
New Trier High School
385 Winnetka Avenue
Winnetka, IL 60093

July 15, 2019

Attn: Mr. Steve Linke

Re: Measurement of Dust Collector Noise

Dear Steve:

On the morning of July 12, 2019, we returned to the school to conduct additional acoustical testing. The purpose of this testing was to document any change in property line sound levels due to insulation of dust collector ductwork.

Acoustical Measurements

We conducted sound level readings at the west edge of the public sidewalk at the north property line of 124 Woodland Ave. on Friday, Jul 12, 2019 between 8:14 a.m. and 8:27 a.m. This time was chosen to be within normal school hours.

We used the following instrumentation for these measurements:

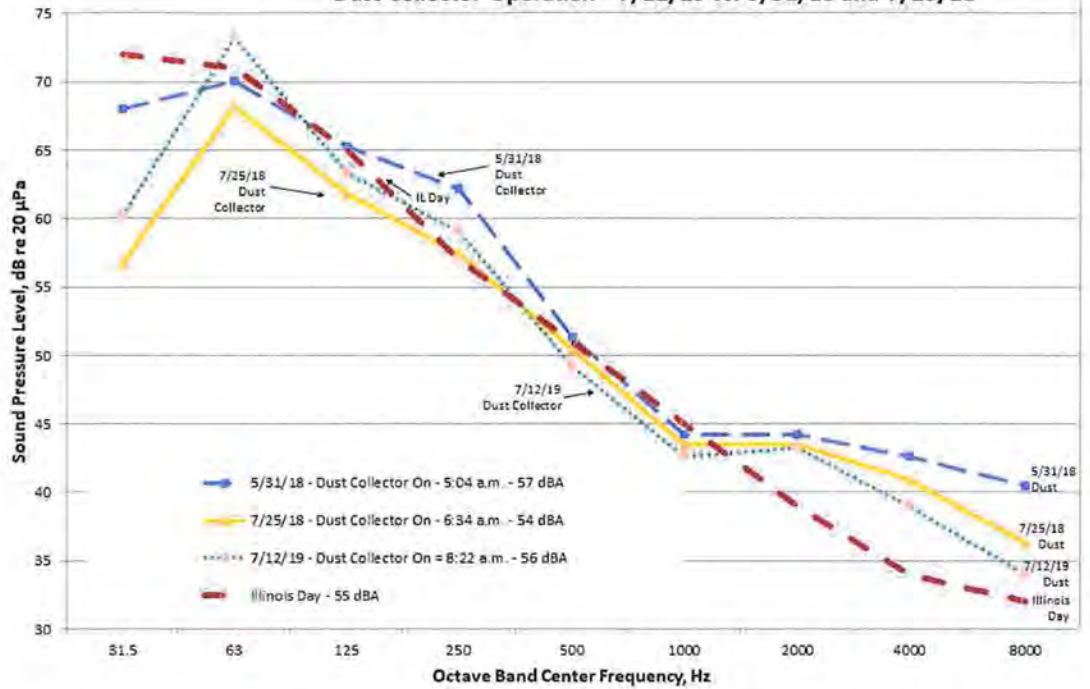
- Bruel & Kjaer 2270 integrating sound level meter/real time analyzer
- B&K 2541 1/2 inch condenser microphone
- B&K Z0032 preamplifier
- Nor 1251 Sound Calibrator
- Windscreen

The meter and measurement microphone were hand held at an approximate height of 4-1/2 ft above ground level. Pavement was dry, the temperature was 81° F and wind was calm.

Because of transportation noise in the area, 10 second readings were taken with the dust collector operating and with it off. We corrected data with the dust collector operating for ambient conditions. Although Illinois requires a measurement duration of one hour, we feel that the short measurement period represents a worst case situation, since the dust collector is typically operated on an as-needed basis, three to four times per day for periods up to 40 minutes.

When compared to the Illinois property line noise standards [Illinois Administrative Code, Title 35, Subtitle H, Chapter I, Sections 901.102(a)], Figure 1 and Table 1 below show that compliance is nearly met at 63 Hz (motor noise) and the blower blade pass frequency (250 Hz). Sound levels in the 4000 to 8000 Hz octave bands have been reduced by 2 dB, although the Illinois standards are still exceeded in the 2000 to 8000 Hz bands.

**Figure 1. New Trier High School - New Building
Dust Collector Operation - 7/12/19 vs. 5/31/18 and 7/25/18**



**Table 1. Results of Study – New Trier High School New Building – Dust Collector
124 Woodland Ave. – May 31, 2018, July 25, 2018 and July 12, 2019**

	Octave Band Sound Pressure Level, dB re 20 µPa									
	31.5	63	125	250	500	1000	2000	4000	8000	Awt
5/31/18 Dust Collector	68	70	65	62	51	44	44	43	41	57
7/25/18 Dust Collector	57	68	62	57	50	44	44	41	36	54
7/12/19 Dust Collector	60	73	63	59	49	43	43	39	34	56
Illinois Daytime Limit	72	71	65	57	51	45	39	34	32	55

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Conclusion

The most recent measurements show that the insulated ductwork resulted in a minor reduction in higher frequency sound levels. For full compliance, we recommend erection of an L-shaped barrier wall that shields Woodland Ave. from the dust collector as described in our August 15, 2018 report.

If you have questions concerning this report, please do not hesitate to contact us.

Respectfully submitted,

Shiner Acoustics, LLC



Brian L. Homans

BLH/mt/13