

27 January 2026

Katherine F. Watkins, P.E.
Deputy City Manager
City of Cambridge
795 Massachusetts Avenue
Cambridge, MA 02139

Project 200609.05 – Vibration Monitoring Data Report – 18 to 24 January 2026, Riverview Condominiums, 221 Mt. Auburn Street, Cambridge, MA

Dear Ms. Watkins:

At your request, we installed vibration monitors at six properties abutting Riverview Condominiums (Riverview) to document vibrations during the Riverview building demolition. The purpose of this letter is to summarize the weekly vibration records and report “triggering” events if the vibration threshold is exceeded.

1. BACKGROUND

The City of Cambridge (City) started the controlled demolition of the Riverview structure on 17 December 2025. The City requested that Simpson Gumpertz & Heger Inc. (SGH) develop a vibration monitoring program to record vibration at abutting properties during the building demolition. Prior to demolition, SGH conducted preliminary surveys of directly abutting properties to determine monitoring locations. Based on these surveys, we selected six locations to install vibration monitors: 1, 7, and 11 Sparks Street, 38 Bradbury Street, 205 Mt. Auburn Street, and the Bradbury Building (see map in Figure 1 below). At each location, we installed a vibration monitor on the foundation wall or the basement-level slab-on-grade. We installed the vibration monitors approximately one month prior to the scheduled start of demolition to acquire typical ambient baseline vibration data at each monitoring location.



Figure 1

Aerial view of the Riverview Condominiums structure (outlined in red) and the abutting properties selected for vibration monitor installation (marked with yellow stars).

On 21 and 22 January 2026, we visited the site to install new batteries for the vibration monitoring units. We notified the project team by email that they may receive alerts of "triggering" events as we handled the units to replace their batteries. During our site visits, we noted the start and end times in each residence to correlate our handling of the units with any potential triggers.

2. DATA COLLECTION

The vibration monitors (VMs) are configured to continuously monitor vibrations and record the Peak Particle Velocity (PPV) in three orthogonal directions at 5 min. intervals. The VMs record a

time history when a preset trigger level is exceeded, capturing 4 sec of data, including a 1 sec pre-trigger time, and the data is automatically downloaded to a remote server. Automated email notifications are sent to a predefined distribution list consisting of project team members when a triggering event occurs. If no triggering event occurs during a calendar day, the system sends a summary report for each monitor showing the recorded vibrations for the day, including the peak particle velocity recorded in each orthogonal direction (vertical and two orthogonal horizontal directions). Table 1 summarizes the maximum peak particle velocity recorded for each location from 18 January 2026 to 24 January 2026. Battery replacement operations caused vibrations to peak at two units (1 and 7 Sparks Street); these units are weighted down rather than bolted due to interior finishes at the foundation elements. Battery replacement did not impact monitoring data for the remaining units. Monitoring data for each location is also included in Appendix A (attached).

Table 1 – Maximum Peak Particle Velocity Recorded

Location	Maximum Peak Particle Velocity (in./sec)¹		
	Vertical	Horizontal 1	Horizontal 2
Bradbury Building	0.02	0.02	0.04
205 Mt. Auburn Street	0.06	0.06	0.03
38 Bradbury Street	0.04	0.02	0.03
1 Sparks Street	0.13 (0.53)	0.02 (1.08)	0.06 (1.05)
7 Sparks Street	0.07 (4.06)	0.05 (3.88)	0.05 (4.51)
11 Sparks Street	0.03	0.03	0.03

¹ Values in parentheses represent “triggering” values that correspond to the time of battery replacement.

3. DISCUSSION

Structural vibration monitoring is typically used to correlate construction activities with potential damage to neighboring structures. For the Riverview Demolition Project, we established six vibration monitoring locations around the site to document potential vibrations resulting from the project demolition activities. We established a recommended vibration monitoring threshold of 0.5 in./sec as a “triggering” event to investigate vibrations, as summarized in our letter dated 12 December 2025.

Last week, the project team received a few notifications of “triggering” events at 1 and 7 Sparks Street, where the maximum PPVs are listed in parentheses in Table 1. These values correspond to the times at which we were replacing the batteries at these residences. Additionally, these two monitoring units are weighed down with sandbags rather than anchored to the slab to prevent any damage to finishes. The movement of the sandbags to access the units and handling of the units to install the new batteries caused the high PPV values recorded. The elevated readings are localized to the individual units and do not represent vibrations due to demolition activities.

Aside from the "triggering" events caused by the battery replacement described above, all vibration monitoring locations maintained a peak particle velocity below the trigger value during the week's demolition activities, as shown in Appendix A. If construction activities cause vibrations greater than the set 0.5 in./sec trigger value, we will follow the protocol outlined in our letter dated 12 December 2025 to analyze the causes and potential impacts of the exceedance. We will continue to monitor the vibrations and provide you with an update regarding any changes.

Sincerely yours,

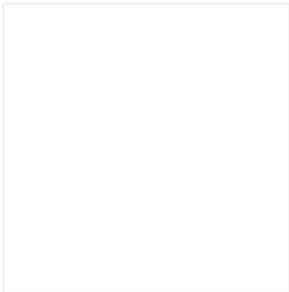


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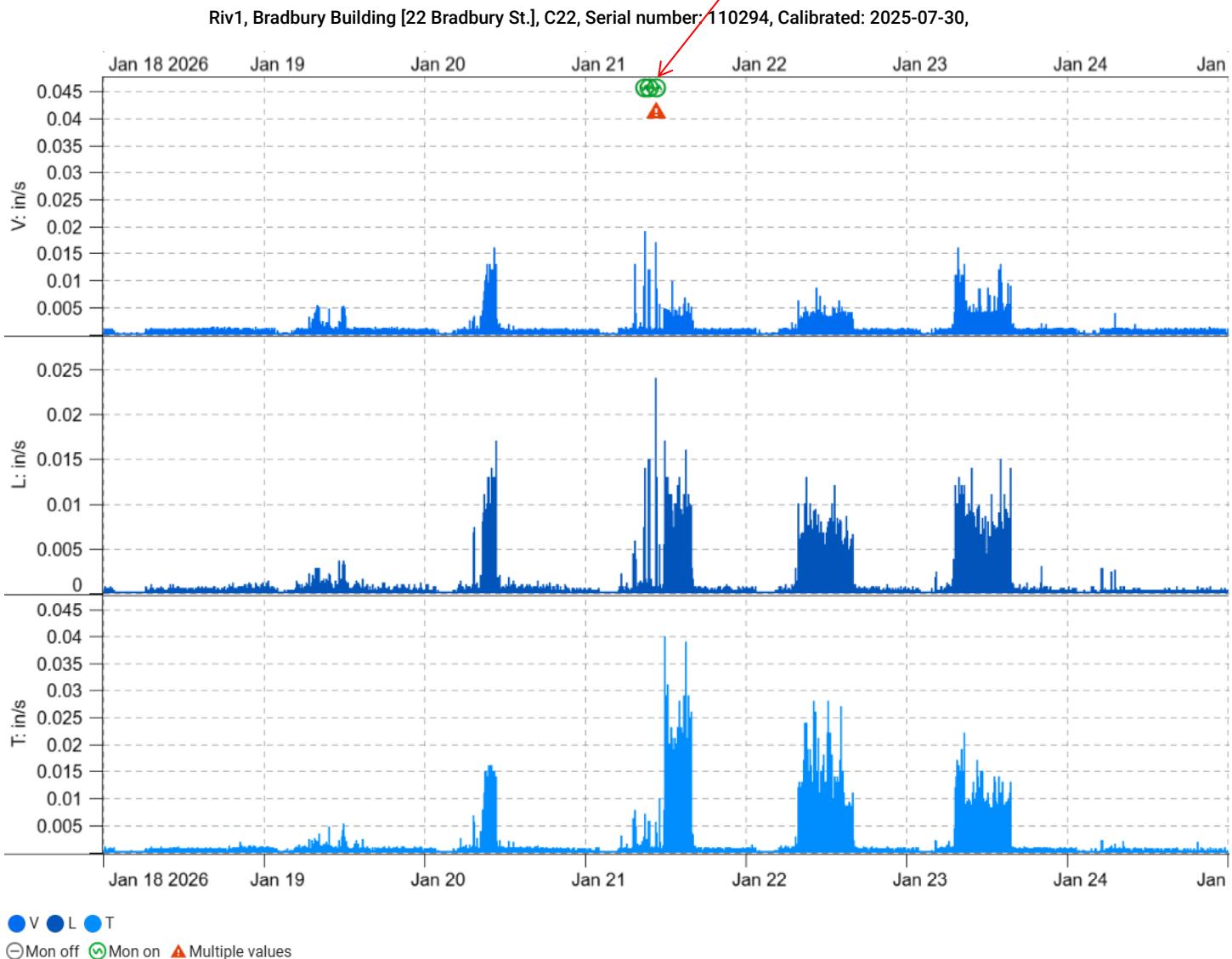
APPENDIX A

Multi report

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Project Riverview Demo
 Project maintainer -
 Time frame 2026-01-18 00:00 - 2026-01-25 00:00 (America/New_York)

SGH Comment:
 Alerts correspond to battery replacement.



X-span	2026-01-18 00:00 - 2026-01-25 00:00		
Y-span	V: 0 - 0.02 in/s, L: 0 - 0.02 in/s, T: 0 - 0.04 in/s		
V		L	T
Max	0.02 in/s	0.02 in/s	0.04 in/s
Date	2026-01-21	2026-01-21	2026-01-21
Time	08:47:30	10:27:30	11:52:30
Hz	341	341	2.25

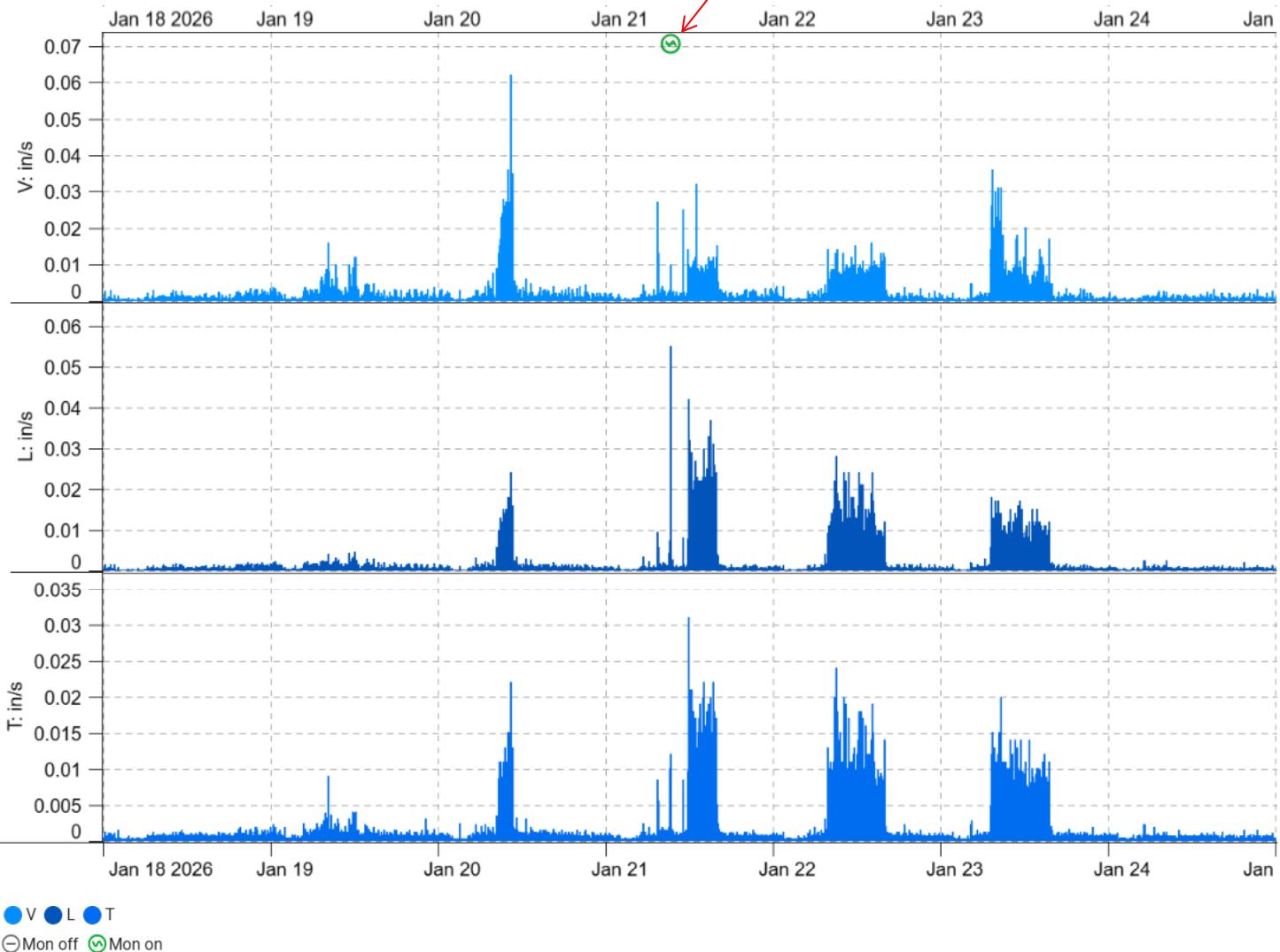
Multi report

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Project Riverview Demo
Project maintainer -
Time frame 2026-01-18 00:00 - 2026-01-25 00:00 (America/New_York)

SGH Comment:
 Alert corresponds to
 battery replacement.

Riv2, 205 Mt. Auburn St., Cambridge, MA, C22, Serial number: 102013, Calibrated: 2025-07-23,



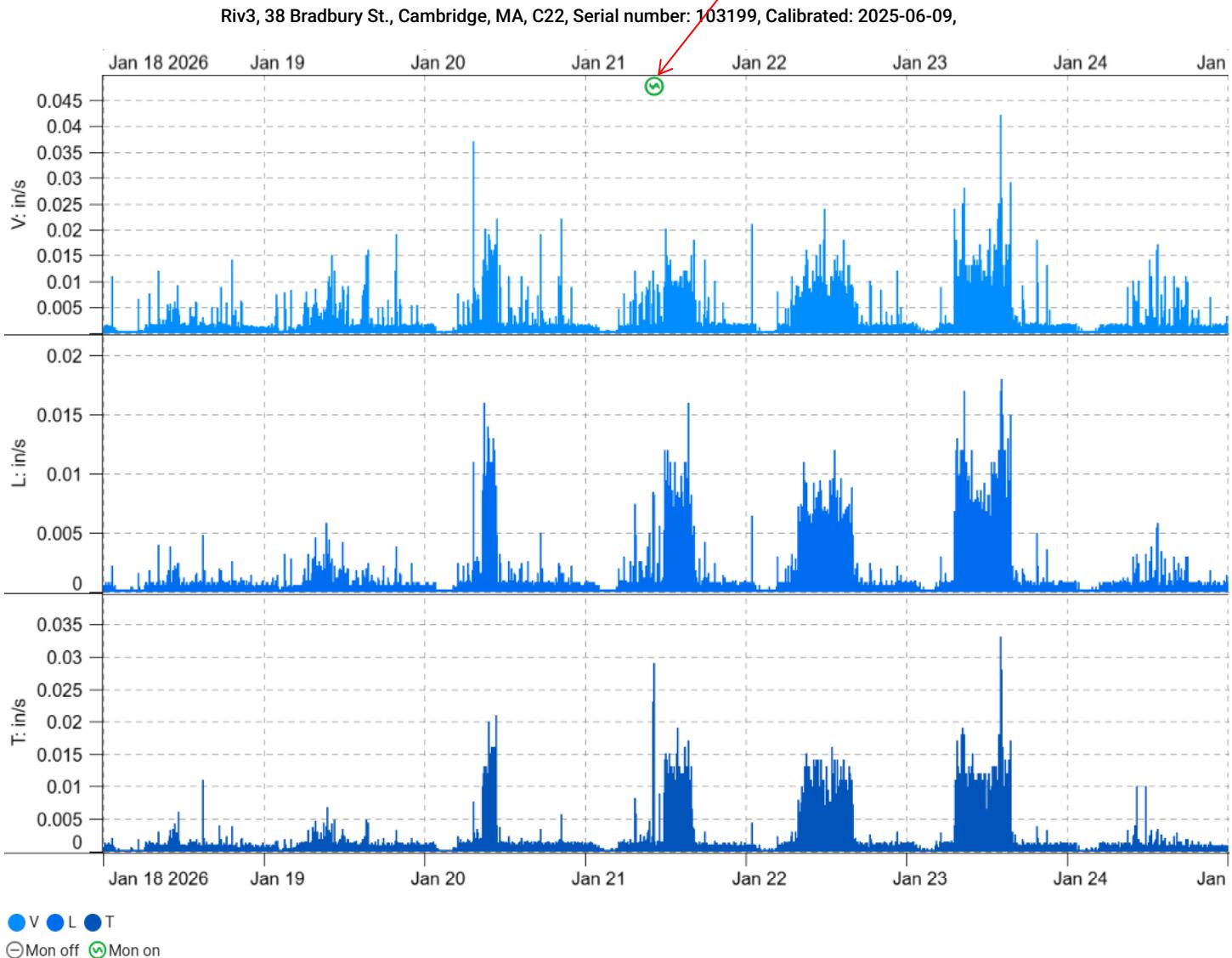
X-span	2026-01-18 00:00 - 2026-01-25 00:00		
Y-span	V: 0 - 0.06 in/s, L: 0 - 0.06 in/s, T: 0 - 0.03 in/s		
V		L	T
Max	0.06 in/s	0.06 in/s	0.03 in/s
Date	2026-01-20	2026-01-21	2026-01-21
Time	10:22:30	09:12:30	11:52:30
Hz	6.6	171	2.45

Multi report

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Project Riverview Demo
Project maintainer -
Time frame 2026-01-18 00:00 - 2026-01-25 00:00 (America/New_York)

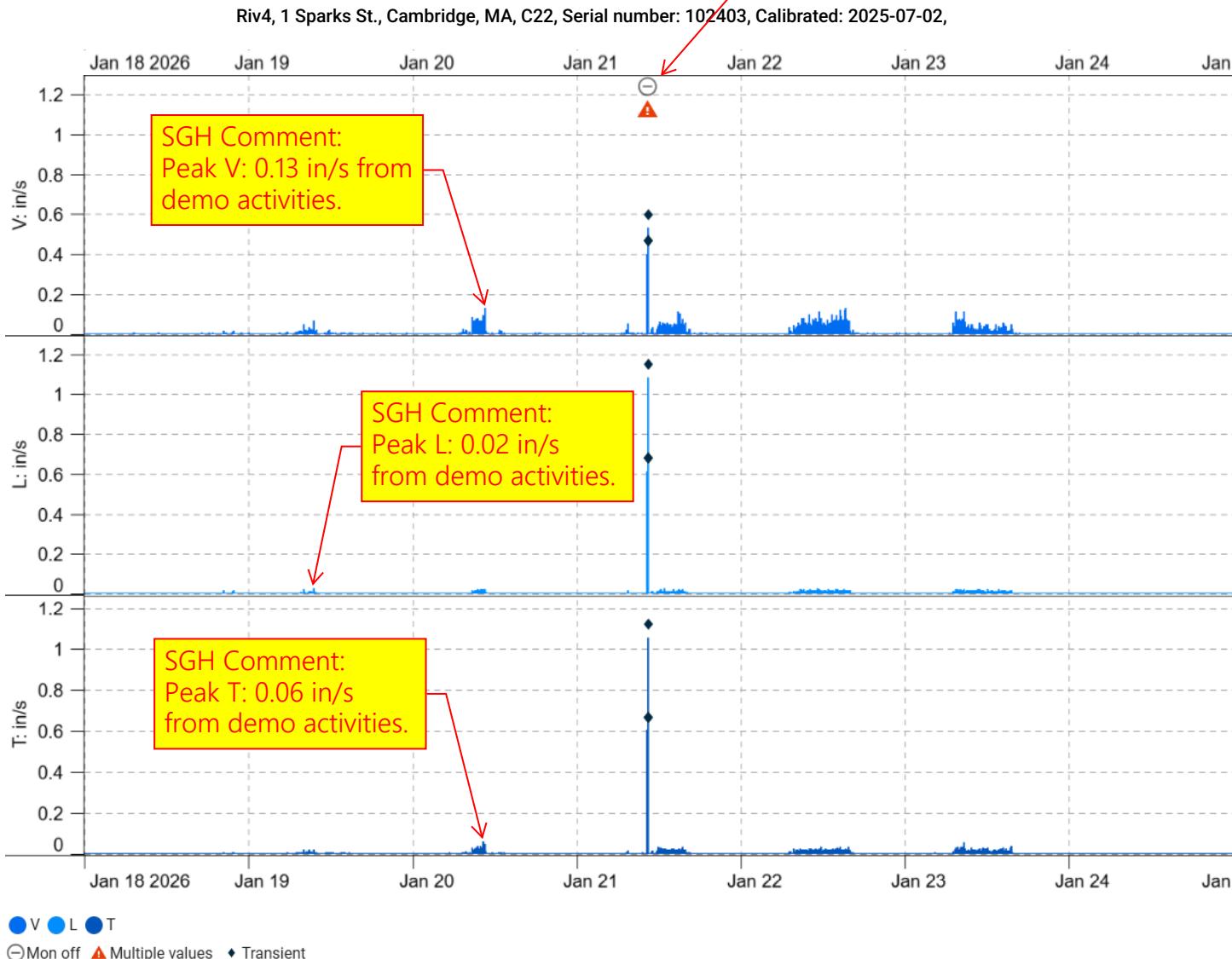
SGH Comment:
 Alert corresponds to
 battery replacement.



X-span	2026-01-18 00:00 - 2026-01-25 00:00		
Y-span	V: 0 - 0.04 in/s, L: 0 - 0.02 in/s, T: 0 - 0.03 in/s		
Max	V: 0.04 in/s	L: 0.02 in/s	T: 0.03 in/s
Date	2026-01-23	2026-01-23	2026-01-23
Time	13:57:30	14:07:30	14:02:30
Hz	5.6	6.6	5

Project Riverview Demo
Project maintainer -
Time frame 2026-01-18 00:00 - 2026-01-25 00:00 (America/New_York)

SGH Comment:
 Alerts and peak correspond to battery replacement.



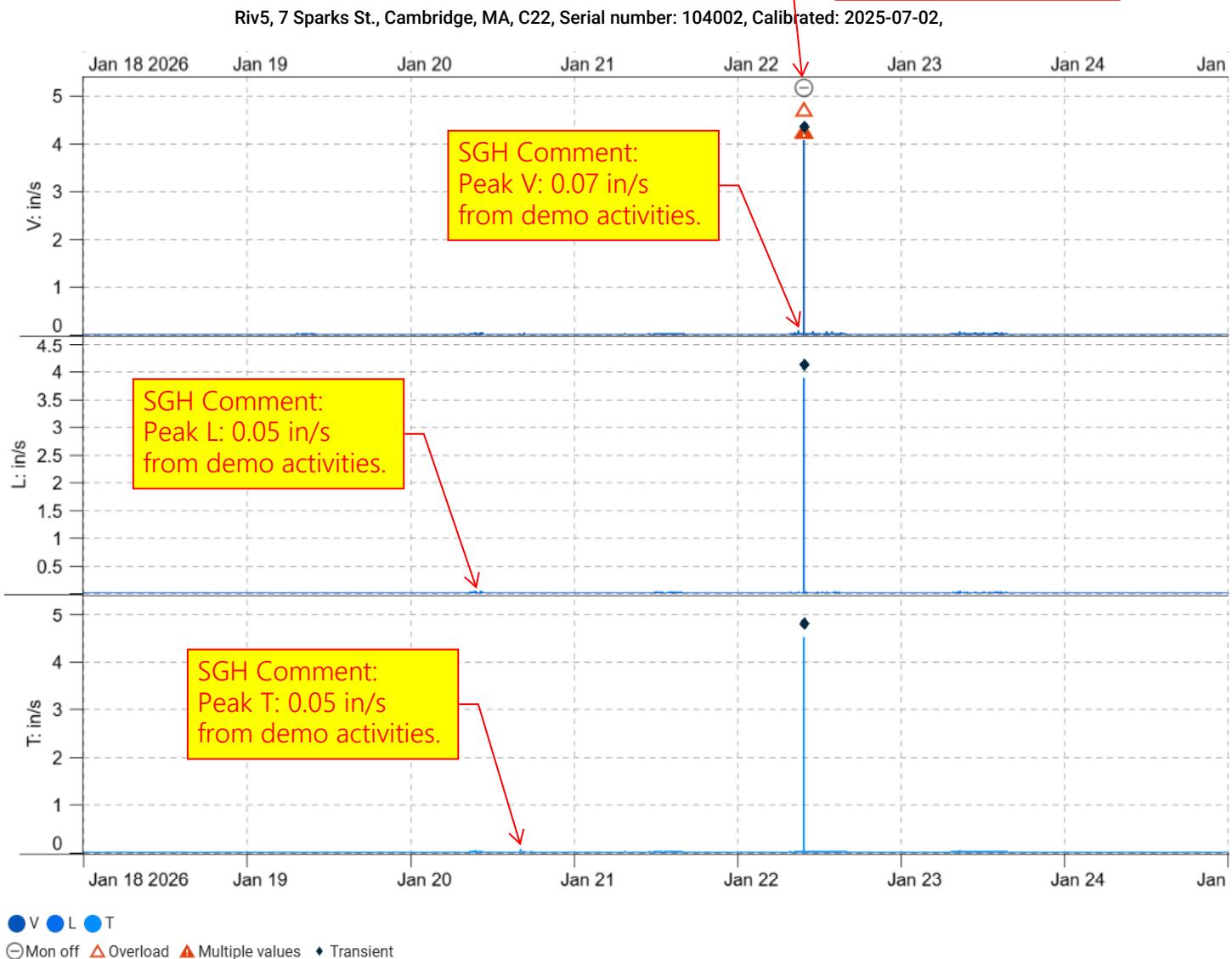
X-span	2026-01-18 00:00 - 2026-01-25 00:00
Y-span	V: 0 - 0.53 in/s, L: 0 - 1.08 in/s, T: 0 - 1.05 in/s
Max	0.53 in/s
Date	2026-01-21
Time	10:22:30
Hz	2.45
V	1.08 in/s
L	1.05 in/s
T	1.05 in/s
Mon off	
Multiple values	
Transient	

Multi report

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Project Riverview Demo
 Project maintainer -
 Time frame 2026-01-18 00:00 - 2026-01-25 00:00 (America/New_York)

SGH Comment:
 Alerts and peak
 correspond to battery
 replacement.



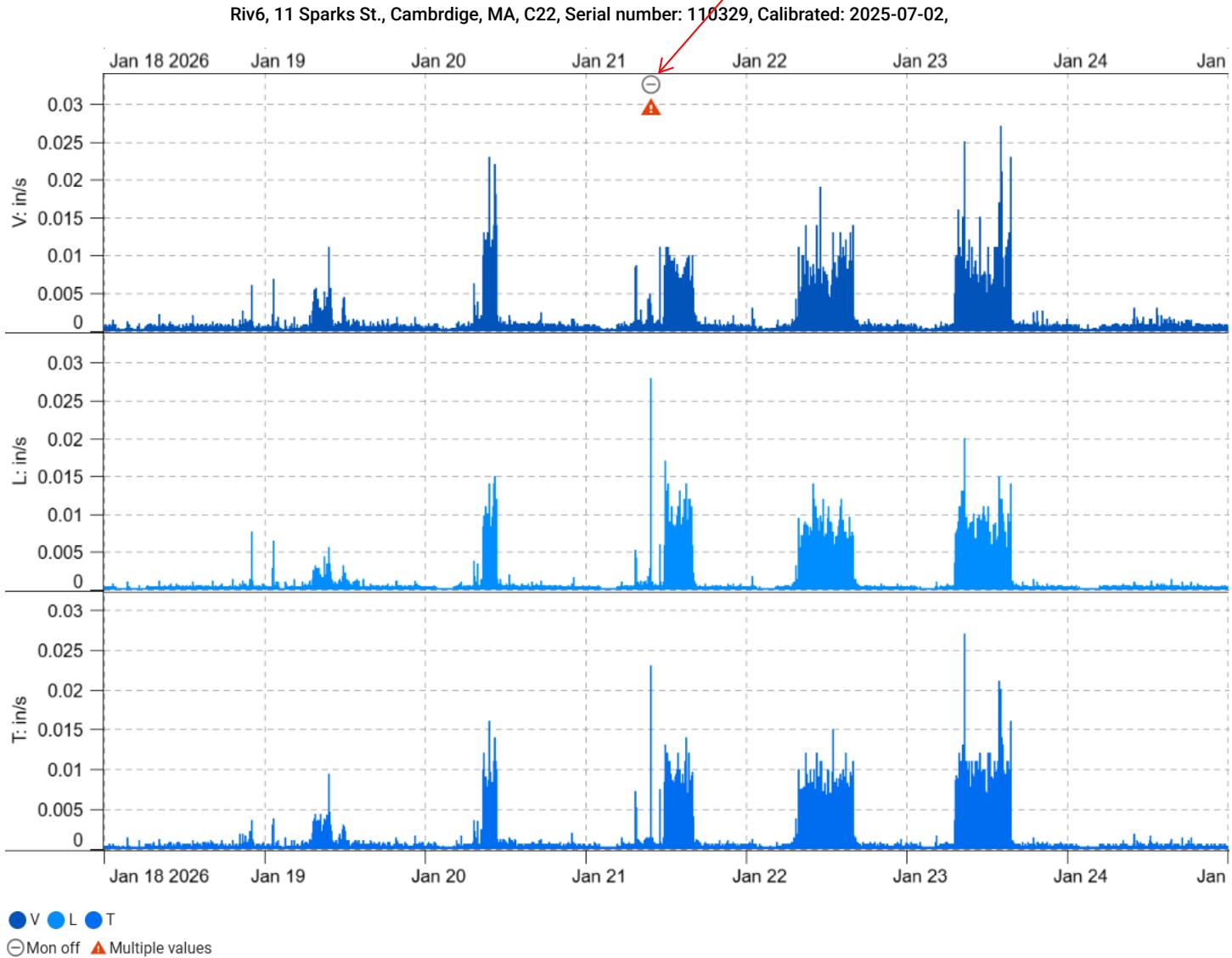
X-span	2026-01-18 00:00 - 2026-01-25 00:00
Y-span	V: 0 - 4.06 in/s, L: 0 - 3.88 in/s, T: 0 - 4.51 in/s
Max	4.06 in/s
Date	2026-01-22
Time	09:42:30
Hz	1.75
V	3.88 in/s
L	2026-01-22
T	4.51 in/s
	09:42:30
	0.75
	09:42:30

Multi report

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Project Riverview Demo
Project maintainer -
Time frame 2026-01-18 00:00 - 2026-01-25 00:00 (America/New_York)

SGH Comment:
 Alerts correspond to
 battery replacement.



X-span	2026-01-18 00:00 - 2026-01-25 00:00		
Y-span	V: 0 - 0.03 in/s, L: 0 - 0.03 in/s, T: 0 - 0.03 in/s		
V		L	T
Max	0.03 in/s	0.03 in/s	0.03 in/s
Date	2026-01-23	2026-01-21	2026-01-23
Time	13:57:30	09:42:30	08:32:30
Hz	5.7	256	4.4