

May 31, 2019

File: 3122-19A

Columbia Containers Ltd.  
2319 Commissioner Street  
Vancouver, BC  
V5L 1A4

Attention: Dean Giles, General Manager

Dear Dean:

**Re: Columbia Containers New Grain Transloading Facility and Silos  
VFPA Project Permit No. 13-123  
Post-Construction Noise Monitoring**

Since receiving VFPA's approval of our post-construction noise monitoring plan dated April 26, 2019, BKL Consultants Ltd. (BKL) performed post-construction noise monitoring and assessment as described in the plan. This letter summarizes the measurement details, results and findings.

## **Background**

Columbia Containers (CC) recently concluded the construction of the New Grain Transloading Facility and Silos Project (the Project). The VFPA project permit includes a condition to conduct post-construction noise monitoring to assess how community noise levels have changed as a result of the Project. Specifically, item 58 of the Project and Environmental Conditions in the above-mentioned project permit states:

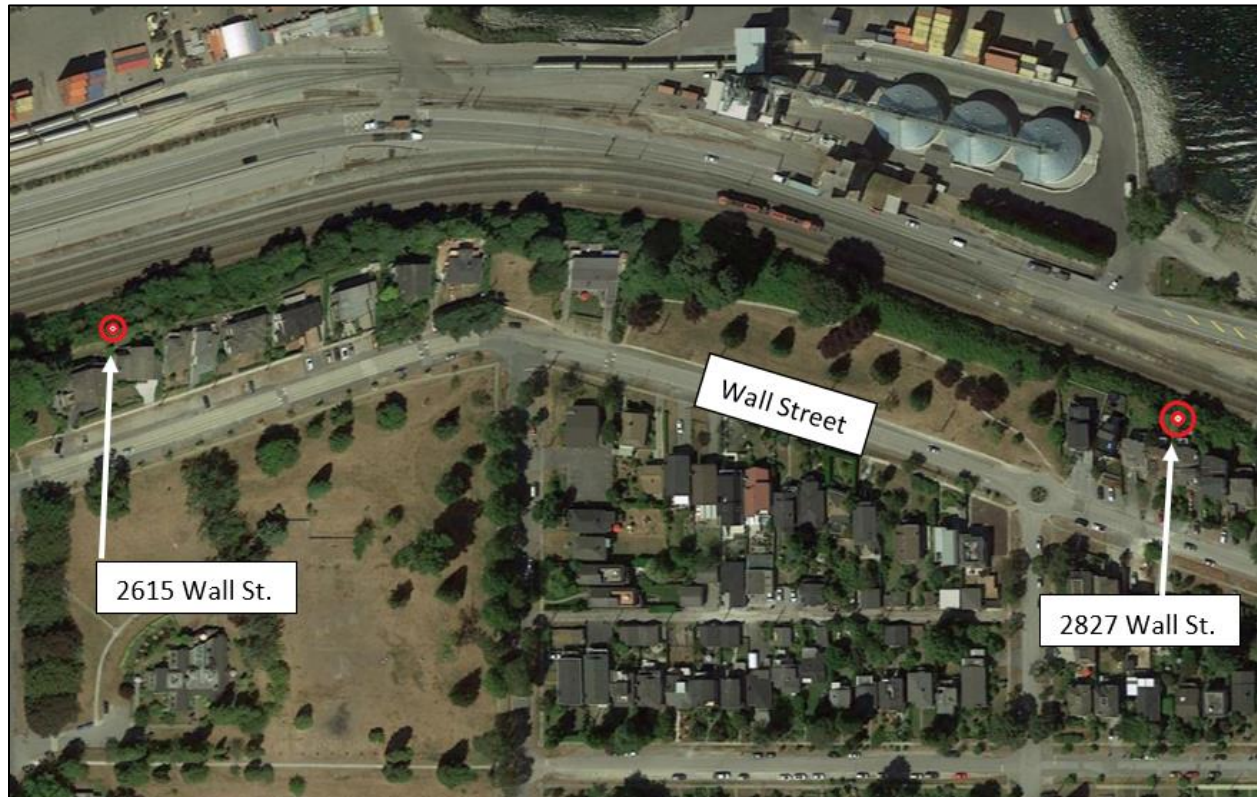
*The Applicant is required to conduct post-construction noise monitoring, following applicable standards and to the satisfaction of VFPA, within one (1) year of project completion to confirm the effectiveness of noise mitigation and low noise initiatives. A copy of the noise monitoring scope and work plan shall be submitted to VFPA for review and approval prior to monitoring activities. A copy of the results of the noise monitoring shall be submitted to VFPA.*

From recent correspondence between CC and VFPA, VFPA has indicated that post-construction noise monitoring is expected to be conducted at similar locations over a similar time period as that conducted in January 2015 to demonstrate that the assumptions in the noise model were reasonable. Hence, BKL has proposed to conduct post-construction noise monitoring at or near the two residences where

baseline monitoring was conducted in 2015 and compare the pre- and post-construction community noise levels.

### Noise Measurements

BKL conducted long-term measurements for seven days at 2615 Wall Street and 2827 Wall Street where baseline noise monitoring was conducted in January 2015. The microphones were set up in the backyard of the residences with clear lines of sight to CC. Noise data was collected from 9 am on Tuesday, May 14, to 9 am on Tuesday, May 21. The measurement locations are shown in Figure 1 below.



**Figure 1: Post-Construction Noise Measurement Locations**

BKL used Brüel & Kjær Type 2250 and Type 2270 sound level meters with weatherproof microphone systems to perform the noise monitoring. Both meters are Type 1 sound level analyzers and were field calibrated before conducting the measurements. Measurement details are described in the attached site descriptions.

### Measurement Results

Data from full 24-hour periods (Wednesday to Monday) at both locations are listed in Table 1 along with the baseline monitoring results from our 2015 Environmental Noise Impact Assessment. The  $L_{dn}$  and  $L_{den}$  values were not adjusted for weekend, tone or impulse penalties and the evening period was defined to be 7 to 11 pm to be consistent with the results presented in our 2015 report. Detailed noise data is included in the attached site descriptions.

**Table 1: Summary of Noise Monitoring Results**

Measurement Date		Day of the Week	L <sub>dn</sub> (dBA)	L <sub>d, 15hrs</sub> (dBA)	L <sub>n,9hrs</sub> (dBA)	L <sub>den</sub> (dBA)
<b>2615 Wall Street</b>						
<b>2015 Baseline</b>	Jan. 22, 2015	Thursday	72	64	65	71
	Jan. 23, 2015	Friday	69	65	62	69
	Jan. 24, 2015	Saturday	68	63	58	68
	Jan. 25, 2015	Sunday	67	58	60	66
	Jan. 26, 2015	Monday	67	65	59	67
	Jan. 27, 2015	Tuesday	70	64	63	70
	<b>Jan 22 - 27, 2015</b>	<b>Thursday - Tuesday</b>	<b>69</b>	<b>64</b>	<b>62</b>	<b>69</b>
<b>2019 Post-Construction</b>	May.15, 2019	Wednesday	67	63	59	67
	May. 16, 2019	Thursday	70	63	64	70
	May. 17, 2019	Friday	66	63	59	66
	May 18, 2019	Saturday	66	60	59	65
	May 19, 2019	Sunday	66	60	60	67
	May 20, 2019	Monday	70	60	64	70
	<b>May 15-20, 2019</b>	<b>Wednesday-Monday</b>	<b>68</b>	<b>62</b>	<b>61</b>	<b>68</b>
<b>2827 Wall Street</b>						
<b>2015 Baseline</b>	Jan. 22, 2015	Thursday	74	69	67	73
	Jan. 23, 2015	Friday	74	68	67	74
	Jan. 24, 2015	Saturday	73	66	65	73
	Jan. 25, 2015	Sunday	72	63	65	71
	Jan. 26, 2015	Monday	72	69	65	72
	Jan. 27, 2015	Tuesday	72	69	65	72
	<b>Jan. 22 - 27, 2015</b>	<b>Thursday - Tuesday</b>	<b>73</b>	<b>68</b>	<b>66</b>	<b>73</b>
<b>2019 Post-Construction</b>	May.15, 2019	Wednesday	71	66	64	71
	May. 16, 2019	Thursday	73	66	67	73
	May. 17, 2019	Friday	71	66	64	71
	May 18, 2019	Saturday	70	63	64	70
	May 19, 2019	Sunday	73	64	67	73
	May 20, 2019	Monday	72	64	66	72
	<b>May 15-20, 2019</b>	<b>Wednesday-Monday</b>	<b>72</b>	<b>65</b>	<b>65</b>	<b>72</b>

As shown in Table 1, the measured noise levels at 2615 Wall Street were approximately 4 dBA lower than measured at 2827 Wall Street. There were day-to-day variations in the daily noise levels measured and the noise levels were generally lower during the weekend than the weekdays. These trends were also observed in the 2015 measurements.

Overall, the average  $L_{dn}$  and  $L_{den}$  measured in 2019 are 1 dBA lower than measured in 2015 at both locations. Columbia Containers was reported to be operating as usual during the entire measurement period.

## Conclusion

BKL measured post-construction noise levels over a one-week period at the same two residences where baseline monitoring was performed in 2015. Measure results indicate that the total community noise levels have decreased after the Project was constructed and, therefore, there is no noise increase as a result of the Project.

Please let us know should you have any questions regarding this letter.

Sincerely,

**BKL Consultants Ltd.**

per:

  
Gary Mak, P.Eng.  
Acoustical Consultant  
[mak@bkl.ca](mailto:mak@bkl.ca)





## Columbia Containers Post-Construction Noise Monitoring - 2615 Wall Street

Project ID: 3122-19A  
Start Date: May 15, 2019  
Start Time: 00:00  
Duration: 6 Days

Address: 2615 Wall Street, Vancouver  
Instrument: Bruel & Kjaer 2270  
Serial No: 3010749  
Measured by: N.Dobbs

### Location Description

The microphone was located near the northwest corner of the property at 1.4 m above the ground. The north façade of the house is 7 m away from the microphone. The microphone position is 55 m from the Commissioner Street centreline.

### Ambient Noise Description

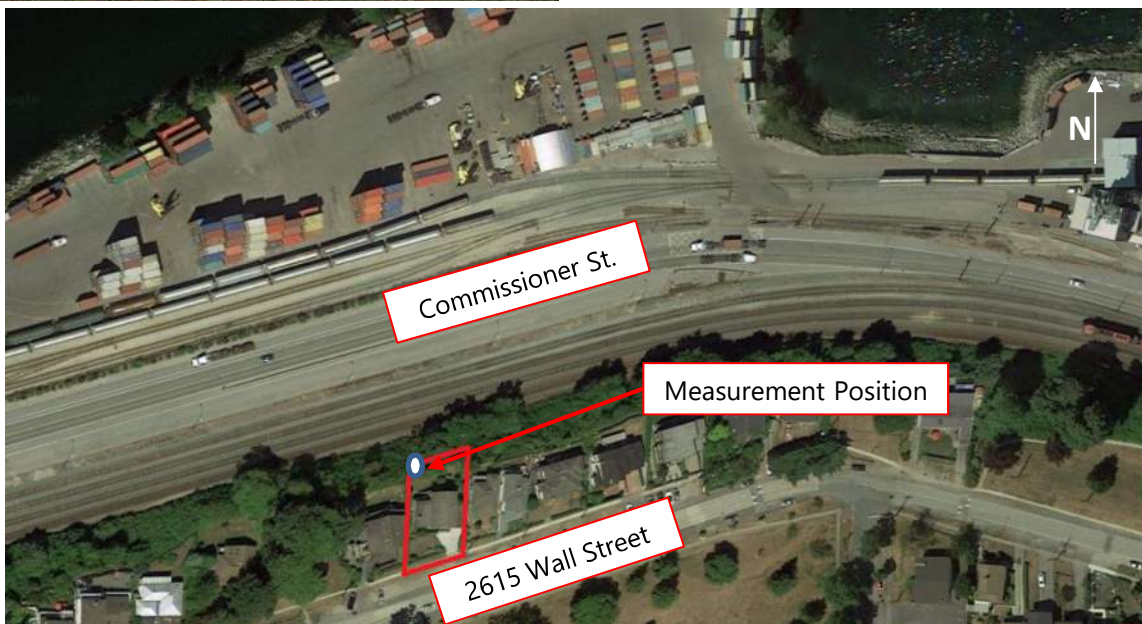
The dominant noise sources at this location included road traffic from Commissioner Street, rail traffic noise from nearby rail lines and operations at Columbia Containers.

### Environmental Conditions

The weather was mixed during the measurement period with mostly overcast or partially sunny and dry conditions. There were occasional periods of light rain throughout.

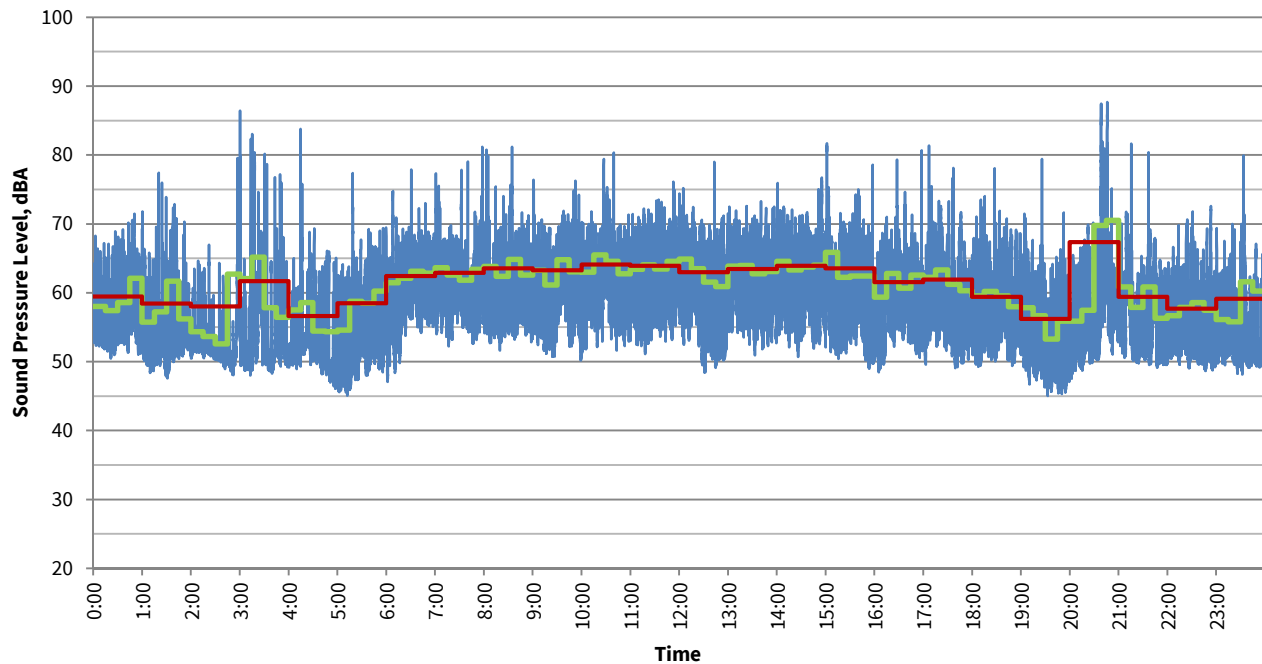
### Purpose of Monitoring Location

This monitoring location is representative of the current environmental noise condition of residential properties along Wall Street overlooking the west side of the Columbia Containers facility.



## Columbia Containers Post-Construction Noise Monitoring - 2615 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 15, 2019



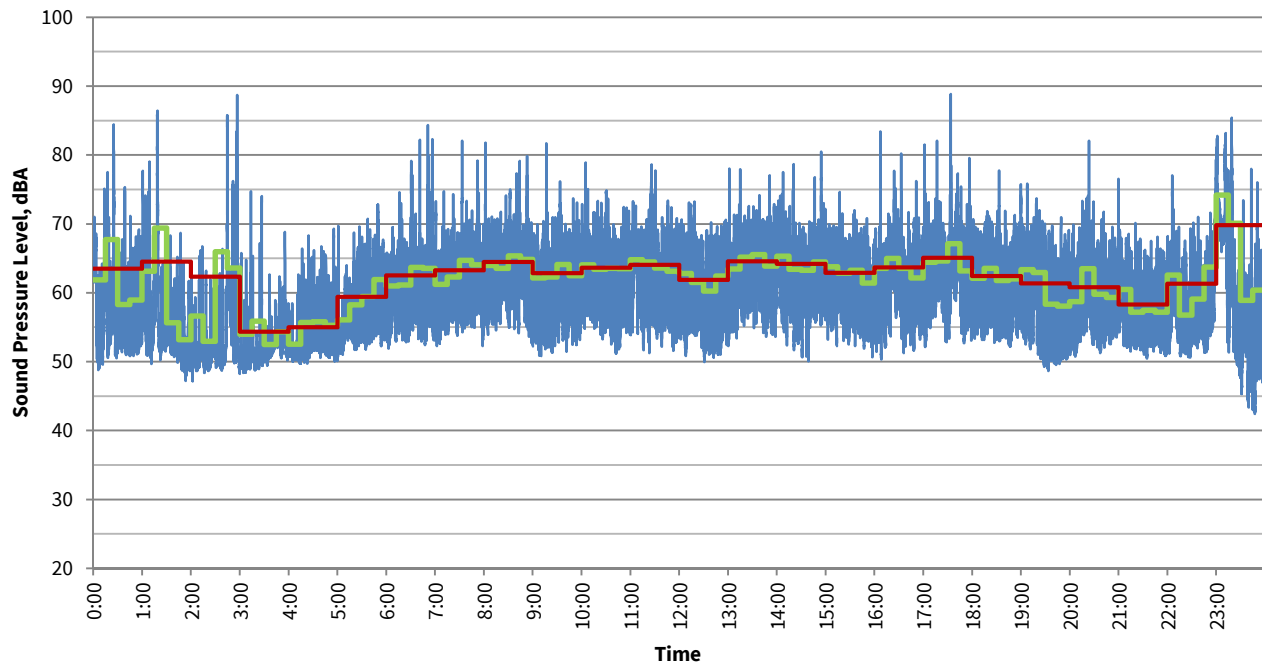
Hourly Interval Report starting at May 15, 2019

All Sound Pressure Levels presented in dBA

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	62	88	45	71	67	65	57	51	47
May 15	0:00:00	1:00:00	59	71	50	69	65	63	57	53	51
May 15	1:00:00	1:00:00	58	77	48	70	65	61	53	50	48
May 15	2:00:00	1:00:00	58	80	48	68	60	56	52	50	49
May 15	3:00:00	1:00:00	62	86	48	74	63	60	52	50	49
May 15	4:00:00	1:00:00	57	84	46	66	62	58	51	49	47
May 15	5:00:00	1:00:00	58	77	45	68	64	63	53	48	46
May 15	6:00:00	1:00:00	62	78	47	69	67	66	61	54	49
May 15	7:00:00	1:00:00	63	81	52	72	67	66	60	55	53
May 15	8:00:00	1:00:00	64	81	52	72	68	67	61	55	53
May 15	9:00:00	1:00:00	63	76	50	70	68	67	60	54	51
May 15	10:00:00	1:00:00	64	80	51	71	69	67	62	56	52
May 15	11:00:00	1:00:00	64	76	51	71	69	67	62	56	53
May 15	12:00:00	1:00:00	63	79	48	71	68	67	60	53	50
May 15	13:00:00	1:00:00	63	73	51	70	68	67	62	56	53
May 15	14:00:00	1:00:00	64	77	51	72	69	67	61	55	53
May 15	15:00:00	1:00:00	64	82	49	74	68	66	59	53	50
May 15	16:00:00	1:00:00	62	81	48	71	66	64	59	53	50
May 15	17:00:00	1:00:00	62	81	49	72	68	65	58	53	50
May 15	18:00:00	1:00:00	59	78	49	69	65	62	56	52	50
May 15	19:00:00	1:00:00	56	79	45	66	62	59	51	47	46
May 15	20:00:00	1:00:00	67	88	48	82	69	63	55	51	49
May 15	21:00:00	1:00:00	59	82	49	68	66	63	54	50	50
May 15	22:00:00	1:00:00	58	73	49	69	64	61	53	50	49
May 15	23:00:00	1:00:00	59	80	48	71	64	61	52	50	49

## Columbia Containers Post-Construction Noise Monitoring - 2615 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 16, 2019



Hourly Interval Report starting at May 16, 2019

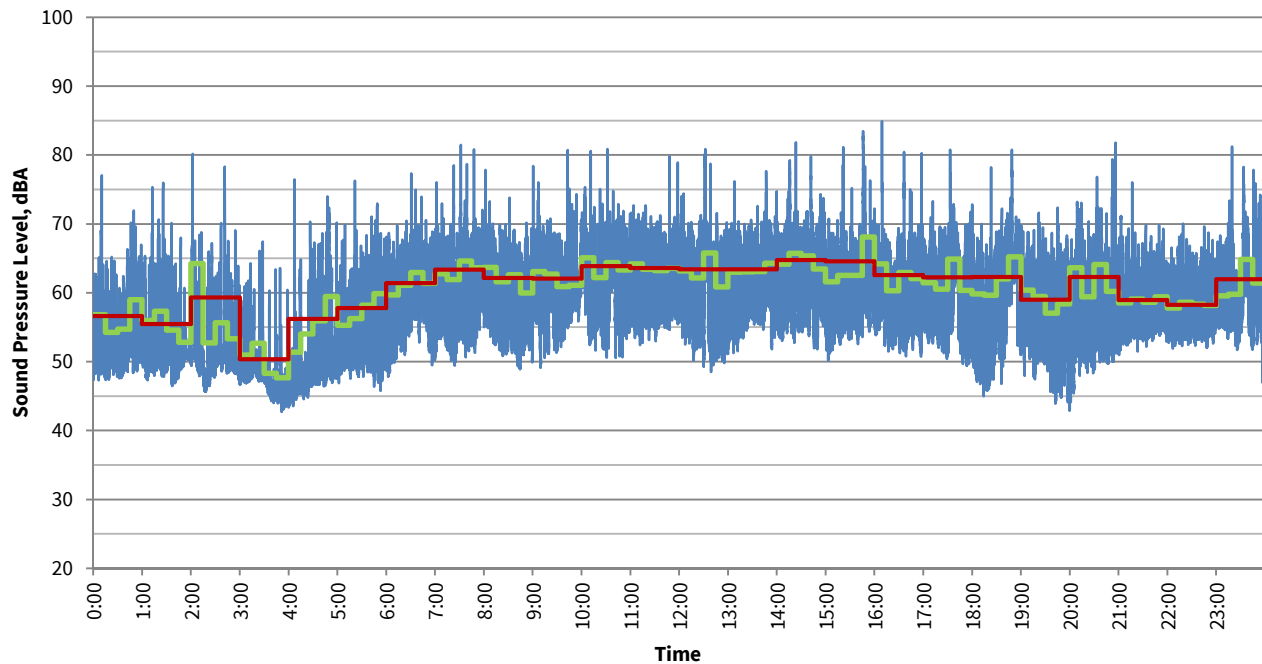
All Sound Pressure Levels presented in dBA

— 1 second measured  $L_{eq}$   
— 15 minute calculated  $L_{eq}$   
— 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	63	89	42	73	68	66	58	52	49
May 16	0:00:00	1:00:00	63	84	49	75	67	64	56	52	50
May 16	1:00:00	1:00:00	65	86	47	77	66	62	53	50	49
May 16	2:00:00	1:00:00	62	89	47	71	63	60	52	50	48
May 16	3:00:00	1:00:00	54	75	48	64	57	55	51	50	49
May 16	4:00:00	1:00:00	55	69	50	65	60	58	52	51	50
May 16	5:00:00	1:00:00	59	73	50	68	65	63	55	53	51
May 16	6:00:00	1:00:00	63	84	52	71	67	65	59	55	53
May 16	7:00:00	1:00:00	63	82	52	72	68	66	61	56	53
May 16	8:00:00	1:00:00	64	82	53	72	69	68	62	57	54
May 16	9:00:00	1:00:00	63	82	51	70	68	66	60	54	52
May 16	10:00:00	1:00:00	64	79	51	71	68	67	61	56	53
May 16	11:00:00	1:00:00	64	79	51	72	69	68	62	55	53
May 16	12:00:00	1:00:00	62	73	50	70	67	66	59	53	51
May 16	13:00:00	1:00:00	65	78	52	72	69	68	62	57	54
May 16	14:00:00	1:00:00	64	80	50	71	68	67	62	57	52
May 16	15:00:00	1:00:00	63	75	51	69	67	66	61	56	53
May 16	16:00:00	1:00:00	64	83	50	73	68	67	61	55	52
May 16	17:00:00	1:00:00	65	89	52	73	69	68	62	56	54
May 16	18:00:00	1:00:00	62	78	52	70	68	66	59	55	53
May 16	19:00:00	1:00:00	61	76	49	71	67	66	56	51	50
May 16	20:00:00	1:00:00	61	82	51	69	66	64	57	53	52
May 16	21:00:00	1:00:00	58	70	50	67	64	62	55	52	51
May 16	22:00:00	1:00:00	61	77	51	73	66	64	57	52	51
May 16	23:00:00	1:00:00	70	85	42	82	78	73	57	48	43

## Columbia Containers Post-Construction Noise Monitoring - 2615 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 17, 2019



Hourly Interval Report starting at May 17, 2019

All Sound Pressure Levels presented in dBA

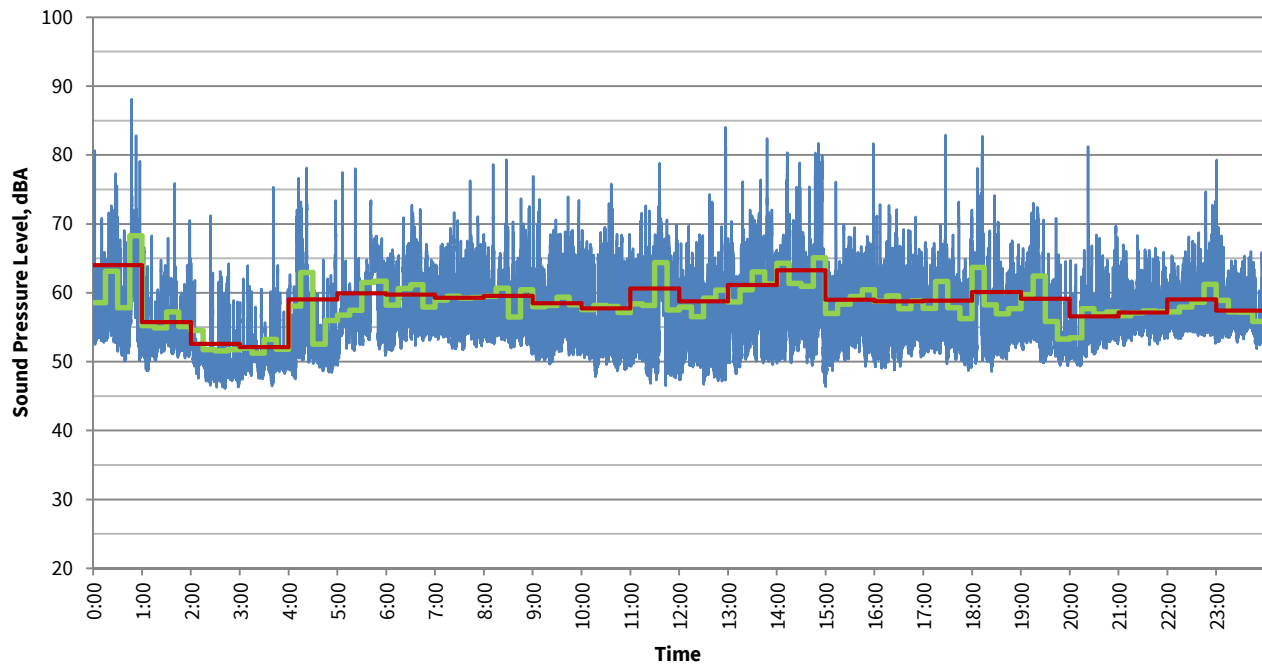
— 1 second measured  $L_{eq}$   
 — 15 minute calculated  $L_{eq}$   
 — 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	62	85	43	70	67	65	57	49	45
May 17	0:00:00	1:00:00	57	77	47	65	62	60	53	49	48
May 17	1:00:00	1:00:00	55	76	46	66	61	58	51	48	47
May 17	2:00:00	1:00:00	59	80	46	69	64	61	50	48	46
May 17	3:00:00	1:00:00	50	67	43	61	55	51	48	45	44
May 17	4:00:00	1:00:00	56	76	43	68	63	59	48	46	44
May 17	5:00:00	1:00:00	58	76	46	68	64	62	52	49	48
May 17	6:00:00	1:00:00	61	77	48	69	66	65	60	53	49
May 17	7:00:00	1:00:00	63	81	49	72	68	66	60	53	50
May 17	8:00:00	1:00:00	62	78	49	70	67	66	59	53	50
May 17	9:00:00	1:00:00	62	81	49	69	67	66	59	55	51
May 17	10:00:00	1:00:00	64	81	51	71	68	67	62	55	52
May 17	11:00:00	1:00:00	64	80	52	70	68	67	61	56	54
May 17	12:00:00	1:00:00	63	81	49	72	68	66	59	52	50
May 17	13:00:00	1:00:00	63	78	51	70	68	67	61	56	53
May 17	14:00:00	1:00:00	65	82	52	74	69	68	62	56	53
May 17	15:00:00	1:00:00	65	83	50	74	68	67	61	55	52
May 17	16:00:00	1:00:00	63	85	51	72	67	65	59	54	52
May 17	17:00:00	1:00:00	62	81	49	70	67	66	59	53	50
May 17	18:00:00	1:00:00	62	81	45	71	68	66	58	49	47
May 17	19:00:00	1:00:00	59	72	43	68	65	63	55	48	45
May 17	20:00:00	1:00:00	62	82	44	72	69	67	56	50	45
May 17	21:00:00	1:00:00	59	76	51	67	64	62	56	54	53
May 17	22:00:00	1:00:00	58	70	52	66	63	61	56	54	53
May 17	23:00:00	1:00:00	62	81	47	74	65	64	58	54	48



## Columbia Containers Post-Construction Noise Monitoring - 2615 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 18, 2019



Hourly Interval Report starting at May 18, 2019

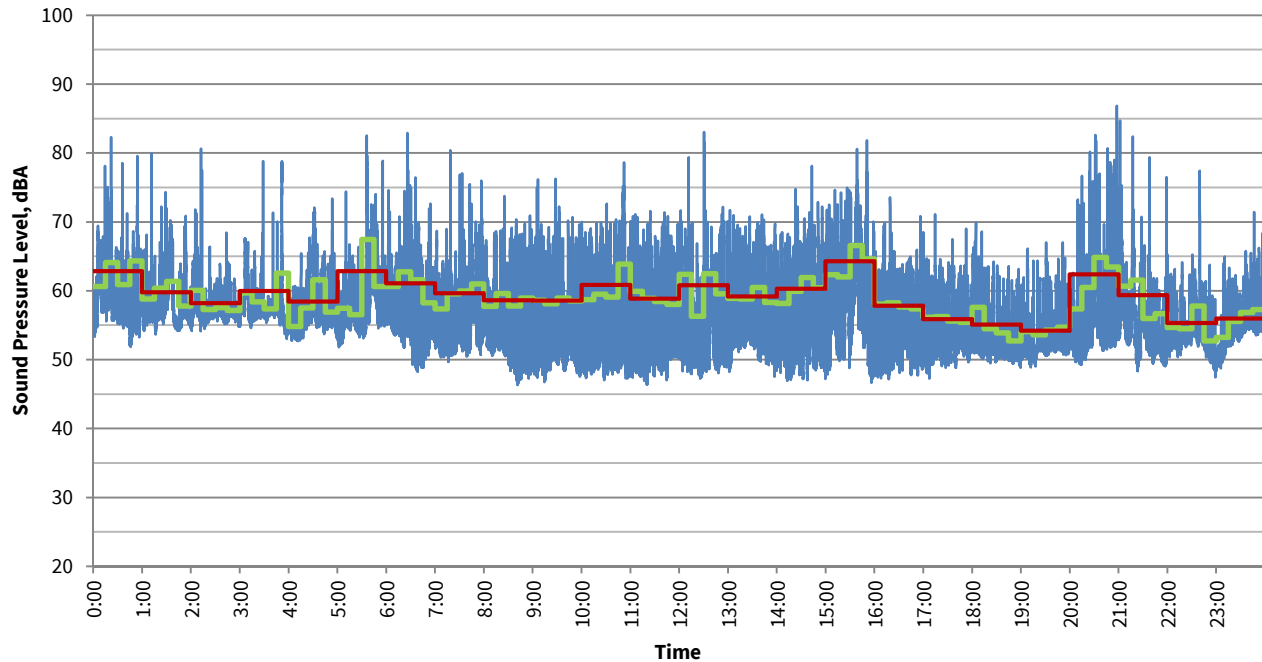
All Sound Pressure Levels presented in dBA

— 1 second measured  $L_{eq}$   
 — 15 minute calculated  $L_{eq}$   
 — 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	59	88	46	69	64	62	55	50	48
May 18	0:00:00	1:00:00	64	88	50	72	69	67	57	53	51
May 18	1:00:00	1:00:00	56	76	49	65	60	57	53	51	50
May 18	2:00:00	1:00:00	53	71	46	62	59	54	50	48	47
May 18	3:00:00	1:00:00	52	75	46	60	56	53	50	49	48
May 18	4:00:00	1:00:00	59	78	48	72	62	59	52	50	49
May 18	5:00:00	1:00:00	60	78	49	68	65	64	56	53	51
May 18	6:00:00	1:00:00	60	73	52	68	65	63	57	54	52
May 18	7:00:00	1:00:00	59	76	52	68	64	62	57	54	52
May 18	8:00:00	1:00:00	60	79	51	69	65	62	55	53	52
May 18	9:00:00	1:00:00	58	77	50	68	64	62	54	51	50
May 18	10:00:00	1:00:00	58	76	48	68	64	61	54	50	49
May 18	11:00:00	1:00:00	61	79	47	70	66	64	54	50	48
May 18	12:00:00	1:00:00	59	84	47	69	64	61	53	49	48
May 18	13:00:00	1:00:00	61	82	48	70	67	65	56	51	49
May 18	14:00:00	1:00:00	63	82	47	76	68	65	58	52	48
May 18	15:00:00	1:00:00	59	82	46	67	64	62	56	51	49
May 18	16:00:00	1:00:00	59	73	49	68	64	62	56	52	50
May 18	17:00:00	1:00:00	59	83	49	67	63	61	55	51	50
May 18	18:00:00	1:00:00	60	83	49	70	65	63	55	51	50
May 18	19:00:00	1:00:00	59	73	49	71	65	62	54	51	50
May 18	20:00:00	1:00:00	57	81	49	66	61	59	54	51	50
May 18	21:00:00	1:00:00	57	68	52	65	61	59	56	54	53
May 18	22:00:00	1:00:00	59	75	53	67	64	62	57	55	54
May 18	23:00:00	1:00:00	57	79	52	65	62	60	56	54	53

## Columbia Containers Post-Construction Noise Monitoring - 2615 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 19, 2019



Hourly Interval Report starting at May 19, 2019

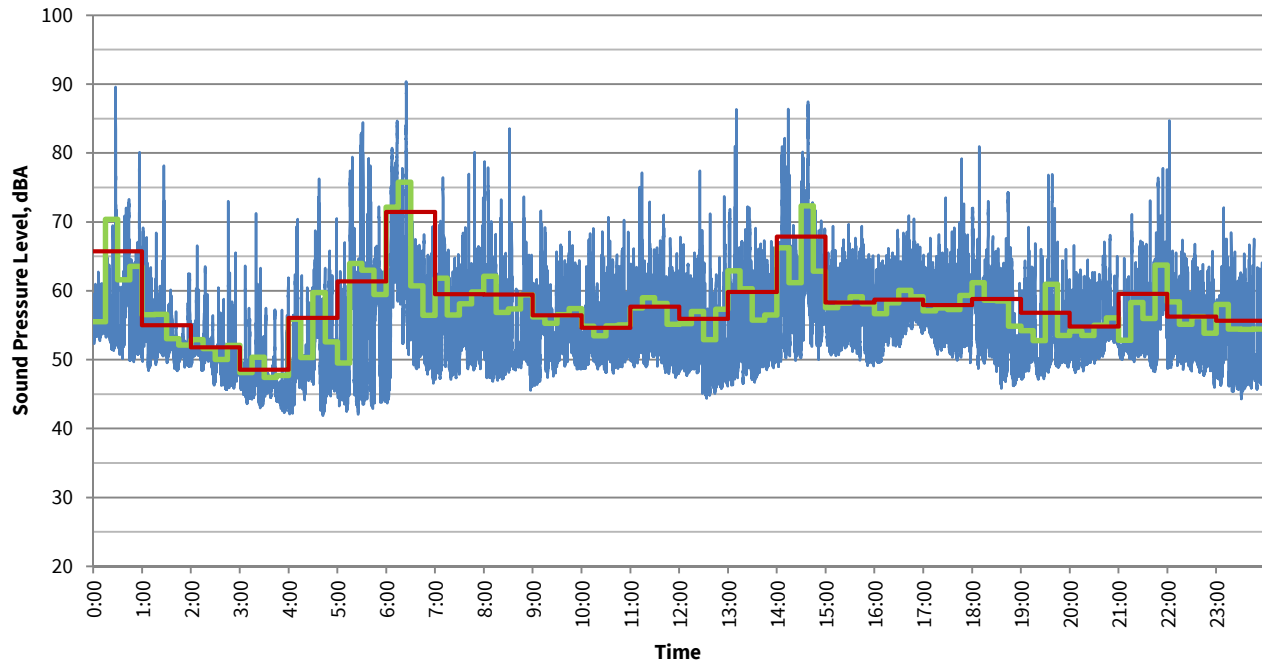
All Sound Pressure Levels presented in dBA

— 1 second measured  $L_{eq}$   
— 15 minute calculated  $L_{eq}$   
— 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	60	87	46	70	65	63	55	50	48
May 19	0:00:00	1:00:00	63	82	52	73	68	65	59	55	52
May 19	1:00:00	1:00:00	60	80	54	69	65	63	57	55	54
May 19	2:00:00	1:00:00	58	81	54	65	60	59	57	56	55
May 19	3:00:00	1:00:00	60	79	53	68	63	60	57	55	54
May 19	4:00:00	1:00:00	58	73	53	68	65	60	56	54	53
May 19	5:00:00	1:00:00	63	83	52	76	67	64	56	54	53
May 19	6:00:00	1:00:00	61	83	48	72	66	64	56	51	49
May 19	7:00:00	1:00:00	60	80	50	68	65	62	55	52	51
May 19	8:00:00	1:00:00	59	74	46	68	66	63	53	49	47
May 19	9:00:00	1:00:00	59	76	47	69	66	63	51	49	48
May 19	10:00:00	1:00:00	61	79	47	71	68	66	52	49	48
May 19	11:00:00	1:00:00	59	72	46	69	66	63	52	49	48
May 19	12:00:00	1:00:00	61	83	47	70	67	64	53	49	48
May 19	13:00:00	1:00:00	59	72	48	68	66	64	54	51	49
May 19	14:00:00	1:00:00	60	78	47	70	66	64	56	50	48
May 19	15:00:00	1:00:00	64	82	47	75	71	68	59	51	48
May 19	16:00:00	1:00:00	58	74	47	67	63	61	55	49	48
May 19	17:00:00	1:00:00	56	71	47	63	61	59	53	50	49
May 19	18:00:00	1:00:00	55	70	49	64	61	59	52	51	50
May 19	19:00:00	1:00:00	54	67	49	63	59	56	52	51	50
May 19	20:00:00	1:00:00	62	87	49	75	67	63	54	52	50
May 19	21:00:00	1:00:00	59	85	48	69	65	61	53	50	49
May 19	22:00:00	1:00:00	55	77	47	62	59	57	53	51	49
May 19	23:00:00	1:00:00	56	71	48	64	60	58	55	51	49

## Columbia Containers Post-Construction Noise Monitoring - 2615 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 20, 2019



Hourly Interval Report starting at May 20, 2019

All Sound Pressure Levels presented in dBA

— 1 second measured  $L_{eq}$   
— 15 minute calculated  $L_{eq}$   
— 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	62	90	42	71	64	62	53	48	44
May 20	0:00:00	1:00:00	66	90	50	77	66	63	55	52	50
May 20	1:00:00	1:00:00	55	78	48	63	59	57	52	50	49
May 20	2:00:00	1:00:00	52	73	46	60	55	53	50	47	46
May 20	3:00:00	1:00:00	49	71	42	58	53	49	46	44	43
May 20	4:00:00	1:00:00	56	76	42	69	62	58	48	44	43
May 20	5:00:00	1:00:00	61	84	42	72	66	63	50	45	43
May 20	6:00:00	1:00:00	71	90	44	84	76	72	59	50	45
May 20	7:00:00	1:00:00	60	80	47	68	65	62	55	49	48
May 20	8:00:00	1:00:00	59	84	46	73	65	61	51	48	47
May 20	9:00:00	1:00:00	56	72	46	66	63	60	53	49	47
May 20	10:00:00	1:00:00	55	71	48	64	59	57	52	50	49
May 20	11:00:00	1:00:00	58	77	47	68	63	60	54	50	48
May 20	12:00:00	1:00:00	56	77	44	66	61	59	50	47	45
May 20	13:00:00	1:00:00	60	86	46	69	65	63	53	48	47
May 20	14:00:00	1:00:00	68	87	49	80	72	68	59	53	50
May 20	15:00:00	1:00:00	58	70	49	66	63	62	56	51	50
May 20	16:00:00	1:00:00	59	71	50	66	64	62	57	53	50
May 20	17:00:00	1:00:00	58	79	50	65	63	61	55	52	51
May 20	18:00:00	1:00:00	59	81	46	71	64	62	53	48	47
May 20	19:00:00	1:00:00	57	77	47	67	62	59	51	48	48
May 20	20:00:00	1:00:00	55	68	48	63	60	58	52	50	49
May 20	21:00:00	1:00:00	60	78	48	70	66	63	52	50	49
May 20	22:00:00	1:00:00	56	85	46	64	61	59	52	49	48
May 20	23:00:00	1:00:00	56	72	44	66	62	59	50	47	45

## Columbia Containers Post-Construction Noise Monitoring - 2827 Wall Street

Project ID: 3122-19A  
Start Date: May 15, 2019  
Start Time: 00:00  
Duration: 6 Days

Address: 2827 Wall Street, Vancouver  
Instrument: Bruel & Kjaer 2250  
Serial No: 2611583  
Measured by: N. Dobbs

### Location Description

The microphone was located 3.8 m above the ground. The north façade of the house is 6 m away from the microphone. The microphone position is 40 m from the Commissioner Street centreline.

### Ambient Noise Description

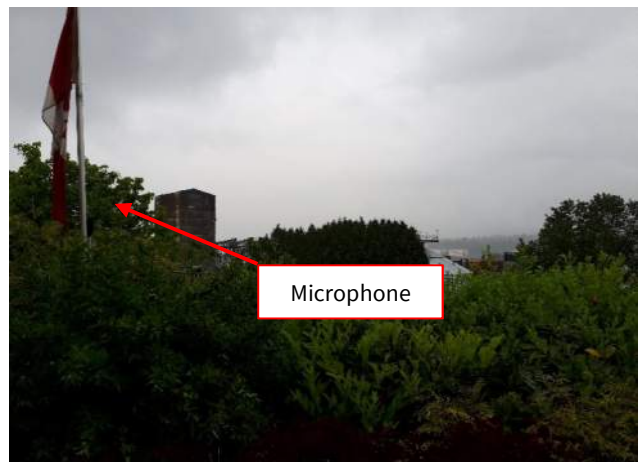
The dominant noise sources at this location included road traffic from Commissioner Street, rail traffic noise from nearby rail lines and operations at Columbia Containers.

### Environmental Conditions

The weather was mixed during the measurement period with mostly overcast or partially sunny and dry conditions. There were occasional periods of light rain throughout.

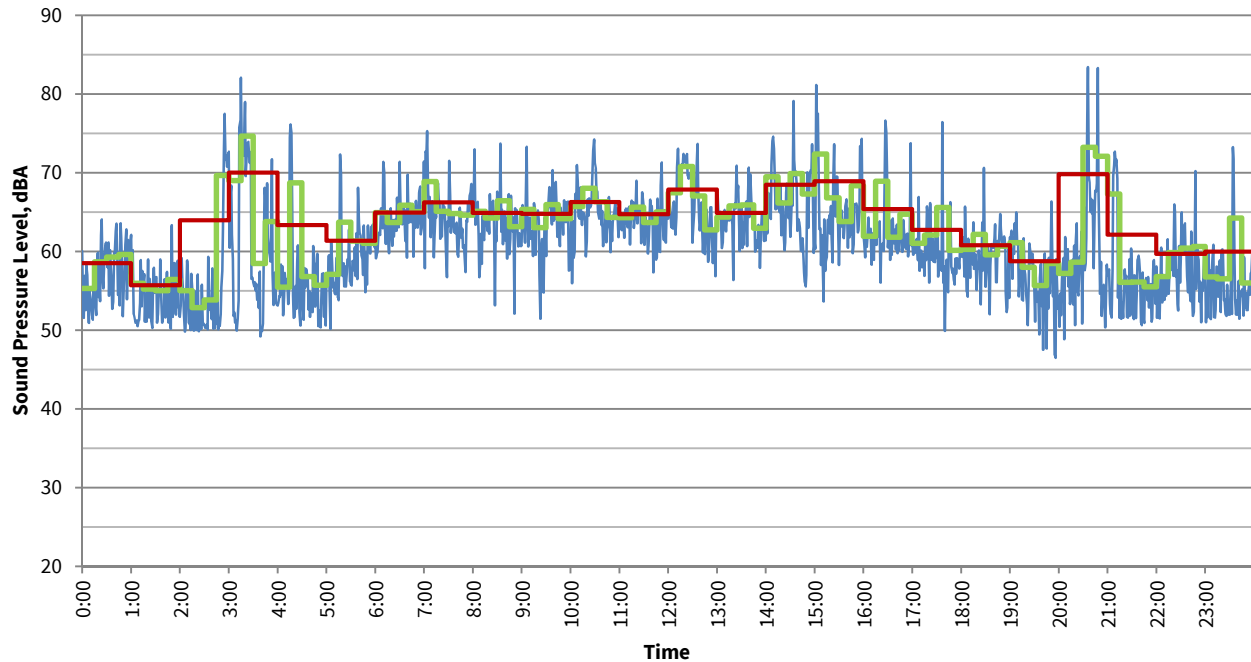
### Purpose of Monitoring Location

This monitoring location is representative of the current environmental noise condition of residential properties along Wall Street overlooking the east side of the Columbia Containers facility.



## Columbia Containers Post-Construction Noise Monitoring - 2827 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 15, 2019



Hourly Interval Report starting at May 15, 2019

All Sound Pressure Levels presented in dBA

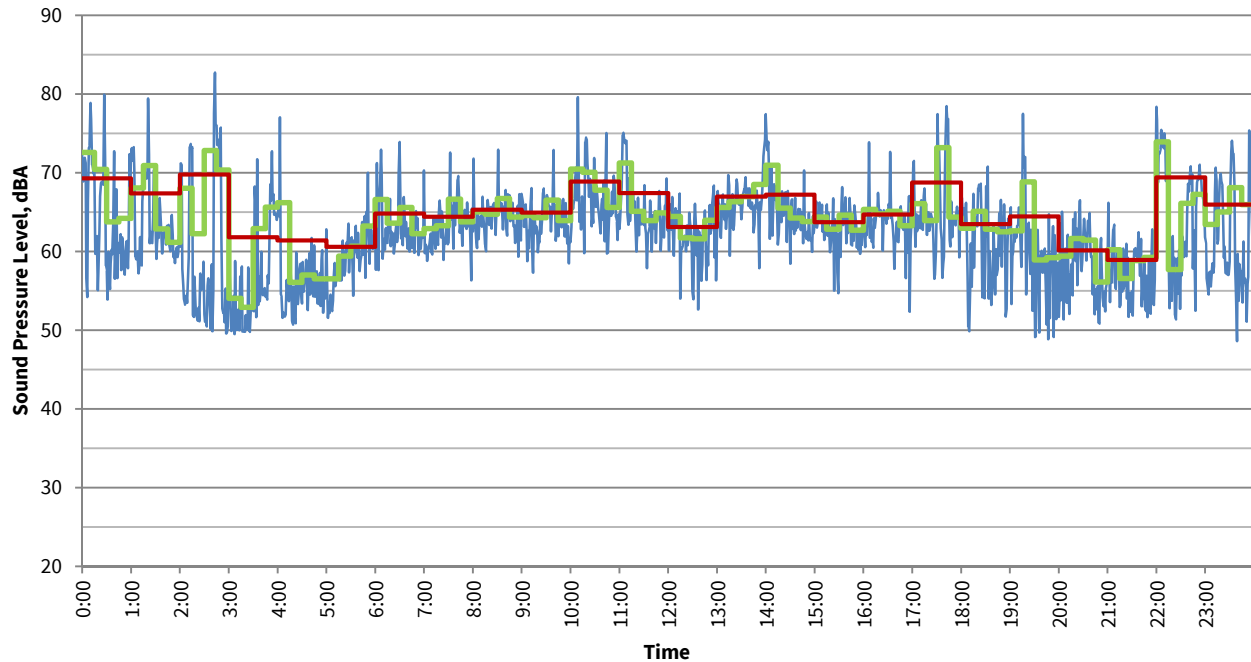
— 60 second measured  $L_{eq}$   
— 15 minute calculated  $L_{eq}$   
— 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	65	83	46	76	71	68	61	53	50
May 15	0:00:00	1:00:00	59	64	51	64	63	62	57	52	51
May 15	1:00:00	1:00:00	56	63	50	63	59	59	54	51	50
May 15	2:00:00	1:00:00	64	77	50	75	72	64	52	50	50
May 15	3:00:00	1:00:00	70	82	49	80	76	74	59	51	50
May 15	4:00:00	1:00:00	63	76	50	76	68	61	55	52	50
May 15	5:00:00	1:00:00	61	72	50	71	64	63	59	55	52
May 15	6:00:00	1:00:00	65	71	59	71	70	67	64	61	59
May 15	7:00:00	1:00:00	66	75	57	74	72	69	64	60	57
May 15	8:00:00	1:00:00	65	74	52	73	67	67	64	60	53
May 15	9:00:00	1:00:00	65	73	51	72	68	66	64	59	53
May 15	10:00:00	1:00:00	66	74	56	73	71	69	65	61	58
May 15	11:00:00	1:00:00	65	71	57	70	68	67	64	61	58
May 15	12:00:00	1:00:00	68	74	57	73	72	71	65	61	58
May 15	13:00:00	1:00:00	65	71	56	71	68	67	64	60	57
May 15	14:00:00	1:00:00	68	79	56	76	74	71	66	60	56
May 15	15:00:00	1:00:00	69	81	54	79	74	73	64	59	56
May 15	16:00:00	1:00:00	65	77	56	76	71	65	62	60	57
May 15	17:00:00	1:00:00	63	76	50	71	66	65	59	56	53
May 15	18:00:00	1:00:00	61	71	52	68	64	63	60	55	52
May 15	19:00:00	1:00:00	59	66	46	66	63	62	57	51	47
May 15	20:00:00	1:00:00	70	83	49	83	70	68	58	52	50
May 15	21:00:00	1:00:00	62	73	51	72	71	61	56	51	51
May 15	22:00:00	1:00:00	60	70	51	68	65	63	57	53	51
May 15	23:00:00	1:00:00	60	73	51	72	60	60	55	52	51



## Columbia Containers Post-Construction Noise Monitoring - 2827 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 16, 2019



Hourly Interval Report starting at May 16, 2019

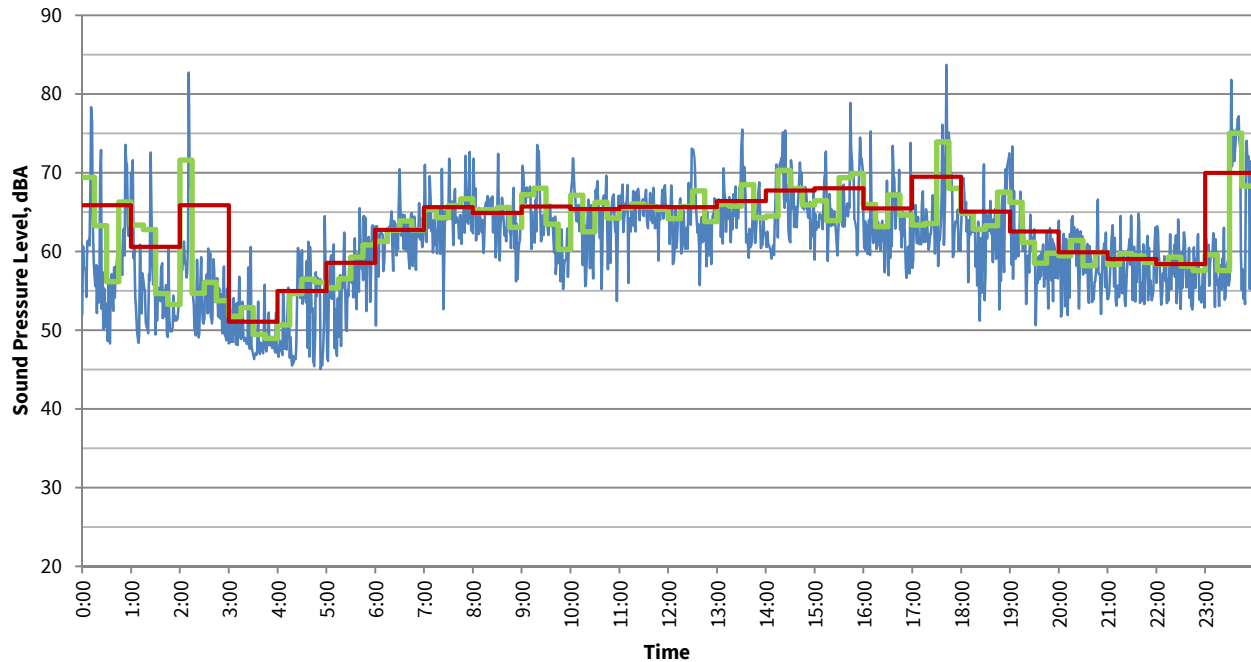
All Sound Pressure Levels presented in dBA

— 60 second measured  $L_{eq}$   
— 15 minute calculated  $L_{eq}$   
— 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	66	83	49	77	72	69	63	54	50
May 16	0:00:00	1:00:00	69	80	54	79	74	72	62	57	54
May 16	1:00:00	1:00:00	67	79	57	76	72	70	62	59	58
May 16	2:00:00	1:00:00	70	83	50	80	76	74	55	51	50
May 16	3:00:00	1:00:00	62	73	50	72	68	67	54	50	50
May 16	4:00:00	1:00:00	61	77	51	70	64	60	55	52	51
May 16	5:00:00	1:00:00	61	70	52	67	64	63	60	54	52
May 16	6:00:00	1:00:00	65	74	58	73	70	67	62	60	58
May 16	7:00:00	1:00:00	64	73	56	71	69	66	63	60	58
May 16	8:00:00	1:00:00	65	73	59	72	67	67	64	62	60
May 16	9:00:00	1:00:00	65	73	57	70	67	67	64	61	58
May 16	10:00:00	1:00:00	69	80	60	77	74	72	66	62	60
May 16	11:00:00	1:00:00	67	75	58	75	74	70	65	62	59
May 16	12:00:00	1:00:00	63	68	53	68	67	66	63	56	53
May 16	13:00:00	1:00:00	67	74	58	73	70	69	66	63	59
May 16	14:00:00	1:00:00	67	77	58	76	73	70	65	61	59
May 16	15:00:00	1:00:00	64	68	55	67	67	66	63	60	55
May 16	16:00:00	1:00:00	65	74	52	73	67	66	63	61	55
May 16	17:00:00	1:00:00	69	78	57	78	77	73	64	60	57
May 16	18:00:00	1:00:00	63	71	50	69	68	67	62	54	50
May 16	19:00:00	1:00:00	64	77	49	74	71	66	60	51	49
May 16	20:00:00	1:00:00	60	66	51	66	65	64	58	52	51
May 16	21:00:00	1:00:00	59	67	52	67	63	62	57	53	52
May 16	22:00:00	1:00:00	69	78	51	77	75	73	66	55	52
May 16	23:00:00	1:00:00	66	75	49	75	72	70	59	55	50

## Columbia Containers Post-Construction Noise Monitoring - 2827 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 17, 2019



Hourly Interval Report starting at May 17, 2019

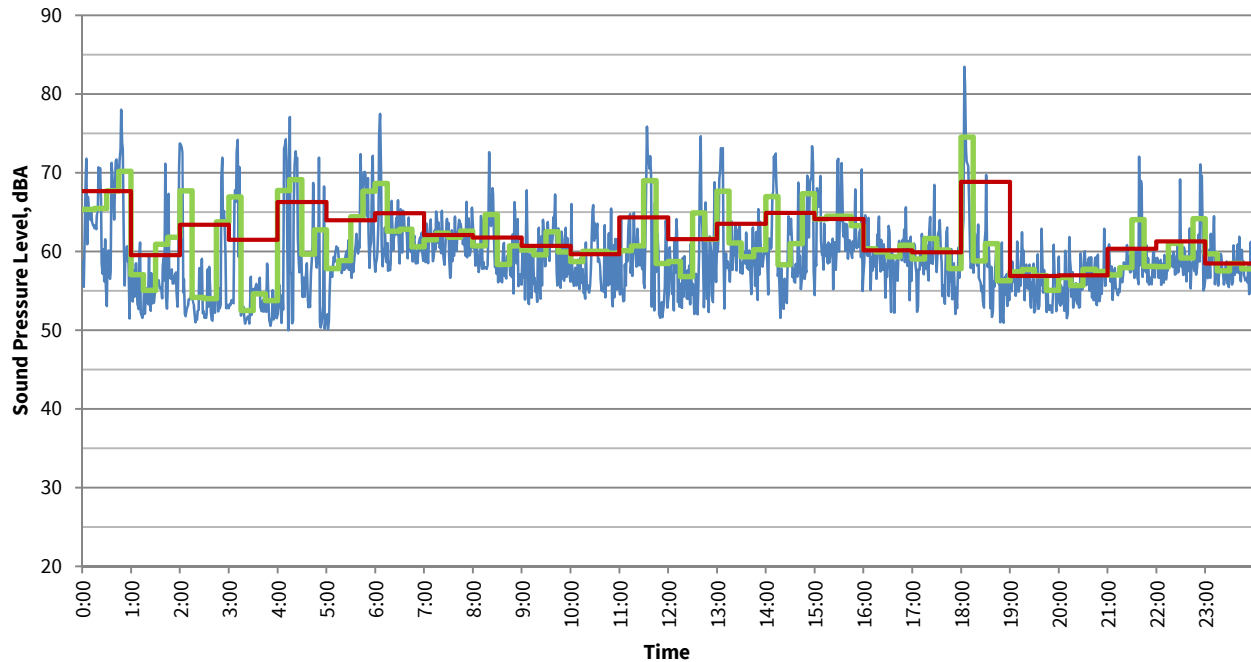
All Sound Pressure Levels presented in dBA

— 60 second measured  $L_{eq}$   
— 15 minute calculated  $L_{eq}$   
— 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	65	84	45	75	71	68	61	52	47
May 17	0:00:00	1:00:00	66	78	48	77	73	69	58	52	49
May 17	1:00:00	1:00:00	61	73	48	72	67	61	54	50	49
May 17	2:00:00	1:00:00	66	83	49	75	68	60	55	50	49
May 17	3:00:00	1:00:00	51	61	46	59	56	54	48	47	47
May 17	4:00:00	1:00:00	55	64	45	63	60	59	51	46	45
May 17	5:00:00	1:00:00	59	65	46	65	63	62	57	49	46
May 17	6:00:00	1:00:00	63	70	51	68	65	65	62	58	54
May 17	7:00:00	1:00:00	66	73	53	72	71	68	64	61	57
May 17	8:00:00	1:00:00	65	72	56	72	68	67	64	60	56
May 17	9:00:00	1:00:00	66	74	55	73	71	68	63	59	56
May 17	10:00:00	1:00:00	65	72	54	71	69	68	65	58	55
May 17	11:00:00	1:00:00	66	68	56	68	68	68	65	63	58
May 17	12:00:00	1:00:00	66	73	56	73	72	68	64	60	57
May 17	13:00:00	1:00:00	66	75	59	74	71	68	65	61	60
May 17	14:00:00	1:00:00	68	75	59	75	72	71	66	61	59
May 17	15:00:00	1:00:00	68	79	59	76	73	71	65	62	59
May 17	16:00:00	1:00:00	65	75	57	74	71	69	63	58	57
May 17	17:00:00	1:00:00	69	84	58	79	75	71	64	60	58
May 17	18:00:00	1:00:00	65	72	51	72	71	68	63	56	52
May 17	19:00:00	1:00:00	63	73	51	72	68	64	60	56	52
May 17	20:00:00	1:00:00	60	67	52	65	64	63	59	53	52
May 17	21:00:00	1:00:00	59	65	53	65	64	62	57	54	53
May 17	22:00:00	1:00:00	58	64	53	64	62	62	57	53	53
May 17	23:00:00	1:00:00	70	82	53	79	76	74	59	55	53

## Columbia Containers Post-Construction Noise Monitoring - 2827 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 18, 2019



Hourly Interval Report starting at May 18, 2019

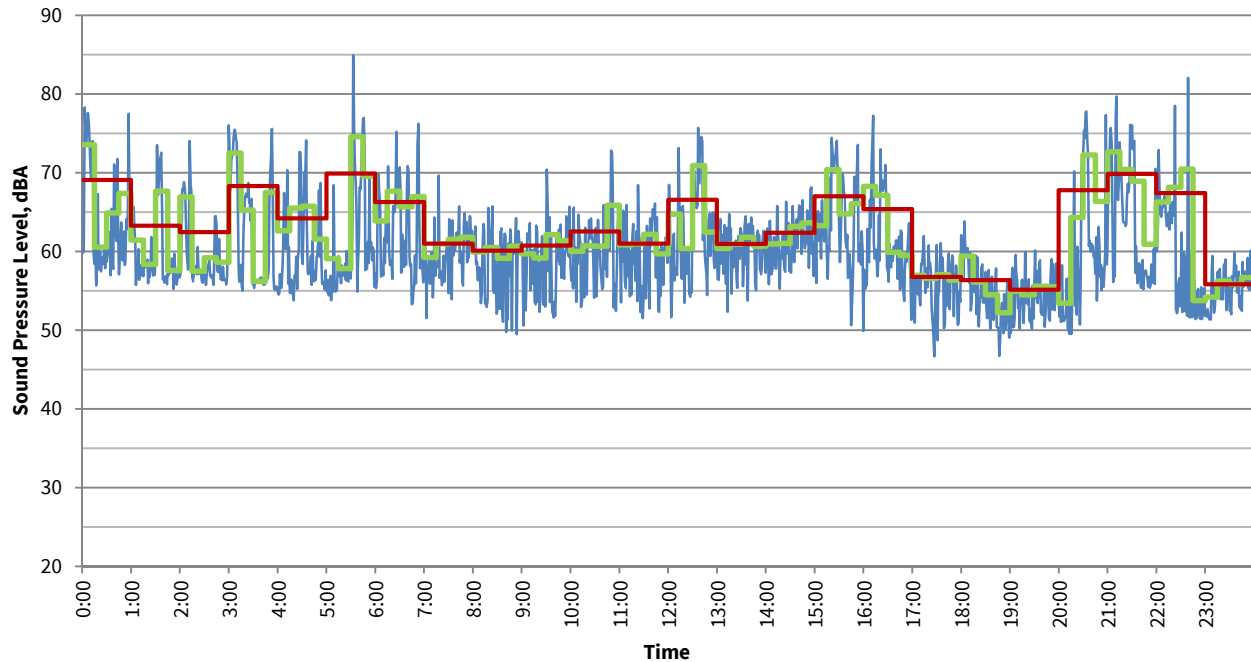
All Sound Pressure Levels presented in dBA

— 60 second measured  $L_{eq}$   
— 15 minute calculated  $L_{eq}$   
— 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	63	83	50	73	70	65	58	53	51
May 18	0:00:00	1:00:00	68	78	52	75	73	72	63	57	52
May 18	1:00:00	1:00:00	60	71	52	71	62	59	56	53	52
May 18	2:00:00	1:00:00	63	74	51	74	73	66	53	52	51
May 18	3:00:00	1:00:00	61	74	51	73	68	60	53	51	51
May 18	4:00:00	1:00:00	66	77	50	75	73	72	57	51	50
May 18	5:00:00	1:00:00	64	72	50	72	70	69	60	57	51
May 18	6:00:00	1:00:00	65	77	57	76	67	65	61	58	58
May 18	7:00:00	1:00:00	62	66	57	66	65	64	62	59	57
May 18	8:00:00	1:00:00	62	73	55	70	66	64	59	57	55
May 18	9:00:00	1:00:00	61	68	53	67	64	63	60	55	53
May 18	10:00:00	1:00:00	60	66	53	66	65	63	57	55	54
May 18	11:00:00	1:00:00	64	76	52	74	71	67	59	53	52
May 18	12:00:00	1:00:00	62	75	52	71	66	63	57	53	52
May 18	13:00:00	1:00:00	64	73	53	73	70	64	59	57	53
May 18	14:00:00	1:00:00	65	73	52	73	71	69	59	55	52
May 18	15:00:00	1:00:00	64	72	54	72	70	68	61	58	55
May 18	16:00:00	1:00:00	60	66	52	65	64	63	59	56	52
May 18	17:00:00	1:00:00	60	68	52	66	63	63	58	54	52
May 18	18:00:00	1:00:00	69	83	51	82	71	70	58	53	51
May 18	19:00:00	1:00:00	57	63	52	63	61	60	56	53	52
May 18	20:00:00	1:00:00	57	63	52	62	60	59	56	53	52
May 18	21:00:00	1:00:00	60	72	54	70	61	61	58	55	54
May 18	22:00:00	1:00:00	61	71	55	70	69	62	59	56	55
May 18	23:00:00	1:00:00	58	64	55	63	62	61	57	56	55

## Columbia Containers Post-Construction Noise Monitoring - 2827 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 19, 2019



Hourly Interval Report starting at May 19, 2019

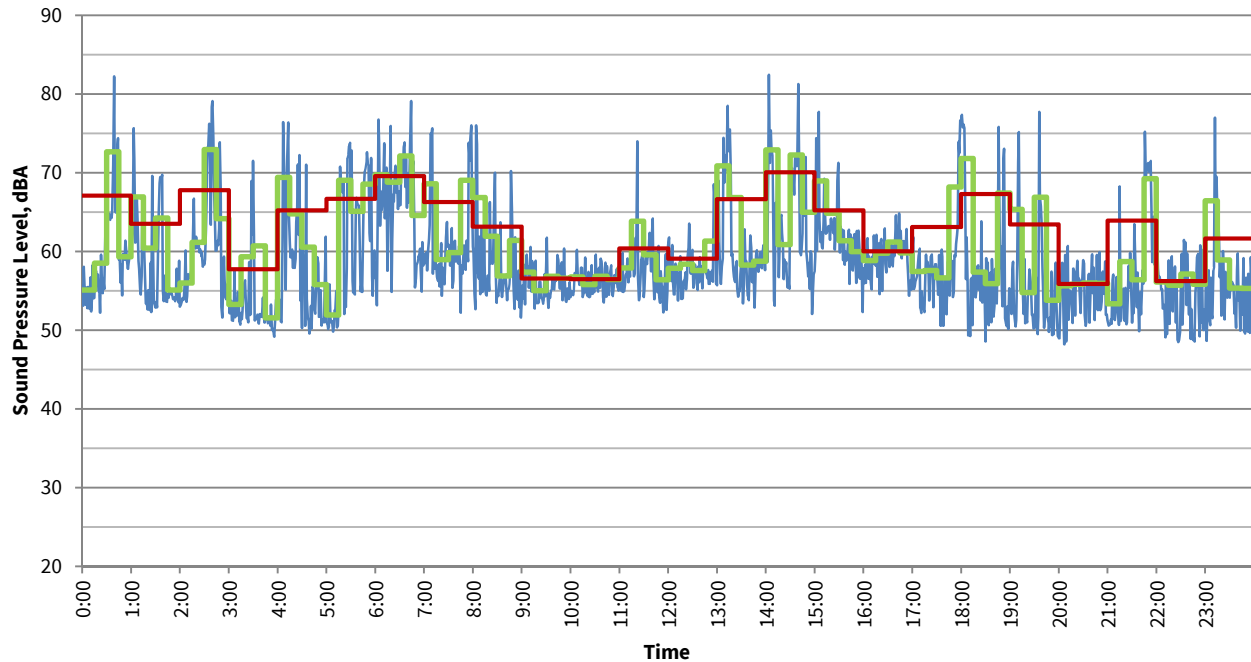
All Sound Pressure Levels presented in dBA

— 60 second measured  $L_{eq}$   
— 15 minute calculated  $L_{eq}$   
— 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	65	85	47	76	72	68	59	53	50
May 19	0:00:00	1:00:00	69	78	56	78	76	74	61	58	56
May 19	1:00:00	1:00:00	63	73	55	73	70	66	58	56	56
May 19	2:00:00	1:00:00	62	74	56	71	68	68	58	56	56
May 19	3:00:00	1:00:00	68	76	55	76	75	74	60	56	55
May 19	4:00:00	1:00:00	64	74	54	73	70	69	58	55	54
May 19	5:00:00	1:00:00	70	85	54	80	76	71	58	55	54
May 19	6:00:00	1:00:00	66	76	53	76	71	70	59	56	53
May 19	7:00:00	1:00:00	61	70	52	67	65	64	59	56	53
May 19	8:00:00	1:00:00	60	66	50	66	64	63	60	52	50
May 19	9:00:00	1:00:00	61	70	51	68	64	63	59	53	51
May 19	10:00:00	1:00:00	63	73	52	73	66	65	60	54	53
May 19	11:00:00	1:00:00	61	68	52	67	65	64	60	54	52
May 19	12:00:00	1:00:00	67	76	52	75	73	70	62	55	53
May 19	13:00:00	1:00:00	61	65	52	65	64	63	61	56	53
May 19	14:00:00	1:00:00	62	68	55	68	66	66	61	57	56
May 19	15:00:00	1:00:00	67	74	51	74	73	71	63	57	52
May 19	16:00:00	1:00:00	65	77	50	75	71	69	60	56	51
May 19	17:00:00	1:00:00	57	62	47	61	61	60	56	51	48
May 19	18:00:00	1:00:00	56	64	47	63	60	60	54	50	48
May 19	19:00:00	1:00:00	55	60	50	60	59	58	54	51	50
May 19	20:00:00	1:00:00	68	78	50	78	75	73	58	51	50
May 19	21:00:00	1:00:00	70	80	55	78	76	74	63	56	55
May 19	22:00:00	1:00:00	67	82	51	80	68	66	56	52	51
May 19	23:00:00	1:00:00	56	60	51	60	59	58	55	52	51

## Columbia Containers Post-Construction Noise Monitoring - 2827 Wall Street

The graph below shows the measured, and calculated time histories beginning on May 20, 2019



Hourly Interval Report starting at May 20, 2019

All Sound Pressure Levels presented in dBA

— 60 second measured  $L_{eq}$   
— 15 minute calculated  $L_{eq}$   
— 1 hour calculated  $L_{eq}$

Date	Time	Duration	$L_{eq}$	$L_{max}$	$L_{min}$	$L_1$	$L_5$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$
Total	-	24:00:00	65	82	48	76	72	68	57	52	49
May 20	0:00:00	1:00:00	67	82	52	78	71	68	58	53	52
May 20	1:00:00	1:00:00	64	76	52	73	70	69	55	53	52
May 20	2:00:00	1:00:00	68	79	52	79	74	73	60	54	52
May 20	3:00:00	1:00:00	58	72	49	70	62	56	52	51	49
May 20	4:00:00	1:00:00	65	76	50	76	72	71	56	51	50
May 20	5:00:00	1:00:00	67	74	50	74	73	72	59	51	50
May 20	6:00:00	1:00:00	70	79	53	78	74	74	67	57	54
May 20	7:00:00	1:00:00	66	76	52	76	75	72	59	56	53
May 20	8:00:00	1:00:00	63	76	52	75	70	65	56	54	52
May 20	9:00:00	1:00:00	57	62	53	61	60	59	55	53	53
May 20	10:00:00	1:00:00	56	60	54	60	59	58	56	54	54
May 20	11:00:00	1:00:00	60	74	52	68	62	62	57	54	52
May 20	12:00:00	1:00:00	59	69	54	68	64	61	57	55	54
May 20	13:00:00	1:00:00	67	78	53	77	73	72	58	55	53
May 20	14:00:00	1:00:00	70	82	52	82	73	72	62	55	53
May 20	15:00:00	1:00:00	65	78	52	76	69	65	62	58	54
May 20	16:00:00	1:00:00	60	65	54	65	63	62	59	56	55
May 20	17:00:00	1:00:00	63	77	51	75	64	61	57	53	51
May 20	18:00:00	1:00:00	67	77	49	77	76	73	56	51	49
May 20	19:00:00	1:00:00	63	78	49	76	67	60	54	50	49
May 20	20:00:00	1:00:00	56	61	48	60	60	59	55	51	48
May 20	21:00:00	1:00:00	64	75	50	73	71	70	55	51	50
May 20	22:00:00	1:00:00	56	62	48	62	61	60	55	49	49
May 20	23:00:00	1:00:00	62	77	49	73	65	60	55	50	49