



Surf House Weekly Vibration Monitoring Report

For Fort Partners

05/01/2023 to 05/07/2023

Project Narrative

PROJECT INFORMATION

The project consists of the construction of a 12-level condominium structure. The new development will have a footprint of about 65 by 180 feet, and will rise to a maximum elevation of +140 feet NGVD. A single level basement is also planned for the development, with an anticipated finished floor elevation of -6' 8" feet NGVD. The underground parking garage will have approximate measurements of 206 feet in the east-west direction, and up to 65 feet in the north-south direction. The footprint of the garage structure is anticipated to be roughly 13,600 square feet. The garage will be accessed on the North side by car lifts. The eastern portion of the undeveloped land will include a pool and garden for the residents.

REMOTE VIBRATION MONITORS

A total of twelve (12) vibration monitors have been installed at this time. The units run continuously for a 24-hour period, with the exception of a short period of time to allow for the devices to download the data collected during the day. The location and identification of each device is presented in the table below and shown graphically on the map. A graph will be displayed for each monitor showing the data point collected during the specified time period. This report will display the historical data and data collected from the week of this report.

The vibration monitors were installed on the dates as listed in the table below:

Installation Date	Location/Name of Vibration Monitor	Serial Number of Vibration Monitor
04/12/2023	8926 Collins VM	UM10647
	8955 Collins VM1	UM6135
	8955 Collins VM2	UM6842
	8955 Collins VM3	UM12622
	8955 Collins VM4	UM13655
04/19/2023	9001 Collins VM1	UM9384
	9001 Collins VM2	UM12058
	9001 Collins VM3	UM12036
	9008 Collins VM1	UM6881
04/20/2023	9008 Collins VM2	UM13186
	8966 Collins VM	UM13654
	8925 Collins VM	UM12761

REVIEW OF VIBRATION MONITORING DATA

The following definitions identify the wording that will be used in the report to describe the vibration readings:

- Longitudinal: a vibration measurement in the axis in line with the vibration source (back and forth).
- Transverse: a vibration measurement in the axis perpendicular to the vibration source (side to side).
- Vertical: a vibration measurement in the vertical axis (up and down).
- Peak Particle Velocity (PPV): movement within the ground of molecular particles. This is not related to surface movement.

THRESHOLD EXCEEDANCES

A vibration level threshold limit of 0.50 in/sec is being used for the project, with trigger alerts set at 0.30 in/sec, or 60 percent of the established threshold level. Listed below are the instances when the seismographs have exceeded the established threshold limit of 0.50 in/sec.:

Date	Vibration Monitor (VM) Name/Location	Peak Particle Velocity (in./sec.)
4/25/2023 8:50	9001 Collins VM3	0.5229 ¹
4/25/2023 8:53		0.7891 ¹
4/28/2023 11:45	9001 Collins VM3	0.5595 ¹
5/4/2023 8:36	8955 Collins VM2	0.5207 ²

Notes:

¹ Exceedances are a result of the enclosure for the vibration equipment being moved by a worker.

² Exceedance appears to be the result of some interior chipping activity or staging of equipment on the south façade of the building.

DATES WHEN VIBRATION DATA WAS NOT RECORDED

Below is a table of dates when readings were not recorded on the vibration monitor, along with the cause of the reason for each occurrence.

Date	Vibration Monitor (VM) Name/Location
4/12/2023 17:00 – 4/19/2023 18:00	8955 Collins VM2 ¹
4/22/2023 6:00 – 4/28/2023 10:00	8955 Collins VM3 ²
5/3/2023 2:30 – 5/5/2023 12:30	8926 Collins VM ³

Notes:

¹ During the setup of this system, the modem was not allowing connection to the system. Due to the communication issue, the unit was not activated. The modem was replaced on 4/19/2023 to allow communication and the unit was activated at that time.

² Communication to this system was interrupted on 4/17/2023. The communications were re-established on 4/28/2023 and all data was processed. Unit lost power on 4/22/2023 and was restarted on 4/28/2023 during the testing of the system.

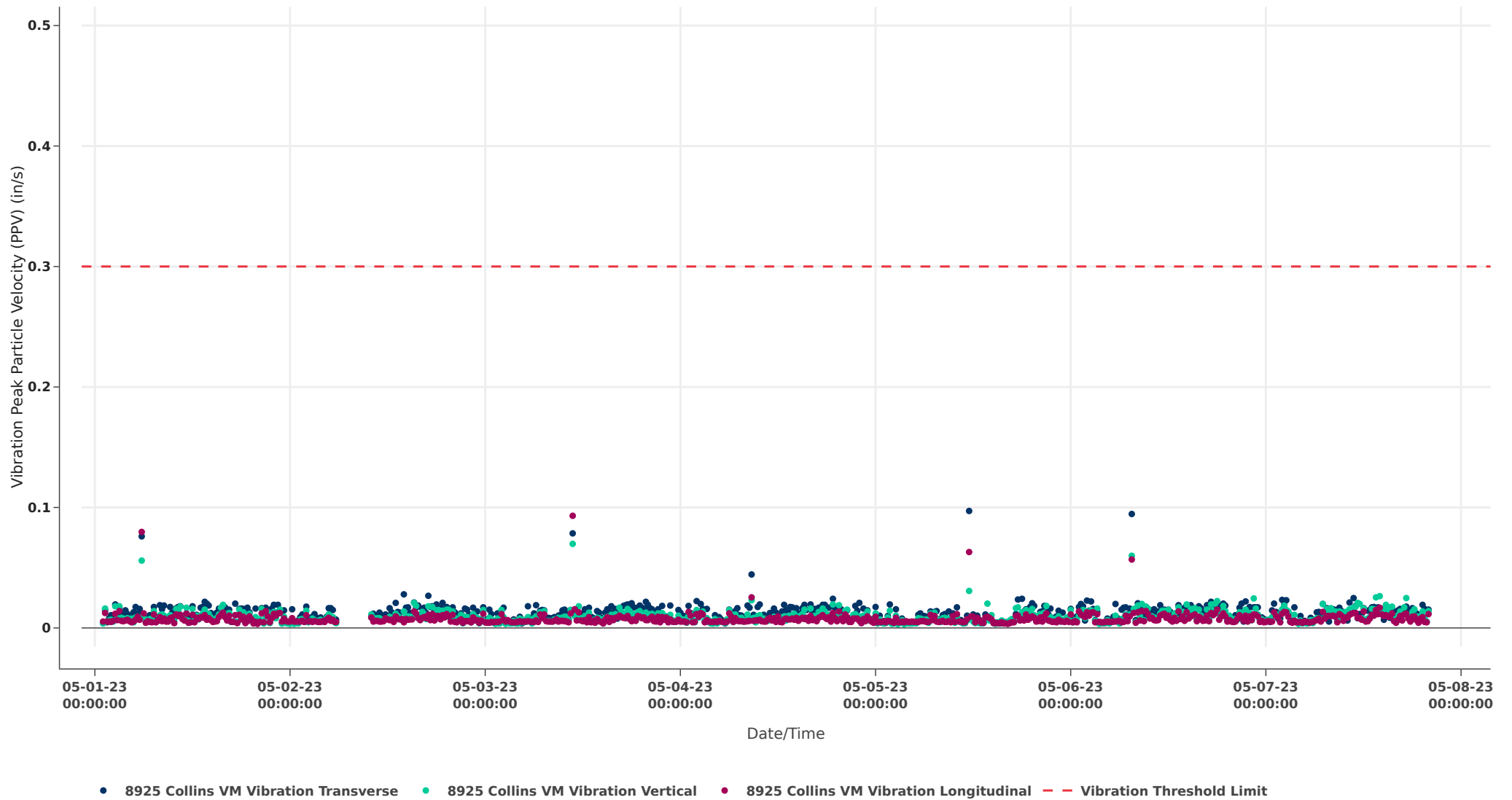
³ Battery power of system was expended and required replacement, completed on 5/5/2023.

*Please note that some of the units had an incorrect time setting on the system, which was corrected on the morning of 5/2/2023. Due to the time correction, a gap in readings appears on some of the project graphs. The units were in operation during the entire period and there is no missing data during the reporting period. The gap is directly related to the incorrect time setting.

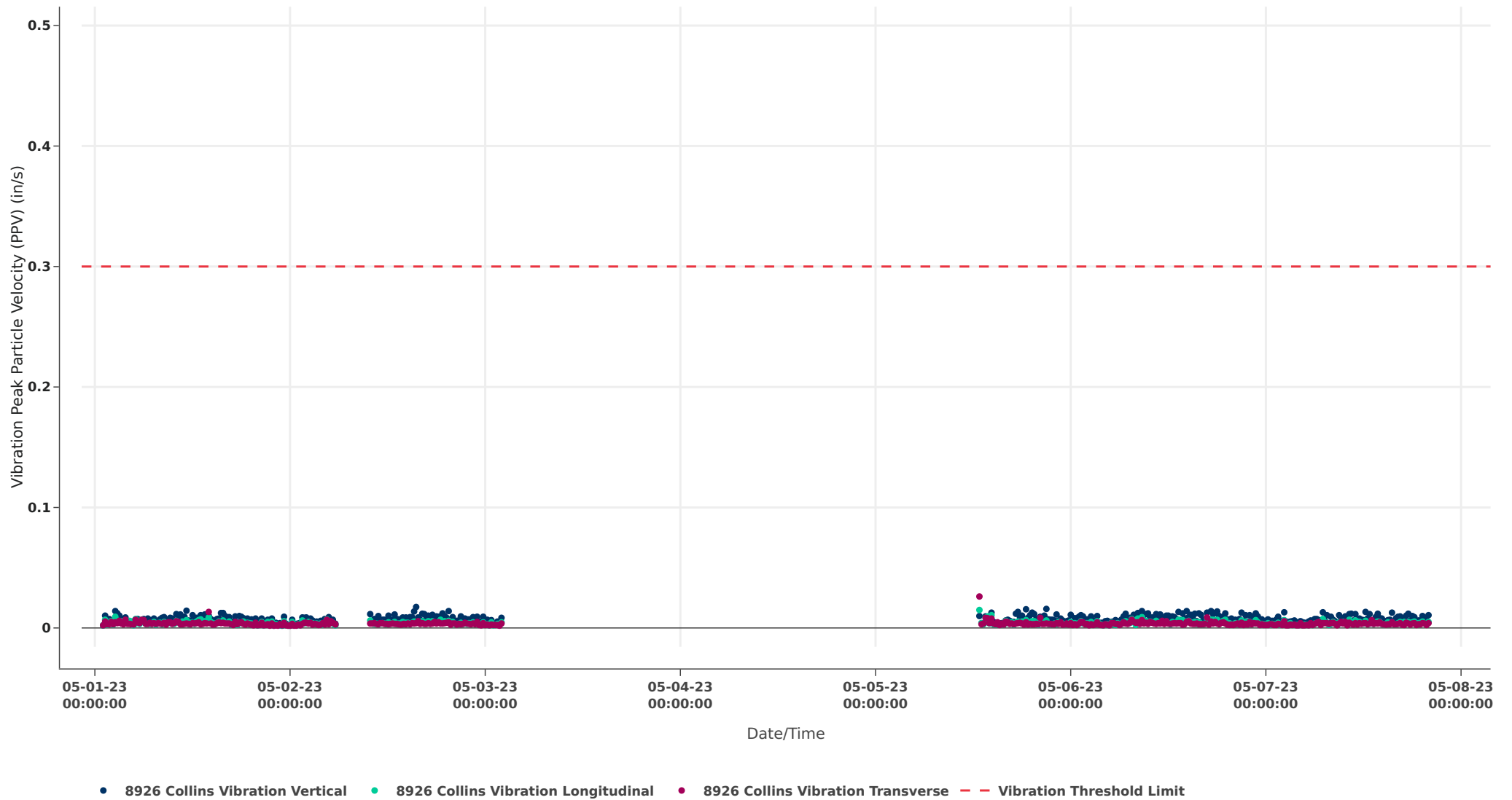
Report Map View



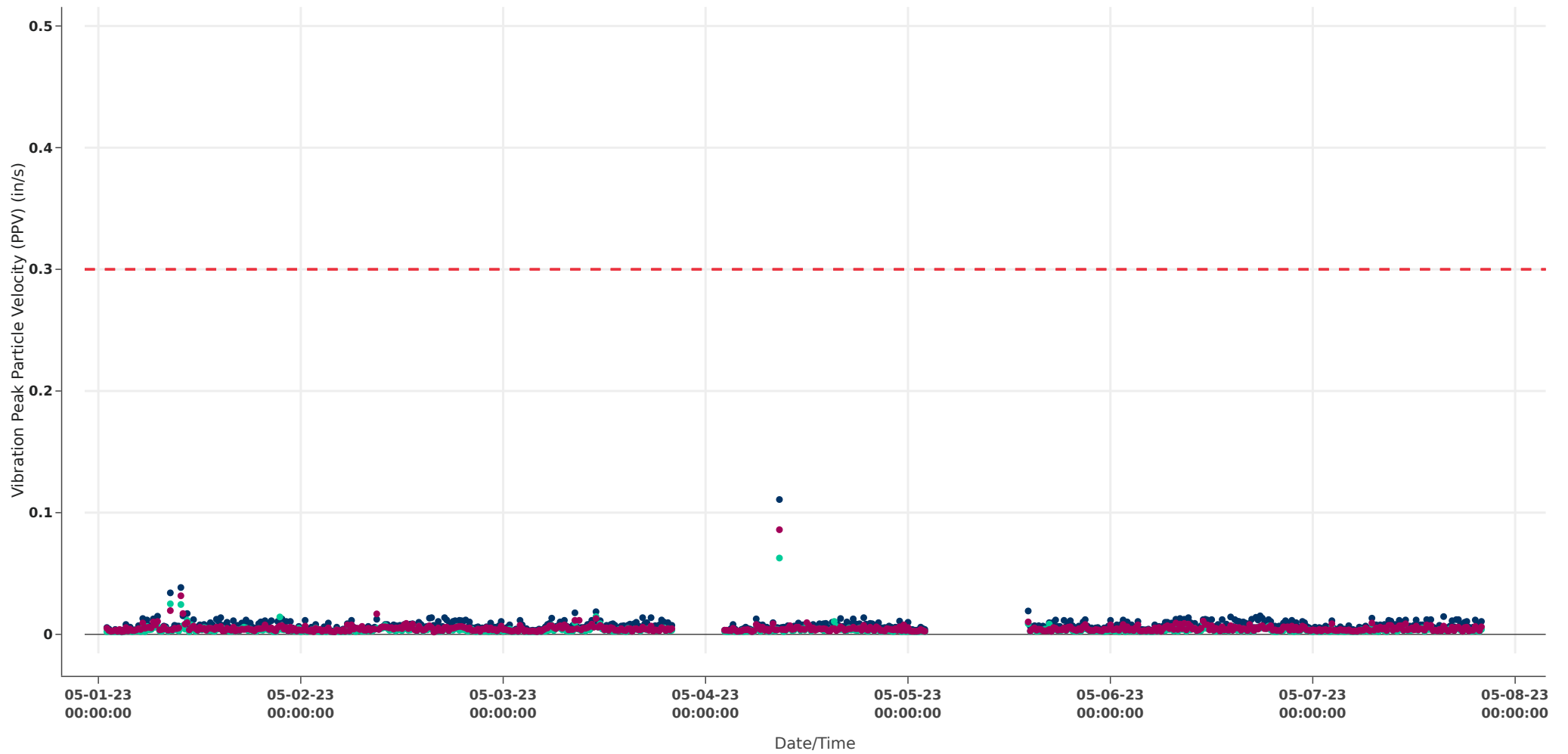
8925 Collins Vibration



8926 Collins Vibration

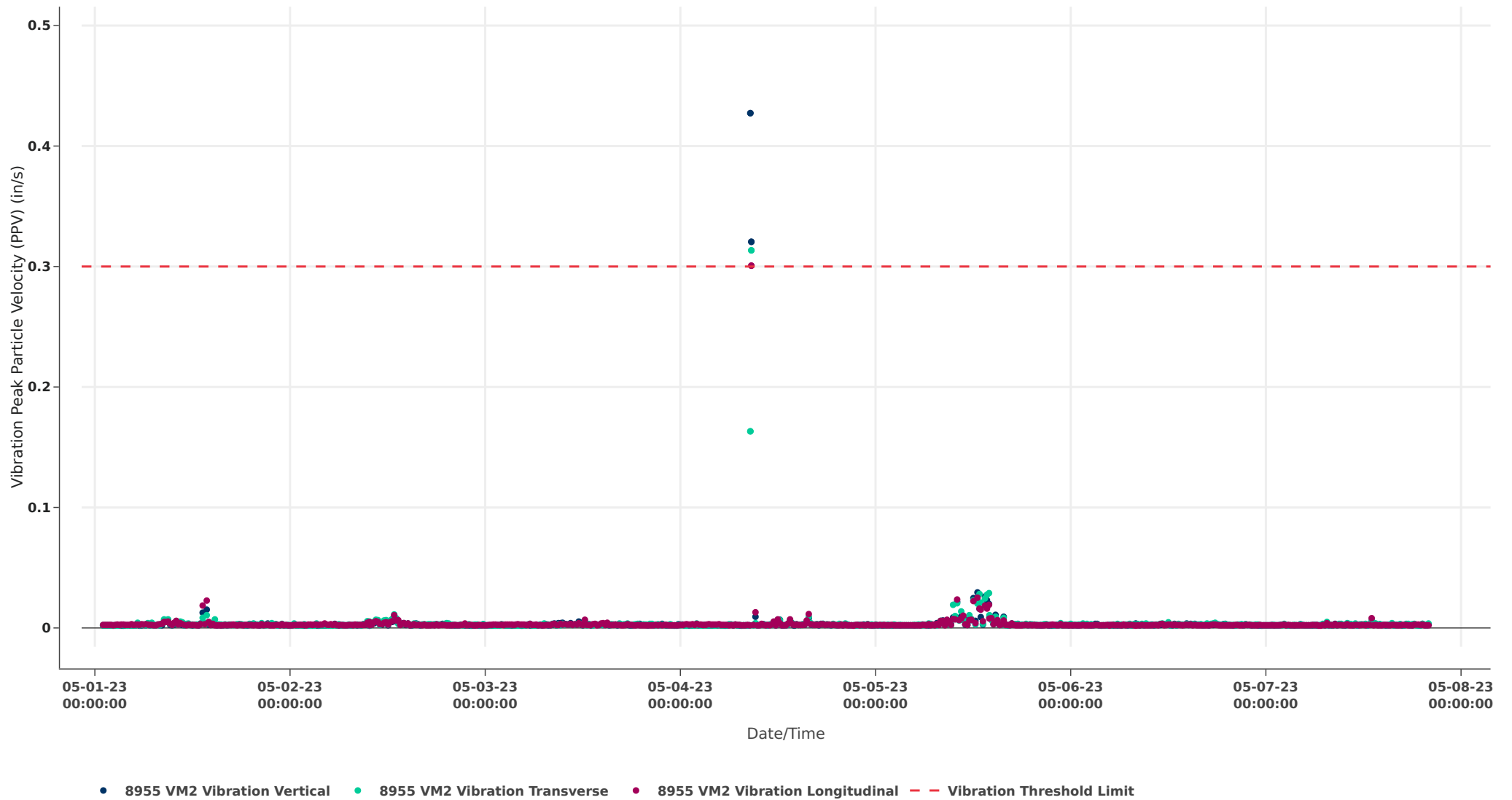


8955 Collins VM1 Vibration

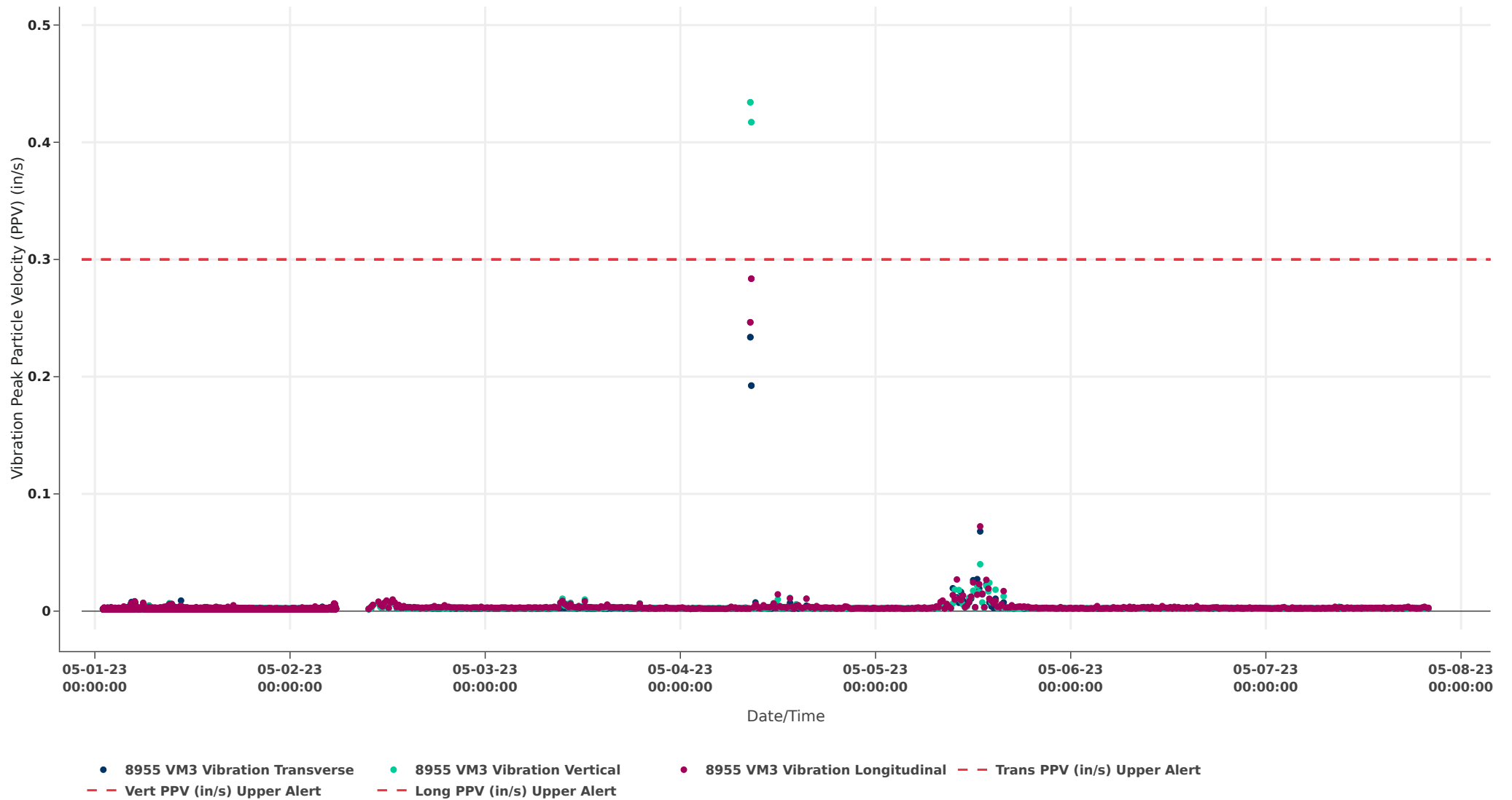


● 8955 VM1 Vibration Vertical ● 8955 VM1 Vibration Transverse ● 8955 VM1 Vibration Longitudinal - - Vert PPV (in/s) Upper Alert
- - Trans PPV (in/s) Upper Alert - - Long PPV (in/s) Upper Alert

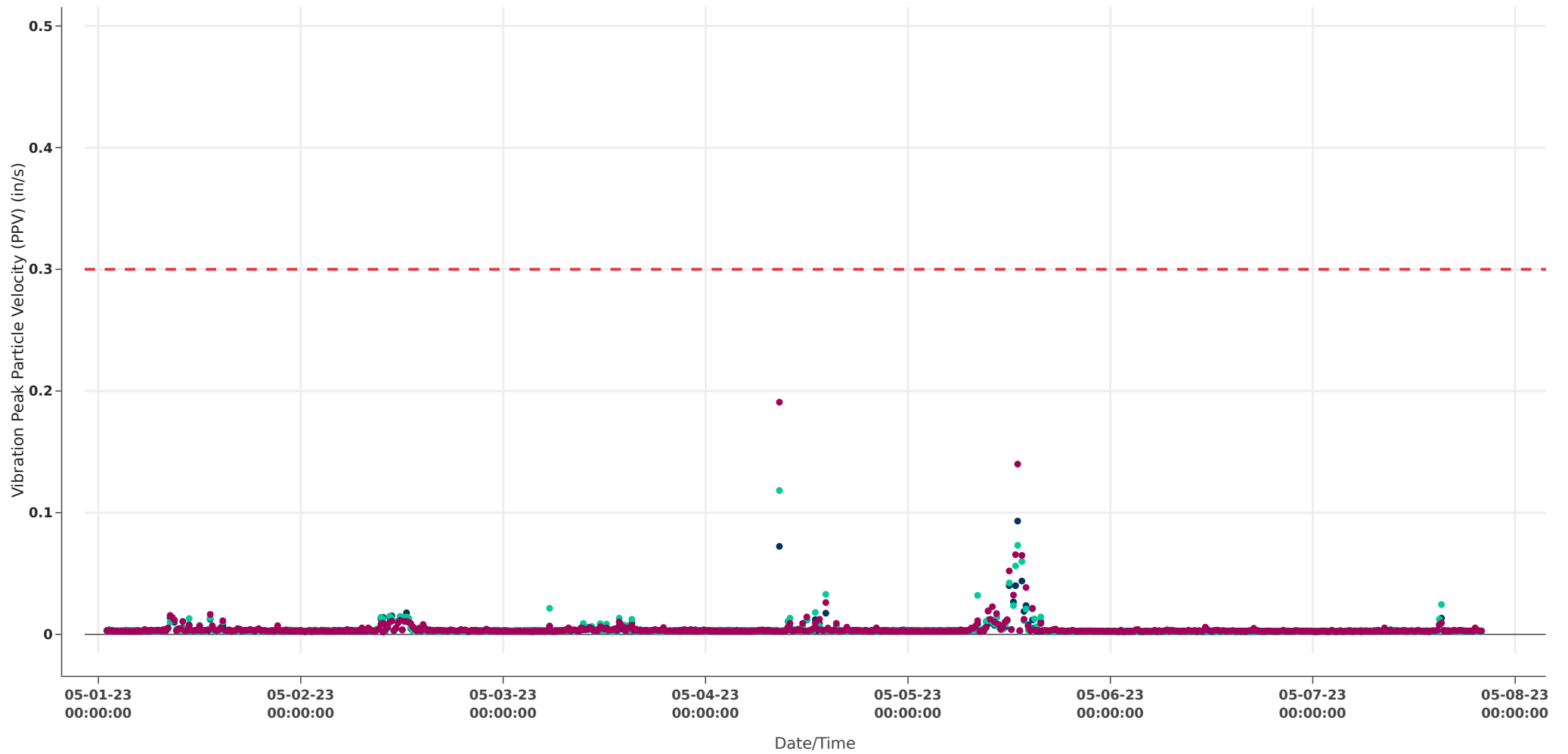
8955 Collins VM2 Vibration



8955 Collins VM3 Vibration

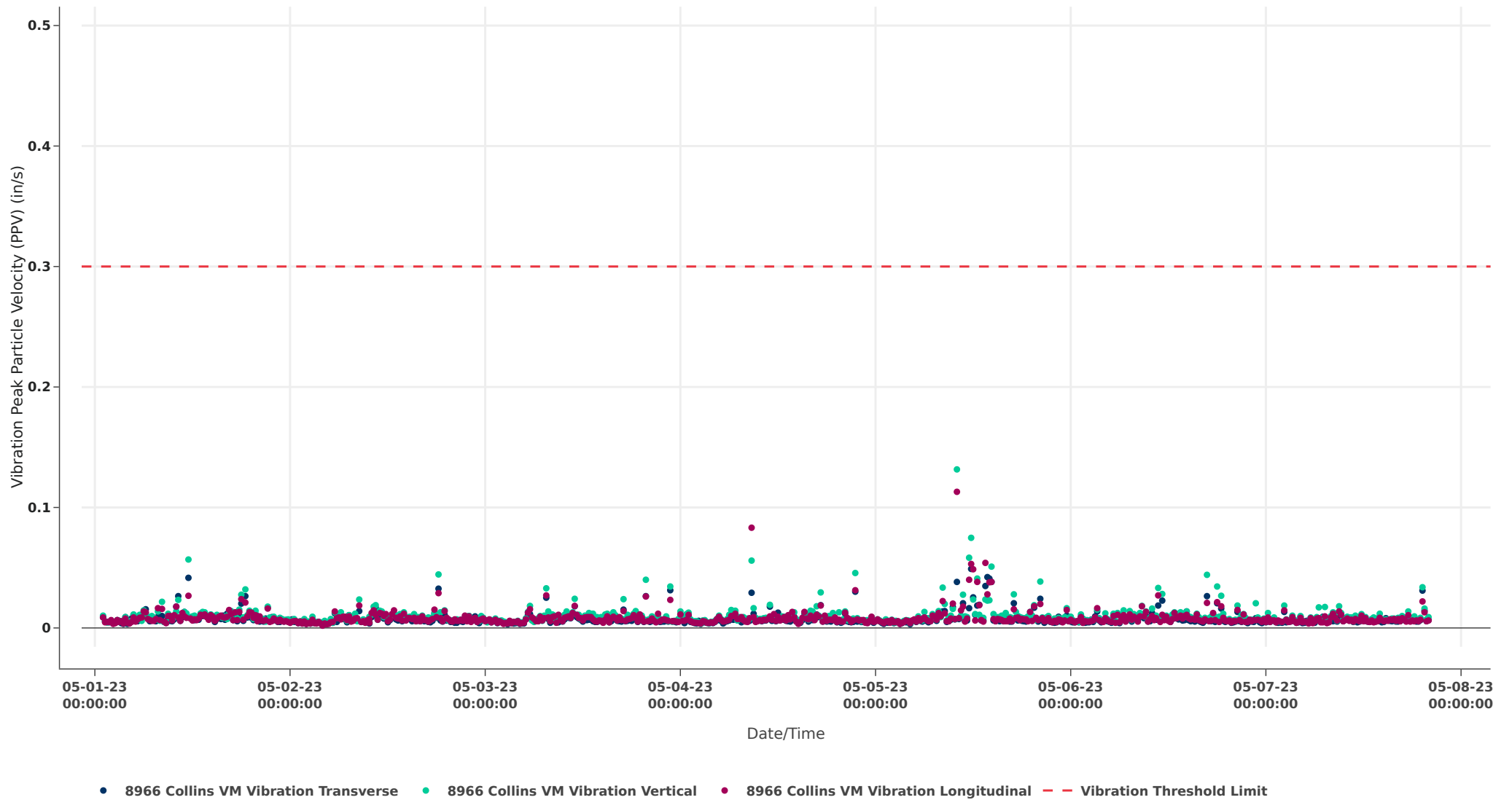


8955 Collins VM4 Vibration

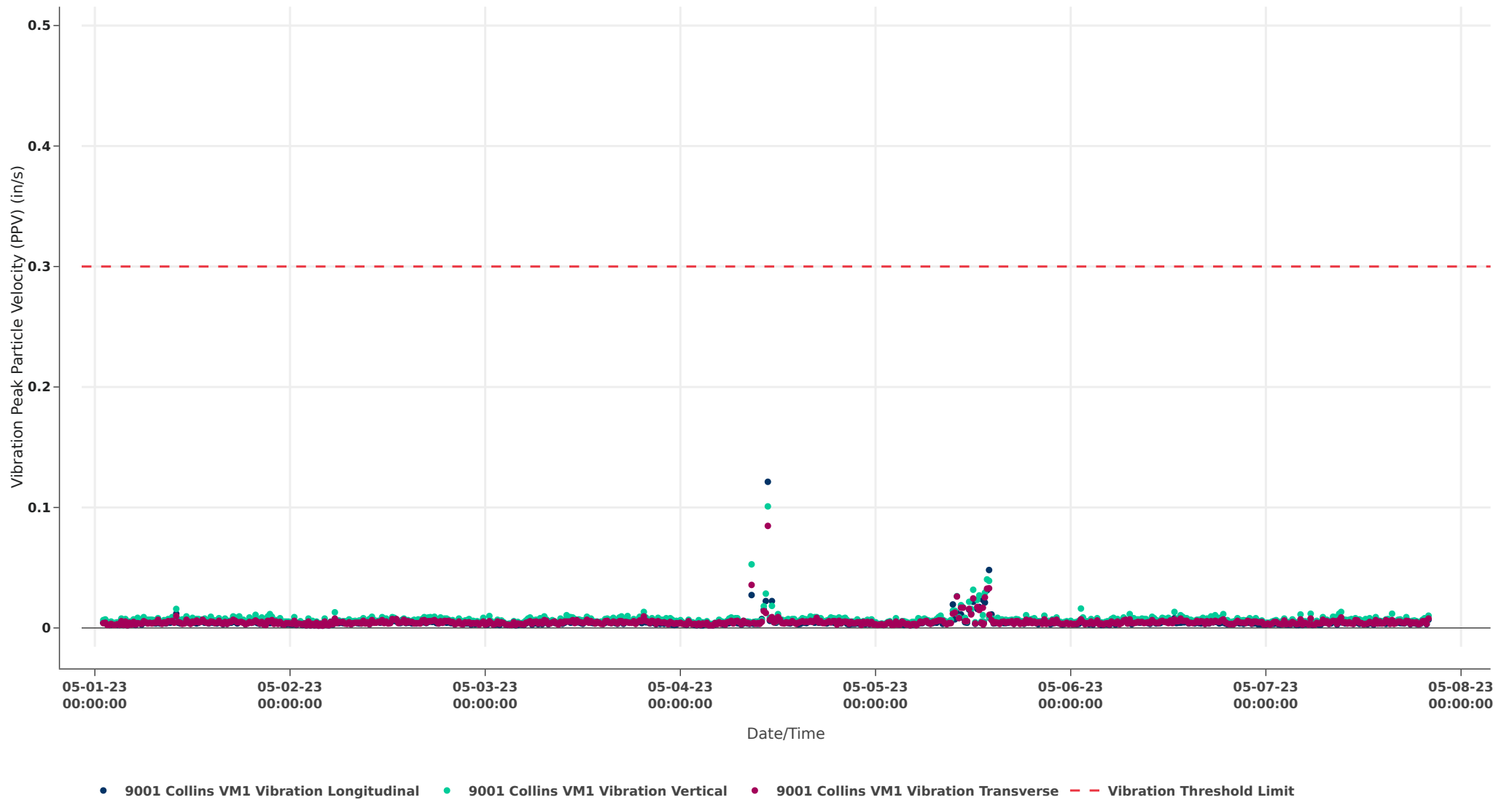


8955 VM4 Vibration Transverse 8955 VM4 Vibration Vertical 8955 VM4 Vibration Longitudinal Trans PPV (in/s) Upper Alert
Vert PPV (in/s) Upper Alert Long PPV (in/s) Upper Alert

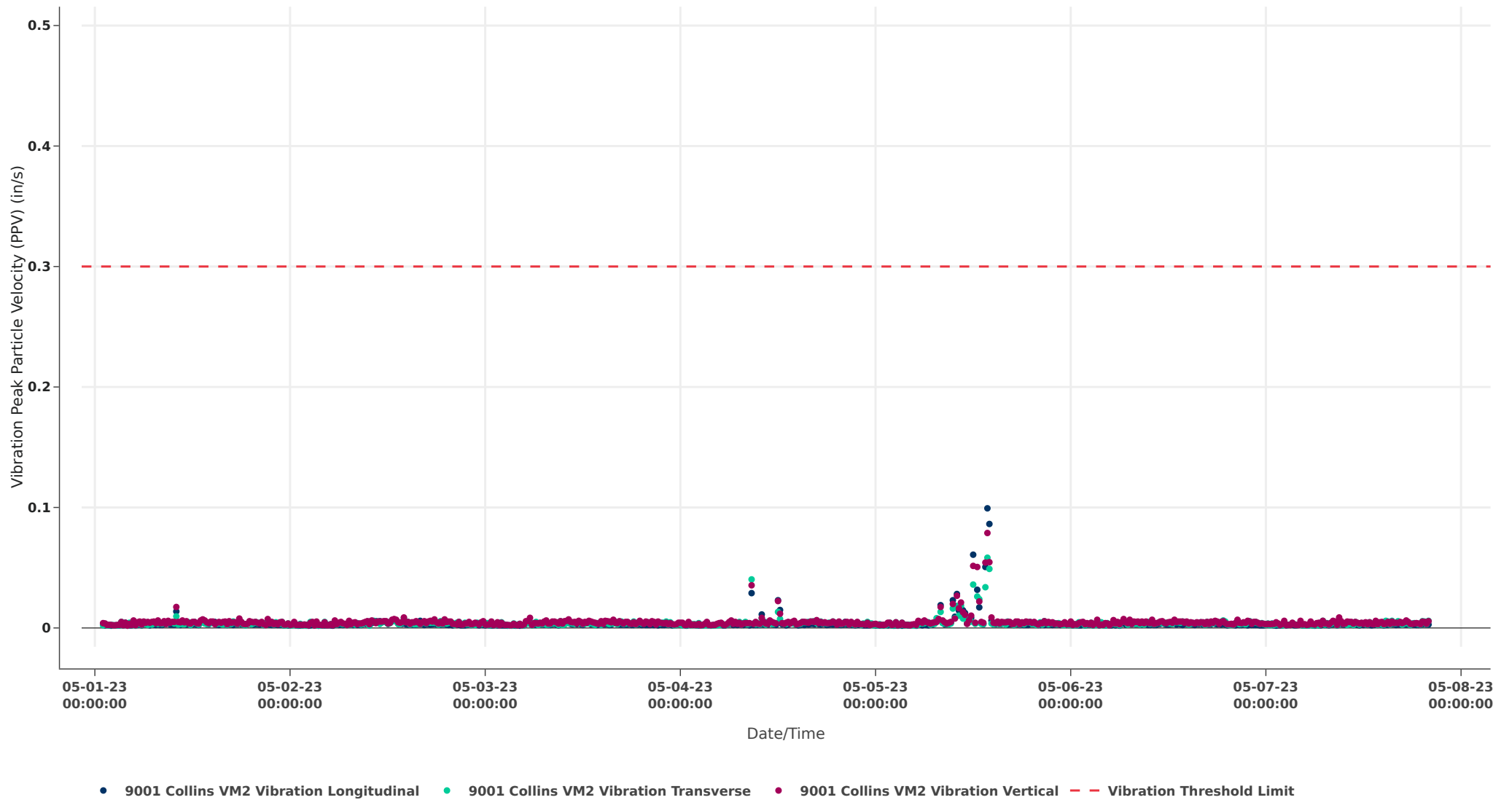
8966 Collins Vibration



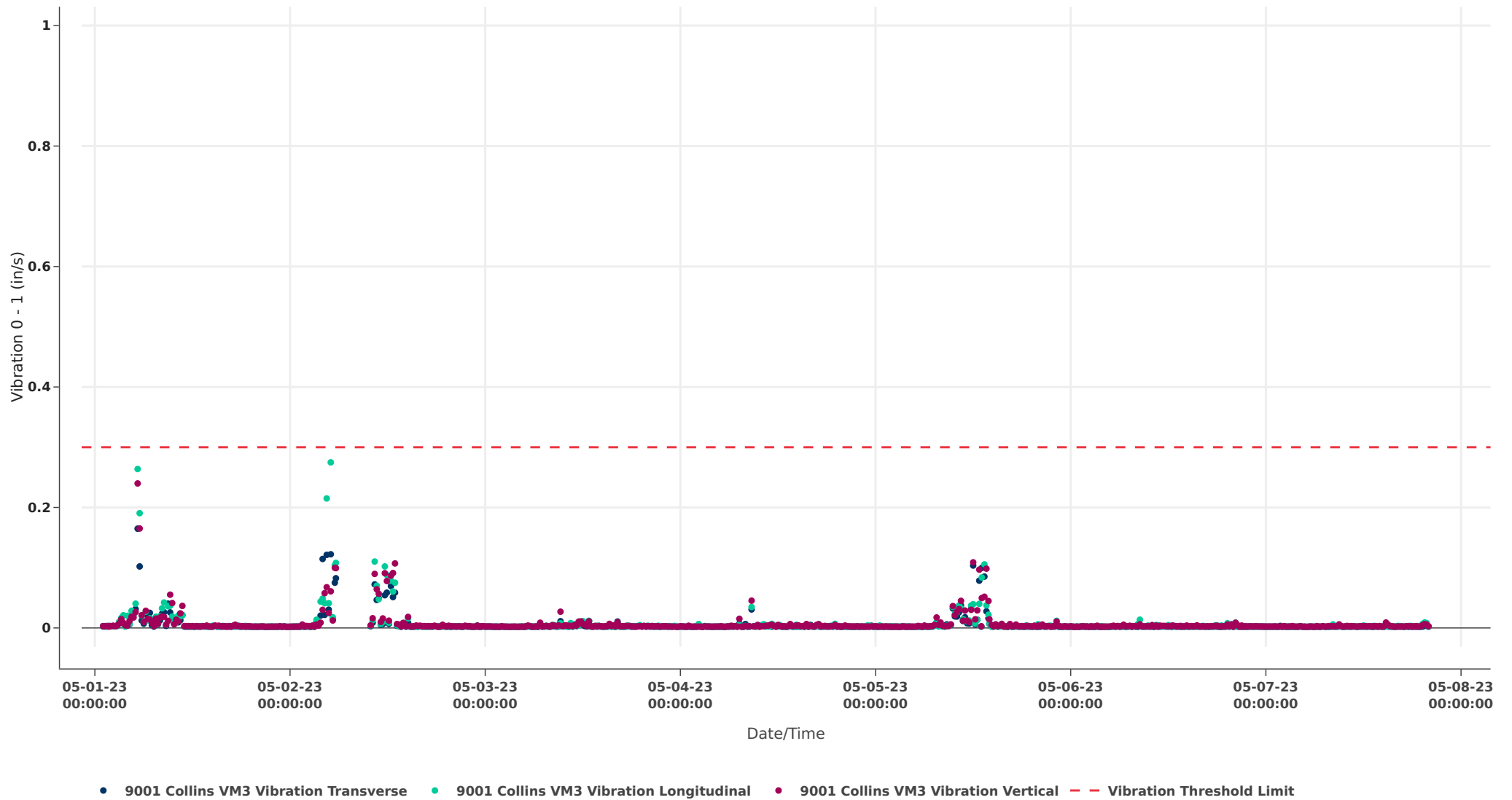
9001 Collins VM1 Vibration



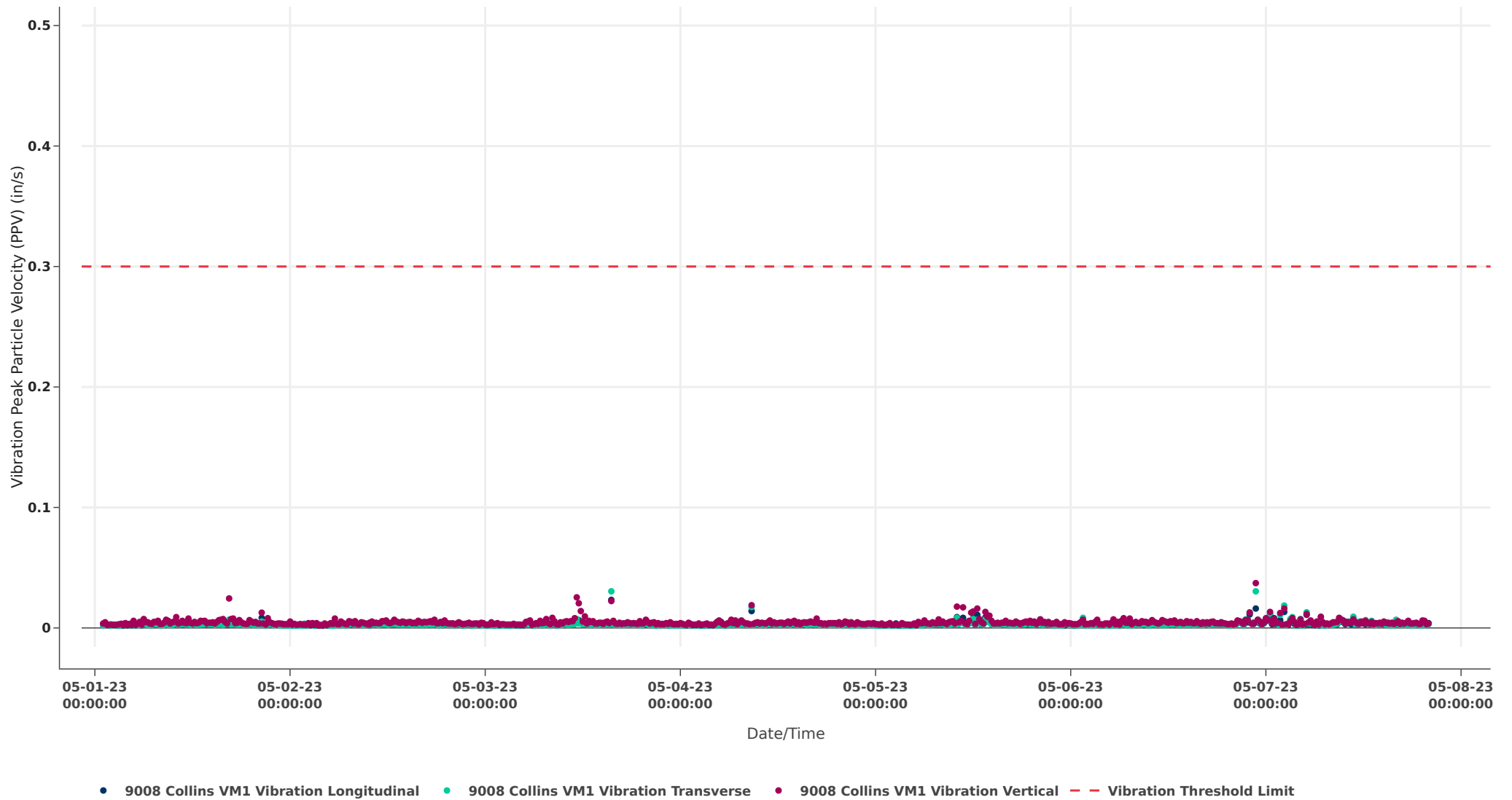
9001 Collins VM2 Vibration



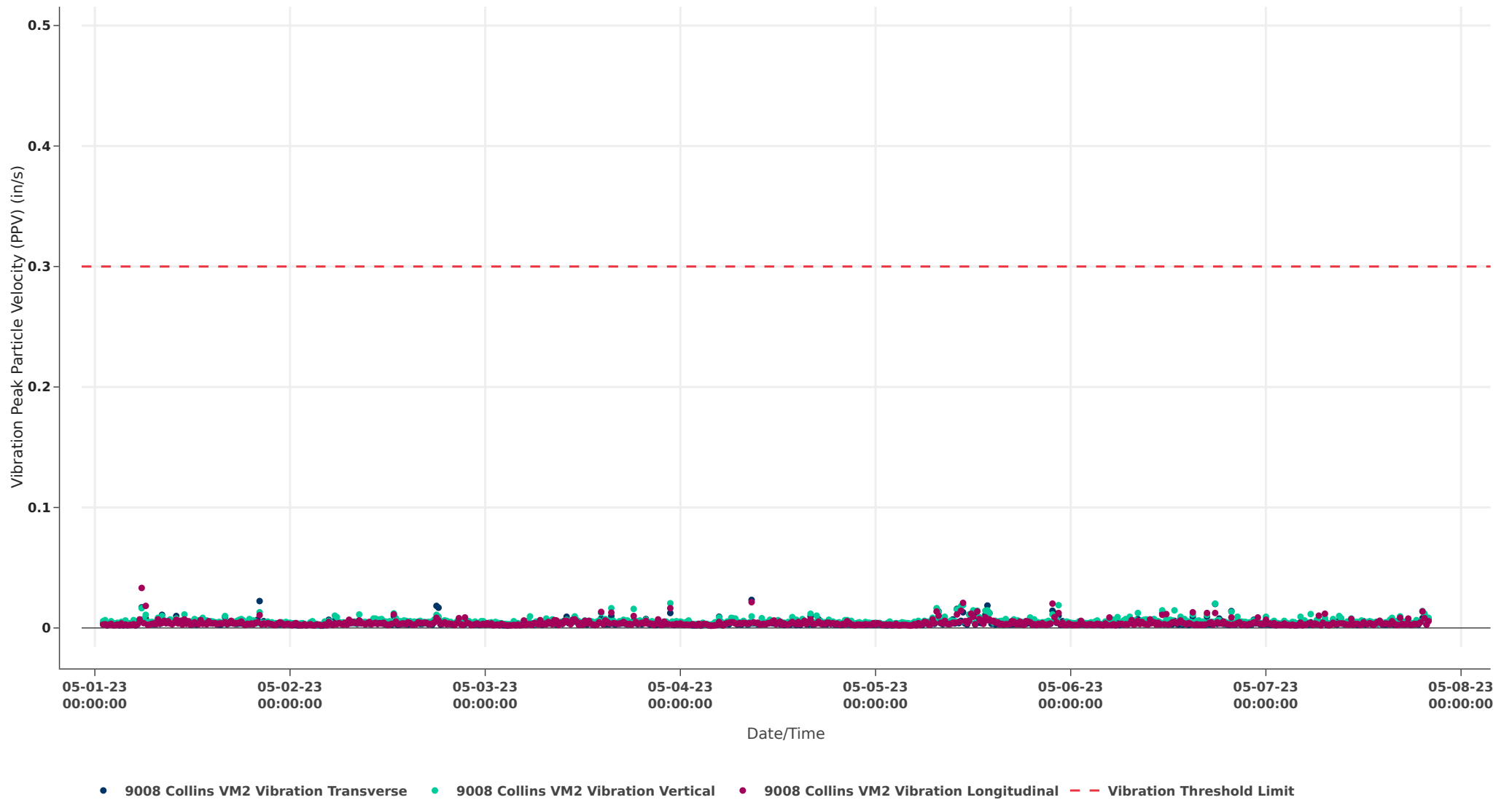
9001 Collins VM3 Vibration



9008 Collins VM1 Vibration



9008 Collins VM2 Vibration



8925 Collins VM Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/20/2023 13:59	0.0366	Transverse
4/21/2023 6:45	0.0996	Longitudinal
4/22/2023 3:45	0.0664	Longitudinal
4/23/2023 7:45	0.0245	Transverse
4/24/2023 6:00	0.0894	Longitudinal
4/25/2023 14:30	0.0338	Transverse
4/26/2023 6:47	0.0745	Transverse
4/27/2023 13:31	0.0348	Transverse
4/28/2023 10:56	0.1728	Transverse
4/29/2023 3:30	0.0869	Transverse
4/30/2023 6:16	0.0276	Vertical
5/1/2023 5:45	0.0797	Longitudinal
5/2/2023 13:59	0.0279	Transverse
5/3/2023 10:45	0.0931	Longitudinal
5/4/2023 8:45	0.0444	Transverse
5/5/2023 11:30	0.0971	Transverse
5/6/2023 7:30	0.0946	Transverse
5/7/2023 13:59	0.0264	Vertical

8926 Collins VM Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/12/2023 20:30	0.0121	Vertical
4/13/2023 9:30	0.0158	Vertical
4/14/2023 17:00	0.0155	Vertical
4/15/2023 12:45	0.0177	Transverse
4/16/2023 17:31	0.0304	Vertical
4/17/2023 18:45	0.0155	Vertical
4/18/2023 11:15	0.0168	Vertical
4/19/2023 13:57	0.0168	Vertical
4/20/2023 7:30	0.0354	Longitudinal
4/21/2023 3:15	0.0133	Vertical
4/22/2023 16:45	0.0143	Vertical
4/23/2023 12:15	0.0146	Vertical
4/24/2023 2:45	0.0161	Vertical
4/25/2023 13:02	0.0127	Vertical
4/26/2023 14:17	0.0152	Vertical
4/27/2023 9:46	0.0143	Vertical
4/28/2023 10:32	0.1443	Longitudinal
4/29/2023 2:00	0.0174	Vertical
4/30/2023 5:30	0.0133	Vertical
5/1/2023 11:15	0.0143	Vertical
5/2/2023 15:30	0.0174	Vertical
5/3/2023 1:59	0.0084	Vertical
5/5/2023 12:46	0.0261	Transverse
5/6/2023 8:45	0.014	Vertical
5/7/2023 12:15	0.0133	Vertical

8955 Collins VM1 Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/13/2023 1:59	0.0121	Vertical
4/13/2023 1:59	0.0146	Vertical
4/14/2023 6:30	0.0338	Transverse
4/15/2023 11:16	0.0152	Vertical
4/16/2023 17:30	0.0189	Vertical
4/17/2023 4:15	0.0242	Transverse
4/18/2023 13:46	0.014	Vertical
4/19/2023 4:31	0.027	Vertical
4/20/2023 21:16	0.0205	Vertical
4/21/2023 4:15	0.0317	Vertical
4/22/2023 7:00	0.0155	Vertical
4/23/2023 1:45	0.0149	Vertical
4/24/2023 4:30	0.0363	Vertical
4/25/2023 4:45	0.0186	Longitudinal
4/26/2023 4:16	0.0313	Vertical
4/27/2023 15:45	0.0143	Vertical
4/28/2023 14:30	0.0391	Vertical
4/29/2023 16:15	0.0146	Vertical
4/30/2023 8:30	0.014	Vertical
5/1/2023 9:46	0.0385	Vertical
5/2/2023 9:00	0.0168	Longitudinal
5/3/2023 11:00	0.0186	Vertical
5/4/2023 8:45	0.1108	Vertical
5/5/2023 10:00	0.0956	Longitudinal
5/6/2023 17:45	0.0152	Vertical
5/7/2023 15:31	0.0146	Vertical

8955 Collins VM2 Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/19/2023 14:08	0.0292	Longitudinal
4/20/2023 5:52	0.0425	Transverse
4/21/2023 6:34	0.0102	Transverse
4/22/2023 5:02	0.005	Transverse
4/23/2023 4:58	0.0043	Transverse
4/24/2023 6:25	0.0121	Transverse
4/25/2023 4:53	0.0214	Transverse
4/26/2023 11:31	0.0093	Transverse
4/27/2023 11:00	0.0341	Transverse
4/28/2023 12:45	0.0605	Longitudinal
4/29/2023 9:30	0.0068	Transverse
4/30/2023 0:45	0.0065	Transverse
5/1/2023 13:45	0.0227	Longitudinal
5/2/2023 12:48	0.0112	Transverse
5/3/2023 12:15	0.0068	Longitudinal
5/4/2023 8:36	0.5207	Longitudinal
5/5/2023 12:32	0.0295	Vertical
5/6/2023 12:00	0.0047	Transverse
5/7/2023 13:00	0.0081	Longitudinal

8955 Collins VM3 Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/12/2023 17:09	0.004	Transverse
4/13/2023 15:18	0.0043	Vertical
4/14/2023 7:45	0.0087	Longitudinal
4/15/2023 11:13	0.0127	Transverse
4/16/2023 4:38	0.0081	Longitudinal
4/17/2023 10:45	0.0133	Vertical
4/18/2023 5:34	0.0081	Transverse
4/19/2023 14:17	0.1192	Transverse
4/20/2023 4:39	0.0459	Transverse
4/21/2023 6:31	0.014	Transverse
4/22/2023 5:19	0.0059	Transverse
4/28/2023 10:43	0.0214	Longitudinal
4/29/2023 20:46	0.0056	Transverse
4/30/2023 4:16	0.023	Vertical
5/1/2023 10:35	0.009	Transverse
5/2/2023 12:37	0.0099	Longitudinal
5/3/2023 9:30	0.0106	Vertical
5/4/2023 8:36	0.4341	Vertical
5/5/2023 12:52	0.0723	Longitudinal
5/6/2023 3:15	0.0043	Longitudinal
5/7/2023 9:00	0.0037	Vertical

8955 Collins VM4 Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/12/2023 16:30	0.0062	Vertical
4/13/2023 5:01	0.0078	Vertical
4/14/2023 5:45	0.0053	Vertical
4/15/2023 11:46	0.0043	Longitudinal
4/16/2023 4:47	0.0205	Longitudinal
4/17/2023 0:02	0.0208	Vertical
4/18/2023 17:17	0.0133	Longitudinal
4/19/2023 14:32	0.0369	Longitudinal
4/20/2023 4:47	0.0515	Longitudinal
4/21/2023 6:30	0.0276	Vertical
4/22/2023 1:00	0.0047	Vertical
4/23/2023 8:45	0.0056	Vertical
4/24/2023 6:30	0.0279	Longitudinal
4/25/2023 4:45	0.0413	Transverse
4/26/2023 11:22	0.0258	Transverse
4/27/2023 10:00	0.0261	Longitudinal
4/28/2023 14:45	0.085	Longitudinal
4/29/2023 6:45	0.0068	Longitudinal
4/30/2023 5:15	0.018	Vertical
5/1/2023 0:30	0.0245	Vertical
5/2/2023 12:32	0.0177	Transverse
5/3/2023 5:30	0.0214	Vertical
5/4/2023 8:45	0.1908	Longitudinal
5/5/2023 13:00	0.1399	Longitudinal
5/6/2023 11:15	0.0059	Longitudinal
5/7/2023 15:15	0.0245	Vertical

8966 Collins VM Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/20/2023 20:45	0.0928	Longitudinal
4/21/2023 13:45	0.0273	Vertical
4/22/2023 4:30	0.0273	Vertical
4/23/2023 10:30	0.0199	Vertical
4/24/2023 6:45	0.0168	Vertical
4/25/2023 14:30	0.032	Vertical
4/26/2023 17:30	0.0348	Vertical
4/27/2023 17:30	0.0258	Vertical
4/28/2023 12:45	0.0431	Vertical
4/29/2023 21:00	0.0301	Vertical
4/30/2023 18:15	0.0254	Vertical
5/1/2023 11:30	0.0568	Vertical
5/2/2023 18:15	0.0444	Vertical
5/3/2023 19:45	0.04	Vertical
5/4/2023 8:45	0.0832	Longitudinal
5/5/2023 10:00	0.1316	Vertical
5/6/2023 16:45	0.0441	Vertical
5/7/2023 19:15	0.0338	Vertical

9001 Collins VM1 Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/19/2023 20:00	0.0084	Vertical
4/20/2023 21:15	0.0161	Longitudinal
4/21/2023 7:15	0.0115	Vertical
4/22/2023 7:00	0.0143	Vertical
4/23/2023 1:30	0.0115	Vertical
4/24/2023 1:45	0.0127	Vertical
4/25/2023 4:45	0.0214	Longitudinal
4/26/2023 15:30	0.0146	Longitudinal
4/27/2023 14:15	0.0155	Vertical
4/28/2023 12:45	0.1154	Longitudinal
4/29/2023 20:15	0.0127	Vertical
4/30/2023 7:59	0.0115	Vertical
5/1/2023 10:00	0.0158	Vertical
5/2/2023 5:30	0.013	Vertical
5/3/2023 19:30	0.0133	Vertical
5/4/2023 10:45	0.1213	Longitudinal
5/5/2023 13:57	0.0481	Longitudinal
5/6/2023 1:15	0.0161	Vertical
5/7/2023 9:15	0.0133	Vertical

9001 Collins VM2 Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/19/2023 19:59	0.0059	Vertical
4/20/2023 8:45	0.0292	Longitudinal
4/21/2023 1:15	0.0093	Vertical
4/22/2023 2:30	0.0071	Vertical
4/23/2023 19:30	0.0062	Vertical
4/24/2023 11:45	0.0115	Longitudinal
4/25/2023 8:45	0.0301	Longitudinal
4/26/2023 11:15	0.009	Longitudinal
4/27/2023 9:45	0.0137	Longitudinal
4/28/2023 11:35	0.4167	Transverse
4/29/2023 16:30	0.0078	Vertical
4/30/2023 5:45	0.0078	Vertical
5/1/2023 10:00	0.0174	Vertical
5/2/2023 13:59	0.0087	Vertical
5/3/2023 5:30	0.0084	Vertical
5/4/2023 8:45	0.0403	Transverse
5/5/2023 13:45	0.0993	Longitudinal
5/6/2023 6:30	0.0074	Vertical
5/7/2023 9:00	0.0087	Vertical

9001 Collins VM3 Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/19/2023 14:30	0.0118	Vertical
4/20/2023 11:00	0.0282	Vertical
4/21/2023 9:30	0.0528	Transverse
4/22/2023 13:02	0.013	Transverse
4/23/2023 19:59	0.0109	Longitudinal
4/24/2023 5:00	0.1033	Vertical
4/25/2023 4:53	0.7891	Vertical
4/26/2023 8:23	0.4521	Longitudinal
4/27/2023 7:55	0.391	Vertical
4/28/2023 7:45	0.5595	Transverse
4/29/2023 11:15	0.0068	Longitudinal
4/30/2023 1:59	0.0081	Longitudinal
5/1/2023 9:15	0.2638	Longitudinal
5/2/2023 9:00	0.2749	Longitudinal
5/3/2023 9:15	0.027	Vertical
5/4/2023 8:45	0.0453	Vertical
5/5/2023 12:00	0.1089	Vertical
5/6/2023 8:30	0.0137	Longitudinal
5/7/2023 14:45	0.009	Vertical

9008 Collins VM1 Site Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/19/2023 15:45	0.0071	Transverse
4/20/2023 10:30	0.0164	Transverse
4/21/2023 7:15	0.0065	Vertical
4/22/2023 14:30	0.0096	Transverse
4/23/2023 7:15	0.0068	Vertical
4/24/2023 7:00	0.0059	Vertical
4/25/2023 4:45	0.0127	Transverse
4/26/2023 21:45	0.014	Transverse
4/27/2023 10:15	0.0074	Vertical
4/28/2023 15:11	0.1403	Vertical
4/29/2023 16:30	0.0081	Vertical
4/30/2023 6:00	0.0074	Vertical
5/1/2023 16:30	0.0245	Vertical
5/2/2023 5:30	0.0078	Vertical
5/3/2023 15:30	0.0304	Transverse
5/4/2023 8:45	0.0189	Vertical
5/5/2023 10:00	0.0177	Vertical
5/6/2023 22:45	0.0372	Vertical
5/7/2023 2:15	0.0186	Transverse

9008 Collins VM2 Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
4/20/2023 12:15	0.0093	Vertical
4/21/2023 4:00	0.0279	Longitudinal
4/22/2023 1:00	0.0146	Vertical
4/23/2023 4:00	0.0124	Vertical
4/24/2023 6:45	0.0189	Transverse
4/25/2023 12:30	0.0419	Vertical
4/26/2023 9:54	0.0264	Longitudinal
4/27/2023 8:15	0.2414	Transverse
4/28/2023 21:00	0.0273	Vertical
4/29/2023 7:30	0.0248	Vertical
4/30/2023 19:15	0.0133	Longitudinal
5/1/2023 5:45	0.0332	Longitudinal
5/2/2023 18:00	0.0183	Transverse
5/3/2023 22:45	0.0205	Vertical
5/4/2023 8:45	0.0233	Transverse
5/5/2023 10:45	0.0208	Longitudinal
5/6/2023 17:45	0.0202	Vertical
5/7/2023 22:15	0.0189	Vertical