

**NOISE IMPACT STUDY
REVIVE CAR WASH
PRETTY RIVER PARKWAY
COLLINGWOOD, ONTARIO**

FOR

BICORP DESIGN GROUP LIMITED

BY

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TABLE OF CONTENTS

1.	INTRODUCTION	Page 1
2.	DESCRIPTION OF SITE AND SURROUNDING NEIGHBOURHOOD.....	Page 1
3.	NOISE CRITERIA.....	Page 1
4.	POTENTIAL NOISE SOURCES AND IMPACT AREAS.....	Page 2
5.	PROJECTED SOUND LEVELS	Page 3
6.	NOISE CONTROL MEASURES	Page 4
7.	CONCLUSIONS	Page 5
8.	RECOMMENDATIONS.....	Page 6

LIST OF TABLES

Table 1: Noise Criteria at Receivers	Page 2
Table 2: Source Sound Levels of Site Equipment.....	Page 3
Table 3: Points-of-Reception Noise Impact (Unmitigated) Daytime (0700–2000 Hours)	Page 4

APPENDICES

APPENDIX A: FIGURES

APPENDIX B: SOUND LEVEL CALCULATIONS

APPENDIX C: REFERENCES

1. INTRODUCTION

At the request of Bicorp Design Group Limited, J.E. COULTER ASSOCIATES LIMITED has reviewed the Site Plan for the proposed upgraded car wash facility at Pretty River Parkway in Collingwood, Ontario (see Appendix A, Figure 1). The development includes: an automatic conveyor wash system and a central vacuum system with 12 vacuum stands (see Appendix A, Figure 2).

The purpose of this review is to identify any potential noise impacts from the entire operation on the existing residential neighbourhood, and to establish whether or not any noise control measures are necessary to satisfy the noise guidelines of the Ministry of the Environment, Conservation and Parks (MECP).

2. DESCRIPTION OF SITE AND SURROUNDING NEIGHBOURHOOD

This report will focus on the proposed car wash building, idling vehicles, and central vacuum system for their potential noise impact on the neighbourhood (see Appendix A, Figure 2). There are existing residential and institutional uses to the southeast and south of the proposed car wash facility and existing residences of the east (east of the automotive dealerships). A future 3-storey apartment building is planned to the south, approximately 102m from the car wash building. Along the east side of Pretty River Parkway, north of Hume Street and across from the proposed car wash facility, are existing automotive dealerships.

The proposal for the site includes the following:

- i. A tunnel car wash (conveyor) building at the north side of the site includes an entrance on the south side where vehicles travel through the car wash and exit on the north side to Pretty River Parkway. Vehicles will queue along the north side of the car wash building. The analysis assumed a maximum of 20 idling cars in the car wash queue at all times between 0700 and 2000 hours.
- ii. A central vacuum system (mechanical room with silenced exhaust) to accommodate 12 bays is located in a stand-alone mechanical room south of the car vacuum stations. The sound of the vacuum nozzle at the vehicles was also considered in the analysis.

3. NOISE CRITERIA

The permissible sound levels generated by a car wash facility are governed by MECP's *NPC-300* Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning (see Appendix C). MECP's noise guideline basically states that the average sound level generated by a stationary source should not exceed the average noise of the roadway traffic during the same hourly time period, as noted in Table 1, below.

The Town of Collingwood does not have a specific Noise By-law for commercial car wash facilities and thus MECP's *NPC-300* will be the noise criteria.

The closest points of reception (R1 to R3) are located to the south of the proposed car wash facility. R4 has direct line-of-site to the car wash exit and is setback more than 250m. The closest points of reception considered for potential noise impact are as follows (see also Appendix A, Figures 3):

- Receiver R1: Bay Haven, a one-storey retirement residence, Hume Street, southeast of the proposed car wash site
- Receiver R2: Future 3-storey apartment building south of the proposed car wash site, along Raglan Street
- Receiver R3: Rear yard of the single-family dwelling southwest of the proposed car wash site, along Raglan Street
- Receiver R4: 15 Eva Crescent, 2-storey, single-family dwelling.

These points of reception are the closest and most sensitive receivers to the proposed car wash facility.

Table 1 summarizes the ambient traffic noise at the various points of reception at different times of the day. The ambient traffic sound levels generated by Farrowfield Drive and Bleams Road are not sufficient, because of the large setback and shielding by intervening buildings, to exceed MECP's exclusion limits noted in Table 1. The noise criteria will be based on the MECP's exclusion limits.

Table 1: Noise Criteria at Receivers			
Receptor Location	Time Period	Quietest Sound Level (dB L_{eq} 1 hr.)	MECP Exclusion Limit
R1, R2 , R4 (Exterior façade at window)	0700–2300	50	50
	2300–0700	45	45
R3 (Rear yard)	0700–2300	50	50

4. POTENTIAL NOISE SOURCES AND IMPACT AREAS

The activities within this site that have the potential for noise concern are those involved with the operation of the car wash, in particular: the sound generated by the dryers through the entrance and exit points of the car wash; the central vacuum system and the station vacuum nozzles; and the idling vehicles in the car wash queuing line.

For this study, the following assumptions were made for the equipment:

Table 2: Source Sound Levels of Site Equipment	
Equipment	Sound Pressure Level
AeroDry – Model A120 (2 Towers)	81 dBA @6m (each tower) including +5 dB for tonality
Central Vacuum (Mechanical Room, 30 HP motor with exhaust silencer)	74 dBA @1m (free-field) including +5 dB for tonality
Vacuum Nozzles (16 Stations)	69 dBA @1m
Idling Car	69 dBA @1m
Car movements	72 dBA at 1m

5. PROJECTED SOUND LEVELS

The site plan indicates the activities at the car wash entrance will be fully or partially exposed to the residential units. The calculations include the directivity of the sound from the car wash building and existing manual car wash between 0700 and 2000 hours. The sound calculations were conducted using Cadna/A 3D modelling software (Version 2023) based on the ISO-9613-2 standard for stationary sound sources. The sound level data have been projected to the closest sensitive points of reception (R1 to R4) in order to determine if any noise impact can be expected.

The analysis was based on the following assumptions:

Daytime (0700–2000 Hours)

1. Continuous operation of the car wash where the entrance and exit doors are open during the wash and dry cycles
2. The central vacuum motor (housed in the mechanical room south of the manual car wash bays) is operated continuously during the daytime
3. 20 idling vehicles in the car wash queue, representing a continuous flow of vehicles into the car wash
4. 12 vacuum stations operating 45 minutes per hour
5. Car movements assume 12 in and 12 out per hour to the vacuum stalls (10 kph).

Nighttime (2000–0700 Hours)

1. Car wash is not operating
2. Central vacuum system is not operational.

The following table summarizes the anticipated unmitigated (no barriers) sound levels (1 hour L_{eq}) for the above noted operation and compares them to a time when the ambient traffic sound levels are at a minimum, as required by MECP. Appendix B provides detailed sound level calculations for the entire operation and its potential noise impact on the residences. The operation between 0700 and 2000 hours assumes all equipment is operating at or near full capacity (see Appendix A, Figure 3).

Table 3: Points-of-Reception Noise Impact (Unmitigated) Daytime (0700–2000 Hours)				
Source ID	R1 (Façade)	R2 (Façade)	R3 (Rear)	R4 (Facade)
	Sound Level (L_{eq})	Sound Level (L_{eq})	Sound Level (L_{eq})	Sound Level (L_{eq})
Car Wash Exit	37.8	33.7	21.0	26.8
Car Wash Entrance	49.7	43.2	32.0	16.3
Idling Vehicles (19)	40.3	36.6	25.8	26.5
Central Vacuum System & 13 Stations	31.1	17.0	4.3	1.2
Car Movements (12 in & 12 out per hour)	26.0	13.1	3.6	8.2
Total Sound Level (dB L_{eq})	50	45	33	30
Noise Criteria (dBA)	50	50	50	50
Noise Impact (dB)	0	- 5	-17	-20

The projected sound levels of the entire operation (car wash dryer system, idling vehicles, central vacuum system, and manual car wash stations) will not result in any noise impact at R1 to R4 during the normal operating time (0700–2000 hours). The sound levels are expected to be equal to or less than the quietest ambient sound levels during operations from 0700 to 2000 hours.

6. NOISE CONTROL MEASURES

There are no exterior noise control measures required based on the acoustic analysis. The proposed AeroDry A120 Car Wash dryer is to generate a sound level of 76 at 6m for each tower. Once the car wash system is installed, it is recommended an acoustic audit be undertaken to confirm the manufacturer's specification is met and MECP's *NPC-300* noise criteria are satisfied at the points of reception. If noise excesses are found on-site, additional measures are feasible, such as reducing the blower speed via the Variable Frequency Drive (VFD) and/or adding acoustic panels to the exit area of the car wash building to absorb the sound.

7. CONCLUSIONS

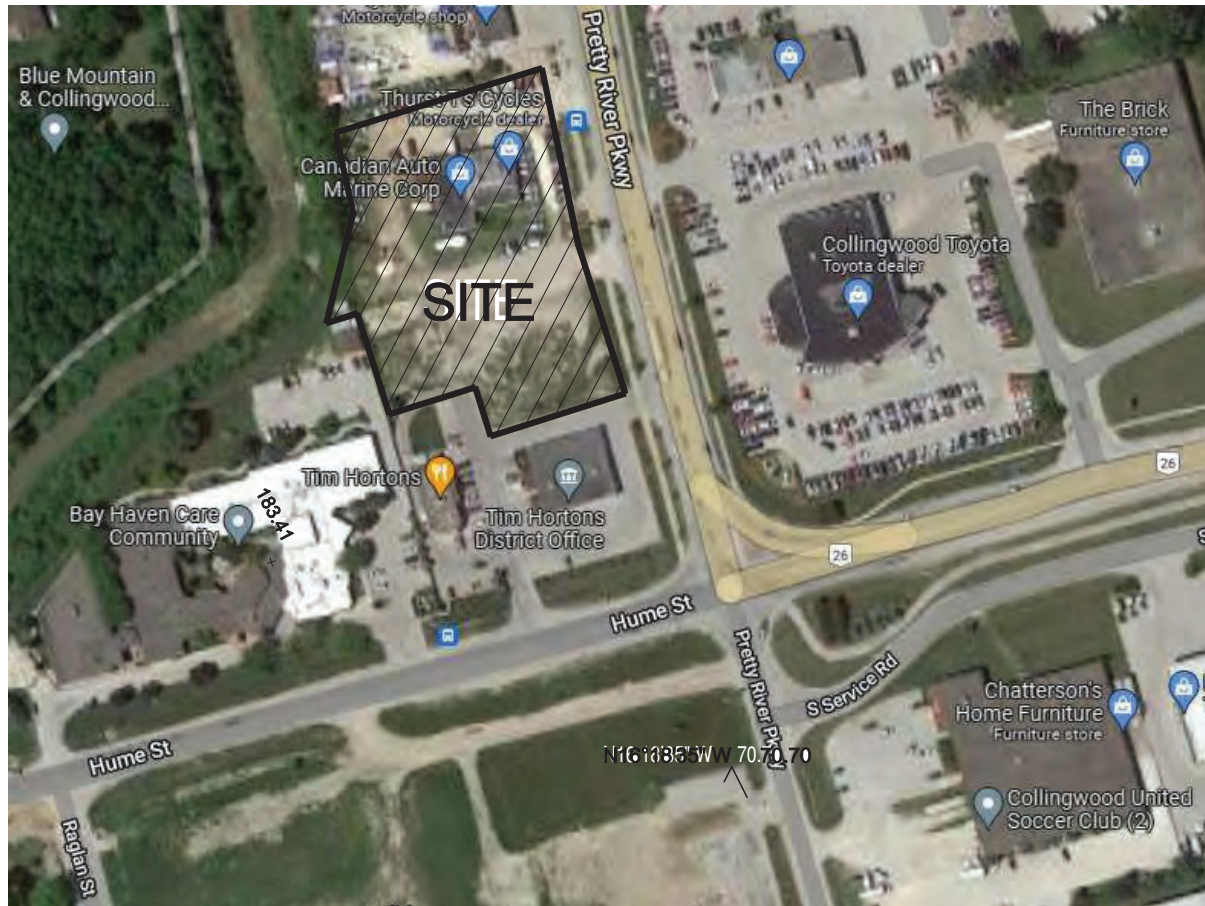
The analysis indicates the sound levels generated by the proposed car wash facility using an AeroDry A120 dryer system will not have any noise impacts at the existing housing (R1 to R4). The car wash can be operated from 0700 to 2000 hour and will meet MECP's *NPC-300* noise criteria. On-site confirmation has been recommended after installation of the car wash system and, if necessary, the consideration of additional noise control measures or operational changes.

8. RECOMMENDATIONS

To meet MECP's *NPC-300* noise criteria during the daytime, the following measures are recommended:

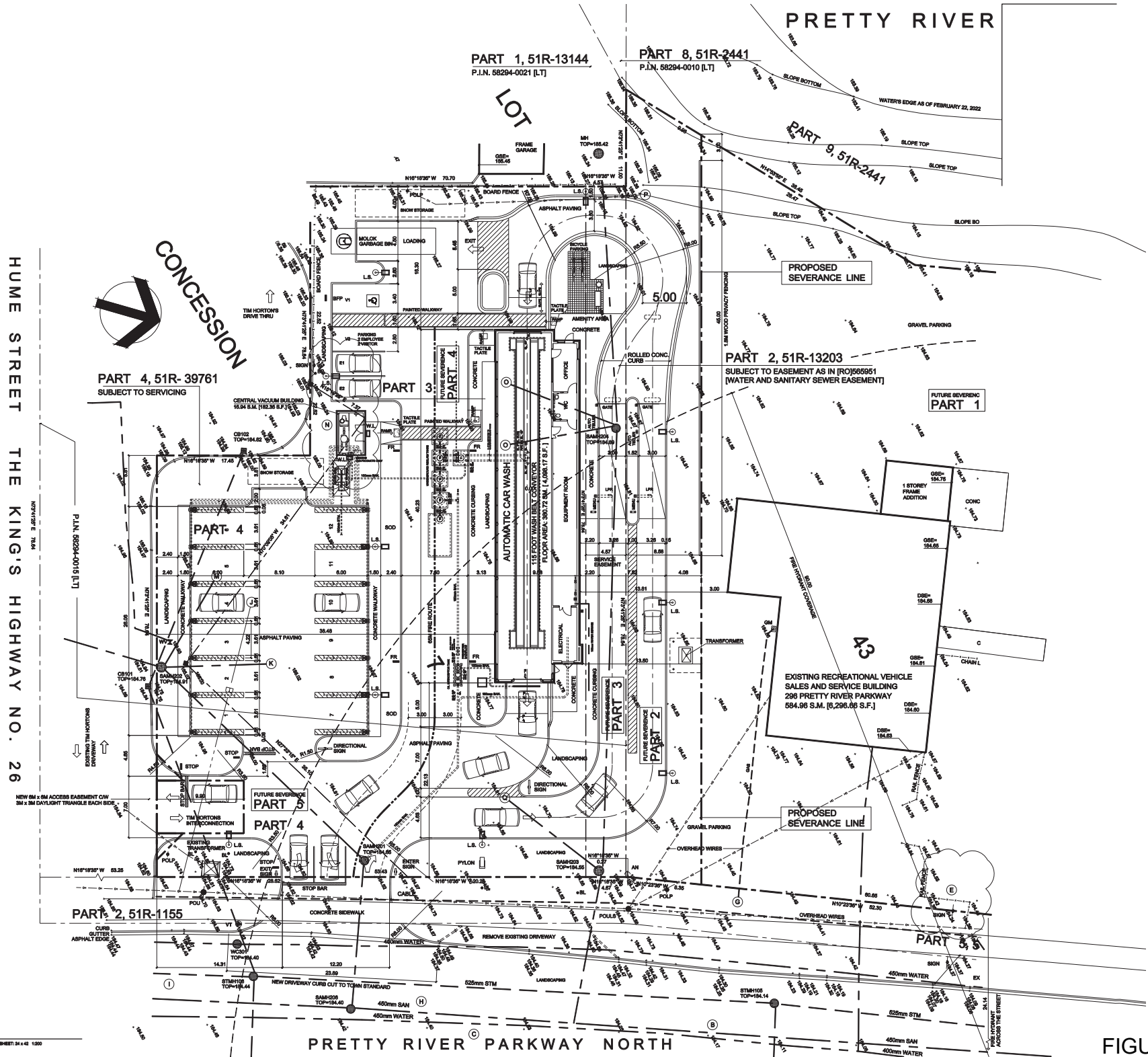
1. The proposed car wash is to be operated from 0700 to 2000 hours. Operations outside of these hours may require additional noise control measures.
2. The proposed car wash system is to be rated, based on the manufacturer's supplied data, at 76 dBA @6m for each AeroDry A120 tower from the car wash exit door.
3. It is recommended once the installation of the car wash system is completed, an acoustic audit be undertaken to confirm the manufacturer's specification is met and MECP's *NPC-300* noise criteria are satisfied at the points of reception. If noise excesses are found on-site, additional measures are feasible, such as reducing the blower speed via the Variable Frequency Drive (VFD) and/or adding acoustic panels to the exit area of the car wash building to absorb the sound.

APPENDIX A: FIGURES



KEY PLAN

FIGURE 1



HUME STREET THE KING'S HIGHWAY NO. 26

PRETTY RIVER

PART 1, 51R-13144
P.I.N. 58294-0021 [L,T]

PART 8, 51R-2441
P.I.N. 58294-0010 [L,T]

PART 9, 51R-2441

PART 4, 51R-39761
SUBJECT TO SERVICING

PART 2, 51R-13203
SUBJECT TO EASEMENT AS IN [R]0565951
(WATER AND SANITARY SEWER EASEMENT)

FUTURE SEWERAGE
PART 1

EXISTING RECREATIONAL VEHICLE
SALES AND SERVICE BUILDING
296 PRETTY RIVER PARKWAY
584.96 S.M. [8,296.66 S.F.]

PART 2, 51R-1155

PRETTY RIVER PARKWAY NORTH

FIGURE 2

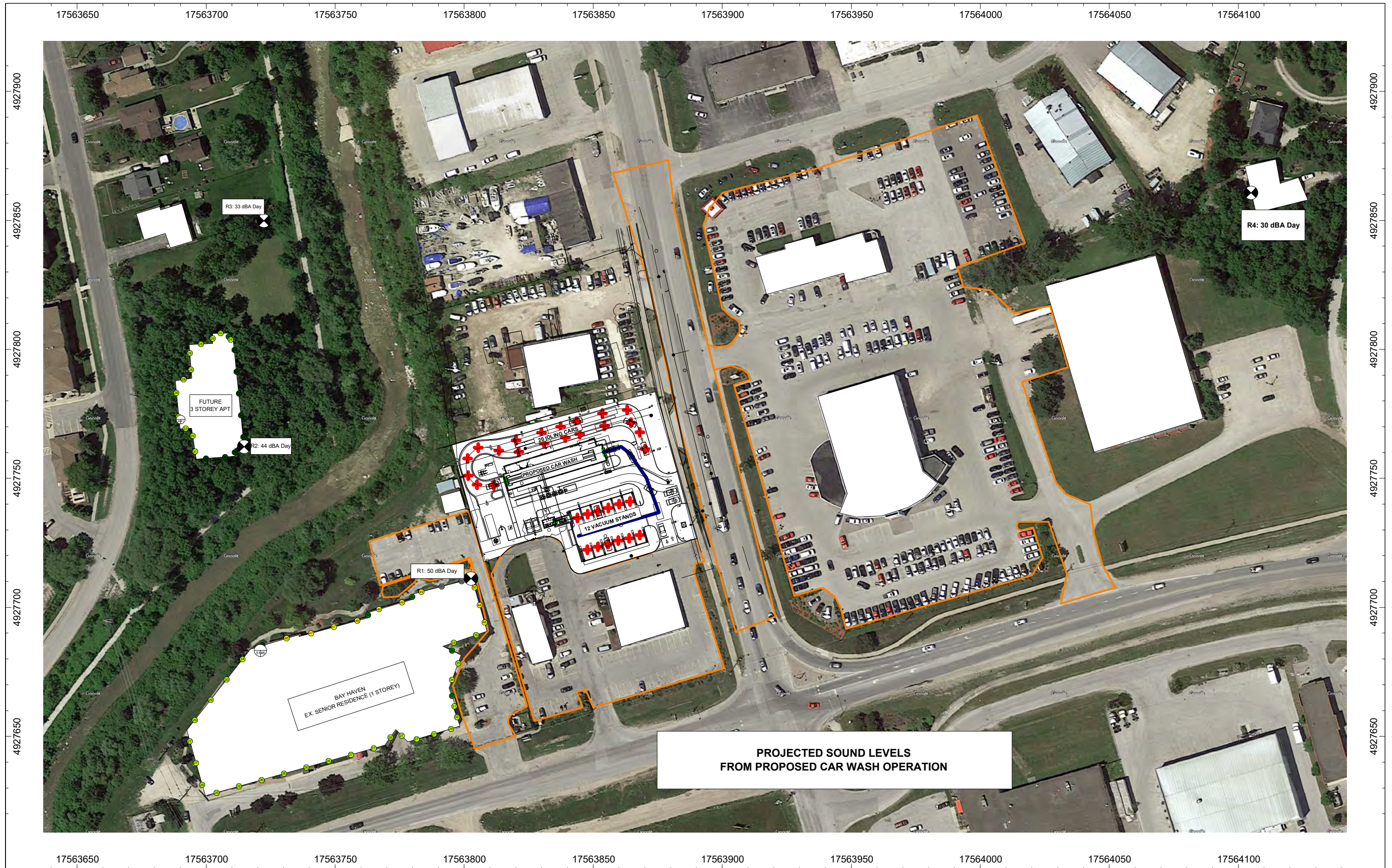


FIGURE 3

APPENDIX B: SOUND LEVEL CALCULATIONS

CADNAA OUTPUT – DAYTIME SOUND LEVELS

DAYTIME CAR WASH OPERATIONS

Receiver

Name: R1 - Sr. Home
ID: R1
X: 17563802.75 m
Y: 4927711.12 m
Z: 2.00 m

Table with 20 columns: Nr., X (m), Y (m), Z (m), Refl., DEN, Freq. (Hz), Lw (dB(A)), l/a (dB), Optime (dB), K0 (dB), Di (dB), Adiv (dB), Aatm (dB), Agr (dB), Afol (dB), Ahous (dB), Abar (dB), Cmet (dB), RL (dB), Lr (dB(A)). Contains data for two sources: 'CW Exit' and 'CW Entrance'.

Table with 20 columns: Nr., X (m), Y (m), Z (m), Refl., DEN, Freq. (Hz), Lw (dB(A)), l/a (dB), Optime (dB), K0 (dB), Di (dB), Adiv (dB), Aatm (dB), Agr (dB), Afol (dB), Ahous (dB), Abar (dB), Cmet (dB), RL (dB), Lr (dB(A)). Contains data for source 'CW Entrance'.

DAYTIME CAR WASH OPERATIONS

Point Source, ISO 9613, Name: "Vac Nozzle", ID: "VAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
248	17563868.03	4927728.00	1.00	0	D	63	22.1	0.0	-12.0	0.0	0.0	47.6	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	-34.5
248	17563868.03	4927728.00	1.00	0	D	125	35.6	0.0	-12.0	0.0	0.0	47.6	0.0	-2.2	0.0	0.0	0.0	0.0	0.0	-21.9
248	17563868.03	4927728.00	1.00	0	D	250	53.5	0.0	-12.0	0.0	0.0	47.6	0.1	-0.4	0.0	0.0	0.0	0.0	0.0	-5.7
248	17563868.03	4927728.00	1.00	0	D	500	63.0	0.0	-12.0	0.0	0.0	47.6	0.1	-0.8	0.0	0.0	0.0	0.0	0.0	4.0
248	17563868.03	4927728.00	1.00	0	D	1000	66.2	0.0	-12.0	0.0	0.0	47.6	0.2	-2.1	0.0	0.0	0.0	0.0	0.0	8.5
248	17563868.03	4927728.00	1.00	0	D	2000	71.0	0.0	-12.0	0.0	0.0	47.6	0.7	-2.4	0.0	0.0	0.0	0.0	0.0	13.2
248	17563868.03	4927728.00	1.00	0	D	4000	72.7	0.0	-12.0	0.0	0.0	47.6	2.2	-2.4	0.0	0.0	0.0	0.0	0.0	13.3
248	17563868.03	4927728.00	1.00	0	D	8000	69.2	0.0	-12.0	0.0	0.0	47.6	7.9	-2.4	0.0	0.0	0.0	0.0	0.0	4.1
251	17563868.03	4927728.00	1.00	1	D	1000	66.2	0.0	-12.0	0.0	0.0	50.1	0.3	-2.2	0.0	0.0	0.0	0.0	1.0	5.0
251	17563868.03	4927728.00	1.00	1	D	2000	71.0	0.0	-12.0	0.0	0.0	50.1	0.9	-2.4	0.0	0.0	0.0	0.0	1.0	9.5
251	17563868.03	4927728.00	1.00	1	D	4000	72.7	0.0	-12.0	0.0	0.0	50.1	2.9	-2.4	0.0	0.0	0.0	0.0	1.0	9.1
251	17563868.03	4927728.00	1.00	1	D	8000	69.2	0.0	-12.0	0.0	0.0	50.1	10.5	-2.4	0.0	0.0	0.0	0.0	1.0	-2.0
254	17563868.03	4927728.00	1.00	1	D	1000	66.2	0.0	-12.0	0.0	0.0	58.3	0.8	-2.2	0.0	0.0	0.0	0.0	1.0	-3.7
254	17563868.03	4927728.00	1.00	1	D	2000	71.0	0.0	-12.0	0.0	0.0	58.3	2.2	-3.3	0.0	0.0	0.0	0.0	1.0	0.8
254	17563868.03	4927728.00	1.00	1	D	4000	72.7	0.0	-12.0	0.0	0.0	58.3	7.6	-3.3	0.0	0.0	0.0	0.0	1.0	-2.8
254	17563868.03	4927728.00	1.00	1	D	8000	69.2	0.0	-12.0	0.0	0.0	58.3	27.0	-3.3	0.0	0.0	0.0	0.0	1.0	-25.8

Point Source, ISO 9613, Name: "Vac Nozzle", ID: "VAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
257	17563864.26	4927741.09	1.00	0	D	63	22.1	0.0	-12.0	0.0	0.0	47.7	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	-34.7
257	17563864.26	4927741.09	1.00	0	D	125	35.6	0.0	-12.0	0.0	0.0	47.7	0.0	-2.2	0.0	0.0	0.0	0.0	0.0	-22.0
257	17563864.26	4927741.09	1.00	0	D	250	53.5	0.0	-12.0	0.0	0.0	47.7	0.1	-0.7	0.0	0.0	0.0	0.0	0.0	-5.6
257	17563864.26	4927741.09	1.00	0	D	500	63.0	0.0	-12.0	0.0	0.0	47.7	0.1	-1.2	0.0	0.0	0.0	0.0	0.0	4.3
257	17563864.26	4927741.09	1.00	0	D	1000	66.2	0.0	-12.0	0.0	0.0	47.7	0.3	-2.2	0.0	0.0	0.0	0.0	0.0	8.5
257	17563864.26	4927741.09	1.00	0	D	2000	71.0	0.0	-12.0	0.0	0.0	47.7	0.7	-2.5	0.0	0.0	0.0	0.0	0.0	13.1
257	17563864.26	4927741.09	1.00	0	D	4000	72.7	0.0	-12.0	0.0	0.0	47.7	2.2	-2.5	0.0	0.0	0.0	0.0	0.0	13.2
257	17563864.26	4927741.09	1.00	0	D	8000	69.2	0.0	-12.0	0.0	0.0	47.7	8.0	-2.5	0.0	0.0	0.0	0.0	0.0	3.9
258	17563864.26	4927741.09	1.00	1	D	1000	66.2	0.0	-12.0	0.0	0.0	49.2	0.3	-1.8	0.0	0.0	0.0	0.0	1.0	5.5
258	17563864.26	4927741.09	1.00	1	D	2000	71.0	0.0	-12.0	0.0	0.0	49.2	0.8	-2.2	0.0	0.0	0.0	0.0	1.0	10.2
258	17563864.26	4927741.09	1.00	1	D	4000	72.7	0.0	-12.0	0.0	0.0	49.2	2.7	-2.2	0.0	0.0	0.0	0.0	1.0	10.0
258	17563864.26	4927741.09	1.00	1	D	8000	69.2	0.0	-12.0	0.0	0.0	49.2	9.6	-2.2	0.0	0.0	0.0	0.0	1.0	-0.4
261	17563864.26	4927741.09	1.00	1	D	1000	66.2	0.0	-12.0	0.0	0.0	58.3	0.8	-3.6	0.0	0.0	0.0	0.0	1.0	-2.3
261	17563864.26	4927741.09	1.00	1	D	2000	71.0	0.0	-12.0	0.0	0.0	58.3	2.2	-4.0	0.0	0.0	0.0	0.0	1.0	1.5
261	17563864.26	4927741.09	1.00	1	D	4000	72.7	0.0	-12.0	0.0	0.0	58.3	7.6	-4.0	0.0	0.0	0.0	0.0	1.0	-2.1
261	17563864.26	4927741.09	1.00	1	D	8000	69.2	0.0	-12.0	0.0	0.0	58.3	27.0	-4.0	0.0	0.0	0.0	0.0	1.0	-25.1

DAYTIME CAR WASH OPERATIONS

vert. Area Source, ISO 9613, Name: "CW Entrance", ID: "CW_ENT"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
34	17563816.20	4927748.80	0.18	0	D	500	85.8	0.1	0.0	3.0	-3.3	51.2	0.2	-1.8	0.0	0.0	0.0	0.0	0.0	35.9
34	17563816.20	4927748.80	0.18	0	D	1000	75.9	0.1	0.0	3.0	-3.9	51.2	0.4	-1.8	0.0	0.0	0.0	0.0	0.0	25.3
34	17563816.20	4927748.80	0.18	0	D	2000	77.5	0.1	0.0	3.0	-4.3	51.2	1.0	-1.8	0.0	0.0	0.0	0.0	0.0	25.9
34	17563816.20	4927748.80	0.18	0	D	4000	72.9	0.1	0.0	3.0	-4.7	51.2	3.4	-1.8	0.0	0.0	0.0	0.0	0.0	18.5
34	17563816.20	4927748.80	0.18	0	D	8000	66.0	0.1	0.0	3.0	-5.0	51.2	12.0	-1.8	0.0	0.0	0.0	0.0	0.0	2.7

vert. Area Source, ISO 9613, Name: "VAC Exhaust", ID: "VAC_EXH"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
41	17563835.63	4927732.86	2.20	0	DEN	500	90.0	-10.6	0.0	3.0	-6.4	52.9	0.2	0.0	0.0	0.0	15.6	0.0	0.0	7.2

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
45	17563801.34	4927757.69	1.00	0	DEN	500	77.0	0.0	0.0	0.0	-0.2	49.8	0.2	6.6	0.0	0.0	0.0	0.0	0.0	20.3

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
49	17563801.56	4927751.05	1.00	0	DEN	500	77.0	0.0	0.0	0.0	-3.1	49.9	0.2	6.5	0.0	0.0	0.0	0.0	0.0	17.4

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
54	17563805.44	4927761.96	1.00	0	DEN	500	77.0	0.0	0.0	0.0	0.8	50.2	0.2	5.4	0.0	0.0	0.0	0.0	0.0	22.1

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
57	17563805.02	4927747.54	1.00	0	DEN	500	77.0	0.0	0.0	0.0	-2.7	50.2	0.2	6.1	0.0	0.0	0.0	0.0	0.0	17.8

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
61	17563811.53	4927747.33	1.00	0	DEN	500	77.0	0.0	0.0	0.0	-3.4	50.8	0.2	3.6	0.0	0.0	0.0	0.0	0.0	18.9

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
65	17563813.47	4927760.76	1.00	0	DEN	500	77.0	0.0	0.0	0.0	-0.0	50.9	0.2	3.0	0.0	0.0	0.0	0.0	0.0	22.9

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
69	17563820.14	4927764.72	1.00	0	D	500	77.0	0.0	0.0	0.0	0.8	51.5	0.2	2.2	0.0	0.0	0.0	0.0	0.0	23.9

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
72	17563821.14	4927760.18	1.00	0	D	500	77.0	0.0	0.0	0.0	0.7	51.6	0.2	0.6	0.0	0.0	0.0	0.0	0.0	25.3

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
85	17563830.02	4927767.72	1.00	0	D	500	77.0	0.0	0.0	0.0	0.7	52.3	0.2	6.3	0.0	0.0	0.0	0.0	0.0	19.0

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
93	17563830.97	4927763.47	1.00	0	D	500	77.0	0.0	0.0	0.0	0.7	52.3	0.2	-1.2	0.0	0.0	0.0	0.0	0.0	26.4
96	17563830.97	4927763.47	1.00	1	D	500	77.0	0.0	0.0	0.0	0.3	52.5	0.2	-1.9	0.0	0.0	0.0	0.0	1.0	25.5

DAYTIME CAR WASH OPERATIONS

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
111	17563837.41	4927770.03	1.00	0	D	500	77.0	0.0	0.0	0.0	0.7	52.8	0.2	6.0	0.0	0.0	0.0	0.0	0.0	18.8

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
116	17563839.22	4927765.80	1.00	0	D	500	77.0	0.0	0.0	0.0	0.7	52.9	0.2	-0.6	0.0	0.0	0.0	0.0	0.0	25.1
121	17563839.22	4927765.80	1.00	1	D	500	77.0	0.0	0.0	0.0	0.3	53.1	0.2	-2.0	0.0	0.0	0.0	0.0	1.0	25.0

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
124	17563843.48	4927771.89	1.00	0	D	500	77.0	0.0	0.0	0.0	0.7	53.2	0.2	5.8	0.0	0.0	0.0	0.0	0.0	18.5

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
128	17563844.82	4927767.17	1.00	0	D	500	77.0	0.0	0.0	0.0	0.7	53.3	0.3	-1.8	0.0	0.0	0.0	0.0	0.0	26.0
132	17563844.82	4927767.17	1.00	1	D	500	77.0	0.0	0.0	0.0	0.3	53.4	0.3	-2.0	0.0	0.0	0.0	0.0	1.0	24.7

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
137	17563864.61	4927771.61	1.00	0	DEN	500	77.0	0.0	0.0	0.0	-2.8	54.5	0.3	-1.8	0.0	0.0	0.0	0.0	0.0	21.2

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
141	17563868.07	4927767.78	1.00	0	DEN	500	77.0	0.0	0.0	0.0	-2.4	54.7	0.3	-2.0	0.0	0.0	0.0	0.0	0.0	21.6

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
144	17563870.09	4927761.32	1.00	0	DEN	500	77.0	0.0	0.0	0.0	-2.3	54.8	0.3	-2.2	0.0	0.0	8.1	0.0	0.0	13.6

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
149	17563853.60	4927775.14	1.00	0	D	500	77.0	0.0	0.0	0.0	0.7	53.9	0.3	5.4	0.0	0.0	0.0	0.0	0.0	18.2

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
153	17563854.31	4927770.30	1.00	0	D	500	77.0	0.0	0.0	0.0	0.7	53.9	0.3	-1.6	0.0	0.0	0.0	0.0	0.0	25.1
156	17563854.31	4927770.30	1.00	1	D	500	77.0	0.0	0.0	0.0	0.4	54.0	0.3	-2.1	0.0	0.0	0.0	0.0	1.0	24.2

Point Source, ISO 9613, Name: "Ilding Car", ID: "CAR"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
164	17563863.10	4927776.47	1.00	0	D	500	77.0	0.0	0.0	0.0	-2.8	54.5	0.3	3.3	0.0	0.0	0.0	0.0	0.0	16.1

Line Source, ISO 9613, Name: "Car Movements", ID: "CAR_M"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
168	17563873.79	4927736.31	1.00	0	D	500	53.8	5.3	0.0	0.0	0.0	55.1	0.3	-0.5	0.0	0.0	2.0	0.0	0.0	2.2
169	17563866.58	4927734.20	1.00	0	D	500	53.8	10.7	0.0	0.0	0.0	54.8	0.3	-0.1	0.0	0.0	0.0	0.0	0.0	9.5
171	17563857.70	4927731.60	1.00	0	D	500	53.8	8.4	0.0	0.0	0.0	54.3	0.3	1.4	0.0	0.0	1.2	0.0	0.0	5.0
173	17563849.35	4927729.15	1.00	0	D	500	53.8	10.2	0.0	0.0	0.0	53.8	0.3	2.5	0.0	0.0	7.1	0.0	0.0	0.3
216	17563872.99	4927743.56	1.00	0	D	500	53.8	11.6	0.0	0.0	0.0	55.1	0.3	1.2	0.0	0.0	3.6	0.0	0.0	5.2
263	17563867.27	4927755.09	1.00	0	D	500	53.8	10.6	0.0	0.0	0.0	54.7	0.3	-2.2	0.0	0.0	9.5	0.0	0.0	2.1
278	17563857.43	4927761.22	1.00	0	D	500	53.8	8.5	0.0	0.0	0.0	54.1	0.3	-2.1	0.0	0.0	13.2	0.0	0.0	-3.1
284	17563862.42	4927761.03	1.00	0	D	500	53.8	5.9	0.0	0.0	0.0	54.4	0.3	-2.1	0.0	0.0	10.7	0.0	0.0	-3.5

DAYTIME CAR WASH OPERATIONS

Point Source, ISO 9613, Name: "Vac Nozzle", ID: "VAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
252	17563859.70	4927725.89	1.00	1	D	8000	69.2	0.0	-12.0	0.0	0.0	61.0	37.2	-2.4	0.0	0.0	0.0	0.0	1.0	-39.7

Point Source, ISO 9613, Name: "Vac Nozzle", ID: "VAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
255	17563864.26	4927741.09	1.00	0	D	63	22.1	0.0	-12.0	0.0	0.0	54.6	0.0	-3.0	0.0	0.0	2.1	0.0	0.0	-43.6
255	17563864.26	4927741.09	1.00	0	D	125	35.6	0.0	-12.0	0.0	0.0	54.6	0.1	-0.8	0.0	0.0	2.4	0.0	0.0	-32.7
255	17563864.26	4927741.09	1.00	0	D	250	53.5	0.0	-12.0	0.0	0.0	54.6	0.2	-0.2	0.0	0.0	2.9	0.0	0.0	-16.0
255	17563864.26	4927741.09	1.00	0	D	500	63.0	0.0	-12.0	0.0	0.0	54.6	0.3	-0.0	0.0	0.0	3.7	0.0	0.0	-7.6
255	17563864.26	4927741.09	1.00	0	D	1000	66.2	0.0	-12.0	0.0	0.0	54.6	0.6	-1.4	0.0	0.0	4.9	0.0	0.0	-4.5
255	17563864.26	4927741.09	1.00	0	D	2000	71.0	0.0	-12.0	0.0	0.0	54.6	1.5	-1.8	0.0	0.0	6.6	0.0	0.0	-1.8
255	17563864.26	4927741.09	1.00	0	D	4000	72.7	0.0	-12.0	0.0	0.0	54.6	5.0	-1.8	0.0	0.0	8.6	0.0	0.0	-5.6
255	17563864.26	4927741.09	1.00	0	D	8000	69.2	0.0	-12.0	0.0	0.0	54.6	17.7	-1.8	0.0	0.0	11.0	0.0	0.0	-24.3
260	17563864.26	4927741.09	1.00	1	D	1000	66.2	0.0	-12.0	0.0	0.0	60.7	1.1	-1.6	0.0	0.0	0.0	0.0	1.0	-7.0
260	17563864.26	4927741.09	1.00	1	D	2000	71.0	0.0	-12.0	0.0	0.0	60.7	3.0	-2.1	0.0	0.0	0.0	0.0	1.0	-3.6
260	17563864.26	4927741.09	1.00	1	D	4000	72.7	0.0	-12.0	0.0	0.0	60.7	10.0	-2.1	0.0	0.0	0.0	0.0	1.0	-9.0
260	17563864.26	4927741.09	1.00	1	D	8000	69.2	0.0	-12.0	0.0	0.0	60.7	35.8	-2.1	0.0	0.0	0.0	0.0	1.0	-38.3

Point Source, ISO 9613, Name: "Vac Nozzle", ID: "VAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
268	17563863.93	4927726.81	1.00	0	D	63	22.1	0.0	-12.0	0.0	0.0	54.7	0.0	-3.0	0.0	0.0	1.5	0.0	0.0	-43.2
268	17563863.93	4927726.81	1.00	0	D	125	35.6	0.0	-12.0	0.0	0.0	54.7	0.1	-0.4	0.0	0.0	2.6	0.0	0.0	-33.5
268	17563863.93	4927726.81	1.00	0	D	250	53.5	0.0	-12.0	0.0	0.0	54.7	0.2	0.6	0.0	0.0	3.5	0.0	0.0	-17.6
268	17563863.93	4927726.81	1.00	0	D	500	63.0	0.0	-12.0	0.0	0.0	54.7	0.3	0.9	0.0	0.0	4.9	0.0	0.0	-9.8
268	17563863.93	4927726.81	1.00	0	D	1000	66.2	0.0	-12.0	0.0	0.0	54.7	0.6	-1.0	0.0	0.0	7.4	0.0	0.0	-7.5
268	17563863.93	4927726.81	1.00	0	D	2000	71.0	0.0	-12.0	0.0	0.0	54.7	1.5	-1.5	0.0	0.0	9.6	0.0	0.0	-5.3
268	17563863.93	4927726.81	1.00	0	D	4000	72.7	0.0	-12.0	0.0	0.0	54.7	5.0	-1.5	0.0	0.0	12.2	0.0	0.0	-9.7
268	17563863.93	4927726.81	1.00	0	D	8000	69.2	0.0	-12.0	0.0	0.0	54.7	17.9	-1.5	0.0	0.0	15.0	0.0	0.0	-29.0
271	17563863.93	4927726.81	1.00	1	D	1000	66.2	0.0	-12.0	0.0	0.0	60.9	1.1	-1.2	0.0	0.0	0.0	0.0	1.0	-7.7
271	17563863.93	4927726.81	1.00	1	D	2000	71.0	0.0	-12.0	0.0	0.0	60.9	3.0	-2.0	0.0	0.0	0.0	0.0	1.0	-4.0
271	17563863.93	4927726.81	1.00	1	D	4000	72.7	0.0	-12.0	0.0	0.0	60.9	10.3	-2.0	0.0	0.0	0.0	0.0	1.0	-9.5
271	17563863.93	4927726.81	1.00	1	D	8000	69.2	0.0	-12.0	0.0	0.0	60.9	36.7	-2.0	0.0	0.0	0.0	0.0	1.0	-39.5

Point Source, ISO 9613, Name: "Vac Nozzle", ID: "VAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
274	17563868.03	4927728.00	1.00	0	D	63	22.1	0.0	-12.0	0.0	0.0	54.9	0.0	-3.0	0.0	0.0	1.2	0.0	0.0	-43.1
274	17563868.03	4927728.00	1.00	0	D	125	35.6	0.0	-12.0	0.0	0.0	54.9	0.1	-0.9	0.0	0.0	1.6	0.0	0.0	-32.2
274	17563868.03	4927728.00	1.00	0	D	250	53.5	0.0	-12.0	0.0	0.0	54.9	0.2	-1.3	0.0	0.0	1.9	0.0	0.0	-14.3
274	17563868.03	4927728.00	1.00	0	D	500	63.0	0.0	-12.0	0.0	0.0	54.9	0.3	-1.2	0.0	0.0	2.3	0.0	0.0	-5.3
274	17563868.03	4927728.00	1.00	0	D	1000	66.2	0.0	-12.0	0.0	0.0	54.9	0.6	-1.7	0.0	0.0	2.8	0.0	0.0	-2.4
274	17563868.03	4927728.00	1.00	0	D	2000	71.0	0.0	-12.0	0.0	0.0	54.9	1.5	-1.9	0.0	0.0	3.4	0.0	0.0	1.0
274	17563868.03	4927728.00	1.00	0	D	4000	72.7	0.0	-12.0	0.0	0.0	54.9	5.2	-1.9	0.0	0.0	4.1	0.0	0.0	-1.6
274	17563868.03	4927728.00	1.00	0	D	8000	69.2	0.0	-12.0	0.0	0.0	54.9	18.4	-1.9	0.0	0.0	5.0	0.0	0.0	-19.2
277	17563868.03	4927728.00	1.00	1	D	1000	66.2	0.0	-12.0	0.0	0.0	60.8	1.1	-0.8	0.0	0.0	0.0	0.0	1.0	-7.9
277	17563868.03	4927728.00	1.00	1	D	2000	71.0	0.0	-12.0	0.0	0.0	60.8	3.0	-1.9	0.0	0.0	0.0	0.0	1.0	-3.9
277	17563868.03	4927728.00	1.00	1	D	4000	72.7	0.0	-12.0	0.0	0.0	60.8	10.2	-1.9	0.0	0.0	0.0	0.0	1.0	-9.4
277	17563868.03	4927728.00	1.00	1	D	8000	69.2	0.0	-12.0	0.0	0.0	60.8	36.2	-1.9	0.0	0.0	0.0	0.0	1.0	-39.0

DAYTIME CAR WASH OPERATIONS

Point Source, ISO 9613, Name: "Vac Nozzle", ID: "VAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
285	17563868.03	4927728.00	1.00	0	D	63	22.1	0.0	-12.0	0.0	0.0	56.6	0.0	-4.8	0.0	0.0	4.8	0.0	0.0	-46.5
285	17563868.03	4927728.00	1.00	0	D	125	35.6	0.0	-12.0	0.0	0.0	56.6	0.1	-0.6	0.0	0.0	5.9	0.0	0.0	-38.4
285	17563868.03	4927728.00	1.00	0	D	250	53.5	0.0	-12.0	0.0	0.0	56.6	0.2	5.8	0.0	0.0	2.3	0.0	0.0	-23.5
285	17563868.03	4927728.00	1.00	0	D	500	63.0	0.0	-12.0	0.0	0.0	56.6	0.4	3.9	0.0	0.0	7.0	0.0	0.0	-16.9
285	17563868.03	4927728.00	1.00	0	D	1000	66.2	0.0	-12.0	0.0	0.0	56.6	0.7	-1.0	0.0	0.0	13.6	0.0	0.0	-15.7
285	17563868.03	4927728.00	1.00	0	D	2000	71.0	0.0	-12.0	0.0	0.0	56.6	1.8	-1.8	0.0	0.0	16.4	0.0	0.0	-14.0
285	17563868.03	4927728.00	1.00	0	D	4000	72.7	0.0	-12.0	0.0	0.0	56.6	6.2	-1.8	0.0	0.0	19.3	0.0	0.0	-19.6
285	17563868.03	4927728.00	1.00	0	D	8000	69.2	0.0	-12.0	0.0	0.0	56.6	22.2	-1.8	0.0	0.0	22.3	0.0	0.0	-42.1
288	17563868.03	4927728.00	1.00	2	D	2000	71.0	0.0	-12.0	0.0	0.0	57.9	2.1	-2.0	0.0	0.0	16.7	0.0	2.0	-17.7
288	17563868.03	4927728.00	1.00	2	D	4000	72.7	0.0	-12.0	0.0	0.0	57.9	7.3	-2.0	0.0	0.0	19.6	0.0	2.0	-24.1
288	17563868.03	4927728.00	1.00	2	D	8000	69.2	0.0	-12.0	0.0	0.0	57.9	25.9	-2.0	0.0	0.0	22.6	0.0	2.0	-49.2
290	17563868.03	4927728.00	1.00	1	D	500	63.0	0.0	-12.0	0.0	0.0	57.8	0.4	5.0	0.0	0.0	2.8	0.0	1.0	-16.1
290	17563868.03	4927728.00	1.00	1	D	1000	66.2	0.0	-12.0	0.0	0.0	57.8	0.8	-0.8	0.0	0.0	10.0	0.0	1.0	-14.6
290	17563868.03	4927728.00	1.00	1	D	2000	71.0	0.0	-12.0	0.0	0.0	57.8	2.1	-1.9	0.0	0.0	12.4	0.0	1.0	-12.4
290	17563868.03	4927728.00	1.00	1	D	4000	72.7	0.0	-12.0	0.0	0.0	57.8	7.2	-1.9	0.0	0.0	15.1	0.0	1.0	-18.4
290	17563868.03	4927728.00	1.00	1	D	8000	69.2	0.0	-12.0	0.0	0.0	57.8	25.5	-1.9	0.0	0.0	17.9	0.0	1.0	-43.2

DAYTIME CAR WASH OPERATIONS

Point Source, ISO 9613, Name: "Vac Nozzle", ID: "VAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
198	17563843.90	4927734.68	1.00	0	D	1000	66.2	0.0	-12.0	0.0	0.0	60.2	1.1	-2.4	0.0	0.0	7.3	0.0	0.0	-12.0
198	17563843.90	4927734.68	1.00	0	D	2000	71.0	0.0	-12.0	0.0	0.0	60.2	2.8	-2.7	0.0	0.0	9.7	0.0	0.0	-11.0
198	17563843.90	4927734.68	1.00	0	D	4000	72.7	0.0	-12.0	0.0	0.0	60.2	9.5	-2.7	0.0	0.0	12.4	0.0	0.0	-18.7
198	17563843.90	4927734.68	1.00	0	D	8000	69.2	0.0	-12.0	0.0	0.0	60.2	33.9	-2.7	0.0	0.0	15.2	0.0	0.0	-49.5
202	17563843.90	4927734.68	1.00	1	D	2000	71.0	0.0	-12.0	0.0	0.0	60.7	3.0	-2.1	0.0	0.0	10.2	0.0	1.0	-13.8
202	17563843.90	4927734.68	1.00	1	D	4000	72.7	0.0	-12.0	0.0	0.0	60.7	10.0	-2.1	0.0	0.0	13.3	0.0	1.0	-22.4
202	17563843.90	4927734.68	1.00	1	D	8000	69.2	0.0	-12.0	0.0	0.0	60.7	35.8	-2.1	0.0	0.0	16.4	0.0	1.0	-54.7

Point Source, ISO 9613, Name: "Vac Nozzle", ID: "VAC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
205	17563847.74	4927722.32	1.00	0	D	63	22.1	0.0	-12.0	0.0	0.0	60.3	0.0	-4.3	0.0	0.0	4.6	0.0	0.0	-50.6
205	17563847.74	4927722.32	1.00	0	D	125	35.6	0.0	-12.0	0.0	0.0	60.3	0.1	-0.9	0.0	0.0	6.0	0.0	0.0	-42.0
205	17563847.74	4927722.32	1.00	0	D	250	53.5	0.0	-12.0	0.0	0.0	60.3	0.3	-2.1	0.0	0.0	7.8	0.0	0.0	-24.8
205	17563847.74	4927722.32	1.00	0	D	500	63.0	0.0	-12.0	0.0	0.0	60.3	0.6	-3.1	0.0	0.0	9.9	0.0	0.0	-16.7
205	17563847.74	4927722.32	1.00	0	D	1000	66.2	0.0	-12.0	0.0	0.0	60.3	1.1	-3.1	0.0	0.0	12.4	0.0	0.0	-16.5
205	17563847.74	4927722.32	1.00	0	D	2000	71.0	0.0	-12.0	0.0	0.0	60.3	2.8	-3.1	0.0	0.0	15.1	0.0	0.0	-16.1
205	17563847.74	4927722.32	1.00	0	D	4000	72.7	0.0	-12.0	0.0	0.0	60.3	9.6	-3.1	0.0	0.0	18.0	0.0	0.0	-24.0
205	17563847.74	4927722.32	1.00	0	D	8000	69.2	0.0	-12.0	0.0	0.0	60.3	34.1	-3.1	0.0	0.0	20.9	0.0	0.0	-55.1

APPENDIX C: REFERENCES

1. Ministry of the Environment, *ORNAMENT*, “Ontario Road Noise Analysis Method for Environment and Transportation,” November 1988.
2. Ministry of the Environment, “Publication NPC-300, Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning,” August 2013.
3. Cadna/A Computer Aided Noise Abatement, Version 2023.