



Hillcrest Weekly Vibration Monitoring Report

For Fort Partners

03-06-2023 through 03-12-2023

Project Narrative

PROJECT INFORMATION

The project consists of the construction of a 10-level condominium structure. The new development will have a footprint of about 75 by 180 feet, and will rise to a maximum elevation of +158 feet NGVD. A single level basement is also planned for the development, with an anticipated finished floor elevation of 14'-2" feet NGVD. The underground parking garage will have approximate measurements of 246 feet in the east-west direction, and up to 94 feet in the north-south direction. The footprint of the garage structure is anticipated to be roughly 22,000 square feet. The new structure will be constructed about 20 feet south of the northern boundary of the site. The southern portion of the undeveloped land will include a lap pool, while the northwest portion will provide access to underground parking.

REMOTE VIBRATION MONITORS

A total of thirteen (13) 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
11/21/2022	9201 Collins	UM17294
	9225 Collins	UM16748
1/31/2023	9111 Collins	UM17094
	9141 Harding	UM16715
2/13/2023	9124 Collins	UM17719
	9140 Collins	UM16754
	9156 Collins	UM17715
	9170 Collins	UM13183
2/21/2023	SE Site	UM17710
	SW Site	UM6841
	NE Site	UM11936
	NW Site	UM16712
	Center Site	UM8401

Threshold Exceedances

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.

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.)
3/2/2023 8:14	Center Site VM	0.8757 ¹
3/6/2023 8:53	SE Site VM	0.6827 ²
3/7/2023 8:59	SE Site VM	1.218 ³
3/7/2023 9:07		0.6209
3/7/2023 9:20		0.5797
3/7/2023 9:28		0.7829
3/7/2023 15:24	NW Site VM	1.4162 ⁴
3/7/2023 15:42	SE Site VM	2.7419 ⁵

Notes:

¹ Digging with backhoe near geophone.

² Movement of debris on-site with excavator near geophone.

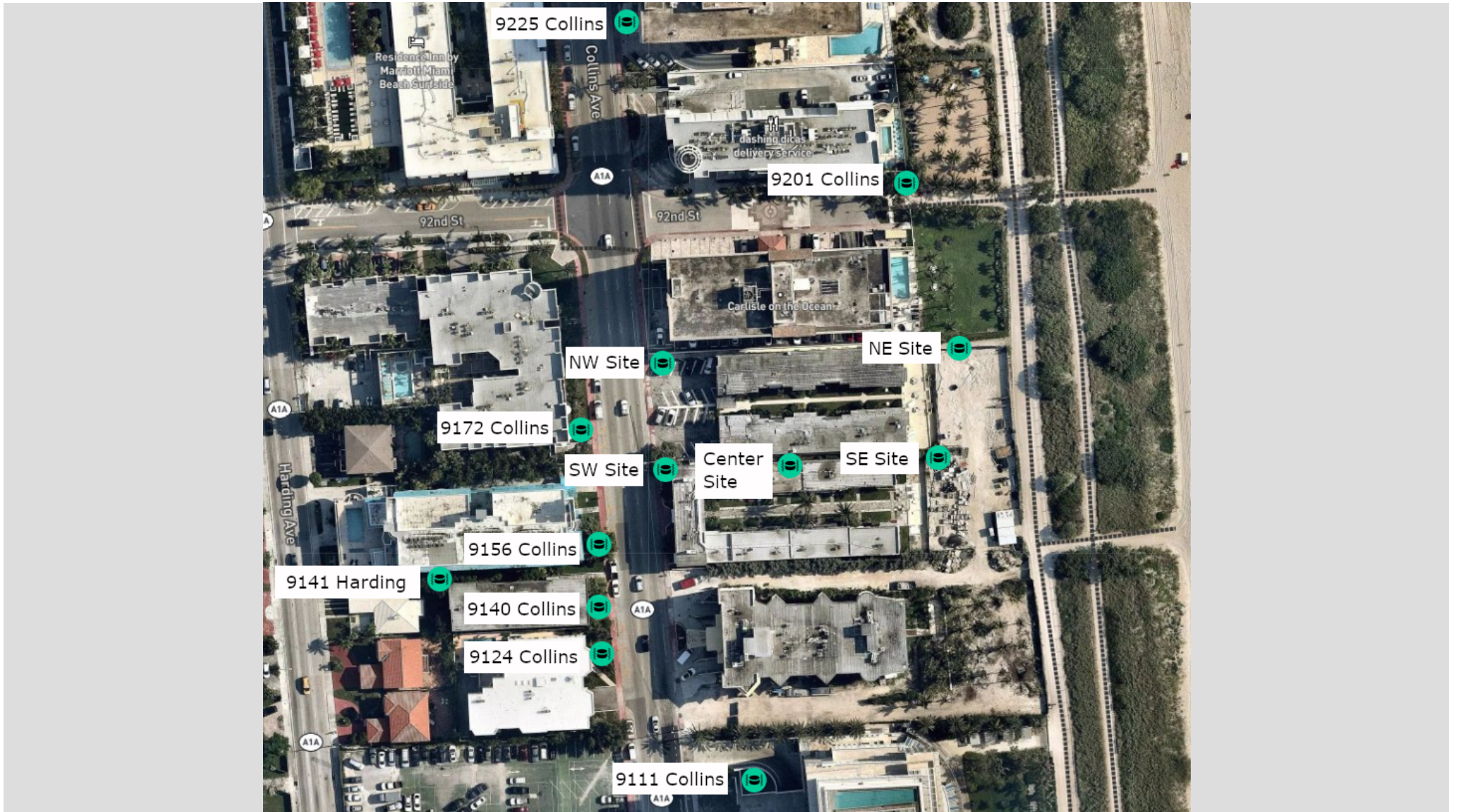
³ Demolition of the sea wall near geophone.

⁴ Demolition of asphalt with excavator near geophone.

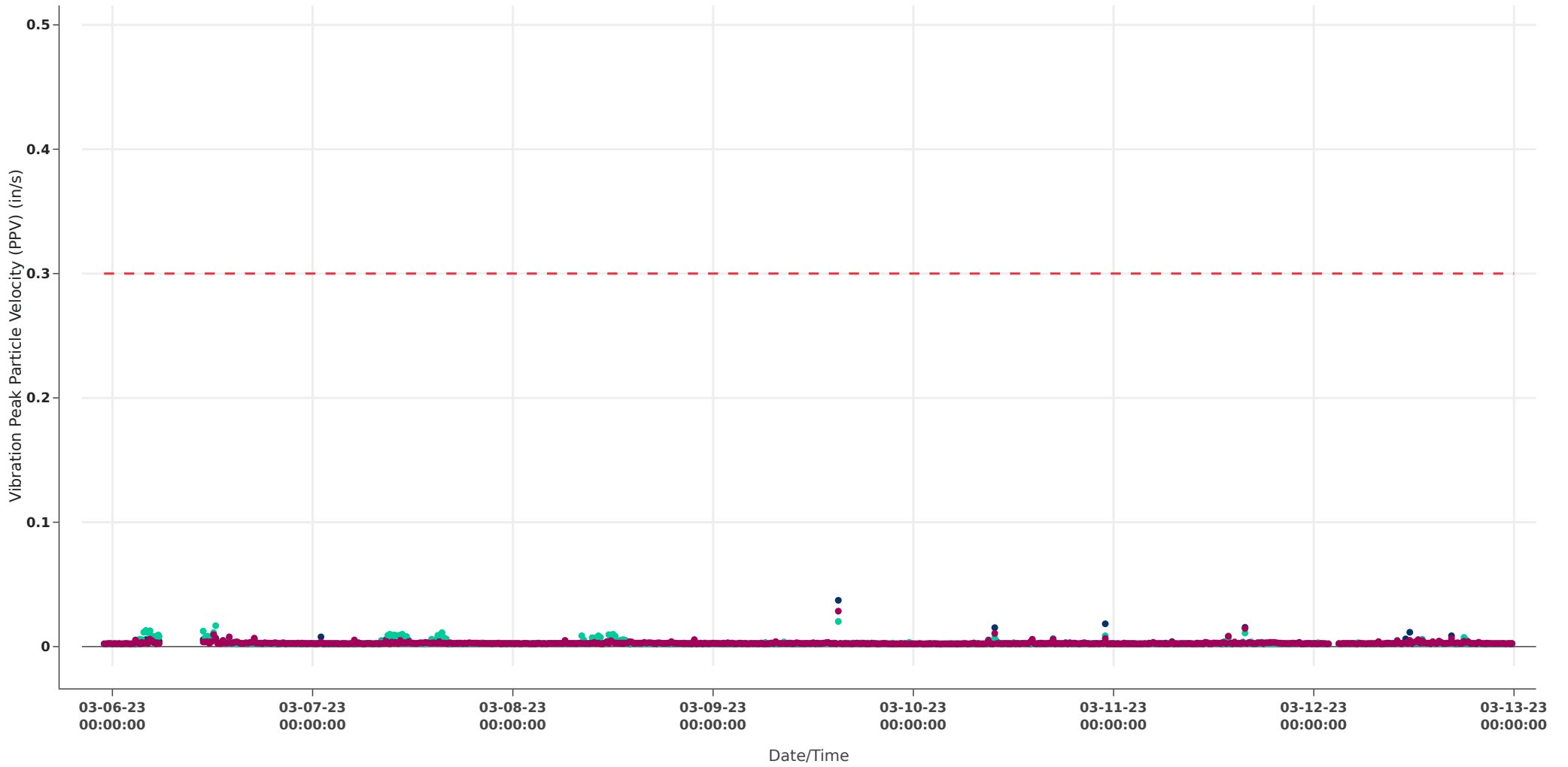
⁵ Digging and moving materials with backhoe near geophone.

*Please note that some of the units had an incorrect time setting on the system, which was corrected on the morning of 3/6/2023. Due to the time correction, a gap in readings appears on the graphical data reports. 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.

Map View

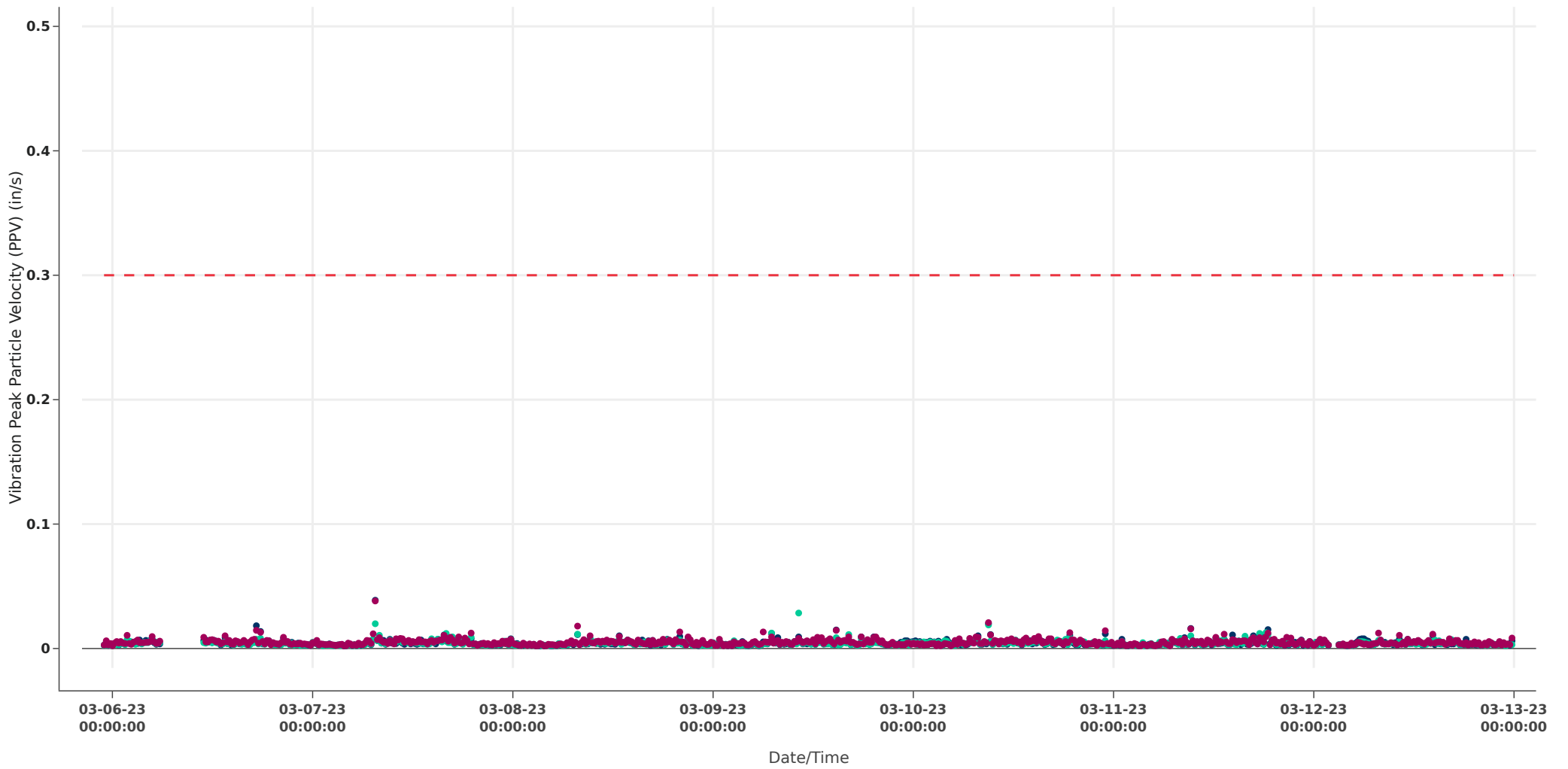


9201 Collins Vibration



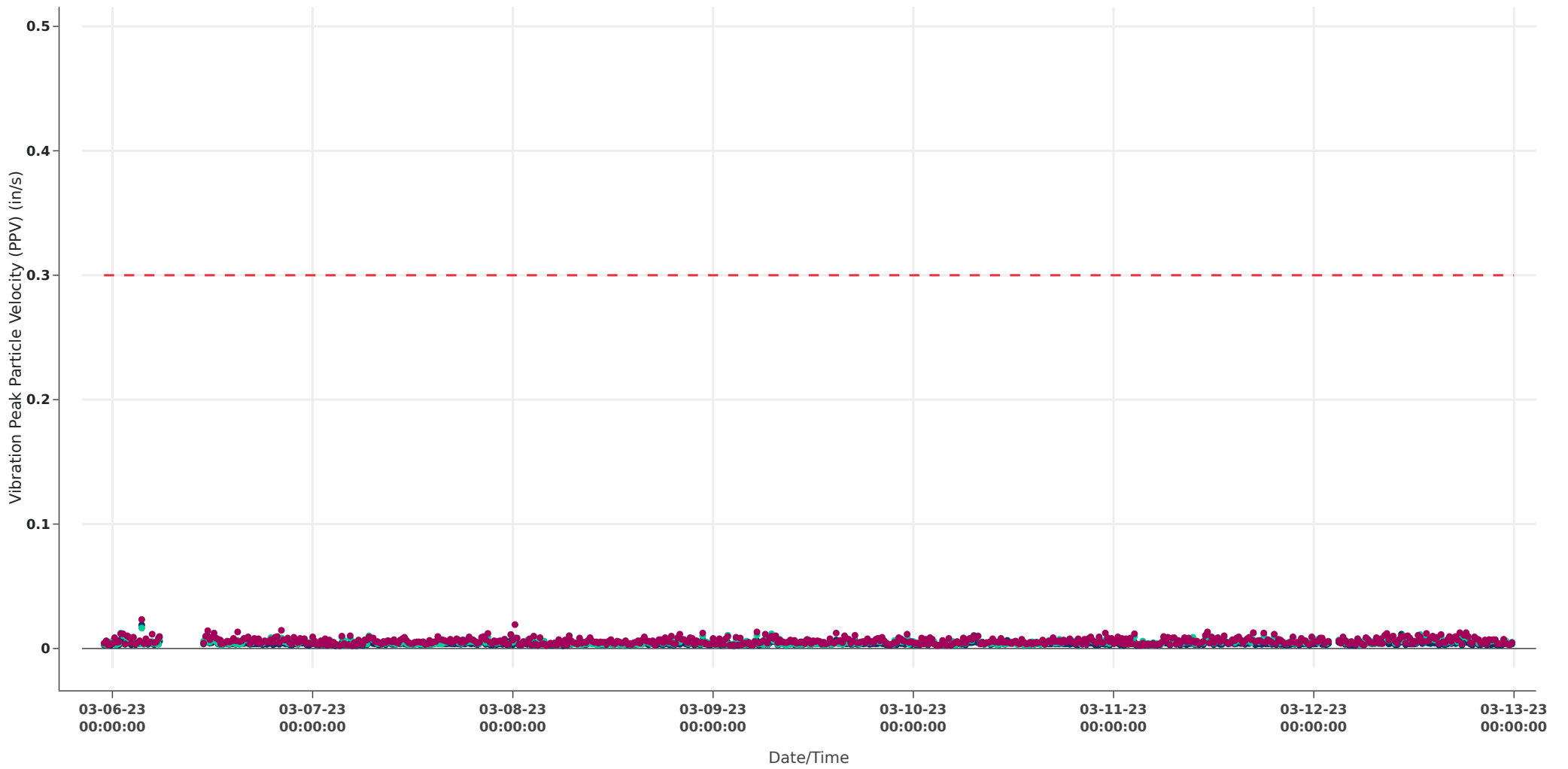
● 9201 Collins Vibration Longitudinal ● 9201 Collins Vibration Transverse ● 9201 Collins Vibration Vertical - - Vibration Threshold Limit

9225 Collins Vibration



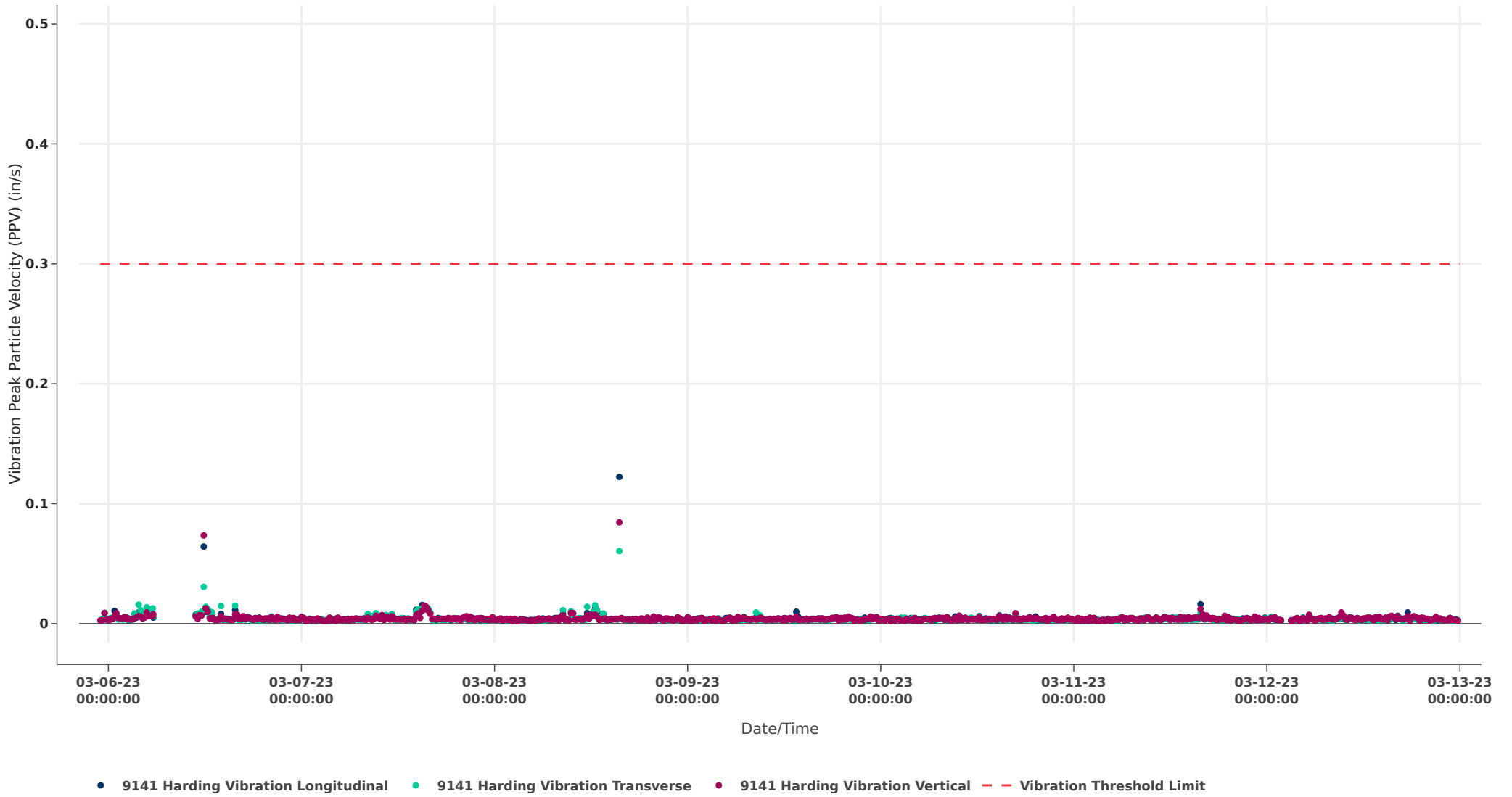
● 9225 Collins Vibration Longitudinal ● 9225 Collins Vibration Transverse ● 9225 Collins Vibration Vertical - - Vibration Threshold Limit

9111 Collins Vibration

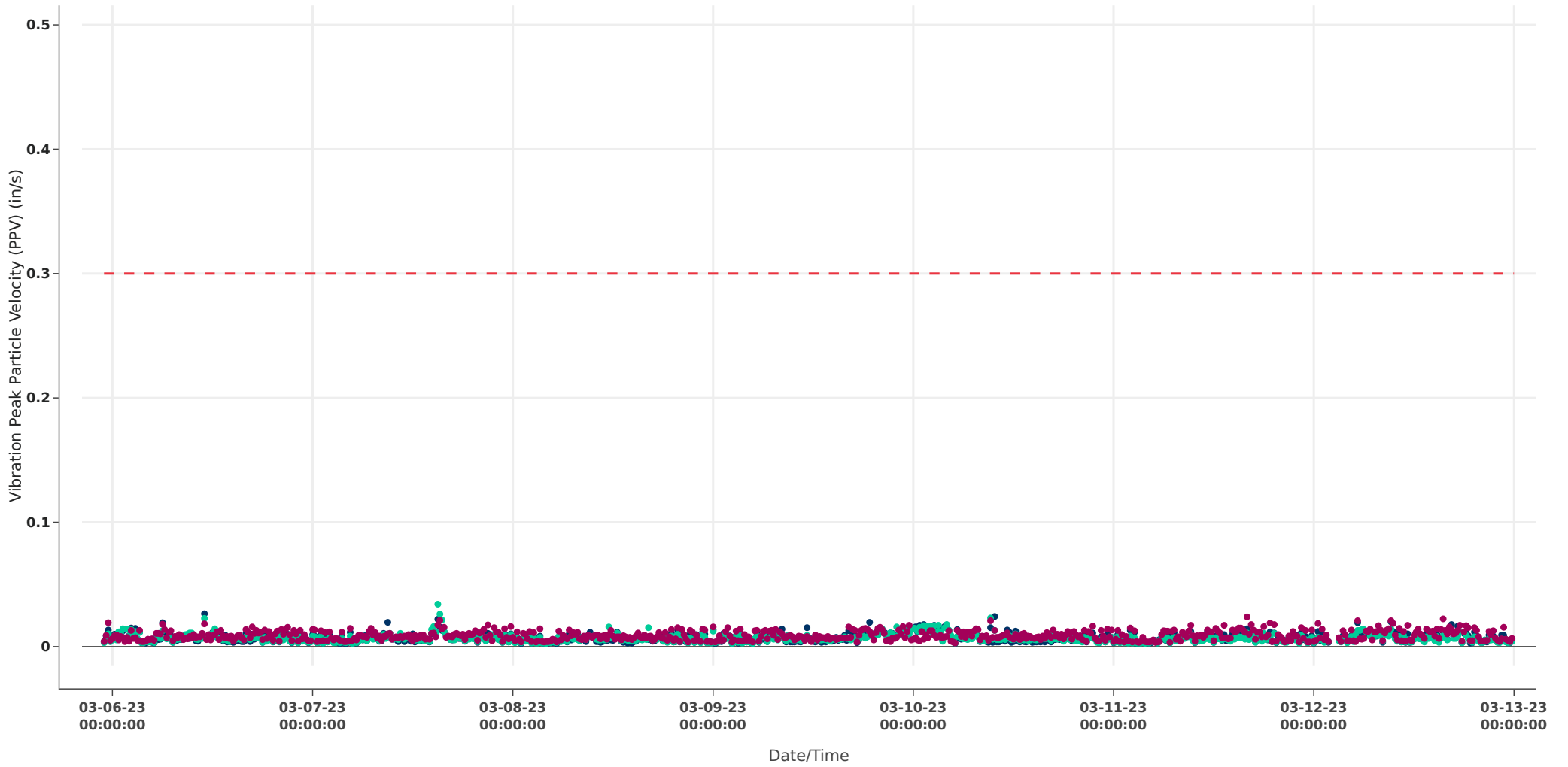


● 9111 Collins Vibration Longitudinal ● 9111 Collins Vibration Transverse ● 9111 Collins Vibration Vertical - - Vibration Threshold Limit

9141 Harding Vibration

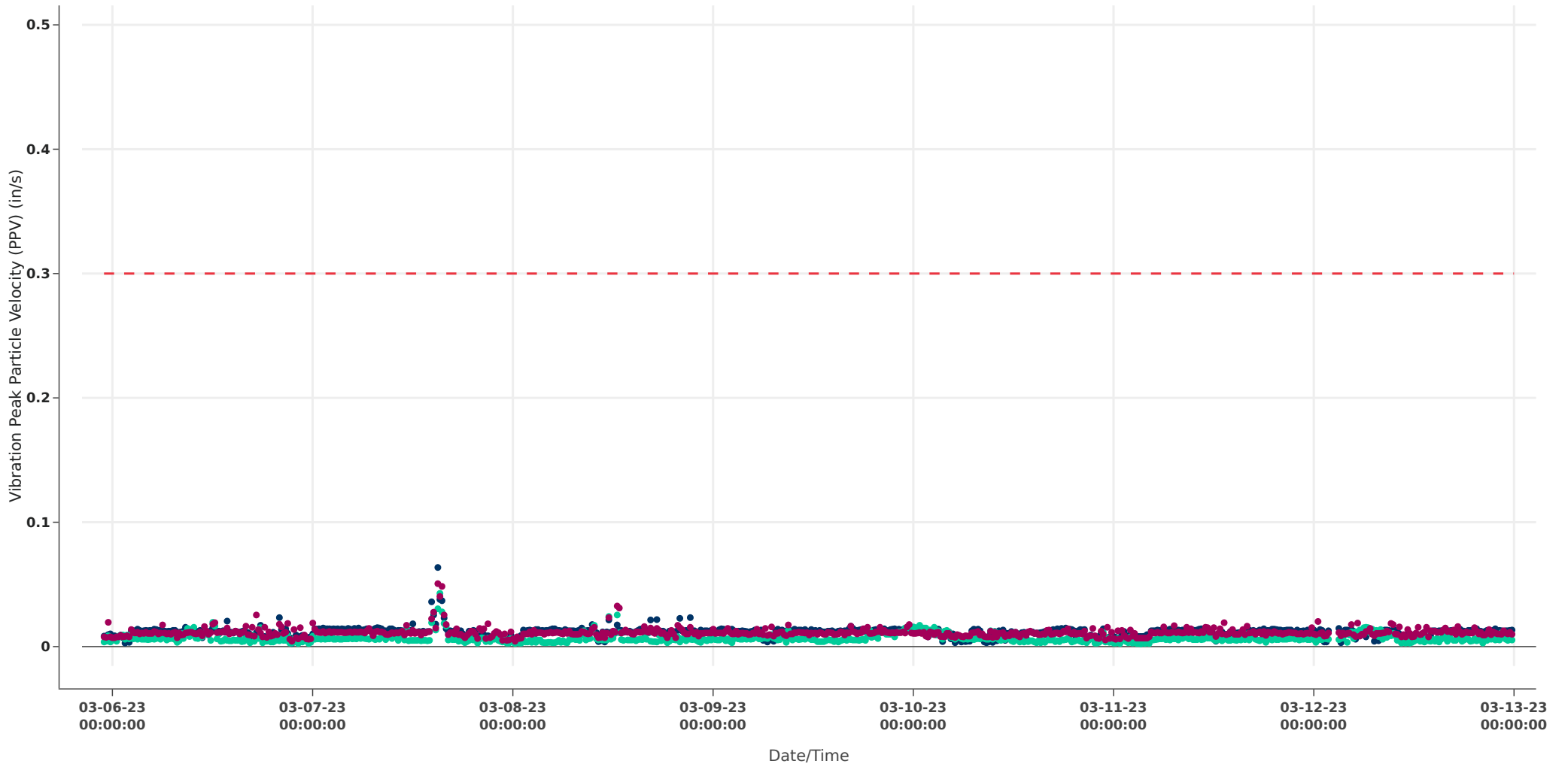


9124 Collins Vibration



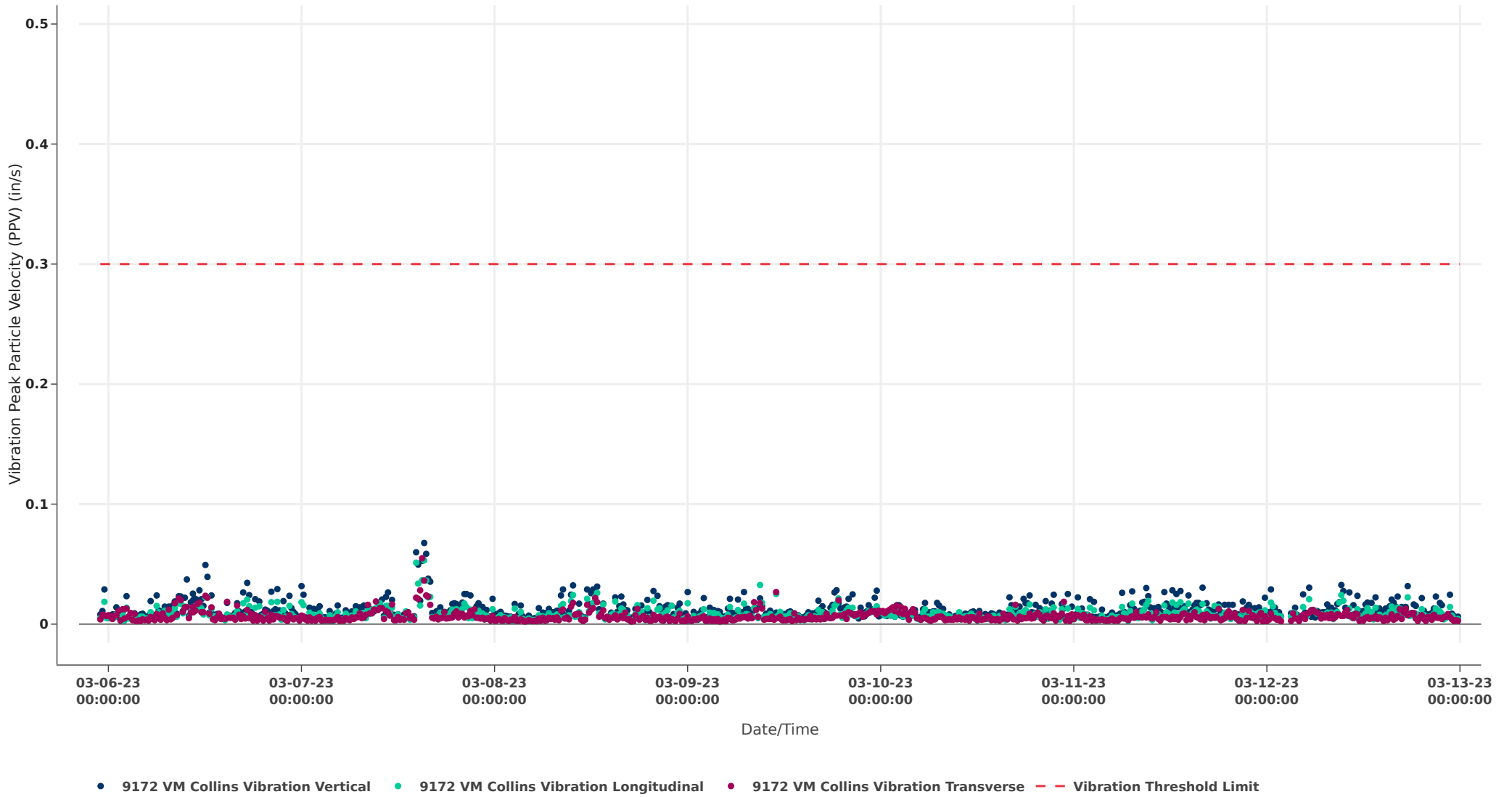
● 9124 Collins Vibration Longitudinal ● 9124 Collins Vibration Transverse ● 9124 Collins Vibration Vertical - - Vibration Threshold Limit

9156 Collins Vibration

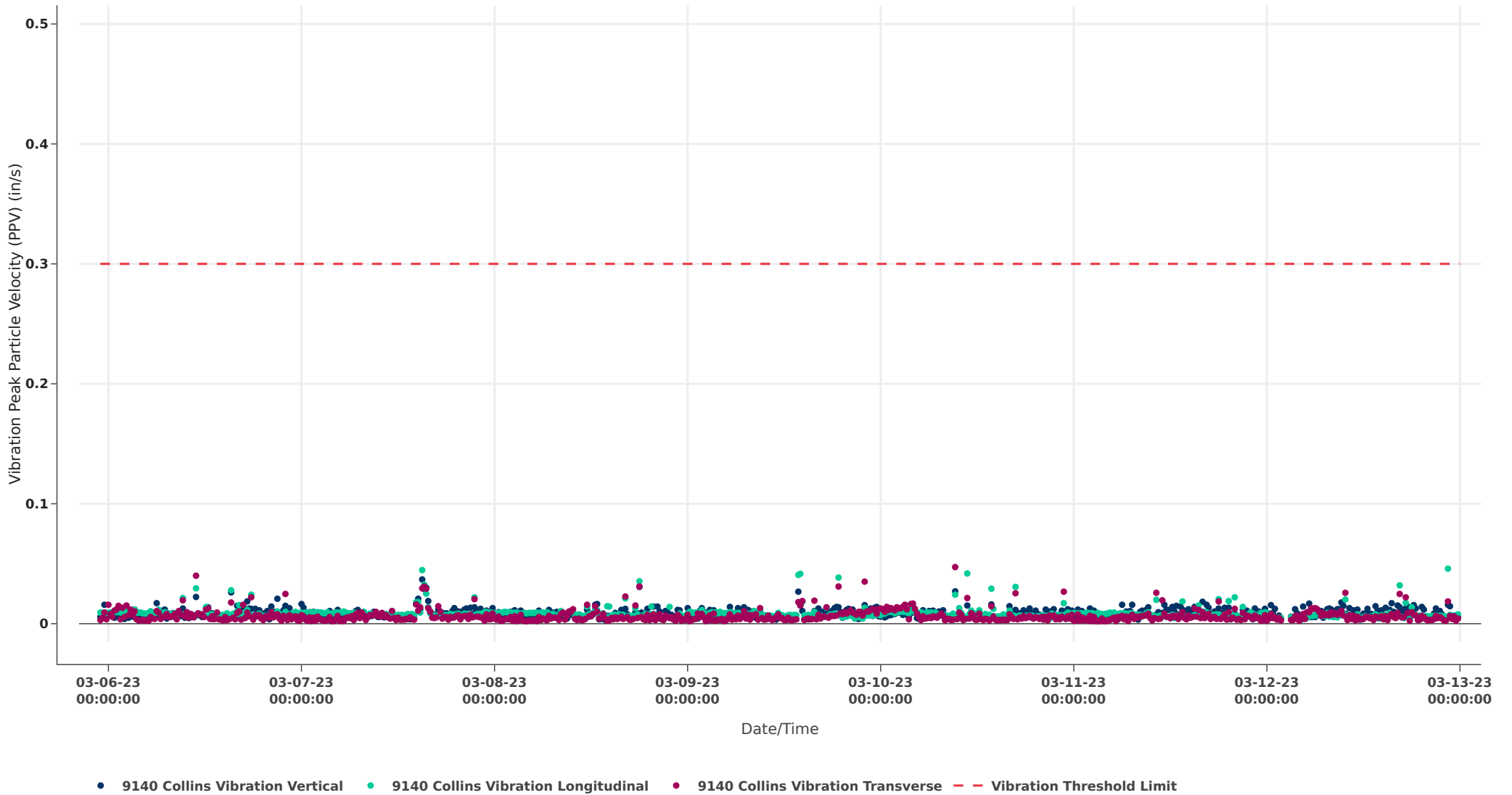


● 9156 VM Collins Vibration Longitudinal ● 9156 VM Collins Vibration Transverse ● 9156 VM Collins Vibration Vertical - - Vibration Threshold Limit

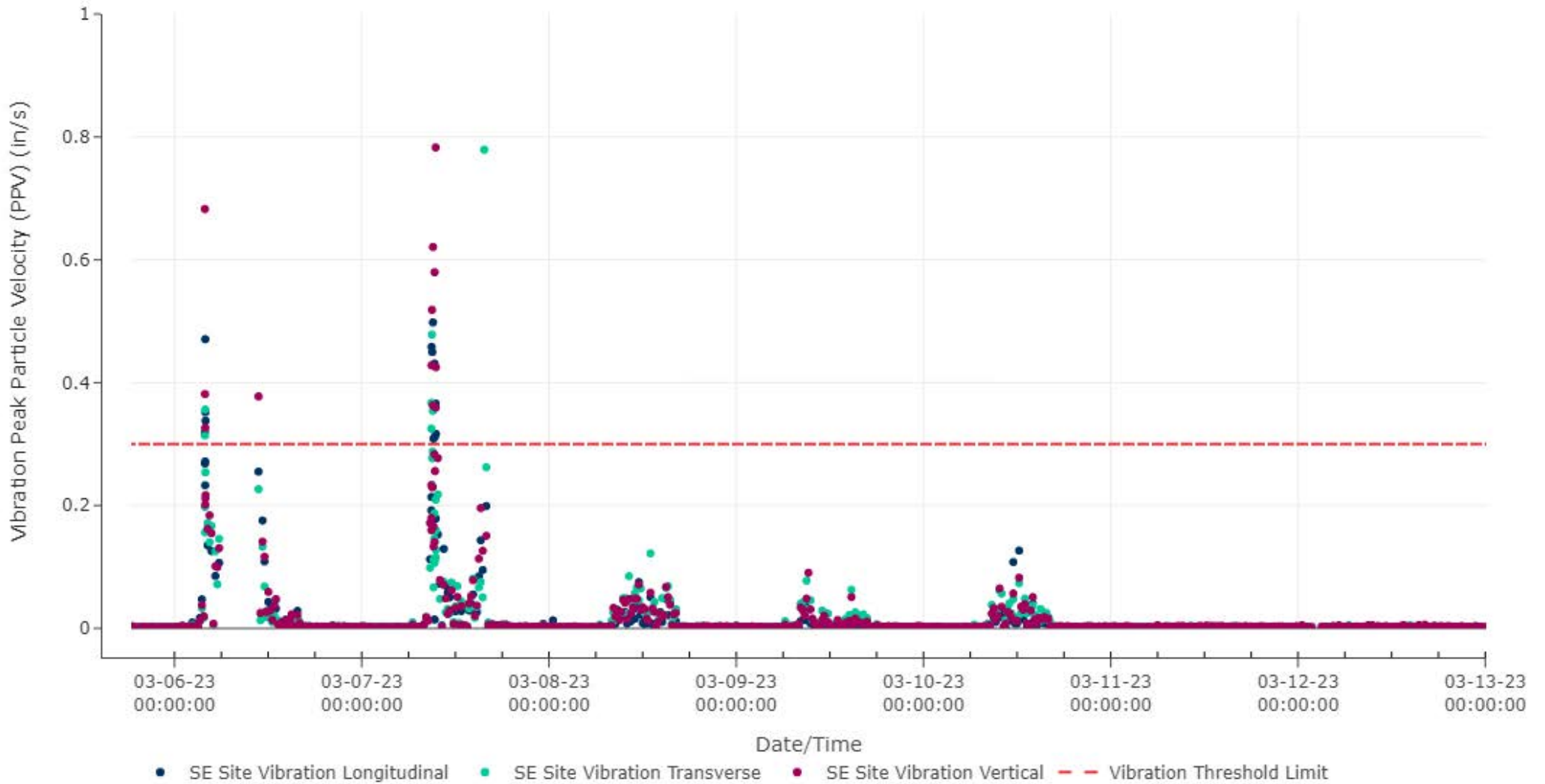
9172 Collins Vibration



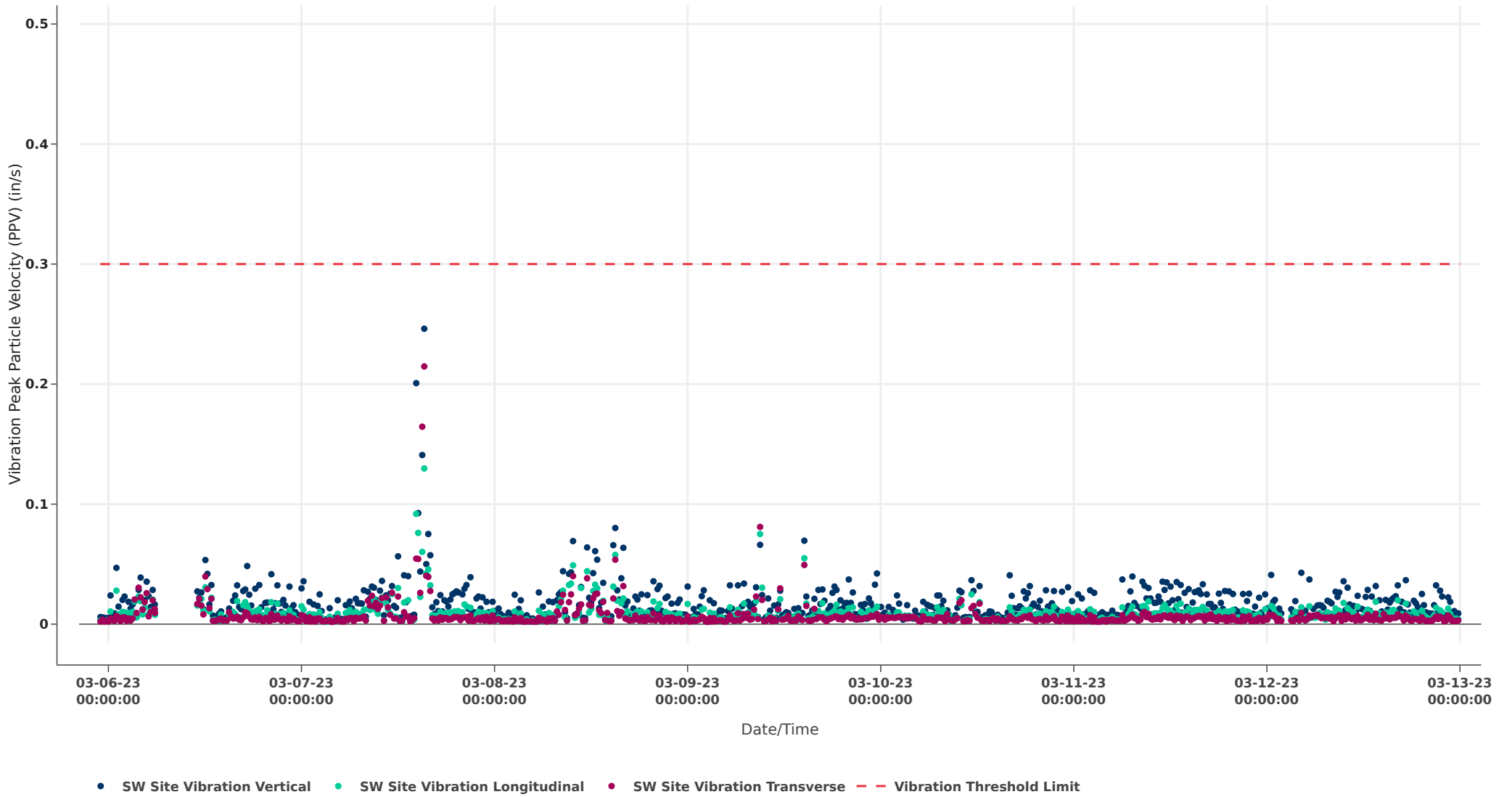
9140 Collins Vibration



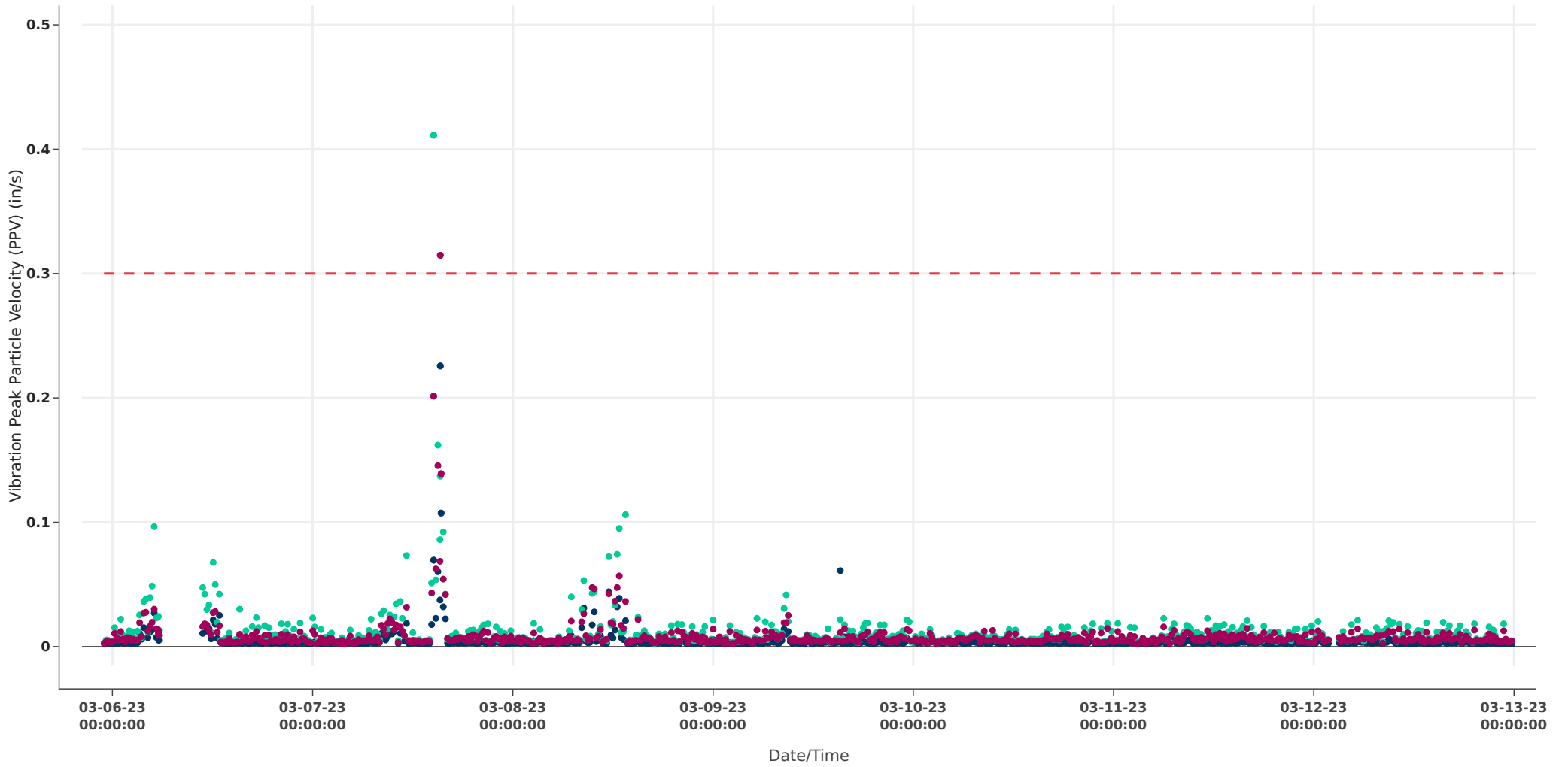
SE Site Vibration



SW Site Vibration

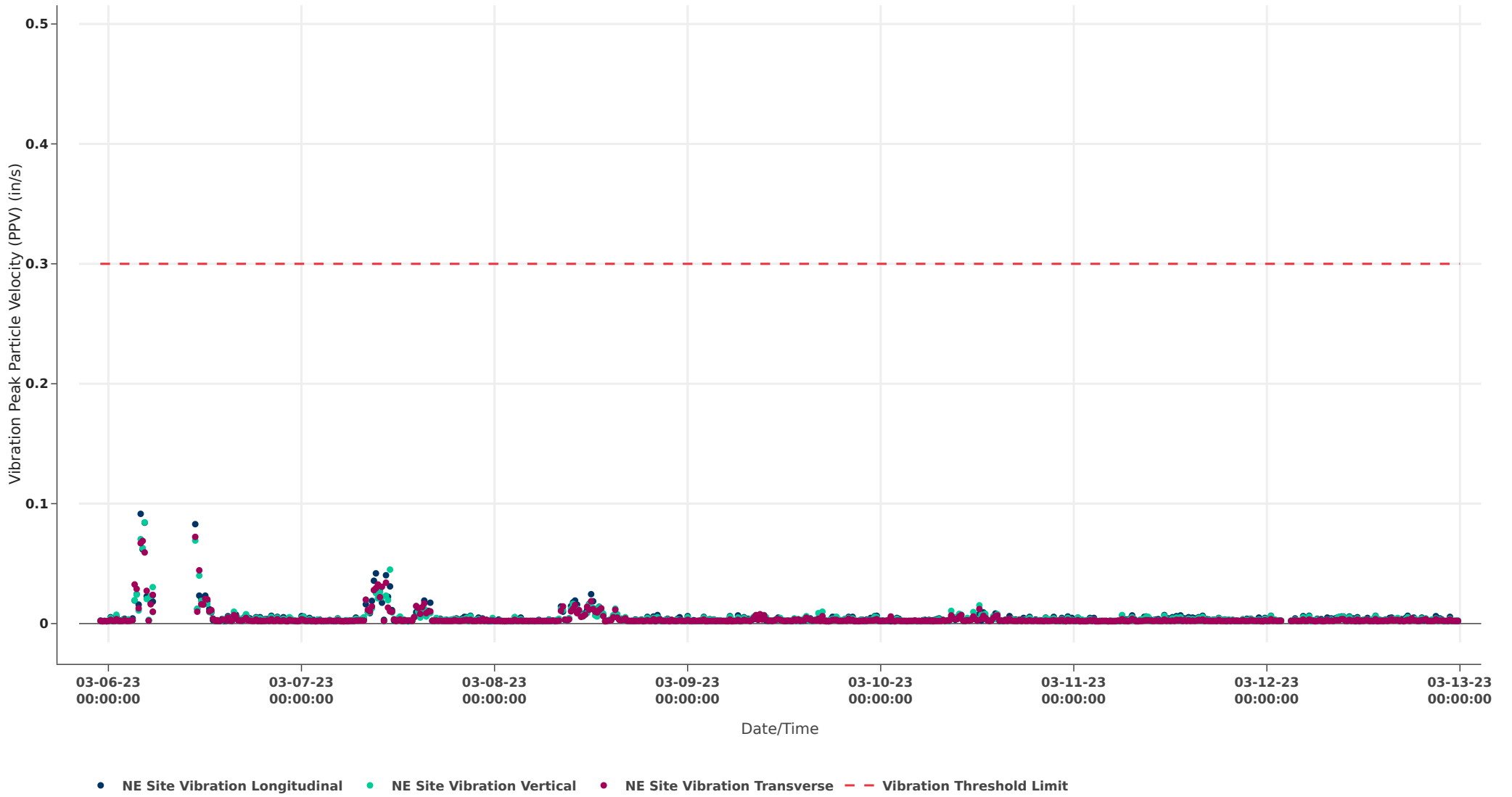


NW Site Vibration

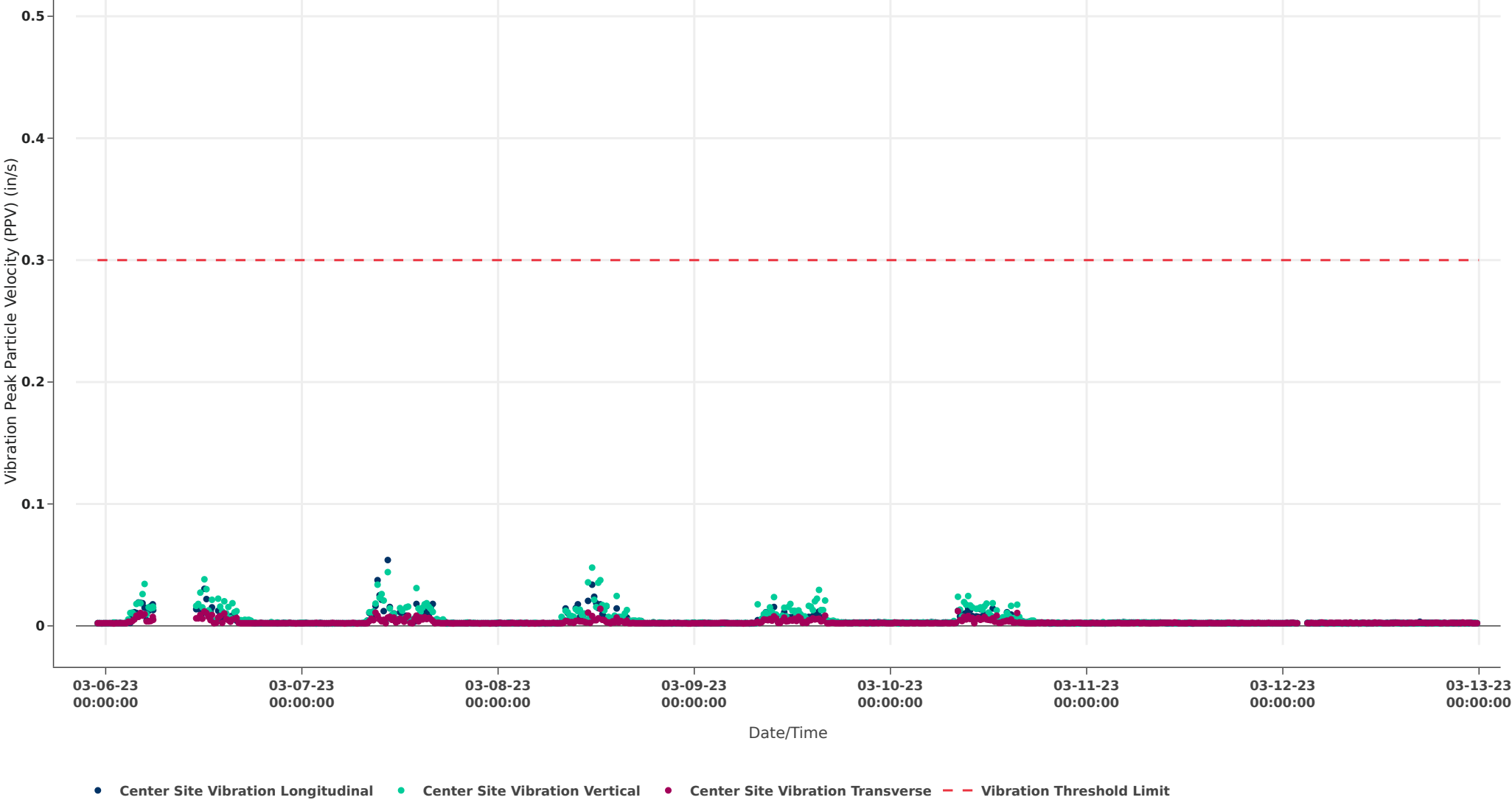


● NW Site Vibration Transverse ● NW Site Vibration Vertical ● NW Site Vibration Longitudinal - - Vibration Threshold Limit

NE Site Vibration



Center Site Vibration



9111 Collins Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/21/2023 10:30	0.0112	Longitudinal
2/22/2023 11:00	0.0118	Longitudinal
2/23/2023 10:15	0.0102	Longitudinal
2/24/2023 4:16	0.0087	Longitudinal
2/25/2023 11:45	0.0074	Longitudinal
2/26/2023 20:31	0.0071	Longitudinal
2/27/2023 6:16	0.0112	Longitudinal
2/28/2023 2:45	0.0115	Vertical
3/1/2023 7:01	0.1036	Longitudinal
3/2/2023 8:34	0.3749	Transverse
3/3/2023 7:59	0.013	Vertical
3/4/2023 9:00	0.0133	Vertical
3/5/2023 8:30	0.0168	Vertical
3/6/2023 3:31	0.0233	Vertical
3/7/2023 21:00	0.0121	Vertical
3/8/2023 0:15	0.0192	Vertical
3/9/2023 5:15	0.0133	Vertical
3/10/2023 23:00	0.0124	Vertical
3/11/2023 11:15	0.0133	Vertical
3/12/2023 17:30	0.0127	Vertical

9124 Collins Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/21/2023 13:30	0.0307	Longitudinal
2/22/2023 6:00	0.0171	Longitudinal
2/23/2023 12:59	0.0168	Longitudinal
2/24/2023 9:00	0.0379	Longitudinal
2/25/2023 2:00	0.0164	Longitudinal
2/26/2023 9:15	0.0168	Longitudinal
2/27/2023 11:00	0.0357	Longitudinal
2/28/2023 23:00	0.0192	Vertical
3/1/2023 22:00	0.0186	Vertical
3/2/2023 15:30	0.224	Longitudinal
3/3/2023 9:15	0.0267	Transverse
3/4/2023 6:30	0.018	Vertical
3/5/2023 12:15	0.0195	Vertical
3/6/2023 11:01	0.0264	Longitudinal
3/7/2023 15:00	0.0341	Transverse
3/8/2023 11:30	0.0158	Transverse
3/9/2023 18:45	0.0195	Longitudinal
3/10/2023 9:45	0.0242	Longitudinal
3/11/2023 16:00	0.0239	Vertical
3/12/2023 15:30	0.0223	Vertical

9140 Collins Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/21/2023 13:30	0.0174	Longitudinal
2/22/2023 7:15	0.023	Longitudinal
2/23/2023 22:45	0.0313	Longitudinal
2/24/2023 9:00	0.0298	Longitudinal
2/25/2023 17:45	0.0273	Longitudinal
2/26/2023 15:30	0.0282	Longitudinal
2/27/2023 18:30	0.085	Longitudinal
2/28/2023 18:00	0.0422	Longitudinal
3/1/2023 15:15	0.0292	Transverse
3/2/2023 12:45	0.0264	Longitudinal
3/3/2023 9:15	0.036	Transverse
3/4/2023 15:00	0.0422	Transverse
3/5/2023 20:00	0.0168	Vertical
3/6/2023 10:53	0.04	Transverse
3/7/2023 15:00	0.0447	Longitudinal
3/8/2023 18:00	0.0354	Longitudinal
3/9/2023 14:00	0.0416	Longitudinal
3/10/2023 9:15	0.0472	Transverse
3/11/2023 10:15	0.0258	Transverse
3/12/2023 22:30	0.0459	Longitudinal

9141 Harding Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/21/2023 2:45	0.0121	Longitudinal
2/22/2023 18:30	0.0127	Longitudinal
2/23/2023 5:15	0.0195	Longitudinal
2/24/2023 10:15	0.0115	Longitudinal
2/25/2023 2:30	0.0102	Longitudinal
2/26/2023 7:00	0.0189	Longitudinal
2/27/2023 5:01	0.0186	Transverse
2/28/2023 3:15	0.0189	Transverse
3/1/2023 11:15	0.0183	Longitudinal
3/2/2023 7:45	0.0208	Transverse
3/3/2023 3:45	0.0183	Transverse
3/4/2023 0:15	0.0127	Longitudinal
3/5/2023 17:01	0.0121	Longitudinal
3/6/2023 11:51	0.0735	Vertical
3/7/2023 15:00	0.0155	Longitudinal
3/8/2023 15:30	0.1223	Longitudinal
3/9/2023 13:30	0.0099	Longitudinal
3/10/2023 16:45	0.0087	Vertical
3/11/2023 15:45	0.0161	Longitudinal
3/12/2023 9:15	0.0093	Vertical

9156 Collins Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/21/2023 17:45	0.027	Longitudinal
2/22/2023 8:30	0.0227	Longitudinal
2/23/2023 22:46	0.023	Longitudinal
2/24/2023 18:15	0.018	Longitudinal
2/25/2023 8:15	0.0239	Longitudinal
2/26/2023 9:15	0.0133	Longitudinal
2/27/2023 19:17	0.0344	Longitudinal
2/28/2023 8:15	0.0292	Transverse
3/1/2023 12:31	0.0223	Transverse
3/2/2023 12:45	0.0285	Transverse
3/3/2023 18:00	0.027	Vertical
3/4/2023 14:15	0.0211	Vertical
3/5/2023 20:00	0.0217	Vertical
3/6/2023 17:15	0.0254	Vertical
3/7/2023 15:00	0.0636	Longitudinal
3/8/2023 12:30	0.0326	Vertical
3/9/2023 23:30	0.0177	Vertical
3/10/2023 0:45	0.0171	Transverse
3/11/2023 13:15	0.0192	Vertical
3/12/2023 0:30	0.0202	Vertical

9172 Collins Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/21/2023 16:30	0.0298	Longitudinal
2/22/2023 11:45	0.0258	Longitudinal
2/23/2023 11:45	0.0285	Longitudinal
2/24/2023 7:30	0.0258	Longitudinal
2/25/2023 13:30	0.0208	Longitudinal
2/26/2023 12:30	0.0217	Longitudinal
2/27/2023 12:15	0.0642	Longitudinal
2/28/2023 8:15	0.0431	Vertical
3/1/2023 9:30	0.0586	Vertical
3/2/2023 12:45	0.0661	Vertical
3/3/2023 13:15	0.0438	Vertical
3/4/2023 0:15	0.036	Vertical
3/5/2023 20:00	0.0298	Vertical
3/6/2023 12:03	0.0493	Vertical
3/7/2023 15:15	0.0676	Vertical
3/8/2023 9:45	0.0323	Vertical
3/9/2023 9:00	0.0326	Longitudinal
3/10/2023 23:15	0.0251	Vertical
3/11/2023 16:00	0.0304	Vertical
3/12/2023 9:15	0.0326	Vertical

9201 Collins Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/21/2023 10:15	0.0171	Longitudinal
2/22/2023 6:45	0.0074	Longitudinal
2/23/2023 4:45	0.0059	Longitudinal
2/24/2023 11:00	0.0071	Longitudinal
2/25/2023 13:46	0.0084	Longitudinal
2/26/2023 8:15	0.0189	Longitudinal
2/27/2023 10:30	0.0164	Transverse
2/28/2023 3:15	0.013	Transverse
3/1/2023 7:46	0.0127	Transverse
3/2/2023 9:30	0.0155	Transverse
3/3/2023 4:00	0.0251	Transverse
3/4/2023 8:15	0.0071	Vertical
3/5/2023 13:46	0.0307	Longitudinal
3/6/2023 12:23	0.0168	Transverse
3/7/2023 15:30	0.0112	Transverse
3/8/2023 12:00	0.0099	Transverse
3/9/2023 15:00	0.0372	Longitudinal
3/10/2023 23:00	0.0183	Longitudinal
3/11/2023 15:45	0.0155	Longitudinal
3/12/2023 11:30	0.0115	Longitudinal

9225 Collins Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/21/2023 3:15	0.0127	Longitudinal
2/22/2023 6:00	0.0087	Longitudinal
2/23/2023 18:46	0.0143	Longitudinal
2/24/2023 12:59	0.0109	Longitudinal
2/25/2023 4:00	0.0112	Longitudinal
2/26/2023 13:46	0.0127	Longitudinal
2/27/2023 4:15	0.0112	Transverse
2/28/2023 2:45	0.0112	Longitudinal
3/1/2023 12:59	0.0115	Transverse
3/2/2023 11:00	0.2271	Longitudinal
3/3/2023 11:45	0.0137	Vertical
3/4/2023 17:00	0.0118	Transverse
3/5/2023 15:15	0.0143	Vertical
3/6/2023 17:15	0.0183	Longitudinal
3/7/2023 7:30	0.0388	Longitudinal
3/8/2023 7:45	0.018	Vertical
3/9/2023 10:15	0.0285	Transverse
3/10/2023 9:00	0.0208	Vertical
3/11/2023 9:15	0.0161	Longitudinal
3/12/2023 7:45	0.0124	Vertical

Center Site Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/22/2023 8:15	0.1319	Longitudinal
2/23/2023 5:45	0.1123	Longitudinal
2/24/2023 10:45	0.1061	Longitudinal
2/25/2023 11:45	0.0043	Longitudinal
2/26/2023 8:30	0.005	Longitudinal
2/27/2023 9:30	0.1573	Longitudinal
2/28/2023 9:16	0.3584	Longitudinal
3/1/2023 4:30	0.1148	Longitudinal
3/2/2023 8:14	0.8757	Transverse
3/3/2023 6:30	0.2057	Vertical
3/4/2023 5:00	0.0053	Vertical
3/5/2023 8:30	0.0037	Vertical
3/6/2023 12:04	0.0382	Vertical
3/7/2023 10:30	0.054	Longitudinal
3/8/2023 11:30	0.0478	Vertical
3/9/2023 15:15	0.0295	Vertical
3/10/2023 9:30	0.0245	Vertical
3/11/2023 2:00	0.0031	Vertical
3/12/2023 16:45	0.0034	Longitudinal

NE Site Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/22/2023 8:00	0.0441	Longitudinal
2/23/2023 4:30	0.0394	Longitudinal
2/24/2023 6:00	0.1167	Longitudinal
2/25/2023 8:31	0.0074	Longitudinal
2/26/2023 8:30	0.0071	Longitudinal
2/27/2023 9:15	0.0881	Transverse
2/28/2023 6:31	0.0366	Transverse
3/1/2023 4:31	0.0369	Transverse
3/2/2023 9:52	0.0723	Vertical
3/3/2023 4:00	0.3475	Vertical
3/4/2023 9:16	0.0071	Vertical
3/5/2023 8:31	0.0071	Vertical
3/6/2023 4:00	0.0915	Longitudinal
3/7/2023 11:00	0.045	Vertical
3/8/2023 12:00	0.0245	Longitudinal
3/9/2023 16:45	0.0099	Vertical
3/10/2023 12:15	0.0152	Vertical
3/11/2023 6:00	0.0071	Vertical
3/12/2023 0:30	0.0065	Longitudinal

NW Site Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/22/2023 6:45	0.0586	Longitudinal
2/23/2023 7:45	0.0348	Longitudinal
2/24/2023 10:15	0.0326	Longitudinal
2/25/2023 8:30	0.018	Longitudinal
2/26/2023 4:16	0.0164	Longitudinal
2/27/2023 5:00	0.1036	Vertical
2/28/2023 3:15	0.0959	Vertical
3/1/2023 4:31	0.0813	Vertical
3/2/2023 6:15	0.0751	Transverse
3/3/2023 8:30	0.063	Vertical
3/4/2023 3:15	0.0211	Vertical
3/5/2023 8:30	0.022	Vertical
3/6/2023 5:01	0.0965	Vertical
3/7/2023 15:24	1.4162	Vertical
3/8/2023 13:30	0.1061	Vertical
3/9/2023 15:15	0.0611	Transverse
3/10/2023 23:15	0.0186	Vertical
3/11/2023 6:00	0.0227	Vertical
3/12/2023 5:15	0.0211	Vertical

SE Site Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/22/2023 8:32	0.1949	Longitudinal
2/23/2023 3:46	0.1098	Longitudinal
2/24/2023 11:00	0.0999	Longitudinal
2/25/2023 1:30	0.0124	Longitudinal
2/26/2023 2:00	0.0053	Longitudinal
2/27/2023 6:45	0.1403	Transverse
2/28/2023 8:15	0.0891	Longitudinal
3/1/2023 8:30	0.1055	Vertical
3/2/2023 11:15	0.0987	Vertical
3/3/2023 4:00	0.1114	Longitudinal
3/4/2023 9:15	0.005	Longitudinal
3/5/2023 17:31	0.0053	Transverse
3/6/2023 8:53	0.6827	Vertical
3/7/2023 15:42	2.7419	Longitudinal
3/8/2023 12:59	0.122	Transverse
3/9/2023 9:15	0.0906	Vertical
3/10/2023 12:15	0.1266	Longitudinal
3/11/2023 6:00	0.0053	Vertical
3/12/2023 16:15	0.0059	Vertical

SW Site Vibration Monitor - Maximum Daily Values		
Timestamp	Peak Particle Velocity (in./sec.)	Axis (Longitudinal/Transverse/Vertical)
2/22/2023 10:45	0.0354	Longitudinal
2/23/2023 10:15	0.0348	Longitudinal
2/24/2023 9:30	0.0605	Longitudinal
2/25/2023 4:45	0.0239	Longitudinal
2/26/2023 20:30	0.0208	Longitudinal
2/27/2023 5:00	0.1036	Vertical
2/28/2023 3:15	0.0959	Vertical
3/1/2023 4:31	0.0813	Vertical
3/2/2023 6:15	0.0751	Transverse
3/3/2023 8:30	0.063	Vertical
3/4/2023 3:15	0.0211	Vertical
3/5/2023 8:30	0.022	Vertical
3/6/2023 12:03	0.0534	Vertical
3/7/2023 15:15	0.2461	Vertical
3/8/2023 15:00	0.0801	Vertical
3/9/2023 9:00	0.081	Transverse
3/10/2023 16:02	0.0407	Vertical
3/11/2023 7:17	0.0397	Vertical
3/12/2023 4:17	0.0428	Vertical