance with a reading of 0.40 in/sec on June 5 at 06:42.
- VM2 – Exceedance with a reading of 0.55 in/sec on June 9 at 11:48.
- VM2 – Exceedance with a reading of 0.38 in/sec on June 13 at 09:31.
- VM2 – Exceedance with a reading of 1.02 in/sec on June 27 at 15:59.

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.

Several air quality exceedances occurred during the month of June 2025 at DM1 and DM2. One event on the evening of June 14 measured sustained exceedances on all three devices for several hours. The peak for this event was between 18:11-18:23, but exceedances continued until about midnight. Details of this event can be found below. It is important to note that there was no work on site during this event.

- DM1 – The PM2.5 limit was exceeded with a peak reading of 79 µg/m³ on June 14 from 17:56-23:56. The PM10 limit was exceeded with a peak reading of 79 µg/m³ on June 14 from 17:56-23:41. The peak was at 18:11.
- DM2 – The PM2.5 limit was exceeded with a peak reading of 67 µg/m³ on June 14 from 17:53-23:38. The PM10 limit was exceeded with a peak reading of 67 µg/m³ on June 14 from 18:08-19:53. The peak was at 18:23.
- DM3 – The PM2.5 limit was exceeded with a peak reading of 93 µg/m³ on June 14 from 17:45-23:45. The PM10 limit was exceeded with a peak reading of 93 µg/m³ on June 14 from 17:45-23:45. The peak was at 18:15.

Outside of the June 14th event, there were twenty Air Quality exceedances in the month of June.

- DM1 – Exceedance of the PM2.5 limit with a reading of 43 µg/m³ on June 17 at 12:56.

- DM1 – Exceedance of the PM2.5 limit with a reading of 44 $\mu\text{g}/\text{m}^3$ on June 18 at 08:41.
- DM1 – Exceedance of the PM2.5 limit with a reading of 54 $\mu\text{g}/\text{m}^3$ on June 18 at 09:41.
- DM1 – Exceedance of the PM10 limit with a reading of 54 $\mu\text{g}/\text{m}^3$ on June 18 at 09:41.
- DM1 – Exceedance of the PM2.5 limit with a reading of 57 $\mu\text{g}/\text{m}^3$ on June 18 at 09:56.
- DM1 – Exceedance of the PM10 limit with a reading of 57 $\mu\text{g}/\text{m}^3$ on June 18 at 09:56.
- DM2 – Exceedance of the PM2.5 limit with a reading of 70 $\mu\text{g}/\text{m}^3$ on June 4 at 09:38.
- DM2 – Exceedance of the PM10 limit with a reading of 73 $\mu\text{g}/\text{m}^3$ on June 4 at 09:38.
- DM2 – Exceedance of the PM2.5 limit with a reading of 53 $\mu\text{g}/\text{m}^3$ on June 5 at 09:53.
- DM2 – Exceedance of the PM10 limit with a reading of 53 $\mu\text{g}/\text{m}^3$ on June 5 at 09:53.
- DM2 – Exceedance of the PM2.5 limit with a reading of 97 $\mu\text{g}/\text{m}^3$ on June 5 at 12:53.
- DM2 – Exceedance of the PM10 limit with a reading of 98 $\mu\text{g}/\text{m}^3$ on June 5 at 12:53.
- DM2 – Exceedance of the PM2.5 limit with a reading of 52 $\mu\text{g}/\text{m}^3$ on June 9 at 10:53.
- DM2 – Exceedance of the PM10 limit with a reading of 54 $\mu\text{g}/\text{m}^3$ on June 9 at 10:53.
- DM2 – Exceedance of the PM2.5 limit with a reading of 46 $\mu\text{g}/\text{m}^3$ on June 9 at 11:08.
- DM2 – Exceedance of the PM2.5 limit with a reading of 48 $\mu\text{g}/\text{m}^3$ on June 9 at 14:23.
- DM2 – Exceedance of the PM2.5 limit with a reading of 62 $\mu\text{g}/\text{m}^3$ on June 17 at 13:08.
- DM2 – Exceedance of the PM10 limit with a reading of 62 $\mu\text{g}/\text{m}^3$ on June 17 at 13:08.
- DM2 – Exceedance of the PM2.5 limit with a reading of 49 $\mu\text{g}/\text{m}^3$ on June 27 at 10:38.
- DM2 – Exceedance of the PM10 limit with a reading of 55 $\mu\text{g}/\text{m}^3$ on June 27 at 10:38.

Figure 1: Vibration and Noise Monitor Location Plan

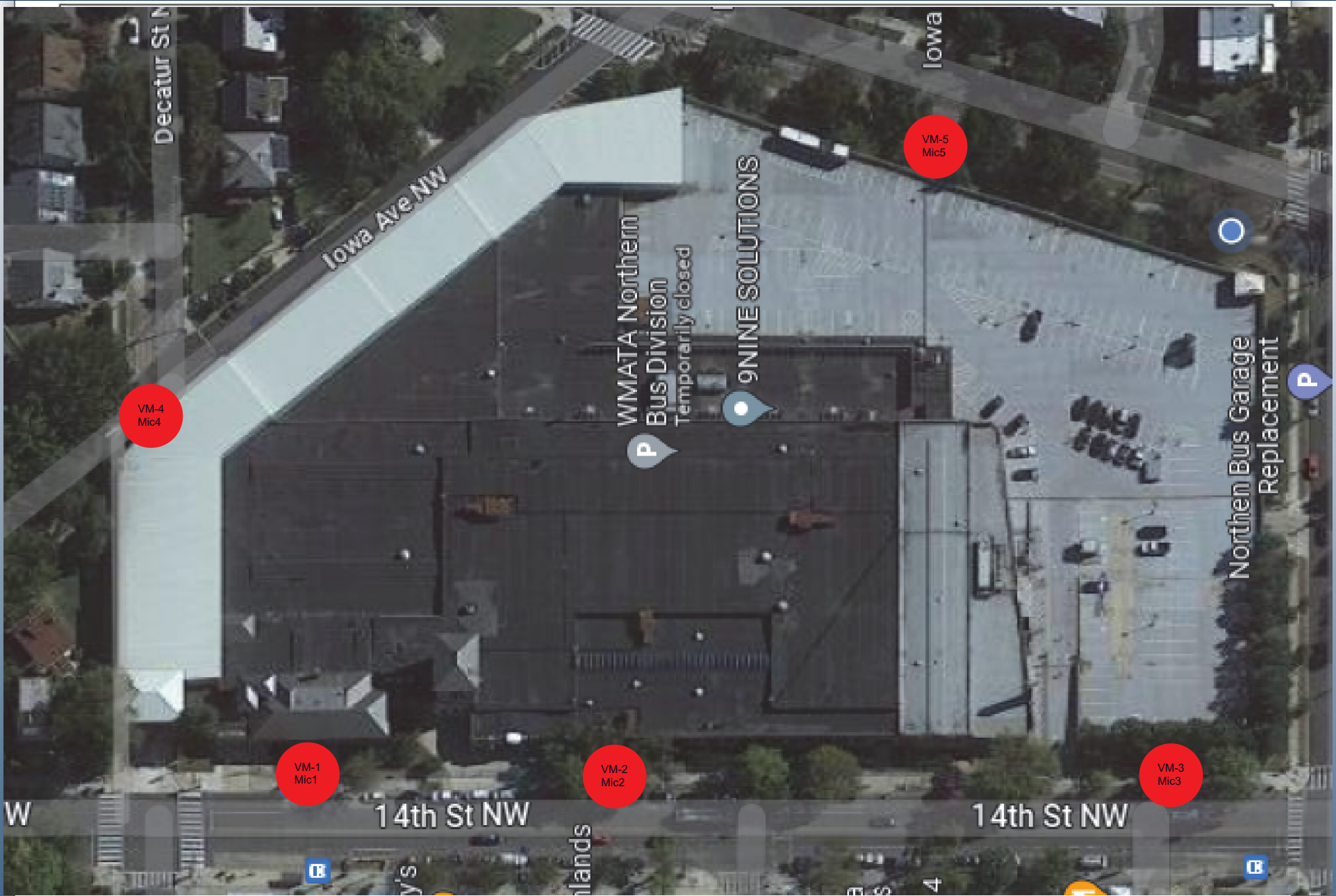


Figure 2: Dust Monitor Location Plan

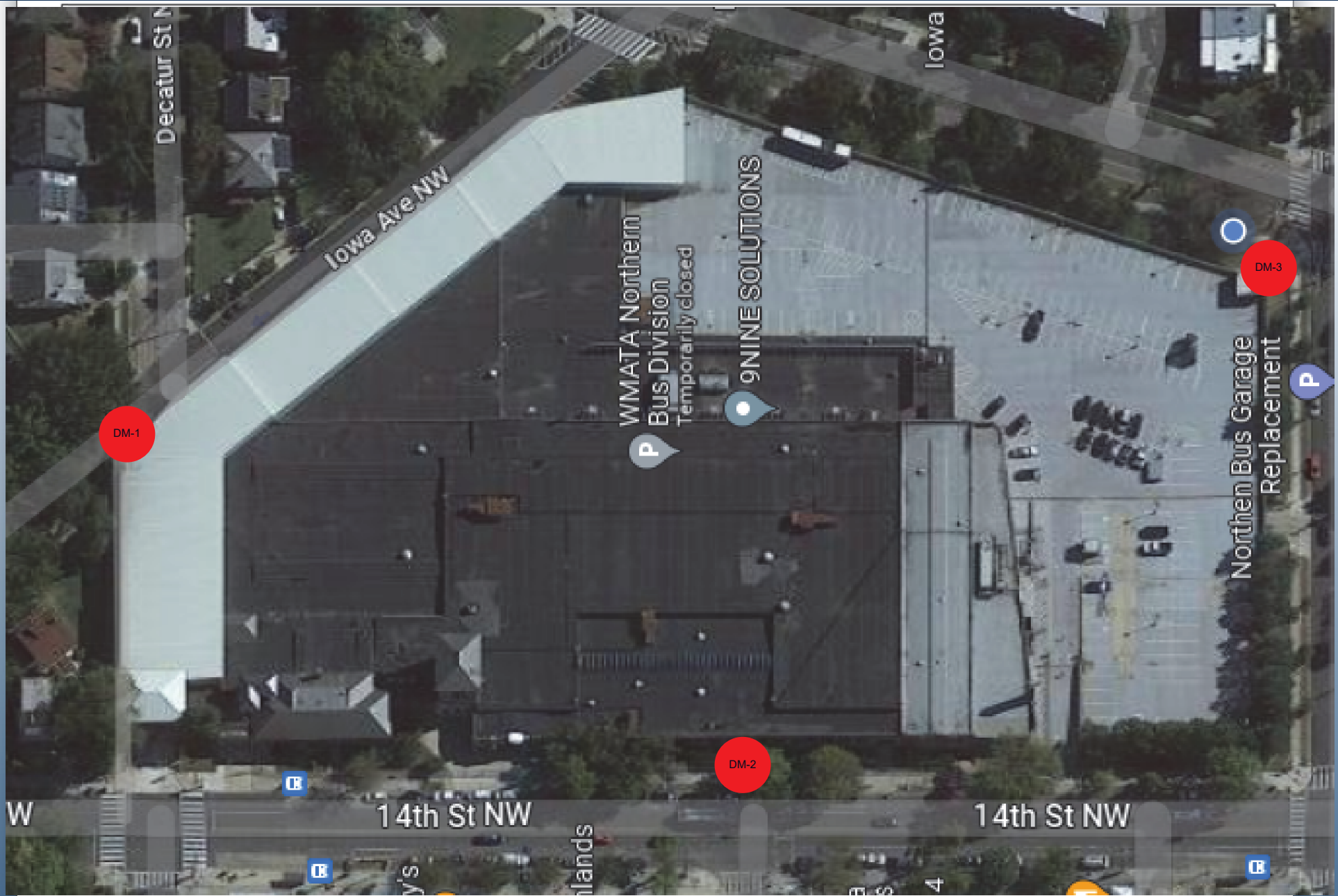


Table 1: Noise Summaries

VM1-MIC		
	Exceedance	Percentage
Work hours	572	57.14%
After hours	258	25.77%
Weekends	171	17.08%
Total	1001	100%

VM1-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	118.4	109.3	106.3
Lmin (dBA)	97.7	55.1	73.6
L10 (dBA)	112	74	88
L90 (dBA)	100	60	75
Leq (dBA)	105.9	80.4	84.3

VM2-MIC		
	Exceedance	Percentage
Work hours	637	71.01%
After hours	142	15.83%
Weekends	118	13.15%
Total	897	100%

VM2-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	111.3	111.7	110.3
Lmin (dBA)	81.7	62.7	60.6
L10 (dBA)	95	77	73
L90 (dBA)	83	68	62
Leq (dBA)	90.3	81.7	82.5

VM3-MIC		
	Exceedance	Percentage
Work hours	794	55.52%
After hours	345	24.13%
Weekends	291	20.35%
Total	1430	100%

VM3-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	108	110.5	108.7
Lmin (dBA)	83.8	56.1	63.5
L10 (dBA)	97	75	80
L90 (dBA)	80	61	71
Leq (dBA)	92.9	79.4	80.7

VM4-MIC		
	Exceedance	Percentage
Work hours	547	90.26%
After hours	32	5.28%
Weekends	27	4.46%
Total	606	100%

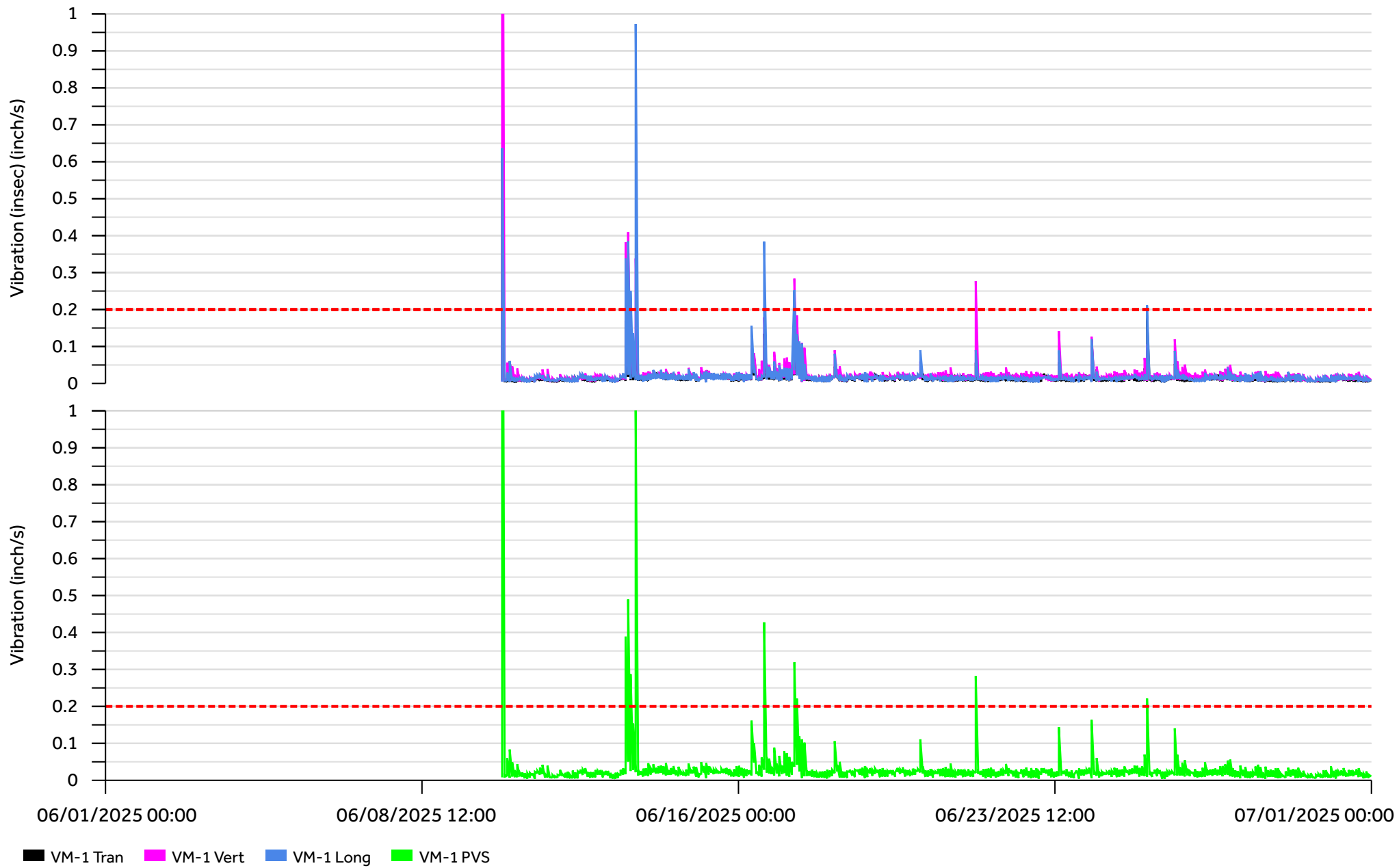
VM4-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	110	101.6	99.9
Lmin (dBA)	73.4	60	58.8
L10 (dBA)	91	74	77
L90 (dBA)	75	62	61
Leq (dBA)	86.5	71.3	71

VM5-MIC		
	Exceedance	Percentage
Work hours	114	46.34%
After hours	62	25.20%
Weekends	70	28.46%
Total	246	100%

VM5-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	111.1	109.1	111
Lmin (dBA)	54.6	53.2	54.1
L10 (dBA)	68	72	69
L90 (dBA)	58	60	56
Leq (dBA)	78	78.7	80

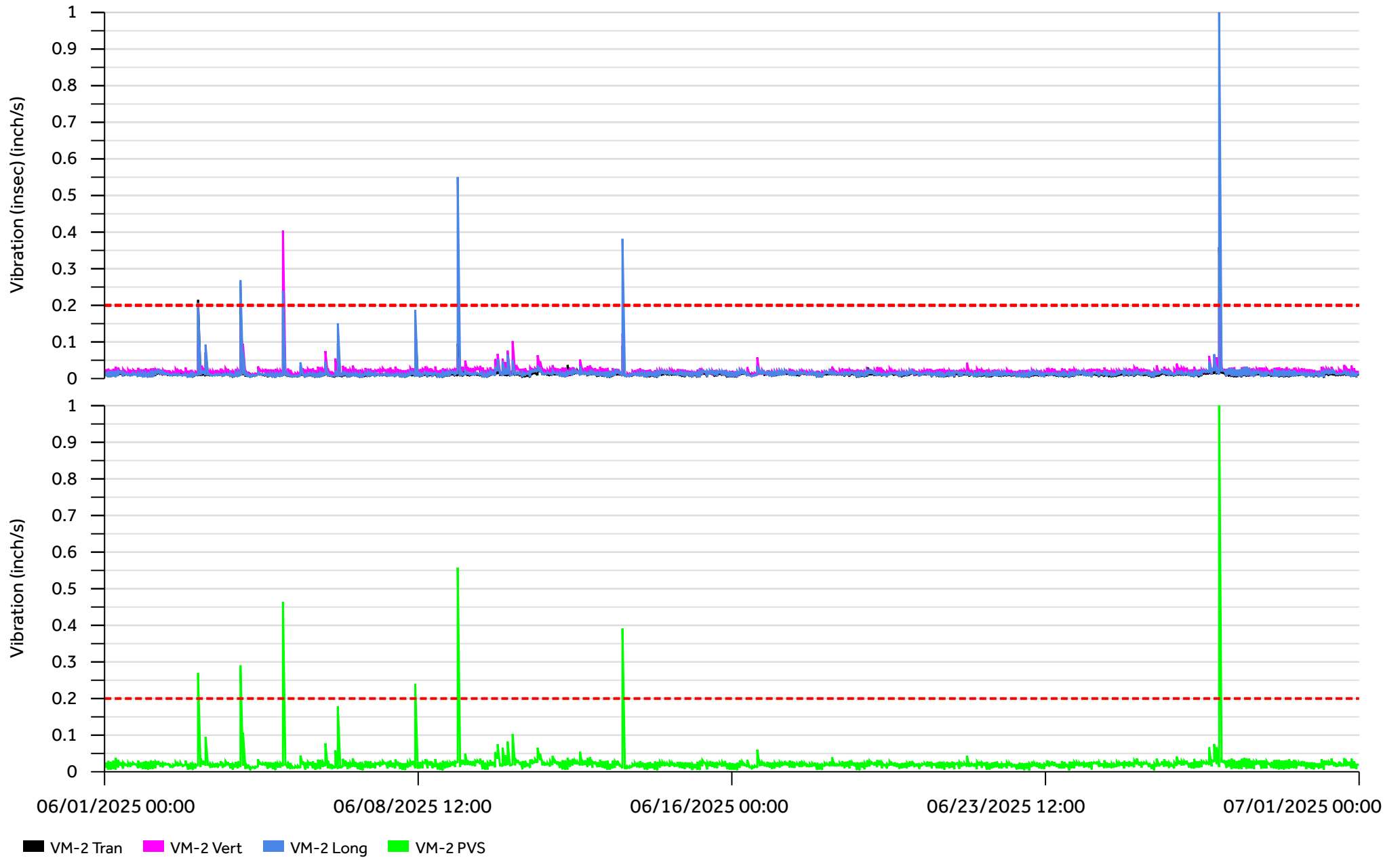
Graph 1

VM-1- Vibration Monitor



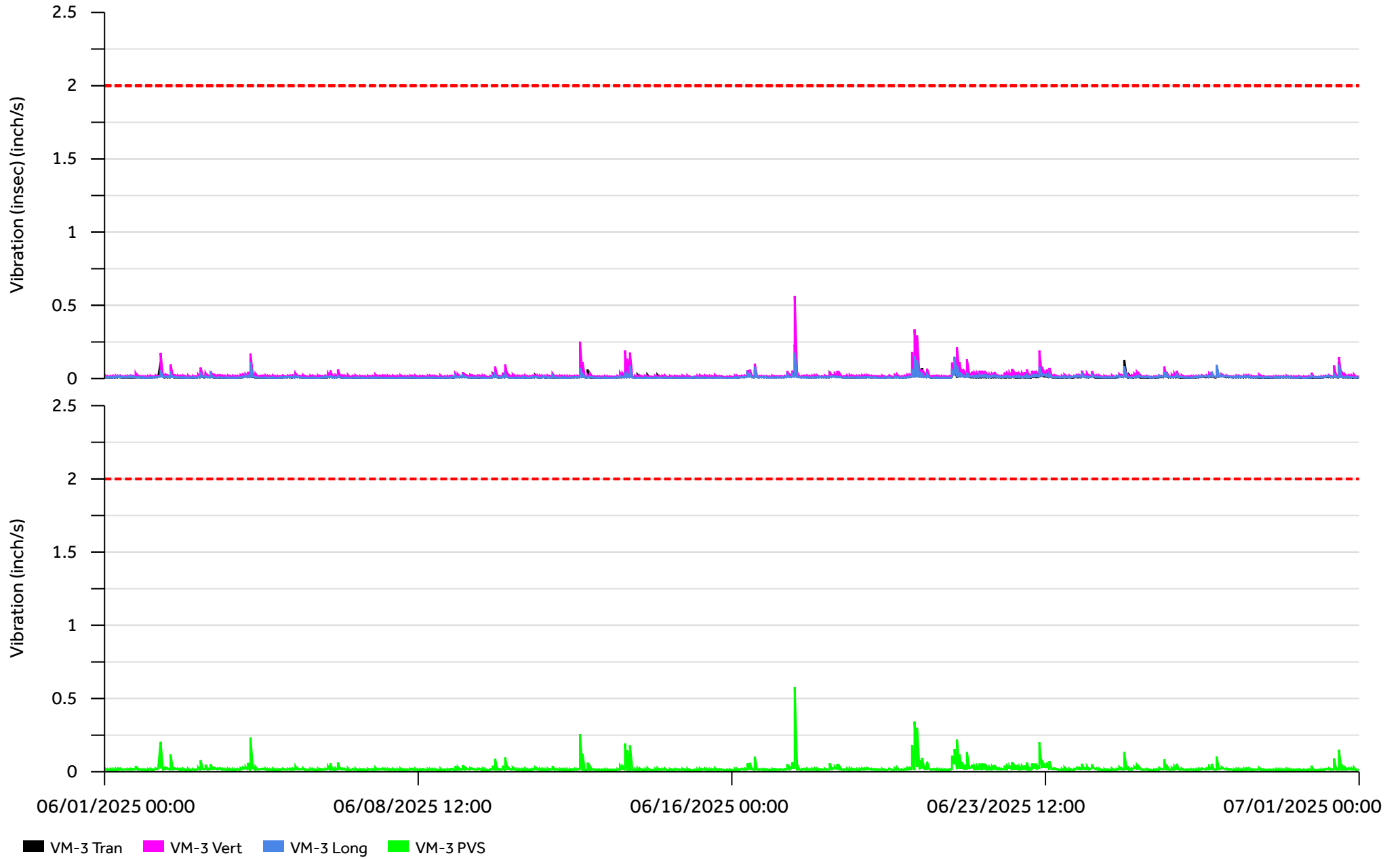
Graph 2

VM-2- Vibration Monitor



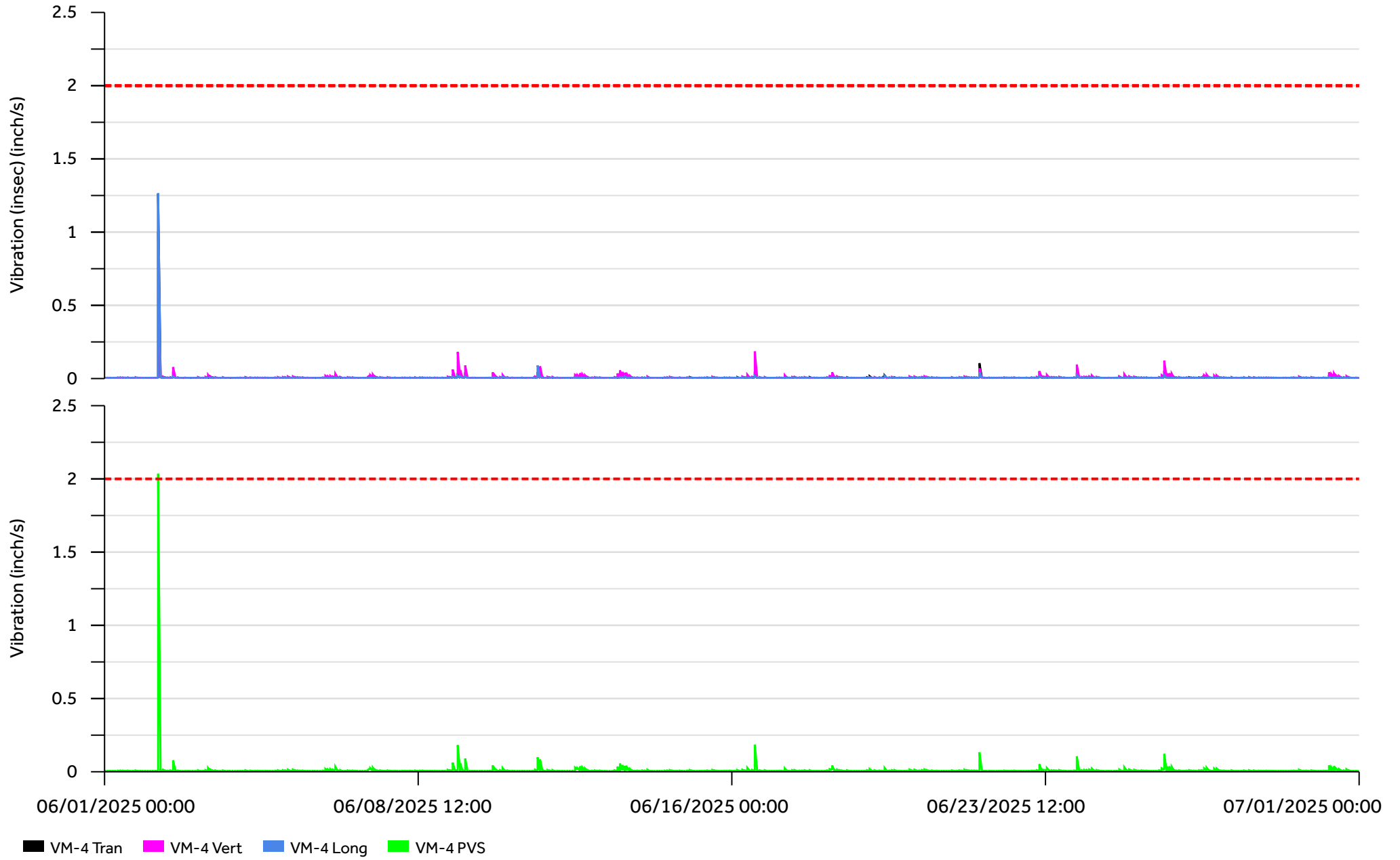
Graph 3

VM-3- Vibration Monitor



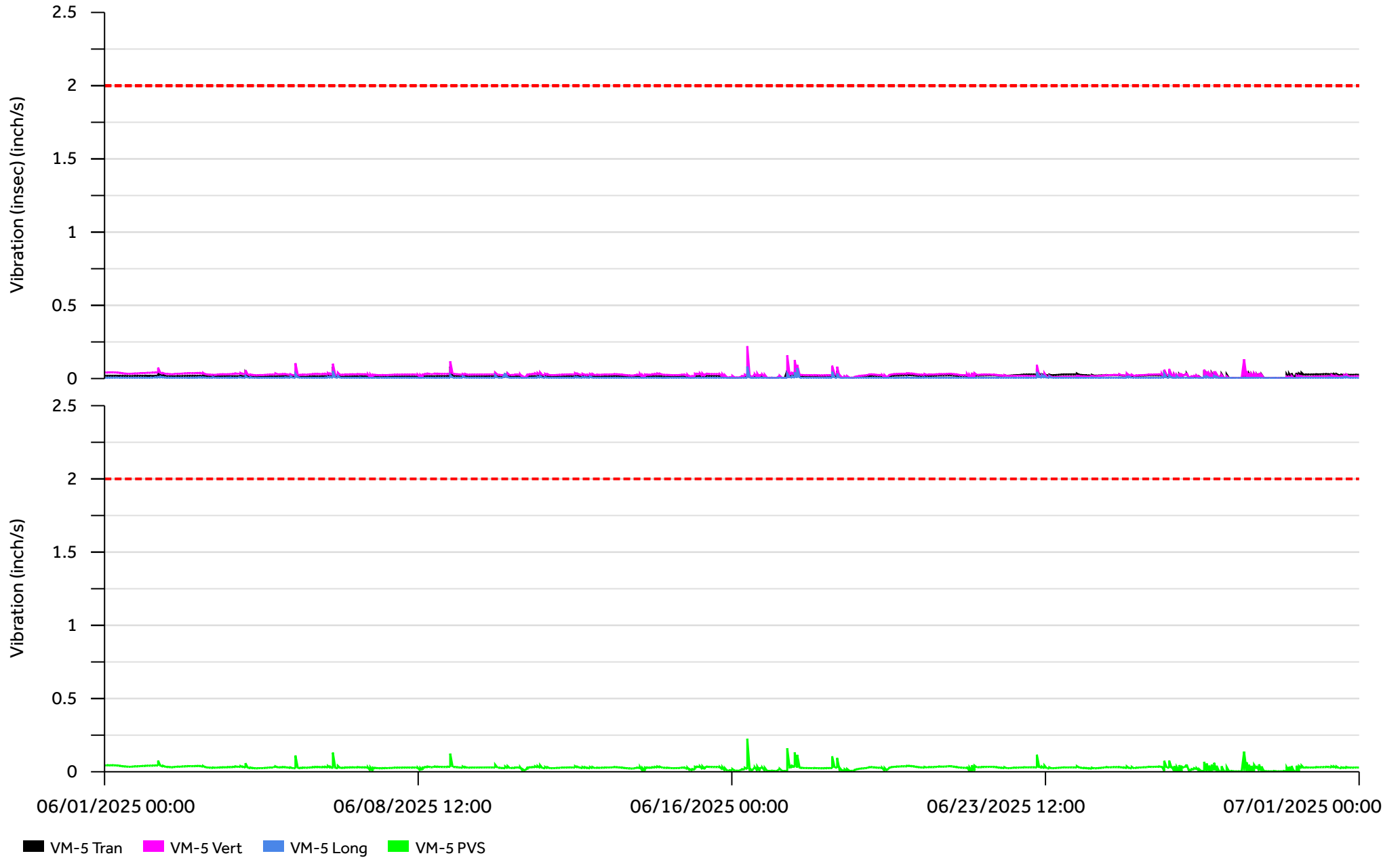
Graph 4

VM-4- Vibration Monitor



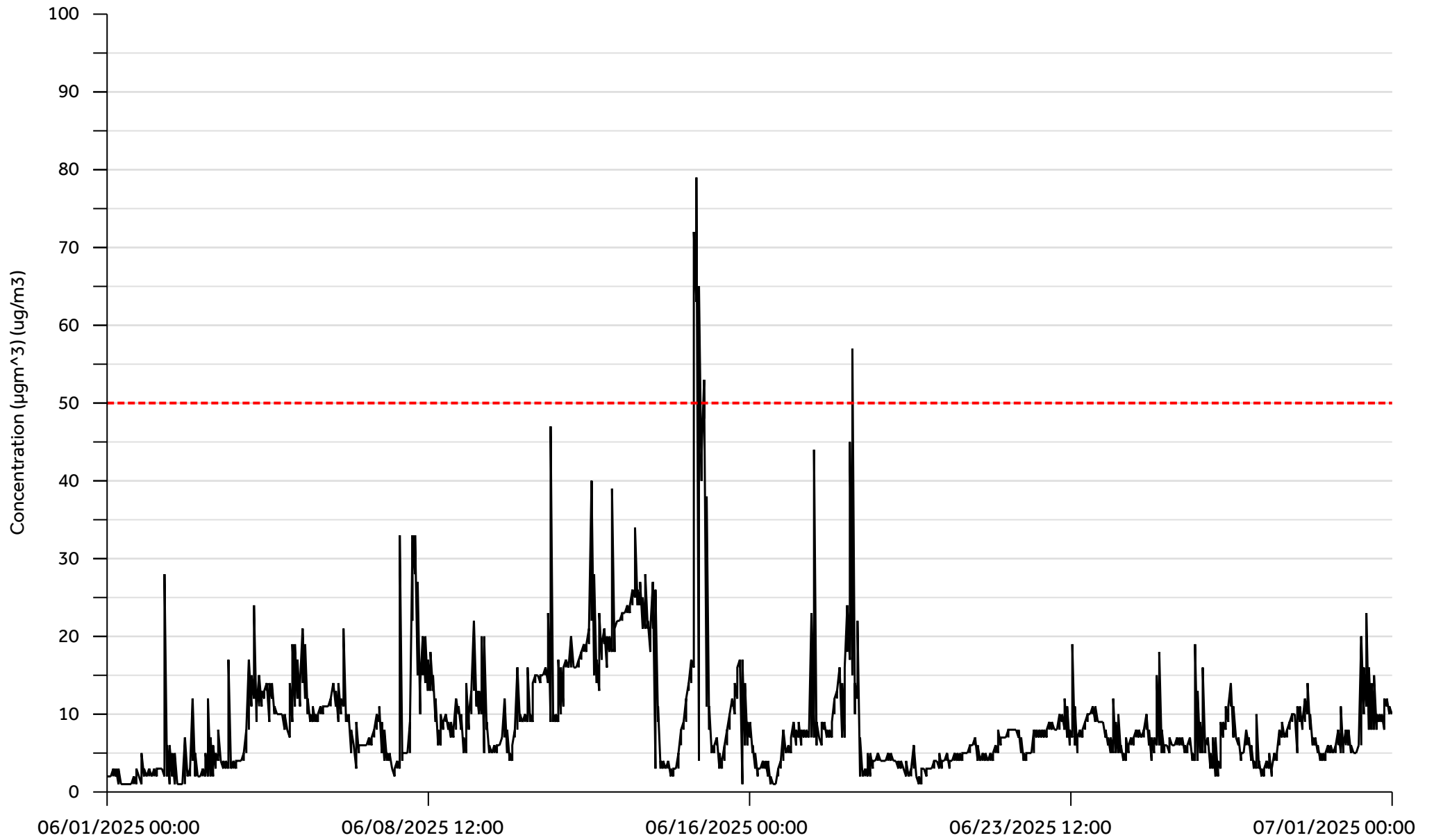
Graph 5

VM-5- Vibration Monitor



Graph 6

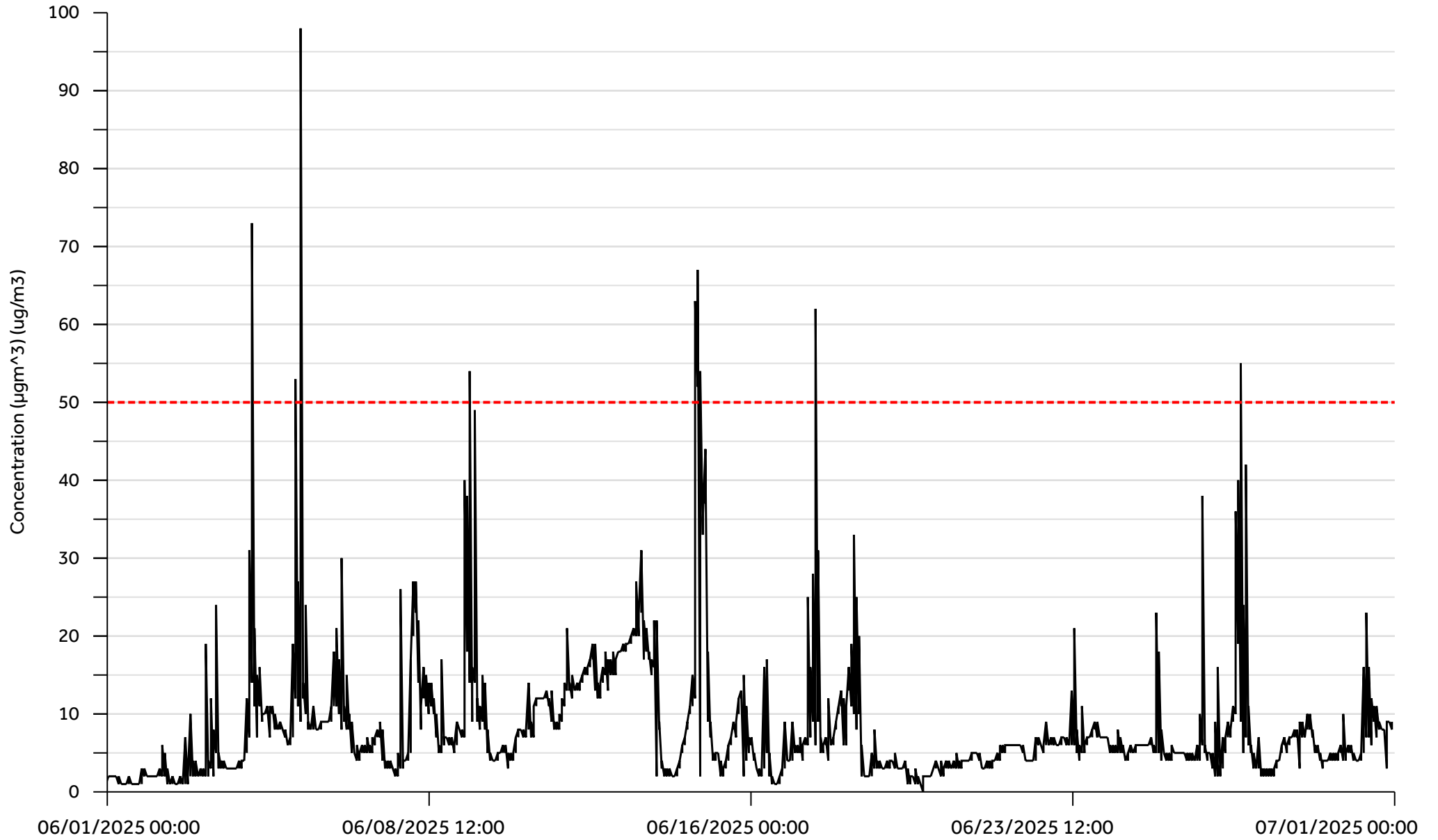
DM1 - PM10



■ DM1_PM10

Graph 7

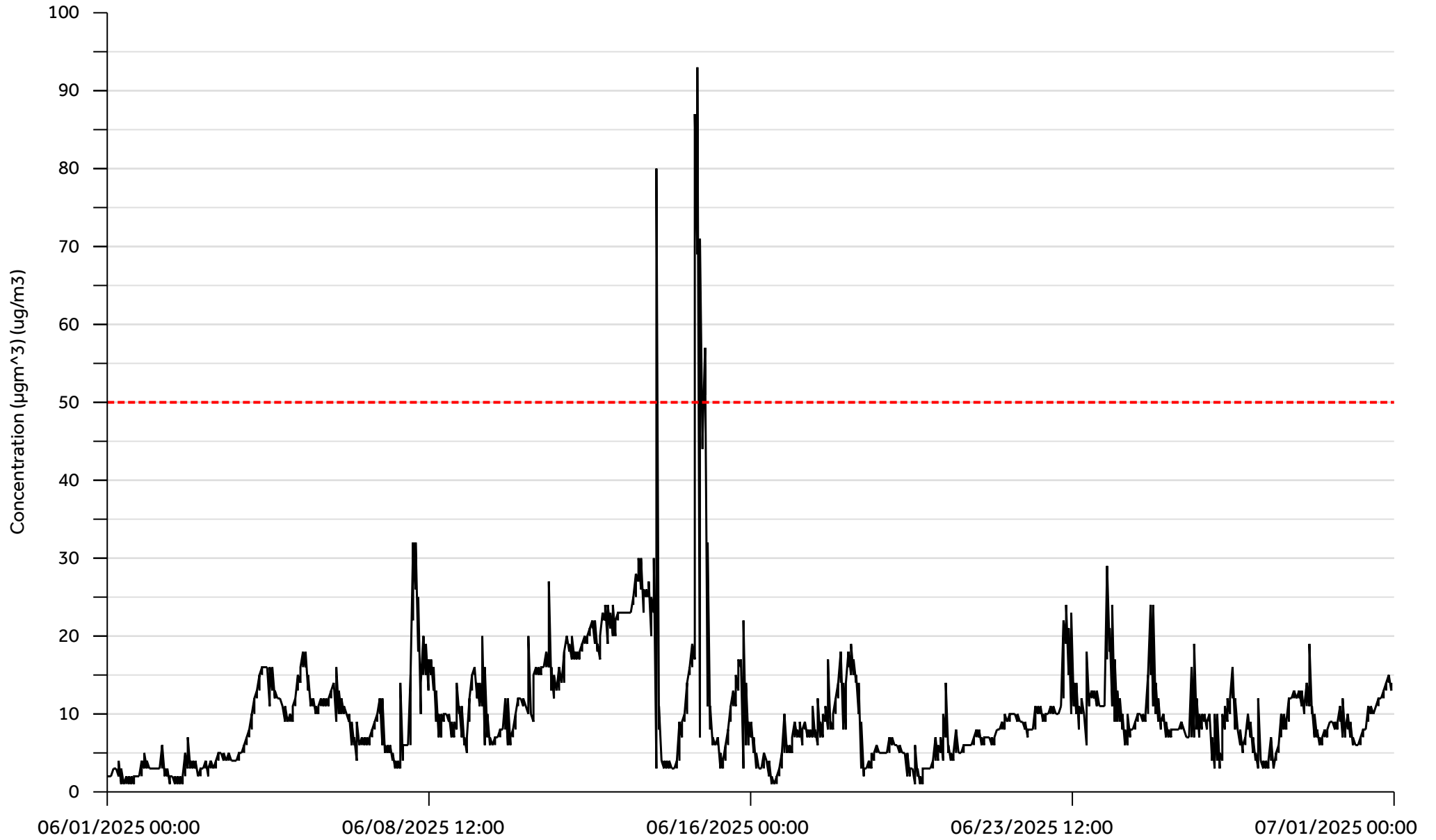
DM2-PM10



DM2_PM10

Graph 8

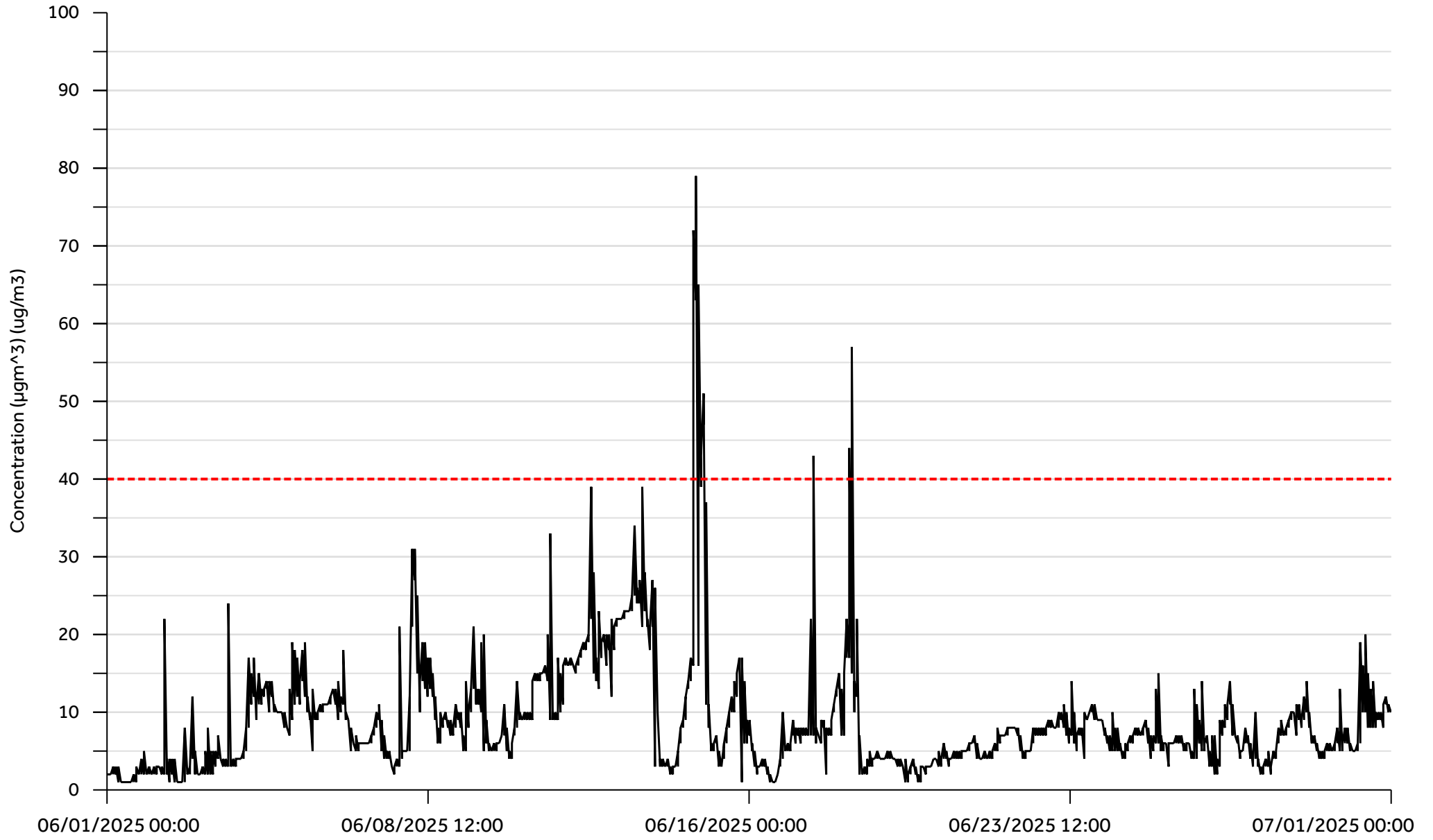
DM3-PM10



■ DM3_PM10

Graph 9

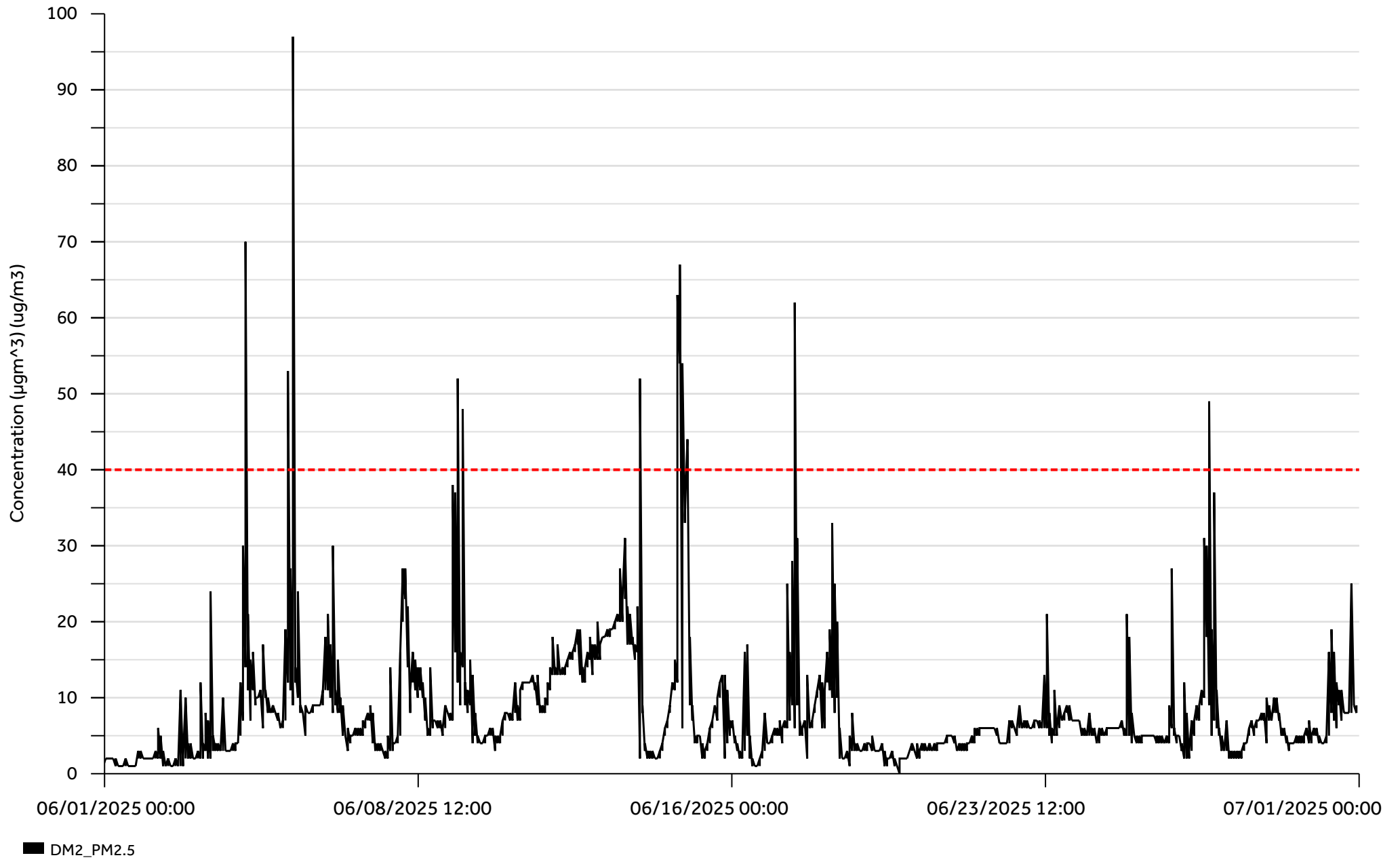
DM1-PM2.5



■ DM1_PM2.5

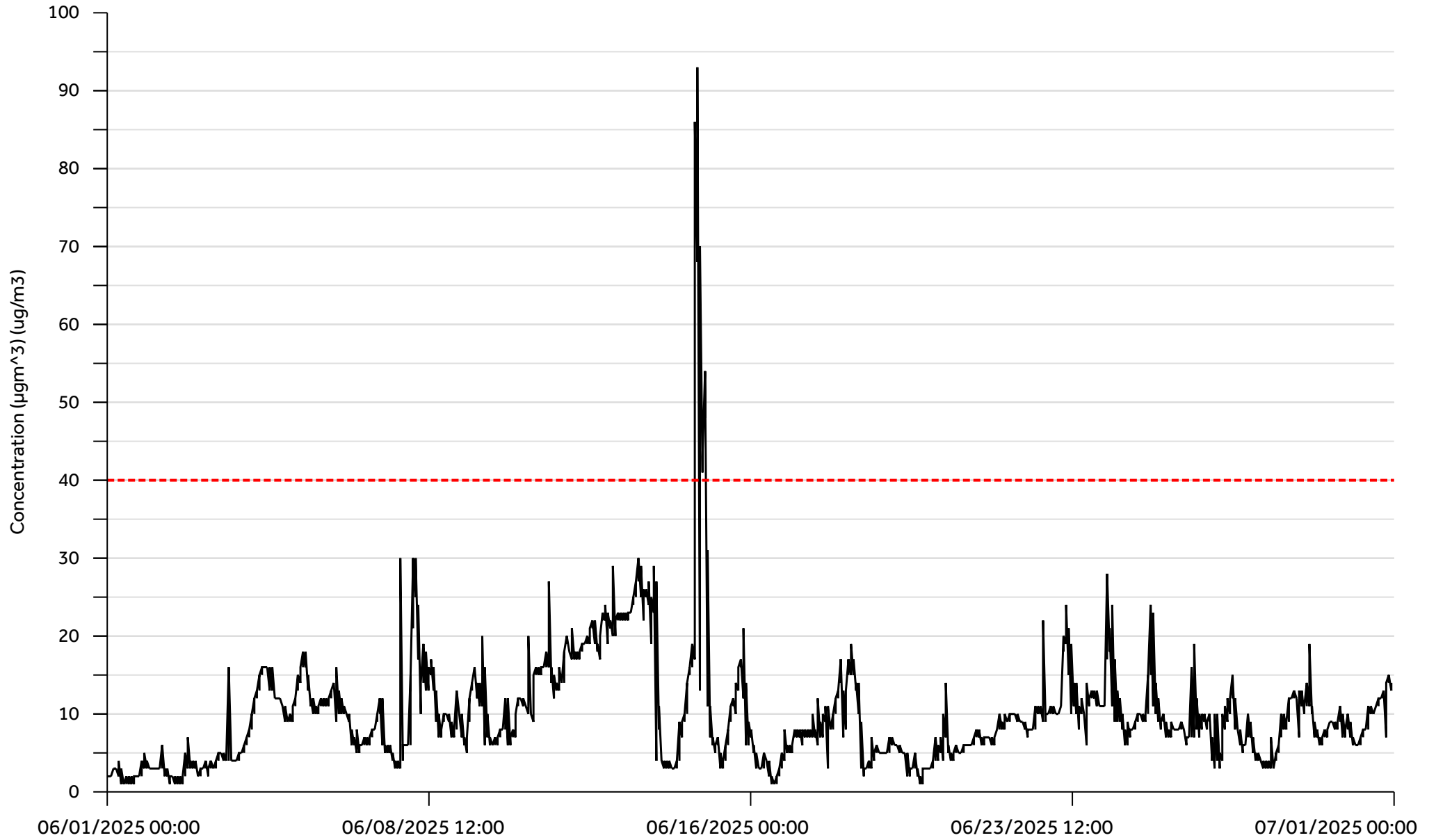
Graph 10

DM2-PM2.5



Graph 11

DM3-PM2.5



■ DM3_PM2.5