

Appendix I

Noise Calculations

Community Noise Exposure Thresholds¹

Land Use	Community Noise Exposure CNEL, db			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single Family, Duplex, Mobile Homes	50 - 60	55 - 70	70 - 75	above 70
Multi-Family Homes	50 - 65	60 - 70	70 - 75	above 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	above 80
Transient Lodging - Motels, Hotels	50 - 65	60 - 70	70 - 80	above 80
Auditoriums, Concert Halls, Amphitheaters		50 - 70		above 65
Sports Arena, Outdoor Spectator Sports		50 - 75		above 70
Playgrounds, Neighborhood Parks	50 - 70		67 - 75	above 72
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 75		70 - 80	above 80
Office Buildings, Business and Professional Commercial	50 - 70	67 - 77	above 75	
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	above 75	
Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.				
Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.				
Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.				
Clearly Unacceptable: New construction or development should generally not be undertaken.				

Notes:

(1) Source: California Department of Health Services (DHS).

Presumed Ambient Noise Level¹

Zone	Presumed Ambient Noise Level (dB(A))	
	Day	Night
A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	50	40
P, PB, CR, C1, C1.5, C2, C4, C5, and CM	60	55
M1, MR1, and MR2	60	55
M2 and M3	65	65

Notes:

(1) Source: City of Los Angeles Municipal Code, Chapter XI, Table 2.

CA/T Construction Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Compressor (air)	No	40	80	78	18
Concrete Mixer Truck	No	40	85	79	40
Concrete Saw	No	20	90	89.6	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Forklift ^{1,2}	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Grader	No	40	85	-N/A-	0
Paver	No	50	85	77	9
Pickup Truck	No	50	85	77	9
Paving Equipment	No	20	90	-N/A-	9
Roller	No	20	85	80	16
Tractor/Loader/Backhoe	No	25	80	-N/A-	0
Welder/Torch	No	40	73	74	5

Source: FHWA RCNM User's Guide, 2006

¹ Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014 <http://www.noisetesting.info/blog/carl-strautins/page-3/>

² Data provided Leq as measured at the operator. Sound Level at 50 feet is estimated.

Construction Noise by Phase - Receptors West and East of the Project Site

A	B	C	D	E	F	G	H	I
Equipment Type	# of Equipment	Equipment Lmax at 50 feet, dBA ^{1,2}	Distance to Receptor ³	Equipment Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Noise Level Leq (dBA) at Receptor
Demolition								
Concrete/Industrial Saw	1	89.6	195	20	0.20	-11.8	-7.0	70.8
Rubber Tired Dozers	1	82	195	40	0.40	-11.8	-4.0	66.2
Tractors/Loaders/Backhoes	2	80	195	25	0.50	-11.8	-3.0	65.2
							Log Sum	72.9
Grading								
Excavator	1	81	195	40	0.40	-11.8	-4.0	65.2
Rubber Tired Dozers	1	82	195	40	0.40	-11.8	-4.0	66.2
Tractors/Loaders/Backhoes	2	80	195	25	0.50	-11.8	-3.0	65.2
							Log Sum	70.3
Building Construction								
Cranes	1	81	195	16	0.16	-11.8	-8.0	61.2
Forklifts	2	64	195	50	1.00	-11.8	0.0	52.2
Generator Sets	1	81	195	40	0.40	-11.8	-4.0	65.2
Welders	3	73	195	40	1.20	-11.8	0.8	62.0
Tractors/Loaders/Backhoes	1	80	195	25	0.25	-11.8	-6.0	62.2
							Log Sum	65.0
Architectural Coating								
Air Compressors	1	78	195	40	0.40	-11.8	-4.0	62.2
							Log Sum	62.2

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018).

(2) Source: https://www.google.com/url?q=http://www.noisetesting.info/blog/warehouse-forklift-workplace-noise-levels/&sa=D&source=hangouts&ust=1545259247311000&usg=AFQjCNHFcKkoEKUjv5VZMOtw_KO977Em1A

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to the structural façade of the nearest sensitive use.

Construction Noise by Phase - Receptors North of the Project Site

A	B	C	D	E	F	G	H	I
Equipment Type	# of Equipment	Equipment Lmax at 50 feet, dBA ^{1,2}	Distance to Receptor ³	Equipment Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Noise Level Leq (dBA) at Receptor
Demolition								
Concrete/Industrial Saw	1	89.6	245	20	0.20	-13.8	-7.0	68.8
Rubber Tired Dozers	1	82	245	40	0.40	-13.8	-4.0	64.2
Tractors/Loaders/Backhoes	2	80	245	25	0.50	-13.8	-3.0	63.2
							Log Sum	70.9
Grading								
Excavator	1	81	245	40	0.40	-13.8	-4.0	63.2
Rubber Tired Dozers	1	82	245	40	0.40	-13.8	-4.0	64.2
Tractors/Loaders/Backhoes	2	80	245	25	0.50	-13.8	-3.0	63.2
							Log Sum	68.3
Building Construction								
Cranes	1	81	245	16	0.16	-13.8	-8.0	59.2
Forklifts	2	64	245	50	1.00	-13.8	0.0	50.2
Generator Sets	1	81	245	40	0.40	-13.8	-4.0	63.2
Welders	3	73	245	40	1.20	-13.8	0.8	60.0
Tractors/Loaders/Backhoes	1	80	245	25	0.25	-13.8	-6.0	60.2
							Log Sum	63.0
Architectural Coating								
Air Compressors	1	78	245	40	0.40	-13.8	-4.0	60.2
							Log Sum	60.2

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018).

(2) Source: https://www.google.com/url?q=http://www.noisetesting.info/blog/warehouse-forklift-workplace-noise-levels/&sa=D&source=hangouts&ust=1545259247311000&usg=AFQjCNHFcKKoEKUjv5VZMOtw_KO977Em1A



(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to the structural façade of the nearest sensitive use.

Noise Levels 50 feet from Roadway Centerline*												
N-S Road Segments	Existing		Existing Plus Project			Is the Increase Significant ?	Future without Project		Future with Project			Is the Increase Significant ?
	ADT	dB CNEL	ADT	Total	Project-Specific Increase		ADT	dB CNEL	ADT	Total	Project-Specific Increase	
Mateo Street												
n/o Jesse Street	2,470	61.6	2,550	61.8	0.2	No	6,970	66.1	7,050	66.2	0.1	No
s/o Jesse Street	4,110	63.8	4,110	63.8	0.0	No	5,860	65.4	5,860	65.4	0.0	No
s/o 7th Street	4,700	64.4	4,740	64.5	0.1	No	7,480	66.4	7,570	66.5	0.1	No
Imperial Street												
n/o Jesse Street	240	51.5	240	51.5	0.0	No	900	57.2	900	57.2	0.0	No
s/o Jesse Street	420	53.9	630	55.7	1.8	No	960	57.5	1,170	58.4	0.9	No
n/o Project Driveway	200	50.7	200	50.7	0.0	No	740	56.4	820	56.8	0.4	No
s/o Project Driveway	320	52.8	790	56.7	3.9	No	840	56.9	1,310	58.9	2.0	No
s/o 7th Street	20	40.7	20	40.7	0.0	No	20	40.7	20	40.7	0.0	No
*The uniform distance of 50 feet allows for direct comparisons of potential increases or decreases in noise levels based upon various traffic scenarios; however, at this distance, no specific noise standard necessarily applies												

Noise Levels 50 feet from Roadway Centerline*												
E-W Road Segments	Existing		Existing Plus Project			Is the Increase Significant ?	Future without Project		Future with Project			Is the Increase Significant ?
	ADT	dB CNEL	ADT	Total	Project-Specific Increase		ADT	dB CNEL	ADT	Total	Project-Specific Increase	
Jesse Street												
w/o Mateo Street	110	48.1	110	48.1	0.0	No	110	48.1	110	48.1	0.0	No
e/o Mateo Street	450	54.2	660	55.9	1.7	No	1,280	58.8	1,490	59.4	0.6	No
e/o Imperial Street	530	54.9	530	54.9	0.0	No	1,230	58.6	1,230	58.6	0.0	No
Project Driveway												
w/o entrance	0	--	1,040	57.9	--	No	0	--	1,040	57.9	--	No
7th Street												
w/o Mateo Street	6,430	65.8	6,640	65.9	0.1	No	13,240	68.9	13,450	69.0	0.1	No
e/o Mateo Street	10,510	67.9	10,890	68.1	0.2	No	14,900	69.4	15,280	69.5	0.1	No
e/o Imperial Street	10,630	68.0	10,800	68.0	0.0	No	14,680	69.4	14,850	69.4	0.0	No
*The uniform distance of 50 feet allows for direct comparisons of potential increases or decreases in noise levels based upon various traffic scenarios; however, at this distance, no specific noise standard necessarily applies												



Legend

-  Project Site
-  Noise Monitoring Locations
- ① Residential uses to the west (55 feet)
- ② Residential uses to the east (55 feet)
- ③ Residential uses to the north (165 feet)

Aerial Source: Google Earth 2018.



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Ambient Noise Monitoring Data

676 Mateo St. - 1

Information Panel

Name 676 Mateo St. 1
Start Time 7/5/2017 11:06:14 AM
Stop Time 7/5/2017 11:21:35 AM
Model Type SoundPro DL
Run Time 00:15:00

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Lmin	1	57.5 dB	Lmax	1	77.3 dB
Leq	1	66.4 dB			
Exchange Rate	1	3 dB	Log Rate	1	60 s
Weighting	1	A	Response	1	SLOW

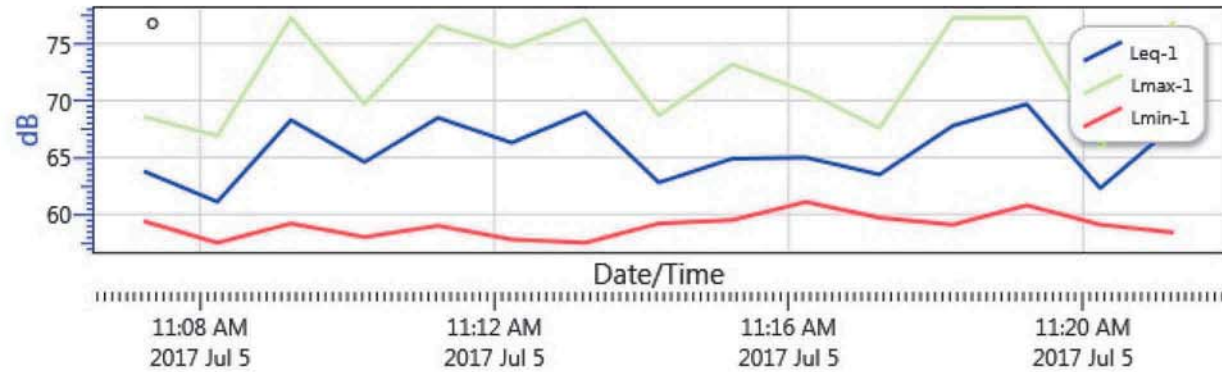
Logged Data Table

Date/Time	Leq-1	Lmax-1	Lmin-1
7/5/2017 11:07:14 AM	63.8	68.6	59.4
11:08:14 AM	61.1	66.9	57.5
11:09:14 AM	68.3	77.3	59.2
11:10:14 AM	64.6	69.7	58
11:11:14 AM	68.5	76.6	59
11:12:14 AM	66.3	74.7	57.8
11:13:14 AM	69	77.2	57.5
11:14:14 AM	62.8	68.7	59.2
11:15:14 AM	64.9	73.2	59.5
11:16:14 AM	65	70.8	61.1
11:17:14 AM	63.5	67.6	59.7
11:18:14 AM	67.8	77.3	59.1
11:19:14 AM	69.7	77.3	60.8
11:20:14 AM	62.3	66.1	59.1
11:21:14 AM	67.8	77	58.4



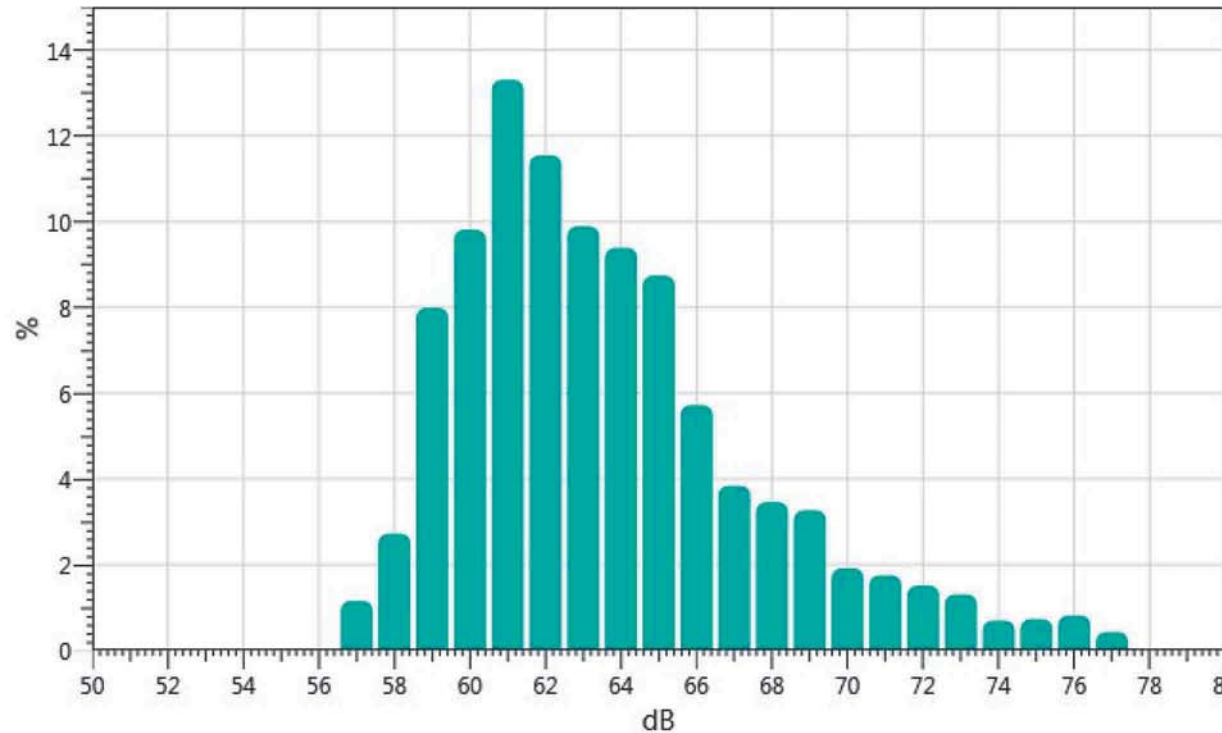
Logged Data Chart

676 Mateo St. 1: Logged Data Chart



Statistics Chart

676 Mateo St. 1: Statistics Chart



Calibration History

Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
7/5/2017 11:05:26 AM	Calibration	114.0			

NOISE MONITORING FIELD REPORT

Site Map

Project Name: 676 Mateo Street

Monitoring Address: 668-678 S. Mateo St

Date: 7/5/17 Site Number: 1

Measured By: Holly Galbreath

Weather Conditions: 82°, 0% cloud

Wind Speed: 4 mph Wind Direction: From SSW

Measurement Start Time: 11:05 am

Measurement End Time: 11:20 am



Total Measurement Time: 15 min

Noise Meter Model: 3M SoundPro SP DL-1 Calibration: 114.0 (dBA)

Meter Setting: A-Weighted Sound Level (SLOW) Session File Name: S004

Primary Noise Sources: Traffic - Mateo St & 7th St.

Data Summary

Noise Scale	Noise Level (dBA)
Leq	66.4
Lmax	77.3
Lmin	57.3

Other Noise Sources During Monitoring

1. _____ Time: _____
2. _____ Time: _____
3. _____ Time: _____
4. _____ Time: _____
5. _____ Time: _____

Additional Notes:

676 Mateo St. - 2

Information Panel

Name 676 Mateo St. 2
Start Time 7/5/2017 11:49:02 AM
Stop Time 7/5/2017 12:04:02 PM
Model Type SoundPro DL
Run Time 00:15:00

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Lmin	1	58.8 dB	Lmax	1	86.7 dB
Leq	1	69.3 dB			
Exchange Rate	1	3 dB	Log Rate	1	60 s
Weighting	1	A	Response	1	SLOW

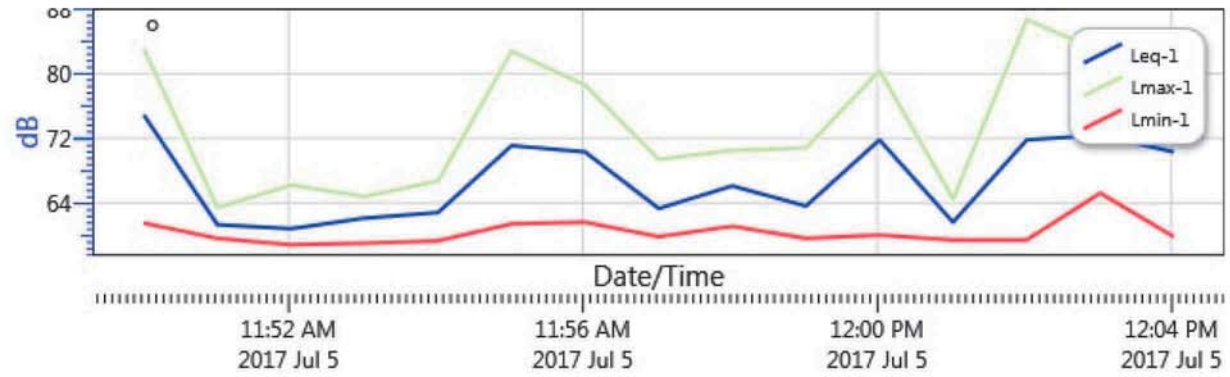
Logged Data Table

Date/Time	Leq-1	Lmax-1	Lmin-1
7/5/2017 11:50:02 AM	74.9	83.1	61.5
11:51:02 AM	61.3	63.4	59.6
11:52:02 AM	60.8	66.2	58.8
11:53:02 AM	62.1	64.8	59
11:54:02 AM	62.8	66.7	59.3
11:55:02 AM	71.1	82.8	61.4
11:56:02 AM	70.3	78.6	61.6
11:57:02 AM	63.3	69.4	59.8
11:58:02 AM	66.1	70.5	61.1
11:59:02 AM	63.6	70.8	59.6
12:00:02 PM	71.8	80.4	60
12:01:02 PM	61.6	64.5	59.4
12:02:02 PM	71.8	86.7	59.4
12:03:02 PM	72.4	82.8	65.2
12:04:02 PM	70.3	80.1	59.8



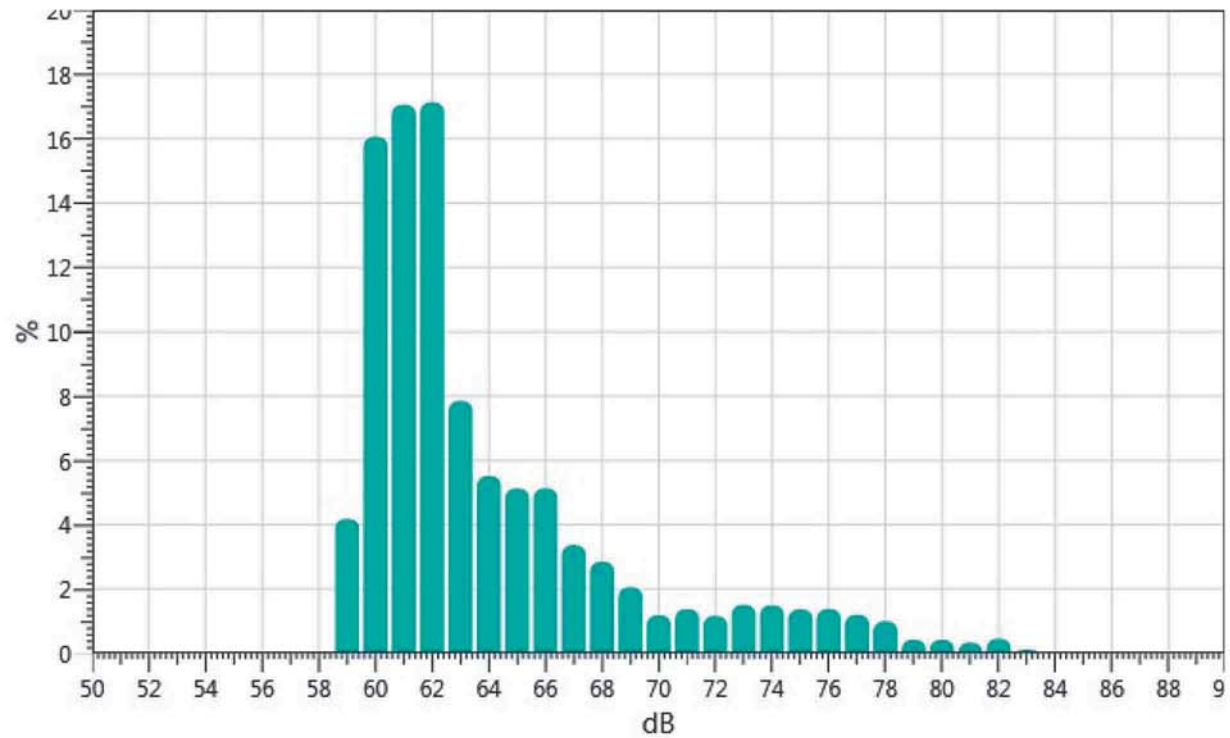
Logged Data Chart

676 Mateo St. 2: Logged Data Chart



Statistics Chart

676 Mateo St. 2: Statistics Chart



Calibration History

Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
7/5/2017 11:48:39 AM	Calibration	114.0			

NOISE MONITORING FIELD REPORT

Site Map

Project Name: 676 Mateo Street

Monitoring Address: 668-678 S. Mateo St

Date: 7/5/17 Site Number: 2

Measured By: Holly Galbreath

Weather Conditions: 88°, 0% cloud

Wind Speed: 2 mph Wind Direction: From W

Measurement Start Time: 11:48 am

Measurement End Time: 12:03 pm



Total Measurement Time: 15 min

Noise Meter Model: 3M SoundPro SP DL-1 Calibration: 114.0 (dBA)

Meter Setting: A-Weighted Sound Level (SLOW) Session File Name: S006

Primary Noise Sources: Traffic / Hauling activity - Imperial st

Data Summary

Noise Scale	Noise Level (dBA)
Leq	69.3
Lmax	86.7
Lmin	58.8

Other Noise Sources During Monitoring

1. Street Sweep Time: 11:53
2. Haul truck Time: 11:54
3. Haul truck Time: 11:58
4. Haul truck / Horn / Street Sweep Time: 12:01
5. Street Sweep Time: 12:02

Additional Notes:

Pool Reference Data - Daytime

6/25/2018

Information Panel

Name	Pool Ref Data Daytime
Start Time	6/25/2018 5:42:21 PM
Stop Time	6/25/2018 5:57:21 PM
Model Type	SoundPro DL
Run Time	00:15:00

Summary Data Panel

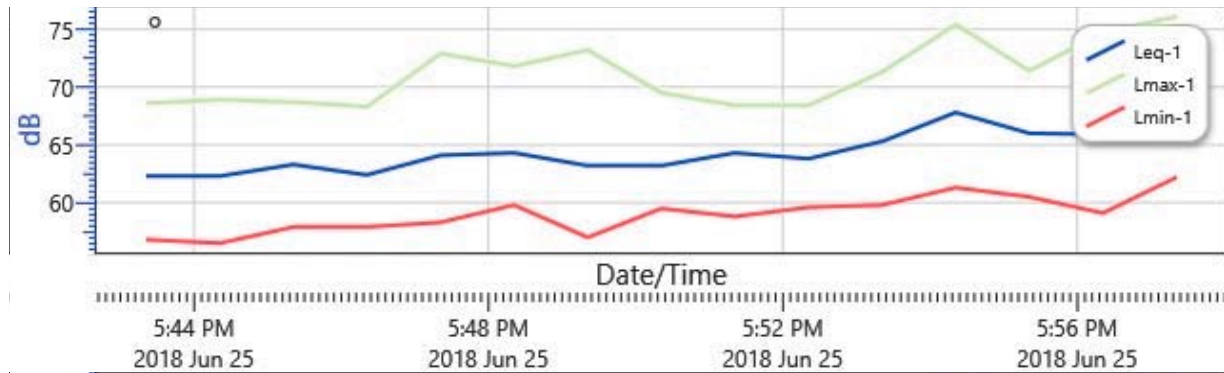
Description	Meter	Value	Description	Meter	Value
Lmin	1	56.5 dB	Lmax	1	76.1 dB
Leq	1	64.8 dB			
Exchange Rate	1	3 dB	Log Rate	1	60 s
Weighting	1	A	Response	1	SLOW

Logged Data Table

Date/Time	Leq-1	Lmax-1	Lmin-1
6/25/2018 5:43:21 PM	62.3	68.6	56.8
5:44:21 PM	62.3	68.9	56.5
5:45:21 PM	63.3	68.7	57.9
5:46:21 PM	62.4	68.3	57.9
5:47:21 PM	64.1	72.9	58.3
5:48:21 PM	64.3	71.8	59.8
5:49:21 PM	63.2	73.2	57
5:50:21 PM	63.2	69.5	59.5
5:51:21 PM	64.3	68.4	58.8
5:52:21 PM	63.8	68.4	59.6
5:53:21 PM	65.3	71.3	59.8
5:54:21 PM	67.8	75.4	61.3
5:55:21 PM	66	71.4	60.5
5:56:21 PM	65.9	74.7	59.1
5:57:21 PM	68.1	76.1	62.2

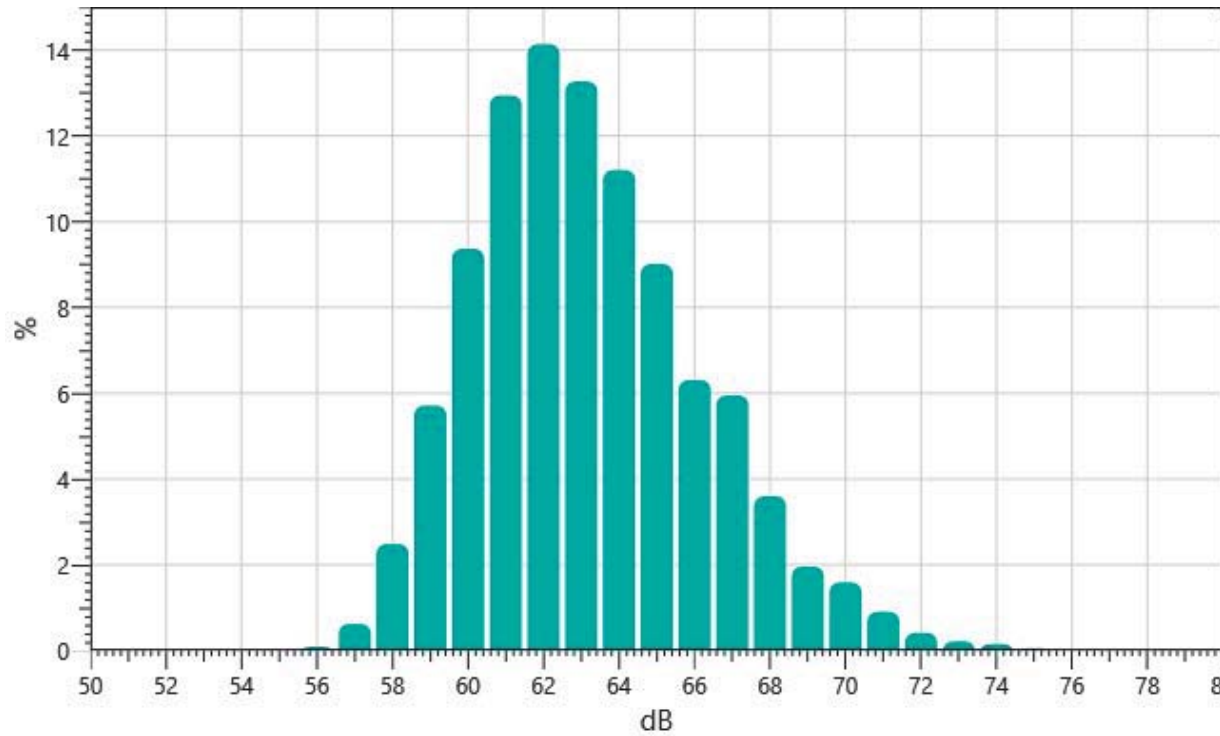
Logged Data Chart

Pool Ref Data Daytime: Logged Data Chart



Statistics Chart

Pool Ref Data Daytime: Statistics Chart



Calibration History

Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
6/25/2018 5:35:42 PM	Calibration	114.0			