

June 21, 2024

Ms. Cynthia Woods  
Manager, Noise Management Office  
Greater Toronto Airports Authority  
P.O. Box 6031, 3111 Convair Drive,  
Toronto AMF, Ontario, L5P 1B2

Re: Report of Noise Monitoring Data for Runway 05 Easterly Departure Operations – Humber Summit and Vaughan Areas

Dear Ms. Woods,

The following is a summary of the noise data acquired at two temporary noise monitoring locations that were installed by Akoustik Engineering Limited in the Humber Summit and City of Vaughan Areas to capture the potential noise impacts from the easterly operations on Runway 05 at these locations. The Humber Summit sound meter was located near Rowntree Mill Road and Islington Avenue (M9L 1C4). This location is under the initial departure flightpath from Runway 05 and was selected to capture the potential noise from these operations. The City of Vaughan installation was located near Wakelin Court and Islington Avenue (L4L 2P1) which was selected to capture the potential noise from the operations of the departure turn to the north from runway 05. The general location of the meter installations with respect to the airport and runway 05 are illustrated in the attached Figure 1. Photos that show the equipment setup are given in Figures 2 and 3.

The noise monitors were Class 1 Type 2250 Bruel & Kjaer analyzers and Bruel & Kjaer Type 4952 outdoor microphones which are similar to the hardware used in the permanent noise monitoring terminals (NMT) located at various locations in the greater Toronto area. The noise acquisition meters were programmed to simultaneously log the A-weighted noise data in one hour intervals at both locations mostly, with the second meter beginning approximately one hour after the first meter began logging data. The logged noise metrics included the one-hour A-weighted equivalent sound level ( $L_{eq}$ ), the maximum A-weighted level for each one hour period ( $L_{max}$ ), and the minimum A-weighted level for each one hour period ( $L_{min}$ ).  $L_{eq}$  is the commonly used sound metric to quantify varying environmental noise and is defined as the steady sound pressure level which, over a given period, has the same total energy as the environmental fluctuating noise. The one-hour  $L_{eq}$  is the accepted metric for this application as it is a good representation of the steady and fluctuating sources of environmental noise (including long term aircraft flyover noise) representing the soundscape at the measurement location for the one-hour period. The  $L_{max}$  and  $L_{min}$  metrics are reported as they give an idea of the range of variability of the soundscape for

each reported one-hour period. That is, they give an indication of the loudest and quietest instantaneous sound levels encountered in each hour. It should be noted that the  $L_{max}$  and  $L_{min}$ , unlike the  $L_{eq}$  metric, are not time averaged values and are quantified approximately every 0.7 seconds during each reported hour.

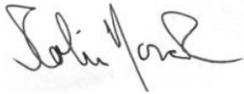
The noise data was collected beginning at approximately 10:00 am on April 08, 2024, until 09:00 am on April 16, 2024. Information pertaining to the hours during this time period that easterly departure operation occurred on Runway 05 was provided by the Greater Toronto Airports Authority (GTAA). The weather conditions were also monitored during the measurements to ensure that the data was consistent to good measurement practices and in accordance with the Ministry of the Environment Conservation and Parks (MECP) protocols as defined in the MECP document NPC-103, section 4, clause (G), paragraph (i). That is, the weather conditions should be such that the wind does not exceed 20 km/h, the relative humidity should not exceed 90% and there should be no precipitation during the acquisition hour if the noise data is to be used for analysis. Data collected that does not meet the above conditions is not reliable as they values may be skewed by the conditions and not representative of the true soundscape. For the raw measurement data given further in Table 1, any data that does not meet the criteria for noise data collection due to weather is highlighted and defined in the legend provided at the end of the table.

Figures 4 and 5 show the logged one-hour  $L_{Aeq}$ , the  $L_{Amax}$  and the  $L_{Amin}$  noise data collected at the Humber Summit and City of Vaughan locations respectively. Also shown in these figures are the time periods that easterly departure operations occurred on Runway 05, including the number of these operations that occurred in each of the hourly period. From this, it is possible to see the differences, if any to the one-hour equivalent sound level during Runway 05 easterly departure operations compared to the one-hour periods when there were no departure operations. From this, it is generally demonstrated that the one-hour  $L_{eq}$  sounds levels at the Humber Summit location are impacted by the Runway 05 departure operations, but not at the City of Vaughan location. At the Humber Summit site, increases in the  $L_{eq}$  noise level of 5 to 10 dB are evident during periods of Runway 05 easterly departures compared to similar time periods when there are no operations. However, this is not the case at the City of Vaughan measurement site where it is observed that the time periods having the highest sound impacts occur during the daytime hours and the periodic amplitudes of these measured sound levels are similar from one day to the corresponding period on the next day, regardless of Runway 05 departure operations. This does not mean that aircraft are not audible in this area, it means that aircraft noise is not greater than existing community noise levels. As such, it is demonstrated from the data collected that the noise levels at the City of Vaughan location are not adversely impacted by the Runway 05 departure procedures. It should be noted that the data given in Figures 4 and 5 include all measured hourly  $L_{eq}$ s, during both favourable and not favourable hourly weather conditions.

Tables 1 and 2 are the detailed data tables for the Humber Summit and City of Vaughan locations respectively, showing all logged noise data, weather conditions and Runway 05 easterly departure details. Tables 1 and 2 should be used for any in depth analysis of comparing the environmental noise impacts at the two measurement locations during periods of easterly departures on Runway 05.

I trust that you will find the above meets your requirements. Please do not hesitate to contact me if you require any further information.

Regards,

A handwritten signature in black ink, appearing to read "Colin Novak". The signature is written in a cursive style with a large, stylized initial 'C'.

Colin Novak Ph.D., P.Eng.

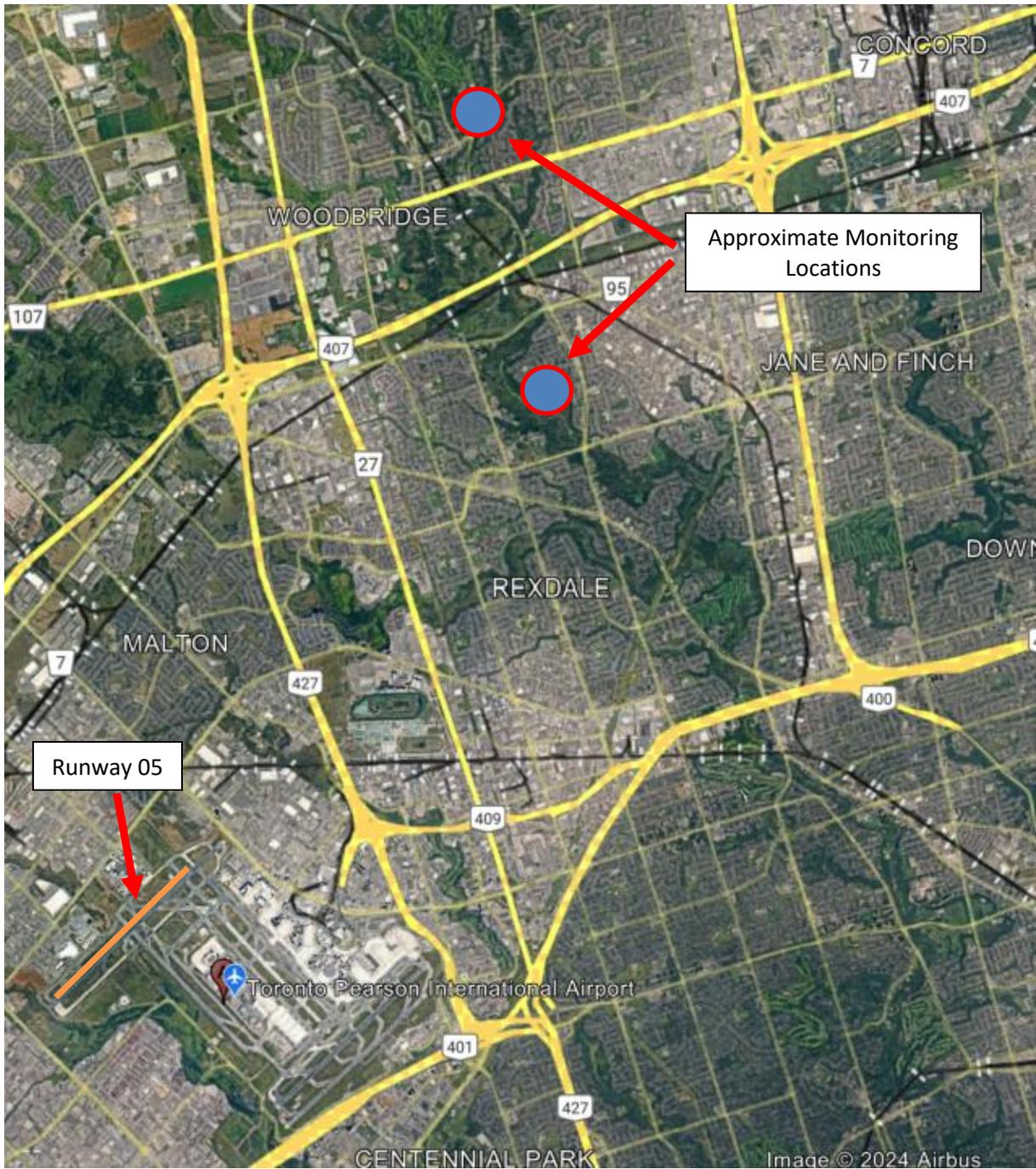


Figure 1: General location Noise Monitors with respect to the Airport and Runway 05

## Photos



Figure 2: Photo of Noise Monitoring Equipment in the Humber Summit Area

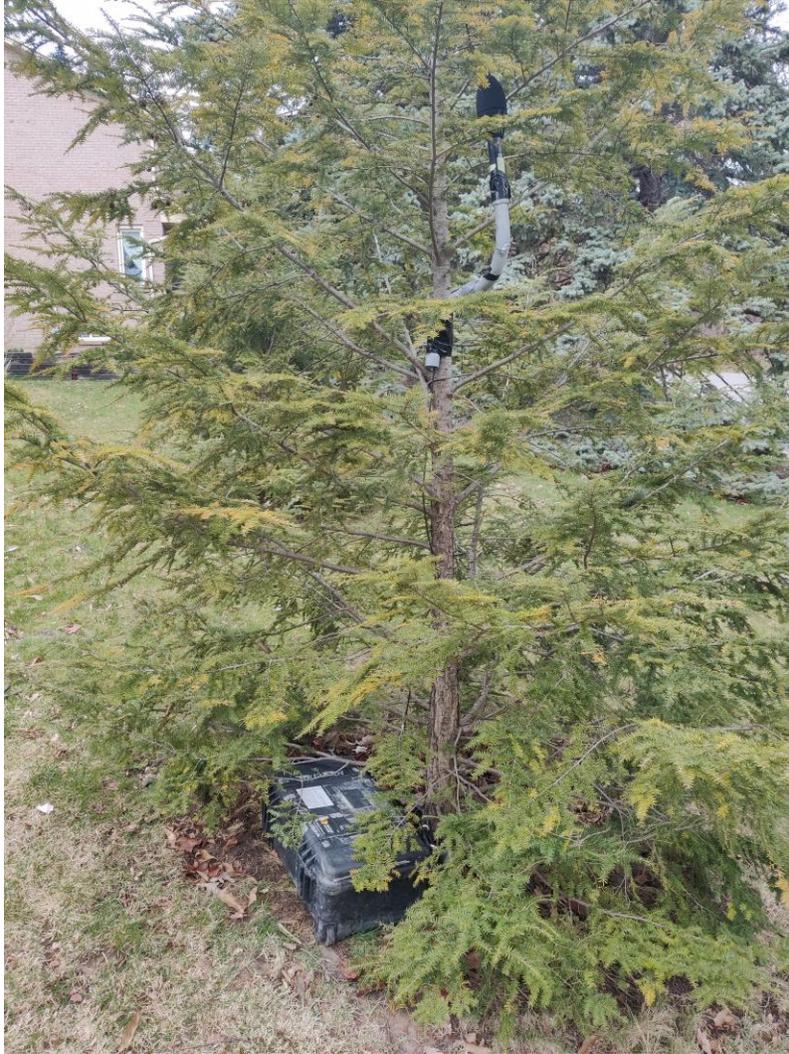


Figure 3: Photo of Noise Monitoring Equipment in the City of Vaughan

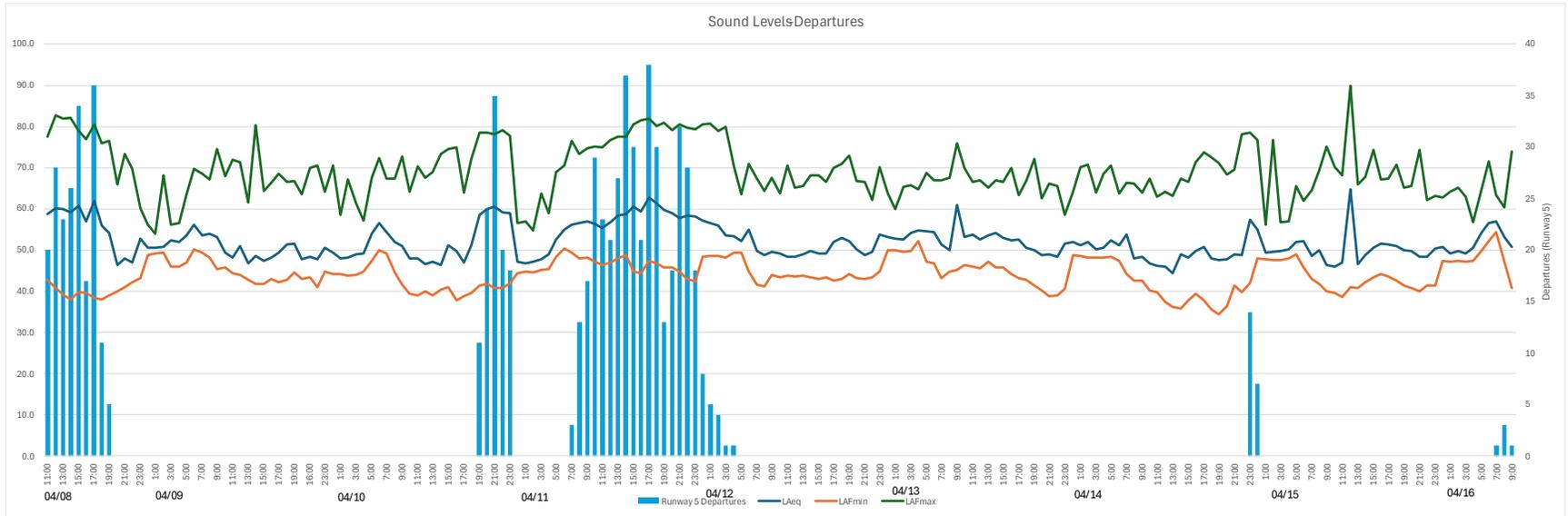


Figure 4: One-hour LAeq (blue), LAMax (green) and LAMin (red) and Runway 05 Easterly Departures (bar) at Humber Summit Location

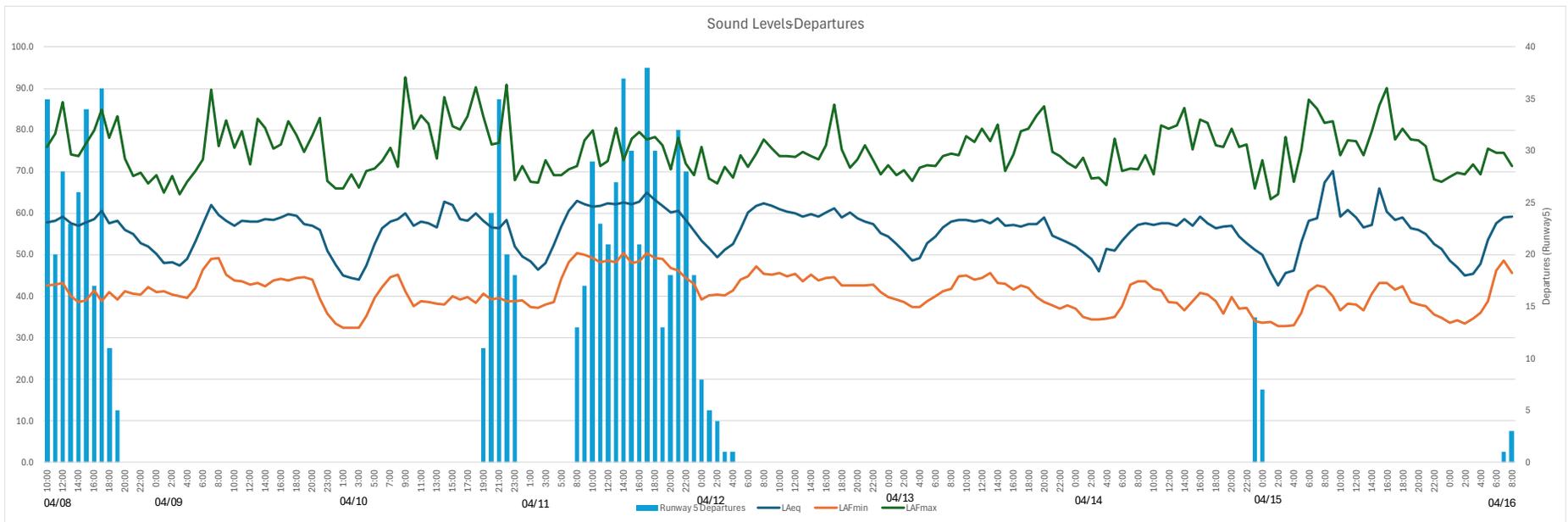


Figure 5: One-hour LAeq (blue), LAMax (green) and LAMin (red) and Runway 05 Easterly Departures (bar) at City of Vaughan Location

Table 1: Noise Monitoring Data with Weather Details (highlights) at Humber Summit Location

Start Time	LAFmax	LAFmin	LAeq	Temp (°C)	Rel Hum (%)	Wind Spd (km/h)	Weather	Runway 5 Departures
2024-04-08 11:00	77.6	42.8	58.7	10.2	42	7	NA	20
2024-04-08 12:00	82.7	40.8	60.1	11.3	33	9	NA	28
2024-04-08 13:00	82.0	39.1	60.0	12.4	32	12	Mostly Cloudy	23
2024-04-08 14:00	82.1	38.0	59.2	11.3	35	12	NA	26
2024-04-08 15:00	79.0	39.9	60.8	10.8	44	8	NA	34
2024-04-08 16:00	76.9	39.6	57.0	13	36	8	Mainly Clear	17
2024-04-08 17:00	80.5	38.4	62.0	13.1	34	9	NA	36
2024-04-08 18:00	76.0	37.9	56.0	12.8	35	9	NA	11
2024-04-08 19:00	76.5	39.0	54.2	10.4	45	8	Clear	5
2024-04-08 20:00	65.9	40.1	46.4	7.5	59	7	NA	0
2024-04-08 21:00	73.4	40.9	47.9	7.1	61	2	NA	0
2024-04-08 22:00	69.7	42.3	46.9	7.1	61	4	Clear	0
2024-04-08 23:00	60.1	43.3	52.8	7.1	60	4	NA	0
2024-04-09 0:00	56.2	48.8	50.5	6.6	60	3	NA	0
2024-04-09 1:00	54.0	49.1	50.5	5.9	62	7	Clear	0
2024-04-09 2:00	68.1	49.3	50.7	5.6	64	4	NA	0
2024-04-09 3:00	56.2	46.0	52.4	5.7	65	1	NA	0
2024-04-09 4:00	56.7	46.0	52.0	4.5	70	1	Clear	0
2024-04-09 5:00	63.6	47.0	53.6	5.1	68	2	NA	0
2024-04-09 6:00	69.7	50.3	56.3	5.4	67	1	NA	0

2024-04-09 7:00	68.6	49.4	53.6	7.1	66	5	Mostly Cloudy	0
2024-04-09 8:00	67.1	48.2	53.9	9.2	57	6	NA	0
2024-04-09 9:00	74.6	45.5	53.2	11.3	53	9	NA	0
2024-04-09 10:00	67.9	45.9	49.5	13.7	50	10	Mostly Cloudy	0
2024-04-09 11:00	71.9	44.3	48.2	14	51	11	NA	0
2024-04-09 12:00	71.4	43.9	51.1	15.5	52	12	NA	0
2024-04-09 13:00	61.5	42.8	46.8	16.7	48	19	Mainly Clear	0
2024-04-09 14:00	80.3	41.7	48.6	16.8	48	20	NA	0
2024-04-09 15:00	64.3	41.8	47.3	17.7	43	22	NA	0
2024-04-09 16:00	66.3	42.9	48.2	17.9	41	20	Mainly Clear	0
2024-04-09 17:00	68.6	42.2	49.4	17.4	47	15	NA	0
2024-04-09 18:00	66.6	42.8	51.3	16.5	52	13	NA	0
2024-04-09 19:00	66.7	44.6	51.6	14.6	58	10	Mainly Clear	0
2024-04-09 20:00	63.5	43.0	47.7	12.9	62	8	NA	0
2024-04-09 21:00	70.0	43.4	48.4	13.2	63	6	NA	0
2024-04-09 22:00	70.5	41.0	47.9	12.6	68	16	Mostly Cloudy	0
2024-04-09 23:00	64.2	44.9	50.6	14.2	58	4	NA	0
2024-04-10 0:00	70.5	44.3	49.3	12.4	68	10	NA	0
2024-04-10 1:00	58.6	44.1	48.1	11.2	69	3	Mostly Cloudy	0
2024-04-10 2:00	67.1	43.8	48.1	11.4	71	7	NA	0
2024-04-10 3:00	61.4	44.0	49.0	11.4	63	17	NA	0
2024-04-10 4:00	57.2	44.7	49.3	10.1	70	12	Mostly Cloudy	0
2024-04-10 5:00	67.5	47.4	54.0	9.5	72	18	NA	0

2024-04-10 6:00	72.3	50.1	56.6	9.3	71	17	NA	0
2024-04-10 7:00	67.4	49.3	54.4	9.2	72	9	Mostly Cloudy	0
2024-04-10 8:00	67.5	44.5	51.9	10.8	64	8	NA	0
2024-04-10 9:00	72.7	41.6	50.9	13.1	54	6	NA	0
2024-04-10 10:00	64.2	39.5	48.0	15.4	50	14	Mostly Cloudy	0
2024-04-10 11:00	70.3	39.0	48.0	16.7	42	18	NA	0
2024-04-10 12:00	67.5	40.0	46.5	16.9	41	14	NA	0
2024-04-10 13:00	69.0	39.0	47.3	17.6	35	22	Mostly Cloudy	0
2024-04-10 14:00	73.4	40.3	46.4	17.9	34	22	NA	0
2024-04-10 15:00	74.5	41.0	51.2	18.2	35	15	NA	0
2024-04-10 16:00	74.9	37.8	49.7	18.2	36	19	Mostly Cloudy	0
2024-04-10 17:00	63.9	38.9	47.1	17.5	36	12	NA	0
2024-04-10 18:00	72.1	39.7	51.2	16.3	41	17	NA	0
2024-04-10 19:00	78.5	41.4	58.5	14.3	46	18	Mostly Cloudy	11
2024-04-10 20:00	78.5	41.9	60.1	13.5	42	12	NA	24
2024-04-10 21:00	78.0	40.9	60.5	13.8	42	7	NA	35
2024-04-10 22:00	79.1	40.7	59.2	13.6	43	5	Mostly Cloudy	20
2024-04-10 23:00	77.8	42.1	58.9	13.2	45	6	NA	18
2024-04-11 0:00	56.6	44.5	47.3	12.9	47	7	NA	0
2024-04-11 1:00	57.0	44.7	46.8	12.6	48	8	Cloudy	0
2024-04-11 2:00	54.8	44.7	47.1	12.3	48	10	NA	0
2024-04-11 3:00	63.8	45.2	47.9	11.4	60	8	Rain	0
2024-04-11 4:00	58.9	45.4	48.9	9.7	75	9	Rain,Fog	0

2024-04-11 5:00	68.9	48.4	52.7	8.7	88	13	Rain,Fog	0
2024-04-11 6:00	70.6	50.4	54.9	8.1	98	12	Moderate Rain,Fog	0
2024-04-11 7:00	76.6	49.5	56.2	8	100	21	Rain,Fog	
2024-04-11 8:00	73.4	48.0	56.7	8.5	99	15	Rain,Fog	13
2024-04-11 9:00	74.8	48.2	57.0	9.2	100	16	Rain,Fog	17
2024-04-11 10:00	75.2	47.2	56.3	9.9	100	23	Rain,Fog	29
2024-04-11 11:00	74.9	46.5	55.3	10.1	100	14	Rain,Fog	23
2024-04-11 12:00	76.6	47.0	56.8	10.5	100	12	Moderate Rain,Fog	21
2024-04-11 13:00	77.6	48.1	58.4	11.3	100	11	Rain,Fog	27
2024-04-11 14:00	77.5	48.8	58.8	11.9	100	12	Rain,Fog	37
2024-04-11 15:00	80.5	44.8	60.6	12.6	100	6	Rain,Fog	30
2024-04-11 16:00	81.6	44.4	59.3	12.8	100	7	Heavy Rain,Fog	21
2024-04-11 17:00	81.8	47.5	62.8	12.7	100	9	Rain,Fog	38
2024-04-11 18:00	80.1	46.8	61.4	12.8	100	10	Rain,Fog	30
2024-04-11 19:00	81.0	45.9	59.8	13.1	100	5	Rain,Fog	13
2024-04-11 20:00	79.2	45.8	58.9	14	100	10	Moderate Rain,Fog	18
2024-04-11 21:00	80.5	44.9	57.8	14.3	100	18	Rain,Fog	32
2024-04-11 22:00	79.8	42.9	58.3	13.8	100	12	Rain,Fog	28
2024-04-11 23:00	79.4	42.4	58.1	13.2	100	13	Rain,Fog	18
2024-04-12 0:00	80.5	48.4	57.1	12.3	100	11	Rain,Fog	8
2024-04-12 1:00	80.7	48.5	56.6	12.5	100	7	Rain,Fog	5
2024-04-12 2:00	79.0	48.6	55.9	12.7	100	7	Rain,Fog	4
2024-04-12 3:00	79.9	48.1	53.5	12.7	100	7	Rain,Fog	1

2024-04-12 4:00	70.3	49.5	53.4	12.6	100	5	Rain,Fog	1
2024-04-12 5:00	63.5	49.3	52.1	12.4	100	5	Rain,Fog	0
2024-04-12 6:00	70.9	44.9	55.1	12.2	100	7	Rain,Fog	0
2024-04-12 7:00	67.4	41.7	49.7	10.8	100	14	Rain,Fog	0
2024-04-12 8:00	64.4	41.2	48.8	8.2	100	32	Rain,Fog	0
2024-04-12 9:00	67.6	44.0	49.5	7.9	98	28	Rain	0
2024-04-12 10:00	63.8	43.5	49.2	7.9	93	27	Rain	0
2024-04-12 11:00	70.6	43.8	48.3	8.5	89	33	Rain	0
2024-04-12 12:00	65.1	43.6	48.3	8.8	86	39	Rain	0
2024-04-12 13:00	65.5	43.9	49.1	8.6	87	42	Rain	0
2024-04-12 14:00	68.1	43.4	49.7	8.8	84	36	Rain	0
2024-04-12 15:00	68.2	43.1	49.2	8.8	83	32	Rain	0
2024-04-12 16:00	66.5	43.4	49.1	8.8	80	36	Rain	0
2024-04-12 17:00	69.9	42.5	52.0	7.6	83	29	Rain	0
2024-04-12 18:00	71.0	43.1	53.0	6.6	86	31	Rain	0
2024-04-12 19:00	73.0	44.1	52.2	6	86	32	Rain	0
2024-04-12 20:00	66.9	43.2	50.3	5.3	87	37	Rain	0
2024-04-12 21:00	66.6	42.9	48.8	4.8	86	37	Rain	0
2024-04-12 22:00	62.1	43.5	49.5	5.4	79	42	Cloudy	0
2024-04-12 23:00	70.2	44.7	53.8	5.4	80	39	NA	0
2024-04-13 0:00	63.8	50.0	53.2	4.7	85	40	Rain	0
2024-04-13 1:00	59.9	50.0	52.8	4.4	87	40	Rain	0
2024-04-13 2:00	65.4	49.6	52.7	4.2	84	44	NA	0

2024-04-13 3:00	65.7	49.7	54.2	4.2	83	41	Rain	0
2024-04-13 4:00	64.8	52.3	54.9	3.9	89	35	Rain	0
2024-04-13 5:00	68.8	47.1	54.6	4.1	86	42	Rain	0
2024-04-13 6:00	67.0	46.7	54.4	4.3	84	40	Rain	0
2024-04-13 7:00	66.9	43.2	51.3	4.7	80	40	Cloudy	0
2024-04-13 8:00	67.7	44.8	50.0	5.2	78	41	NA	0
2024-04-13 9:00	75.9	45.2	60.9	5.3	76	45	NA	0
2024-04-13 10:00	69.9	46.4	53.2	6.1	69	48	Cloudy	0
2024-04-13 11:00	66.7	46.0	53.8	7.3	62	48	NA	0
2024-04-13 12:00	67.0	45.5	52.6	7.7	61	43	NA	0
2024-04-13 13:00	65.1	47.1	53.6	8.2	58	41	Mostly Cloudy	0
2024-04-13 14:00	66.9	45.8	54.1	10	52	46	NA	0
2024-04-13 15:00	66.6	45.7	52.9	11.4	48	42	NA	0
2024-04-13 16:00	70.0	44.3	52.5	11.2	45	49	Mainly Clear	0
2024-04-13 17:00	63.4	43.3	52.5	11.4	44	44	NA	0
2024-04-13 18:00	66.8	42.8	50.7	10.8	41	36	NA	0
2024-04-13 19:00	72.1	41.4	50.0	9.7	49	17	Clear	0
2024-04-13 20:00	62.5	40.1	48.9	8.6	54	14	NA	0
2024-04-13 21:00	66.1	38.8	49.0	8.2	56	7	NA	0
2024-04-13 22:00	65.5	39.0	48.3	7.4	60	8	Mainly Clear	0
2024-04-13 23:00	58.5	40.6	51.7	7.8	62	3	NA	0
2024-04-14 0:00	64.1	48.8	52.0	7	70	8	NA	0
2024-04-14 1:00	70.2	48.5	51.3	7.5	70	5	Rain	0

2024-04-14 2:00	70.7	48.1	51.9	7.9	64	3	NA	0
2024-04-14 3:00	63.9	48.1	50.1	7.9	60	1	NA	0
2024-04-14 4:00	68.6	48.2	50.7	7.7	66	8	Cloudy	0
2024-04-14 5:00	70.6	48.3	52.3	7.2	75	7	Rain	0
2024-04-14 6:00	63.8	47.4	51.2	6.4	90	6	Rain	0
2024-04-14 7:00	66.4	44.2	53.8	6.5	98	13	Moderate Rain,Fog	0
2024-04-14 8:00	66.2	42.7	48.1	6.8	99	16	Rain	0
2024-04-14 9:00	64.0	42.6	48.4	9	78	17	NA	0
2024-04-14 10:00	67.4	40.2	46.8	10.2	72	14	Mainly Clear	0
2024-04-14 11:00	63.0	39.8	46.2	11.8	65	11	NA	0
2024-04-14 12:00	64.1	37.4	46.0	12.3	70	8	NA	0
2024-04-14 13:00	63.2	36.3	44.4	14.7	62	4	Mainly Clear	0
2024-04-14 14:00	67.3	35.9	48.9	14.7	60	18	NA	0
2024-04-14 15:00	66.5	37.9	48.2	13.7	64	16	NA	0
2024-04-14 16:00	71.3	39.4	49.8	13.8	63	13	Mostly Cloudy	0
2024-04-14 17:00	73.8	37.7	50.7	15.9	58	10	NA	0
2024-04-14 18:00	72.5	35.5	47.9	15	60	3	NA	0
2024-04-14 19:00	71.1	34.5	47.6	13.3	66	6	Mainly Clear	0
2024-04-14 20:00	68.3	36.5	47.9	12.9	67	9	NA	0
2024-04-14 21:00	69.6	41.3	48.9	13.2	71	9	NA	0
2024-04-14 22:00	78.1	39.8	48.9	10	77	30	Clear	0
2024-04-14 23:00	78.5	42.0	57.3	8.5	82	26	NA	14
2024-04-15 0:00	76.7	47.9	55.1	8.1	79	17	NA	7

2024-04-15 1:00	56.2	47.8	49.5	7.8	79	15	Clear	0
2024-04-15 2:00	76.8	47.6	49.6	6.6	87	12	NA	0
2024-04-15 3:00	56.7	47.6	49.8	6.8	89	16	NA	0
2024-04-15 4:00	57.0	48.0	50.3	7	85	14	Mostly Cloudy	0
2024-04-15 5:00	65.5	48.9	51.9	6	90	16	NA	0
2024-04-15 6:00	61.9	45.8	52.3	5.9	88	13	NA	0
2024-04-15 7:00	64.6	43.1	48.6	6.9	85	19	Mainly Clear	0
2024-04-15 8:00	69.3	41.7	49.9	8.3	76	19	NA	0
2024-04-15 9:00	75.1	39.9	46.4	10	68	11	NA	0
2024-04-15 10:00	70.2	39.6	46.1	11.9	66	9	Mainly Clear	0
2024-04-15 11:00	68.2	38.7	47.0	12.7	54	14	NA	0
2024-04-15 12:00	89.9	40.9	64.7	14.8	45	25	NA	0
2024-04-15 13:00	66.0	40.8	46.6	15.3	39	21	Mostly Cloudy	0
2024-04-15 14:00	67.7	42.1	48.8	15.8	37	24	NA	0
2024-04-15 15:00	74.4	43.3	50.7	15.8	35	27	NA	0
2024-04-15 16:00	67.1	44.2	51.6	16.4	32	36	Mostly Cloudy	0
2024-04-15 17:00	67.4	43.6	51.4	15.7	32	38	NA	0
2024-04-15 18:00	70.8	42.5	51.0	14.7	35	25	NA	0
2024-04-15 19:00	65.1	41.4	49.9	13.5	34	32	Mainly Clear	0
2024-04-15 20:00	65.6	40.8	49.7	12.8	38	22	NA	0
2024-04-15 21:00	74.3	40.0	48.5	12.2	41	17	NA	0
2024-04-15 22:00	62.1	41.4	48.3	9.8	52	12	Mostly Cloudy	0
2024-04-15 23:00	63.2	41.5	50.4	9	55	13	NA	0

2024-04-16 0:00	62.8	47.3	50.9	8.1	59	16	NA	0
2024-04-16 1:00	64.1	47.3	49.3	7.6	60	16	Clear	0
2024-04-16 2:00	65.1	47.3	49.7	8.1	59	17	NA	0
2024-04-16 3:00	63.0	47.3	49.2	7	61	17	NA	0
2024-04-16 4:00	56.8	47.4	50.6	6.6	61	18	Clear	0
2024-04-16 5:00	64.6	49.7	54.1	6.9	59	19	NA	0
2024-04-16 6:00	71.6	52.2	56.7	6.5	62	16	NA	0
2024-04-16 7:00	63.3	54.4	57.0	7.8	59	13	Clear	1
2024-04-16 8:00	60.4	47.3	53.2	9.9	53	14	NA	3
2024-04-16 9:00	73.9	40.8	50.9	11.7	50	7	NA	1

	High Humidity (>90%)
	High Wind (>20 km/h)
	Rain

Note: Highlighted cells indicate periods where the weather conditions were not consistent with good measurement practices and should be excluded from detailed analysis as the adverse weather conditions may have impacted the quality of the collected noise data.

Table 2: Noise Monitoring Data with Weather Details (highlights) at City of Vaughan Location

Start Time	LAFmax	LAFmin	LAeq	Temp (°C)	Rel Hum (%)	Wind Spd (km/h)	Weather	Runway 5 Departures
2024-04-08 10:00	75.9	42.7	57.7	9.5	43	10	Mostly Cloudy	35
2024-04-08 11:00	79.2	42.9	58.2	10.2	42	7	NA	20
2024-04-08 12:00	86.8	43.2	59.2	11.3	33	9	NA	28
2024-04-08 13:00	74.1	40.1	57.5	12.4	32	12	Mostly Cloudy	23
2024-04-08 14:00	73.7	38.6	56.9	11.3	35	12	NA	26
2024-04-08 15:00	76.7	39.0	57.7	10.8	44	8	NA	34
2024-04-08 16:00	80.0	41.3	58.6	13	36	8	Mainly Clear	17
2024-04-08 17:00	85.0	38.9	60.6	13.1	34	9	NA	36
2024-04-08 18:00	78.1	41.0	57.5	12.8	35	9	NA	11
2024-04-08 19:00	83.3	39.2	58.2	10.4	45	8	Clear	5
2024-04-08 20:00	73.1	41.3	55.9	7.5	59	7	NA	0
2024-04-08 21:00	68.9	40.6	54.9	7.1	61	2	NA	0
2024-04-08 22:00	69.7	40.5	52.8	7.1	61	4	Clear	0
2024-04-08 23:00	67.2	42.2	52.0	7.1	60	4	NA	0
2024-04-09 0:00	69.2	41.1	50.2	6.6	60	3	NA	0
2024-04-09 1:00	64.9	41.2	48.0	5.9	62	7	Clear	0
2024-04-09 2:00	69.0	40.4	48.2	5.6	64	4	NA	0
2024-04-09 3:00	64.5	40.0	47.4	5.7	65	1	NA	0
2024-04-09 4:00	67.6	39.6	49.0	4.5	70	1	Clear	0
2024-04-09 5:00	70.2	42.0	53.2	5.1	68	2	NA	0

2024-04-09 6:00	72.9	46.3	57.3	5.4	67	1	NA	0
2024-04-09 7:00	89.7	48.9	62.0	7.1	66	5	Mostly Cloudy	0
2024-04-09 8:00	76.2	49.3	59.5	9.2	57	6	NA	0
2024-04-09 9:00	82.3	45.2	58.2	11.3	53	9	NA	0
2024-04-09 10:00	75.7	43.8	57.1	13.7	50	10	Mostly Cloudy	0
2024-04-09 11:00	79.7	43.6	58.2	14	51	11	NA	0
2024-04-09 12:00	71.8	42.8	57.9	15.5	52	12	NA	0
2024-04-09 13:00	82.8	43.2	57.9	16.7	48	19	Mainly Clear	0
2024-04-09 14:00	80.5	42.4	58.6	16.8	48	20	NA	0
2024-04-09 15:00	75.6	43.8	58.3	17.7	43	22	NA	0
2024-04-09 16:00	76.6	44.1	58.9	17.9	41	20	Mainly Clear	0
2024-04-09 17:00	82.1	43.8	59.9	17.4	47	15	NA	0
2024-04-09 18:00	78.8	44.4	59.3	16.5	52	13	NA	0
2024-04-09 19:00	74.6	44.6	57.4	14.6	58	10	Mainly Clear	0
2024-04-09 20:00	78.8	44.0	56.9	12.9	62	8	NA	0
2024-04-09 22:00	82.9	39.4	55.9	12.6	68	16	Mostly Cloudy	0
2024-04-09 23:00	67.8	35.8	51.0	14.2	58	4	NA	0
2024-04-10 0:00	65.9	33.3	47.5	12.4	68	10	NA	0
2024-04-10 1:00	65.9	32.3	45.1	11.2	69	3	Mostly Cloudy	0
2024-04-10 2:00	69.3	32.4	44.4	11.4	71	7	NA	0
2024-04-10 3:00	66.2	32.5	44.0	11.4	63	17	NA	0
2024-04-10 4:00	70.1	35.2	47.4	10.1	70	12	Mostly Cloudy	0
2024-04-10 5:00	70.8	39.6	52.5	9.5	72	18	NA	0

2024-04-10 6:00	72.5	42.2	56.3	9.3	71	17	NA	0
2024-04-10 7:00	75.8	44.6	58.0	9.2	72	9	Mostly Cloudy	0
2024-04-10 8:00	71.1	45.3	58.7	10.8	64	8	NA	0
2024-04-10 9:00	92.7	41.2	60.0	13.1	54	6	NA	0
2024-04-10 10:00	80.4	37.6	57.0	15.4	50	14	Mostly Cloudy	0
2024-04-10 11:00	83.6	38.8	58.0	16.7	42	18	NA	0
2024-04-10 12:00	81.6	38.6	57.6	16.9	41	14	NA	0
2024-04-10 13:00	73.1	38.2	56.6	17.6	35	22	Mostly Cloudy	0
2024-04-10 14:00	87.8	38.0	62.7	17.9	34	22	NA	0
2024-04-10 15:00	80.9	40.0	62.0	18.2	35	15	NA	0
2024-04-10 16:00	80.1	39.3	58.5	18.2	36	19	Mostly Cloudy	0
2024-04-10 17:00	83.3	39.8	58.2	17.5	36	12	NA	0
2024-04-10 18:00	90.2	38.5	59.9	16.3	41	17	NA	0
2024-04-10 19:00	83.3	40.6	58.2	14.3	46	18	Mostly Cloudy	11
2024-04-10 20:00	76.6	39.2	56.6	13.5	42	12	NA	24
2024-04-10 21:00	77.0	39.6	56.3	13.8	42	7	NA	35
2024-04-10 22:00	90.9	38.9	58.4	13.6	43	5	Mostly Cloudy	20
2024-04-10 23:00	67.9	38.9	52.1	13.2	45	6	NA	18
2024-04-11 0:00	71.4	39.0	49.7	12.9	47	7	NA	0
2024-04-11 1:00	67.6	37.3	48.4	12.6	48	8	Cloudy	0
2024-04-11 2:00	67.3	37.3	46.3	12.3	48	10	NA	0
2024-04-11 3:00	72.8	38.0	47.9	11.4	60	8	Rain	0
2024-04-11 4:00	69.1	38.6	52.5	9.7	75	9	Rain,Fog	0

2024-04-11 5:00	69.1	44.2	56.7	8.7	88	13	Rain,Fog	0
2024-04-11 6:00	70.5	48.2	60.5	8.1	98	12	Moderate Rain,Fog	0
2024-04-11 8:00	71.4	50.3	63.0	8.5	99	15	Rain,Fog	13
2024-04-11 9:00	77.6	50.1	62.1	9.2	100	16	Rain,Fog	17
2024-04-11 10:00	79.9	49.3	61.6	9.9	100	23	Rain,Fog	29
2024-04-11 11:00	71.4	48.1	61.7	10.1	100	14	Rain,Fog	23
2024-04-11 12:00	72.5	48.6	62.4	10.5	100	12	Moderate Rain,Fog	21
2024-04-11 13:00	80.6	48.2	62.2	11.3	100	11	Rain,Fog	27
2024-04-11 14:00	72.7	50.4	62.6	11.9	100	12	Rain,Fog	37
2024-04-11 15:00	77.9	48.0	62.2	12.6	100	6	Rain,Fog	30
2024-04-11 16:00	79.5	48.3	62.8	12.8	100	7	Heavy Rain,Fog	21
2024-04-11 17:00	77.6	50.4	65.0	12.7	100	9	Rain,Fog	38
2024-04-11 18:00	78.4	49.2	63.1	12.8	100	10	Rain,Fog	30
2024-04-11 19:00	76.4	48.9	61.7	13.1	100	5	Rain,Fog	13
2024-04-11 20:00	70.5	46.8	60.2	14	100	10	Moderate Rain,Fog	18
2024-04-11 21:00	78.0	46.1	60.6	14.3	100	18	Rain,Fog	32
2024-04-11 22:00	71.9	44.4	58.4	13.8	100	12	Rain,Fog	28
2024-04-11 23:00	69.2	43.0	55.8	13.2	100	13	Rain,Fog	18
2024-04-12 0:00	76.0	39.2	53.4	12.3	100	11	Rain,Fog	8
2024-04-12 1:00	68.4	40.2	51.5	12.5	100	7	Rain,Fog	5
2024-04-12 2:00	67.1	40.4	49.3	12.7	100	7	Rain,Fog	4
2024-04-12 3:00	71.1	40.2	51.2	12.7	100	7	Rain,Fog	1
2024-04-12 4:00	68.6	41.4	52.5	12.6	100	5	Rain,Fog	1

2024-04-12 5:00	74.0	43.9	56.2	12.4	100	5	Rain,Fog	0
2024-04-12 6:00	71.2	44.8	60.2	12.2	100	7	Rain,Fog	0
2024-04-12 7:00	74.3	47.2	61.7	10.8	100	14	Rain,Fog	0
2024-04-12 8:00	77.7	45.5	62.3	8.2	100	32	Rain,Fog	0
2024-04-12 9:00	75.6	45.1	61.7	7.9	98	28	Rain	0
2024-04-12 10:00	73.8	45.7	61.0	7.9	93	27	Rain	0
2024-04-12 11:00	73.7	44.8	60.4	8.5	89	33	Rain	0
2024-04-12 12:00	73.6	45.5	59.9	8.8	86	39	Rain	0
2024-04-12 13:00	74.8	43.6	59.2	8.6	87	42	Rain	0
2024-04-12 14:00	73.7	45.1	59.7	8.8	84	36	Rain	0
2024-04-12 15:00	73.0	43.7	59.2	8.8	83	32	Rain	0
2024-04-12 16:00	76.3	44.4	60.2	8.8	80	36	Rain	0
2024-04-12 17:00	86.2	44.5	61.1	7.6	83	29	Rain	0
2024-04-12 18:00	75.3	42.6	58.9	6.6	86	31	Rain	0
2024-04-12 19:00	71.0	42.6	60.1	6	86	32	Rain	0
2024-04-12 20:00	73.0	42.6	58.8	5.3	87	37	Rain	0
2024-04-12 21:00	76.3	42.6	57.9	4.8	86	37	Rain	0
2024-04-12 22:00	72.8	42.8	57.4	5.4	79	42	Cloudy	0
2024-04-12 23:00	69.4	41.0	55.2	5.4	80	39	NA	0
2024-04-13 0:00	71.5	39.8	54.3	4.7	85	40	Rain	0
2024-04-13 1:00	69.2	39.2	52.7	4.4	87	40	Rain	0
2024-04-13 2:00	70.4	38.6	50.8	4.2	84	44	NA	0
2024-04-13 3:00	67.8	37.3	48.7	4.2	83	41	Rain	0

2024-04-13 4:00	71.0	37.4	49.1	3.9	89	35	Rain	0
2024-04-13 5:00	71.6	38.8	52.8	4.1	86	42	Rain	0
2024-04-13 6:00	71.3	40.1	54.4	4.3	84	40	Rain	0
2024-04-13 7:00	73.6	41.2	56.7	4.7	80	40	Cloudy	0
2024-04-13 8:00	74.3	41.8	58.0	5.2	78	41	NA	0
2024-04-13 9:00	73.9	44.7	58.4	5.3	76	45	NA	0
2024-04-13 10:00	78.6	45.0	58.4	6.1	69	48	Cloudy	0
2024-04-13 11:00	77.1	43.9	58.0	7.3	62	48	NA	0
2024-04-13 12:00	80.4	44.4	58.4	7.7	61	43	NA	0
2024-04-13 13:00	77.3	45.7	57.5	8.2	58	41	Mostly Cloudy	0
2024-04-13 14:00	81.4	43.1	58.7	10	52	46	NA	0
2024-04-13 15:00	70.1	43.0	56.9	11.4	48	42	NA	0
2024-04-13 16:00	74.1	41.5	57.2	11.2	45	49	Mainly Clear	0
2024-04-13 17:00	79.7	42.7	56.8	11.4	44	44	NA	0
2024-04-13 18:00	80.4	42.1	57.4	10.8	41	36	NA	0
2024-04-13 19:00	83.6	39.8	57.4	9.7	49	17	Clear	0
2024-04-13 20:00	85.7	38.6	58.9	8.6	54	14	NA	0
2024-04-13 21:00	74.8	37.9	54.5	8.2	56	7	NA	0
2024-04-13 22:00	73.8	37.1	53.8	7.4	60	8	Mainly Clear	0
2024-04-13 23:00	72.2	37.8	53.0	7.8	62	3	NA	0
2024-04-14 0:00	70.9	36.9	52.1	7	70	8	NA	0
2024-04-14 1:00	73.3	35.0	50.7	7.5	70	5	Rain	0
2024-04-14 2:00	68.4	34.4	48.9	7.9	64	3	NA	0

2024-04-14 3:00	68.6	34.5	45.9	7.9	60	1	NA	0
2024-04-14 4:00	66.7	34.5	51.5	7.7	66	8	Cloudy	0
2024-04-14 5:00	77.9	35.0	51.1	7.2	75	7	Rain	0
2024-04-14 6:00	70.2	37.6	53.4	6.4	90	6	Rain	0
2024-04-14 7:00	70.8	42.8	55.6	6.5	98	13	Moderate Rain,Fog	0
2024-04-14 8:00	70.6	43.6	57.2	6.8	99	16	Rain	0
2024-04-14 9:00	73.9	43.6	57.6	9	78	17	NA	0
2024-04-14 10:00	69.4	41.7	57.2	10.2	72	14	Mainly Clear	0
2024-04-14 11:00	81.1	41.4	57.5	11.8	65	11	NA	0
2024-04-14 12:00	80.2	38.7	57.5	12.3	70	8	NA	0
2024-04-14 13:00	81.1	38.5	57.0	14.7	62	4	Mainly Clear	0
2024-04-14 14:00	85.3	36.6	58.5	14.7	60	18	NA	0
2024-04-14 15:00	75.4	38.9	57.1	13.7	64	16	NA	0
2024-04-14 16:00	82.5	40.8	59.1	13.8	63	13	Mostly Cloudy	0
2024-04-14 17:00	81.7	40.4	57.6	15.9	58	10	NA	0
2024-04-14 18:00	76.4	38.8	56.4	15	60	3	NA	0
2024-04-14 19:00	75.9	35.8	56.8	13.3	66	6	Mainly Clear	0
2024-04-14 20:00	80.3	39.7	56.9	12.9	67	9	NA	0
2024-04-14 21:00	75.9	37.0	54.4	13.2	71	9	NA	0
2024-04-14 22:00	76.5	37.3	52.9	10	77	30	Clear	0
2024-04-14 23:00	66.0	34.1	51.2	8.5	82	26	NA	14
2024-04-15 0:00	72.7	33.7	49.9	8.1	79	17	NA	7
2024-04-15 1:00	63.3	33.9	45.7	7.8	79	15	Clear	0

2024-04-15 2:00	64.6	32.9	42.5	6.6	87	12	NA	0
2024-04-15 3:00	78.2	32.8	45.7	6.8	89	16	NA	0
2024-04-15 4:00	67.6	33.0	46.3	7	85	14	Mostly Cloudy	0
2024-04-15 5:00	75.1	35.9	53.1	6	90	16	NA	0
2024-04-15 6:00	87.2	41.2	58.1	5.9	88	13	NA	0
2024-04-15 7:00	85.0	42.6	58.8	6.9	85	19	Mainly Clear	0
2024-04-15 8:00	81.7	42.2	67.3	8.3	76	19	NA	0
2024-04-15 9:00	82.2	40.0	70.1	10	68	11	NA	0
2024-04-15 10:00	74.0	36.6	59.1	11.9	66	9	Mainly Clear	0
2024-04-15 11:00	77.5	38.3	60.7	12.7	54	14	NA	0
2024-04-15 12:00	77.3	38.1	59.0	14.8	45	25	NA	0
2024-04-15 13:00	74.0	36.7	56.7	15.3	39	21	Mostly Cloudy	0
2024-04-15 14:00	79.7	40.6	57.1	15.8	37	24	NA	0
2024-04-15 15:00	85.9	43.2	65.9	15.8	35	27	NA	0
2024-04-15 16:00	90.2	43.2	60.3	16.4	32	36	Mostly Cloudy	0
2024-04-15 17:00	77.8	41.5	58.4	15.7	32	38	NA	0
2024-04-15 18:00	80.3	42.3	59.0	14.7	35	25	NA	0
2024-04-15 19:00	77.7	38.5	56.3	13.5	34	32	Mainly Clear	0
2024-04-15 20:00	77.5	38.0	56.1	12.8	38	22	NA	0
2024-04-15 21:00	76.2	37.6	54.9	12.2	41	17	NA	0
2024-04-15 22:00	68.1	35.5	52.7	9.8	52	12	Mostly Cloudy	0
2024-04-15 23:00	67.5	34.8	51.5	9	55	13	NA	0
2024-04-16 0:00	68.8	33.6	48.5	8.1	59	16	NA	0

2024-04-16 1:00	69.7	34.2	47.0	7.6	60	16	Clear	0
2024-04-16 2:00	69.4	33.5	45.0	8.1	59	17	NA	0
2024-04-16 3:00	71.8	34.6	45.5	7	61	17	NA	0
2024-04-16 4:00	69.4	36.1	47.8	6.6	61	18	Clear	0
2024-04-16 5:00	75.6	38.9	53.5	6.9	59	19	NA	0
2024-04-16 6:00	74.5	46.2	57.6	6.5	62	16	NA	0
2024-04-16 7:00	74.6	48.5	58.9	7.8	59	13	Clear	1
2024-04-16 8:00	71.4	45.5	59.1	9.9	53	14	NA	3

	High Humidity (>90%)
	High Wind (>20 km/h)
	Rain

Note: Highlighted cells indicate periods where the weather conditions were not consistent with good measurement practices and should be excluded from detailed analysis as the adverse weather conditions may have impacted the quality of the collected noise data.