Flat Creek Solar Project

PRE-CONSTRUCTION SOUND LEVEL MEASUREMENT PROGRAM

Prepared for:

TRC
215 Greenfield Parkway, Suite 102
Liverpool, NY 13088

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1.0 BASELINE SOUND LEVEL MONITORING PROGRAM

To characterize the existing soundscape of the Project area, an ambient (baseline) monitoring program was conducted in accordance with the NYS Office of Renewable Energy (ORES) Section 94-c Section 900-2.8(i) Exhibit 7: Noise and Vibration requirements. This section outlines the methodology and results of the ambient program.

1.1 Sound Level Measurement Locations

In accordance with ANSI S12.9-1992/Part 2 (R2013), the deterministic spatial sampling technique was used to select measurement locations. In other words, sound monitoring locations were selected to be representative of nearby residences in various directions from the solar project. Thus, the selected locations are representative of potentially impacted receptors. The program was intended to measure total ambient sound in the area which includes all noise sources.

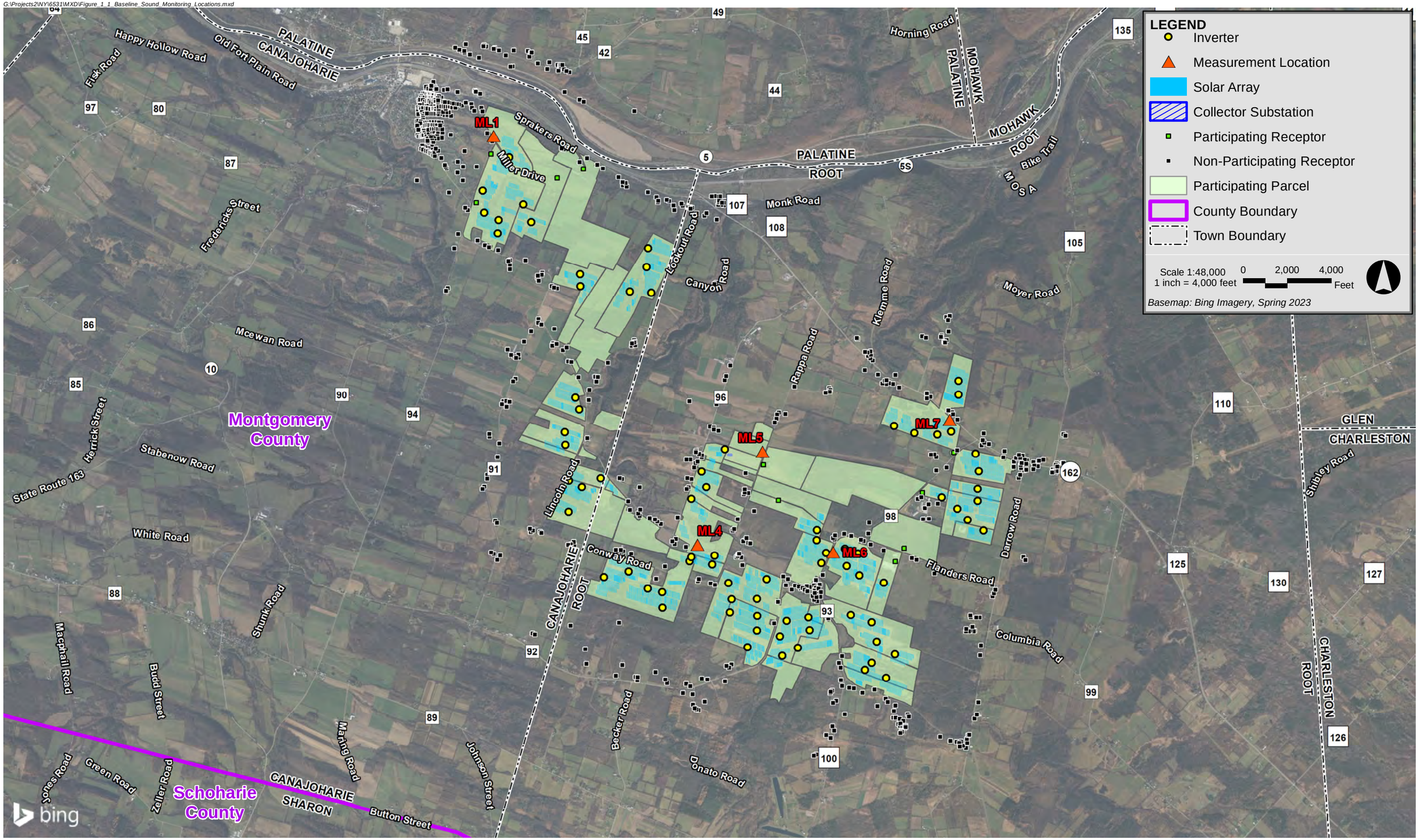
One sound level measurement program was conducted at five (5) locations for approximately eight (8) days which is well beyond the minimum requirement of four (4) days for a solar facility in the Section 94-c regulations. Figure 1-1 shows the measurement locations for the measurement program. The ambient measurement locations are representative of the general vicinity of the Project. Each sound level monitoring location is described in the following subsections.

The coordinates for the sound level measurement locations are listed in Table 1-1, which were slightly adjusted as needed from the field-measured Global Positioning System (GPS) points for refined accuracy.

Table 1-1 GPS Coordinates – Sound Level Measurement Locations

Location	Latitude	Longitude
Location 1	42.899334°	-74.555099°
Location 4	42.848323°	-74.520992°
Location 5	42.859881°	-74.509912°
Location 6	42.847329°	-74.498061°
Location 7	42.863719°	-74.478228°

G:\Projects2\NY\6531\MXD\Figure_1_1_Baseline_Sound_Monitoring_Locations.mxd



Flat Creek Solar **Montgomery County, New York**

Epsilon Associates Inc.

Figure 1-1
Baseline Sound Monitoring Locations

1.1.1 Location 1— Cunningham Road

One continuous programmable, unattended sound level meter was placed near Cunningham Road in the Town of Canajoharie. The meter was placed approximately 100 feet northeast of the road. This location is representative of existing sound levels on the northwestern area of the project site and along Cunningham Road. The monitoring setup is shown in Figure 1-2 Location 1 - Sound Level Meter

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The meter continuously measured and stored broadband (A-weighted) and one-third octave band sound level statistics from 2:00 p.m. Tuesday, December 12, 2023 until 8:40 a.m. on Wednesday, December 20, 2023. In total, 1,120 10-minute measurement periods were recorded during the measurement program.

In addition to sound data collection, continuous ground-level wind speed data were collected at this location. The meteorological equipment setup is shown in Figure 1-3.

Figure 1-2 Location 1 - Sound Level Meter

Figure 1-3 Location 1 - Meteorological Tower

1.1.2 Location 4— Carlisle Road

One continuous programmable, unattended sound level meter was placed near Carlisle Road in the Town of Root. The meter was placed approximately 150 feet southeast of the road and is representative of existing sound levels on the southern area of the Project Site and along Carlisle Road. The monitoring setup is shown in

Figure 1-4.

The meter continuously measured and stored broadband (A-weighted) and one-third octave band sound level statistics from 12:40 p.m. Tuesday, December 12, 2023 until 9:40 a.m. on Wednesday, December 20, 2023. In total, 1,134 10-minute measurement periods were recorded during the measurement program.

In addition to sound data collection, continuous ground-level wind speed data were collected at this location. The meteorological equipment setup is shown in Figure 1-5.

Figure 1-4 Location 4 – Sound Level Meter

Figure 1-5 Location 4 - Meteorological Tower

1.1.3 Location 5 – Rappa Road

One continuous programmable, unattended sound level meter was placed near Rappa Road in the Town of Root. The meter was placed approximately 100 feet west of Rappa Road and is representative of existing sound levels on the central area of the Project Site and near Olmstead Cemetery. The monitoring setup is shown in Figure 1-6.

The meter continuously measured and stored broadband (A-weighted) and one-third octave band sound level statistics from 11:40 a.m. Tuesday, December 12, 2023 until 10:20 a.m. on Wednesday, December 20, 2023. In total, 1,144 10-minute measurement periods were recorded during the measurement program.

Figure 1-6 Location 5 – Sound Level Meter

1.1.4 Location 6 – Flat Creek Road

One continuous programmable, unattended sound level meter was placed near Flat Creek Road in the Town of Root. The meter was placed approximately 80 feet northwest of the road and is representative of existing sound levels on the southeastern area of the Project Site and along Flat Creek Road. The monitoring setup is shown in Figure 1-7.

The meter continuously measured and stored broadband (A-weighted) and one-third octave band sound level statistics from 11:10 a.m. Tuesday, December 12, 2023 until 11:20 a.m. on Wednesday, December 20, 2023. In total, 1,153 10-minute measurement periods were recorded during the measurement program.

Figure 1-7 Location 6 – Sound Level Meter

1.1.5 Location 7 – State Route 162

One continuous programmable, unattended sound level meter was placed near Route 162 in the Town of Root. The meter was placed approximately 100 feet northwest of the road and is representative of existing sound levels on the northeastern area of the Project Site and along State Route 162. The monitoring setup is shown in Figure 1-8.

The meter continuously measured and stored broadband (A-weighted) and one-third octave band sound level statistics from 12:40 p.m. Tuesday, December 12, 2023, until 10:40 a.m. on Wednesday, December 20, 2023. In total, 1,142 10-minute measurement periods were recorded during the measurement program.

In addition to sound data collection, continuous ground-level wind speed data and precipitation data were collected at this location. The meteorological equipment setup is shown in Figure 1-9.

Figure 1-8 Location 7 – Sound Level Meter

Figure 1-9 Location 7 - Meteorological Tower

1.2 Sound Level Measurement Instrumentation

Each of the monitoring locations used a Larson Davis (LD) model 831[1] or model 831C[2] sound level meter (SLM) to measure both A-weighted (dBA) and one third octave bands from 6.3Hz to 20,000Hz. A one-second time history data collection using the "fast" response setting was also implemented. The meters logged data every 10-minutes with statistical data for the L_{eq} and L_{90} among other parameters.

Each instrument was equipped with a LD PRM 831 preamplifier and a PCB 377B20, PCB 377C20, or a PCB 377B02 half inch microphone, along with an environmental protection kit. The kit included a 7-inch open cell foam wind screen to reduce wind-induced noise over the microphone. A peer-reviewed study presenting the windscreen insertion loss data by one-third octave band for each wind screen used in the background monitoring is provided in Appendix A. Since all measured sound level results are presented in terms of ANS weighting (see discussion in section 2.1), frequencies above 1250 Hz are not included, and thus the minor microphone insertion losses at higher frequencies are not relevant.

Microphones were tripod-mounted at a height of approximately five feet (1.5 meters) above ground level in accordance with ANSI S12.9-1992/Part 2 (R2013). Horizontal microphone placements near roadways were in accordance with ANSI S12.9-1992/Part 2 (R2013) for open land.

The LD831 and LD831C meters meet Type 1 ANSI/ASA S1.4, ANSI S1.43-1997 (R2007), and IEC 61672 Class 1 standards for sound level meters and were calibrated and certified as accurate to standards set by the National Institute of Standards and Technology. The octave band filters for all instrumentation meet ANSI S1.11-2004 (R2009). These calibrations were conducted by an independent laboratory within 12 months of field placement and certificates of calibration are provided in Appendix B. All measurement equipment was calibrated in the field before and after the surveys with the manufacturer's acoustical calibrator which meets the standards of IEC 60942-2003 Class 1L and ANSI/ASA S1.40-2006 (R2016).

1.3 Meteorological Instrumentation

1.3.1 Ground Level Winds

Wind speed can have a strong influence on ambient sound levels. In order to understand how the existing sound levels are influenced by wind speed, a HOBO H21-USB micro-weather station and data logger (manufactured by Onset Computer Corporation) with tripod was used to continuously measure the ground-level wind speed at Locations 1, 4 and 7.

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[1] Noise floor specified in manufacturer's manual with use of PRM831 preamplifier and 377B20 microphone for A-weighted sound pressure levels is 18dBA at a 0dB gain and 17dBA at a 20dB gain. Noise floor specified for Z-weighted sound pressure levels is 23dBA at a 0dB gain and 21dBA at a 20dB gain.

[2] Noise floor specified in manufacturer's manual with use of PRM831 preamplifier and 377B02 microphone for A-weighted sound pressure levels is 16dBA at a 0dB gain and 16dBA at a 20dB gain. Noise floor specified for Z-weighted sound pressure levels is 23dBA at a 0dB gain and 23dBA at a 20dB gain.

The HOBO wind instruments have a measurement range of 0 to 44 m/s (99 mph) or 0 to 76 m/s (170 mph) and an accuracy of +/- 0.5 m/s (1.1 mph) or +/- 1.1 m/s (2.4 mph). The starting threshold is 0.5 m/s (1.1 mph) or ≤1.0 m/s (2.2 mph).

1.3.2 Precipitation, Temperature, and Relative Humidity

Precipitation, temperature, and relative humidity data from the New York State MesoNet system were collected during the measurements. The New York State MesoNet consists of 126 state-of-the-art environmental monitoring stations and serves as the foundation of an Early Warning Severe Weather Detection network for the entire State of New York. The New York State MesoNet was developed by research scientists at the State University of New York (SUNY) at Albany's Atmospheric Sciences Research Center, and Department of Atmospheric and Environmental Sciences. MesoNet sites are distributed statewide with every county across New York having at least one or more sites. The MesoNet collects measurements of several surface and atmospheric variables, such as temperature, relative humidity, wind speed and direction, surface pressure, soil moisture, soil temperature, solar radiation, and precipitation amounts for rainfall and snow accumulation. These data are archived and available to the public.

The Sprakers MesoNet station is located approximately 5 miles south-southwest from the closest Flat Creek Solar sound level measurement location. This MesoNet station is the closest to the Project site. The SUNY MesoNet data from the Sprakers station is provided in Appendix C of this report.

1.4 Low Frequency and Infrasound Monitoring

Although not relevant to solar energy projects, all monitoring locations were equipped to measure existing levels of low frequency and infrasound down to 6.3 Hz for informational purposes.

2.0 BASELINE SOUND LEVEL MONITORING RESULTS

This chapter discusses the results from the detailed ambient (baseline) monitoring program outlined in the previous chapter. Specifically, the logic for data validity, and sound level result descriptions for the monitoring locations are explained.

2.1 Data Formatting Overview

Sound level data were collected in 10-minute intervals[3] at five strategically selected locations around the proposed solar energy project. Monitoring periods that experienced elevated ground-level wind speeds or precipitation were excluded from the data analysis per Method #1 in ANSI S12.18-1994. According to this standard, "No sound level measurement shall be made when the average wind velocity exceeds 5 m/s when measured at a height of 2±0.2 m above the ground". In addition, "Measurement during precipitation […] is highly discouraged". Precipitation events identified at the SUNY MesoNet station in Sprakers, NY defined periods for which sound level data were excluded from the analysis for the measurement program. By convention, daytime is defined as the hours from 7:00 AM through 9:59 PM and nighttime is defined as the hours from 10:00 PM through 6:59 AM.

The sound level equipment used in ambient monitoring have specifications regarding operative ranges under certain air conditions, e.g., temperature and relative humidity.[4,5] Data from the Sprakers MesoNet station was additionally referenced for the range exceedances during all measurement timeframes. Sound levels during these exceedances were excluded from further processing.

Intermittent noise was automatically filtered by using the L_{90} statistic. Seasonal noise was removed from the ambient sound level measurements regardless of season. A high-frequency natural sound (HFNS) filter was applied to the measured one-third octave-band data from which a broadband sound level was calculated for the monitoring period. This technique removes all sound energy above the 1,250 Hertz frequency band. The methodology for the filtration process is as specified in ANSI/ASA S12.100-2014 as required by Section 900-2.8(i) of the Section 94-c regulations. The calculated sound pressure levels presented in Chapter 3 of this report using this methodology are indicated as ANS-weighted levels (presented in dBA). The "as-measured"

[3] It should be noted that all sound level instrumentation and ground level meteorological instrumentation were time-synchronized to align the monitoring periods.

[4] Periods measured outside the temperature range of 14°F to 122°F were considered invalid due to the Larson Davis Model 831 SLM specifications.

[5] Periods measured outside the relative humidity range of 1 to 99% were considered invalid based on microphone specifications. The accuracy of sound levels measured with a Larson Davis Model 831 SLM outside the relative humidity range of 25% to 90% is unknown; however, the data are not considered invalid and are included in the data summaries.

broadband A-weighted (dBA) L_{eq} and L_{90} and one-third octave band ambient sound levels are presented graphically for each location in the following subsections. The one-third octave-band data span the frequencies from 12.5 Hz to 10,000 Hz.

2.2 Location 1 – Cunningham Road

Sound levels at Location 1 were influenced by distant traffic from the interstate and occasionally local traffic, wind, distant train horns, and occasional birds chirping. The measured A-weighted L_{eq} and L_{90} sound pressure levels during the measurement program are presented graphically in Figure 2-1. This figure includes ground-level wind speeds measured at Location 1. Data that were excluded from further analysis due to ground-level winds exceeding 5 m/s measured within the project area, or precipitation or instrumentation operative exceedances as recorded at the Sprakers MesoNet station, are identified in the figure. A total of 155 10-minute periods were excluded from the measurement analysis. The resulting dataset includes a total of 965 10-minute periods of valid data.

In addition to broadband sound levels, spectral sound level data were measured during each 10-minute period at Location 1 during the measurement program. Using only valid measurement periods, one-third octave-band data are summarized in Figure 2-2, as logarithmic averages of the equivalent (L_{eq}) sound levels; separated by daytime and nighttime.

2.3 Location 4 – Carlisle Road

Sound levels at Location 4 were influenced by traffic, wind, aircraft, distant train horns, and distant gunshots. The measured A-weighted L_{eq} and L_{90} sound pressure levels during the measurement program are presented graphically in Figure 2-3. This figure includes ground-level wind speeds measured at Location 4. Data that were excluded from further analysis due to ground-level winds exceeding 5 m/s measured within the project area, or precipitation or instrumentation operative exceedances as recorded at the Sprakers MesoNet station, are identified in the figure. A total of 227 10-minute periods were excluded from the measurement analysis. The resulting dataset includes a total of 907 10-minute periods of valid data.

In addition to broadband sound levels, spectral sound level data were measured during each 10-minute period at Location 4 during the measurement program. Using only valid measurement periods, one-third octave-band data are summarized in Figure 2-4, as logarithmic averages of the equivalent (L_{eq}) sound levels; separated by daytime and nighttime.

2.4 Location 5 – Rappa Road

Sound levels at Location 5 were influenced by distant farming equipment, backup alarms, birds chirping, occasional local traffic, wind, and corona noise. The measured A-weighted L_{eq} and L_{90} sound pressure levels during the measurement program are presented graphically in Figure 2-5. This figure includes ground-level wind speeds measured at Location 4. Data that were excluded from further analysis due to ground-level winds exceeding 5 m/s measured within the project area, or precipitation or instrumentation operative exceedances as recorded at the Sprakers MesoNet station, are identified in the figure. A total of 228 10-minute periods were excluded from the measurement analysis. The resulting dataset includes a total of 916 10-minute periods of valid data.

In addition to broadband sound levels, spectral sound level data were measured during each 10-minute period at Location 5 during the measurement program. Using only valid measurement periods, one-third octave-band data are summarized in Figure 2-6, as logarithmic averages of the equivalent (L_{eq}) sound levels; separated by daytime and nighttime.

2.5 Location 6 – Flat Creek Road

Sound levels at Location 6 were influenced by distant traffic on Interstate 93 and Interstate 92, birds chirping, wind, occasional local traffic, and dogs barking. The measured A-weighted L_{eq} and L_{90} sound pressure levels during the measurement program are presented graphically in Figure 2-7. This figure includes ground-level wind speeds measured at Location 7. Data that were excluded from further analysis due to ground-level winds exceeding 5 m/s measured within the project area, or precipitation or instrumentation operative exceedances as recorded at the Sprakers MesoNet station, are identified in the figure. A total of 185 10-minute periods were excluded from the measurement analysis. The resulting dataset includes a total of 968 10-minute periods of valid data.

In addition to broadband sound levels, spectral sound level data were measured during each 10-minute period at Location 6 during the measurement program. Using only valid measurement periods, one-third octave-band data are summarized in Figure 2-8, as logarithmic averages of the equivalent (L_{eq}) sound levels; separated by daytime and nighttime.

2.6 Location 7 – State Route 162

Sound levels at Location 7 were influenced by mechanical noise from a local business, traffic along route 162, traffic to the south of the measurement location, and wind. The measured A-weighted L_{eq} and L_{90} sound pressure levels during the measurement program are presented graphically in Figure 2-9. This figure includes ground-level wind speeds measured at Location 7. Data that were excluded from further analysis due to ground-level winds exceeding 5 m/s measured within the project area, or precipitation or instrumentation operative exceedances as recorded at the Sprakers MesoNet station, are identified in the figure. A total of 185 10-minute periods were excluded from the measurement analysis. The resulting dataset includes a total of 957 10-minute periods of valid data.

In addition to broadband sound levels, spectral sound level data were measured during each 10-minute period at Location 7 during the measurement program. Using only valid measurement periods, one-third octave-band data are summarized in Figure 2-10, as logarithmic averages of the equivalent (L_{eq}) sound levels; separated by daytime and nighttime.

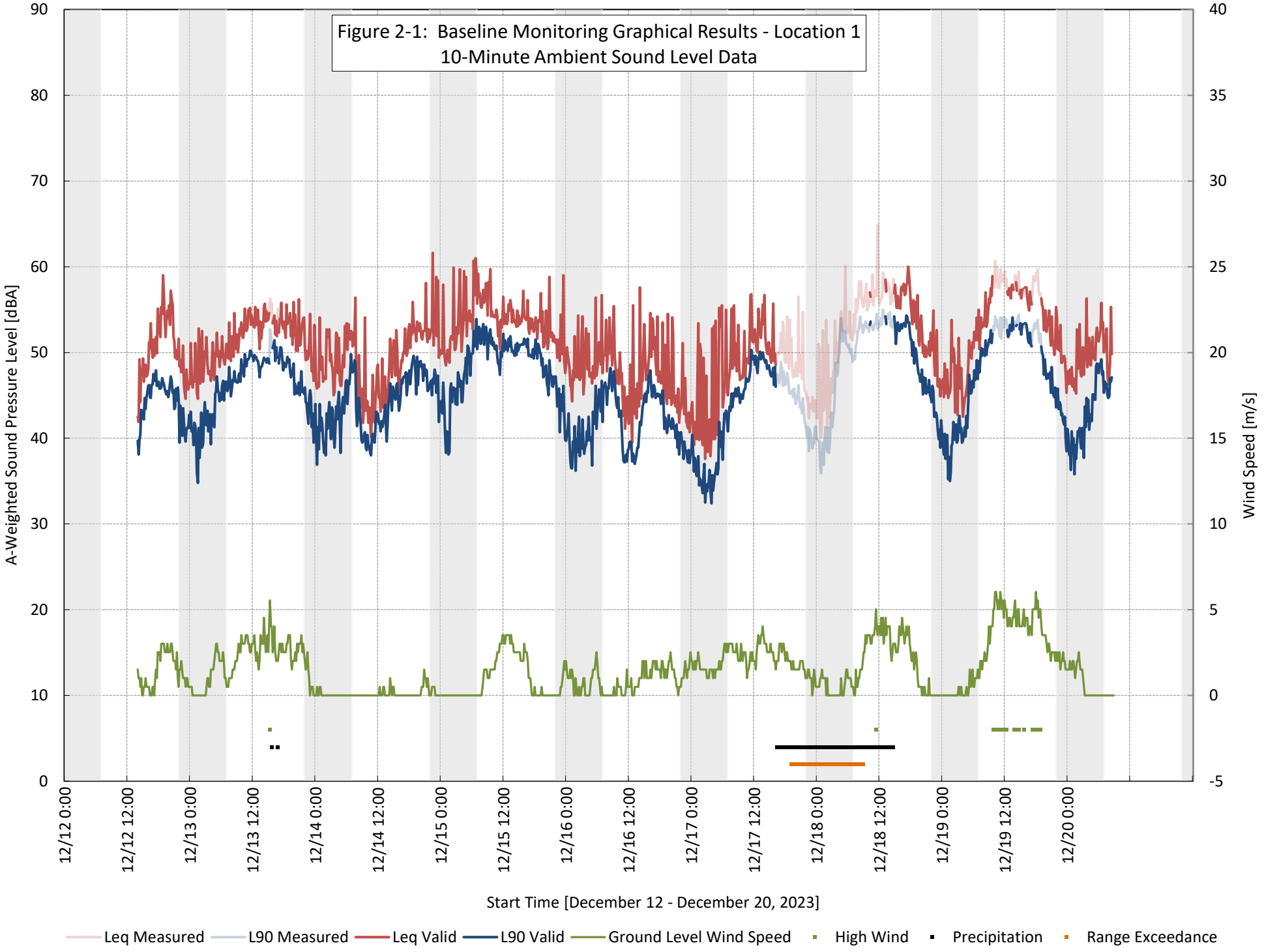
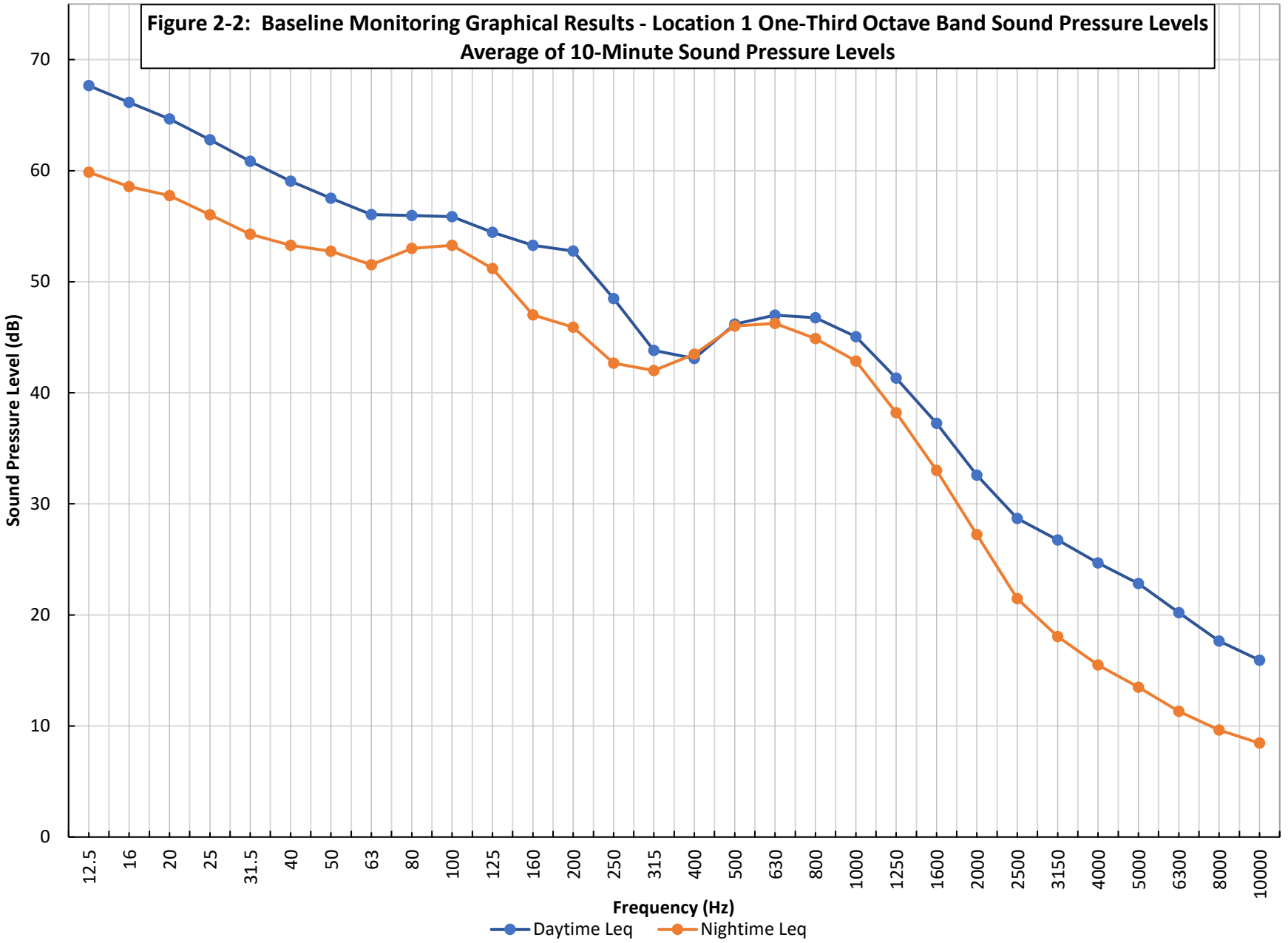


Figure 2-1: Baseline Monitoring Graphical Results - Location 1
10-Minute Ambient Sound Level Data
A-Weighted Sound Pressure Level [dBA]
Wind Speed [m/s]
90
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
-5
12/12 0:00
12/12 12:00
12/13 0:00
12/13 12:00
12/14 0:00
12/14 12:00
12/15 0:00
12/15 12:00
12/16 0:00
12/16 12:00
12/17 0:00
12/17 12:00
12/18 0:00
12/18 12:00
12/19 0:00
12/19 12:00
12/20 0:00
Start Time [December 12 - December 20, 2023]
Leq Measured
L90 Measured
Leq Valid
L90 Valid
Ground Level Wind Speed
High Wind
Precipitation
Range Exceedance

Figure 2-2: Baseline Monitoring Graphical Results - Location 1 One-Third Octave Band Sound Pressure Levels
Average of 10-Minute Sound Pressure Levels



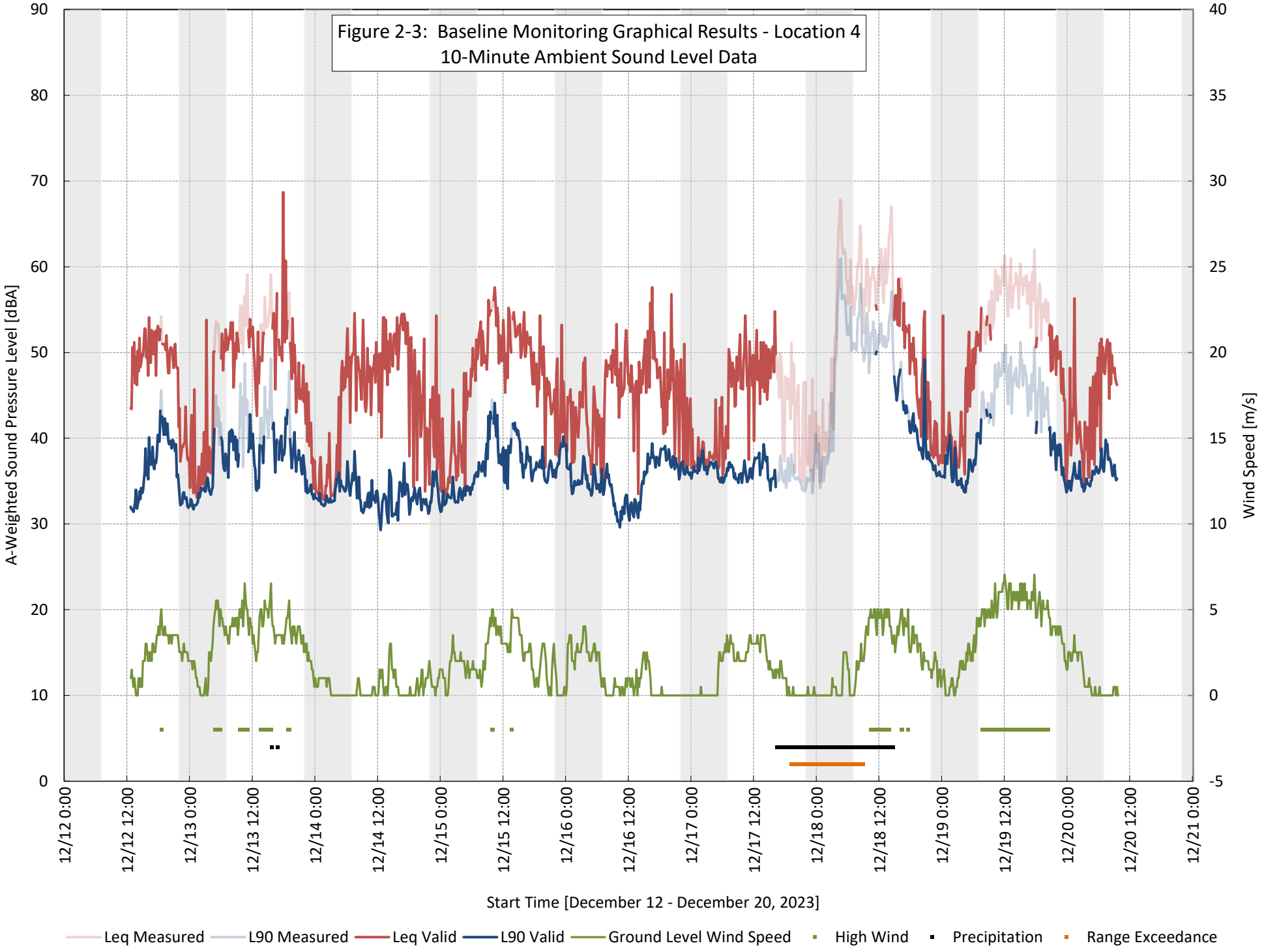
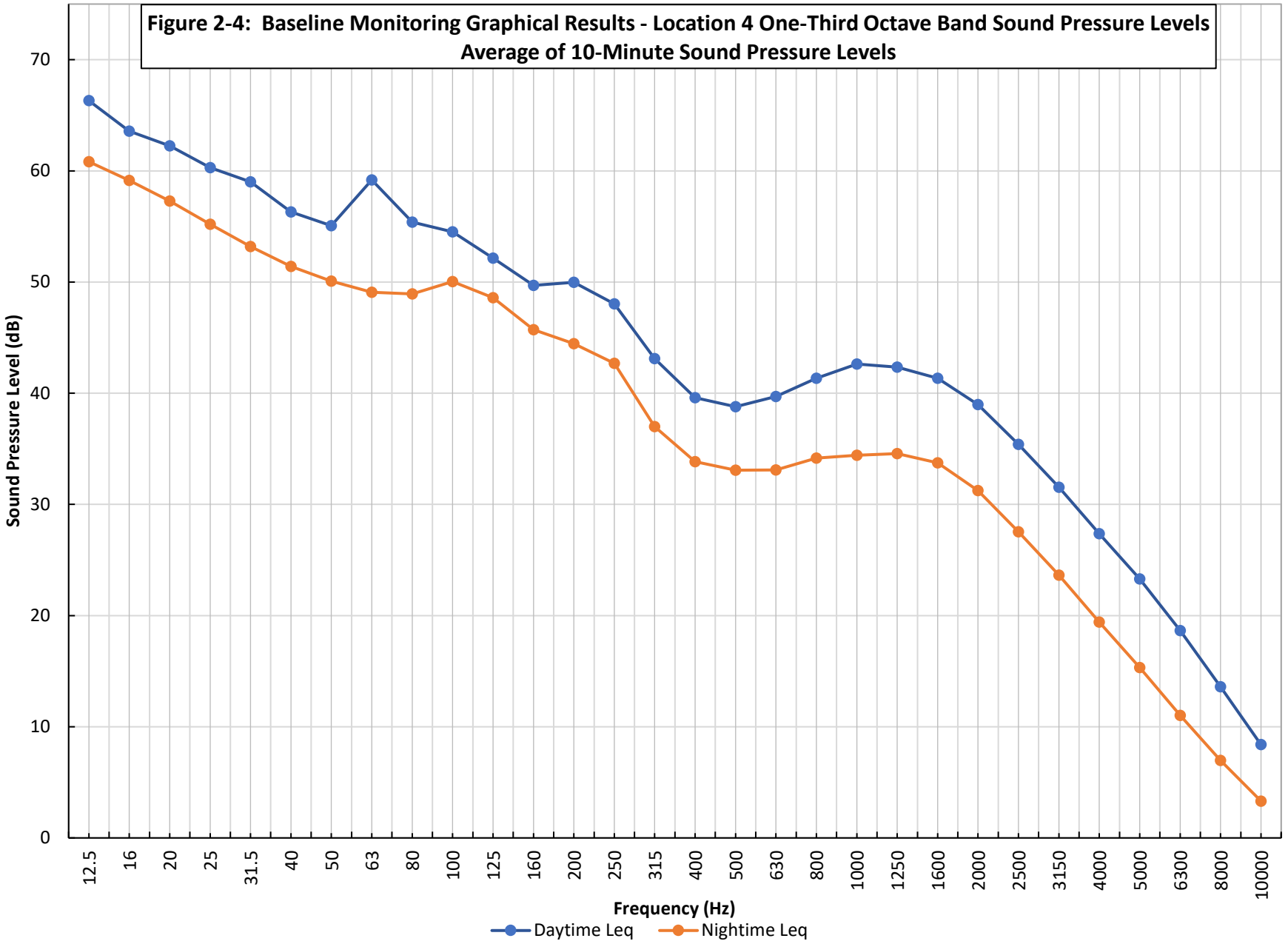


Figure 2-3: Baseline Monitoring Graphical Results - Location 4
10-Minute Ambient Sound Level Data
A-Weighted Sound Pressure Level [dBA]
Wind Speed [m/s]
90
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
-5
12/12 0:00
12/12 12:00
12/13 0:00
12/13 12:00
12/14 0:00
12/14 12:00
12/15 0:00
12/15 12:00
12/16 0:00
12/16 12:00
12/17 0:00
12/17 12:00
12/18 0:00
12/18 12:00
12/19 0:00
12/19 12:00
12/20 0:00
12/20 12:00
12/21 0:00
Start Time [December 12 - December 20, 2023]
Leq Measured
L90 Measured
Leq Valid
L90 Valid
Ground Level Wind Speed
High Wind
Precipitation
Range Exceedance

Figure 2-4: Baseline Monitoring Graphical Results - Location 4 One-Third Octave Band Sound Pressure Levels
Average of 10-Minute Sound Pressure Levels



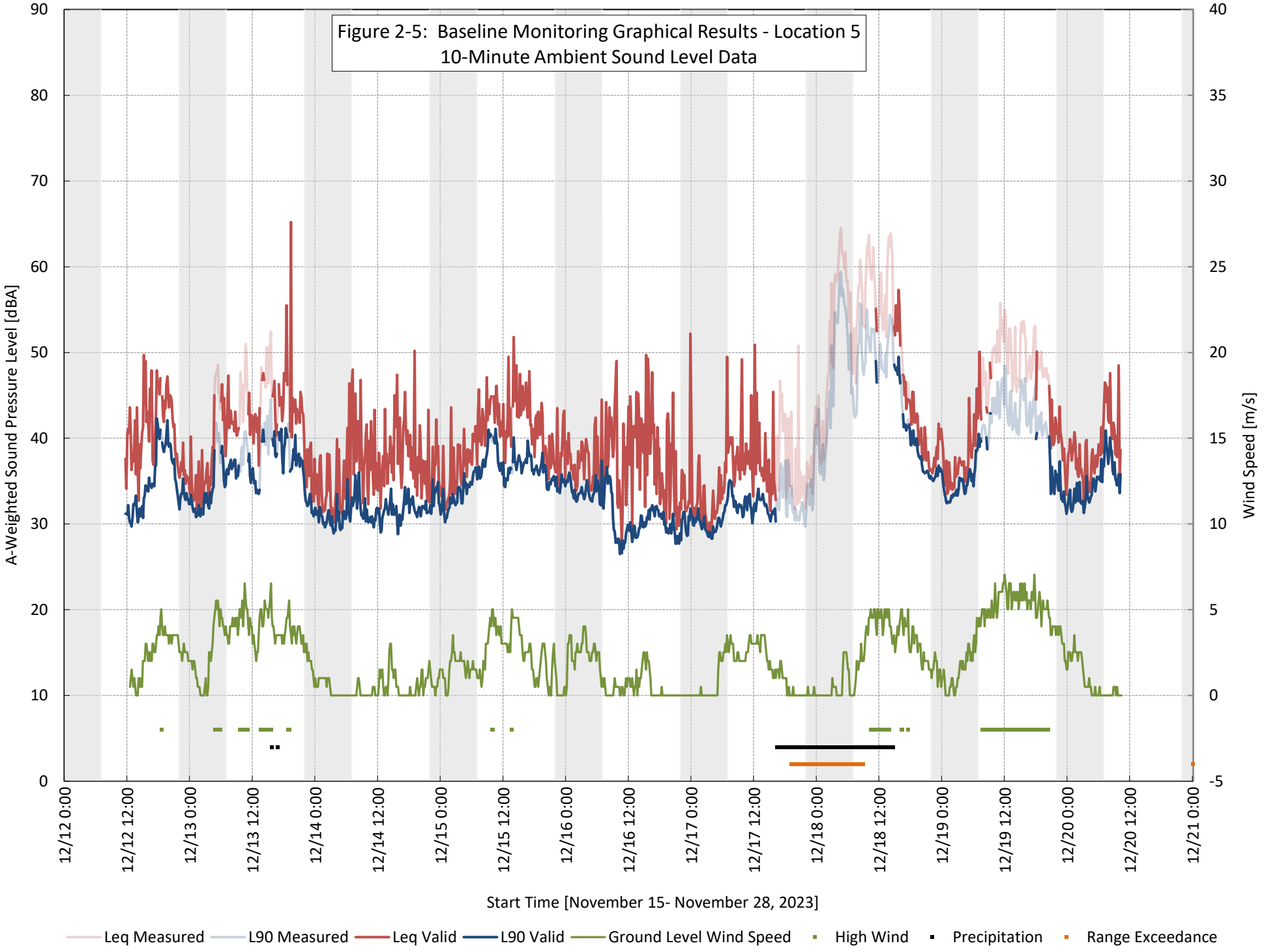
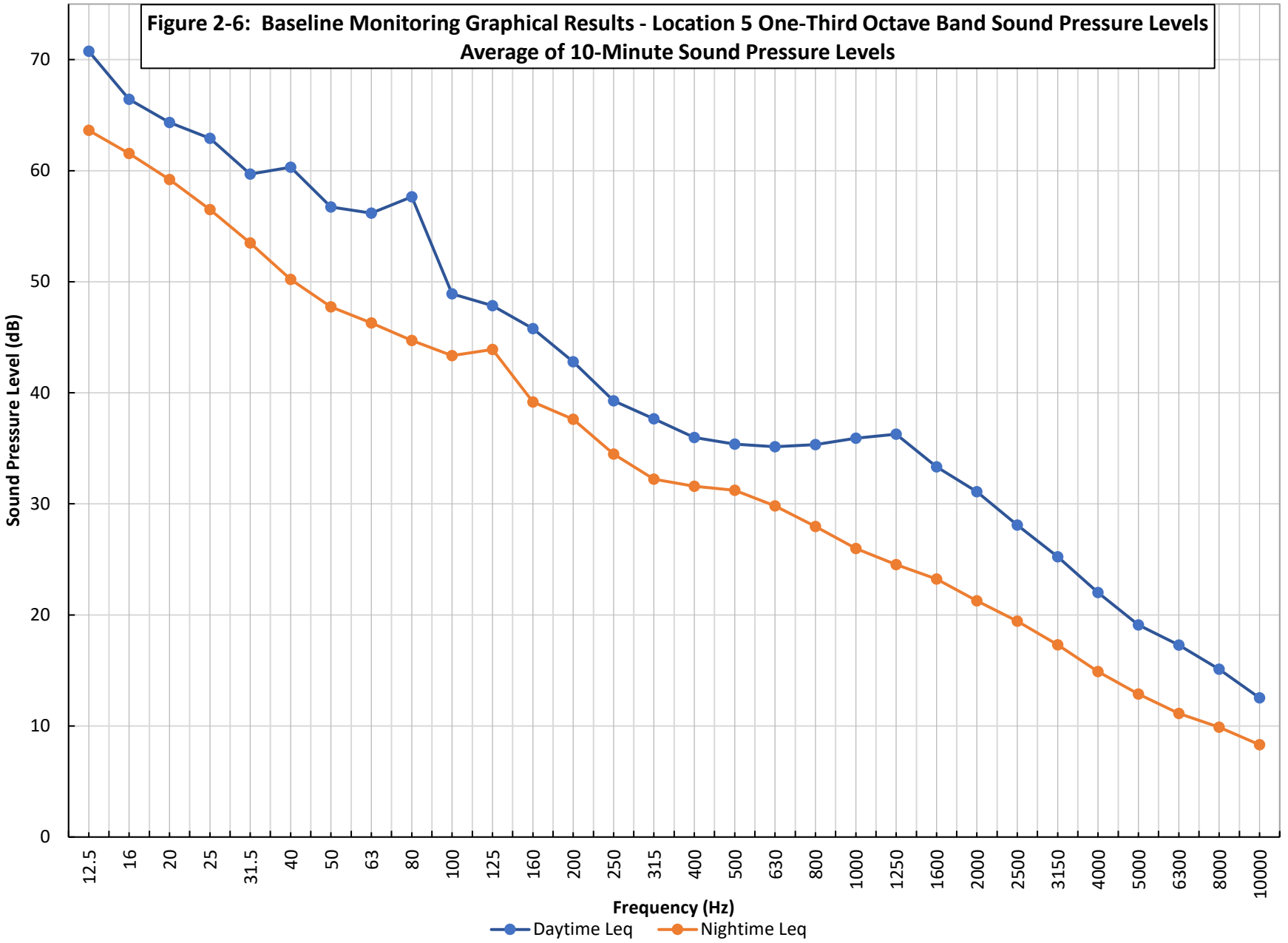


Figure 2-5: Baseline Monitoring Graphical Results - Location 5
10-Minute Ambient Sound Level Data
A-Weighted Sound Pressure Level [dBA]
Wind Speed [m/s]
90
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
-5
12/12 0:00
12/12 12:00
12/13 0:00
12/13 12:00
12/14 0:00
12/14 12:00
12/15 0:00
12/15 12:00
12/16 0:00
12/16 12:00
12/17 0:00
12/17 12:00
12/18 0:00
12/18 12:00
12/19 0:00
12/19 12:00
12/20 0:00
12/20 12:00
12/21 0:00
Start Time [November 15- November 28, 2023]
Leq Measured
L90 Measured
Leq Valid
L90 Valid
Ground Level Wind Speed
High Wind
Precipitation
Range Exceedance

Figure 2-6: Baseline Monitoring Graphical Results - Location 5 One-Third Octave Band Sound Pressure Levels
Average of 10-Minute Sound Pressure Levels



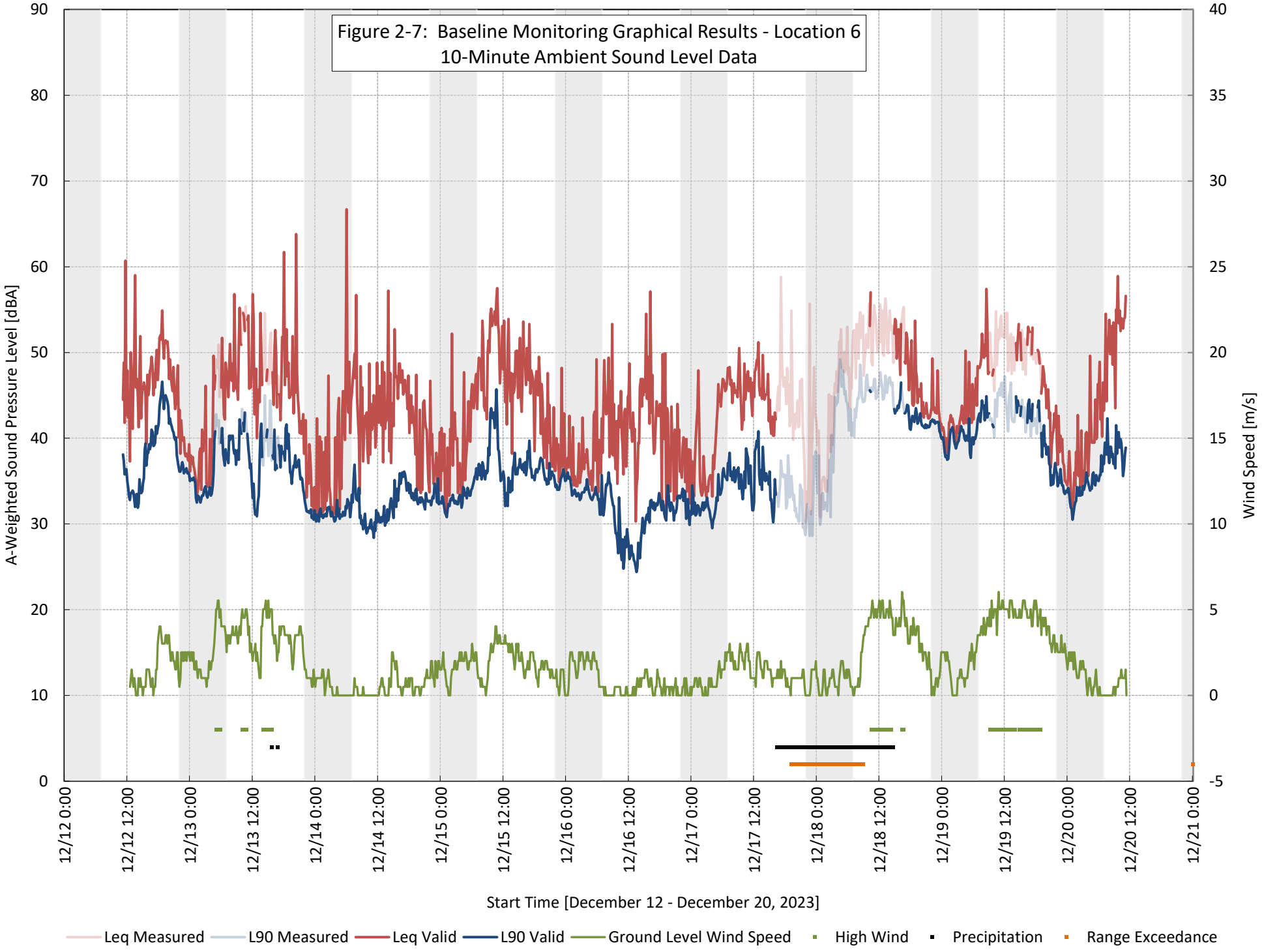
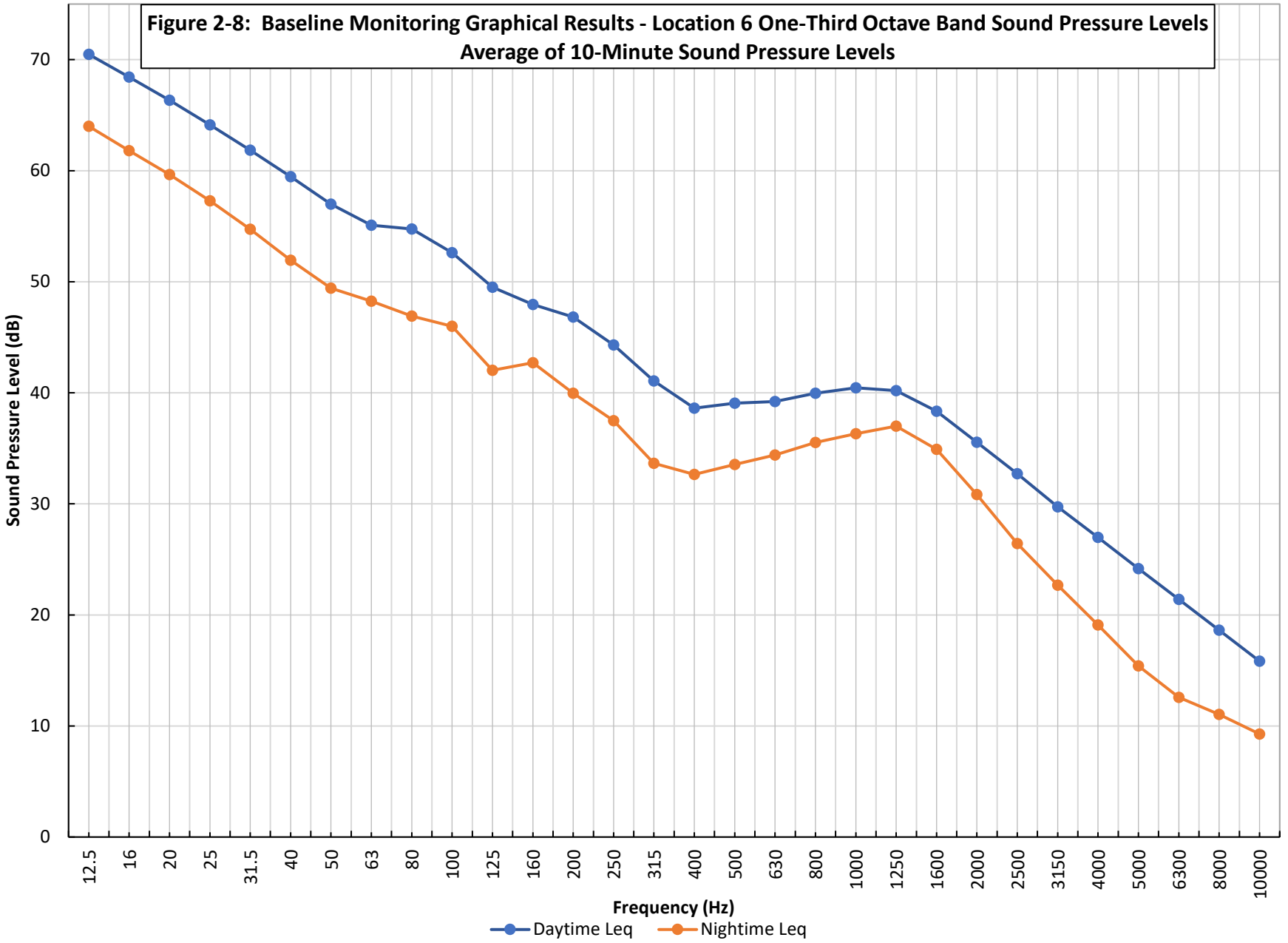


Figure 2-7: Baseline Monitoring Graphical Results - Location 6
10-Minute Ambient Sound Level Data
A-Weighted Sound Pressure Level [dBA]
Wind Speed [m/s]
90
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
-5
12/12 0:00
12/12 12:00
12/13 0:00
12/13 12:00
12/14 0:00
12/14 12:00
12/15 0:00
12/15 12:00
12/16 0:00
12/16 12:00
12/17 0:00
12/17 12:00
12/18 0:00
12/18 12:00
12/19 0:00
12/19 12:00
12/20 0:00
12/20 12:00
12/21 0:00
Start Time [December 12 - December 20, 2023]
Leq Measured
L90 Measured
Leq Valid
L90 Valid
Ground Level Wind Speed
High Wind
Precipitation
Range Exceedance

Figure 2-8: Baseline Monitoring Graphical Results - Location 6 One-Third Octave Band Sound Pressure Levels
Average of 10-Minute Sound Pressure Levels



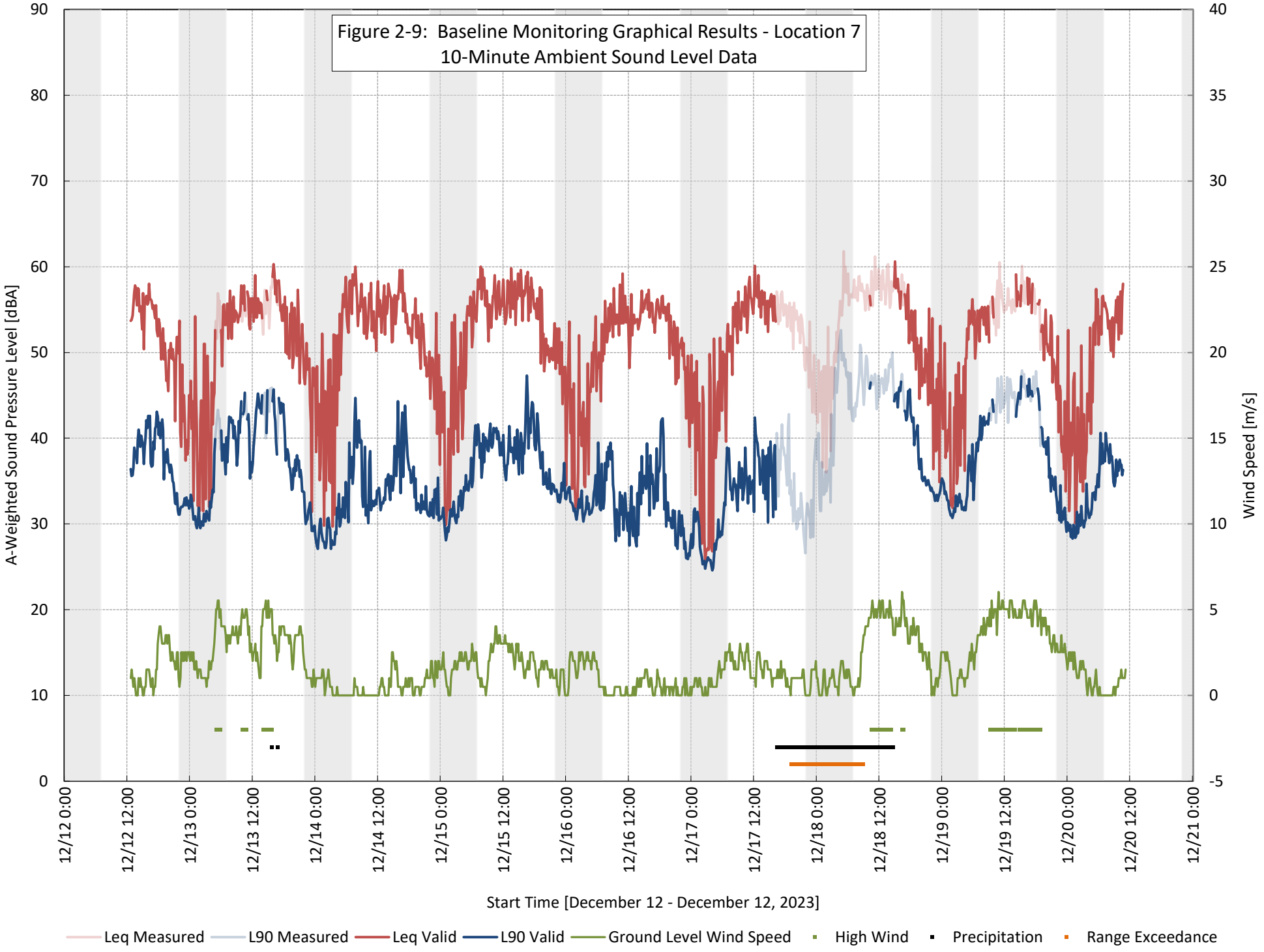


Figure 2-9: Baseline Monitoring Graphical Results - Location 7
10-Minute Ambient Sound Level Data
A-Weighted Sound Pressure Level [dBA]
Wind Speed [m/s]
90
80
70
60
50
40
30
20
10
0
40
35
30
25
20
15
10
5
0
-5
12/12 0:00
12/12 12:00
12/13 0:00
12/13 12:00
12/14 0:00
12/14 12:00
12/15 0:00
12/15 12:00
12/16 0:00
12/16 12:00
12/17 0:00
12/17 12:00
12/18 0:00
12/18 12:00
12/19 0:00
12/19 12:00
12/20 0:00
12/20 12:00
12/21 0:00
Start Time [December 12 - December 12, 2023]
Leq Measured
L90 Measured
Leq Valid
L90 Valid
Ground Level Wind Speed
High Wind
Precipitation
Range Exceedance

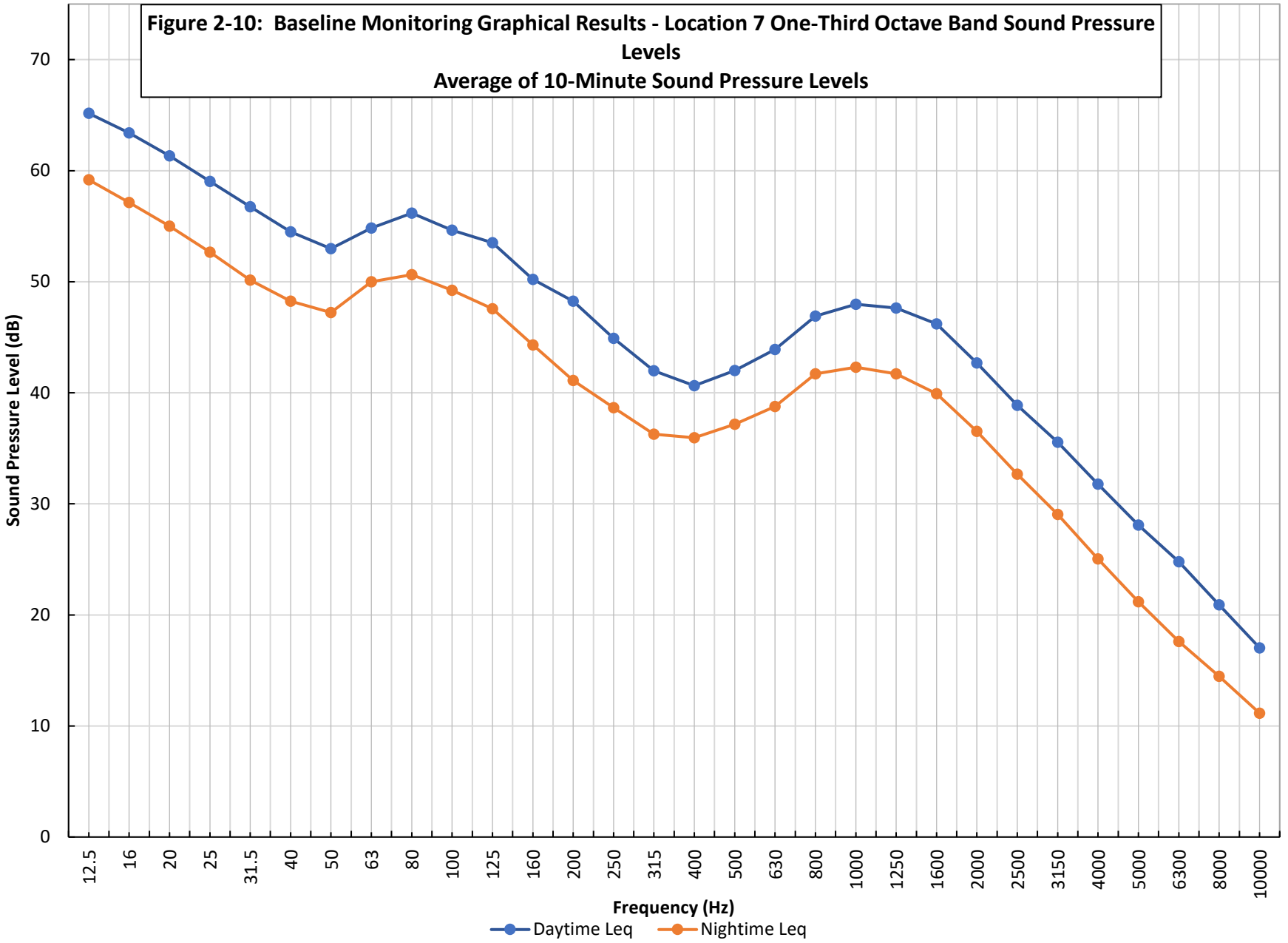


Figure 2-10: Baseline Monitoring Graphical Results - Location 7 One-Third Octave Band Sound Pressure Levels
Average of 10-Minute Sound Pressure Levels
Sound Pressure Level (dB)
0
10
20
30
40
50
60
70
12.5
16
20
25
31.5
40
50
63
80
100
125
160
200
250
315
400
500
630
800
1000
1250
1600
2000
2500
3150
4000
5000
6300
8000
10000
Frequency (Hz)
Daytime Leq
Nightime Leq

3.0 SOUND LEVEL MONITORING SUMMARY

A baseline monitoring program was performed for the proposed Flat Creek Solar Project to characterize the existing sound level environment in the Project area. The measured sound levels are summarized below as tabular data by location. Respective ANS-weighted broadband sound levels calculated for the summary period of interest are provided along with the "as-measured" broadband levels within each table. Only valid[6] 10-minute measurement periods are included in the summary tables.

3.1 Existing Ambient – L90

Measured ambient L_{90} sound levels are shown below in Table 3-1. Values are separated by daytime and nighttime periods as well as for the entire program combined. These values represent the L_{90} of the measured L_{90} values.

Table 3-1 Existing Ambient L_{90} (dBA) Sound Pressure Level Summary

Location	Overall (dBA)		Daytime (dBA)		Nighttime (dBA)	
	Measured	ANS	Measured	ANS	Measured	ANS
Location 1	39	38	41	41	37	37
Location 4	33	32	32	31	33	32
Location 5	30	28	30	28	30	28
Location 6	31	30	30	30	31	31
Location 7	30	30	32	32	28	28

3.2 Existing Ambient - Leq

Measured average ambient L_{eq} levels are presented in Table 3-2. Values are separated by daytime and nighttime periods as well as for the entire program combined.

Table 3-2 Existing Ambient L_{eq} (dBA) Sound Pressure Level Summary

Location	Overall (dBA)		Daytime (dBA)		Nighttime (dBA)	
	Measured	ANS	Measured	ANS	Measured	ANS
Location 1	51	50	52	51	49	49
Location 4	46	45	49	48	41	40
Location 5	39	38	41	40	36	36
Location 6	43	42	46	44	39	37
Location 7	50	49	54	53	44	43

[6] Refer to Chapter 2 for details concerning valid periods.

Appendix A

Windscreen Insertion Loss

Experimental study to determine wind-induced noise and windscreen attenuation effects on microphone response for environmental wind turbine and other applications

George F. Hessler[a)], David M. Hessler[b)], Peter Brandstätt[c)] and Karlheinz Bay[d)]

(Received: 23 February 2008; Revised: 30 May 2008; Accepted: 31 May 2008)

Despite the use of windscreens, the measurement of ambient sound levels or noise emissions in quiet environments can be adversely affected by wind blowing over the microphone. This is especially true when environmental impact assessments are being carried out for proposed wind turbine power projects - where the objective is to determine the level of background masking noise available as a function of wind speed, since any potential noise impact from the project will only occur under moderately windy conditions. Under calm conditions the project will produce no noise at all. A number of windscreen products are commercially available for short and long-term sound level monitoring in adverse weather conditions. Generally, these windscreens vary by physical size and the method of preventing water from reaching the microphone. High frequency attenuation effects are usually available from the product suppliers but, in general, low frequency turbulence effects are not available. Consequently, a controlled laboratory test program was carried out in a state-of-the-art wind tunnel at the Fraunhofer Institut für Bauphysik in Stuttgart, Germany to quantify the level of low frequency interference (down to 6.3 Hz) associated with a number of different foam windscreens and an aerodynamic microphone nose cone. A total of nine configurations were tested with "quiet" airflow only, artificial noise only and noise plus airflow to evaluate both low frequency wind induced noise and high frequency attenuation effects. The test program demonstrated that the largest size foam-based windscreens provided the most protection from flow induced noise due to wind. Flow induced noise by air flow alone was estimated from the study results and compared to community noise measurements at a typical wind turbine site. It was determined that flow induced wind noise does not have a significant or detrimental effect on the measurement of A-weighted sound levels under wind conditions of concern as long as the suggested measurement techniques described herein are followed.

Primary subject classification: 71.1.1; Secondary subject classification: 21.6

1 INTRODUCTION

It is a challenge to measure ambient or background levels in quiet, rural environments. Such areas are usually devoid of any major noise sources, such as highways, industrial facilities or airports. Except for occasional, usually man-made, noise events the sound level in rural environments is normally dominated by the rustling of tree leaves or branches in the wind or by the high frequency sounds of insects during the warmer months of the year. For wind turbine power project assessments, ambient sound levels when the wind is blowing in the 3 to 10 m/s range (measured at 10 m above the surface) is very relevant because that is when typical wind turbines first begin to generate significant noise. At higher wind speeds turbine sound levels remain largely constant while the background sound continues to increase. Consequently, background sound

[a)] Hessler Associates, Inc., Haymarket, VA; email: George@HesslerAssociates.com.
[b)] Hessler Associates, Inc., Haymarket, VA; email: David@HesslerAssociates.com.
[c)] Fraunhofer Institut für Bauphysik, Stuttgart, GERMANY; email: Peter.Brandstaett@ibp.fraunhofer.de.
[d)] Fraunhofer Institut für Bauphysik, Stuttgart, GERMANY; email: Karlheinz.Bay@ibp.fraunhofer.de.

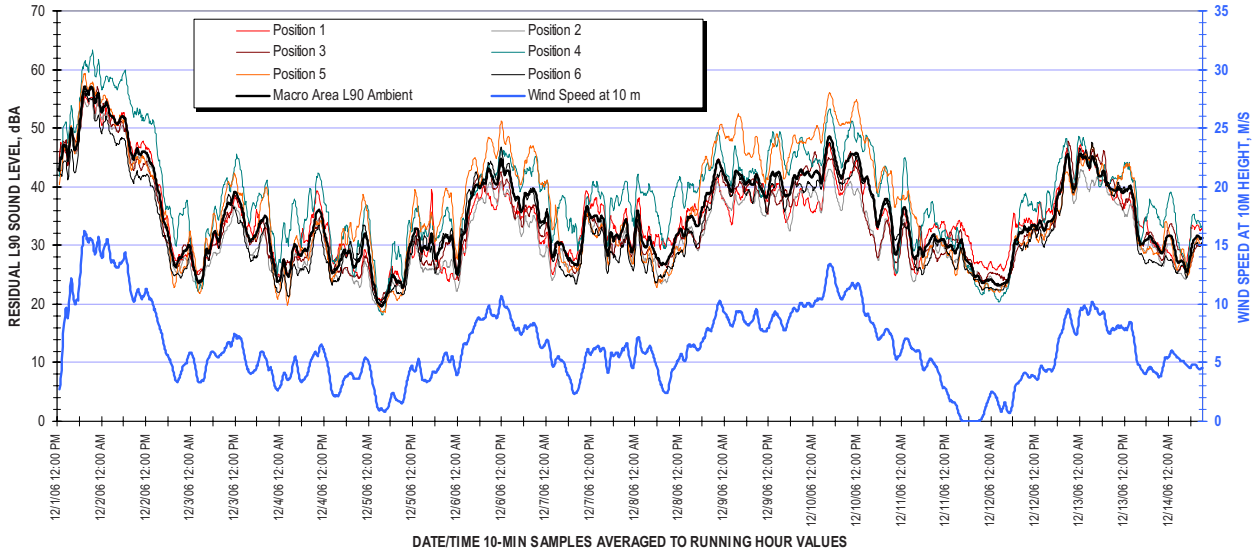


Fig. 1—Measured residual LA90 ambient sound levels at six widely spaced locations in a quiet rural area compared to wind speed over a 13 day period.

levels that occur during moderate winds are of the most interest. Reference 1 offers techniques for measuring wind turbine sources using a ground plane microphone setup to eliminate wind induced noise, but background baseline measurements are made above grade with wind.

In general, experience with (insect-free) wintertime surveys at rural sites indicates that there is normally an

Fig. 2—Photographs of nine microphone test configurations.

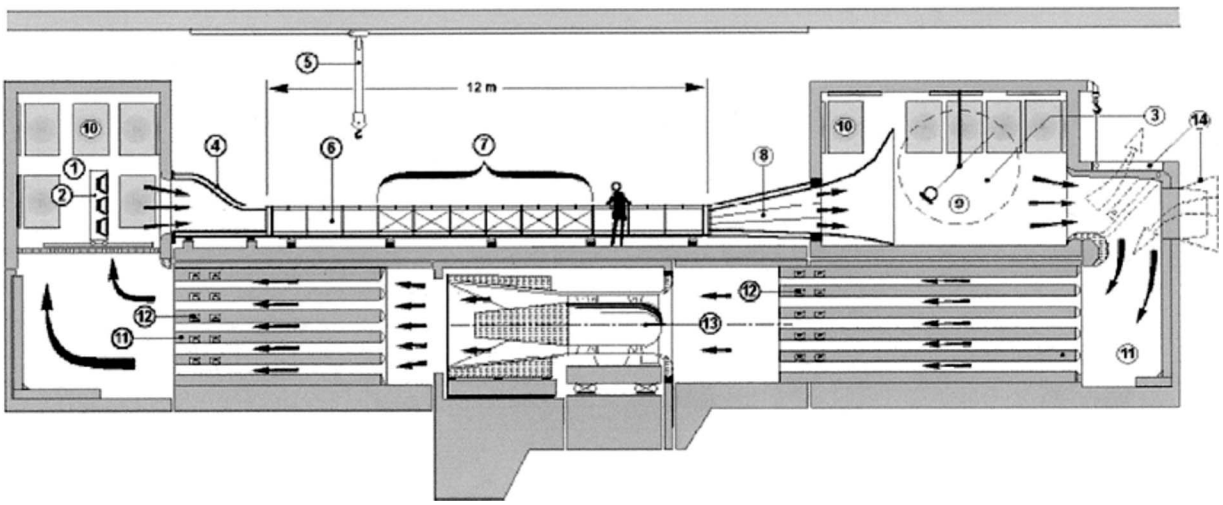


Fig. 3—Cross sectional elevation view of silencer test facility.

excellent correlation between wind speeds and the ambient residual (L90) sound levels as shown on Fig. 1. Of course, such a high degree of correlation could result if the microphone response was dominated by wind-induced turbulence effects around the microphone as opposed to the true ambient sound level signal. Hence, the purpose of this study is to quantitatively address this uncertainty and determine, for a number of common windscreens types, if/when any substantial contamination occurs over a range of wind speeds.

Nine microphone configurations, as illustrated in Fig. 2, were tested under controlled conditions in a wind tunnel duct using quiet airflow only, artificial noise only (at three volumes) and airflow plus artificial noise. Ninety degree incidence is used to duplicate ambient sound measurement survey techniques, but the nose cone (B&K model UA 0386) was aimed into the flow stream. Windscreens for tests 3, 4, 8 and 9 are products available for long-term outdoor monitoring. The foam ball ACO Pacific models (tests 8 and 9) are specifically treated to shed rain water while the other foam balls are not intended for outdoor rain exposure. Measurements were carried out at duct velocities of 2.5, 5, 10, 20 and 30 m/s (8, 16, 33, 66 and 98 ft/s, or 6, 11, 22, 45 and 67 mph). The test results are also useful for determining flow turbulence effects when measuring industrial noise sources in the presence of airflow, as well as for outdoor environmental measurements.

The test program was carried out at the Fraunhofer Institute of Building Physics located in Stuttgart, Germany at their aero-acoustic wind tunnel illustrated on Fig. 3. Note the large silencers on the inlet and exhaust path of the airflow fan and the structural isolation of the test duct. The airflow delivered to the duct test section is essentially free of fan noise or is "quiet" air. The airflow in the duct cross section has an even distribution without swirl or turbulences as it is supplied through a stilling chamber and an air inlet profile. The duct cross section of 1 m by 0.5 m was held constant over the complete length for all measurements. In this way re-generated noise was kept at a minimum. Measurements were made with a Norsonic 840 Analyzer, Norsonic Model 1201 preamp and 1/2 inch (13 mm) diameter Model 1225 microphone.

2 LOW FREQUENCY TURBULENCE EFFECTS - FLOW MEASUREMENTS

The raw measured data for all configurations at the five airflow speeds are plotted on Fig. 4. It is certainly not news, but the data clearly demonstrate that even the most modest foam windscreen should always be used when outdoors, since it dramatically improves the low and mid frequency microphone response. Because the extreme low frequencies are significantly affected by flow induced noise even at fairly low wind speeds, these plots also show that whenever low level very low frequency or C-weighted sound levels must be measured outdoors such measurements should only be carried out under completely calm conditions.

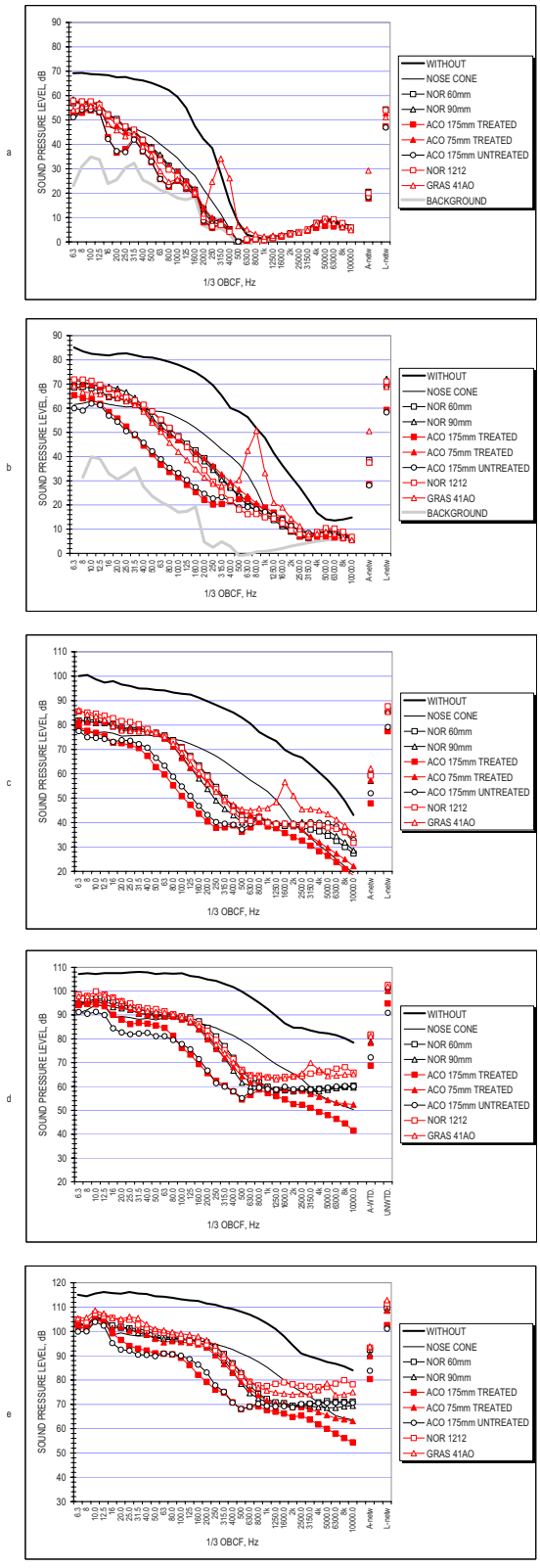


Fig. 4—Measured microphone response at five velocities (2.5, 5. 10, 20 and 30 m/s*, graph a through e).*

The second trend immediately noticeable is that the two larger (175 mm diameter) windscreens are significantly better at reducing flow induced noise at low and

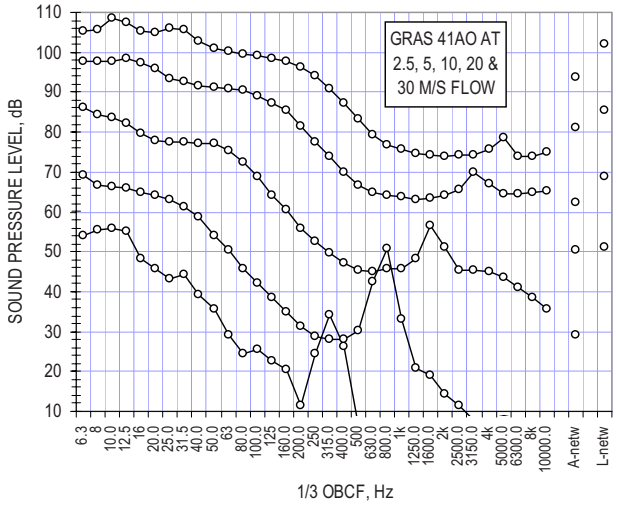


Fig. 5—Graph showing flow generated tonal noise associated with the gap between foam and wire.

mid frequencies. Flow-induced noise levels are on the order of 10 dB lower for this type of windscreen than they are for all others. Prior studies have shown this relationship and an excellent analytical study and summary of microphone response to turbulence is presented by van den Berg in Ref. 2. This testing quantifies the improvement and low frequency performance for readily available current wind protection products.

All of the plots, but particularly the lower wind speed cases, show a tonal aberration for the GRAS model 41AO windscreen. A frequency shift with wind velocity can clearly be seen in Fig. 5, which shows only the results for this model windscreen at all five wind speeds. This behavior was initially attributed to vortex shedding from the bird spike wires (each 1.5 mm in diameter) where the frequency may be calculated by the well known equation:

$$f = Sv/d \qquad (1)$$

where,
S=the Strouhal number of 0.2
v=velocity, m/s
d=diameter, m

This calculation indicated that the 315, 630, 1250, 2500 and 5000 Hz 1/3 octave bands would be excited by vortex shedding, but the actual measurements showed that the affected bands were 315, 800, 1600, 3150 and 5000 Hz. Further diagnostic testing demonstrated that the peaks are caused by the gap between the

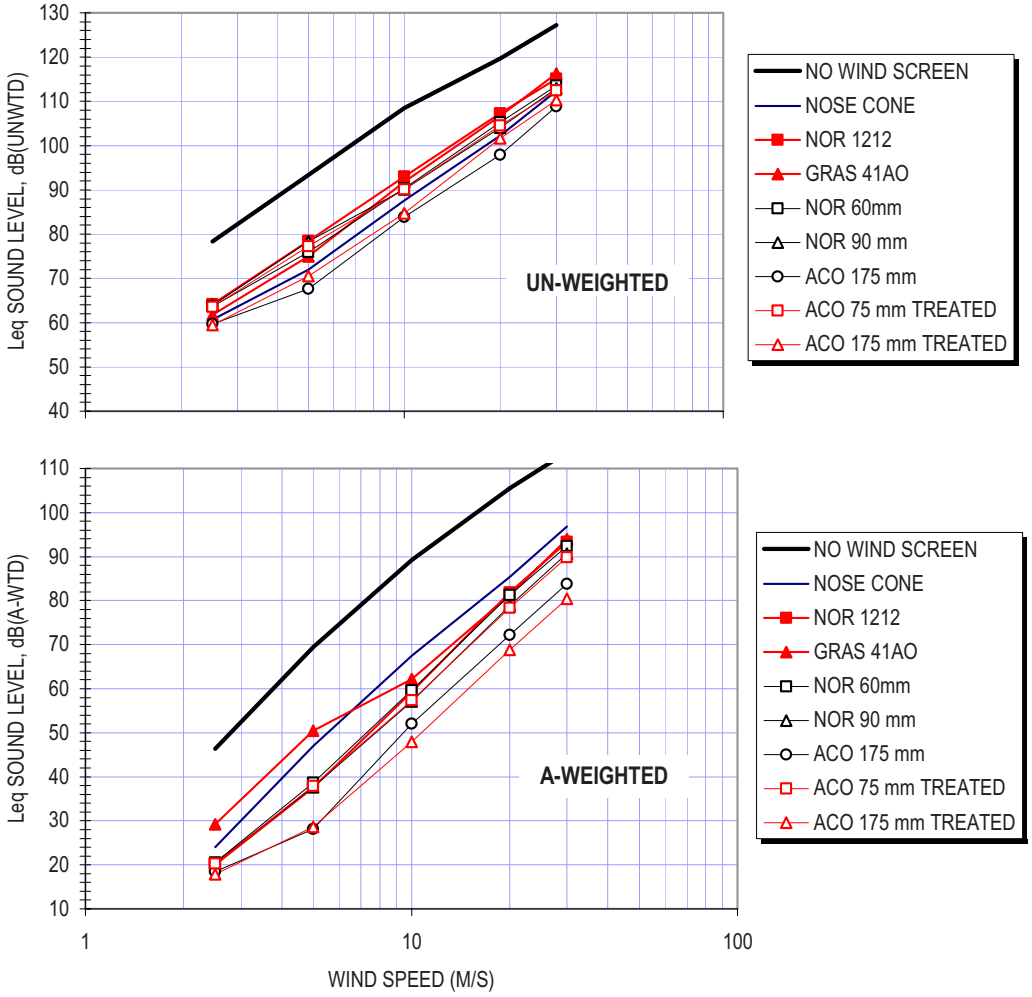


Fig. 6—Plot of overall flow noise response for windscreen models. Upper: Un-weighted level, Lower: A-weighted level.

wire bird spike base and the top of the windscreen. Apparently small mini-jets are created by this gap and it was found that this noise could be reduced by a closer fit between the foam screen and the wire. The gap should be eliminated when employing this model for monitoring.

Figure 6 plots the overall measured values of flow-generated noise as a function of air flow velocity. When plotted on a logarithmic scale, the data show a linear increase with velocity for all models. The overall, un-weighted sound level slope is a v^5 relationship, or approximately a 15 dB increase for each doubling of velocity, whereas the A-weighted results are a v^6 relationship, or approximately 18 dBA increase per doubling. Table 1 tabulates the overall measured values at each velocity for each model windscreen. These data can be used to derive a logarithmic expression for the self-generated noise level as a function of wind speed for any of the tested windscreens. For example, data for the treated ACO 175 mm windscreen leads to the following approximate equation for estimating the A-weighted flow induced noise level for the wind speed at the microphone location. Wind speed at 10 m elevation is the standardized elevation for rating wind turbines as given in Ref. 1 but this equation applies at the microphone location.

$$L_{fin} = 27.4 \ln(v) - 10.7, \text{ dBA} \qquad (2)$$

where,

L_{fin}=the A-weighted flow-induced-noise level due only to wind

v=the wind speed at the microphone, m/s

Table 1—Measured overall levels for microphone response with and without windscreens at five velocity settings. Lowest response results are for the 175 mm *size windscreens.*

		FLOW SPEED M/S (MPH)				
A-WTD		2.5	5	10	20	30
T1	NO WIND SCREEN	46	69	89	106	114
T2	NOSE CONE	24	47	68	85	97
T3	NOR 1212	20	38	59	82	93
T4	GRAS 41AO	29	51	62	81	94
T5	NOR 60 mm	21	39	60	81	92
T6	NOR 90 mm	20	38	57	79	91
T7	ACO 175 mm	18	28	52	72	84
T8	ACO 75 mm TREATED	20	38	57	78	90
T9	ACO 175 mm TREATED	18	29	48	69	80
UNWTD		FLOW SPEED M/S (MPH)				
		2.5	5	10	20	30
T1	NO WIND SCREEN	78	93	109	120	127
T2	NOSE CONE	61	72	88	102	112
T3	NOR 1212	64	79	93	107	115
T4	GRAS 41AO	62	75	92	107	116
T5	NOR 60 mm	64	76	90	105	114
T6	NOR 90 mm	64	78	90	104	113
T7	ACO 175 mm	60	68	84	98	109
T8	ACO 75 mm TREATED	64	77	90	105	113
T9	ACO 175 mm TREATED	60	71	85	102	110

3 ATTENUATION EFFECTS – ARTIFICIAL NOISE MEASUREMENTS

The measured sound levels in the duct at three volumes of artificial loud speaker noise (without any airflow) are plotted in Fig. 7. The fairly significant response variances at frequencies below 50 Hz are attributable to longitudinal in-duct resonances. Variable levels of external low frequency background noise outside the test duct at the facility may have also contributed to the scatter and loudspeaker output is poor at frequencies below 20 Hz. An improved signal to background noise ratio is suspected as the reason for better data grouping at the highest volume. There is no reason to believe that windscreens have any attenuation or amplification effects at these low frequencies. To verify this, testing was repeated in the facilities anechoic free-field environment. Figure 8 plots the raw data for this test and it is readily apparent that the low frequency variations are absent for a free progressive wave in an anechoic room as opposed to the wave front in a duct containing lateral reflections.

At the high end of the frequency spectrum the plots consistently show the same, model-dependent trends such as the significant attenuation of the ACO 175 mm treated windscreen at all frequencies above about 1250 Hz. Figure 9 shows the averaged attenuation for the three volumes in 1/3 octave bands for all windscreen models tested. Negative attenuation, or amplification of the signal, is significant for the nose cone and Nor 1212 outdoor windscreen. Table 2 tabulates the measured attenuations.

In general, the relatively large high frequency attenuation associated with the ACO 175 mm treated windscreen means that any un-corrected measurements made with it would be somewhat lower on an overall A-weighted basis than the actual value and therefore conservative in background survey applications. The overall noise reduction of this windscreen would depend on the frequency spectrum shape of the sound being measured but appears to be in 2 to 5 dBA range (neglecting any possible counteracting increases due to wind-induced effects). This low-pass filter quality could actually be beneficial in cases where unwanted summertime insect noise (generally above 2 kHz) is present. This contamination would be automatically

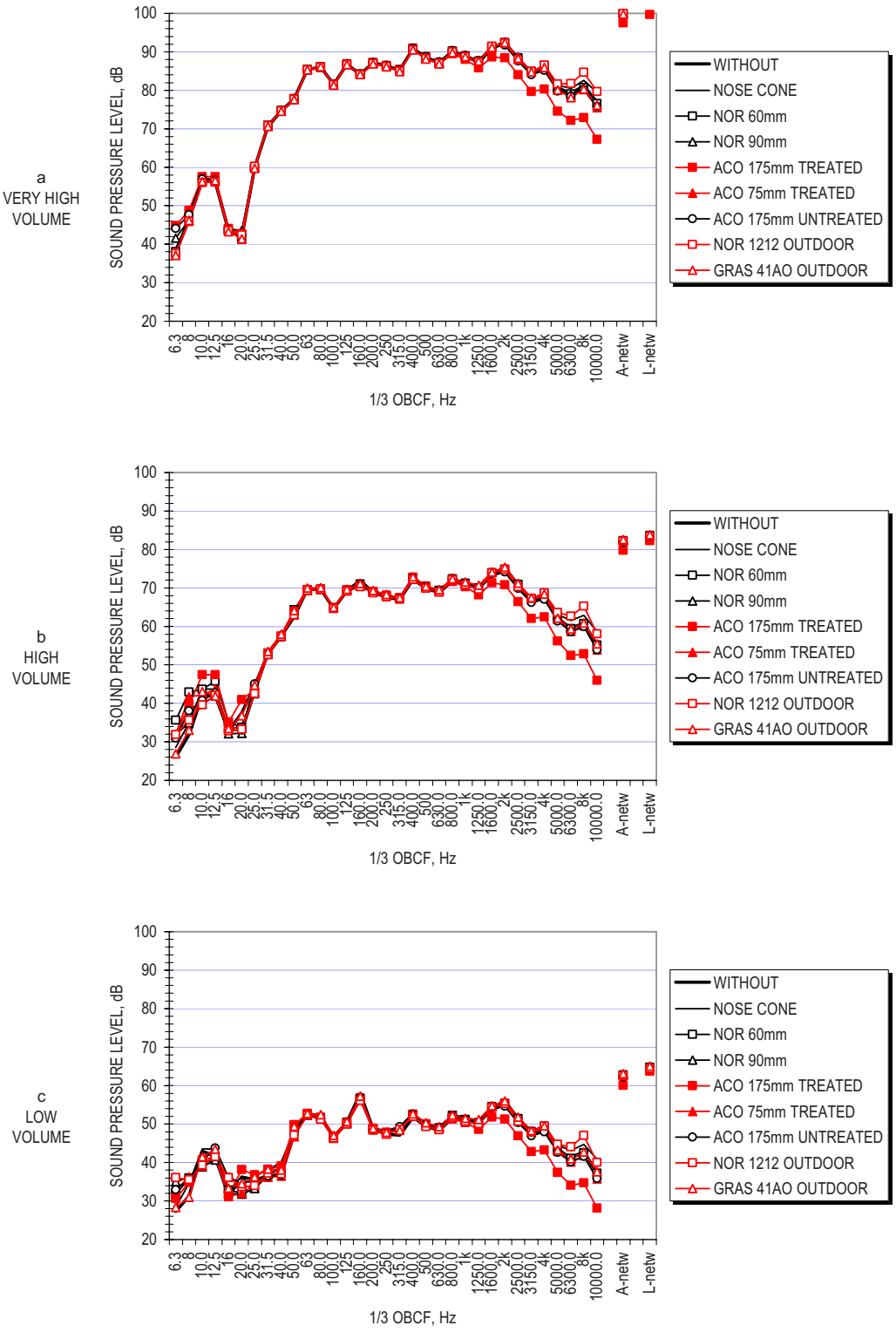


Fig. 7—Measured response with three volumes of artificial noise in the duct.

minimized, though not necessarily eliminated, through the use of this windscreen

4 FLOW AND NOISE MEASUREMENTS

The combined flow and noise measurements serve to illustrate the accuracy of the measurements and the benefits of using windscreens. Figure 10 plots the flow only, noise only and the combined flow and noise measurements for three cases: no windscreen, minimum diameter and maximum diameter foam windscreens. The point where the flow only and noise only traces cross essentially defines the minimum

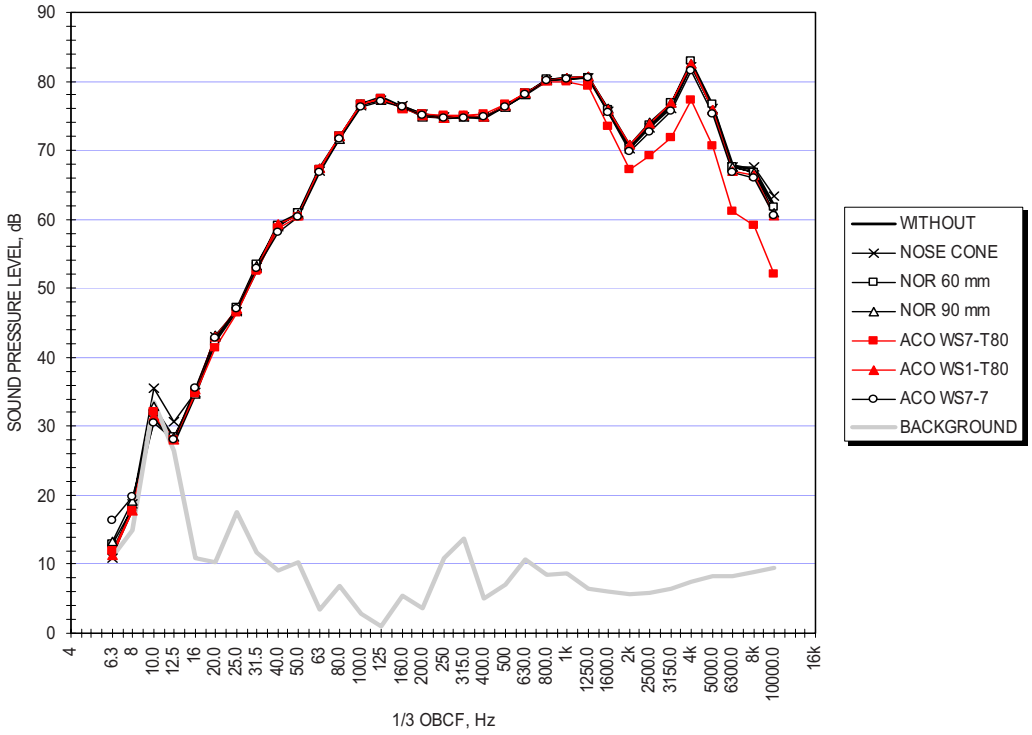


Fig. 8—Measured sound pressure spectra for five windscreen models in an anechoic chamber.

frequency at which valid data can be measured during, in this case, a 10 m/s wind. Without a windscreen, almost the entire spectrum (0 to 6300 Hz) is dominated by the 10 m/s flow noise. At the same 10 m/s flow speed; however, accurate measurements can be made in all bands above 125 Hz using only a 60 mm windscreen. The frequency response is improved to above 50 Hz using the largest (175 mm) windscreen.

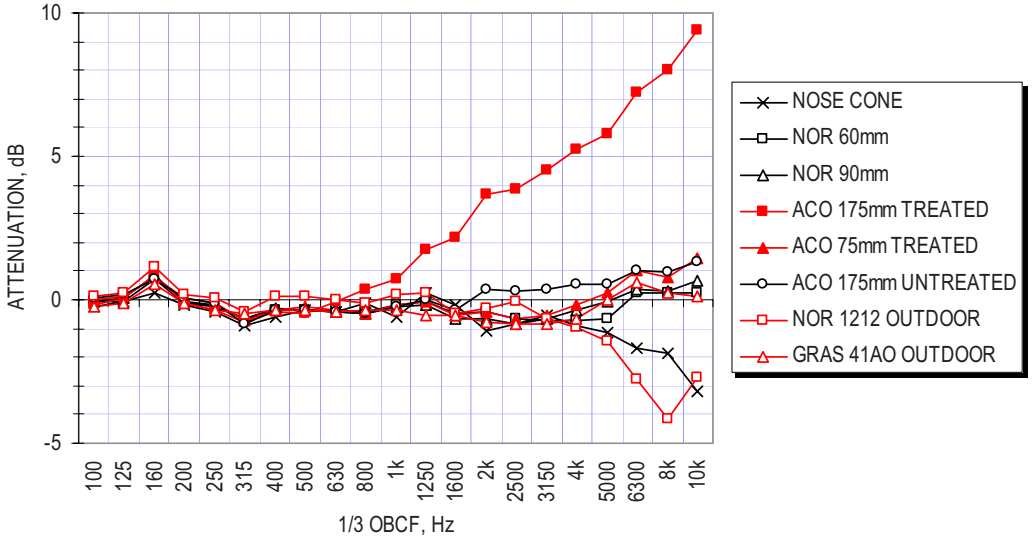


Fig. 9—Measured microphone response attenuation for windscreen models for 90 degree sound incidence.

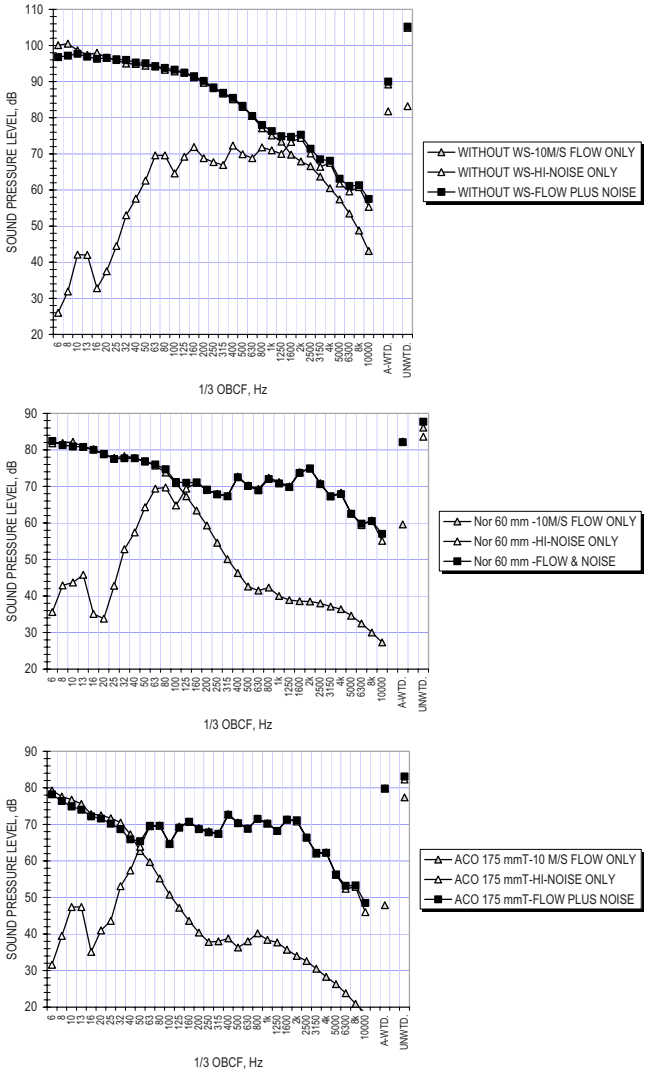


Fig. 10—Flow only, noise only and flow and noise measurements.

5 CONCLUSIONS AND RECOMMENDATIONS

The data show that reasonably good results when measuring in low to moderate wind conditions are possible even with conventional 60 mm windscreens, but that a larger (175 mm) diameter windscreen offers significantly better performance in the lower frequencies.

In the special case of background sound level surveys for wind turbine projects, where the objective is to determine the environmental sound level/masking level as a function of wind speed, the suggested practice based on this lab study is to use a large 175 mm windscreen and mount the microphone at a maximum elevation of about 1 m above grade. This latter step helps ensure that the microphone is exposed to relatively low wind speeds, since the nominal wind velocity profile, Eqn. (7) in Ref. 1 has a parabolic shape where the velocity decreases rapidly near the ground – theoretically going to zero at the surface. For example, a wind speed of 10 m/s (22.4 mph) measured at a standardized elevation of 10 m would translate to a nominal speed of 5.6 m/s (12.5 mph) at only 1 m above the surface. The wind speed range of most relevance to wind turbine analyses is usually in the 5 to 8 m/s range as measured at 10 m; consequently, a microphone at 1 m would be exposed to nominal flow velocities of 2.8 m/s (6.3 mph) to 4.5 m/s (10.1 mph) where the A-weighted flow induced noise levels would

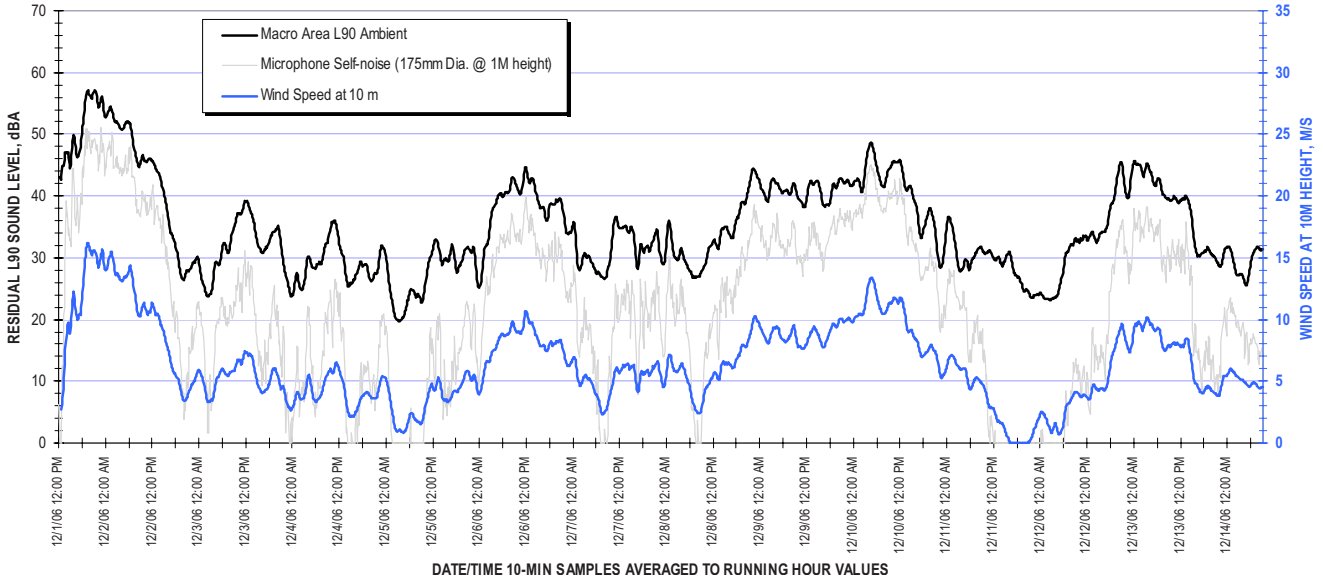


Fig. 11—Measured community ambient level compared to estimated microphone response to wind.

Table 2—Measured attenuation for windscreen models, 90 degree sound incidence.

1/3 OBCF, Hz	NOR 60 mm	NOR 90 mm	ACO 175 mm TREATED	ACO 75 mm TREATED	ACO 175 mm UNTREATED	NOR1212 OUTDOOR	GRAS41AO OUTDOOR	NOSE CONE
100	0.0	−0.1	−0.2	0.0	0.1	0.1	−0.2	−0.2
125	−0.1	0.1	0.1	0.1	0.2	0.3	−0.1	−0.1
160	0.7	0.9	0.8	0.8	0.7	1.2	0.5	0.2
200	−0.1	0.0	−0.1	0.0	0.1	0.2	−0.1	−0.2
250	−0.2	−0.2	−0.4	−0.1	−0.1	0.0	−0.3	−0.4
315	−0.7	−0.6	−0.8	−0.7	−0.8	−0.4	−0.5	−0.9
400	−0.4	−0.3	−0.4	−0.3	−0.4	0.1	−0.4	−0.6
500	−0.3	−0.3	−0.5	−0.2	−0.3	0.1	−0.3	−0.3
630	−0.4	−0.4	0.0	−0.4	−0.4	0.0	−0.4	−0.4
800	−0.4	−0.5	0.4	−0.5	−0.5	−0.1	−0.3	−0.1
1K	−0.2	−0.2	0.7	−0.2	−0.2	0.2	−0.3	−0.6
1250	0.0	−0.2	1.8	−0.1	0.0	0.3	−0.5	0.3
1600	−0.5	−0.6	2.2	−0.6	−0.3	−0.5	−0.6	−0.2
2K	−0.4	−0.7	3.7	−0.4	0.3	−0.3	−0.8	−1.1
2500	−0.6	−0.8	3.8	−0.7	0.3	0.0	−0.8	−0.8
3150	−0.7	−0.6	4.5	−0.5	0.3	−0.7	−0.8	−0.6
4K	−0.7	−0.3	5.3	−0.2	0.5	−1.0	−0.7	−0.9
5K	−0.6	−0.1	5.8	0.2	0.6	−1.5	0.0	−1.1
6300	0.2	0.3	7.2	1.0	1.0	−2.8	0.6	−1.7
8K	0.2	0.3	8.0	0.8	1.0	−4.1	0.2	−1.9
10K	0.3	0.7	9.4	1.5	1.3	−2.7	0.1	−3.2

range from 18 to 31 dBA. Such levels are low to insignificant even compared to the quiet environmental sound levels that commonly exist in rural areas.

As an example, the self-noise sound levels associated with the field data illustrated in Figure 1 have been calculated from Eqn. (2) above (based on the 10 m wind data converted to 1 m) and used to correct the sound levels actually measured. The measured and corrected sound levels are plotted in Fig. 11. Since the microphone flow induced noise response alone is frequently 8 to 10 dBA below the measured levels, the adjustment is minimal in most instances (=< 0.5 dBA) and therefore considered insignificant.

6 ACKNOWLEDGEMENTS

The author wishes to acknowledge both the technical and financial assistance provided by the Norsonic in Germany, Scantek, Inc., GRAS and ACO Pacific in the U.S.

7 REFERENCES

1. International Standard IEC 61400-11, *Wind turbine generator systems – Part 11: "Acoustic noise measurement techniques"*, 2nd edition 2002–12, (2002).
2. G. P. van den Berg, "The sound of high winds: the effect of atmospheric stability on wind turbine sound and microphone noise." Ph.D. Thesis, National University of Groningen, The Netherlands, (2006).

Appendix B

Certificates of Sound Level Instrument Calibration

West Caldwell Calibration Laboratories Inc.

Certificate of Calibration

for

PRECISON INTEGRATING SOUND LEVEL METER

Manufactured by:	LARSON DAVIS
Model No:	831
Serial No:	0003752
Calibration Recall No:	34590

Submitted By:

Customer:	ANTHONY SAVINO JR.
Company:	EPSILON ASSOCIATES, INC
Address:	3 MILL & MAIN PLACE
	MAYNARD MA 01754

The subject instrument was calibrated to the indicated specification using standards traceable to the SI through the National Institute of Standards and Technology or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the submitter.

West Caldwell Calibration Laboratories Procedure No. 831 LARS

Upon receipt for Calibration, the instrument was found to be:

Within (X)

tolerance of the indicated specification. See attached Report of Calibration.
The information supplied certifies that the item listed above meets acceptance criteria under the decision rule: A=(L-(U95)), where A is the acceptance criteria, L is manufacturer specifications, and U95 is confidence level of 95% at k=2. The decision rule has been communicated and approved by customer during contract review. Measurements marked with (*) are not covered by the scope of current A2LA accreditation.

West Caldwell Calibration Laboratories' calibration control system meets the following requirements: ANSI/NCSL Z540-1, ISO 9001, and ISO 17025.

Note: With this Certificate, Report of Calibration is included.

Approved by:

James Zhu

Quality Manager

Calibration Date:	09-Nov-23
Certificate Issue Date:	10-Nov-23
Certificate No:	34590 - 1

QA Doc. #1051 Rev. 3.0 5/29/20

ISO/IEC 17025

ACCREDITED

Calibration Lab. Cert. # 1533.01

West Caldwell Calibration Laboratories, Inc.
uncompromised calibration
1575 State Route 96, Victor, NY 14564, U.S.A.

West Caldwell Calibration Laboratories Inc.

Certificate of Calibration

for

MICROPHONE

Manufactured by:	PCB PIEZOTRONICS
Model No:	377C20
Serial No:	165015
Calibration Recall No:	34590

Submitted By:

Customer:	ANTHONY SAVINO JR.
Company:	EPSILON ASSOCIATES, INC
Address:	3 MILL & MAIN PLACE
	MAYNARD MA 01754

The subject instrument was calibrated to the indicated specification using standards traceable to the SI through the National Institute of Standards and Technology or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the submitter.

West Caldwell Calibration Laboratories Procedure No. 377C20 PCB PI

Upon receipt for Calibration, the instrument was found to be:

Within (X)

tolerance of the indicated specification. See attached Report of Calibration.
The information supplied certifies that the item listed above meets acceptance criteria under the decision rule: A=(L-(U95)), where A is the acceptance criteria, L is manufacturer specifications, and U95 is confidence level of 95% at k=2. The decision rule has been communicated and approved by customer during contract review. Measurements marked with (*) are not covered by the scope of current A2LA accreditation.

West Caldwell Calibration Laboratories' calibration control system meets the following requirements: ANSI/NCSL Z540-1, ISO 9001, and ISO 17025.

Note: With this Certificate, Report of Calibration is included.

Approved by:

James Zhu

Quality Manager

Calibration Date:	09-Nov-23
Certificate Issue Date:	10-Nov-23
Certificate No:	34590 -3

QA Doc. #1051 Rev. 3.0 5/29/20

ISO/IEC 17025

ACCREDITED

Calibration Lab. Cert. # 1533.01

West Caldwell Calibration Laboratories, Inc.
uncompromised calibration
1575 State Route 96, Victor, NY 14564, U.S.A.

West Caldwell Calibration Laboratories Inc.

Certificate of Calibration

for

PRECISON INTEGRATING SOUND LEVEL METER

Manufactured by:	LARSON DAVIS
Model No:	831
Serial No:	0003753
Calibration Recall No:	34590

Submitted By:

Customer:	ANTHONY SAVINO JR.
Company:	EPSILON ASSOCIATES, INC
Address:	3 MILL & MAIN PLACE
	MAYNARD MA 01754

The subject instrument was calibrated to the indicated specification using standards traceable to the SI through the National Institute of Standards and Technology or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the submitter.

West Caldwell Calibration Laboratories Procedure No. 831 LARS

Upon receipt for Calibration, the instrument was found to be:

Within (X)

tolerance of the indicated specification. See attached Report of Calibration.
The information supplied certifies that the item listed above meets acceptance criteria under the decision rule: A=(L-(U95)), where A is the acceptance criteria, L is manufacturer specifications, and U95 is confidence level of 95% at k=2. The decision rule has been communicated and approved by customer during contract review. Measurements marked with (*) are not covered by the scope of current A2LA accreditation.

West Caldwell Calibration Laboratories' calibration control system meets the following requirements: ANSI/NCSL Z540-1, ISO 9001, and ISO 17025.

Note: With this Certificate, Report of Calibration is included.

Approved by:

James Zhu

Quality Manager

Calibration Date:	09-Nov-23
Certificate Issue Date:	10-Nov-23
Certificate No:	34590 -4

QA Doc. #1051 Rev. 3.0 5/29/20

ISO/IEC 17025

ACCREDITED

Calibration Lab. Cert. # 1533.01

West Caldwell Calibration Laboratories, Inc.
uncompromised calibration
1575 State Route 96, Victor, NY 14564, U.S.A.

West Caldwell Calibration Laboratories Inc.

Certificate of Calibration

for

MICROPHONE

Manufactured by:	PCB PIEZOTRONICS
Model No:	377B20
Serial No:	142956
Calibration Recall No:	34590

Submitted By:

Customer:	ANTHONY SAVINO JR.
Company:	EPSILON ASSOCIATES, INC
Address:	3 MILL & MAIN PLACE
	MAYNARD MA 01754

The subject instrument was calibrated to the indicated specification using standards traceable to the SI through the National Institute of Standards and Technology or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the submitter.

West Caldwell Calibration Laboratories Procedure No. 377B20 PCB PI

Upon receipt for Calibration, the instrument was found to be:

Within (X)

tolerance of the indicated specification. See attached Report of Calibration.
The information supplied certifies that the item listed above meets acceptance criteria under the decision rule: A=(L-(U95)), where A is the acceptance criteria, L is manufacturer specifications, and U95 is confidence level of 95% at k=2. The decision rule has been communicated and approved by customer during contract review. Measurements marked with (*) are not covered by the scope of current A2LA accreditation.

West Caldwell Calibration Laboratories' calibration control system meets the following requirements: ANSI/NCSL Z540-1, ISO 9001, and ISO 17025.

Note: With this Certificate, Report of Calibration is included.

Approved by:

James Zhu

Quality Manager

Calibration Date:	09-Nov-23
Certificate Issue Date:	10-Nov-23
Certificate No:	34590 - 6

QA Doc. #1051 Rev. 3.0 5/29/20

ISO/IEC 17025

ACCREDITED

Calibration Lab. Cert. # 1533.01

West Caldwell Calibration Laboratories, Inc.
uncompromised calibration
1575 State Route 96, Victor, NY 14564, U.S.A.

West Caldwell Calibration Laboratories Inc.

Certificate of Conformance

for

PRECISION INTEGRATING SOUND LEVEL METER

Manufactured by:	LARSON DAVIS
Model No:	831
Serial No:	0004374
Calibration Recall No:	34798

Submitted By:

Customer:	ANTHONY SAVINO JR.
Company:	EPSILON ASSOCIATES, INC
Address:	3 MILL & MAIN PLACE
	MAYNARD MA 01754

The subject instrument was calibrated to the indicated specification using standards traceable to the SI through the National Institute of Standards and Technology or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the submitter.

West Caldwell Calibration Laboratories Procedure No. 831 LARSON DAVIS

Upon receipt for Calibration, the instrument was found to be:

Within (X)

tolerance of the indicated specification. See attached Report of Calibration.
The information supplied certifies that the item listed above meets acceptance criteria under the decision rule:

A=(L-(U95)), where A is the acceptance limit, L is the tolerance limit, and U95 is the expanded uncertainty. This minimizes the probability of false accept about less than 2.5%.
Measurements marked with (*) are not covered by the scope of accreditation.

The expanded uncertainty is based of the standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%. West Caldwell Calibration Laboratories' calibration control systems meets the requirements of ANSI/NCSL Z540-1, ISO 9001, and ISO 17025.

Note: With this Certificate, Report of Calibration is included

Approved by:

James Zhu

Quality Manager

Calibration Date:	07-Feb-24
Certificate Issue Date:	07-Feb-24
Certificate No:	34798 -7

ISO/IEC 17025

ACCREDITED

Calibration Lab. Cert. # 1533.01

West Caldwell Calibration Laboratories, Inc.
uncompromised calibration
1575 State Route 96, Victor, NY 14564, U.S.A.

West Caldwell Calibration Laboratories Inc.

Certificate of Conformance

for

MICROPHONE

Manufactured by:	PCB PIEZOTRONCS
Model No:	377C20
Serial No:	319397
Calibration Recall No:	34798

Submitted By:

Customer:	ANTHONY SAVINO JR.
Company:	EPSILON ASSOCIATES, INC
Address:	3 MILL & MAIN PLACE
	MAYNARD MA 01754

The subject instrument was calibrated to the indicated specification using standards traceable to the SI through the National Institute of Standards and Technology or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the submitter.

West Caldwell Calibration Laboratories Procedure No. 377C20 PCB PIEZOTRONCS

Upon receipt for Calibration, the instrument was found to be:

Within (X)

tolerance of the indicated specification. See attached Report of Calibration.
The information supplied certifies that the item listed above meets acceptance criteria under the decision rule:

A=(L-(U95)), where A is the acceptance limit, L is the tolerance limit, and U95 is the expanded uncertainty. This minimizes the probability of false accept about less than 2.5%.
Measurements marked with (*) are not covered by the scope of accreditation.

The expanded uncertainty is based of the standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%. West Caldwell Calibration Laboratories' calibration control systems meets the requirements of ANSI/NCSL Z540-1, ISO 9001, and ISO 17025.

Note: With this Certificate, Report of Calibration is included

Approved by:

James Zhu

Quality Manager

Calibration Date:	06-Feb-24
Certificate Issue Date:	08-Feb-24
Certificate No:	34798 - 12

ISO/IEC 17025

ACCREDITED

Calibration Lab. Cert. # 1533.01

West Caldwell Calibration Laboratories, Inc.
uncompromised calibration
1575 State Route 96, Victor, NY 14564, U.S.A.

West Caldwell Calibration Laboratories Inc.

Certificate of Calibration

for

PRECISION INTEGRATING SOUND LEVEL METER

Manufactured by:	LARSON DAVIS
Model No:	831
Serial No:	0004375
Calibration Recall No:	33881

Submitted By:

Customer:	ANTHONY SAVINO JR.
Company:	EPSILON ASSOCIATES, INC
Address:	3 MILL & MAIN PLACE
	MAYNARD MA 01754

The subject instrument was calibrated to the indicated specification using standards traceable to the SI through the National Institute of Standards and Technology or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the submitter.

West Caldwell Calibration Laboratories Procedure No. 831 LARS

Upon receipt for Calibration, the instrument was found to be:

Within (X)

tolerance of the indicated specification. See attached Report of Calibration.
The information supplied certifies that the item listed above meets acceptance criteria under the decision rule: A=(L-(U95)), where A is the acceptance criteria, L is manufacturer specifications, and U95 is confidence level of 95% at k=2. The decision rule has been communicated and approved by customer during contract review. Measurements marked with (*) are not covered by the scope of current A2LA accreditation.

West Caldwell Calibration Laboratories' calibration control system meets the following requirements: ANSI/NCSL Z540-1, ISO 9001, and ISO 17025.

Note: With this Certificate, Report of Calibration is included.

Approved by:

James Zhu

Quality Manager

Calibration Date:	23-Mar-23
Certificate Issue Date:	30-Mar-23
Certificate No:	33881 -4

QA Doc. #1051 Rev. 3.0 5/29/20

ISO/IEC 17025

ACCREDITED

Calibration Lab. Cert. # 1533.01

West Caldwell Calibration Laboratories, Inc.
uncompromised calibration
1575 State Route 96, Victor, NY 14564, U.S.A.

West Caldwell Calibration Laboratories Inc.

Certificate of Calibration

for

MICROPHONE

Manufactured by:	PCB
Model No:	377C20
Serial No:	165757
Calibration Recall No:	33881

Submitted By:

Customer:	ANTHONY SAVINO JR.
Company:	EPSILON ASSOCIATES, INC
Address:	3 MILL & MAIN PLACE
	MAYNARD MA 01754

The subject instrument was calibrated to the indicated specification using standards traceable to the SI through the National Institute of Standards and Technology or to accepted values of natural physical constants. This document certifies that the instrument met the following specification upon its return to the submitter.

West Caldwell Calibration Laboratories Procedure No. 377C20 PCB

Upon receipt for Calibration, the instrument was found to be:

Within (X)

tolerance of the indicated specification. See attached Report of Calibration.
The information supplied certifies that the item listed above meets acceptance criteria under the decision rule: A=(L-(U95)), where A is the acceptance criteria, L is manufacturer specifications, and U95 is confidence level of 95% at k=2. The decision rule has been communicated and approved by customer during contract review. Measurements marked with (*) are not covered by the scope of current A2LA accreditation.

West Caldwell Calibration Laboratories' calibration control system meets the following requirements: ANSI/NCSL Z540-1, ISO 9001, and ISO 17025.

Note: With this Certificate, Report of Calibration is included.

Approved by:

James Zhu

Quality Manager

Calibration Date:	23-Mar-23
Certificate Issue Date:	30-Mar-23
Certificate No:	33881 -6

QA Doc. #1051 Rev. 3.0 5/29/20

ISO/IEC 17025

ACCREDITED

Calibration Lab. Cert. # 1533.01

West Caldwell Calibration Laboratories, Inc.
uncompromised calibration
1575 State Route 96, Victor, NY 14564, U.S.A.

Calibration Certificate

Certificate Number 2023012978

Customer:

Epsilon Associates Inc
Suite 250
3 Mill and Main Place
Maynard, MA 01754, United States

Model Number	831C
Serial Number	12342
Test Results	**Pass**
Initial Condition	As Manufactured
Description	Larson Davis Model 831C Class 1 Sound Level Meter Firmware Revision: 04.9.0R59

Procedure Number	D0001.8378		
Technician	Jacob Cannon		
Calibration Date	26 Sep 2023		
Calibration Due	26 Sep 2024		
Temperature	23.77	°C	± 0.25 °C
Humidity	52.8	%RH	± 2.0 %RH
Static Pressure	86.23	kPa	± 0.13 kPa

Evaluation Method Tested electrically using Larson Davis PRM831 S/N 077520 and a 12.0 pF capacitor to simulate microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 50.0 mV/Pa.

Compliance Standards Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8384:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1
IEC 61260:2014 Class 1	ANSI S1.11-2014 Class 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017. **Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

Correction data from Larson Davis SoundAdvisor Model 831C Reference Manual, I831C.01 Rev M, 2019-09-10

Calibration Check Frequency: 1000 Hz; Reference Sound Pressure Level: 114 dB re 20 µPa; Reference Range: 0 dB gain

Calibration Certificate

Certificate Number 2023012990
Customer:
Epsilon Associates Inc
Suite 250
3 Mill and Main Place
Maynard, MA 01754, United States

Model Number	PRM831	***Procedure Number***	D0001.8383		
Serial Number	077520	***Technician***	Jacob Cannon		
Test Results	**Pass**	***Calibration Date***	26 Sep 2023		
Initial Condition	As Manufactured	***Calibration Due***	26 Sep 2024		
		Temperature	23.82	°C	± 0.01 °C
Description	Larson Davis 1/2" Preamplifier for Model 831 Type 1	***Humidity***	53.4	%RH	± 0.5 %RH
		Static Pressure	86.21	kPa	± 0.03 kPa

Evaluation Method Tested electrically using a 12.0 pF capacitor to simulate microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 50.0 mV/Pa.

Compliance Standards Compliant to Manufacturer Specifications

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017. **Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level. Tests are considered to pass when the measured value is within the acceptance limits, which are derived from industry standards.

Simple acceptance criteria is used with an expanded uncertainty not to exceed 0.20 dB for all measurements below 100 kHz and 0.50 dB for measurements above 100 kHz.

Standards Used

Description	Cal Date	Cal Due	Cal Standard
Larson Davis Model 2900 Real Time Analyzer	10/31/2022	10/31/2023	001150
Hart Scientific 2626-S Humidity/Temperature Sensor	02/20/2023	08/20/2024	006946
Keysight 34401A DMM	06/14/2023	06/14/2024	007485
SRS DS360 Ultra Low Distortion Generator	03/30/2023	03/30/2024	007635

Calibration Certificate

Certificate Number 2023011083

Customer:

Epsilon Associates Inc
Suite 250
3 Mill and Main Place
Maynard,MA 01754,United States

Model Number	377B02	***Procedure Number***	D0001.8387		
Serial Number	344923	***Technician***	Abraham Ortega		
Test Results	**Pass**	***Calibration Date***	22 Aug 2023		
Initial Condition	As Manufactured	***Calibration Due***	22 Aug 2024		
Description	1/2 inch Microphone - FF - 0V	***Temperature***	24.7	°C	± 0.01 °C
		Humidity	32.5	%RH	± 0.5 %RH
		Static Pressure	101.50	kPa	± 0.03 kPa

Evaluation Method Tested electrically using an electrostatic actuator.

Compliance Standards Compliant to Manufacturer Specifications.

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017.
Test points marked with a ‡ do not fall within this laboratory's scope of accreditation.

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

For microphone sensitivity measurements, simple acceptance criteria is used with an expanded uncertainty not to exceed 0.25 dB for microphone sensitivities above 1 mV/Pa and 0.65 dB for microphone sensitivities below 1 mV/Pa.

Appendix C

SUNY MesoNet Meteorological Data

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231212T000000	2023	12	12	00:00	32.7	67.8	0
20231212T000500	2023	12	12	00:05	32.8	66.8	0
20231212T001000	2023	12	12	00:10	32.9	66.2	0
20231212T001500	2023	12	12	00:15	32.9	66.3	0
20231212T002000	2023	12	12	00:20	32.8	67.3	0
20231212T002500	2023	12	12	00:25	32.9	66.8	0
20231212T003000	2023	12	12	00:30	33	66.5	0
20231212T003500	2023	12	12	00:35	32.9	67	0
20231212T004000	2023	12	12	00:40	32.9	67.4	0
20231212T004500	2023	12	12	00:45	32.9	67.6	0
20231212T005000	2023	12	12	00:50	32.8	68.6	0
20231212T005500	2023	12	12	00:55	32.9	67.9	0
20231212T010000	2023	12	12	01:00	32.9	67.9	0
20231212T010500	2023	12	12	01:05	32.9	67.8	0
20231212T011000	2023	12	12	01:10	32.7	69.4	0
20231212T011500	2023	12	12	01:15	32.8	68.8	0
20231212T012000	2023	12	12	01:20	32.7	69.4	0
20231212T012500	2023	12	12	01:25	32.7	69.7	0
20231212T013000	2023	12	12	01:30	32.7	69.7	0
20231212T013500	2023	12	12	01:35	32.6	70	0
20231212T014000	2023	12	12	01:40	32.7	69.9	0
20231212T014500	2023	12	12	01:45	32.6	69.4	0
20231212T015000	2023	12	12	01:50	32.6	69.5	0
20231212T015500	2023	12	12	01:55	32.5	70.5	0
20231212T020000	2023	12	12	02:00	32.6	69.1	0
20231212T020500	2023	12	12	02:05	32.6	69	0
20231212T021000	2023	12	12	02:10	32.5	69.6	0
20231212T021500	2023	12	12	02:15	32.4	70.5	0
20231212T022000	2023	12	12	02:20	32.5	69.8	0
20231212T022500	2023	12	12	02:25	32.4	70.2	0
20231212T023000	2023	12	12	02:30	32.4	69.1	0
20231212T023500	2023	12	12	02:35	32.3	69.2	0
20231212T024000	2023	12	12	02:40	32.4	68.5	0
20231212T024500	2023	12	12	02:45	32.4	68.2	0
20231212T025000	2023	12	12	02:50	32.3	68.2	0
20231212T025500	2023	12	12	02:55	32.3	67.7	0
20231212T030000	2023	12	12	03:00	32.3	67.5	0
20231212T030500	2023	12	12	03:05	32.3	67.3	0
20231212T031000	2023	12	12	03:10	32.4	66.7	0
20231212T031500	2023	12	12	03:15	32.4	66.5	0
20231212T032000	2023	12	12	03:20	32.4	66.3	0
20231212T032500	2023	12	12	03:25	32.4	65.9	0
20231212T033000	2023	12	12	03:30	32.4	65.9	0
20231212T033500	2023	12	12	03:35	32.4	65.8	0
20231212T034000	2023	12	12	03:40	32.4	65.9	0
20231212T034500	2023	12	12	03:45	32.4	65.4	0
20231212T035000	2023	12	12	03:50	32.4	65.3	0
20231212T035500	2023	12	12	03:55	32.3	65.7	0
20231212T040000	2023	12	12	04:00	32.3	65.2	0
20231212T040500	2023	12	12	04:05	32.3	65.9	0
20231212T041000	2023	12	12	04:10	32.3	65.3	0
20231212T041500	2023	12	12	04:15	32.4	64.5	0
20231212T042000	2023	12	12	04:20	32.4	64.5	0
20231212T042500	2023	12	12	04:25	32.3	65.3	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231212T043000	2023	12	12	04:30	32.3	65.5	0
20231212T043500	2023	12	12	04:35	32.3	65.1	0
20231212T044000	2023	12	12	04:40	32.3	64.9	0
20231212T044500	2023	12	12	04:45	32.3	65.3	0
20231212T045000	2023	12	12	04:50	32.4	64.3	0
20231212T045500	2023	12	12	04:55	32.3	65.1	0
20231212T050000	2023	12	12	05:00	32.4	64.1	0
20231212T050500	2023	12	12	05:05	32.4	64	0
20231212T051000	2023	12	12	05:10	32.4	64.2	0
20231212T051500	2023	12	12	05:15	32.4	64.1	0
20231212T052000	2023	12	12	05:20	32.5	63.1	0
20231212T052500	2023	12	12	05:25	32.4	63.3	0
20231212T053000	2023	12	12	05:30	32.3	63.4	0
20231212T053500	2023	12	12	05:35	32.1	64.1	0
20231212T054000	2023	12	12	05:40	32.2	63	0
20231212T054500	2023	12	12	05:45	32.3	62.6	0
20231212T055000	2023	12	12	05:50	32.3	62.7	0
20231212T055500	2023	12	12	05:55	32.3	62.7	0
20231212T060000	2023	12	12	06:00	32.4	62.3	0
20231212T060500	2023	12	12	06:05	32.5	62	0
20231212T061000	2023	12	12	06:10	32.4	61.3	0
20231212T061500	2023	12	12	06:15	31.9	63.2	0
20231212T062000	2023	12	12	06:20	31.7	63.6	0
20231212T062500	2023	12	12	06:25	31.6	64.2	0
20231212T063000	2023	12	12	06:30	31.5	64.4	0
20231212T063500	2023	12	12	06:35	31.1	66.1	0
20231212T064000	2023	12	12	06:40	30.9	66.7	0
20231212T064500	2023	12	12	06:45	30.8	66.4	0
20231212T065000	2023	12	12	06:50	31	65.8	0
20231212T065500	2023	12	12	06:55	31.1	66.1	0
20231212T070000	2023	12	12	07:00	31.4	65.4	0
20231212T070500	2023	12	12	07:05	31.4	65.6	0
20231212T071000	2023	12	12	07:10	31.4	66.4	0
20231212T071500	2023	12	12	07:15	31.5	67.2	0
20231212T072000	2023	12	12	07:20	31.5	67.2	0
20231212T072500	2023	12	12	07:25	31.7	65.8	0
20231212T073000	2023	12	12	07:30	31.8	66.2	0
20231212T073500	2023	12	12	07:35	31.7	66.4	0
20231212T074000	2023	12	12	07:40	31.9	66.5	0
20231212T074500	2023	12	12	07:45	31.9	67.6	0
20231212T075000	2023	12	12	07:50	32	67.6	0
20231212T075500	2023	12	12	07:55	32.1	67.7	0
20231212T080000	2023	12	12	08:00	32.3	67.4	0
20231212T080500	2023	12	12	08:05	32.5	67.1	0
20231212T081000	2023	12	12	08:10	32.6	67.2	0
20231212T081500	2023	12	12	08:15	32.5	68.1	0
20231212T082000	2023	12	12	08:20	32.7	68.1	0
20231212T082500	2023	12	12	08:25	32.6	68.7	0
20231212T083000	2023	12	12	08:30	32.8	68.5	0
20231212T083500	2023	12	12	08:35	32.9	68.6	0
20231212T084000	2023	12	12	08:40	33.1	68	0
20231212T084500	2023	12	12	08:45	33.2	68.2	0
20231212T085000	2023	12	12	08:50	33.3	67.9	0
20231212T085500	2023	12	12	08:55	33.4	67.9	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231212T090000	2023	12	12	09:00	33.4	68.3	0
20231212T090500	2023	12	12	09:05	33.5	68.1	0
20231212T091000	2023	12	12	09:10	33.6	67.4	0
20231212T091500	2023	12	12	09:15	33.6	66.5	0
20231212T092000	2023	12	12	09:20	33.6	66.7	0
20231212T092500	2023	12	12	09:25	33.5	66.4	0
20231212T093000	2023	12	12	09:30	33.4	66.2	0
20231212T093500	2023	12	12	09:35	33.3	66.3	0
20231212T094000	2023	12	12	09:40	33.5	65.4	0
20231212T094500	2023	12	12	09:45	33.7	65.8	0
20231212T095000	2023	12	12	09:50	34	65.4	0
20231212T095500	2023	12	12	09:55	33.9	64.3	0
20231212T100000	2023	12	12	10:00	34.1	64.5	0
20231212T100500	2023	12	12	10:05	34	63.3	0
20231212T101000	2023	12	12	10:10	34.1	63.3	0
20231212T101500	2023	12	12	10:15	34.2	63	0
20231212T102000	2023	12	12	10:20	34.3	63.1	0
20231212T102500	2023	12	12	10:25	34.2	62.6	0
20231212T103000	2023	12	12	10:30	34.2	62.6	0
20231212T103500	2023	12	12	10:35	34.4	62.5	0
20231212T104000	2023	12	12	10:40	34.4	62.2	0
20231212T104500	2023	12	12	10:45	34.4	62.3	0
20231212T105000	2023	12	12	10:50	34.3	62.4	0
20231212T105500	2023	12	12	10:55	34.4	62.5	0
20231212T110000	2023	12	12	11:00	34.5	62.7	0
20231212T110500	2023	12	12	11:05	34.6	62	0
20231212T111000	2023	12	12	11:10	34.9	62.9	0
20231212T111500	2023	12	12	11:15	34.9	61.3	0
20231212T112000	2023	12	12	11:20	35.1	60.8	0
20231212T112500	2023	12	12	11:25	34.9	60.4	0
20231212T113000	2023	12	12	11:30	35.1	59.9	0
20231212T113500	2023	12	12	11:35	35.2	60.8	0
20231212T114000	2023	12	12	11:40	35.4	60.2	0
20231212T114500	2023	12	12	11:45	35.6	61.1	0
20231212T115000	2023	12	12	11:50	35.9	59.9	0
20231212T115500	2023	12	12	11:55	35.9	58.6	0
20231212T120000	2023	12	12	12:00	35.9	59	0
20231212T120500	2023	12	12	12:05	36	59	0
20231212T121000	2023	12	12	12:10	36.2	59.5	0
20231212T121500	2023	12	12	12:15	36.3	58.3	0
20231212T122000	2023	12	12	12:20	36.4	58.1	0
20231212T122500	2023	12	12	12:25	36.6	57.1	0
20231212T123000	2023	12	12	12:30	36.7	56.3	0
20231212T123500	2023	12	12	12:35	36.9	56.9	0
20231212T124000	2023	12	12	12:40	36.9	55.8	0
20231212T124500	2023	12	12	12:45	37.3	55.3	0
20231212T125000	2023	12	12	12:50	37.5	54.3	0
20231212T125500	2023	12	12	12:55	37.7	54.2	0
20231212T130000	2023	12	12	13:00	38.2	54.6	0
20231212T130500	2023	12	12	13:05	38.1	53.1	0
20231212T131000	2023	12	12	13:10	38.2	54.9	0
20231212T131500	2023	12	12	13:15	38.2	55.7	0
20231212T132000	2023	12	12	13:20	38.6	53.8	0
20231212T132500	2023	12	12	13:25	38.7	52.5	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231212T133000	2023	12	12	13:30	39.2	50.7	0
20231212T133500	2023	12	12	13:35	39.2	51.8	0
20231212T134000	2023	12	12	13:40	39.5	54.3	0
20231212T134500	2023	12	12	13:45	39.1	54.1	0
20231212T135000	2023	12	12	13:50	39.3	52.5	0
20231212T135500	2023	12	12	13:55	39.5	52.4	0
20231212T140000	2023	12	12	14:00	39.6	53.7	0
20231212T140500	2023	12	12	14:05	39.7	53.6	0
20231212T141000	2023	12	12	14:10	40	54.1	0
20231212T141500	2023	12	12	14:15	40.2	53.5	0
20231212T142000	2023	12	12	14:20	40.4	53.4	0
20231212T142500	2023	12	12	14:25	39.6	54.1	0
20231212T143000	2023	12	12	14:30	40.1	53.9	0
20231212T143500	2023	12	12	14:35	40	52.5	0
20231212T144000	2023	12	12	14:40	40.1	51.7	0
20231212T144500	2023	12	12	14:45	40.3	51.2	0
20231212T145000	2023	12	12	14:50	40.3	51.9	0
20231212T145500	2023	12	12	14:55	40.4	51.8	0
20231212T150000	2023	12	12	15:00	40.6	51	0
20231212T150500	2023	12	12	15:05	40.5	50.7	0
20231212T151000	2023	12	12	15:10	40.5	50.9	0
20231212T151500	2023	12	12	15:15	40.3	52.2	0
20231212T152000	2023	12	12	15:20	40.5	51.5	0
20231212T152500	2023	12	12	15:25	40.7	50.3	0
20231212T153000	2023	12	12	15:30	40.4	51.3	0
20231212T153500	2023	12	12	15:35	40.3	51.6	0
20231212T154000	2023	12	12	15:40	40	52.9	0
20231212T154500	2023	12	12	15:45	40	53.1	0
20231212T155000	2023	12	12	15:50	39.7	54.3	0
20231212T155500	2023	12	12	15:55	39.4	55.1	0
20231212T160000	2023	12	12	16:00	39.4	55.5	0
20231212T160500	2023	12	12	16:05	39.3	55.3	0
20231212T161000	2023	12	12	16:10	39.2	55.3	0
20231212T161500	2023	12	12	16:15	39.6	54.6	0
20231212T162000	2023	12	12	16:20	39.3	54.2	0
20231212T162500	2023	12	12	16:25	39.2	54.9	0
20231212T163000	2023	12	12	16:30	38.8	56	0
20231212T163500	2023	12	12	16:35	39.1	56	0
20231212T164000	2023	12	12	16:40	38.8	56.5	0
20231212T164500	2023	12	12	16:45	38.6	57.6	0
20231212T165000	2023	12	12	16:50	38.3	57.6	0
20231212T165500	2023	12	12	16:55	38.5	57.9	0
20231212T170000	2023	12	12	17:00	38.1	58.6	0
20231212T170500	2023	12	12	17:05	37.9	59	0
20231212T171000	2023	12	12	17:10	37.9	59.4	0
20231212T171500	2023	12	12	17:15	37.7	60.3	0
20231212T172000	2023	12	12	17:20	37.7	60.3	0
20231212T172500	2023	12	12	17:25	37.7	60.9	0
20231212T173000	2023	12	12	17:30	37.8	60.6	0
20231212T173500	2023	12	12	17:35	37.6	61.3	0
20231212T174000	2023	12	12	17:40	37.8	61.4	0
20231212T174500	2023	12	12	17:45	38	60.9	0
20231212T175000	2023	12	12	17:50	37.7	61.4	0
20231212T175500	2023	12	12	17:55	37.8	61.5	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231212T180000	2023	12	12	18:00	37.7	61.8	0
20231212T180500	2023	12	12	18:05	37.7	61.7	0
20231212T181000	2023	12	12	18:10	37.6	61.8	0
20231212T181500	2023	12	12	18:15	37.6	61.8	0
20231212T182000	2023	12	12	18:20	37.8	61.5	0
20231212T182500	2023	12	12	18:25	37.6	61.8	0
20231212T183000	2023	12	12	18:30	38	60.6	0
20231212T183500	2023	12	12	18:35	37.6	61.8	0
20231212T184000	2023	12	12	18:40	37.7	61.3	0
20231212T184500	2023	12	12	18:45	37.7	61.6	0
20231212T185000	2023	12	12	18:50	37.9	60.6	0
20231212T185500	2023	12	12	18:55	37.7	61.2	0
20231212T190000	2023	12	12	19:00	37.5	62	0
20231212T190500	2023	12	12	19:05	37.5	61.8	0
20231212T191000	2023	12	12	19:10	37.7	61.3	0
20231212T191500	2023	12	12	19:15	37.3	62.4	0
20231212T192000	2023	12	12	19:20	37.4	62.2	0
20231212T192500	2023	12	12	19:25	37.5	62	0
20231212T193000	2023	12	12	19:30	37.5	61.9	0
20231212T193500	2023	12	12	19:35	37.7	61.3	0
20231212T194000	2023	12	12	19:40	37.9	60.9	0
20231212T194500	2023	12	12	19:45	38	60.5	0
20231212T195000	2023	12	12	19:50	38.3	59.8	0
20231212T195500	2023	12	12	19:55	38.2	60.3	0
20231212T200000	2023	12	12	20:00	38.4	59.5	0
20231212T200500	2023	12	12	20:05	38.4	59.5	0
20231212T201000	2023	12	12	20:10	38.4	59.9	0
20231212T201500	2023	12	12	20:15	38.7	59	0
20231212T202000	2023	12	12	20:20	39	58.4	0
20231212T202500	2023	12	12	20:25	38.9	58.7	0
20231212T203000	2023	12	12	20:30	39.1	58.5	0
20231212T203500	2023	12	12	20:35	39.1	58.1	0
20231212T204000	2023	12	12	20:40	38.8	58.9	0
20231212T204500	2023	12	12	20:45	39.1	58.4	0
20231212T205000	2023	12	12	20:50	39.4	57.2	0
20231212T205500	2023	12	12	20:55	39.4	57.7	0
20231212T210000	2023	12	12	21:00	39.4	57.6	0
20231212T210500	2023	12	12	21:05	39.5	57.5	0
20231212T211000	2023	12	12	21:10	39.6	57.5	0
20231212T211500	2023	12	12	21:15	39.7	57	0
20231212T212000	2023	12	12	21:20	39.5	58	0
20231212T212500	2023	12	12	21:25	40	56.3	0
20231212T213000	2023	12	12	21:30	39.8	56.7	0
20231212T213500	2023	12	12	21:35	38.8	59	0
20231212T214000	2023	12	12	21:40	37.7	63.1	0
20231212T214500	2023	12	12	21:45	37.3	64.6	0
20231212T215000	2023	12	12	21:50	37.3	65.3	0
20231212T215500	2023	12	12	21:55	37.8	63.9	0
20231212T220000	2023	12	12	22:00	38.5	61.9	0
20231212T220500	2023	12	12	22:05	38.6	60.9	0
20231212T221000	2023	12	12	22:10	38.5	61.3	0
20231212T221500	2023	12	12	22:15	38.2	62.6	0
20231212T222000	2023	12	12	22:20	38.4	62	0
20231212T222500	2023	12	12	22:25	38.2	63	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231212T223000	2023	12	12	22:30	38	63.9	0
20231212T223500	2023	12	12	22:35	37.8	64.8	0
20231212T224000	2023	12	12	22:40	38	64.3	0
20231212T224500	2023	12	12	22:45	38	64.1	0
20231212T225000	2023	12	12	22:50	38	64.2	0
20231212T225500	2023	12	12	22:55	37.8	64.9	0
20231212T230000	2023	12	12	23:00	38	64.6	0
20231212T230500	2023	12	12	23:05	38	64.5	0
20231212T231000	2023	12	12	23:10	38.3	63.7	0
20231212T231500	2023	12	12	23:15	38.1	64.1	0
20231212T232000	2023	12	12	23:20	38	64.9	0
20231212T232500	2023	12	12	23:25	38.2	64.5	0
20231212T233000	2023	12	12	23:30	38.3	63.8	0
20231212T233500	2023	12	12	23:35	38.2	64.2	0
20231212T234000	2023	12	12	23:40	38.2	64.3	0
20231212T234500	2023	12	12	23:45	38.2	64.2	0
20231212T235000	2023	12	12	23:50	38.2	64.5	0
20231212T235500	2023	12	12	23:55	37.9	65	0
20231213T000000	2023	12	13	00:00	37.8	65.4	0
20231213T000500	2023	12	13	00:05	38	64.7	0
20231213T001000	2023	12	13	00:10	37.9	64.3	0
20231213T001500	2023	12	13	00:15	37.5	65.6	0
20231213T002000	2023	12	13	00:20	37.7	64.9	0
20231213T002500	2023	12	13	00:25	37.4	65.2	0
20231213T003000	2023	12	13	00:30	37.4	64.6	0
20231213T003500	2023	12	13	00:35	37	65.8	0
20231213T004000	2023	12	13	00:40	36.9	66	0
20231213T004500	2023	12	13	00:45	36.8	65.8	0
20231213T005000	2023	12	13	00:50	36.3	66.7	0
20231213T005500	2023	12	13	00:55	36.2	67.2	0
20231213T010000	2023	12	13	01:00	36.1	66.3	0
20231213T010500	2023	12	13	01:05	36	66.7	0
20231213T011000	2023	12	13	01:10	36	66.1	0
20231213T011500	2023	12	13	01:15	35.9	65.8	0
20231213T012000	2023	12	13	01:20	35.7	65.7	0
20231213T012500	2023	12	13	01:25	35.5	65.8	0
20231213T013000	2023	12	13	01:30	35.3	65.8	0
20231213T013500	2023	12	13	01:35	35.4	65.6	0
20231213T014000	2023	12	13	01:40	35.2	65.7	0
20231213T014500	2023	12	13	01:45	35.4	64.6	0
20231213T015000	2023	12	13	01:50	35.1	64.9	0
20231213T015500	2023	12	13	01:55	34.9	65	0
20231213T020000	2023	12	13	02:00	35	64.7	0
20231213T020500	2023	12	13	02:05	35.3	64.2	0
20231213T021000	2023	12	13	02:10	35.4	64	0
20231213T021500	2023	12	13	02:15	35.1	64.9	0
20231213T022000	2023	12	13	02:20	35	65.3	0
20231213T022500	2023	12	13	02:25	34.9	65.4	0
20231213T023000	2023	12	13	02:30	34.8	65.8	0
20231213T023500	2023	12	13	02:35	34.8	66.1	0
20231213T024000	2023	12	13	02:40	34.6	66.4	0
20231213T024500	2023	12	13	02:45	34.3	66.9	0
20231213T025000	2023	12	13	02:50	34	66.8	0
20231213T025500	2023	12	13	02:55	33.9	67.7	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231213T030000	2023	12	13	03:00	34.1	67.4	0
20231213T030500	2023	12	13	03:05	34.1	67.5	0
20231213T031000	2023	12	13	03:10	34.3	66.6	0
20231213T031500	2023	12	13	03:15	34.1	67	0
20231213T032000	2023	12	13	03:20	34.2	66.9	0
20231213T032500	2023	12	13	03:25	34.3	67.2	0
20231213T033000	2023	12	13	03:30	34.3	67.3	0
20231213T033500	2023	12	13	03:35	34.4	67.4	0
20231213T034000	2023	12	13	03:40	34.5	67.5	0
20231213T034500	2023	12	13	03:45	34.7	67.5	0
20231213T035000	2023	12	13	03:50	34.6	67.6	0
20231213T035500	2023	12	13	03:55	34.6	68	0
20231213T040000	2023	12	13	04:00	34.9	66.8	0
20231213T040500	2023	12	13	04:05	35	66.3	0
20231213T041000	2023	12	13	04:10	35.1	65.7	0
20231213T041500	2023	12	13	04:15	35.1	65.5	0
20231213T042000	2023	12	13	04:20	35	65.4	0
20231213T042500	2023	12	13	04:25	35	64.9	0
20231213T043000	2023	12	13	04:30	34.8	65.5	0
20231213T043500	2023	12	13	04:35	34.7	65.5	0
20231213T044000	2023	12	13	04:40	34.8	64.2	0
20231213T044500	2023	12	13	04:45	34.8	63.7	0
20231213T045000	2023	12	13	04:50	34.9	62.8	0
20231213T045500	2023	12	13	04:55	34.8	61.3	0
20231213T050000	2023	12	13	05:00	34.8	60.2	0
20231213T050500	2023	12	13	05:05	34.9	58	0
20231213T051000	2023	12	13	05:10	34.9	56.2	0
20231213T051500	2023	12	13	05:15	34.7	55.6	0
20231213T052000	2023	12	13	05:20	34.8	52.6	0
20231213T052500	2023	12	13	05:25	34.6	52	0
20231213T053000	2023	12	13	05:30	34.5	52.1	0
20231213T053500	2023	12	13	05:35	34.5	51.7	0
20231213T054000	2023	12	13	05:40	34.2	52.6	0
20231213T054500	2023	12	13	05:45	34.2	52	0
20231213T055000	2023	12	13	05:50	34.2	51.5	0
20231213T055500	2023	12	13	05:55	34	51.7	0
20231213T060000	2023	12	13	06:00	34.1	51.4	0
20231213T060500	2023	12	13	06:05	33.9	52	0
20231213T061000	2023	12	13	06:10	33.7	52.9	0
20231213T061500	2023	12	13	06:15	33.7	53.1	0
20231213T062000	2023	12	13	06:20	33.4	53.8	0
20231213T062500	2023	12	13	06:25	33.4	53.7	0
20231213T063000	2023	12	13	06:30	33.2	54.3	0
20231213T063500	2023	12	13	06:35	33.2	54.4	0
20231213T064000	2023	12	13	06:40	33.1	55	0
20231213T064500	2023	12	13	06:45	32.9	56	0
20231213T065000	2023	12	13	06:50	33	56.9	0
20231213T065500	2023	12	13	06:55	33	57.9	0
20231213T070000	2023	12	13	07:00	32.8	59.7	0
20231213T070500	2023	12	13	07:05	32.7	60.4	0
20231213T071000	2023	12	13	07:10	32.6	60.6	0
20231213T071500	2023	12	13	07:15	32.6	59.9	0
20231213T072000	2023	12	13	07:20	32.5	59.6	0
20231213T072500	2023	12	13	07:25	32.2	59.9	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231213T073000	2023	12	13	07:30	32.1	60.2	0
20231213T073500	2023	12	13	07:35	32.1	59.5	0
20231213T074000	2023	12	13	07:40	31.9	60.4	0
20231213T074500	2023	12	13	07:45	32	59.5	0
20231213T075000	2023	12	13	07:50	32.1	58.8	0
20231213T075500	2023	12	13	07:55	31.8	59.9	0
20231213T080000	2023	12	13	08:00	32.1	59.1	0
20231213T080500	2023	12	13	08:05	32.1	58.7	0
20231213T081000	2023	12	13	08:10	32.4	57.9	0
20231213T081500	2023	12	13	08:15	32.5	57.3	0
20231213T082000	2023	12	13	08:20	32.5	57.9	0
20231213T082500	2023	12	13	08:25	32.6	57.7	0
20231213T083000	2023	12	13	08:30	32.6	57.8	0
20231213T083500	2023	12	13	08:35	32.7	57.7	0
20231213T084000	2023	12	13	08:40	32.9	57	0
20231213T084500	2023	12	13	08:45	33.2	56.2	0
20231213T085000	2023	12	13	08:50	33.3	56.3	0
20231213T085500	2023	12	13	08:55	33.4	56.1	0
20231213T090000	2023	12	13	09:00	33.3	56.7	0
20231213T090500	2023	12	13	09:05	33.5	56.1	0
20231213T091000	2023	12	13	09:10	33.4	56.7	0
20231213T091500	2023	12	13	09:15	33.5	56.9	0
20231213T092000	2023	12	13	09:20	33.7	56.2	0
20231213T092500	2023	12	13	09:25	33.8	55.7	0
20231213T093000	2023	12	13	09:30	33.8	55.5	0
20231213T093500	2023	12	13	09:35	33.9	55.3	0
20231213T094000	2023	12	13	09:40	34	55.2	0
20231213T094500	2023	12	13	09:45	34.4	55.5	0
20231213T095000	2023	12	13	09:50	34.3	55.7	0
20231213T095500	2023	12	13	09:55	34.2	55.7	0
20231213T100000	2023	12	13	10:00	34.4	55.2	0
20231213T100500	2023	12	13	10:05	34.4	55.4	0
20231213T101000	2023	12	13	10:10	34.6	56.3	0
20231213T101500	2023	12	13	10:15	34.9	55	0
20231213T102000	2023	12	13	10:20	34.8	55.4	0
20231213T102500	2023	12	13	10:25	34.7	55.1	0
20231213T103000	2023	12	13	10:30	34.5	55.6	0
20231213T103500	2023	12	13	10:35	34.3	56.5	0
20231213T104000	2023	12	13	10:40	34.3	56.5	0
20231213T104500	2023	12	13	10:45	34.3	57.4	0
20231213T105000	2023	12	13	10:50	34.3	58.3	0
20231213T105500	2023	12	13	10:55	34.2	58.8	0
20231213T110000	2023	12	13	11:00	34.1	57.7	0
20231213T110500	2023	12	13	11:05	33.9	58.1	0
20231213T111000	2023	12	13	11:10	33.8	59.4	0
20231213T111500	2023	12	13	11:15	33.6	60.6	0
20231213T112000	2023	12	13	11:20	33.1	63.9	0
20231213T112500	2023	12	13	11:25	32.4	70.3	0
20231213T113000	2023	12	13	11:30	32.3	72.3	0
20231213T113500	2023	12	13	11:35	32.3	71.8	0
20231213T114000	2023	12	13	11:40	32.1	74.1	0
20231213T114500	2023	12	13	11:45	31.9	75.3	0
20231213T115000	2023	12	13	11:50	31.7	76.2	0
20231213T115500	2023	12	13	11:55	31.7	77.9	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231213T120000	2023	12	13	12:00	32.1	75.6	0
20231213T120500	2023	12	13	12:05	32.3	73	0
20231213T121000	2023	12	13	12:10	32.3	72.3	0
20231213T121500	2023	12	13	12:15	32.3	73.5	0
20231213T122000	2023	12	13	12:20	32.2	73.3	0
20231213T122500	2023	12	13	12:25	32.1	74.1	0
20231213T123000	2023	12	13	12:30	32.1	74.2	0
20231213T123500	2023	12	13	12:35	32	75.7	0
20231213T124000	2023	12	13	12:40	31.8	77.1	0
20231213T124500	2023	12	13	12:45	31.8	77.4	0
20231213T125000	2023	12	13	12:50	31.8	77.4	0
20231213T125500	2023	12	13	12:55	32	77.3	0
20231213T130000	2023	12	13	13:00	32.1	77.2	0
20231213T130500	2023	12	13	13:05	32.2	76.4	0
20231213T131000	2023	12	13	13:10	32.1	76.8	0
20231213T131500	2023	12	13	13:15	32.3	76.8	0
20231213T132000	2023	12	13	13:20	32.4	76.7	0
20231213T132500	2023	12	13	13:25	32.7	75.1	0
20231213T133000	2023	12	13	13:30	33.4	71	0
20231213T133500	2023	12	13	13:35	34.4	59.6	0
20231213T134000	2023	12	13	13:40	34.6	54	0
20231213T134500	2023	12	13	13:45	34.5	53.5	0
20231213T135000	2023	12	13	13:50	34.6	54.2	0
20231213T135500	2023	12	13	13:55	34.7	53.9	0
20231213T140000	2023	12	13	14:00	34.7	52.5	0
20231213T140500	2023	12	13	14:05	34.7	52.7	0
20231213T141000	2023	12	13	14:10	34.7	51.9	0
20231213T141500	2023	12	13	14:15	34.7	51.7	0
20231213T142000	2023	12	13	14:20	34.6	52.1	0
20231213T142500	2023	12	13	14:25	34.4	52.7	0
20231213T143000	2023	12	13	14:30	34.3	53.3	0
20231213T143500	2023	12	13	14:35	34.5	53.3	0
20231213T144000	2023	12	13	14:40	34.6	52.2	0
20231213T144500	2023	12	13	14:45	34.6	51.6	0
20231213T145000	2023	12	13	14:50	34.7	49.9	0
20231213T145500	2023	12	13	14:55	34.7	50.4	0
20231213T150000	2023	12	13	15:00	34.6	51.6	0
20231213T150500	2023	12	13	15:05	34.6	50.8	0
20231213T151000	2023	12	13	15:10	34.6	51.1	0
20231213T151500	2023	12	13	15:15	34.4	50.9	0
20231213T152000	2023	12	13	15:20	34.3	51.2	0
20231213T152500	2023	12	13	15:25	34	52.6	0
20231213T153000	2023	12	13	15:30	33.5	56.7	0
20231213T153500	2023	12	13	15:35	31.6	73.7	0
20231213T154000	2023	12	13	15:40	30.9	81.7	0
20231213T154500	2023	12	13	15:45	30.3	87.2	0
20231213T155000	2023	12	13	15:50	30.2	88.8	0.003
20231213T155500	2023	12	13	15:55	30.3	87.7	0
20231213T160000	2023	12	13	16:00	30.2	88.3	0
20231213T160500	2023	12	13	16:05	30.2	88.1	0
20231213T161000	2023	12	13	16:10	30.4	85.8	0
20231213T161500	2023	12	13	16:15	30.5	84.6	0
20231213T162000	2023	12	13	16:20	30.4	85.3	0
20231213T162500	2023	12	13	16:25	30.2	87.6	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231213T163000	2023	12	13	16:30	30.1	88.5	0
20231213T163500	2023	12	13	16:35	30.1	89.2	0
20231213T164000	2023	12	13	16:40	30.1	89.5	0
20231213T164500	2023	12	13	16:45	29.9	90.7	0
20231213T165000	2023	12	13	16:50	29.7	92	0
20231213T165500	2023	12	13	16:55	29.6	93.3	0.008
20231213T170000	2023	12	13	17:00	29.6	93	0.002
20231213T170500	2023	12	13	17:05	29.6	91.8	0
20231213T171000	2023	12	13	17:10	29.7	90.2	0
20231213T171500	2023	12	13	17:15	29.7	89.6	0
20231213T172000	2023	12	13	17:20	29.8	88	0
20231213T172500	2023	12	13	17:25	30	85.6	0
20231213T173000	2023	12	13	17:30	30.1	84	0
20231213T173500	2023	12	13	17:35	30.2	82.7	0
20231213T174000	2023	12	13	17:40	30.2	81.7	0
20231213T174500	2023	12	13	17:45	30.2	81.2	0
20231213T175000	2023	12	13	17:50	30.2	80.9	0
20231213T175500	2023	12	13	17:55	30.3	80.1	0
20231213T180000	2023	12	13	18:00	30.4	79.5	0
20231213T180500	2023	12	13	18:05	30.4	79.4	0
20231213T181000	2023	12	13	18:10	30.4	79.3	0
20231213T181500	2023	12	13	18:15	30.3	79.5	0
20231213T182000	2023	12	13	18:20	30.1	79.7	0
20231213T182500	2023	12	13	18:25	30	79.1	0
20231213T183000	2023	12	13	18:30	30	78.5	0
20231213T183500	2023	12	13	18:35	30.1	77.4	0
20231213T184000	2023	12	13	18:40	30	77.3	0
20231213T184500	2023	12	13	18:45	29.9	77.1	0
20231213T185000	2023	12	13	18:50	29.9	76.3	0
20231213T185500	2023	12	13	18:55	29.9	75.3	0
20231213T190000	2023	12	13	19:00	29.6	75.8	0
20231213T190500	2023	12	13	19:05	29.6	76.2	0
20231213T191000	2023	12	13	19:10	29.5	76.7	0
20231213T191500	2023	12	13	19:15	29.3	78	0
20231213T192000	2023	12	13	19:20	29.1	78.6	0
20231213T192500	2023	12	13	19:25	28.9	78.7	0
20231213T193000	2023	12	13	19:30	28.9	78	0
20231213T193500	2023	12	13	19:35	28.9	77.9	0
20231213T194000	2023	12	13	19:40	29.1	77.7	0
20231213T194500	2023	12	13	19:45	29	77.5	0
20231213T195000	2023	12	13	19:50	29.1	77.3	0
20231213T195500	2023	12	13	19:55	29	76.8	0
20231213T200000	2023	12	13	20:00	29.2	76.2	0
20231213T200500	2023	12	13	20:05	29.2	75.7	0
20231213T201000	2023	12	13	20:10	29	75.5	0
20231213T201500	2023	12	13	20:15	29	75.4	0
20231213T202000	2023	12	13	20:20	29	74.9	0
20231213T202500	2023	12	13	20:25	28.9	75.2	0
20231213T203000	2023	12	13	20:30	28.6	76.1	0
20231213T203500	2023	12	13	20:35	28.7	76.1	0
20231213T204000	2023	12	13	20:40	28.9	75.2	0
20231213T204500	2023	12	13	20:45	29.1	74.2	0
20231213T205000	2023	12	13	20:50	29.1	73.6	0
20231213T205500	2023	12	13	20:55	29.1	73	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231213T210000	2023	12	13	21:00	29.2	72.5	0
20231213T210500	2023	12	13	21:05	29	72.8	0
20231213T211000	2023	12	13	21:10	29	72.3	0
20231213T211500	2023	12	13	21:15	29	71.8	0
20231213T212000	2023	12	13	21:20	29	71.9	0
20231213T212500	2023	12	13	21:25	28.8	71.8	0
20231213T213000	2023	12	13	21:30	28.9	72	0
20231213T213500	2023	12	13	21:35	28.8	71.9	0
20231213T214000	2023	12	13	21:40	28.5	72.5	0
20231213T214500	2023	12	13	21:45	28.5	72.5	0
20231213T215000	2023	12	13	21:50	28.4	73.2	0
20231213T215500	2023	12	13	21:55	28.3	73.5	0
20231213T220000	2023	12	13	22:00	28.2	73.8	0
20231213T220500	2023	12	13	22:05	28	74	0
20231213T221000	2023	12	13	22:10	27.8	74.6	0
20231213T221500	2023	12	13	22:15	27.5	75.1	0
20231213T222000	2023	12	13	22:20	27.5	76.1	0
20231213T222500	2023	12	13	22:25	27.3	76.5	0
20231213T223000	2023	12	13	22:30	27.1	77.3	0
20231213T223500	2023	12	13	22:35	26.9	77.8	0
20231213T224000	2023	12	13	22:40	27	78.9	0
20231213T224500	2023	12	13	22:45	27.2	78.9	0
20231213T225000	2023	12	13	22:50	26.9	79.3	0
20231213T225500	2023	12	13	22:55	26.5	80.2	0
20231213T230000	2023	12	13	23:00	26.5	81.1	0
20231213T230500	2023	12	13	23:05	26.4	81.4	0
20231213T231000	2023	12	13	23:10	26.2	81.9	0
20231213T231500	2023	12	13	23:15	26.1	82.1	0
20231213T232000	2023	12	13	23:20	26.2	81.6	0
20231213T232500	2023	12	13	23:25	26.1	80.3	0
20231213T233000	2023	12	13	23:30	26	78.9	0
20231213T233500	2023	12	13	23:35	25.9	77.7	0
20231213T234000	2023	12	13	23:40	25.9	76.3	0
20231213T234500	2023	12	13	23:45	26	75.6	0
20231213T235000	2023	12	13	23:50	25.9	75.1	0
20231213T235500	2023	12	13	23:55	25.9	74.6	0
20231214T000000	2023	12	14	00:00	25.9	73.3	0
20231214T000500	2023	12	14	00:05	25.8	72.6	0
20231214T001000	2023	12	14	00:10	25.4	73.1	0
20231214T001500	2023	12	14	00:15	25.3	73.4	0
20231214T002000	2023	12	14	00:20	25.2	72.9	0
20231214T002500	2023	12	14	00:25	25.3	72.2	0
20231214T003000	2023	12	14	00:30	25.1	71.5	0
20231214T003500	2023	12	14	00:35	25.2	70.4	0
20231214T004000	2023	12	14	00:40	25	69.7	0
20231214T004500	2023	12	14	00:45	24.8	69.3	0
20231214T005000	2023	12	14	00:50	25.1	68.7	0
20231214T005500	2023	12	14	00:55	24.9	68.4	0
20231214T010000	2023	12	14	01:00	24.6	68.7	0
20231214T010500	2023	12	14	01:05	24.8	68.3	0
20231214T011000	2023	12	14	01:10	25	66.7	0
20231214T011500	2023	12	14	01:15	24.9	65.9	0
20231214T012000	2023	12	14	01:20	24.7	65.9	0
20231214T012500	2023	12	14	01:25	24.4	66.1	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231214T013000	2023	12	14	01:30	24.3	66.3	0
20231214T013500	2023	12	14	01:35	24	66.7	0
20231214T014000	2023	12	14	01:40	24.1	67.3	0
20231214T014500	2023	12	14	01:45	23.8	67.2	0
20231214T015000	2023	12	14	01:50	23.6	67.2	0
20231214T015500	2023	12	14	01:55	23.7	67.1	0
20231214T020000	2023	12	14	02:00	23.6	66.8	0
20231214T020500	2023	12	14	02:05	23.2	66.8	0
20231214T021000	2023	12	14	02:10	23.3	66.3	0
20231214T021500	2023	12	14	02:15	23.4	65.5	0
20231214T022000	2023	12	14	02:20	23.1	66.1	0
20231214T022500	2023	12	14	02:25	23.4	64.3	0
20231214T023000	2023	12	14	02:30	23.2	63.9	0
20231214T023500	2023	12	14	02:35	23.2	63.4	0
20231214T024000	2023	12	14	02:40	23.2	63.8	0
20231214T024500	2023	12	14	02:45	22.9	64.1	0
20231214T025000	2023	12	14	02:50	22.5	65.5	0
20231214T025500	2023	12	14	02:55	22	66.6	0
20231214T030000	2023	12	14	03:00	22.1	67.2	0
20231214T030500	2023	12	14	03:05	21.7	67.6	0
20231214T031000	2023	12	14	03:10	21.3	67.3	0
20231214T031500	2023	12	14	03:15	21.3	66.7	0
20231214T032000	2023	12	14	03:20	21	67.1	0
20231214T032500	2023	12	14	03:25	20.7	67.6	0
20231214T033000	2023	12	14	03:30	20.8	67.7	0
20231214T033500	2023	12	14	03:35	20.5	67.9	0
20231214T034000	2023	12	14	03:40	20.3	68.6	0
20231214T034500	2023	12	14	03:45	20	69	0
20231214T035000	2023	12	14	03:50	19.8	69.2	0
20231214T035500	2023	12	14	03:55	19.2	70.4	0
20231214T040000	2023	12	14	04:00	19.7	71.8	0
20231214T040500	2023	12	14	04:05	19.7	70.3	0
20231214T041000	2023	12	14	04:10	20	69.3	0
20231214T041500	2023	12	14	04:15	19.9	69.4	0
20231214T042000	2023	12	14	04:20	19.9	70.3	0
20231214T042500	2023	12	14	04:25	18.7	71.2	0
20231214T043000	2023	12	14	04:30	18.5	72.7	0
20231214T043500	2023	12	14	04:35	17.1	74.8	0
20231214T044000	2023	12	14	04:40	17.3	76.2	0
20231214T044500	2023	12	14	04:45	18.1	76.1	0
20231214T045000	2023	12	14	04:50	17.9	76.1	0
20231214T045500	2023	12	14	04:55	17.7	75	0
20231214T050000	2023	12	14	05:00	17	75.9	0
20231214T050500	2023	12	14	05:05	16.4	76.7	0
20231214T051000	2023	12	14	05:10	18.1	78.7	0
20231214T051500	2023	12	14	05:15	18.1	75	0
20231214T052000	2023	12	14	05:20	17.8	74.1	0
20231214T052500	2023	12	14	05:25	18.3	73.4	0
20231214T053000	2023	12	14	05:30	17.7	73.2	0
20231214T053500	2023	12	14	05:35	18	73.6	0
20231214T054000	2023	12	14	05:40	17.8	75	0
20231214T054500	2023	12	14	05:45	17.5	75.1	0
20231214T055000	2023	12	14	05:50	17.7	75.6	0
20231214T055500	2023	12	14	05:55	17.8	75.3	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231214T060000	2023	12	14	06:00	18.1	75.5	0
20231214T060500	2023	12	14	06:05	18.4	74.8	0
20231214T061000	2023	12	14	06:10	18.2	73.2	0
20231214T061500	2023	12	14	06:15	17.7	73.6	0
20231214T062000	2023	12	14	06:20	17.1	74.7	0
20231214T062500	2023	12	14	06:25	17.8	75.8	0
20231214T063000	2023	12	14	06:30	17.8	75.7	0
20231214T063500	2023	12	14	06:35	17.6	74.9	0
20231214T064000	2023	12	14	06:40	17.7	76.2	0
20231214T064500	2023	12	14	06:45	17.8	76.1	0
20231214T065000	2023	12	14	06:50	17.7	75.5	0
20231214T065500	2023	12	14	06:55	17.5	75.8	0
20231214T070000	2023	12	14	07:00	17.6	76.9	0
20231214T070500	2023	12	14	07:05	17.6	77.4	0
20231214T071000	2023	12	14	07:10	17.8	77.1	0
20231214T071500	2023	12	14	07:15	18.2	75.4	0
20231214T072000	2023	12	14	07:20	17.6	74.9	0
20231214T072500	2023	12	14	07:25	17.9	74.9	0
20231214T073000	2023	12	14	07:30	17.5	75.6	0
20231214T073500	2023	12	14	07:35	18	73.3	0
20231214T074000	2023	12	14	07:40	17.1	75.3	0
20231214T074500	2023	12	14	07:45	17.1	77.6	0
20231214T075000	2023	12	14	07:50	17.3	76.1	0
20231214T075500	2023	12	14	07:55	16.3	75.2	0
20231214T080000	2023	12	14	08:00	16.3	76.6	0
20231214T080500	2023	12	14	08:05	17.6	77.8	0
20231214T081000	2023	12	14	08:10	17.5	75.2	0
20231214T081500	2023	12	14	08:15	17.7	73.6	0
20231214T082000	2023	12	14	08:20	18.4	71.9	0
20231214T082500	2023	12	14	08:25	18.4	69.2	0
20231214T083000	2023	12	14	08:30	18.6	71.6	0
20231214T083500	2023	12	14	08:35	18.5	73	0
20231214T084000	2023	12	14	08:40	19	69.8	0
20231214T084500	2023	12	14	08:45	19.5	71.5	0
20231214T085000	2023	12	14	08:50	19.9	71.1	0
20231214T085500	2023	12	14	08:55	20.3	69.2	0
20231214T090000	2023	12	14	09:00	20.9	67.5	0
20231214T090500	2023	12	14	09:05	20.6	67.2	0
20231214T091000	2023	12	14	09:10	20.9	68.8	0
20231214T091500	2023	12	14	09:15	21	69.7	0
20231214T092000	2023	12	14	09:20	21.1	69.9	0
20231214T092500	2023	12	14	09:25	21.2	70.1	0
20231214T093000	2023	12	14	09:30	21.5	70.9	0
20231214T093500	2023	12	14	09:35	21.7	69.9	0
20231214T094000	2023	12	14	09:40	22.2	68.8	0
20231214T094500	2023	12	14	09:45	22.8	67.3	0
20231214T095000	2023	12	14	09:50	23.7	63.6	0
20231214T095500	2023	12	14	09:55	24.9	60.5	0
20231214T100000	2023	12	14	10:00	24	62.6	0
20231214T100500	2023	12	14	10:05	24.1	62.4	0
20231214T101000	2023	12	14	10:10	24.3	62.3	0
20231214T101500	2023	12	14	10:15	24.4	62.3	0
20231214T102000	2023	12	14	10:20	25	61.8	0
20231214T102500	2023	12	14	10:25	25.1	60.1	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231214T103000	2023	12	14	10:30	24.7	59.8	0
20231214T103500	2023	12	14	10:35	25.4	62	0
20231214T104000	2023	12	14	10:40	26	60.3	0
20231214T104500	2023	12	14	10:45	25.9	62.1	0
20231214T105000	2023	12	14	10:50	25.9	60.8	0
20231214T105500	2023	12	14	10:55	26	62.3	0
20231214T110000	2023	12	14	11:00	25.6	61.4	0
20231214T110500	2023	12	14	11:05	25.9	62	0
20231214T111000	2023	12	14	11:10	26	59.1	0
20231214T111500	2023	12	14	11:15	26.1	60	0
20231214T112000	2023	12	14	11:20	26.2	61.5	0
20231214T112500	2023	12	14	11:25	26.5	60.9	0
20231214T113000	2023	12	14	11:30	27.1	59.4	0
20231214T113500	2023	12	14	11:35	27.7	56.9	0
20231214T114000	2023	12	14	11:40	27.5	54.8	0
20231214T114500	2023	12	14	11:45	28.3	57.1	0
20231214T115000	2023	12	14	11:50	29	58.4	0
20231214T115500	2023	12	14	11:55	28.9	59.2	0
20231214T120000	2023	12	14	12:00	28.8	58.5	0
20231214T120500	2023	12	14	12:05	29.8	57.1	0
20231214T121000	2023	12	14	12:10	29.6	56.9	0
20231214T121500	2023	12	14	12:15	29.9	58.3	0
20231214T122000	2023	12	14	12:20	29.6	58.2	0
20231214T122500	2023	12	14	12:25	30	58.4	0
20231214T123000	2023	12	14	12:30	31.2	59.7	0
20231214T123500	2023	12	14	12:35	30.3	61.2	0
20231214T124000	2023	12	14	12:40	30.9	63	0
20231214T124500	2023	12	14	12:45	30.6	62.4	0
20231214T125000	2023	12	14	12:50	31	62.8	0
20231214T125500	2023	12	14	12:55	31.2	61.4	0
20231214T130000	2023	12	14	13:00	30.8	62.9	0
20231214T130500	2023	12	14	13:05	31.4	62.6	0
20231214T131000	2023	12	14	13:10	30.9	62.8	0
20231214T131500	2023	12	14	13:15	30.9	63	0
20231214T132000	2023	12	14	13:20	31.2	62	0
20231214T132500	2023	12	14	13:25	31.4	60.8	0
20231214T133000	2023	12	14	13:30	31.7	60.5	0
20231214T133500	2023	12	14	13:35	32.1	61.4	0
20231214T134000	2023	12	14	13:40	32.7	63.5	0
20231214T134500	2023	12	14	13:45	33.1	59.3	0
20231214T135000	2023	12	14	13:50	32.8	59.9	0
20231214T135500	2023	12	14	13:55	33.2	60.6	0
20231214T140000	2023	12	14	14:00	33.4	58.7	0
20231214T140500	2023	12	14	14:05	34	57.4	0
20231214T141000	2023	12	14	14:10	33.8	55.1	0
20231214T141500	2023	12	14	14:15	33.6	56.4	0
20231214T142000	2023	12	14	14:20	34.3	56.6	0
20231214T142500	2023	12	14	14:25	34.5	56.2	0
20231214T143000	2023	12	14	14:30	35.3	53.4	0
20231214T143500	2023	12	14	14:35	35.4	51.2	0
20231214T144000	2023	12	14	14:40	35.3	51.8	0
20231214T144500	2023	12	14	14:45	35.4	50.6	0
20231214T145000	2023	12	14	14:50	35.4	50.3	0
20231214T145500	2023	12	14	14:55	35.5	50.3	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231214T150000	2023	12	14	15:00	35.6	49.3	0
20231214T150500	2023	12	14	15:05	35.7	48.5	0
20231214T151000	2023	12	14	15:10	35.9	47.3	0
20231214T151500	2023	12	14	15:15	35.9	46.6	0
20231214T152000	2023	12	14	15:20	35.9	46.5	0
20231214T152500	2023	12	14	15:25	35.9	46.5	0
20231214T153000	2023	12	14	15:30	35.8	46.7	0
20231214T153500	2023	12	14	15:35	35.6	46.9	0
20231214T154000	2023	12	14	15:40	35.2	48.5	0
20231214T154500	2023	12	14	15:45	34.9	49.8	0
20231214T155000	2023	12	14	15:50	34.7	50.3	0
20231214T155500	2023	12	14	15:55	34.5	51.2	0
20231214T160000	2023	12	14	16:00	34	52.4	0
20231214T160500	2023	12	14	16:05	33.6	54.3	0
20231214T161000	2023	12	14	16:10	33.4	55.2	0
20231214T161500	2023	12	14	16:15	32.9	56.3	0
20231214T162000	2023	12	14	16:20	32.7	56.4	0
20231214T162500	2023	12	14	16:25	32.6	57.2	0
20231214T163000	2023	12	14	16:30	32.5	57.7	0
20231214T163500	2023	12	14	16:35	32.6	57.3	0
20231214T164000	2023	12	14	16:40	32.4	57.9	0
20231214T164500	2023	12	14	16:45	32.4	58.6	0
20231214T165000	2023	12	14	16:50	32.4	58.1	0
20231214T165500	2023	12	14	16:55	32.5	58	0
20231214T170000	2023	12	14	17:00	32.9	58	0
20231214T170500	2023	12	14	17:05	33	57.3	0
20231214T171000	2023	12	14	17:10	32.9	57.9	0
20231214T171500	2023	12	14	17:15	32.7	58.7	0
20231214T172000	2023	12	14	17:20	32.9	59.6	0
20231214T172500	2023	12	14	17:25	33.1	58.8	0
20231214T173000	2023	12	14	17:30	32.9	59.5	0
20231214T173500	2023	12	14	17:35	32.5	62.2	0
20231214T174000	2023	12	14	17:40	32.3	63.5	0
20231214T174500	2023	12	14	17:45	32.4	63.8	0
20231214T175000	2023	12	14	17:50	32.5	63.1	0
20231214T175500	2023	12	14	17:55	32.7	62.5	0
20231214T180000	2023	12	14	18:00	32.8	62.3	0
20231214T180500	2023	12	14	18:05	32.7	63	0
20231214T181000	2023	12	14	18:10	32.8	63	0
20231214T181500	2023	12	14	18:15	32.6	63.2	0
20231214T182000	2023	12	14	18:20	33	62.7	0
20231214T182500	2023	12	14	18:25	33	61.6	0
20231214T183000	2023	12	14	18:30	32.7	62.3	0
20231214T183500	2023	12	14	18:35	31.8	64.1	0
20231214T184000	2023	12	14	18:40	31.7	65.3	0
20231214T184500	2023	12	14	18:45	30.9	66	0
20231214T185000	2023	12	14	18:50	30.6	68.2	0
20231214T185500	2023	12	14	18:55	31.1	68.6	0
20231214T190000	2023	12	14	19:00	29.1	70.4	0
20231214T190500	2023	12	14	19:05	30.3	75.9	0
20231214T191000	2023	12	14	19:10	29.7	73.6	0
20231214T191500	2023	12	14	19:15	27.3	73.7	0
20231214T192000	2023	12	14	19:20	28.2	76.2	0
20231214T192500	2023	12	14	19:25	29.6	75.4	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231214T193000	2023	12	14	19:30	29.1	72.1	0
20231214T193500	2023	12	14	19:35	28.1	71.6	0
20231214T194000	2023	12	14	19:40	29	71.7	0
20231214T194500	2023	12	14	19:45	29.8	69.8	0
20231214T195000	2023	12	14	19:50	28.7	70	0
20231214T195500	2023	12	14	19:55	30.2	71.6	0
20231214T200000	2023	12	14	20:00	31.1	69.4	0
20231214T200500	2023	12	14	20:05	30.3	68.5	0
20231214T201000	2023	12	14	20:10	29.9	70.1	0
20231214T201500	2023	12	14	20:15	29.2	70.4	0
20231214T202000	2023	12	14	20:20	30.2	70.4	0
20231214T202500	2023	12	14	20:25	30.3	68	0
20231214T203000	2023	12	14	20:30	26.8	69.6	0
20231214T203500	2023	12	14	20:35	26.3	77.9	0
20231214T204000	2023	12	14	20:40	29.4	73.6	0
20231214T204500	2023	12	14	20:45	30.6	69.7	0
20231214T205000	2023	12	14	20:50	31	66	0
20231214T205500	2023	12	14	20:55	27	71.3	0
20231214T210000	2023	12	14	21:00	28.4	75.5	0
20231214T210500	2023	12	14	21:05	30.4	68.8	0
20231214T211000	2023	12	14	21:10	30	68	0
20231214T211500	2023	12	14	21:15	31.8	67.1	0
20231214T212000	2023	12	14	21:20	31	66.2	0
20231214T212500	2023	12	14	21:25	30.8	66.7	0
20231214T213000	2023	12	14	21:30	28.3	71.5	0
20231214T213500	2023	12	14	21:35	29.4	76	0
20231214T214000	2023	12	14	21:40	29	76	0
20231214T214500	2023	12	14	21:45	27.7	74.9	0
20231214T215000	2023	12	14	21:50	28.1	75	0
20231214T215500	2023	12	14	21:55	27.2	72.8	0
20231214T220000	2023	12	14	22:00	28.1	75.8	0
20231214T220500	2023	12	14	22:05	26.4	78.3	0
20231214T221000	2023	12	14	22:10	28.6	78.5	0
20231214T221500	2023	12	14	22:15	28.1	75.4	0
20231214T222000	2023	12	14	22:20	27.4	76.5	0
20231214T222500	2023	12	14	22:25	27.3	78.6	0
20231214T223000	2023	12	14	22:30	31.6	75.1	0
20231214T223500	2023	12	14	22:35	35.5	64.3	0
20231214T224000	2023	12	14	22:40	36.3	59.4	0
20231214T224500	2023	12	14	22:45	36.6	58.7	0
20231214T225000	2023	12	14	22:50	36.8	57.9	0
20231214T225500	2023	12	14	22:55	35.5	59.1	0
20231214T230000	2023	12	14	23:00	35.9	62.1	0
20231214T230500	2023	12	14	23:05	32.6	64.5	0
20231214T231000	2023	12	14	23:10	33.8	66.9	0
20231214T231500	2023	12	14	23:15	31.3	66.8	0
20231214T232000	2023	12	14	23:20	31.1	70.2	0
20231214T232500	2023	12	14	23:25	30.7	70.7	0
20231214T233000	2023	12	14	23:30	31.3	70.6	0
20231214T233500	2023	12	14	23:35	31.8	69.5	0
20231214T234000	2023	12	14	23:40	31.8	68.9	0
20231214T234500	2023	12	14	23:45	31.2	68.5	0
20231214T235000	2023	12	14	23:50	31.7	69.8	0
20231214T235500	2023	12	14	23:55	31.2	68.5	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231215T000000	2023	12	15	00:00	31.4	69.4	0
20231215T000500	2023	12	15	00:05	31.1	70.5	0
20231215T001000	2023	12	15	00:10	31	68.7	0
20231215T001500	2023	12	15	00:15	30.4	70.3	0
20231215T002000	2023	12	15	00:20	31	71	0
20231215T002500	2023	12	15	00:25	29.5	70.9	0
20231215T003000	2023	12	15	00:30	32	71.7	0
20231215T003500	2023	12	15	00:35	31.2	69.9	0
20231215T004000	2023	12	15	00:40	31.9	69.7	0
20231215T004500	2023	12	15	00:45	31.2	68.4	0
20231215T005000	2023	12	15	00:50	31.2	70.9	0
20231215T005500	2023	12	15	00:55	30.5	71.5	0
20231215T010000	2023	12	15	01:00	30.9	72.8	0
20231215T010500	2023	12	15	01:05	31	72.8	0
20231215T011000	2023	12	15	01:10	30.9	72.6	0
20231215T011500	2023	12	15	01:15	31	71.6	0
20231215T012000	2023	12	15	01:20	31.1	70.9	0
20231215T012500	2023	12	15	01:25	31.5	69.5	0
20231215T013000	2023	12	15	01:30	31.4	69.4	0
20231215T013500	2023	12	15	01:35	31.1	69.5	0
20231215T014000	2023	12	15	01:40	29.8	71.2	0
20231215T014500	2023	12	15	01:45	30.7	71.3	0
20231215T015000	2023	12	15	01:50	30.7	70.6	0
20231215T015500	2023	12	15	01:55	27.8	73	0
20231215T020000	2023	12	15	02:00	28.5	77.6	0
20231215T020500	2023	12	15	02:05	29.7	77.7	0
20231215T021000	2023	12	15	02:10	30.4	76.6	0
20231215T021500	2023	12	15	02:15	31.4	74.9	0
20231215T022000	2023	12	15	02:20	31.7	71.8	0
20231215T022500	2023	12	15	02:25	32.5	71.3	0
20231215T023000	2023	12	15	02:30	33	68.2	0
20231215T023500	2023	12	15	02:35	31.7	68.9	0
20231215T024000	2023	12	15	02:40	33.4	69.9	0
20231215T024500	2023	12	15	02:45	33	67	0
20231215T025000	2023	12	15	02:50	31.1	70	0
20231215T025500	2023	12	15	02:55	31.6	71.2	0
20231215T030000	2023	12	15	03:00	31	71.1	0
20231215T030500	2023	12	15	03:05	30.3	71	0
20231215T031000	2023	12	15	03:10	29.9	73.6	0
20231215T031500	2023	12	15	03:15	29.4	74	0
20231215T032000	2023	12	15	03:20	29.8	75.2	0
20231215T032500	2023	12	15	03:25	29.5	73.6	0
20231215T033000	2023	12	15	03:30	30	74.3	0
20231215T033500	2023	12	15	03:35	30	74.2	0
20231215T034000	2023	12	15	03:40	31.2	74.4	0
20231215T034500	2023	12	15	03:45	33.6	71.9	0
20231215T035000	2023	12	15	03:50	33.1	68.4	0
20231215T035500	2023	12	15	03:55	32.1	69.3	0
20231215T040000	2023	12	15	04:00	32.8	70.2	0
20231215T040500	2023	12	15	04:05	32	68.5	0
20231215T041000	2023	12	15	04:10	31.7	70.7	0
20231215T041500	2023	12	15	04:15	31	72.2	0
20231215T042000	2023	12	15	04:20	31.9	72.1	0
20231215T042500	2023	12	15	04:25	32.2	70.1	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231215T043000	2023	12	15	04:30	31.7	70.4	0
20231215T043500	2023	12	15	04:35	30.5	72.2	0
20231215T044000	2023	12	15	04:40	32.2	73.2	0
20231215T044500	2023	12	15	04:45	34.1	70.7	0
20231215T045000	2023	12	15	04:50	35.7	66.7	0
20231215T045500	2023	12	15	04:55	35.5	65.4	0
20231215T050000	2023	12	15	05:00	34.7	65.6	0
20231215T050500	2023	12	15	05:05	33.5	67.1	0
20231215T051000	2023	12	15	05:10	34.8	68.8	0
20231215T051500	2023	12	15	05:15	35.3	67.3	0
20231215T052000	2023	12	15	05:20	33.6	66.4	0
20231215T052500	2023	12	15	05:25	32.2	69.7	0
20231215T053000	2023	12	15	05:30	32.7	70.7	0
20231215T053500	2023	12	15	05:35	32.6	70.2	0
20231215T054000	2023	12	15	05:40	32.1	70.5	0
20231215T054500	2023	12	15	05:45	32.3	71.3	0
20231215T055000	2023	12	15	05:50	33.6	71.8	0
20231215T055500	2023	12	15	05:55	33.8	69.4	0
20231215T060000	2023	12	15	06:00	34.8	69.3	0
20231215T060500	2023	12	15	06:05	33.8	68.5	0
20231215T061000	2023	12	15	06:10	33.2	69.1	0
20231215T061500	2023	12	15	06:15	33	69.5	0
20231215T062000	2023	12	15	06:20	32.8	71.1	0
20231215T062500	2023	12	15	06:25	32.6	71.5	0
20231215T063000	2023	12	15	06:30	32.3	72.2	0
20231215T063500	2023	12	15	06:35	32.3	73.7	0
20231215T064000	2023	12	15	06:40	33.5	72.8	0
20231215T064500	2023	12	15	06:45	33.4	72.3	0
20231215T065000	2023	12	15	06:50	34.6	72.6	0
20231215T065500	2023	12	15	06:55	34.7	71.4	0
20231215T070000	2023	12	15	07:00	32.3	70.7	0
20231215T070500	2023	12	15	07:05	30.5	74.3	0
20231215T071000	2023	12	15	07:10	31.9	77.6	0
20231215T071500	2023	12	15	07:15	33.7	76.2	0
20231215T072000	2023	12	15	07:20	34.3	73.3	0
20231215T072500	2023	12	15	07:25	34.3	72.1	0
20231215T073000	2023	12	15	07:30	33.5	71.1	0
20231215T073500	2023	12	15	07:35	33.4	72.5	0
20231215T074000	2023	12	15	07:40	33.2	73.1	0
20231215T074500	2023	12	15	07:45	33.7	73.4	0
20231215T075000	2023	12	15	07:50	33.5	73.7	0
20231215T075500	2023	12	15	07:55	33.7	73.6	0
20231215T080000	2023	12	15	08:00	33.6	73.1	0
20231215T080500	2023	12	15	08:05	33.6	72.9	0
20231215T081000	2023	12	15	08:10	33.3	73	0
20231215T081500	2023	12	15	08:15	33.5	73.3	0
20231215T082000	2023	12	15	08:20	33.3	73.5	0
20231215T082500	2023	12	15	08:25	33.6	74	0
20231215T083000	2023	12	15	08:30	34.3	73.4	0
20231215T083500	2023	12	15	08:35	34.5	72.4	0
20231215T084000	2023	12	15	08:40	34.6	72.8	0
20231215T084500	2023	12	15	08:45	35	72.3	0
20231215T085000	2023	12	15	08:50	35.3	72.3	0
20231215T085500	2023	12	15	08:55	35.3	72	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231215T090000	2023	12	15	09:00	35.1	72.4	0
20231215T090500	2023	12	15	09:05	34.8	72.7	0
20231215T091000	2023	12	15	09:10	35.1	72.9	0
20231215T091500	2023	12	15	09:15	36	72.8	0
20231215T092000	2023	12	15	09:20	36.6	71.5	0
20231215T092500	2023	12	15	09:25	38	71	0
20231215T093000	2023	12	15	09:30	38.8	68.5	0
20231215T093500	2023	12	15	09:35	39.1	67.7	0
20231215T094000	2023	12	15	09:40	39.3	67.4	0
20231215T094500	2023	12	15	09:45	39.6	67.4	0
20231215T095000	2023	12	15	09:50	40.1	66.7	0
20231215T095500	2023	12	15	09:55	40.5	66.2	0
20231215T100000	2023	12	15	10:00	40.9	65.8	0
20231215T100500	2023	12	15	10:05	41.3	65.3	0
20231215T101000	2023	12	15	10:10	41.5	65.3	0
20231215T101500	2023	12	15	10:15	41.7	65	0
20231215T102000	2023	12	15	10:20	42.1	65	0
20231215T102500	2023	12	15	10:25	42.6	64.4	0
20231215T103000	2023	12	15	10:30	42.9	63.7	0
20231215T103500	2023	12	15	10:35	43.1	63.5	0
20231215T104000	2023	12	15	10:40	43.2	63.2	0
20231215T104500	2023	12	15	10:45	43.5	62.4	0
20231215T105000	2023	12	15	10:50	43.6	62.7	0
20231215T105500	2023	12	15	10:55	43.7	62.9	0
20231215T110000	2023	12	15	11:00	44	62.8	0
20231215T110500	2023	12	15	11:05	44	62.5	0
20231215T111000	2023	12	15	11:10	44.2	62.3	0
20231215T111500	2023	12	15	11:15	43.8	62.7	0
20231215T112000	2023	12	15	11:20	43.8	63.1	0
20231215T112500	2023	12	15	11:25	44.3	62.8	0
20231215T113000	2023	12	15	11:30	44.7	62.2	0
20231215T113500	2023	12	15	11:35	45	61.6	0
20231215T114000	2023	12	15	11:40	45.1	61.2	0
20231215T114500	2023	12	15	11:45	44.7	62.2	0
20231215T115000	2023	12	15	11:50	44.6	63	0
20231215T115500	2023	12	15	11:55	44.8	63.2	0
20231215T120000	2023	12	15	12:00	44.8	64	0
20231215T120500	2023	12	15	12:05	45.2	63.4	0
20231215T121000	2023	12	15	12:10	45.2	63.8	0
20231215T121500	2023	12	15	12:15	45.4	63.4	0
20231215T122000	2023	12	15	12:20	45.6	62.8	0
20231215T122500	2023	12	15	12:25	46	62.2	0
20231215T123000	2023	12	15	12:30	46.1	62.1	0
20231215T123500	2023	12	15	12:35	45.8	62.5	0
20231215T124000	2023	12	15	12:40	45.7	63	0
20231215T124500	2023	12	15	12:45	46.1	62.5	0
20231215T125000	2023	12	15	12:50	46.4	61.7	0
20231215T125500	2023	12	15	12:55	46.6	61.7	0
20231215T130000	2023	12	15	13:00	46.7	60.3	0
20231215T130500	2023	12	15	13:05	46.7	60.4	0
20231215T131000	2023	12	15	13:10	46.9	60	0
20231215T131500	2023	12	15	13:15	46.7	60.3	0
20231215T132000	2023	12	15	13:20	47.2	59.7	0
20231215T132500	2023	12	15	13:25	47.3	59.7	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231215T133000	2023	12	15	13:30	47.3	59.3	0
20231215T133500	2023	12	15	13:35	47.4	59.5	0
20231215T134000	2023	12	15	13:40	47.4	59.5	0
20231215T134500	2023	12	15	13:45	47.7	59.2	0
20231215T135000	2023	12	15	13:50	47.9	58.8	0
20231215T135500	2023	12	15	13:55	48.1	58.6	0
20231215T140000	2023	12	15	14:00	48.1	58.8	0
20231215T140500	2023	12	15	14:05	48.5	57.8	0
20231215T141000	2023	12	15	14:10	48.7	57.5	0
20231215T141500	2023	12	15	14:15	48.8	57.3	0
20231215T142000	2023	12	15	14:20	49.1	56	0
20231215T142500	2023	12	15	14:25	49.2	55	0
20231215T143000	2023	12	15	14:30	49.2	54.6	0
20231215T143500	2023	12	15	14:35	49.1	54.5	0
20231215T144000	2023	12	15	14:40	49.1	54.6	0
20231215T144500	2023	12	15	14:45	49.1	54.6	0
20231215T145000	2023	12	15	14:50	49.1	54.6	0
20231215T145500	2023	12	15	14:55	49.1	54.8	0
20231215T150000	2023	12	15	15:00	49	54.8	0
20231215T150500	2023	12	15	15:05	49.1	54.7	0
20231215T151000	2023	12	15	15:10	49	54.1	0
20231215T151500	2023	12	15	15:15	48.9	54.5	0
20231215T152000	2023	12	15	15:20	49	53.8	0
20231215T152500	2023	12	15	15:25	48.9	53.7	0
20231215T153000	2023	12	15	15:30	48.7	53.9	0
20231215T153500	2023	12	15	15:35	48.5	54.4	0
20231215T154000	2023	12	15	15:40	48.4	54.6	0
20231215T154500	2023	12	15	15:45	48.3	54.6	0
20231215T155000	2023	12	15	15:50	48.2	54.5	0
20231215T155500	2023	12	15	15:55	47.9	55.2	0
20231215T160000	2023	12	15	16:00	48.1	54.9	0
20231215T160500	2023	12	15	16:05	48	54.6	0
20231215T161000	2023	12	15	16:10	47.6	54.9	0
20231215T161500	2023	12	15	16:15	47.5	55.2	0
20231215T162000	2023	12	15	16:20	47.3	56	0
20231215T162500	2023	12	15	16:25	47	56.2	0
20231215T163000	2023	12	15	16:30	47.1	56	0
20231215T163500	2023	12	15	16:35	47.2	55.5	0
20231215T164000	2023	12	15	16:40	46.8	56	0
20231215T164500	2023	12	15	16:45	46.7	56.3	0
20231215T165000	2023	12	15	16:50	46.6	56.3	0
20231215T165500	2023	12	15	16:55	46.5	56.6	0
20231215T170000	2023	12	15	17:00	46.7	56.4	0
20231215T170500	2023	12	15	17:05	46.8	56.1	0
20231215T171000	2023	12	15	17:10	46.9	55.8	0
20231215T171500	2023	12	15	17:15	46.7	56	0
20231215T172000	2023	12	15	17:20	46.6	56.4	0
20231215T172500	2023	12	15	17:25	46.5	56.5	0
20231215T173000	2023	12	15	17:30	46.1	57	0
20231215T173500	2023	12	15	17:35	46.1	57.4	0
20231215T174000	2023	12	15	17:40	46	57.8	0
20231215T174500	2023	12	15	17:45	46.2	57.3	0
20231215T175000	2023	12	15	17:50	46.2	57.1	0
20231215T175500	2023	12	15	17:55	45.9	57.3	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231215T180000	2023	12	15	18:00	45.5	58.1	0
20231215T180500	2023	12	15	18:05	45.4	58.8	0
20231215T181000	2023	12	15	18:10	44.8	59.6	0
20231215T181500	2023	12	15	18:15	44.7	60.3	0
20231215T182000	2023	12	15	18:20	44.6	60.7	0
20231215T182500	2023	12	15	18:25	44.1	61.4	0
20231215T183000	2023	12	15	18:30	43.3	62.4	0
20231215T183500	2023	12	15	18:35	42.9	64	0
20231215T184000	2023	12	15	18:40	43.6	63.9	0
20231215T184500	2023	12	15	18:45	43.7	63.2	0
20231215T185000	2023	12	15	18:50	43.4	63.6	0
20231215T185500	2023	12	15	18:55	43.6	63.7	0
20231215T190000	2023	12	15	19:00	43.8	63.3	0
20231215T190500	2023	12	15	19:05	43.5	63.5	0
20231215T191000	2023	12	15	19:10	43.2	64	0
20231215T191500	2023	12	15	19:15	43.1	64.4	0
20231215T192000	2023	12	15	19:20	42.9	64.7	0
20231215T192500	2023	12	15	19:25	42.7	65.1	0
20231215T193000	2023	12	15	19:30	42.5	65.8	0
20231215T193500	2023	12	15	19:35	42.8	65.5	0
20231215T194000	2023	12	15	19:40	43.1	64.4	0
20231215T194500	2023	12	15	19:45	43	64.2	0
20231215T195000	2023	12	15	19:50	43.1	64	0
20231215T195500	2023	12	15	19:55	43.2	63.8	0
20231215T200000	2023	12	15	20:00	43.3	63.6	0
20231215T200500	2023	12	15	20:05	43.4	63.2	0
20231215T201000	2023	12	15	20:10	43	63.6	0
20231215T201500	2023	12	15	20:15	43.1	63.5	0
20231215T202000	2023	12	15	20:20	42.9	63.5	0
20231215T202500	2023	12	15	20:25	42.7	64.3	0
20231215T203000	2023	12	15	20:30	42.4	64.6	0
20231215T203500	2023	12	15	20:35	42.8	64.8	0
20231215T204000	2023	12	15	20:40	43.4	63.2	0
20231215T204500	2023	12	15	20:45	43.4	62.8	0
20231215T205000	2023	12	15	20:50	43.2	62.9	0
20231215T205500	2023	12	15	20:55	43	63.4	0
20231215T210000	2023	12	15	21:00	42.7	63.9	0
20231215T210500	2023	12	15	21:05	43	64.2	0
20231215T211000	2023	12	15	21:10	42.8	63.9	0
20231215T211500	2023	12	15	21:15	42.6	63.9	0
20231215T212000	2023	12	15	21:20	41.7	65.3	0
20231215T212500	2023	12	15	21:25	41.5	66.4	0
20231215T213000	2023	12	15	21:30	40.8	67.1	0
20231215T213500	2023	12	15	21:35	39.9	68.4	0
20231215T214000	2023	12	15	21:40	40.1	69.9	0
20231215T214500	2023	12	15	21:45	40.4	70.1	0
20231215T215000	2023	12	15	21:50	40.5	70.1	0
20231215T215500	2023	12	15	21:55	40.6	69.1	0
20231215T220000	2023	12	15	22:00	41.1	68.3	0
20231215T220500	2023	12	15	22:05	41.6	67.3	0
20231215T221000	2023	12	15	22:10	42.1	66	0
20231215T221500	2023	12	15	22:15	41.8	65.8	0
20231215T222000	2023	12	15	22:20	41.2	66.6	0
20231215T222500	2023	12	15	22:25	41.5	67.2	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231215T223000	2023	12	15	22:30	41.6	66.5	0
20231215T223500	2023	12	15	22:35	41.2	67	0
20231215T224000	2023	12	15	22:40	40.9	67.4	0
20231215T224500	2023	12	15	22:45	40.7	67.8	0
20231215T225000	2023	12	15	22:50	41	67.4	0
20231215T225500	2023	12	15	22:55	41.1	67.9	0
20231215T230000	2023	12	15	23:00	41.1	67.5	0
20231215T230500	2023	12	15	23:05	41.3	67.8	0
20231215T231000	2023	12	15	23:10	41.1	67.9	0
20231215T231500	2023	12	15	23:15	41.4	67.4	0
20231215T232000	2023	12	15	23:20	40.9	67.6	0
20231215T232500	2023	12	15	23:25	40.7	68.2	0
20231215T233000	2023	12	15	23:30	40.7	68.4	0
20231215T233500	2023	12	15	23:35	40.7	68.2	0
20231215T234000	2023	12	15	23:40	40.4	68.8	0
20231215T234500	2023	12	15	23:45	40	69	0
20231215T235000	2023	12	15	23:50	40.7	68.5	0
20231215T235500	2023	12	15	23:55	40.3	68.4	0
20231216T000000	2023	12	16	00:00	39.2	70.6	0
20231216T000500	2023	12	16	00:05	39.3	72.5	0
20231216T001000	2023	12	16	00:10	39.2	71.8	0
20231216T001500	2023	12	16	00:15	39.8	71	0
20231216T002000	2023	12	16	00:20	39.4	70.1	0
20231216T002500	2023	12	16	00:25	41	69.8	0
20231216T003000	2023	12	16	00:30	41.8	67.5	0
20231216T003500	2023	12	16	00:35	42.5	65.9	0
20231216T004000	2023	12	16	00:40	42.4	65.3	0
20231216T004500	2023	12	16	00:45	42.7	65.4	0
20231216T005000	2023	12	16	00:50	42.5	65.2	0
20231216T005500	2023	12	16	00:55	42.6	65.8	0
20231216T010000	2023	12	16	01:00	42.8	65.7	0
20231216T010500	2023	12	16	01:05	42.8	65.6	0
20231216T011000	2023	12	16	01:10	42.8	66.5	0
20231216T011500	2023	12	16	01:15	42.9	66.7	0
20231216T012000	2023	12	16	01:20	42.8	66.9	0
20231216T012500	2023	12	16	01:25	42.8	67.5	0
20231216T013000	2023	12	16	01:30	43	67.3	0
20231216T013500	2023	12	16	01:35	42.7	67.6	0
20231216T014000	2023	12	16	01:40	42.9	67.8	0
20231216T014500	2023	12	16	01:45	42.8	67.9	0
20231216T015000	2023	12	16	01:50	42.7	68.4	0
20231216T015500	2023	12	16	01:55	42.8	68.8	0
20231216T020000	2023	12	16	02:00	43	68.4	0
20231216T020500	2023	12	16	02:05	43.1	68.2	0
20231216T021000	2023	12	16	02:10	43	68.4	0
20231216T021500	2023	12	16	02:15	43.2	68.2	0
20231216T022000	2023	12	16	02:20	43.2	68.6	0
20231216T022500	2023	12	16	02:25	43.3	68.7	0
20231216T023000	2023	12	16	02:30	43.3	68.8	0
20231216T023500	2023	12	16	02:35	43	69.6	0
20231216T024000	2023	12	16	02:40	43.1	69.5	0
20231216T024500	2023	12	16	02:45	43	69.9	0
20231216T025000	2023	12	16	02:50	43.2	70	0
20231216T025500	2023	12	16	02:55	43.1	69.7	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231216T030000	2023	12	16	03:00	43.2	69.7	0
20231216T030500	2023	12	16	03:05	43	70	0
20231216T031000	2023	12	16	03:10	42.9	70.3	0
20231216T031500	2023	12	16	03:15	42.8	70.5	0
20231216T032000	2023	12	16	03:20	42.5	71.2	0
20231216T032500	2023	12	16	03:25	42.5	71.1	0
20231216T033000	2023	12	16	03:30	42.3	71.5	0
20231216T033500	2023	12	16	03:35	42.3	71.9	0
20231216T034000	2023	12	16	03:40	42	71.8	0
20231216T034500	2023	12	16	03:45	42.4	72.6	0
20231216T035000	2023	12	16	03:50	42	73.2	0
20231216T035500	2023	12	16	03:55	42.4	73.8	0
20231216T040000	2023	12	16	04:00	42.3	73.5	0
20231216T040500	2023	12	16	04:05	41.8	74.9	0
20231216T041000	2023	12	16	04:10	42	75.4	0
20231216T041500	2023	12	16	04:15	42	75.6	0
20231216T042000	2023	12	16	04:20	41.8	76.2	0
20231216T042500	2023	12	16	04:25	41.5	76.7	0
20231216T043000	2023	12	16	04:30	41.3	76.9	0
20231216T043500	2023	12	16	04:35	41.2	76.8	0
20231216T044000	2023	12	16	04:40	41.5	76.7	0
20231216T044500	2023	12	16	04:45	41.5	77.1	0
20231216T045000	2023	12	16	04:50	41.5	76.9	0
20231216T045500	2023	12	16	04:55	41.4	77.4	0
20231216T050000	2023	12	16	05:00	41.5	78	0
20231216T050500	2023	12	16	05:05	41.5	77.9	0
20231216T051000	2023	12	16	05:10	41.4	77.8	0
20231216T051500	2023	12	16	05:15	41.2	77.7	0
20231216T052000	2023	12	16	05:20	41.3	77.7	0
20231216T052500	2023	12	16	05:25	41.2	78.1	0
20231216T053000	2023	12	16	05:30	41.4	77.9	0
20231216T053500	2023	12	16	05:35	41.4	77.7	0
20231216T054000	2023	12	16	05:40	41.4	77.4	0
20231216T054500	2023	12	16	05:45	41.5	77.2	0
20231216T055000	2023	12	16	05:50	41.4	77.7	0
20231216T055500	2023	12	16	05:55	41.6	77.3	0
20231216T060000	2023	12	16	06:00	41.6	77.2	0
20231216T060500	2023	12	16	06:05	41.7	76.9	0
20231216T061000	2023	12	16	06:10	41.6	77.1	0
20231216T061500	2023	12	16	06:15	41.8	76.5	0
20231216T062000	2023	12	16	06:20	41.6	76.6	0
20231216T062500	2023	12	16	06:25	41.5	76.9	0
20231216T063000	2023	12	16	06:30	41.2	77.3	0
20231216T063500	2023	12	16	06:35	40.9	77.9	0
20231216T064000	2023	12	16	06:40	40.9	78.1	0
20231216T064500	2023	12	16	06:45	40.9	78	0
20231216T065000	2023	12	16	06:50	41.1	77.7	0
20231216T065500	2023	12	16	06:55	40.8	77.3	0
20231216T070000	2023	12	16	07:00	40.6	78.4	0
20231216T070500	2023	12	16	07:05	40.8	78.4	0
20231216T071000	2023	12	16	07:10	40.5	78.3	0
20231216T071500	2023	12	16	07:15	40.1	79.9	0
20231216T072000	2023	12	16	07:20	40.3	80.2	0
20231216T072500	2023	12	16	07:25	40.3	80.2	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231216T073000	2023	12	16	07:30	40.6	80	0
20231216T073500	2023	12	16	07:35	40.7	79.4	0
20231216T074000	2023	12	16	07:40	40.7	79	0
20231216T074500	2023	12	16	07:45	40.4	79.5	0
20231216T075000	2023	12	16	07:50	40.4	80.1	0
20231216T075500	2023	12	16	07:55	39.6	81.3	0
20231216T080000	2023	12	16	08:00	39.6	83.4	0
20231216T080500	2023	12	16	08:05	38.7	84	0
20231216T081000	2023	12	16	08:10	39.1	85	0
20231216T081500	2023	12	16	08:15	39.3	85.7	0
20231216T082000	2023	12	16	08:20	39.8	84.8	0
20231216T082500	2023	12	16	08:25	40.2	82.3	0
20231216T083000	2023	12	16	08:30	40.6	80.8	0
20231216T083500	2023	12	16	08:35	40.7	80.5	0
20231216T084000	2023	12	16	08:40	40.4	80.6	0
20231216T084500	2023	12	16	08:45	40.6	80.7	0
20231216T085000	2023	12	16	08:50	40.9	79.7	0
20231216T085500	2023	12	16	08:55	41.5	78.9	0
20231216T090000	2023	12	16	09:00	41.8	78.8	0
20231216T090500	2023	12	16	09:05	42.1	78.7	0
20231216T091000	2023	12	16	09:10	42.2	78.1	0
20231216T091500	2023	12	16	09:15	42.4	78.1	0
20231216T092000	2023	12	16	09:20	42.7	77.2	0
20231216T092500	2023	12	16	09:25	42.9	77	0
20231216T093000	2023	12	16	09:30	42.9	77.6	0
20231216T093500	2023	12	16	09:35	43	77.4	0
20231216T094000	2023	12	16	09:40	43	77.1	0
20231216T094500	2023	12	16	09:45	42.9	77.2	0
20231216T095000	2023	12	16	09:50	43.1	77.7	0
20231216T095500	2023	12	16	09:55	43	77.3	0
20231216T100000	2023	12	16	10:00	43.1	77.6	0
20231216T100500	2023	12	16	10:05	43.2	76.7	0
20231216T101000	2023	12	16	10:10	43.4	76.4	0
20231216T101500	2023	12	16	10:15	43.6	76.1	0
20231216T102000	2023	12	16	10:20	43.6	74.8	0
20231216T102500	2023	12	16	10:25	44	75.1	0
20231216T103000	2023	12	16	10:30	44.2	73.7	0
20231216T103500	2023	12	16	10:35	44.5	72.7	0
20231216T104000	2023	12	16	10:40	44.6	72.5	0
20231216T104500	2023	12	16	10:45	44.8	71.9	0
20231216T105000	2023	12	16	10:50	45	70.4	0
20231216T105500	2023	12	16	10:55	44.7	69.4	0
20231216T110000	2023	12	16	11:00	44.8	68.4	0
20231216T110500	2023	12	16	11:05	44.9	66	0
20231216T111000	2023	12	16	11:10	45.8	65.8	0
20231216T111500	2023	12	16	11:15	45.5	65.5	0
20231216T112000	2023	12	16	11:20	45.4	64	0
20231216T112500	2023	12	16	11:25	45.6	63.2	0
20231216T113000	2023	12	16	11:30	46.5	64.7	0
20231216T113500	2023	12	16	11:35	46.8	64.9	0
20231216T114000	2023	12	16	11:40	46.9	63.8	0
20231216T114500	2023	12	16	11:45	47.3	64.1	0
20231216T115000	2023	12	16	11:50	46.3	63.3	0
20231216T115500	2023	12	16	11:55	46.8	64.1	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231216T120000	2023	12	16	12:00	47	63.7	0
20231216T120500	2023	12	16	12:05	47.4	63.3	0
20231216T121000	2023	12	16	12:10	47.7	64.2	0
20231216T121500	2023	12	16	12:15	47.7	63.4	0
20231216T122000	2023	12	16	12:20	47.6	63.5	0
20231216T122500	2023	12	16	12:25	48	63	0
20231216T123000	2023	12	16	12:30	47.6	62.1	0
20231216T123500	2023	12	16	12:35	47.6	60.7	0
20231216T124000	2023	12	16	12:40	47.5	60.9	0
20231216T124500	2023	12	16	12:45	47.6	59	0
20231216T125000	2023	12	16	12:50	47.4	58.6	0
20231216T125500	2023	12	16	12:55	47.8	60	0
20231216T130000	2023	12	16	13:00	47.7	59.8	0
20231216T130500	2023	12	16	13:05	47.4	57.5	0
20231216T131000	2023	12	16	13:10	47.3	59.1	0
20231216T131500	2023	12	16	13:15	47	61	0
20231216T132000	2023	12	16	13:20	47.6	61	0
20231216T132500	2023	12	16	13:25	47.7	61	0
20231216T133000	2023	12	16	13:30	47.6	61.6	0
20231216T133500	2023	12	16	13:35	48.5	61.3	0
20231216T134000	2023	12	16	13:40	48.6	60.1	0
20231216T134500	2023	12	16	13:45	48.3	60.4	0
20231216T135000	2023	12	16	13:50	48.4	61.6	0
20231216T135500	2023	12	16	13:55	48	61.6	0
20231216T140000	2023	12	16	14:00	48.4	60.9	0
20231216T140500	2023	12	16	14:05	48	61.5	0
20231216T141000	2023	12	16	14:10	47.5	62.2	0
20231216T141500	2023	12	16	14:15	47.5	63.4	0
20231216T142000	2023	12	16	14:20	47.9	62.4	0
20231216T142500	2023	12	16	14:25	48.3	62.5	0
20231216T143000	2023	12	16	14:30	48.4	62.1	0
20231216T143500	2023	12	16	14:35	48	63.3	0
20231216T144000	2023	12	16	14:40	47.9	63.4	0
20231216T144500	2023	12	16	14:45	47.6	63.8	0
20231216T145000	2023	12	16	14:50	47.4	63.6	0
20231216T145500	2023	12	16	14:55	47.4	65.1	0
20231216T150000	2023	12	16	15:00	47.1	64.6	0
20231216T150500	2023	12	16	15:05	47	64.4	0
20231216T151000	2023	12	16	15:10	46.7	65	0
20231216T151500	2023	12	16	15:15	46.6	64.3	0
20231216T152000	2023	12	16	15:20	46.4	63.8	0
20231216T152500	2023	12	16	15:25	46.6	63.5	0
20231216T153000	2023	12	16	15:30	46.3	64	0
20231216T153500	2023	12	16	15:35	45.9	64.1	0
20231216T154000	2023	12	16	15:40	45.8	64.1	0
20231216T154500	2023	12	16	15:45	45.2	64.8	0
20231216T155000	2023	12	16	15:50	44.7	66	0
20231216T155500	2023	12	16	15:55	44.2	66.9	0
20231216T160000	2023	12	16	16:00	44	66.7	0
20231216T160500	2023	12	16	16:05	43.7	67	0
20231216T161000	2023	12	16	16:10	43.4	67.2	0
20231216T161500	2023	12	16	16:15	42.9	67.9	0
20231216T162000	2023	12	16	16:20	43	68.6	0
20231216T162500	2023	12	16	16:25	42.8	68.7	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231216T163000	2023	12	16	16:30	42.7	68.4	0
20231216T163500	2023	12	16	16:35	41.8	69.4	0
20231216T164000	2023	12	16	16:40	41.7	71.1	0
20231216T164500	2023	12	16	16:45	41.4	70.8	0
20231216T165000	2023	12	16	16:50	41	71.5	0
20231216T165500	2023	12	16	16:55	40.8	72.2	0
20231216T170000	2023	12	16	17:00	40.9	72.2	0
20231216T170500	2023	12	16	17:05	41.3	71.3	0
20231216T171000	2023	12	16	17:10	41.1	70.5	0
20231216T171500	2023	12	16	17:15	41.4	69.5	0
20231216T172000	2023	12	16	17:20	41	69.1	0
20231216T172500	2023	12	16	17:25	40.9	69.6	0
20231216T173000	2023	12	16	17:30	40.2	70.5	0
20231216T173500	2023	12	16	17:35	40.4	71.1	0
20231216T174000	2023	12	16	17:40	40.3	70.7	0
20231216T174500	2023	12	16	17:45	40.5	69.9	0
20231216T175000	2023	12	16	17:50	40.4	69.6	0
20231216T175500	2023	12	16	17:55	40.1	69.7	0
20231216T180000	2023	12	16	18:00	39.4	70.8	0
20231216T180500	2023	12	16	18:05	38.8	72.5	0
20231216T181000	2023	12	16	18:10	38.5	73.4	0
20231216T181500	2023	12	16	18:15	38.1	74	0
20231216T182000	2023	12	16	18:20	39	73.6	0
20231216T182500	2023	12	16	18:25	38.7	71.8	0
20231216T183000	2023	12	16	18:30	37.9	74.4	0
20231216T183500	2023	12	16	18:35	38.4	73.2	0
20231216T184000	2023	12	16	18:40	38.4	72.8	0
20231216T184500	2023	12	16	18:45	38.1	73.6	0
20231216T185000	2023	12	16	18:50	38.2	73.3	0
20231216T185500	2023	12	16	18:55	36.7	75.3	0
20231216T190000	2023	12	16	19:00	35.9	78.1	0
20231216T190500	2023	12	16	19:05	35.2	79.7	0
20231216T191000	2023	12	16	19:10	36	79.6	0
20231216T191500	2023	12	16	19:15	36.4	79.2	0
20231216T192000	2023	12	16	19:20	36.9	76.4	0
20231216T192500	2023	12	16	19:25	36.4	77.4	0
20231216T193000	2023	12	16	19:30	36	76.6	0
20231216T193500	2023	12	16	19:35	34.9	78.7	0
20231216T194000	2023	12	16	19:40	33.8	80.2	0
20231216T194500	2023	12	16	19:45	34	82	0
20231216T195000	2023	12	16	19:50	34.3	82.3	0
20231216T195500	2023	12	16	19:55	35	80.3	0
20231216T200000	2023	12	16	20:00	34.9	79.7	0
20231216T200500	2023	12	16	20:05	34.9	79.1	0
20231216T201000	2023	12	16	20:10	34.2	81.1	0
20231216T201500	2023	12	16	20:15	34.4	80.7	0
20231216T202000	2023	12	16	20:20	34.2	81.8	0
20231216T202500	2023	12	16	20:25	33.4	81.7	0
20231216T203000	2023	12	16	20:30	33.7	83	0
20231216T203500	2023	12	16	20:35	32.1	84.4	0
20231216T204000	2023	12	16	20:40	32.3	86.6	0
20231216T204500	2023	12	16	20:45	33.1	87.2	0
20231216T205000	2023	12	16	20:50	32.8	86	0
20231216T205500	2023	12	16	20:55	33	86	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231216T210000	2023	12	16	21:00	33.4	86.7	0
20231216T210500	2023	12	16	21:05	34.3	86.1	0
20231216T211000	2023	12	16	21:10	33.5	84.9	0
20231216T211500	2023	12	16	21:15	33.2	85.6	0
20231216T212000	2023	12	16	21:20	34.1	87.1	0
20231216T212500	2023	12	16	21:25	33	84.4	0
20231216T213000	2023	12	16	21:30	33.6	87.2	0
20231216T213500	2023	12	16	21:35	35.2	84.4	0
20231216T214000	2023	12	16	21:40	34.1	81	0
20231216T214500	2023	12	16	21:45	34.1	83.4	0
20231216T215000	2023	12	16	21:50	34	82.1	0
20231216T215500	2023	12	16	21:55	33.9	82.7	0
20231216T220000	2023	12	16	22:00	33.2	83.8	0
20231216T220500	2023	12	16	22:05	33.9	84.3	0
20231216T221000	2023	12	16	22:10	33.7	84.2	0
20231216T221500	2023	12	16	22:15	33.5	84.4	0
20231216T222000	2023	12	16	22:20	33.1	85.3	0
20231216T222500	2023	12	16	22:25	33.1	84.5	0
20231216T223000	2023	12	16	22:30	33.2	85.6	0
20231216T223500	2023	12	16	22:35	32.9	85.4	0
20231216T224000	2023	12	16	22:40	33.5	86.3	0
20231216T224500	2023	12	16	22:45	33.9	84.6	0
20231216T225000	2023	12	16	22:50	34	84.3	0
20231216T225500	2023	12	16	22:55	33.8	84	0
20231216T230000	2023	12	16	23:00	33.9	84.3	0
20231216T230500	2023	12	16	23:05	34	84.4	0
20231216T231000	2023	12	16	23:10	33.8	84.3	0
20231216T231500	2023	12	16	23:15	33.1	84.4	0
20231216T232000	2023	12	16	23:20	33	85.9	0
20231216T232500	2023	12	16	23:25	32.7	86.3	0
20231216T233000	2023	12	16	23:30	32.7	87.7	0
20231216T233500	2023	12	16	23:35	33.1	87	0
20231216T234000	2023	12	16	23:40	33.3	86.3	0
20231216T234500	2023	12	16	23:45	33.3	85.8	0
20231216T235000	2023	12	16	23:50	33.5	85.9	0
20231216T235500	2023	12	16	23:55	33.6	85.7	0
20231217T000000	2023	12	17	00:00	33.6	85.7	0
20231217T000500	2023	12	17	00:05	33.8	85.6	0
20231217T001000	2023	12	17	00:10	33.9	85.5	0
20231217T001500	2023	12	17	00:15	34.1	85.3	0
20231217T002000	2023	12	17	00:20	34.1	85	0
20231217T002500	2023	12	17	00:25	34.1	85	0
20231217T003000	2023	12	17	00:30	34	85.4	0
20231217T003500	2023	12	17	00:35	34.2	85.7	0
20231217T004000	2023	12	17	00:40	34.1	85.7	0
20231217T004500	2023	12	17	00:45	34.3	85.7	0
20231217T005000	2023	12	17	00:50	34.1	85.9	0
20231217T005500	2023	12	17	00:55	34.2	86.1	0
20231217T010000	2023	12	17	01:00	34.2	86.1	0
20231217T010500	2023	12	17	01:05	34.5	86	0
20231217T011000	2023	12	17	01:10	34.7	85.6	0
20231217T011500	2023	12	17	01:15	34.6	86.1	0
20231217T012000	2023	12	17	01:20	34.8	86.2	0
20231217T012500	2023	12	17	01:25	35	86	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231217T013000	2023	12	17	01:30	35.1	85.9	0
20231217T013500	2023	12	17	01:35	35	86	0
20231217T014000	2023	12	17	01:40	35	86.3	0
20231217T014500	2023	12	17	01:45	34.9	86.4	0
20231217T015000	2023	12	17	01:50	34.7	87.2	0
20231217T015500	2023	12	17	01:55	34.7	88	0
20231217T020000	2023	12	17	02:00	35	87.9	0
20231217T020500	2023	12	17	02:05	35.3	87.4	0
20231217T021000	2023	12	17	02:10	35.2	87	0
20231217T021500	2023	12	17	02:15	35	87.8	0
20231217T022000	2023	12	17	02:20	35.4	87.9	0
20231217T022500	2023	12	17	02:25	35.5	87.2	0
20231217T023000	2023	12	17	02:30	35.6	87.2	0
20231217T023500	2023	12	17	02:35	35.7	87	0
20231217T024000	2023	12	17	02:40	35.7	87.2	0
20231217T024500	2023	12	17	02:45	35.4	87.4	0
20231217T025000	2023	12	17	02:50	35.2	88.3	0
20231217T025500	2023	12	17	02:55	35.4	88.3	0
20231217T030000	2023	12	17	03:00	35.5	88.3	0
20231217T030500	2023	12	17	03:05	35.4	88.2	0
20231217T031000	2023	12	17	03:10	35.5	88.3	0
20231217T031500	2023	12	17	03:15	35.4	88.3	0
20231217T032000	2023	12	17	03:20	35.2	88.4	0
20231217T032500	2023	12	17	03:25	34.9	89.4	0
20231217T033000	2023	12	17	03:30	35.2	89.4	0
20231217T033500	2023	12	17	03:35	35	89.1	0
20231217T034000	2023	12	17	03:40	35	89.6	0
20231217T034500	2023	12	17	03:45	35.3	89.4	0
20231217T035000	2023	12	17	03:50	35.2	89.3	0
20231217T035500	2023	12	17	03:55	35.5	89.5	0
20231217T040000	2023	12	17	04:00	35.6	89	0
20231217T040500	2023	12	17	04:05	35.6	89.2	0
20231217T041000	2023	12	17	04:10	35.6	89.3	0
20231217T041500	2023	12	17	04:15	35.7	89.7	0
20231217T042000	2023	12	17	04:20	35.9	89.2	0
20231217T042500	2023	12	17	04:25	36	89.5	0
20231217T043000	2023	12	17	04:30	36.1	89.6	0
20231217T043500	2023	12	17	04:35	36.3	89.5	0
20231217T044000	2023	12	17	04:40	36.3	89.8	0
20231217T044500	2023	12	17	04:45	36.5	90.2	0
20231217T045000	2023	12	17	04:50	36.8	90	0
20231217T045500	2023	12	17	04:55	36.7	90.3	0
20231217T050000	2023	12	17	05:00	36.9	91	0
20231217T050500	2023	12	17	05:05	37.3	90.8	0
20231217T051000	2023	12	17	05:10	37.5	90.1	0
20231217T051500	2023	12	17	05:15	37.6	89.8	0
20231217T052000	2023	12	17	05:20	37.6	90.1	0
20231217T052500	2023	12	17	05:25	37.7	90.4	0
20231217T053000	2023	12	17	05:30	37.9	90.4	0
20231217T053500	2023	12	17	05:35	38	90.2	0
20231217T054000	2023	12	17	05:40	38.1	90.1	0
20231217T054500	2023	12	17	05:45	38.1	90.4	0
20231217T055000	2023	12	17	05:50	38.2	90.4	0
20231217T055500	2023	12	17	05:55	38.2	90.5	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231217T060000	2023	12	17	06:00	38.2	90.3	0
20231217T060500	2023	12	17	06:05	38.2	90.5	0
20231217T061000	2023	12	17	06:10	38.1	91	0
20231217T061500	2023	12	17	06:15	38.1	91.2	0
20231217T062000	2023	12	17	06:20	38.1	91.6	0
20231217T062500	2023	12	17	06:25	38.1	91.6	0
20231217T063000	2023	12	17	06:30	38	91.6	0
20231217T063500	2023	12	17	06:35	38	91.8	0
20231217T064000	2023	12	17	06:40	37.9	92	0
20231217T064500	2023	12	17	06:45	37.9	92.3	0
20231217T065000	2023	12	17	06:50	37.9	92.5	0
20231217T065500	2023	12	17	06:55	38.2	92.3	0
20231217T070000	2023	12	17	07:00	38.2	92	0
20231217T070500	2023	12	17	07:05	38.3	92	0
20231217T071000	2023	12	17	07:10	38.3	92	0
20231217T071500	2023	12	17	07:15	38.3	92.1	0
20231217T072000	2023	12	17	07:20	38.3	92.3	0
20231217T072500	2023	12	17	07:25	38.6	91.8	0
20231217T073000	2023	12	17	07:30	38.8	91.3	0
20231217T073500	2023	12	17	07:35	38.6	91.5	0
20231217T074000	2023	12	17	07:40	39.5	90.7	0
20231217T074500	2023	12	17	07:45	39.8	89.2	0
20231217T075000	2023	12	17	07:50	39.9	89	0
20231217T075500	2023	12	17	07:55	40	88.4	0
20231217T080000	2023	12	17	08:00	40.1	88.5	0
20231217T080500	2023	12	17	08:05	39.8	88.7	0
20231217T081000	2023	12	17	08:10	39.7	89.5	0
20231217T081500	2023	12	17	08:15	39.8	89.4	0
20231217T082000	2023	12	17	08:20	39.9	88.9	0
20231217T082500	2023	12	17	08:25	39.7	89.1	0
20231217T083000	2023	12	17	08:30	39.7	89.5	0
20231217T083500	2023	12	17	08:35	39.8	89.3	0
20231217T084000	2023	12	17	08:40	39.8	88.8	0
20231217T084500	2023	12	17	08:45	39.8	88.9	0
20231217T085000	2023	12	17	08:50	39.7	89.2	0
20231217T085500	2023	12	17	08:55	39.8	89.2	0
20231217T090000	2023	12	17	09:00	39.9	88.5	0
20231217T090500	2023	12	17	09:05	40.2	87.7	0
20231217T091000	2023	12	17	09:10	40.3	87.6	0
20231217T091500	2023	12	17	09:15	40.3	87.6	0
20231217T092000	2023	12	17	09:20	40.4	87.8	0
20231217T092500	2023	12	17	09:25	40.5	88	0
20231217T093000	2023	12	17	09:30	40.8	88.3	0
20231217T093500	2023	12	17	09:35	41.5	88.5	0
20231217T094000	2023	12	17	09:40	41.6	87.5	0
20231217T094500	2023	12	17	09:45	41.8	88.2	0
20231217T095000	2023	12	17	09:50	42.2	87.5	0
20231217T095500	2023	12	17	09:55	42.1	87.4	0
20231217T100000	2023	12	17	10:00	42.5	87.3	0
20231217T100500	2023	12	17	10:05	41.7	86.5	0
20231217T101000	2023	12	17	10:10	41.3	87.6	0
20231217T101500	2023	12	17	10:15	41.2	88.1	0
20231217T102000	2023	12	17	10:20	41.1	88.3	0
20231217T102500	2023	12	17	10:25	41.1	88.6	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231217T103000	2023	12	17	10:30	41.1	88.6	0
20231217T103500	2023	12	17	10:35	41.1	89.1	0
20231217T104000	2023	12	17	10:40	41.5	89.4	0
20231217T104500	2023	12	17	10:45	42.6	89.2	0
20231217T105000	2023	12	17	10:50	42.9	87.9	0
20231217T105500	2023	12	17	10:55	43	87.5	0
20231217T110000	2023	12	17	11:00	43	87.4	0
20231217T110500	2023	12	17	11:05	43	87.5	0
20231217T111000	2023	12	17	11:10	43	87.6	0
20231217T111500	2023	12	17	11:15	42.7	87.2	0
20231217T112000	2023	12	17	11:20	42.3	87.5	0
20231217T112500	2023	12	17	11:25	42.1	88.1	0
20231217T113000	2023	12	17	11:30	42	88.1	0
20231217T113500	2023	12	17	11:35	41.7	88.5	0
20231217T114000	2023	12	17	11:40	41.6	89	0
20231217T114500	2023	12	17	11:45	41.5	88.9	0
20231217T115000	2023	12	17	11:50	41.5	89.1	0
20231217T115500	2023	12	17	11:55	41.5	89.2	0
20231217T120000	2023	12	17	12:00	41.4	89.2	0
20231217T120500	2023	12	17	12:05	41.3	89	0
20231217T121000	2023	12	17	12:10	41.3	89.2	0
20231217T121500	2023	12	17	12:15	41.3	89.2	0
20231217T122000	2023	12	17	12:20	41.2	88.8	0
20231217T122500	2023	12	17	12:25	41.2	88.6	0
20231217T123000	2023	12	17	12:30	41.3	88.5	0
20231217T123500	2023	12	17	12:35	41.4	88.9	0
20231217T124000	2023	12	17	12:40	41.5	89	0
20231217T124500	2023	12	17	12:45	41.7	89.1	0
20231217T125000	2023	12	17	12:50	41.9	89	0
20231217T125500	2023	12	17	12:55	42.1	88.8	0
20231217T130000	2023	12	17	13:00	42.3	88.4	0
20231217T130500	2023	12	17	13:05	42.4	88.4	0
20231217T131000	2023	12	17	13:10	42.6	88.5	0
20231217T131500	2023	12	17	13:15	42.7	88.3	0
20231217T132000	2023	12	17	13:20	42.7	88.3	0
20231217T132500	2023	12	17	13:25	42.6	88.5	0
20231217T133000	2023	12	17	13:30	42.6	88.6	0
20231217T133500	2023	12	17	13:35	42.5	88.9	0
20231217T134000	2023	12	17	13:40	42.5	88.8	0
20231217T134500	2023	12	17	13:45	42.5	88.8	0
20231217T135000	2023	12	17	13:50	42.4	89	0
20231217T135500	2023	12	17	13:55	42.4	89.1	0
20231217T140000	2023	12	17	14:00	42.4	89.2	0
20231217T140500	2023	12	17	14:05	42.5	89.4	0
20231217T141000	2023	12	17	14:10	42.5	89.5	0
20231217T141500	2023	12	17	14:15	42.4	89.8	0
20231217T142000	2023	12	17	14:20	42.7	89.7	0
20231217T142500	2023	12	17	14:25	43	89.4	0
20231217T143000	2023	12	17	14:30	43.4	89.5	0
20231217T143500	2023	12	17	14:35	43.6	89	0
20231217T144000	2023	12	17	14:40	43.7	89.1	0
20231217T144500	2023	12	17	14:45	43.2	88.3	0
20231217T145000	2023	12	17	14:50	42.1	88.6	0
20231217T145500	2023	12	17	14:55	42	89.7	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231217T150000	2023	12	17	15:00	41.8	89.9	0
20231217T150500	2023	12	17	15:05	41.5	89.7	0
20231217T151000	2023	12	17	15:10	41.3	90	0
20231217T151500	2023	12	17	15:15	41.3	90.4	0
20231217T152000	2023	12	17	15:20	41.3	90.6	0
20231217T152500	2023	12	17	15:25	41.2	91	0
20231217T153000	2023	12	17	15:30	41.2	91.2	0
20231217T153500	2023	12	17	15:35	41.2	91.6	0
20231217T154000	2023	12	17	15:40	41.3	91.7	0
20231217T154500	2023	12	17	15:45	41.3	91.6	0
20231217T155000	2023	12	17	15:50	41.4	91.6	0
20231217T155500	2023	12	17	15:55	41.4	91.7	0
20231217T160000	2023	12	17	16:00	41.4	92	0
20231217T160500	2023	12	17	16:05	41.3	92.3	0
20231217T161000	2023	12	17	16:10	41.3	92.4	0
20231217T161500	2023	12	17	16:15	41.3	92.7	0
20231217T162000	2023	12	17	16:20	41.4	92.8	0
20231217T162500	2023	12	17	16:25	41.4	92.6	0
20231217T163000	2023	12	17	16:30	41.3	93.4	0.003
20231217T163500	2023	12	17	16:35	41.2	94	0.001
20231217T164000	2023	12	17	16:40	41.2	94.4	0
20231217T164500	2023	12	17	16:45	41.1	94.7	0
20231217T165000	2023	12	17	16:50	41.1	94.9	0
20231217T165500	2023	12	17	16:55	41	95	0
20231217T170000	2023	12	17	17:00	40.9	95.1	0.009
20231217T170500	2023	12	17	17:05	40.8	95.6	0.002
20231217T171000	2023	12	17	17:10	40.7	95.9	0
20231217T171500	2023	12	17	17:15	40.6	96.1	0.002
20231217T172000	2023	12	17	17:20	40.5	96.4	0.001
20231217T172500	2023	12	17	17:25	40.5	96.7	0.001
20231217T173000	2023	12	17	17:30	40.4	96.8	0
20231217T173500	2023	12	17	17:35	40.4	97	0.004
20231217T174000	2023	12	17	17:40	40.3	97.2	0
20231217T174500	2023	12	17	17:45	40.3	97.4	0.005
20231217T175000	2023	12	17	17:50	40.4	97.4	0.004
20231217T175500	2023	12	17	17:55	40.3	97.5	0.003
20231217T180000	2023	12	17	18:00	40.4	97.6	0.001
20231217T180500	2023	12	17	18:05	40.3	97.7	0.003
20231217T181000	2023	12	17	18:10	40.3	97.8	0.004
20231217T181500	2023	12	17	18:15	40.3	98	0.001
20231217T182000	2023	12	17	18:20	40.3	98	0
20231217T182500	2023	12	17	18:25	40.3	98.1	0
20231217T183000	2023	12	17	18:30	40.3	98.3	0
20231217T183500	2023	12	17	18:35	40.3	98.5	0.006
20231217T184000	2023	12	17	18:40	40.3	98.6	0.006
20231217T184500	2023	12	17	18:45	40.3	98.7	0.009
20231217T185000	2023	12	17	18:50	40.4	98.8	0.003
20231217T185500	2023	12	17	18:55	40.4	98.9	0.001
20231217T190000	2023	12	17	19:00	40.4	98.9	0
20231217T190500	2023	12	17	19:05	40.4	99	0.003
20231217T191000	2023	12	17	19:10	40.4	99	0.007
20231217T191500	2023	12	17	19:15	40.4	99.1	0.01
20231217T192000	2023	12	17	19:20	40.4	99.2	0.002
20231217T192500	2023	12	17	19:25	40.5	99.3	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231217T193000	2023	12	17	19:30	40.5	99.3	0
20231217T193500	2023	12	17	19:35	40.6	99.4	0
20231217T194000	2023	12	17	19:40	40.6	99.4	0
20231217T194500	2023	12	17	19:45	40.6	99.5	0
20231217T195000	2023	12	17	19:50	40.7	99.6	0.002
20231217T195500	2023	12	17	19:55	40.7	99.6	0
20231217T200000	2023	12	17	20:00	40.8	99.7	0.001
20231217T200500	2023	12	17	20:05	40.8	99.7	0
20231217T201000	2023	12	17	20:10	40.8	99.7	0.002
20231217T201500	2023	12	17	20:15	40.8	99.8	0
20231217T202000	2023	12	17	20:20	40.9	99.8	0
20231217T202500	2023	12	17	20:25	41	99.8	0
20231217T203000	2023	12	17	20:30	41	99.9	0
20231217T203500	2023	12	17	20:35	41.1	99.9	0.002
20231217T204000	2023	12	17	20:40	41.1	99.9	0
20231217T204500	2023	12	17	20:45	41.3	100	0
20231217T205000	2023	12	17	20:50	41.4	100	0
20231217T205500	2023	12	17	20:55	41.4	100	0.002
20231217T210000	2023	12	17	21:00	41.5	100	0
20231217T210500	2023	12	17	21:05	41.5	100	0.001
20231217T211000	2023	12	17	21:10	41.5	100	0
20231217T211500	2023	12	17	21:15	41.6	100	0.002
20231217T212000	2023	12	17	21:20	41.7	100	0.002
20231217T212500	2023	12	17	21:25	41.8	100	0.001
20231217T213000	2023	12	17	21:30	41.9	100	0
20231217T213500	2023	12	17	21:35	42	100	0
20231217T214000	2023	12	17	21:40	42	100	0.002
20231217T214500	2023	12	17	21:45	42.1	100	0
20231217T215000	2023	12	17	21:50	42	100	0
20231217T215500	2023	12	17	21:55	42.1	100	0
20231217T220000	2023	12	17	22:00	42.1	100	0
20231217T220500	2023	12	17	22:05	42.1	100	0
20231217T221000	2023	12	17	22:10	42.1	100	0.002
20231217T221500	2023	12	17	22:15	42.2	100	0.002
20231217T222000	2023	12	17	22:20	42.2	100	0.004
20231217T222500	2023	12	17	22:25	42.2	100	0.004
20231217T223000	2023	12	17	22:30	42.2	100	0.002
20231217T223500	2023	12	17	22:35	42.3	100	0
20231217T224000	2023	12	17	22:40	42.3	100	0.003
20231217T224500	2023	12	17	22:45	42.4	100	0.001
20231217T225000	2023	12	17	22:50	42.4	100	0
20231217T225500	2023	12	17	22:55	42.5	100	0
20231217T230000	2023	12	17	23:00	42.6	100	0.003
20231217T230500	2023	12	17	23:05	42.7	100	0.002
20231217T231000	2023	12	17	23:10	42.6	100	0.002
20231217T231500	2023	12	17	23:15	42.7	100	0.002
20231217T232000	2023	12	17	23:20	42.9	100	0.001
20231217T232500	2023	12	17	23:25	43.1	100	0
20231217T233000	2023	12	17	23:30	43.1	100	0.002
20231217T233500	2023	12	17	23:35	43	100	0.002
20231217T234000	2023	12	17	23:40	43.1	100	0.005
20231217T234500	2023	12	17	23:45	43.2	100	0.006
20231217T235000	2023	12	17	23:50	43.4	100	0.004
20231217T235500	2023	12	17	23:55	43.4	100	0.006

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231218T000000	2023	12	18	00:00	43.5	100	0.007
20231218T000500	2023	12	18	00:05	43.5	100	0.006
20231218T001000	2023	12	18	00:10	43.5	100	0.007
20231218T001500	2023	12	18	00:15	43.5	100	0.003
20231218T002000	2023	12	18	00:20	43.5	100	0.006
20231218T002500	2023	12	18	00:25	43.5	100	0.015
20231218T003000	2023	12	18	00:30	43.5	100	0.01
20231218T003500	2023	12	18	00:35	43.6	100	0.007
20231218T004000	2023	12	18	00:40	43.8	100	0.002
20231218T004500	2023	12	18	00:45	43.8	100	0.004
20231218T005000	2023	12	18	00:50	43.8	100	0.003
20231218T005500	2023	12	18	00:55	43.8	100	0.002
20231218T010000	2023	12	18	01:00	43.7	100	0.004
20231218T010500	2023	12	18	01:05	43.7	100	0.003
20231218T011000	2023	12	18	01:10	43.8	100	0.003
20231218T011500	2023	12	18	01:15	43.8	100	0.004
20231218T012000	2023	12	18	01:20	43.9	100	0.007
20231218T012500	2023	12	18	01:25	44.2	100	0.004
20231218T013000	2023	12	18	01:30	44.4	100	0.002
20231218T013500	2023	12	18	01:35	44.6	100	0.002
20231218T014000	2023	12	18	01:40	44.6	100	0.004
20231218T014500	2023	12	18	01:45	44.7	100	0.004
20231218T015000	2023	12	18	01:50	44.9	100	0.004
20231218T015500	2023	12	18	01:55	44.8	100	0.002
20231218T020000	2023	12	18	02:00	44.8	100	0.001
20231218T020500	2023	12	18	02:05	44.8	100	0.004
20231218T021000	2023	12	18	02:10	44.7	100	0.002
20231218T021500	2023	12	18	02:15	44.6	100	0.004
20231218T022000	2023	12	18	02:20	44.5	100	0.005
20231218T022500	2023	12	18	02:25	44.5	100	0.004
20231218T023000	2023	12	18	02:30	44.5	100	0.005
20231218T023500	2023	12	18	02:35	44.5	100	0.004
20231218T024000	2023	12	18	02:40	44.5	100	0.005
20231218T024500	2023	12	18	02:45	44.5	100	0.003
20231218T025000	2023	12	18	02:50	44.5	100	0.004
20231218T025500	2023	12	18	02:55	44.6	100	0.013
20231218T030000	2023	12	18	03:00	44.7	100	0.012
20231218T030500	2023	12	18	03:05	44.8	100	0.008
20231218T031000	2023	12	18	03:10	44.8	100	0.007
20231218T031500	2023	12	18	03:15	44.8	100	0.004
20231218T032000	2023	12	18	03:20	44.8	100	0.004
20231218T032500	2023	12	18	03:25	44.8	100	0.013
20231218T033000	2023	12	18	03:30	44.8	100	0.024
20231218T033500	2023	12	18	03:35	44.9	100	0.016
20231218T034000	2023	12	18	03:40	45	100	0.021
20231218T034500	2023	12	18	03:45	45.1	100	0.021
20231218T035000	2023	12	18	03:50	44.8	100	0.023
20231218T035500	2023	12	18	03:55	44.3	100	0.021
20231218T040000	2023	12	18	04:00	44.3	100	0.026
20231218T040500	2023	12	18	04:05	44.4	100	0.024
20231218T041000	2023	12	18	04:10	44.3	100	0.022
20231218T041500	2023	12	18	04:15	44.1	100	0.02
20231218T042000	2023	12	18	04:20	44	100	0.024
20231218T042500	2023	12	18	04:25	44.1	100	0.025

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231218T043000	2023	12	18	04:30	45.9	100	0.03
20231218T043500	2023	12	18	04:35	47.3	100	0.032
20231218T044000	2023	12	18	04:40	47.4	100	0.036
20231218T044500	2023	12	18	04:45	47.5	100	0.038
20231218T045000	2023	12	18	04:50	47.7	100	0.037
20231218T045500	2023	12	18	04:55	47.9	100	0.026
20231218T050000	2023	12	18	05:00	48	100	0.028
20231218T050500	2023	12	18	05:05	48.1	100	0.031
20231218T051000	2023	12	18	05:10	48	99.9	0.031
20231218T051500	2023	12	18	05:15	47.9	99.9	0.03
20231218T052000	2023	12	18	05:20	48.1	100	0.03
20231218T052500	2023	12	18	05:25	48.3	100	0.028
20231218T053000	2023	12	18	05:30	48.4	100	0.011
20231218T053500	2023	12	18	05:35	48.5	100	0.03
20231218T054000	2023	12	18	05:40	48.8	100	0.021
20231218T054500	2023	12	18	05:45	48.9	99.9	0.024
20231218T055000	2023	12	18	05:50	49	99.8	0.019
20231218T055500	2023	12	18	05:55	49.2	99.8	0.022
20231218T060000	2023	12	18	06:00	49.4	99.7	0.015
20231218T060500	2023	12	18	06:05	49.6	99.6	0.005
20231218T061000	2023	12	18	06:10	49.6	99.4	0.016
20231218T061500	2023	12	18	06:15	49.7	99.3	0.011
20231218T062000	2023	12	18	06:20	49.7	99.2	0.007
20231218T062500	2023	12	18	06:25	49.8	99.1	0.008
20231218T063000	2023	12	18	06:30	49.9	99	0.012
20231218T063500	2023	12	18	06:35	50	98.9	0.016
20231218T064000	2023	12	18	06:40	49.9	98.8	0.017
20231218T064500	2023	12	18	06:45	49.9	98.9	0.013
20231218T065000	2023	12	18	06:50	49.9	98.9	0.013
20231218T065500	2023	12	18	06:55	49.8	99	0.011
20231218T070000	2023	12	18	07:00	49.8	99.2	0.011
20231218T070500	2023	12	18	07:05	49.9	99.3	0.011
20231218T071000	2023	12	18	07:10	49.9	99.3	0.008
20231218T071500	2023	12	18	07:15	49.9	99.4	0.002
20231218T072000	2023	12	18	07:20	49.8	99.4	0.005
20231218T072500	2023	12	18	07:25	49.8	99.5	0.002
20231218T073000	2023	12	18	07:30	49.9	99.6	0
20231218T073500	2023	12	18	07:35	49.9	99.6	0
20231218T074000	2023	12	18	07:40	49.9	99.6	0.003
20231218T074500	2023	12	18	07:45	49.6	99.5	0.002
20231218T075000	2023	12	18	07:50	49.5	99.6	0.002
20231218T075500	2023	12	18	07:55	49.4	99.7	0.009
20231218T080000	2023	12	18	08:00	49.2	99.6	0.013
20231218T080500	2023	12	18	08:05	49.2	99.8	0.014
20231218T081000	2023	12	18	08:10	48.9	99.7	0.012
20231218T081500	2023	12	18	08:15	49.3	100	0.009
20231218T082000	2023	12	18	08:20	49.2	99.9	0.017
20231218T082500	2023	12	18	08:25	49.1	99.8	0.025
20231218T083000	2023	12	18	08:30	49.1	99.8	0.021
20231218T083500	2023	12	18	08:35	49.1	99.8	0.021
20231218T084000	2023	12	18	08:40	49.2	99.7	0.019
20231218T084500	2023	12	18	08:45	49.2	99.5	0.015
20231218T085000	2023	12	18	08:50	49.2	99.3	0.01
20231218T085500	2023	12	18	08:55	49.2	99.2	0.003

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231218T090000	2023	12	18	09:00	49.2	98.9	0.005
20231218T090500	2023	12	18	09:05	49.2	98.6	0.004
20231218T091000	2023	12	18	09:10	49.3	98	0.001
20231218T091500	2023	12	18	09:15	49.2	97.2	0
20231218T092000	2023	12	18	09:20	49.2	96.8	0
20231218T092500	2023	12	18	09:25	49.2	96.2	0
20231218T093000	2023	12	18	09:30	49.1	96	0.005
20231218T093500	2023	12	18	09:35	49	95.9	0.007
20231218T094000	2023	12	18	09:40	48.9	95.8	0.007
20231218T094500	2023	12	18	09:45	48.8	95.9	0.013
20231218T095000	2023	12	18	09:50	48.7	95.7	0.009
20231218T095500	2023	12	18	09:55	48.7	95.5	0.011
20231218T100000	2023	12	18	10:00	48.6	95.3	0.004
20231218T100500	2023	12	18	10:05	48.6	95.3	0.002
20231218T101000	2023	12	18	10:10	48.5	95.4	0.001
20231218T101500	2023	12	18	10:15	48.5	94.7	0
20231218T102000	2023	12	18	10:20	48.4	94	0
20231218T102500	2023	12	18	10:25	48.3	93.1	0
20231218T103000	2023	12	18	10:30	48.3	92.8	0
20231218T103500	2023	12	18	10:35	48.1	92.5	0.004
20231218T104000	2023	12	18	10:40	47.9	92.3	0.002
20231218T104500	2023	12	18	10:45	47.7	92.7	0
20231218T105000	2023	12	18	10:50	47.6	92.3	0.005
20231218T105500	2023	12	18	10:55	47.6	92.7	0.005
20231218T110000	2023	12	18	11:00	47.5	92.5	0
20231218T110500	2023	12	18	11:05	47.4	91.3	0
20231218T111000	2023	12	18	11:10	47.3	91.3	0.006
20231218T111500	2023	12	18	11:15	47.2	91.6	0
20231218T112000	2023	12	18	11:20	47.2	91.2	0
20231218T112500	2023	12	18	11:25	47.1	90.8	0
20231218T113000	2023	12	18	11:30	47.1	90.3	0
20231218T113500	2023	12	18	11:35	47.1	89.9	0
20231218T114000	2023	12	18	11:40	47	89	0
20231218T114500	2023	12	18	11:45	47	89.1	0.003
20231218T115000	2023	12	18	11:50	46.9	89.4	0
20231218T115500	2023	12	18	11:55	46.7	89.4	0
20231218T120000	2023	12	18	12:00	46.5	89.1	0
20231218T120500	2023	12	18	12:05	46.4	89.1	0.006
20231218T121000	2023	12	18	12:10	46.2	89.2	0.005
20231218T121500	2023	12	18	12:15	46	90.1	0
20231218T122000	2023	12	18	12:20	45.8	89.9	0.011
20231218T122500	2023	12	18	12:25	45.8	89.5	0
20231218T123000	2023	12	18	12:30	45.6	90	0.006
20231218T123500	2023	12	18	12:35	45.4	89.6	0.006
20231218T124000	2023	12	18	12:40	45.3	89.2	0
20231218T124500	2023	12	18	12:45	45.1	89.1	0.004
20231218T125000	2023	12	18	12:50	45	90	0
20231218T125500	2023	12	18	12:55	44.8	90.6	0
20231218T130000	2023	12	18	13:00	44.7	90.4	0
20231218T130500	2023	12	18	13:05	44.6	89	0
20231218T131000	2023	12	18	13:10	44.4	89.3	0.004
20231218T131500	2023	12	18	13:15	44.2	89.3	0
20231218T132000	2023	12	18	13:20	44	88.2	0
20231218T132500	2023	12	18	13:25	43.9	87.8	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231218T133000	2023	12	18	13:30	43.8	88	0
20231218T133500	2023	12	18	13:35	43.7	88.1	0.005
20231218T134000	2023	12	18	13:40	43.7	88	0
20231218T134500	2023	12	18	13:45	43.6	88.1	0
20231218T135000	2023	12	18	13:50	43.4	88.1	0
20231218T135500	2023	12	18	13:55	43.2	88.2	0.005
20231218T140000	2023	12	18	14:00	42.9	87.9	0
20231218T140500	2023	12	18	14:05	42.6	87.9	0.011
20231218T141000	2023	12	18	14:10	42.3	89.2	0.003
20231218T141500	2023	12	18	14:15	42	89.1	0.002
20231218T142000	2023	12	18	14:20	41.8	89.4	0.005
20231218T142500	2023	12	18	14:25	41.6	89.3	0.008
20231218T143000	2023	12	18	14:30	41.4	89.9	0.014
20231218T143500	2023	12	18	14:35	41.3	91.1	0.011
20231218T144000	2023	12	18	14:40	41.3	91.4	0.007
20231218T144500	2023	12	18	14:45	41.4	91.3	0.002
20231218T145000	2023	12	18	14:50	41.6	91.2	0.002
20231218T145500	2023	12	18	14:55	41.9	91.2	0
20231218T150000	2023	12	18	15:00	42.1	91	0
20231218T150500	2023	12	18	15:05	42.3	91.1	0
20231218T151000	2023	12	18	15:10	42.5	91	0
20231218T151500	2023	12	18	15:15	42.7	90.3	0
20231218T152000	2023	12	18	15:20	42.8	89.8	0
20231218T152500	2023	12	18	15:25	42.8	90	0
20231218T153000	2023	12	18	15:30	42.9	90.6	0
20231218T153500	2023	12	18	15:35	43	90.6	0
20231218T154000	2023	12	18	15:40	43	90.5	0
20231218T154500	2023	12	18	15:45	43.2	89.8	0
20231218T155000	2023	12	18	15:50	43.3	89.2	0
20231218T155500	2023	12	18	15:55	43.4	88.4	0
20231218T160000	2023	12	18	16:00	43.5	87.6	0
20231218T160500	2023	12	18	16:05	43.5	86.9	0
20231218T161000	2023	12	18	16:10	43.5	86.2	0
20231218T161500	2023	12	18	16:15	43.6	85.3	0
20231218T162000	2023	12	18	16:20	43.6	84.8	0
20231218T162500	2023	12	18	16:25	43.7	84	0
20231218T163000	2023	12	18	16:30	43.6	84	0
20231218T163500	2023	12	18	16:35	43.4	84.8	0
20231218T164000	2023	12	18	16:40	43.2	85.5	0
20231218T164500	2023	12	18	16:45	43.2	86.1	0
20231218T165000	2023	12	18	16:50	42.9	88	0
20231218T165500	2023	12	18	16:55	42.8	88.8	0
20231218T170000	2023	12	18	17:00	42.9	87.5	0
20231218T170500	2023	12	18	17:05	43.1	86.1	0
20231218T171000	2023	12	18	17:10	43.2	84.7	0
20231218T171500	2023	12	18	17:15	43.2	84.1	0
20231218T172000	2023	12	18	17:20	43.2	84.2	0
20231218T172500	2023	12	18	17:25	43	84.9	0
20231218T173000	2023	12	18	17:30	43.1	84.6	0
20231218T173500	2023	12	18	17:35	43	84.6	0
20231218T174000	2023	12	18	17:40	43.1	84.4	0
20231218T174500	2023	12	18	17:45	42.9	84.1	0
20231218T175000	2023	12	18	17:50	42.9	83.7	0
20231218T175500	2023	12	18	17:55	43	83.3	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231218T180000	2023	12	18	18:00	42.9	83.3	0
20231218T180500	2023	12	18	18:05	42.8	83.2	0
20231218T181000	2023	12	18	18:10	42.9	82.5	0
20231218T181500	2023	12	18	18:15	43	81.8	0
20231218T182000	2023	12	18	18:20	43	81.6	0
20231218T182500	2023	12	18	18:25	42.8	82	0
20231218T183000	2023	12	18	18:30	42.8	81	0
20231218T183500	2023	12	18	18:35	42.8	79.8	0
20231218T184000	2023	12	18	18:40	42.6	80.4	0
20231218T184500	2023	12	18	18:45	42.7	80.1	0
20231218T185000	2023	12	18	18:50	42.5	79.9	0
20231218T185500	2023	12	18	18:55	42.4	80.3	0
20231218T190000	2023	12	18	19:00	42.5	80.5	0
20231218T190500	2023	12	18	19:05	42.5	80.1	0
20231218T191000	2023	12	18	19:10	42.5	80.3	0
20231218T191500	2023	12	18	19:15	42.6	79.7	0
20231218T192000	2023	12	18	19:20	42.6	78.9	0
20231218T192500	2023	12	18	19:25	42.6	78.1	0
20231218T193000	2023	12	18	19:30	42.5	78	0
20231218T193500	2023	12	18	19:35	42.6	77	0
20231218T194000	2023	12	18	19:40	42.5	77.4	0
20231218T194500	2023	12	18	19:45	42.5	77.4	0
20231218T195000	2023	12	18	19:50	42.5	77	0
20231218T195500	2023	12	18	19:55	42.5	76.3	0
20231218T200000	2023	12	18	20:00	42.5	76.1	0
20231218T200500	2023	12	18	20:05	42.3	76.7	0
20231218T201000	2023	12	18	20:10	42.3	75.4	0
20231218T201500	2023	12	18	20:15	42.2	75.9	0
20231218T202000	2023	12	18	20:20	42.3	74.8	0
20231218T202500	2023	12	18	20:25	42.1	74.7	0
20231218T203000	2023	12	18	20:30	41.8	75.5	0
20231218T203500	2023	12	18	20:35	41.7	75.3	0
20231218T204000	2023	12	18	20:40	41.8	74.3	0
20231218T204500	2023	12	18	20:45	41.4	74.9	0
20231218T205000	2023	12	18	20:50	41.1	74.8	0
20231218T205500	2023	12	18	20:55	41	74.4	0
20231218T210000	2023	12	18	21:00	40.8	74.3	0
20231218T210500	2023	12	18	21:05	40.2	75.9	0
20231218T211000	2023	12	18	21:10	40.3	76.1	0
20231218T211500	2023	12	18	21:15	40.1	76.8	0
20231218T212000	2023	12	18	21:20	40.5	75.9	0
20231218T212500	2023	12	18	21:25	40.1	76.1	0
20231218T213000	2023	12	18	21:30	40.4	74.4	0
20231218T213500	2023	12	18	21:35	39.8	74.6	0
20231218T214000	2023	12	18	21:40	39.9	74.7	0
20231218T214500	2023	12	18	21:45	39.8	73.8	0
20231218T215000	2023	12	18	21:50	39.7	74.1	0
20231218T215500	2023	12	18	21:55	39.4	74	0
20231218T220000	2023	12	18	22:00	39.6	73.6	0
20231218T220500	2023	12	18	22:05	39.2	73.7	0
20231218T221000	2023	12	18	22:10	39.2	73.7	0
20231218T221500	2023	12	18	22:15	39.4	72.4	0
20231218T222000	2023	12	18	22:20	39	72.8	0
20231218T222500	2023	12	18	22:25	38.5	73.9	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231218T223000	2023	12	18	22:30	38.6	74.3	0
20231218T223500	2023	12	18	22:35	38.5	74.4	0
20231218T224000	2023	12	18	22:40	38.7	74.6	0
20231218T224500	2023	12	18	22:45	38.2	74.9	0
20231218T225000	2023	12	18	22:50	38.7	73.7	0
20231218T225500	2023	12	18	22:55	38.5	72.9	0
20231218T230000	2023	12	18	23:00	38.3	72.6	0
20231218T230500	2023	12	18	23:05	38.2	72.4	0
20231218T231000	2023	12	18	23:10	38.2	72.2	0
20231218T231500	2023	12	18	23:15	38.1	72.4	0
20231218T232000	2023	12	18	23:20	37.9	72.5	0
20231218T232500	2023	12	18	23:25	37.8	73.1	0
20231218T233000	2023	12	18	23:30	37.5	72.9	0
20231218T233500	2023	12	18	23:35	37.9	72.2	0
20231218T234000	2023	12	18	23:40	37.9	71.7	0
20231218T234500	2023	12	18	23:45	38.3	69.5	0
20231218T235000	2023	12	18	23:50	38	70.4	0
20231218T235500	2023	12	18	23:55	38.2	69.3	0
20231219T000000	2023	12	19	00:00	37.9	69.6	0
20231219T000500	2023	12	19	00:05	37.6	70.6	0
20231219T001000	2023	12	19	00:10	38.1	69.8	0
20231219T001500	2023	12	19	00:15	37.7	70.7	0
20231219T002000	2023	12	19	00:20	37.6	71.6	0
20231219T002500	2023	12	19	00:25	37.3	72	0
20231219T003000	2023	12	19	00:30	37.5	71.5	0
20231219T003500	2023	12	19	00:35	37.4	71.3	0
20231219T004000	2023	12	19	00:40	37.2	71.6	0
20231219T004500	2023	12	19	00:45	37.5	71	0
20231219T005000	2023	12	19	00:50	37.9	69.2	0
20231219T005500	2023	12	19	00:55	37.6	69.8	0
20231219T010000	2023	12	19	01:00	37.7	69	0
20231219T010500	2023	12	19	01:05	37.5	70.2	0
20231219T011000	2023	12	19	01:10	37.6	69.9	0
20231219T011500	2023	12	19	01:15	37.8	69	0
20231219T012000	2023	12	19	01:20	37.3	70.5	0
20231219T012500	2023	12	19	01:25	37.4	70.6	0
20231219T013000	2023	12	19	01:30	37	71.6	0
20231219T013500	2023	12	19	01:35	36.9	71.8	0
20231219T014000	2023	12	19	01:40	36.7	72.3	0
20231219T014500	2023	12	19	01:45	36.5	72.7	0
20231219T015000	2023	12	19	01:50	36.4	73.2	0
20231219T015500	2023	12	19	01:55	36.7	72.1	0
20231219T020000	2023	12	19	02:00	36.3	72.7	0
20231219T020500	2023	12	19	02:05	35.9	73.4	0
20231219T021000	2023	12	19	02:10	34.6	75.7	0
20231219T021500	2023	12	19	02:15	33.6	78.9	0
20231219T022000	2023	12	19	02:20	34.9	78.3	0
20231219T022500	2023	12	19	02:25	34.5	76.7	0
20231219T023000	2023	12	19	02:30	33.9	79.1	0
20231219T023500	2023	12	19	02:35	34.1	82.1	0
20231219T024000	2023	12	19	02:40	35.4	81.9	0
20231219T024500	2023	12	19	02:45	35.5	80.1	0
20231219T025000	2023	12	19	02:50	35.7	79.8	0
20231219T025500	2023	12	19	02:55	36.1	78.3	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231219T030000	2023	12	19	03:00	36.6	75.8	0
20231219T030500	2023	12	19	03:05	36.6	75.3	0
20231219T031000	2023	12	19	03:10	36.8	75	0
20231219T031500	2023	12	19	03:15	37.1	74	0
20231219T032000	2023	12	19	03:20	36.9	74.8	0
20231219T032500	2023	12	19	03:25	37.1	74.8	0
20231219T033000	2023	12	19	03:30	37.2	74.9	0
20231219T033500	2023	12	19	03:35	37.3	74.6	0
20231219T034000	2023	12	19	03:40	37.3	74.7	0
20231219T034500	2023	12	19	03:45	37.1	76.1	0
20231219T035000	2023	12	19	03:50	37.2	76.1	0
20231219T035500	2023	12	19	03:55	37.2	76	0
20231219T040000	2023	12	19	04:00	37.1	76.6	0
20231219T040500	2023	12	19	04:05	37.1	76.7	0
20231219T041000	2023	12	19	04:10	37.2	76.4	0
20231219T041500	2023	12	19	04:15	37.1	76.8	0
20231219T042000	2023	12	19	04:20	37.1	77.2	0
20231219T042500	2023	12	19	04:25	37.4	75.9	0
20231219T043000	2023	12	19	04:30	37.2	76.6	0
20231219T043500	2023	12	19	04:35	37.1	77.1	0
20231219T044000	2023	12	19	04:40	37.3	76.7	0
20231219T044500	2023	12	19	04:45	37.2	77.1	0
20231219T045000	2023	12	19	04:50	37.3	76.6	0
20231219T045500	2023	12	19	04:55	37.1	77.9	0
20231219T050000	2023	12	19	05:00	37.1	78.1	0
20231219T050500	2023	12	19	05:05	37	78	0
20231219T051000	2023	12	19	05:10	37	77.1	0
20231219T051500	2023	12	19	05:15	37	76.2	0
20231219T052000	2023	12	19	05:20	36.9	76.3	0
20231219T052500	2023	12	19	05:25	36.8	75.7	0
20231219T053000	2023	12	19	05:30	36.7	73.6	0
20231219T053500	2023	12	19	05:35	36.5	73.9	0
20231219T054000	2023	12	19	05:40	36.3	74	0
20231219T054500	2023	12	19	05:45	36.1	74.2	0
20231219T055000	2023	12	19	05:50	36.1	73.5	0
20231219T055500	2023	12	19	05:55	36.1	72.8	0
20231219T060000	2023	12	19	06:00	35.8	73.1	0
20231219T060500	2023	12	19	06:05	35.9	73.1	0
20231219T061000	2023	12	19	06:10	35.9	72.7	0
20231219T061500	2023	12	19	06:15	35.8	73.1	0
20231219T062000	2023	12	19	06:20	35.8	72.7	0
20231219T062500	2023	12	19	06:25	35.7	72.9	0
20231219T063000	2023	12	19	06:30	35.6	73.2	0
20231219T063500	2023	12	19	06:35	35.6	73.9	0
20231219T064000	2023	12	19	06:40	35.6	73.6	0
20231219T064500	2023	12	19	06:45	35.5	74	0
20231219T065000	2023	12	19	06:50	35.4	74.1	0
20231219T065500	2023	12	19	06:55	35.2	74.5	0
20231219T070000	2023	12	19	07:00	35	74.5	0
20231219T070500	2023	12	19	07:05	34.9	75.3	0
20231219T071000	2023	12	19	07:10	34.7	75.7	0
20231219T071500	2023	12	19	07:15	34.5	75.8	0
20231219T072000	2023	12	19	07:20	34.4	75.9	0
20231219T072500	2023	12	19	07:25	34.4	76.1	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231219T073000	2023	12	19	07:30	34.3	76.1	0
20231219T073500	2023	12	19	07:35	34.3	76.2	0
20231219T074000	2023	12	19	07:40	34.3	75.7	0
20231219T074500	2023	12	19	07:45	34.2	76.2	0
20231219T075000	2023	12	19	07:50	34	77.4	0
20231219T075500	2023	12	19	07:55	33.9	76.6	0
20231219T080000	2023	12	19	08:00	33.8	76.6	0
20231219T080500	2023	12	19	08:05	33.9	75.7	0
20231219T081000	2023	12	19	08:10	34	75.5	0
20231219T081500	2023	12	19	08:15	34.1	75	0
20231219T082000	2023	12	19	08:20	34.3	74	0
20231219T082500	2023	12	19	08:25	34.2	74	0
20231219T083000	2023	12	19	08:30	34.1	74.5	0
20231219T083500	2023	12	19	08:35	34	74.4	0
20231219T084000	2023	12	19	08:40	33.9	73.6	0
20231219T084500	2023	12	19	08:45	33.8	74.7	0
20231219T085000	2023	12	19	08:50	33.9	74.7	0
20231219T085500	2023	12	19	08:55	34	73.8	0
20231219T090000	2023	12	19	09:00	34.1	73.9	0
20231219T090500	2023	12	19	09:05	34.1	73	0
20231219T091000	2023	12	19	09:10	34.2	74	0
20231219T091500	2023	12	19	09:15	34.3	73.7	0
20231219T092000	2023	12	19	09:20	34.2	73	0
20231219T092500	2023	12	19	09:25	34	73.1	0
20231219T093000	2023	12	19	09:30	33.7	73.1	0
20231219T093500	2023	12	19	09:35	33.3	72.9	0
20231219T094000	2023	12	19	09:40	33	74	0
20231219T094500	2023	12	19	09:45	32.8	73.7	0
20231219T095000	2023	12	19	09:50	33	73.5	0
20231219T095500	2023	12	19	09:55	33.1	73.4	0
20231219T100000	2023	12	19	10:00	33.3	72.5	0
20231219T100500	2023	12	19	10:05	33.4	72.4	0
20231219T101000	2023	12	19	10:10	32.9	72.9	0
20231219T101500	2023	12	19	10:15	32.6	73.6	0
20231219T102000	2023	12	19	10:20	32.7	73.4	0
20231219T102500	2023	12	19	10:25	33	72.9	0
20231219T103000	2023	12	19	10:30	33	71.9	0
20231219T103500	2023	12	19	10:35	33	70.7	0
20231219T104000	2023	12	19	10:40	32.6	71.1	0
20231219T104500	2023	12	19	10:45	32.7	72.2	0
20231219T105000	2023	12	19	10:50	33	72.1	0
20231219T105500	2023	12	19	10:55	32.3	70.1	0
20231219T110000	2023	12	19	11:00	32	70.5	0
20231219T110500	2023	12	19	11:05	32	71.7	0
20231219T111000	2023	12	19	11:10	32	72.4	0
20231219T111500	2023	12	19	11:15	31.5	73.1	0
20231219T112000	2023	12	19	11:20	31.3	71.7	0
20231219T112500	2023	12	19	11:25	31.3	69.4	0
20231219T113000	2023	12	19	11:30	31.4	69.4	0
20231219T113500	2023	12	19	11:35	32.2	67.5	0
20231219T114000	2023	12	19	11:40	32.5	64.9	0
20231219T114500	2023	12	19	11:45	32.9	65.5	0
20231219T115000	2023	12	19	11:50	32.9	66	0
20231219T115500	2023	12	19	11:55	32	67	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231219T120000	2023	12	19	12:00	31.7	68.6	0
20231219T120500	2023	12	19	12:05	31.9	70.8	0
20231219T121000	2023	12	19	12:10	32.3	71.5	0
20231219T121500	2023	12	19	12:15	32.5	71.6	0
20231219T122000	2023	12	19	12:20	32.6	72.7	0
20231219T122500	2023	12	19	12:25	31.9	73.5	0
20231219T123000	2023	12	19	12:30	31.1	74.4	0
20231219T123500	2023	12	19	12:35	30.7	74.2	0
20231219T124000	2023	12	19	12:40	30.6	77.2	0
20231219T124500	2023	12	19	12:45	30.7	78.3	0
20231219T125000	2023	12	19	12:50	30.9	76.5	0
20231219T125500	2023	12	19	12:55	31.3	72.1	0
20231219T130000	2023	12	19	13:00	31.4	67.5	0
20231219T130500	2023	12	19	13:05	31.1	66.9	0
20231219T131000	2023	12	19	13:10	31	67.5	0
20231219T131500	2023	12	19	13:15	31	70.4	0
20231219T132000	2023	12	19	13:20	31	68.3	0
20231219T132500	2023	12	19	13:25	30.6	67.1	0
20231219T133000	2023	12	19	13:30	30.3	74	0
20231219T133500	2023	12	19	13:35	30	77.2	0
20231219T134000	2023	12	19	13:40	30	77.7	0
20231219T134500	2023	12	19	13:45	30.1	78.3	0
20231219T135000	2023	12	19	13:50	30.1	76.4	0
20231219T135500	2023	12	19	13:55	30	74	0
20231219T140000	2023	12	19	14:00	29.9	72.7	0
20231219T140500	2023	12	19	14:05	29.8	72.7	0
20231219T141000	2023	12	19	14:10	29.8	73.7	0
20231219T141500	2023	12	19	14:15	29.7	73.6	0
20231219T142000	2023	12	19	14:20	29.8	73.8	0
20231219T142500	2023	12	19	14:25	29.8	73.3	0
20231219T143000	2023	12	19	14:30	29.8	72.7	0
20231219T143500	2023	12	19	14:35	29.7	71.3	0
20231219T144000	2023	12	19	14:40	29.6	71.8	0
20231219T144500	2023	12	19	14:45	29.4	72.4	0
20231219T145000	2023	12	19	14:50	29.4	73	0
20231219T145500	2023	12	19	14:55	29.3	72.5	0
20231219T150000	2023	12	19	15:00	29.2	72.7	0
20231219T150500	2023	12	19	15:05	29.2	72.9	0
20231219T151000	2023	12	19	15:10	29.1	73.3	0
20231219T151500	2023	12	19	15:15	29	73.4	0
20231219T152000	2023	12	19	15:20	28.9	73.8	0
20231219T152500	2023	12	19	15:25	28.9	74.1	0
20231219T153000	2023	12	19	15:30	28.8	75	0
20231219T153500	2023	12	19	15:35	28.8	74.9	0
20231219T154000	2023	12	19	15:40	28.7	75	0
20231219T154500	2023	12	19	15:45	28.7	75.5	0
20231219T155000	2023	12	19	15:50	28.7	76.1	0
20231219T155500	2023	12	19	15:55	28.6	76.8	0
20231219T160000	2023	12	19	16:00	28.6	77.1	0
20231219T160500	2023	12	19	16:05	28.5	77.2	0
20231219T161000	2023	12	19	16:10	28.4	78.8	0
20231219T161500	2023	12	19	16:15	28.3	79.1	0
20231219T162000	2023	12	19	16:20	28.3	78.6	0
20231219T162500	2023	12	19	16:25	28.2	78.6	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231219T163000	2023	12	19	16:30	28.2	79.1	0
20231219T163500	2023	12	19	16:35	28.2	79.5	0
20231219T164000	2023	12	19	16:40	28.1	79.4	0
20231219T164500	2023	12	19	16:45	28	78.8	0
20231219T165000	2023	12	19	16:50	27.9	78.9	0
20231219T165500	2023	12	19	16:55	27.9	79.2	0
20231219T170000	2023	12	19	17:00	27.9	78.7	0
20231219T170500	2023	12	19	17:05	27.8	77.6	0
20231219T171000	2023	12	19	17:10	27.9	77	0
20231219T171500	2023	12	19	17:15	27.9	76.9	0
20231219T172000	2023	12	19	17:20	27.8	76.9	0
20231219T172500	2023	12	19	17:25	27.8	75.6	0
20231219T173000	2023	12	19	17:30	27.7	75.8	0
20231219T173500	2023	12	19	17:35	27.6	76.1	0
20231219T174000	2023	12	19	17:40	27.6	74.2	0
20231219T174500	2023	12	19	17:45	27.6	74	0
20231219T175000	2023	12	19	17:50	27.6	73.9	0
20231219T175500	2023	12	19	17:55	27.5	73.9	0
20231219T180000	2023	12	19	18:00	27.4	72.9	0
20231219T180500	2023	12	19	18:05	27.4	73.1	0
20231219T181000	2023	12	19	18:10	27.5	72.3	0
20231219T181500	2023	12	19	18:15	27.5	71.9	0
20231219T182000	2023	12	19	18:20	27.6	72.1	0
20231219T182500	2023	12	19	18:25	27.5	72.5	0
20231219T183000	2023	12	19	18:30	27.5	72.9	0
20231219T183500	2023	12	19	18:35	27.5	73	0
20231219T184000	2023	12	19	18:40	27.5	72.8	0
20231219T184500	2023	12	19	18:45	27.5	72.9	0
20231219T185000	2023	12	19	18:50	27.6	73.3	0
20231219T185500	2023	12	19	18:55	27.6	73.3	0
20231219T190000	2023	12	19	19:00	27.7	72.4	0
20231219T190500	2023	12	19	19:05	27.8	72.1	0
20231219T191000	2023	12	19	19:10	27.8	72.4	0
20231219T191500	2023	12	19	19:15	27.8	72.6	0
20231219T192000	2023	12	19	19:20	27.8	72.8	0
20231219T192500	2023	12	19	19:25	27.9	73	0
20231219T193000	2023	12	19	19:30	27.9	73	0
20231219T193500	2023	12	19	19:35	27.9	72.8	0
20231219T194000	2023	12	19	19:40	27.9	73.3	0
20231219T194500	2023	12	19	19:45	27.9	73	0
20231219T195000	2023	12	19	19:50	27.9	73.4	0
20231219T195500	2023	12	19	19:55	28	72.9	0
20231219T200000	2023	12	19	20:00	28	73.3	0
20231219T200500	2023	12	19	20:05	28	73.3	0
20231219T201000	2023	12	19	20:10	28	72.9	0
20231219T201500	2023	12	19	20:15	28	73.3	0
20231219T202000	2023	12	19	20:20	28	72.8	0
20231219T202500	2023	12	19	20:25	28	72.8	0
20231219T203000	2023	12	19	20:30	28	72.9	0
20231219T203500	2023	12	19	20:35	28	73.4	0
20231219T204000	2023	12	19	20:40	28	73.1	0
20231219T204500	2023	12	19	20:45	28	73.5	0
20231219T205000	2023	12	19	20:50	28	74.1	0
20231219T205500	2023	12	19	20:55	28	74.6	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231219T210000	2023	12	19	21:00	27.9	75.4	0
20231219T210500	2023	12	19	21:05	27.9	75	0
20231219T211000	2023	12	19	21:10	27.9	75	0
20231219T211500	2023	12	19	21:15	28	74.3	0
20231219T212000	2023	12	19	21:20	28	74.3	0
20231219T212500	2023	12	19	21:25	28	74.7	0
20231219T213000	2023	12	19	21:30	28	73.8	0
20231219T213500	2023	12	19	21:35	28.1	72.5	0
20231219T214000	2023	12	19	21:40	28	72.8	0
20231219T214500	2023	12	19	21:45	28	73	0
20231219T215000	2023	12	19	21:50	28	73.1	0
20231219T215500	2023	12	19	21:55	28	72.9	0
20231219T220000	2023	12	19	22:00	28	72.9	0
20231219T220500	2023	12	19	22:05	28	73	0
20231219T221000	2023	12	19	22:10	28	73.2	0
20231219T221500	2023	12	19	22:15	28	73.2	0
20231219T222000	2023	12	19	22:20	28	72.4	0
20231219T222500	2023	12	19	22:25	28	72.2	0
20231219T223000	2023	12	19	22:30	28	72.3	0
20231219T223500	2023	12	19	22:35	28	72.4	0
20231219T224000	2023	12	19	22:40	28	71.7	0
20231219T224500	2023	12	19	22:45	28	71.6	0
20231219T225000	2023	12	19	22:50	28	71.6	0
20231219T225500	2023	12	19	22:55	28	71.4	0
20231219T230000	2023	12	19	23:00	28	71.8	0
20231219T230500	2023	12	19	23:05	28	70.5	0
20231219T231000	2023	12	19	23:10	27.9	70.7	0
20231219T231500	2023	12	19	23:15	27.8	70.9	0
20231219T232000	2023	12	19	23:20	27.6	69.9	0
20231219T232500	2023	12	19	23:25	27.3	69.9	0
20231219T233000	2023	12	19	23:30	27.1	70.2	0
20231219T233500	2023	12	19	23:35	26.7	71.3	0
20231219T234000	2023	12	19	23:40	26.9	70.7	0
20231219T234500	2023	12	19	23:45	26.9	70.6	0
20231219T235000	2023	12	19	23:50	26.7	71.1	0
20231219T235500	2023	12	19	23:55	26.7	71.4	0
20231220T000000	2023	12	20	00:00	26.7	72	0
20231220T000500	2023	12	20	00:05	26.8	72.6	0
20231220T001000	2023	12	20	00:10	26.9	72.1	0
20231220T001500	2023	12	20	00:15	26.9	72.4	0
20231220T002000	2023	12	20	00:20	26.8	73	0
20231220T002500	2023	12	20	00:25	26.8	73.5	0
20231220T003000	2023	12	20	00:30	27	73.8	0
20231220T003500	2023	12	20	00:35	27.1	73.4	0
20231220T004000	2023	12	20	00:40	27.1	74.5	0
20231220T004500	2023	12	20	00:45	27.1	75.4	0
20231220T005000	2023	12	20	00:50	26.7	75.5	0
20231220T005500	2023	12	20	00:55	26.4	74.8	0
20231220T010000	2023	12	20	01:00	26.2	75.8	0
20231220T010500	2023	12	20	01:05	26.3	75.6	0
20231220T011000	2023	12	20	01:10	26.1	75.5	0
20231220T011500	2023	12	20	01:15	25.7	76.4	0
20231220T012000	2023	12	20	01:20	25.7	76.6	0
20231220T012500	2023	12	20	01:25	25.5	76.1	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231220T013000	2023	12	20	01:30	25.3	76.8	0
20231220T013500	2023	12	20	01:35	25.2	77.7	0
20231220T014000	2023	12	20	01:40	25	78.1	0
20231220T014500	2023	12	20	01:45	25.1	78.1	0
20231220T015000	2023	12	20	01:50	25	77.8	0
20231220T015500	2023	12	20	01:55	25	77.9	0
20231220T020000	2023	12	20	02:00	24.9	77.9	0
20231220T020500	2023	12	20	02:05	24.7	78.2	0
20231220T021000	2023	12	20	02:10	24.6	78.7	0
20231220T021500	2023	12	20	02:15	24.8	79.2	0
20231220T022000	2023	12	20	02:20	24.9	79	0
20231220T022500	2023	12	20	02:25	25	78.8	0
20231220T023000	2023	12	20	02:30	25	79.3	0
20231220T023500	2023	12	20	02:35	25.1	79.2	0
20231220T024000	2023	12	20	02:40	25.1	79	0
20231220T024500	2023	12	20	02:45	25.1	78.3	0
20231220T025000	2023	12	20	02:50	25	77.5	0
20231220T025500	2023	12	20	02:55	24.9	77.3	0
20231220T030000	2023	12	20	03:00	24.7	78.1	0
20231220T030500	2023	12	20	03:05	24.5	78.6	0
20231220T031000	2023	12	20	03:10	24.5	78.9	0
20231220T031500	2023	12	20	03:15	24.4	79.4	0
20231220T032000	2023	12	20	03:20	24.2	79.7	0
20231220T032500	2023	12	20	03:25	24.1	80.2	0
20231220T033000	2023	12	20	03:30	24.1	80.7	0
20231220T033500	2023	12	20	03:35	24	80.7	0
20231220T034000	2023	12	20	03:40	23.9	80.9	0
20231220T034500	2023	12	20	03:45	23.8	81.6	0
20231220T035000	2023	12	20	03:50	23.7	81.9	0
20231220T035500	2023	12	20	03:55	23.5	83	0
20231220T040000	2023	12	20	04:00	23.3	85	0
20231220T040500	2023	12	20	04:05	23.7	84.7	0
20231220T041000	2023	12	20	04:10	23.8	83.5	0
20231220T041500	2023	12	20	04:15	23.7	83.3	0
20231220T042000	2023	12	20	04:20	23.7	83.1	0
20231220T042500	2023	12	20	04:25	23.6	82.6	0
20231220T043000	2023	12	20	04:30	23.5	83	0
20231220T043500	2023	12	20	04:35	23.6	83.1	0
20231220T044000	2023	12	20	04:40	23.6	82.6	0
20231220T044500	2023	12	20	04:45	23.6	82.4	0
20231220T045000	2023	12	20	04:50	23.5	83	0
20231220T045500	2023	12	20	04:55	23.5	82.6	0
20231220T050000	2023	12	20	05:00	23.6	82.5	0
20231220T050500	2023	12	20	05:05	23.4	82.9	0
20231220T051000	2023	12	20	05:10	23.4	83.8	0
20231220T051500	2023	12	20	05:15	23.6	82.9	0
20231220T052000	2023	12	20	05:20	23.7	82.2	0
20231220T052500	2023	12	20	05:25	23.8	82	0
20231220T053000	2023	12	20	05:30	23.8	81.8	0
20231220T053500	2023	12	20	05:35	23.7	82	0
20231220T054000	2023	12	20	05:40	23.7	82	0
20231220T054500	2023	12	20	05:45	23.7	82	0
20231220T055000	2023	12	20	05:50	23.7	82.1	0
20231220T055500	2023	12	20	05:55	23.4	82.5	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231220T060000	2023	12	20	06:00	23.3	84.1	0
20231220T060500	2023	12	20	06:05	23.3	84.7	0
20231220T061000	2023	12	20	06:10	23.1	84.8	0
20231220T061500	2023	12	20	06:15	23.1	85.6	0
20231220T062000	2023	12	20	06:20	23.1	85.6	0
20231220T062500	2023	12	20	06:25	23.1	85.5	0
20231220T063000	2023	12	20	06:30	23.1	86.1	0
20231220T063500	2023	12	20	06:35	23.2	86.7	0
20231220T064000	2023	12	20	06:40	22.6	86.7	0
20231220T064500	2023	12	20	06:45	22.5	87.6	0
20231220T065000	2023	12	20	06:50	22.5	87.9	0
20231220T065500	2023	12	20	06:55	22.6	88.2	0
20231220T070000	2023	12	20	07:00	22.9	89	0
20231220T070500	2023	12	20	07:05	23.2	89.6	0
20231220T071000	2023	12	20	07:10	23.1	89.6	0
20231220T071500	2023	12	20	07:15	23.2	88.9	0
20231220T072000	2023	12	20	07:20	23.3	89	0
20231220T072500	2023	12	20	07:25	23.4	87.3	0
20231220T073000	2023	12	20	07:30	23.6	86.5	0
20231220T073500	2023	12	20	07:35	23.7	86.8	0
20231220T074000	2023	12	20	07:40	23.7	86.8	0
20231220T074500	2023	12	20	07:45	23.9	86.6	0
20231220T075000	2023	12	20	07:50	24	87	0
20231220T075500	2023	12	20	07:55	24.3	87.4	0
20231220T080000	2023	12	20	08:00	24.6	85.5	0
20231220T080500	2023	12	20	08:05	24.9	84.8	0
20231220T081000	2023	12	20	08:10	25.2	84.3	0
20231220T081500	2023	12	20	08:15	25.4	83.7	0
20231220T082000	2023	12	20	08:20	25.5	82.4	0
20231220T082500	2023	12	20	08:25	25.7	81.5	0
20231220T083000	2023	12	20	08:30	25.8	81.4	0
20231220T083500	2023	12	20	08:35	26	81.8	0
20231220T084000	2023	12	20	08:40	26.1	81.9	0
20231220T084500	2023	12	20	08:45	26.3	81.3	0
20231220T085000	2023	12	20	08:50	26.4	81.1	0
20231220T085500	2023	12	20	08:55	26.5	80.3	0
20231220T090000	2023	12	20	09:00	26.7	78.4	0
20231220T090500	2023	12	20	09:05	26.8	79	0
20231220T091000	2023	12	20	09:10	26.7	80.5	0
20231220T091500	2023	12	20	09:15	26.9	79.8	0
20231220T092000	2023	12	20	09:20	27.2	80.2	0
20231220T092500	2023	12	20	09:25	27.6	77.8	0
20231220T093000	2023	12	20	09:30	27.9	75	0
20231220T093500	2023	12	20	09:35	28.1	74.3	0
20231220T094000	2023	12	20	09:40	28.4	74.4	0
20231220T094500	2023	12	20	09:45	28.6	73.7	0
20231220T095000	2023	12	20	09:50	28.6	72.6	0
20231220T095500	2023	12	20	09:55	28.8	73.4	0
20231220T100000	2023	12	20	10:00	28.8	72.5	0
20231220T100500	2023	12	20	10:05	29	72.9	0
20231220T101000	2023	12	20	10:10	29.3	71.9	0
20231220T101500	2023	12	20	10:15	29.6	72	0
20231220T102000	2023	12	20	10:20	29.8	72	0
20231220T102500	2023	12	20	10:25	30	72.9	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231220T103000	2023	12	20	10:30	30	72.2	0
20231220T103500	2023	12	20	10:35	30.6	72.3	0
20231220T104000	2023	12	20	10:40	30.4	71.8	0
20231220T104500	2023	12	20	10:45	30.2	72.4	0
20231220T105000	2023	12	20	10:50	30.2	72.4	0
20231220T105500	2023	12	20	10:55	30.3	72.7	0
20231220T110000	2023	12	20	11:00	30.2	72.3	0
20231220T110500	2023	12	20	11:05	30.4	73.3	0
20231220T111000	2023	12	20	11:10	30.8	73.3	0
20231220T111500	2023	12	20	11:15	30.7	72.4	0
20231220T112000	2023	12	20	11:20	30.8	72.6	0
20231220T112500	2023	12	20	11:25	30.7	72.3	0
20231220T113000	2023	12	20	11:30	30.6	72.6	0
20231220T113500	2023	12	20	11:35	30.7	73.3	0
20231220T114000	2023	12	20	11:40	30.6	73.2	0
20231220T114500	2023	12	20	11:45	30.6	73	0
20231220T115000	2023	12	20	11:50	30.8	73.3	0
20231220T115500	2023	12	20	11:55	30.7	73.1	0
20231220T120000	2023	12	20	12:00	30.8	73.4	0
20231220T120500	2023	12	20	12:05	31	74	0
20231220T121000	2023	12	20	12:10	30.9	73.7	0
20231220T121500	2023	12	20	12:15	31	73.9	0
20231220T122000	2023	12	20	12:20	31.1	73.9	0
20231220T122500	2023	12	20	12:25	31.3	74.3	0
20231220T123000	2023	12	20	12:30	31.1	73.8	0
20231220T123500	2023	12	20	12:35	31.1	74.5	0
20231220T124000	2023	12	20	12:40	31.3	74.6	0
20231220T124500	2023	12	20	12:45	31.3	74.2	0
20231220T125000	2023	12	20	12:50	31.6	75.2	0
20231220T125500	2023	12	20	12:55	31.4	73.6	0
20231220T130000	2023	12	20	13:00	31.6	74.2	0
20231220T130500	2023	12	20	13:05	31.6	74	0
20231220T131000	2023	12	20	13:10	31.7	74.3	0
20231220T131500	2023	12	20	13:15	31.7	73.9	0
20231220T132000	2023	12	20	13:20	31.8	73.9	0
20231220T132500	2023	12	20	13:25	31.8	74	0
20231220T133000	2023	12	20	13:30	31.9	74.1	0
20231220T133500	2023	12	20	13:35	31.9	73.9	0
20231220T134000	2023	12	20	13:40	32.1	74.4	0
20231220T134500	2023	12	20	13:45	32.1	74.4	0
20231220T135000	2023	12	20	13:50	32.2	74.5	0
20231220T135500	2023	12	20	13:55	32.3	74.4	0
20231220T140000	2023	12	20	14:00	32.3	73.9	0
20231220T140500	2023	12	20	14:05	32.4	74.4	0
20231220T141000	2023	12	20	14:10	32.5	74.4	0
20231220T141500	2023	12	20	14:15	32.6	74.3	0
20231220T142000	2023	12	20	14:20	32.5	74	0
20231220T142500	2023	12	20	14:25	32.5	74.6	0
20231220T143000	2023	12	20	14:30	32.5	75	0
20231220T143500	2023	12	20	14:35	32.4	75.5	0
20231220T144000	2023	12	20	14:40	32.4	76.6	0
20231220T144500	2023	12	20	14:45	32.4	76.1	0
20231220T145000	2023	12	20	14:50	32.3	75.4	0
20231220T145500	2023	12	20	14:55	32.3	74.8	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231220T150000	2023	12	20	15:00	32.4	74.8	0
20231220T150500	2023	12	20	15:05	32.3	74.7	0
20231220T151000	2023	12	20	15:10	32.3	74.9	0
20231220T151500	2023	12	20	15:15	32.3	74.8	0
20231220T152000	2023	12	20	15:20	32.2	75.3	0
20231220T152500	2023	12	20	15:25	32.2	75.2	0
20231220T153000	2023	12	20	15:30	32.1	75.9	0
20231220T153500	2023	12	20	15:35	32.1	76.1	0
20231220T154000	2023	12	20	15:40	32.1	76.7	0
20231220T154500	2023	12	20	15:45	32.1	77.4	0
20231220T155000	2023	12	20	15:50	32	78.4	0
20231220T155500	2023	12	20	15:55	32	78.4	0
20231220T160000	2023	12	20	16:00	32	79	0
20231220T160500	2023	12	20	16:05	32	79.3	0
20231220T161000	2023	12	20	16:10	31.9	80	0
20231220T161500	2023	12	20	16:15	31.9	80.3	0
20231220T162000	2023	12	20	16:20	31.8	80.7	0
20231220T162500	2023	12	20	16:25	31.7	82.4	0
20231220T163000	2023	12	20	16:30	31.6	83.8	0
20231220T163500	2023	12	20	16:35	31.5	83.8	0
20231220T164000	2023	12	20	16:40	31.5	84.1	0
20231220T164500	2023	12	20	16:45	31.5	84.1	0
20231220T165000	2023	12	20	16:50	31.5	83.8	0
20231220T165500	2023	12	20	16:55	31.5	83.6	0
20231220T170000	2023	12	20	17:00	31.5	83.4	0
20231220T170500	2023	12	20	17:05	31.4	83.8	0
20231220T171000	2023	12	20	17:10	31.4	83.8	0
20231220T171500	2023	12	20	17:15	31.4	83.7	0
20231220T172000	2023	12	20	17:20	31.4	83.8	0
20231220T172500	2023	12	20	17:25	31.3	83.6	0
20231220T173000	2023	12	20	17:30	31.3	83.5	0
20231220T173500	2023	12	20	17:35	31.2	84	0
20231220T174000	2023	12	20	17:40	31.3	83.5	0
20231220T174500	2023	12	20	17:45	31.2	83.6	0
20231220T175000	2023	12	20	17:50	31.1	83.6	0
20231220T175500	2023	12	20	17:55	31	83.9	0
20231220T180000	2023	12	20	18:00	30.9	84.3	0
20231220T180500	2023	12	20	18:05	30.9	84.2	0
20231220T181000	2023	12	20	18:10	30.9	84.4	0
20231220T181500	2023	12	20	18:15	30.9	84.5	0
20231220T182000	2023	12	20	18:20	31	84.3	0
20231220T182500	2023	12	20	18:25	31.1	83.8	0
20231220T183000	2023	12	20	18:30	31.2	83.5	0
20231220T183500	2023	12	20	18:35	31.3	83.5	0
20231220T184000	2023	12	20	18:40	31.2	84.1	0
20231220T184500	2023	12	20	18:45	31.2	84.1	0
20231220T185000	2023	12	20	18:50	31.3	84.1	0
20231220T185500	2023	12	20	18:55	31.3	84	0
20231220T190000	2023	12	20	19:00	31.1	84.1	0
20231220T190500	2023	12	20	19:05	31	83.7	0
20231220T191000	2023	12	20	19:10	30.9	83.8	0
20231220T191500	2023	12	20	19:15	30.8	83.9	0
20231220T192000	2023	12	20	19:20	30.7	83.8	0
20231220T192500	2023	12	20	19:25	30.6	84.3	0

Table C-1: Winter SUNY MesoNet Meteorological Data (Sprakers Station)

Raw Date/Time	Year	Month	Day	Time	Temperature [F]	Relative Humidity [%]	Precipitation [in]
20231220T193000	2023	12	20	19:30	30.6	84.8	0
20231220T193500	2023	12	20	19:35	30.8	84	0
20231220T194000	2023	12	20	19:40	30.8	83.6	0
20231220T194500	2023	12	20	19:45	30.7	83.9	0
20231220T195000	2023	12	20	19:50	30.8	83.5	0
20231220T195500	2023	12	20	19:55	30.9	83.2	0
20231220T200000	2023	12	20	20:00	30.8	83.4	0
20231220T200500	2023	12	20	20:05	30.8	83.8	0
20231220T201000	2023	12	20	20:10	30.8	83.7	0
20231220T201500	2023	12	20	20:15	30.8	83.6	0
20231220T202000	2023	12	20	20:20	30.8	83.6	0
20231220T202500	2023	12	20	20:25	30.9	83.8	0
20231220T203000	2023	12	20	20:30	30.8	84.4	0
20231220T203500	2023	12	20	20:35	30.8	84.3	0
20231220T204000	2023	12	20	20:40	30.8	84.4	0
20231220T204500	2023	12	20	20:45	30.8	84.7	0
20231220T205000	2023	12	20	20:50	30.9	84.2	0
20231220T205500	2023	12	20	20:55	30.9	84.3	0
20231220T210000	2023	12	20	21:00	30.9	84.4	0
20231220T210500	2023	12	20	21:05	30.9	84.9	0
20231220T211000	2023	12	20	21:10	30.8	84.9	0
20231220T211500	2023	12	20	21:15	30.8	84.9	0
20231220T212000	2023	12	20	21:20	30.7	85.6	0
20231220T212500	2023	12	20	21:25	30.7	86	0
20231220T213000	2023	12	20	21:30	30.8	86.1	0
20231220T213500	2023	12	20	21:35	30.8	86.3	0
20231220T214000	2023	12	20	21:40	30.8	86.5	0
20231220T214500	2023	12	20	21:45	30.8	86.7	0
20231220T215000	2023	12	20	21:50	30.8	86.7	0
20231220T215500	2023	12	20	21:55	30.9	86.7	0
20231220T220000	2023	12	20	22:00	30.9	86.5	0
20231220T220500	2023	12	20	22:05	30.9	86.6	0
20231220T221000	2023	12	20	22:10	30.9	87	0
20231220T221500	2023	12	20	22:15	30.8	87.5	0
20231220T222000	2023	12	20	22:20	30.8	88.2	0
20231220T222500	2023	12	20	22:25	30.8	88.1	0
20231220T223000	2023	12	20	22:30	30.9	88.1	0
20231220T223500	2023	12	20	22:35	31	87.5	0
20231220T224000	2023	12	20	22:40	31	87.4	0
20231220T224500	2023	12	20	22:45	31	87.3	0
20231220T225000	2023	12	20	22:50	31.1	87.5	0
20231220T225500	2023	12	20	22:55	31.1	87.2	0
20231220T230000	2023	12	20	23:00	31.1	87.3	0
20231220T230500	2023	12	20	23:05	31.1	87.2	0
20231220T231000	2023	12	20	23:10	31	87.5	0
20231220T231500	2023	12	20	23:15	31.1	87.8	0
20231220T232000	2023	12	20	23:20	31.2	87.3	0
20231220T232500	2023	12	20	23:25	31.2	87.2	0
20231220T233000	2023	12	20	23:30	31.2	87	0
20231220T233500	2023	12	20	23:35	31.2	87	0
20231220T234000	2023	12	20	23:40	31.3	86.7	0
20231220T234500	2023	12	20	23:45	31.3	86.9	0
20231220T235000	2023	12	20	23:50	31.3	86.8	0
20231220T235500	2023	12	20	23:55	31.4	86.7	0