



Specialists in Explosives, Blasting and Vibration  
Consulting Engineers

December 4, 2017

Dragados-Tomlinson Joint Venture  
5597 Power Road  
Ottawa, Ontario  
K1G 3N4

Attention: Mr. Kevin Stadelmann

**Re: Interim Weekly Vibration Monitoring Report – November 27 to December 3, 2017  
Combined Sewage Storage Tunnel (CSST) – Site 5 Operations**

Dear Mr. Stadelmann,

Attached please find the interim weekly summary report detailing the results of the vibration monitoring program developed and implemented as part of the construction operations for the Combined Sewage Storage Tunnel (CSST) Project – Site 5 Operations in Ottawa, Ontario. This monitoring program was initiated on March 31, 2017 and has been recording vibrations generated as a result of the construction equipment in order to confirm predictable levels and to guard against possible adverse impacts on the surrounding structures.

A full time on-site Vibration Monitoring Program is currently implemented to delineate vibration intensities experienced at a representative sampling of structures around the Site 5 construction areas as a result of the construction equipment in operation. The monitoring instruments installed consist of Instantel tri-directional digital seismographs capable of measuring vibration intensities up to 254mm/s at a frequency response of 2 – 250Hz or 1 – 315Hz depending on the installation. The units are programmed to measure all vibration levels continuously at a sampling rate of 1024 samples per second. Following each five minute interval, the units review the 307,200 measured vibrations and permanently records the peak particle velocity for that time interval while deleting all subordinate vibration intensities. This process is repeated for all subsequent five minute time intervals thereby providing maximum vibration intensities experienced at the monitored areas throughout the day.



Such a configuration permits continuous monitoring of vibration levels and provides complete coverage of all vibrations, construction induced or otherwise, experienced at the monitored structure. Events recorded under this program mode are marked by an “H” on the vibrations summary report. As an additional analytical tool, the seismographs are configured to record a more detailed waveform in the event that vibration intensities exceeded a pre-set trigger of 4mm/s. This feature permits advanced analysis in the event that anomalous elevated readings are recorded. Events recorded under this program mode are marked by a “W” on the vibrations summary report.

As per the Contract Specification 02482, Subsection 1.5.1.1, the following threshold, response and shutdown values are observed at Site 5:

Project Threshold, Response and Shutdown Values			
Description of Event	Threshold Value (PPV)	Response Value (PPV)	Shutdown Value (PPV)
Continuous/ Intermittent Source	4mm/s	6mm/s	7mm/s
Transient Source	5mm/s	8mm/s	9mm/s
Blasting	10mm/s	16mm/s	20mm/s

The monitoring locations itemized below were installed for the following sites on the listed days and remain installed during the construction operations:

**Site 5A/5B**

- **141/151 Stanley Avenue** – Installed on March 31, 2017
- **133 Stanley Avenue** – Installed on August 4, 2017
- **IOS Shaft 5A Location** (Borehole and Surface) – Installed on Sept 5, 2017
- **IOS Shaft IOS Location** (Borehole and Surface) – Installed on Oct 13, 2017



**Site 5C**

- **54 Queen Victoria Street** – Installed on March 31, 2017
- **51 Queen Victoria Street** – Installed on April 11, 2017

The following readings generated at Site 5 monitoring locations exceeded the 4mm/s trigger level during the interim monitoring period:

Vibration Readings Exceeding 4mm/s During Interim Monitoring Period						
Ref. Event #	Location	Date	Time	Velocity (mm/s)	Cause of Event	Applicable Project Limit Exceeded
<b>Site 5A/5B</b>						
1 to 19	IOS Shaft IOS - Surface	Nov 27, 2017	13:31 to 16:15	Up to 8.128	Transient Source	N/A – Surface is for information purposes only
20 to 36	IOS Shaft IOS - Surface	Nov 28, 2017	7:06 to 8:53	Up to 8.636	Transient Source	N/A – Surface is for information purposes only
37 to 38	IOS Shaft 5A - Surface	Nov 29, 2017	14:39 to 16:46	Up to 7.747	Transient Source	N/A – Surface is for information purposes only
39	133 Stanley Avenue	Nov 30, 2017	7:31	5.715	RF / Power Spike	N/A – Not Construction Related
40 to 41	IOS Shaft 5A - Surface	Nov 30, 2016	7:43 to 7:46	Up to 4.953	Transient Source	N/A – Surface is for information purposes only
42 to 43	IOS Shaft 5A - Surface	Dec 1, 2017	12:55 to 14:43	Up to 6.731	Transient Source	N/A – Surface is for information purposes only
44	133 Stanley Avenue	Dec 1, 2017	15:45	192.9	Localized Impact	N/A – Not Construction Related
<b>Site 5C</b>						
N/A	No Events	N/A	N/A	N/A	N/A	N/A

# EXPLOTECH

All recorded Histogram summaries and Waveform details for Site 5 are available for reference at anytime on the [www.constructionvibrations.com](http://www.constructionvibrations.com) website. A summary list is attached to this interim report for reference. Should you have any questions or concerns related to the information contained herein or the monitoring program undertaken, please do not hesitate to contact the undersigned at your leisure.

Kindest regards,



Mitch Malcomson, P.Eng.

**CSST - Site 5  
M7550A DTJV  
Nov 27, 2017 to Dec 3, 2017**

**Event Report: Event List - z:\to be archived\2 csst temp folders\site 5**

Type	Serial No.	Date/Time	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	PVS1 (mm/s)	Tran2 Peak (mm/s)	Vert2 Peak (mm/s)	Long2 Peak (mm/s)	PVS2 (mm/s)	Mic Peak (dB)	Description
H	BE15997	Nov 27 /17 06:01:53	0.381	0.254	0.381	0.554	***	***	***	***	***	Site 5C - 54 Queen Victoria Stre
H	BE11685	Nov 27 /17 06:06:55	0.254	0.381	0.254	0.475	***	***	***	***	108.8L	Site 5AB - 133 Stanley Avenue
H	BE16212	Nov 27 /17 06:06:56	0.635	0.508	0.762	1.047	4.064	2.667	3.810	4.387	***	Site 5A - IOS Shaft IOS Location
H	BE14293	Nov 27 /17 06:07:05	0.889	1.524	0.762	1.626	1.778	0.635	1.524	1.836	114.4L	Site 5AB - 141+151 Stanley Ave
H	BE17376	Nov 27 /17 06:10:07	0.889	0.762	0.889	1.000	***	***	***	***	***	Site 5C - 51 Queen Victoria Stre
H	BE20061	Nov 27 /17 06:14:04	0.381	0.508	0.254	0.568	1.016	1.905	1.143	1.988	***	Site 5A - IOS Shaft 5A Location
W	BE16212	Nov 27 /17 13:31:17	0.381	0.381	0.254	0.421	4.064	2.159	3.302	4.387	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 13:33:24	0.381	0.381	0.254	0.475	4.191	1.016	2.159	4.549	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 13:33:56	0.381	0.381	0.254	0.421	4.191	1.016	1.905	4.549	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 13:36:00	0.381	0.381	0.254	0.421	8.128	2.667	6.477	10.39	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 13:37:27	0.381	0.381	0.254	0.402	8.128	2.667	6.477	10.39	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 13:40:11	0.508	0.381	0.254	0.524	5.588	2.413	4.572	6.986	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 13:40:14	0.381	0.381	0.254	0.402	5.588	2.413	4.572	6.986	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 13:49:29	0.381	0.381	0.254	0.402	5.080	1.778	2.540	5.419	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 13:49:33	0.381	0.254	0.254	0.402	5.080	1.778	2.540	5.419	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 13:51:54	0.381	0.381	0.381	0.421	6.350	3.302	7.112	9.835	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 13:53:44	0.381	0.381	0.381	0.421	6.350	3.302	7.112	9.835	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 13:56:31	0.381	0.381	0.381	0.421	3.302	3.048	4.064	4.728	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 13:58:11	0.381	0.381	0.254	0.402	3.302	1.524	4.064	4.728	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 14:00:55	0.381	0.381	0.381	0.421	4.064	2.286	5.080	5.709	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 14:01:06	0.381	0.254	0.381	0.421	4.064	2.286	5.080	5.709	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 14:03:10	0.381	0.381	0.254	0.458	3.683	6.604	5.207	7.106	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 14:04:01	0.381	0.381	0.254	0.402	3.683	6.604	5.207	7.106	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 14:06:48	0.508	0.381	0.381	0.524	3.683	4.318	3.810	5.301	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 14:18:53	0.254	0.254	0.254	0.359	3.683	4.318	3.810	5.301	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 14:21:36	0.508	0.508	0.254	0.524	3.429	3.556	5.207	6.351	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 14:26:31	0.381	0.254	0.254	0.402	3.429	3.556	5.207	6.351	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 14:28:34	0.508	0.508	0.381	0.524	5.080	5.969	4.064	6.747	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 14:49:22	0.381	0.381	0.254	0.402	5.080	5.969	4.064	6.747	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 14:51:26	0.381	0.381	0.381	0.458	3.937	3.302	2.540	4.222	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 14:53:34	0.381	0.381	0.381	0.402	3.937	0.762	1.778	4.222	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 14:56:19	0.508	0.508	0.381	0.539	3.683	1.905	4.699	5.282	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 15:06:24	0.381	0.381	0.254	0.402	3.683	1.905	4.699	5.282	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 15:12:10	0.381	0.508	0.381	0.524	2.667	1.143	4.826	4.938	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 15:12:46	0.381	0.508	0.254	0.524	1.524	1.143	4.826	4.938	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 15:14:49	0.508	0.508	0.381	0.582	3.810	1.651	4.572	5.230	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 16:00:01	0.381	0.508	0.254	0.508	3.683	1.651	4.572	5.230	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 16:02:45	0.508	0.381	0.381	0.524	2.667	1.016	4.445	4.604	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 16:04:54	0.508	0.381	0.254	0.524	1.905	1.016	4.445	4.604	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 16:06:57	0.508	0.381	0.381	0.568	5.588	2.794	3.683	5.927	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 16:09:25	0.381	0.381	0.254	0.421	5.588	1.651	3.683	5.927	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 16:11:29	0.508	0.381	0.381	0.524	4.318	1.016	4.699	5.238	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 27 /17 16:15:56	0.381	0.381	0.254	0.402	4.318	1.016	4.699	5.238	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 27 /17 16:18:42	0.762	1.016	0.889	1.350	2.921	1.143	2.286	3.053	***	Site 5A - IOS Shaft IOS Location
H	BE15997	Nov 28 /17 06:01:56	0.508	0.254	0.381	0.582	***	***	***	***	***	Site 5C - 54 Queen Victoria Stre
H	BE17376	Nov 28 /17 06:06:55	0.762	0.254	0.381	0.803	***	***	***	***	***	Site 5C - 51 Queen Victoria Stre
H	BE14293	Nov 28 /17 06:07:08	1.016	1.397	0.889	1.535	1.778	0.635	1.651	1.892	119.8L	Site 5AB - 141+151 Stanley Ave
H	BE11685	Nov 28 /17 06:07:36	0.254	0.508	0.254	0.582	***	***	***	***	114.4L	Site 5AB - 133 Stanley Avenue
H	BE20061	Nov 28 /17 06:10:21	0.254	0.254	0.254	0.381	1.524	1.905	1.397	2.304	***	Site 5A - IOS Shaft 5A Location
H	BE16212	Nov 28 /17 06:11:46	0.508	0.508	0.508	0.648	2.794	1.651	4.318	5.067	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 07:06:48	0.381	0.381	0.254	0.458	2.794	1.270	4.318	5.067	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 07:12:34	0.381	0.381	0.381	0.475	3.048	1.905	4.191	4.782	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 07:14:52	0.381	0.254	0.254	0.421	3.048	1.651	4.191	4.782	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 07:18:17	0.381	0.381	0.254	0.440	2.921	3.429	6.604	6.649	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 07:19:00	0.381	0.381	0.254	0.421	2.921	3.429	6.604	6.649	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 07:21:46	0.381	0.381	0.254	0.421	2.794	1.905	4.064	4.645	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 07:23:31	0.381	0.254	0.254	0.402	2.286	1.397	4.064	4.645	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 07:25:35	0.381	0.381	0.254	0.458	3.302	2.032	5.080	5.262	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 07:28:43	0.381	0.381	0.254	0.421	1.397	1.651	5.080	5.262	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 07:34:10	0.381	0.381	0.254	0.402	1.524	1.397	5.080	5.137	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 07:34:39	0.254	0.381	0.254	0.402	1.524	1.397	5.080	5.137	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 07:40:11	0.381	0.381	0.254	0.421	5.969	2.032	5.080	7.705	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 07:40:51	0.381	0.381	0.254	0.402	5.969	2.032	5.080	7.705	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 07:42:53	0.508	0.381	0.381	0.539	4.191	1.651	5.842	7.045	***	Site 5A - IOS Shaft IOS Location

**CSST - Site 5  
M7550A DTJV  
Nov 27, 2017 to Dec 3, 2017**

**Event Report: Event List - z:\to be archived\2 csst temp folders\site 5**

Type	Serial No.	Date/Time	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	PVS1 (mm/s)	Tran2 Peak (mm/s)	Vert2 Peak (mm/s)	Long2 Peak (mm/s)	PVS2 (mm/s)	Mic Peak (dB)	Description
W	BE16212	Nov 28 /17 07:59:12	0.381	0.254	0.254	0.421	4.191	0.508	5.842	7.045	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 08:01:17	0.381	0.381	0.254	0.475	5.207	2.794	5.080	7.285	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 08:03:45	0.381	0.254	0.254	0.402	5.207	0.889	5.080	7.285	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 08:05:51	0.381	0.381	0.254	0.421	3.937	2.286	3.429	5.019	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 08:06:01	0.381	0.381	0.254	0.421	3.937	2.286	3.429	5.019	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 08:08:04	0.508	0.381	0.381	0.539	3.048	3.683	3.937	3.947	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 08:10:02	0.254	0.381	0.254	0.402	3.048	3.302	3.937	3.947	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 08:12:46	0.508	0.508	0.381	0.524	2.413	5.080	3.683	5.311	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 08:26:14	0.381	0.254	0.254	0.402	2.032	5.080	3.683	5.311	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 08:28:59	0.508	0.508	0.381	0.582	3.048	2.667	6.604	7.167	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 08:35:26	0.381	0.381	0.254	0.421	3.048	2.667	6.604	7.167	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 08:37:28	0.381	0.381	0.381	0.458	2.667	5.461	6.636	9.377	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 08:38:35	0.381	0.254	0.254	0.402	2.667	5.461	8.636	9.377	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 08:43:37	0.381	0.381	0.254	0.421	2.794	3.429	5.715	6.328	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 08:44:04	0.381	0.381	0.254	0.421	2.794	3.175	5.715	6.328	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 08:49:05	0.381	0.381	0.254	0.421	2.794	2.921	5.969	6.860	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 08:49:28	0.381	0.381	0.254	0.421	2.794	2.667	5.969	6.860	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 08:52:46	0.381	0.381	0.254	0.421	2.413	6.223	2.921	6.440	***	Site 5A - IOS Shaft IOS Location
W	BE16212	Nov 28 /17 08:53:03	0.381	0.254	0.254	0.402	2.286	6.223	2.794	6.440	***	Site 5A - IOS Shaft IOS Location
H	BE16212	Nov 28 /17 08:55:08	1.397	1.270	1.270	2.144	2.286	1.524	1.270	2.615	***	Site 5A - IOS Shaft IOS Location
H	BE20061	Nov 28 /17 09:56:02	0.381	0.381	0.254	0.458	1.905	1.905	1.016	2.118	***	Site 5A - IOS Shaft IOS Location
H	BE15997	Nov 29 /17 06:01:53	0.508	0.254	0.381	0.568	***	***	***	***	***	Site 5C - 54 Queen Victoria Stre
H	BE17376	Nov 29 /17 06:06:54	0.889	0.508	0.635	0.925	***	***	***	***	***	Site 5C - 51 Queen Victoria Stre
H	BE14293	Nov 29 /17 06:07:05	0.889	0.889	0.254	0.976	1.143	0.508	0.889	1.283	115.6L	Site 5AB - 141+151 Stanley Ave
H	BE20061	Nov 29 /17 06:07:13	0.381	0.508	0.254	0.508	2.794	7.747	5.588	9.006	***	Site 5A - IOS Shaft 5A Location
H	BE11685	Nov 29 /17 06:07:34	0.635	0.381	0.381	0.660	***	***	***	***	108.8L	Site 5AB - 133 Stanley Avenue
H	BE16212	Nov 29 /17 06:11:49	0.762	0.762	2.413	2.416	1.778	1.524	1.778	2.229	***	Site 5A - IOS Shaft IOS Location
W	BE20061	Nov 29 /17 14:39:46	0.254	0.254	0.254	0.311	2.794	7.747	5.588	9.006	***	Site 5A - IOS Shaft 5A Location
H	BE20061	Nov 29 /17 14:42:34	0.381	0.381	0.254	0.458	2.794	3.937	2.286	4.044	***	Site 5A - IOS Shaft 5A Location
W	BE20061	Nov 29 /17 16:46:53	0.254	0.254	0.254	0.311	1.524	3.937	1.905	4.044	***	Site 5A - IOS Shaft 5A Location
H	BE20061	Nov 29 /17 16:49:07	0.381	0.381	0.254	0.402	1.016	0.889	0.508	1.032	***	Site 5A - IOS Shaft 5A Location
H	BE15997	Nov 30 /17 06:01:53	1.651	0.889	2.286	2.345	***	***	***	***	***	Site 5C - 54 Queen Victoria Stre
H	BE20061	Nov 30 /17 06:06:50	0.381	0.381	0.254	0.475	1.397	4.953	1.270	5.008	***	Site 5A - IOS Shaft 5A Location
H	BE17376	Nov 30 /17 06:06:55	0.762	0.381	0.762	0.813	***	***	***	***	***	Site 5C - 51 Queen Victoria Stre
H	BE14293	Nov 30 /17 06:07:07	0.889	0.889	0.762	0.976	2.540	1.016	1.905	2.572	110.9L	Site 5AB - 141+151 Stanley Ave
H	BE11685	Nov 30 /17 06:07:36	5.715	1.651	1.524	6.024	***	***	***	***	110.6L	Site 5AB - 133 Stanley Avenue
H	BE16212	Nov 30 /17 06:09:52	0.635	0.635	0.508	0.852	1.397	3.175	1.016	3.336	***	Site 5A - IOS Shaft IOS Location
W	BE11685	Nov 30 /17 07:31:44	5.715	1.651	1.524	6.024	***	***	***	***	110.6L	Site 5AB - 133 Stanley Avenue
H	BE11685	Nov 30 /17 07:34:34	0.254	0.254	0.254	0.311	***	***	***	***	132.0L	Site 5AB - 133 Stanley Avenue
W	BE20061	Nov 30 /17 07:43:16	0.254	0.254	0.254	0.284	1.397	4.953	1.270	5.008	***	Site 5A - IOS Shaft 5A Location
H	BE20061	Nov 30 /17 07:46:36	0.381	0.254	0.254	0.458	2.286	4.699	0.889	4.955	***	Site 5A - IOS Shaft 5A Location
W	BE20061	Nov 30 /17 07:46:57	0.381	0.254	0.254	0.458	2.286	4.572	0.889	4.955	***	Site 5A - IOS Shaft 5A Location
H	BE20061	Nov 30 /17 07:49:43	0.381	0.508	0.254	0.524	0.762	2.794	0.635	2.800	***	Site 5A - IOS Shaft 5A Location
H	BE15997	Dec 1 /17 06:01:55	0.254	0.254	0.381	0.524	***	***	***	***	***	Site 5C - 54 Queen Victoria Stre
H	BE17376	Dec 1 /17 06:06:54	0.762	0.254	0.254	0.783	***	***	***	***	***	Site 5C - 51 Queen Victoria Stre
H	BE20061	Dec 1 /17 06:07:34	0.381	0.381	0.254	0.458	4.064	6.731	2.032	6.925	***	Site 5A - IOS Shaft 5A Location
H	BE11685	Dec 1 /17 06:07:35	192.9	153.5	120.8	221.9	***	***	***	***	104.9L	Site 5AB - 133 Stanley Avenue
H	BE16212	Dec 1 /17 06:07:35	0.635	0.635	0.762	0.852	1.016	0.635	0.889	1.143	***	Site 5A - IOS Shaft IOS Location
H	BE14293	Dec 1 /17 06:07:46	0.889	0.889	0.508	0.976	1.651	0.508	1.524	1.699	104.9L	Site 5AB - 141+151 Stanley Ave
W	BE20061	Dec 1 /17 12:55:41	0.254	0.254	0.254	0.284	4.064	6.731	1.778	6.925	***	Site 5A - IOS Shaft 5A Location
H	BE20061	Dec 1 /17 13:03:16	0.381	0.254	0.254	0.402	1.778	4.191	2.667	4.461	***	Site 5A - IOS Shaft 5A Location
W	BE20061	Dec 1 /17 14:43:53	0.254	0.254	0.254	0.284	1.143	4.191	2.667	4.461	***	Site 5A - IOS Shaft 5A Location
H	BE20061	Dec 1 /17 14:46:00	0.381	0.381	0.254	0.421	1.397	3.683	2.667	3.945	***	Site 5A - IOS Shaft 5A Location
W	BE11685	Dec 1 /17 15:45:16	192.9	153.5	120.8	221.9	***	***	***	***	104.9L	Site 5AB - 133 Stanley Avenue
H	BE11685	Dec 1 /17 15:48:11	0.381	0.254	0.254	0.402	***	***	***	***	98.8L	Site 5AB - 133 Stanley Avenue
H	BE15997	Dec 2 /17 06:01:54	0.254	0.254	0.381	0.475	***	***	***	***	***	Site 5C - 54 Queen Victoria Stre
H	BE20061	Dec 2 /17 06:06:48	0.381	0.381	0.254	0.458	0.254	0.381	0.254	0.402	***	Site 5A - IOS Shaft 5A Location
H	BE17376	Dec 2 /17 06:06:54	0.762	0.254	0.254	0.783	***	***	***	***	***	Site 5C - 51 Queen Victoria Stre
H	BE11685	Dec 2 /17 06:07:30	0.254	0.254	0.254	0.311	***	***	***	***	95.9L	Site 5AB - 133 Stanley Avenue
H	BE16212	Dec 2 /17 06:07:35	0.762	0.762	1.016	1.244	0.381	0.254	0.254	0.402	***	Site 5A - IOS Shaft IOS Location
H	BE14293	Dec 2 /17 06:07:46	1.016	0.889	1.016	1.164	1.651	0.762	1.270	1.675	108.0L	Site 5AB - 141+151 Stanley Ave
H	BE15997	Dec 3 /17 06:01:52	0.254	0.254	0.254	0.381	***	***	***	***	***	Site 5C - 54 Queen Victoria Stre
H	BE17376	Dec 3 /17 06:06:53	0.635	0.381	0.381	0.648	***	***	***	***	***	Site 5C - 51 Queen Victoria Stre
H	BE20061	Dec 3 /17 06:06:53	0.381	0.381	0.254	0.475	0.254	0.381	0.254	0.402	***	Site 5A - IOS Shaft 5A Location

**CSST - Site 5**  
**M7550A DTJV**  
**Nov 27, 2017 to Dec 3, 2017**

**Event Report: Event List - z:\to be archived\2 csst temp folders\site 5**

Type	Serial No.	Date/Time	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	PVS1 (mm/s)	Tran2 Peak (mm/s)	Vert2 Peak (mm/s)	Long2 Peak (mm/s)	PVS2 (mm/s)	Mic Peak (dB)	Description
H	BE11685	Dec 3 /17 06:06:54	0.254	0.254	0.254	0.311	***	***	***	***	104.9L	Site 5AB - 133 Stanley Avenue
H	BE16212	Dec 3 /17 06:06:55	2.159	2.032	1.905	3.029	0.381	0.254	0.254	0.421	***	Site 5A - IOS Shaft IOS Location
H	BE14293	Dec 3 /17 06:07:43	1.143	1.016	0.889	1.178	2.540	0.762	2.286	2.691	107.5L	Site 5AB - 141+151 Stanley Ave