Blue Ridge Research and Consulting

Final Report

Indian Point Energy Center
Siren System Far Field Acoustic Testing
April 2008

Final Report

Prepared for:

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Overview

Entergy contracted with Blue Ridge Research and Consulting, LLC (BRRC) to oversee the collection of siren sound levels and local weather data at 24 locations during two full system tests of Indian Point's new siren system along. The tests were conducted on the 15th and 16th of April, 2008. BRRC assisted Entergy with the selection of the measurement locations and the training of Entergy personnel who were responsible for the actual data collection.

Each measurement location had a Sound Level Meter (SLM) and a weather station. The SLMs were either Larson Davis Model 824s or Model 831s. Regardless of the model, each meter was set to measure and record one second Leq time histories. The weather stations were Kestrel Model 4500s set to record the wind speed, wind direction, temperature, humidity and barometric pressure every five seconds.

Each SLM was calibrated before the testing began, and a calibration tone was recorded on each meter before and after each test. The microphones were mounted on tripods at a height approximately five feet above the ground. The meters in general started recording data at least ten minutes before each test and continued recording data for at least ten minutes after the sirens finished sounding. The weather stations recorded data over that same time period and had their internal clocks synchronized with the SLMs. Complete data were collected at each site for both days, creating a total of 48 complete measurements. The complete measurement protocol is provided in Appendix A.

When the measured values were compared with the predicted values provided by ATI, the average difference for the data collected on April 15, 2008 was 0.2 dB and the average difference for the data collected on April 16, 2008 was -0.8 dB. The average of all of the data collected was -0.3 dB. This shows a good agreement with the predicted values.

SLM Measurement Results

The SLMs were programmed to record slow weighted sound. Each meter was set to measure and record the C-weighted 1 second Leq, as well as the octave band and third octave band one second Leqs. The L10 for the center three minutes of each siren signal was calculated. Only the center three minutes were included to ensure that the sound from all surrounding sirens reached the microphone. Also, the regulations guiding the sounding of the siren system call for a sounding that is three to five minute in length, so using three minutes is still within the guidelines for this type of a system[1].

The three minute L10 was computed by two methods. The first was simply by computing the L10 based on the recorded C-Weighted levels. The second method was to compute the L10 by combining the measured sound from the 500 Hz and the 630 Hz third octave bands. These are the bands that contain most of the sound energy from the sirens so they represent a cleaner signal than the C-Weighted sound. The C-weighted sound levels include

[1] "Outdoor Warning Systems Guide," CPG 1-17, FEMA March 1980.

a wide range of frequencies that can have significant noise levels that do not contribute to the siren signal but none the less increase the measured noise. Table 1 and Table 2 provide the L10s as computed for sound levels recorded on April 15 and April 16. Included in these tables are the predicted results based on ATI's propagation model, provided to BRRC by Entergy[2].

The average difference between the measured values and the predicted values was 0.2 dB for the sounding on April 15, 2008, and -0.8 dB for the sounding on April 16, 2008. The average difference for all of the collected data was -0.3 dB. Based on these results as provided, this average difference shows an accurate prediction of the measured sound levels.

[2] E-mail correspondence with Mike Miele of Entergy, April 29, 2008.

Table 1. SLM Results from the Full Siren System Test on April 15, 2008

Meter	Measured 630Hz + 500Hz L10 (dB)	Predicted Sound Level (dB)‡	Measured Minus Predicted
Meter 01	82	73	9
Meter 02	82	73	9
Meter 03	76	70	6
Meter 04	77	75	2
Meter 05	89	77	12
Meter 06	65	72	-7
Meter 07	72	71	1
Meter 08	69	71	-2
Meter 09	74	70	4
Meter 10	66	67	-1
Meter 11	53	55	-2
Meter 12	76	70	6
Meter 13	68	73	-5
Meter 14	58	60	-2
Meter 15	64	65	-1
Meter 16	59	60	-1
Meter 17	75	74	1
Meter 18	53	62	-9
Meter 19	59	70	-11
Meter 20	74	76	-2
Meter 21	70	70	0
Meter 22	67	68	-1
Meter 23	72	77	-5
Meter 24	77	73	4

‡ Data provided by Entergy from ATI

Table 2. SLM Results from the Full Siren System Test on April 16, 2008

Meter	Measured 630Hz + 500Hz L10 (dB)	Predicted Sound Level (dB)‡	Measured Minus Predicted
Meter 01	86	72	14
Meter 02	81	73	8
Meter 03	74	70	4
Meter 04	78	75	3
Meter 05	69	70	-1
Meter 06	71	72	-1
Meter 07	71	71	0
Meter 08	65	71	-6
Meter 09	69	70	-1
Meter 10	61	67	-6
Meter 11	53	55	-2
Meter 12	65	70	-5
Meter 13	64	73	-9
Meter 14	62	63	-1
Meter 15*	56	65	-9
Meter 16*	62	69	-7
Meter 17	73	74	-1
Meter 18*	56	55	1
Meter 19*	63	71	-8
Meter 20	79	76	3
Meter 21	67	70	-3
Meter 22	89	70	19
Meter 23	72	77	-5
Meter 24	69	73	-4

‡ Data provided by Entergy from ATI

* Results edited to remove outside noise.

Some of the data collected on April 16 had some extraneous noise during the siren sounding. To avoid this noise from interfering with the calculation of the L10 some adjustments to the standard calculation process were made. Meter 15 had an obvious intrusion into the siren signal during the first one minute of the sounding (noted in the notes as an aircraft), so that was excluded from the analysis. For Meter 16 an aircraft was also noted during the sounding, so the first one minute was skipped for the analysis. During the signal recorded by Meter 18 another aircraft was noted, increasing the noise level during most of the signal. Only the last 90 seconds were used to calculate the L10. Finally, the signal recorded by Meter 19 had extra noise during the last section of the signal, so the first three minutes were used without skipping the first 30 seconds as usual in order to avoid the extraneous noise.

Meteorological Measurement Results

The weather on both collection days had fairly low winds with little cloud cover and mild temperatures. The meteorological instruments collected the wind speed and direction, temperature, humidity, and barometric pressure every five seconds. From this data BRRC determined the average weather conditions during the test. The full four minutes of weather data were used to be consistent for every site and it represents the full weather conditions during the soundings. For temperature and humidity and wind speed this was accomplished by simply averaging the values during the sounding period. The same was true for the barometric pressure. However, that metric was so stable as to not warrant any statistical analysis. Also, the pressure sensor for the Meter 14 appears to have failed so no data on pressure is provided for that location. There is some variation from site to site of the barometric pressure. This variation is closely related to the elevation of that location and is less a function of the local weather conditions.

For the wind direction the problem is more difficult. Not only does the wind direction wrap around 360 degrees, averaging two directions does not necessarily provide a true direction where the wind came from. Instead, BRRC selected the median value, or the value that separates the higher half of the data from the lower half. Table 3 and Table 4 provide the complete results from these measurements, Together with some statistical measurements to help identify the variability. Note that for these tables a range of wind directions was denoted with a dash. For example, the Meter 01 on April 15th where the wind direction swung from 0 degrees to 135 degrees is written as 0-135. For cases where there were two distinct wind directions the slash symbol is used. 36/319 therefore means that the wind shifted between 36 degrees and 319 degrees. Finally, when the wind did not have any identifiable direction it is simply marked down as VAR for variable.

Table 3. Weather Station Results from the Full Siren System Test on April 15, 2008

	Wind Direction (magnetic)		Wind Speed (MPH)			Temperature (deg F)		Relative Humidity (%)		Atmospheric Pressure (kPa)
Meter	MEDIAN	STD	AVG	MAX	STD	AVG	STD	AVG	STD	AVG
Meter 01	0-135	100.8	3.0	6.5	1.2	49.3	1.2	29.1	0.6	99.8
Meter 02	285-105	47.7	5.1	13.5	2.1	49.2	1.1	26.9	0.6	100.4
Meter 03	311	20.9	7.4	11.5	2.1	47.5	0.5	31.2	0.8	101.5
Meter 04	90-150	60.1	2.2	4.6	1.1	52.8	1.3	29.6	1.8	101.9
Meter 05	325	23.6	5.6	10.7	1.7	48.4	0.5	27.5	0.7	101.2
Meter 06	VAR	176.5	2.4	5.8	1.0	51.5	1.6	26.9	0.6	100.9
Meter 07	284	44.5	2.7	4.6	1.1	51.8	1.3	19.7	0.6	101.5
Meter 08	22	49.6	3.3	7.0	1.8	50.0	1.3	24.8	1.3	100.5
Meter 09	36/319	46.1	2.2	4.8	1.1	50.3	1.1	26.8	0.5	101.5
Meter 10	54	56.3	1.7	3.7	1.0	48.6	0.9	29.7	1.3	100.5
Meter 11	166	35.2	3.4	6.0	1.2	47.4	0.6	31.9	0.5	100.2
Meter 12	310	31.6	3.4	9.1	1.9	50.0	0.7	28.0	0.7	101.4
Meter 13	VAR	129.5	2.0	5.9	1.2	51.5	1.3	28.6	0.6	100.5
Meter 14	146	28.6	3.2	4.9	1.0	49.2	0.7	27.5	0.6	-NA-
Meter 15	66/195	71.7	2.5	5.8	1.4	47.5	1.5	26.8	0.5	98.9
Meter 16	VAR	98.8	2.6	5.5	1.7	49.5	1.3	25.7	0.7	99.5
Meter 17	39	44.9	3.2	5.9	1.7	51.3	1.7	30.7	1.5	101.9
Meter 18	75-150	99.3	3.7	7.1	1.7	47.3	1.4	28.5	1.1	98.7
Meter 19	36	29.8	3.2	6.5	1.4	46.6	0.7	27.4	0.6	99.1
Meter 20	113-339	94.4	1.9	4.7	1.2	50.3	1.7	26.5	1.3	99.4
Meter 21	35	49.3	3.2	7.4	1.5	48.8	1.4	36.3	0.9	100.3
Meter 22	63/265	83.3	2.6	5.7	1.4	45.2	1.1	33.4	0.8	98.5
Meter 23	128	24.7	2.7	6.3	1.5	49.7	1.3	30.5	1.5	99.2
Meter 24	270 - 90	43.2	3.8	9.5	1.8	49.3	0.6	31.3	0.5	101.7

Table 4. Weather Station Results from the Full Siren System Test on April 16, 2008

	Wind Direction (magnetic)		Wind Speed (MPH)			Temperature (deg F)		Relative Humidity (%)		Atmospheric Pressure (kPa)
Meter	MEDIAN	STD	AVG	MAX	STD	AVG	STD	AVG	STD	AVG
Meter 01	279	29	1.7	3.5	1.0	58.3	1.2	19.9	0.5	100.2
Meter 02	VAR	95	1.7	5.4	1.3	57.9	1.9	21.9	1.4	100.8
Meter 03	152	17	2.1	3.5	0.8	59.2	1.4	25.8	1.4	102.1
Meter 04	85	9	3.2	5.8	1.0	56.9	0.6	20.8	0.8	102.2
Meter 05	287	27	1.6	3.6	1.2	55.8	1.3	21.5	0.5	101.5
Meter 06	176	46	1.6	3.8	1.2	58.9	2.3	25.0	1.9	101.2
Meter 07	252	25	2.7	4.2	0.8	57.5	0.6	13.8	0.4	101.9
Meter 08	49	33	2.7	6.4	1.4	56.9	1.1	15.7	0.6	100.8
Meter 09	75-360	90	2.7	5.2	1.0	59.3	0.5	16.3	1.0	101.9
Meter 10	275	30	1.5	3.9	1.1	56.9	1.0	22.2	0.5	100.9
Meter 11	60-240	53	2.4	5.2	1.1	55.3	0.7	26.9	0.5	100.5
Meter 12	27	39	1.5	4.3	1.1	58.4	1.7	18.3	0.7	101.8
Meter 13	0-165	46	1.3	2.9	0.8	59.0	1.5	23.8	0.5	100.9
Meter 14	139	7	2.1	5.4	1.0	56.8	0.4	24.6	1.1	-NA-
Meter 15	200-300	47	2.8	6.5	1.6	54.8	0.7	22.4	0.6	99.2
Meter 16	134	2	0.9	2.8	1.0	59.4	0.9	16.8	0.4	100.1
Meter 17	300-60	29	1.9	3.9	0.9	59.6	2.1	23.3	1.0	102.2
Meter 18	30-200	49	1.4	3.4	1.0	59.4	1.8	20.6	0.7	99.0
Meter 19	90-300	76	2.6	4.6	1.1	53.7	0.6	18.4	0.4	99.5
Meter 20	300-135	49	1.1	2.8	0.7	57.0	1.2	19.1	0.6	99.8
Meter 21	256	20	3.1	4.8	0.8	56.2	0.5	26.1	0.7	100.7
Meter 22	58	24	2.3	4.6	1.0	54.9	0.7	23.2	0.5	99.2
Meter 23	90-210	45	1.8	4.4	1.0	59.8	1.3	19.8	1.1	99.5
Meter 24	110	20	2.0	3.7	1.0	56.9	1.3	34.5	1.3	102.1

Measurement Locations

An initial set of measurement locations were selected before the testing began. However, as the testers arrived at their locations they were asked to make reasonable assessments of the local ambient noise environment and decide if the needed to more. In addition, after reviewing some of the noise data collected on April 15, 2008 some of the measurement locations were moved to try and limit the background noise levels. Table 5 provides the complete Latitude and Longitude of the measurement sites for both days.

Table 5. Coordinates of the Measurement Locations

	April 15, 2008		April 16, 2008	
Site	**Latitude (decimal degrees)**	**Longitude (decimal degrees)**	**Latitude (decimal degrees)**	**Longitude (decimal degrees)**
Meter 01	41.33196	-73.78555	41.33196	-73.78555
Meter 02	41.31934	-73.85642	41.31939	-73.85641
Meter 03	41.31393	-73.93043	41.30983	-73.92823
Meter 04	41.25121	-73.94531	41.25136	-73.94488
Meter 05	41.16842	-73.83306	41.16983	-73.83111
Meter 06	41.21783	-73.79970	41.21698	-73.79534
Meter 07	41.26170	-73.91910	41.26184	-73.91908
Meter 08	41.37214	-73.85717	41.37214	-73.85717
Meter 09	41.42510	-73.94748	41.42515	-73.94743
Meter 10	41.33949	-73.91590	41.33940	-73.91585
Meter 11	41.33582	-73.94310	41.33668	-73.94069
Meter 12	41.15904	-73.93201	41.15904	-73.93201
Meter 13	41.15892	-74.02097	41.15896	-74.02107
Meter 14	41.15454	-74.10072	41.15262	-74.09498
Meter 15	41.21367	-74.12081	41.21367	-74.12077
Meter 16	41.20102	-74.05010	41.19719	-74.05395
Meter 17	41.22960	-73.99584	41.22960	-73.99590
Meter 18	41.23944	-74.06483	41.23097	-74.06831
Meter 19	41.28693	-74.07508	41.28537	-74.07615
Meter 20	41.27780	-74.11977	41.27780	-74.11977
Meter 21	41.32096	-74.12333	41.32501	-74.12525
Meter 22	41.32031	-74.08997	41.31567	-74.08117
Meter 23	41.35689	-74.10032	41.35642	-74.09908
Meter 24	41.36626	-73.96844	41.36626	-73.96844

All Coordinates use the WGS 84 Datum

The proximity of a siren to a measurement location is crucial in understanding the propagation of sound. Therefore, BRRC has calculated the distance and heading to the nearest two sirens for each sound level meter. These results are provided in Table 6.

Table 6. Distance and Heading for Each Meter Location to the Nearest Sirens.

April 15, 2008				April 16, 2008			
Meter	Closest Siren	Distance (ft.)	Heading (Degrees Mag.)	Meter	Closest Siren	Distance (ft.)	Heading (Degrees Mag.)
Meter 01	Siren 340	1555	168	Meter 01	Siren 340	1555	168
	Siren 401	4602	315		Siren 401	4602	315
Meter 02	Siren 357	3024	336	Meter 02	Siren 357	3009	335
	Siren 333	3159	71		Siren 333	3150	72
Meter 03	Siren 338	3964	302	Meter 03	Siren 328	3463	167
	Siren 328	5060	164		Siren 338	5360	312
Meter 04	Siren 345	3048	59	Meter 04	Siren 345	2916	58
	Siren 336	4076	298		Siren 336	4156	296
Meter 05	Siren 303	1518	254	Meter 05	Siren 303	2200	245
	Siren 302	4831	182		Siren 302	5393	187
Meter 06	Siren 308	2423	169	Meter 06	Siren 308	2221	200
	Siren 364	3742	327		Siren 364	4723	317
Meter 07	Siren 324	2121	133	Meter 07	Siren 324	2154	134
	Siren 326	5113	326		Siren 326	5072	326
Meter 08	Siren 403	3057	240	Meter 08	Siren 403	3057	240
	Siren 410	4049	348		Siren 410	4049	348
Meter 09	Siren 411	1658	253	Meter 09	Siren 411	1675	252
	Siren 412	9829	130		Siren 412	9831	130
Meter 10	Siren 347	3865	177	Meter 10	Siren 347	3833	177
	Siren 405	4993	350		Siren 405	5026	350
Meter 11	Siren 338	5836	178	Meter 11	Siren 338	6169	184
	Siren 347	8016	108		Siren 347	7504	112
Meter 12	Siren 225	3529	276	Meter 12	Siren 225	3529	276
	Siren 220	4813	188		Siren 220	4813	188
Meter 13	Siren 232	4156	154	Meter 13	Siren 238	4172	345
	Siren 238	4192	344		Siren 232	4180	153
Meter 14	Siren 236	6025	53	Meter 14	Siren 236	5379	37
	Siren 234	8502	82		Siren 234	7078	75
Meter 15	Siren 204	4304	7	Meter 15	Siren 204	4303	7
	Siren 243	5565	203		Siren 243	5569	203
Meter 16	Siren 209	3233	233	Meter 16	Siren 209	1634	251
	Siren 208	6256	144		Siren 208	5966	128
Meter 17	Siren 211	3503	57	Meter 17	Siren 211	3517	57
	Siren 223	4026	219		Siren 223	4016	219
Meter 18	Siren 206	5902	118	Meter 18	Siren 244	4900	260
	Siren 244	6971	236		Siren 206	6148	87
Meter 19	Siren 122	5326	224	Meter 19	Siren 122	4720	227
	Siren 109	10365	197		Siren 109	9735	196
Meter 20	Siren 110	1825	161	Meter 20	Siren 110	1825	161
	Siren 121	8211	262		Siren 121	8211	262
Meter 21	Siren 103	4012	8	Meter 21	Siren 103	2733	24
	Siren 106	4866	237		Siren 106	5422	221
Meter 22	Siren 107	3220	90	Meter 22	Siren 107	1860	25
	Siren 103	9549	296		Siren 108	12271	104
Meter 23	Siren 105	1231	211	Meter 23	Siren 105	1314	227
	Siren 116	8321	3		Siren 116	8481	0
Meter 24	Siren 111	2766	26	Meter 24	Siren 111	2766	26
	Siren 113	6422	186		Siren 113	6422	186

Individual Measurements

The following sections will provide the results from each individual measurement location in detail. For each location and each measurement day there will be an aerial photograph of the location (from Google Earth), the hand written data sheet for that site, a plot showing both the C-weighted time history and the combined 500Hz and 630Hz third octave band time history, and the time history of the wind speed and wind direction. For the wind direction, BRRC used the concept of a wrapped direction to produce some directions that have a negative heading. For example, if the wind direction swings from 359 degrees to 2 degrees, it looks better on a graph if that swing is actually from -1 degree to 2 degrees.

Meter 01, April 15, 2008

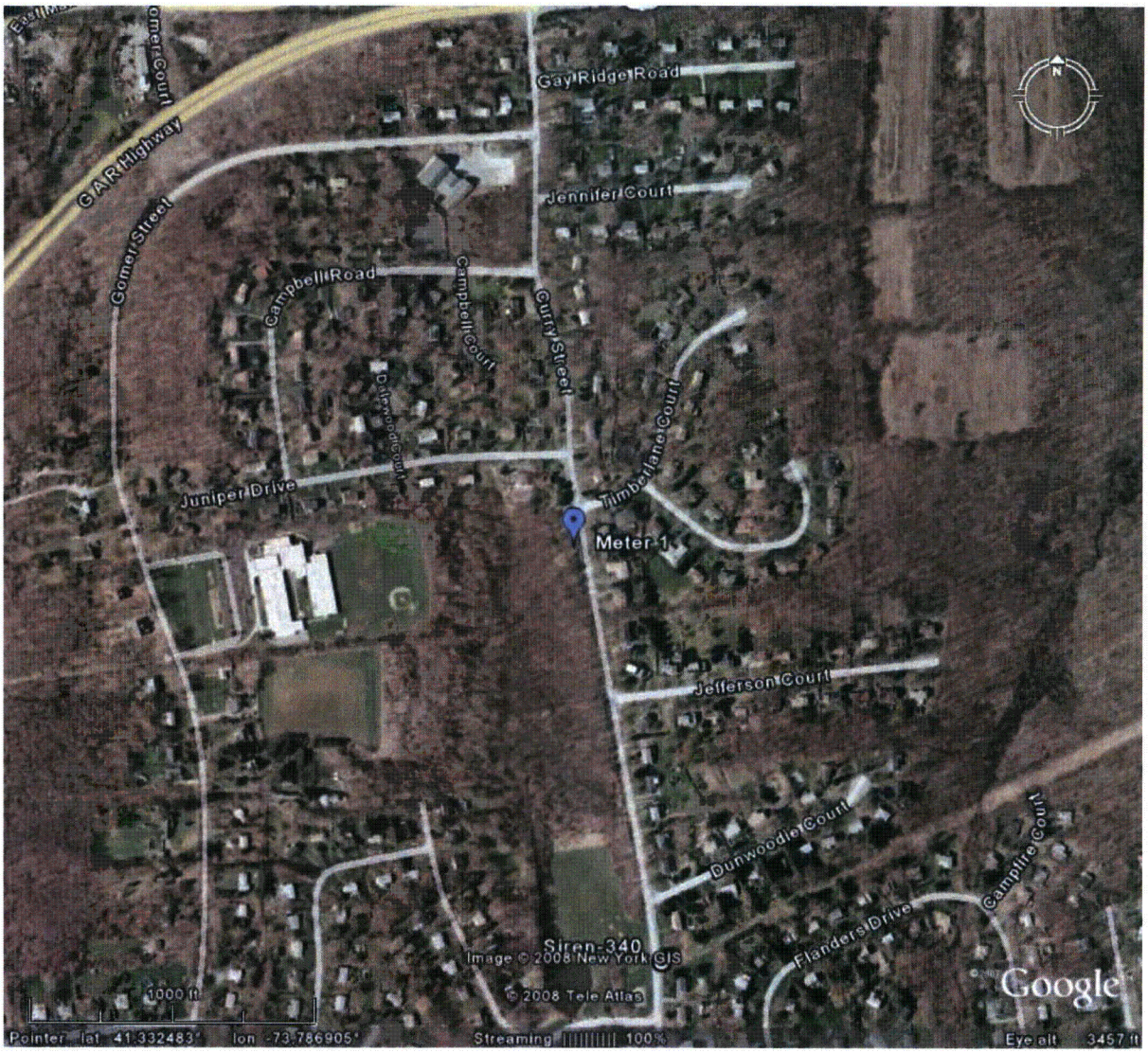


Figure 1. Aerial Photograph of Meter 1 Location, April 15, 2008.

SITE # 1

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

Date: 4/15/08 Time: _____

SLM Model: 831 SLM Serial Number: 1200 / weather 570055

Tester's Name: MJS

GPS Coordinates: 73° 47' 8" West 41° 19' 55" North

Checked Battery? (Yes) No

Checked Clock? (Yes) No

Memory Checked? (Yes) No

DOWNLOADED SLM ✓ WEATHER ✓

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? (Yes) No

Calibration level after test: 94.0 dBC

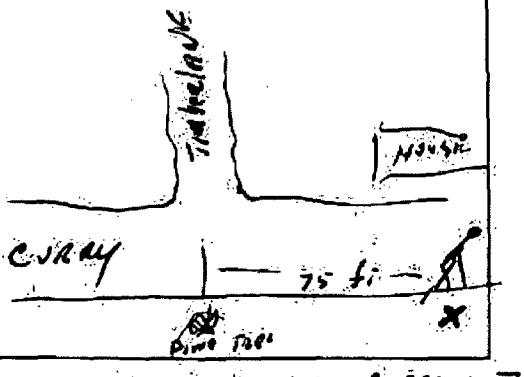
30 second calibration tone recorded after test? (Yes) No

Calibrator Model: B&K 4231 Calibrator SN: 2575552

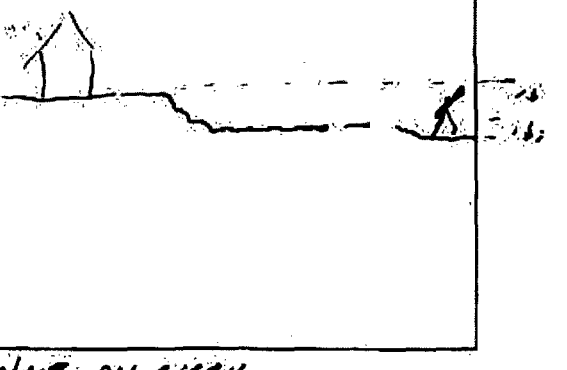
To be filled in be by the field crew at the site

Location Drawing:

Plan View
(Can also use provided map to mark location)



Major Elevation Changes



Measurement Location description: Curry - Timberline ON every

Microphone height: 5 ft. Wind Dir: 349 deg.

Photos Taken? (Yes) No Wind Spd: 4.1 mph

Meter Recording? (Yes) No Temp: 49.2 °F

Weather Station on and wind cover removed? (Yes) No

Ambient noise level before test: 63 dBC

Maximum level observed during the test: 86.4 dBC

Could you hear the sirens? (Yes) No

Ambient noise level after test: 57.3 / 51.6 dBC

Notes about test (including background noise and noise intrusions during the test):
TRAFFIC NOISE CARS AND TRUCKS - CROWS IN TREES

Tester's Signature: John Conroy

Figure 2. Data Sheet for Meter 1, April 15, 2008

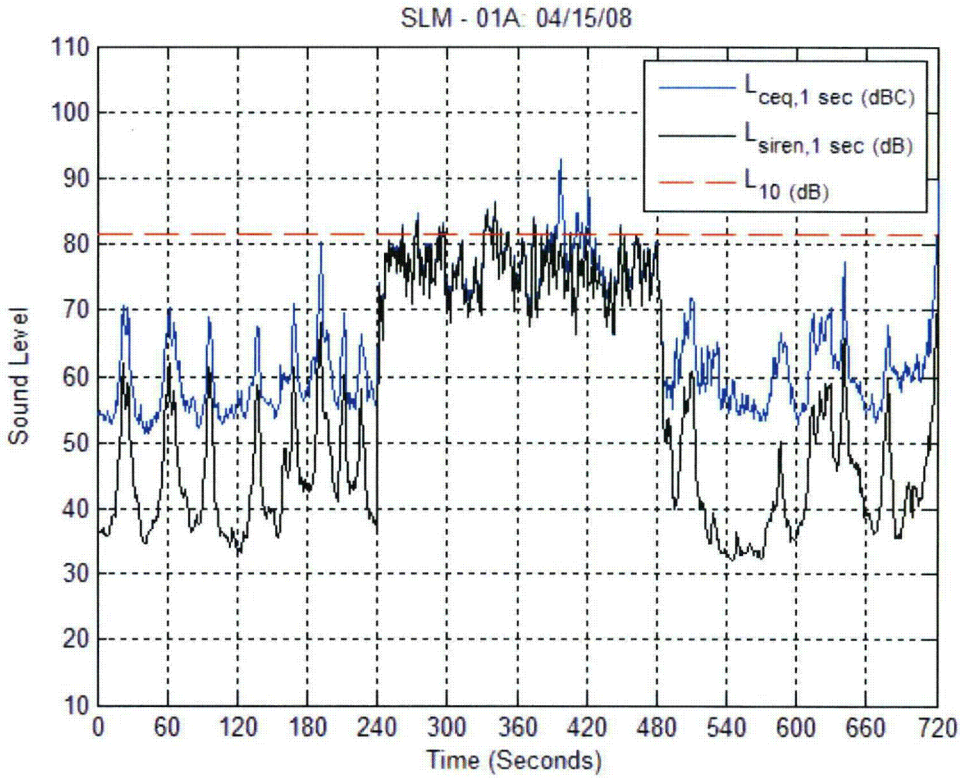


Figure 3. Time History Plot for Meter 1, April 15, 2008

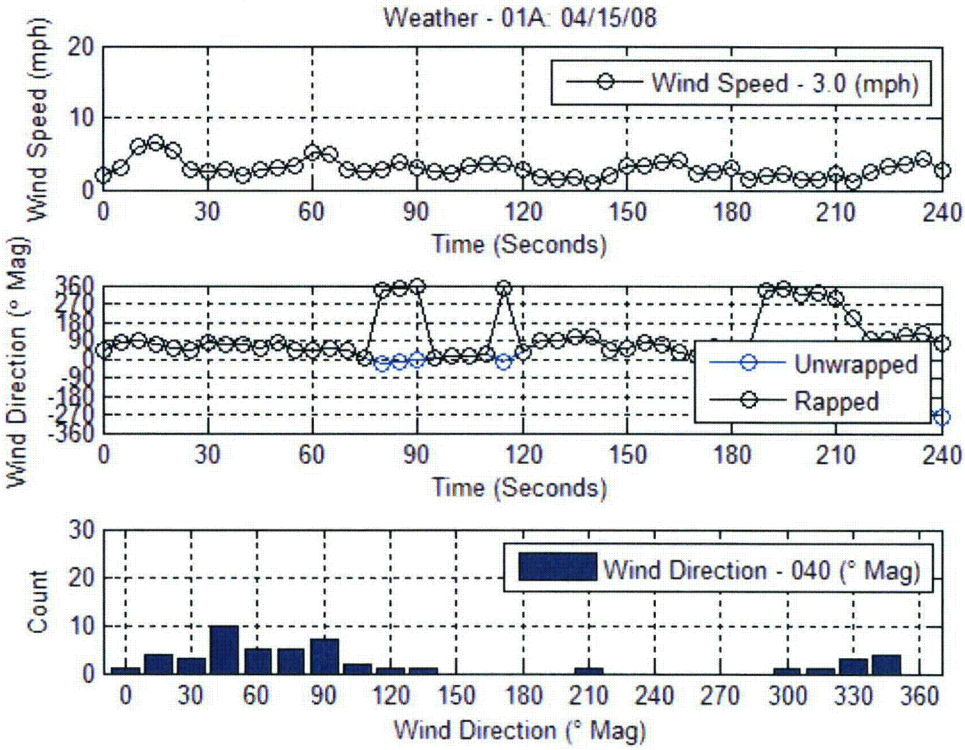


Figure 4. Weather Plots for Meter 1, April 15, 2008

Meter 1, April 16, 2008

Figure 5. Aerial Photograph of Meter 1 Location, April 16, 2008.

SITE #1

Indian Point Siren Test Data Sheet

To be filled in by at the EOF by support staff

Date: 4/16/08 Time: 5700SS

SLM Model: 831 SLM Serial Number: 1200 \WEATHER

Tester's Name: MJ\ John Curry

GPS Coordinates: West North

Checked Battery? (Yes) No 105.2

Checked Clock? (Yes) No

Memory Checked? (Yes) No

DOWNLOADED SLM\ /WEATHER\

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? (Yes) No

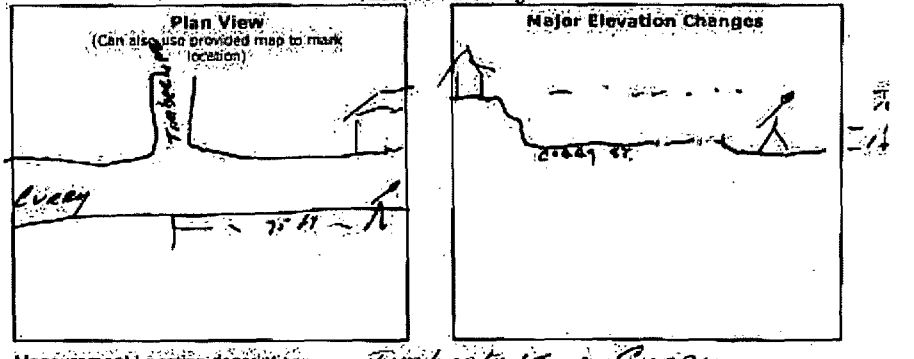
Calibration level after test: 94.0 dBC

30 second calibration tone recorded after test? (Yes) No

Calibrator Model: B+K 4231 Calibrator SN: 2575552

To be filled in be by the field crew at the site

Location Drawing:



Measurement Location description: Timbertrail + Curry

Microphone height: 6 ft. Wind Dir: 332 deg.

Photos Taken? (Yes) No Wind Spd: 2.1 mph

Meter Recording? (Yes) No Temp: 58.9 °F

Weather Station on and wind cover removed? (Yes) No

Ambient noise level before test: 48 dBC

Maximum level observed during the test: 84.8 dBC

Could you hear the sirens? (Yes) No

Ambient noise level after test: 47 dBC

Notes about test (including background noise and noise intrusions during the test):
QUIET BACKGROUND BIRDS + TRAFFIC ON CURRY ST
(SEE PINE STREET)

Tester's Signature: John Curry

Figure 6. Data Sheet for Meter 1, April 16, 2008

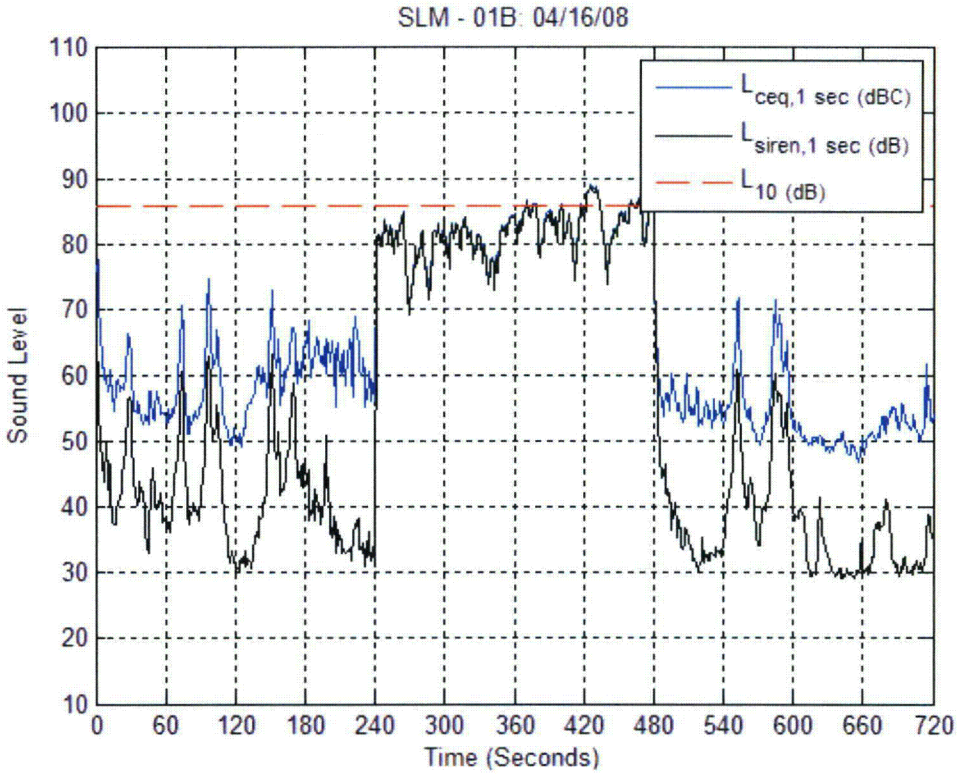


Figure 7. Time History Plot for Meter 1, April 16, 2008

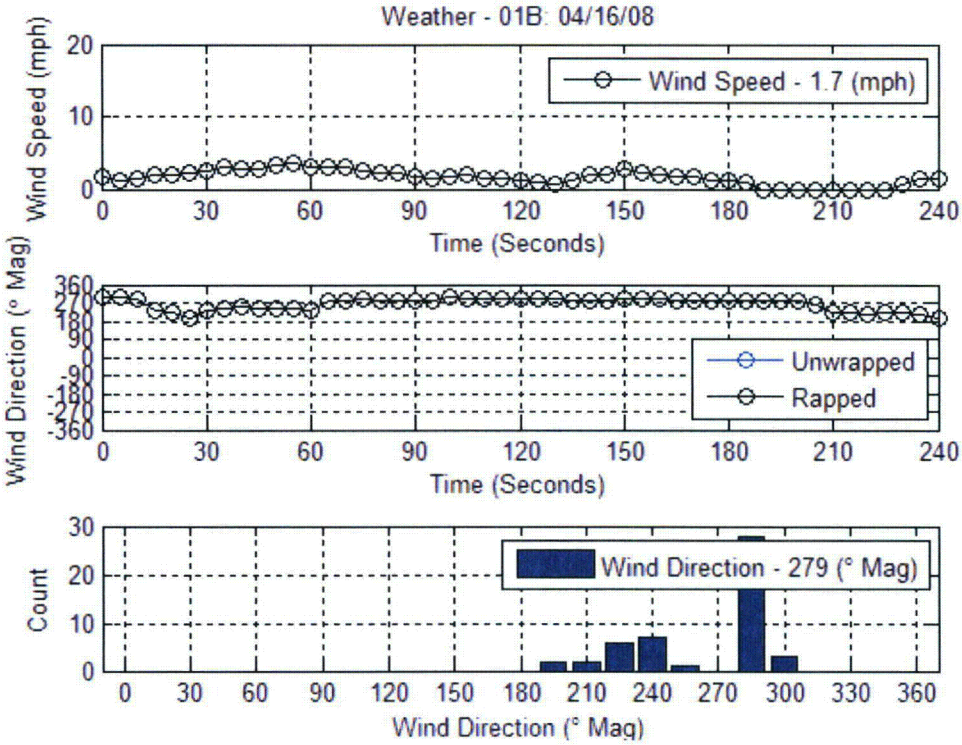


Figure 8. Weather Plots for Meter 1, April 16, 2008

Meter 2, April 15, 2008

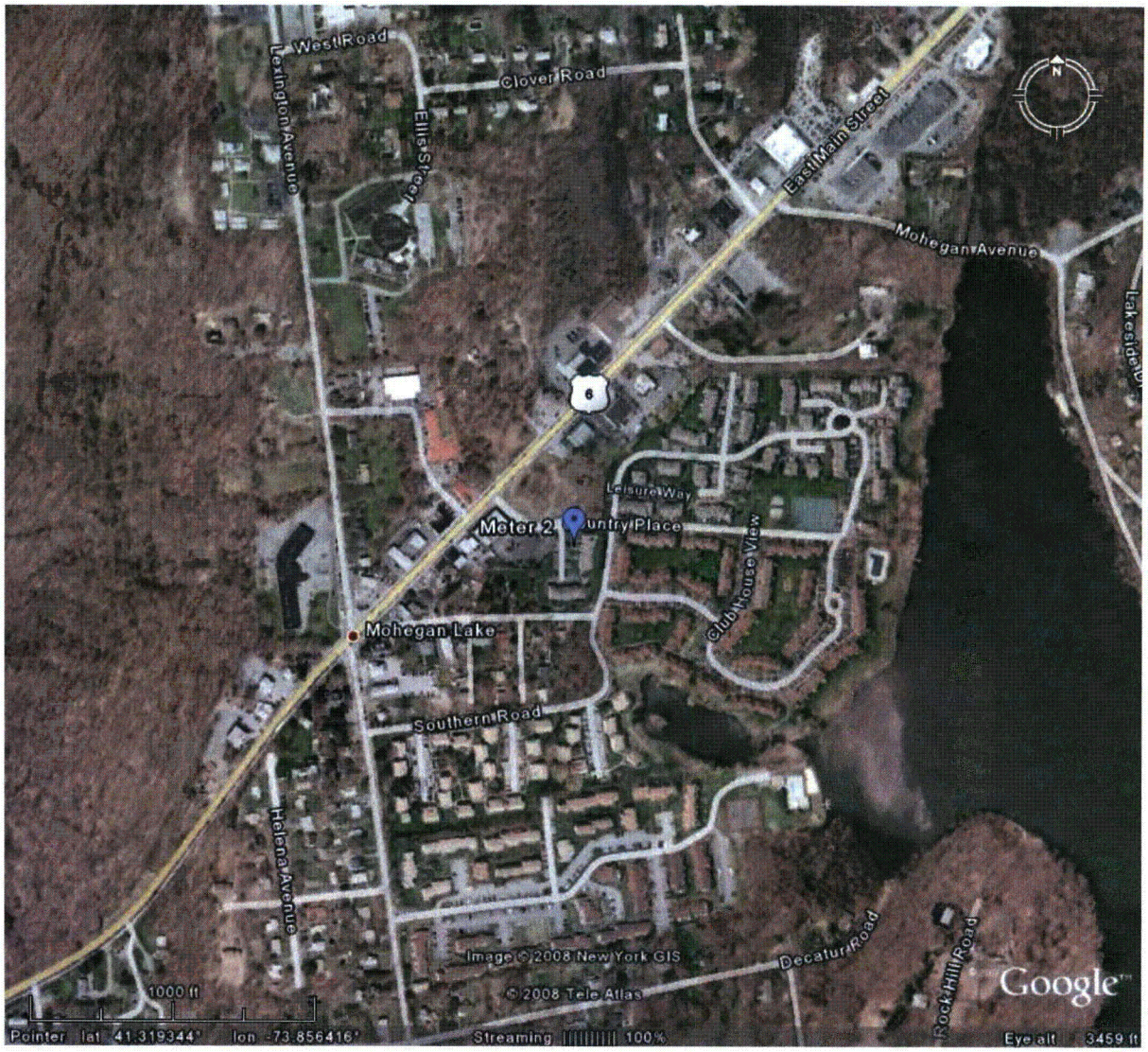


Figure 9. Aerial Photograph of Meter 2 Location, April 15, 2008.

Indian Point Siren Test Data Sheet SITE 2

To be filled in be at the EOF by support staff

Date: 4/15/08 Time: 7:15

SLM Model: 831 SLM Serial Number: 0001417 / weather 56 9908

Tester's Name: DOREEN COSTABILE

GPS Coordinates: 73° 51' 23" West 41° 19' 10" North

Checked Battery? Yes No

Checked Clock? Yes No

Memory Checked? Yes No

DOWNLOADED SLM // WEATHER

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? Yes No

Calibration level after test: 94.0 dBC

30 second calibration tone recorded after test? Yes No

Calibrator Model: B&K 4231 Calibrator SN: 2592139

To be filled in be by the field crew at the site

Location Drawing:

Plan View (Can also use provided map to mark location)	Major Elevation Changes
GRASSY AREA NEAR 14 COUNTRY PLACE	

Measurement Location description: CORNER OF OLD FARM LANE & COUNTRY PLACE

Microphone height: 5 ft. Wind Dir: 341 NNW deg.

Photos Taken? Yes No Wind Spd: 3 mph avg.

Meter Recording? Yes No Temp: 50 °F

Weather Station on and wind cover removed? Yes No

Ambient noise level before test: 67.9 dBC HIGHEST

Maximum level observed during the test: 90.8 dBC

Could you hear the sirens? Yes No

Ambient noise level after test: 65 dBC

Notes about test (including background noise and noise intrusions during the test):
COULD NOT SET UP AT ORIGINAL LOCATION DUE TO CONSTRUCTION
CHAIN SAW IN THE DISTANCE
MOSTLY CAR TRAFFIC, OCCASIONAL TRUCK
5 CARS WENT BY DURING ALARM BUT NOT DURING HIGHEST READING

Tester's Signature: Doreen Costabile

Figure 10. Data Sheet for Meter 2, April 15, 2008

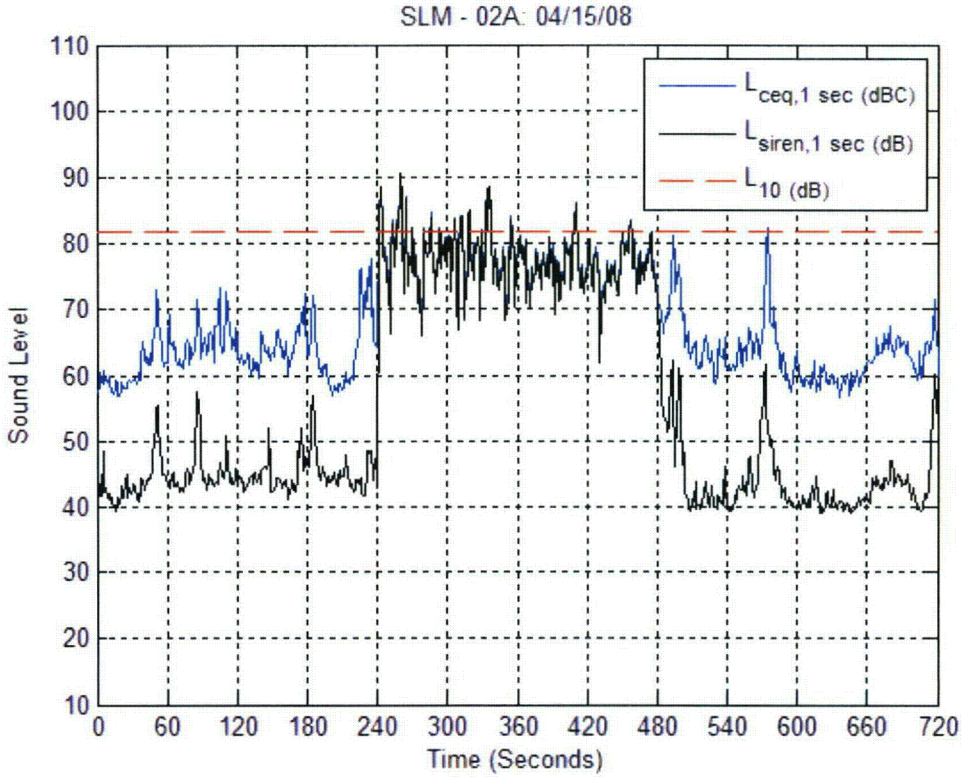


Figure 11. Time History Plot for Meter 2, April 15, 2008

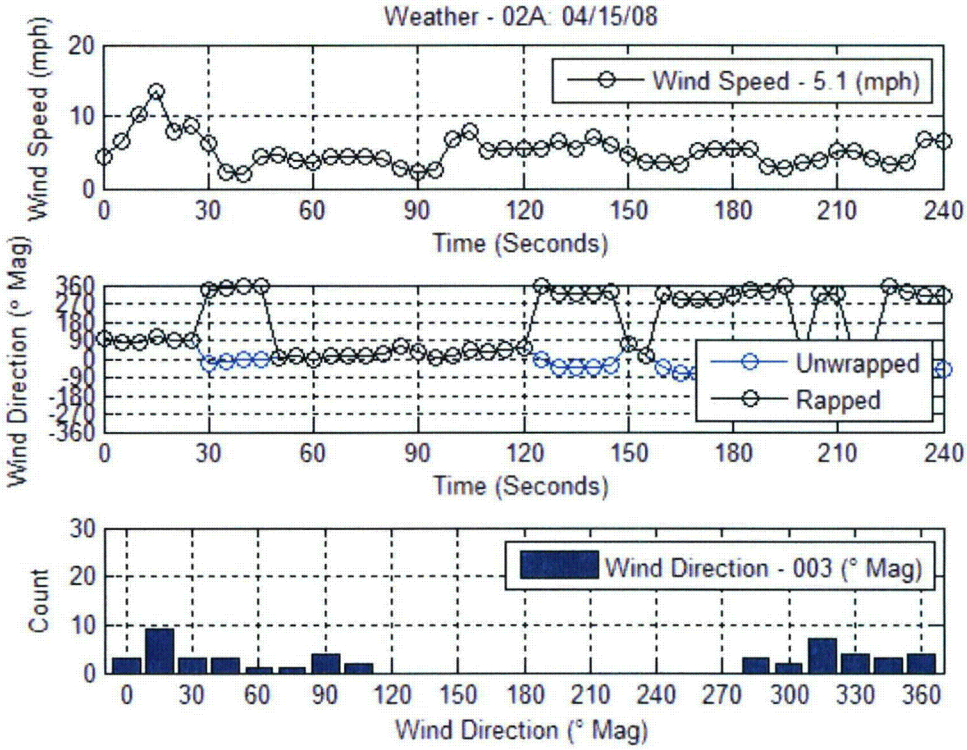


Figure 12. Weather Plots for Meter 2, April 15, 2008

Meter 2, April 16, 2008

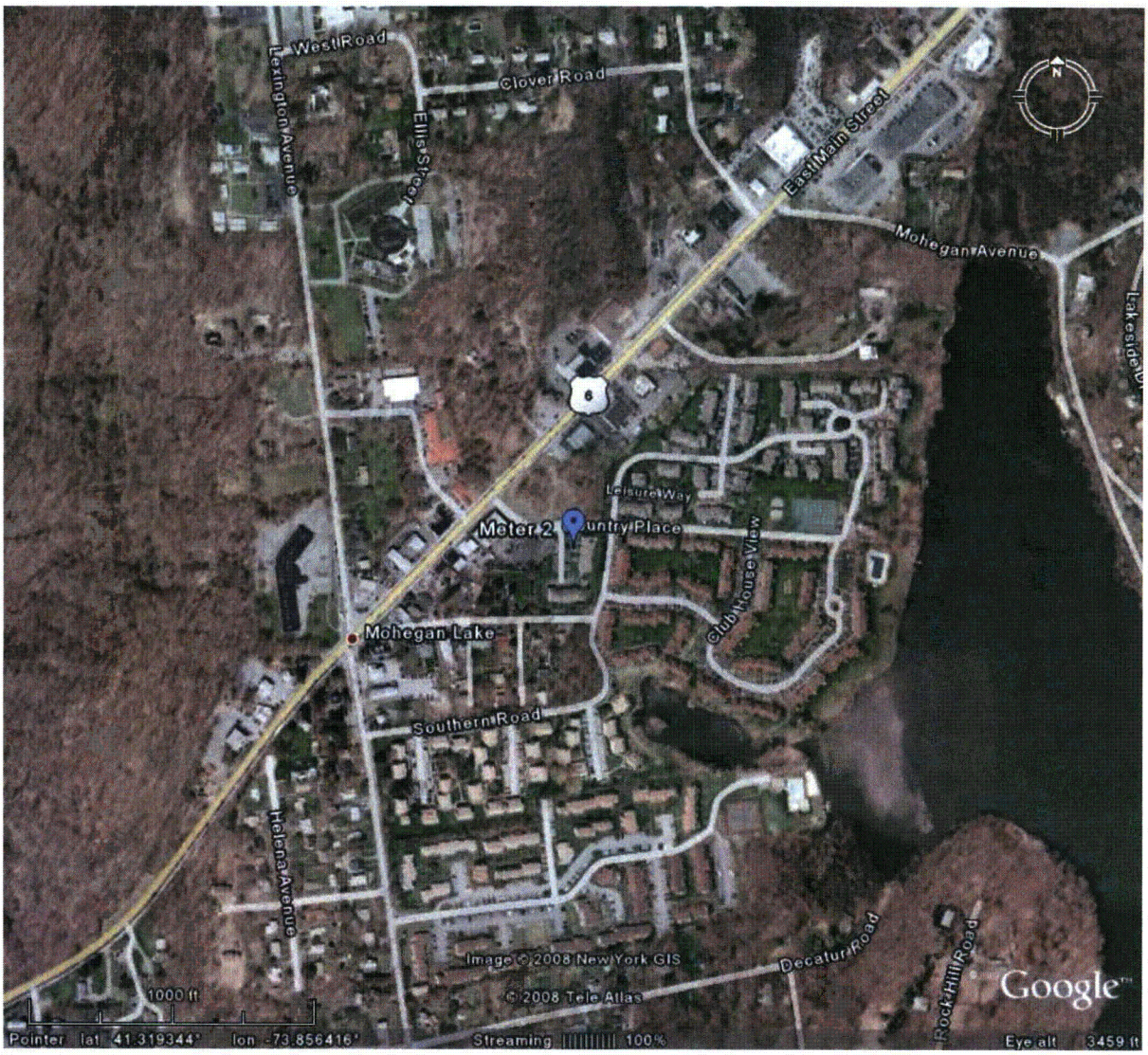


Figure 13. Aerial Photograph of Meter 2 Location, April 16, 2008.

SITE #2

Indian Point Siren Test Data Sheet

----To be filled in be at the EOF by support staff----

Date: 4/16/08 Time: _____

SLM Model: 831 SLM Serial Number: 1417 \ WEATHER 569908

Tester's Name: MJ \ DOREEN COSTABILE

GPS Coordinates: _____ West _____ North

Checked Battery? (Yes) No

Checked Clock? (Yes) No

Memory Checked? (Yes) No

DOWNLOADED SLM ✓ / WEATHER ✓

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? (Yes) No

Calibration level after test: 94.0 dBC

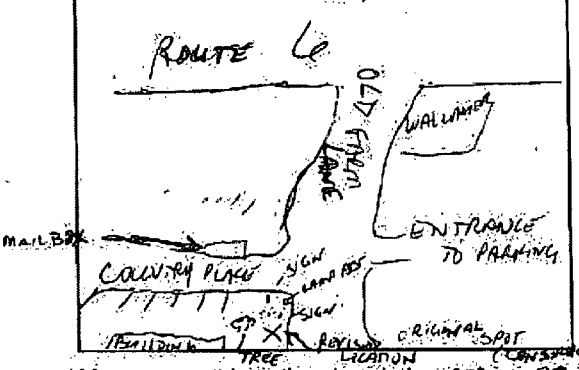
30 second calibration tone recorded after test? (Yes) No

Calibrator Model: B+K 4231 Calibrator SN: 2592139

----To be filled in be by the field crew at the site----

Location Drawing:

Plan View
(Can also use provided map to mark location)



Major Elevation Changes

Measurement Location description: CORNER OF COUNTRY PLACE AND OLD FARM LANE

Microphone height: 5 ft. Wind Dir: 340 NW deg.

Photos Taken? (Yes) No Wind Spd: 3.5 mph

Meter Recording? (Yes) No Temp: 58 °F

Weather Station on and wind cover removed? (Yes) No

Ambient noise level before test: 65 dBC

Maximum level observed during the test: 87.4 dBC

Could you hear the sirens? (Yes) No

Ambient noise level after test: 65 dBC

Notes about test (including background noise and noise intrusions during the test):

- WHEN METER SET TO RECORD, TRACTOR TRAILER CAME TO MAKE DELIVERY TO WALLAKER.
- WITHOUT CHAIN SAW IN THE DISTANCE FROM YESTERDAY AND NO TRAFFIC, AMBIENT NOISE LEVEL IS APPROX. 55
- OCCASIONAL CAR TRAFFIC
- 4 CARS PAST DURING TEST, NOT AT HIGHEST LEVEL

Tester's Signature: Doreen Costabile

- UPS TRUCK AND ANOTHER DELIVERY TRUCK DETER SIREN

Figure 14. Data Sheet for Meter 2, April 16, 2008

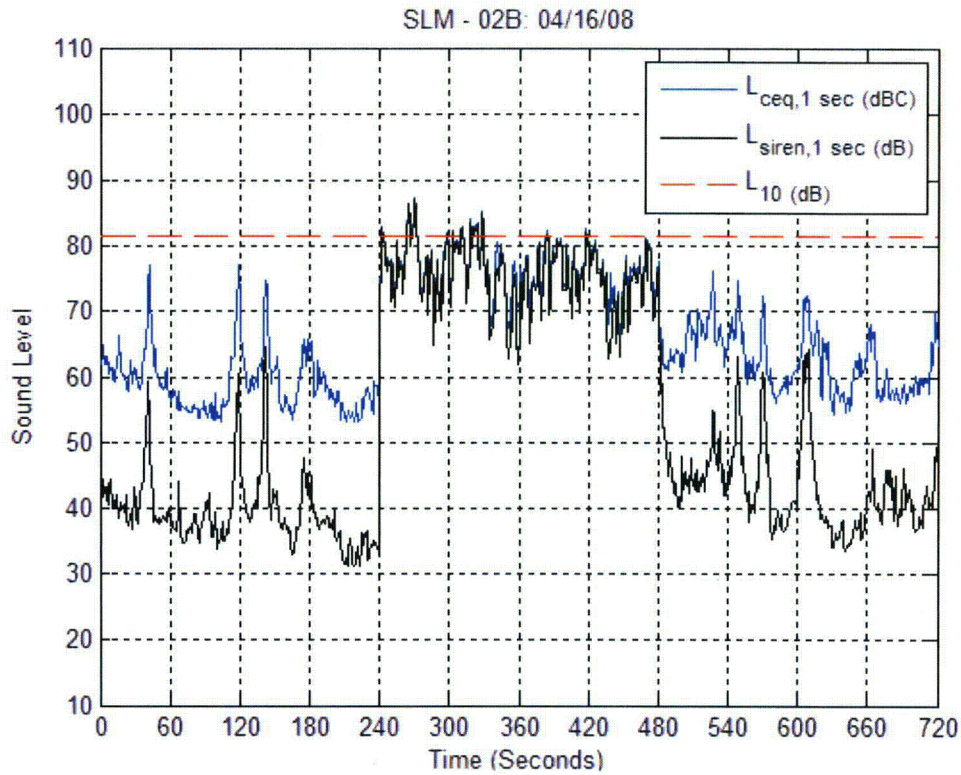


Figure 15. Time History Plot for Meter 2, April 16, 2008

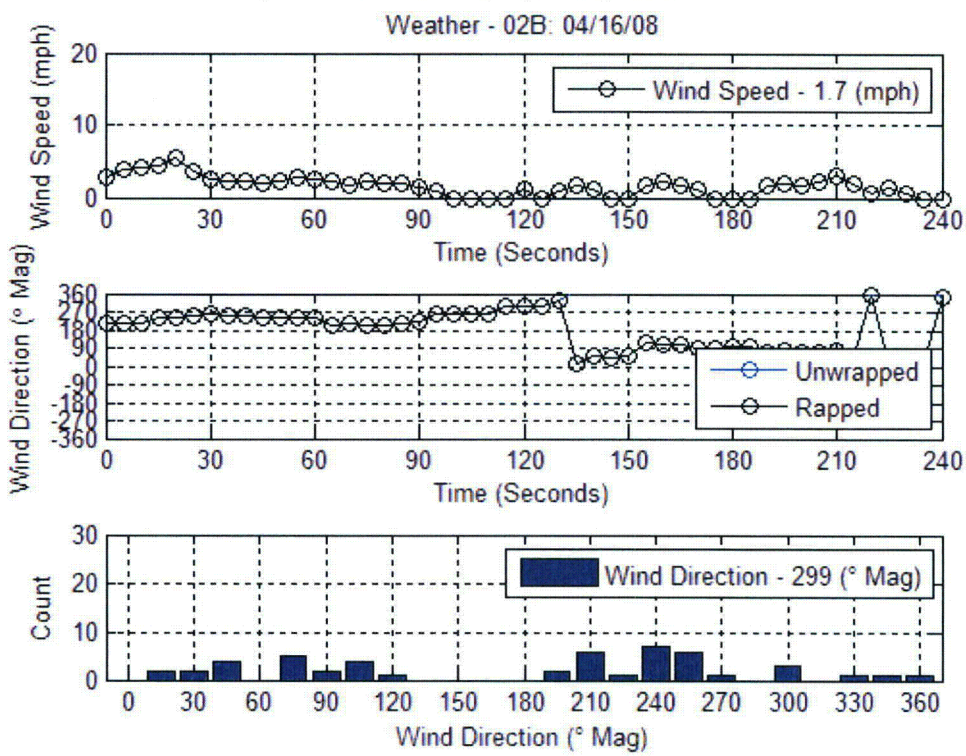


Figure 16. Weather Plots for Meter 2, April 16, 2008

Meter 3, April 15, 2008

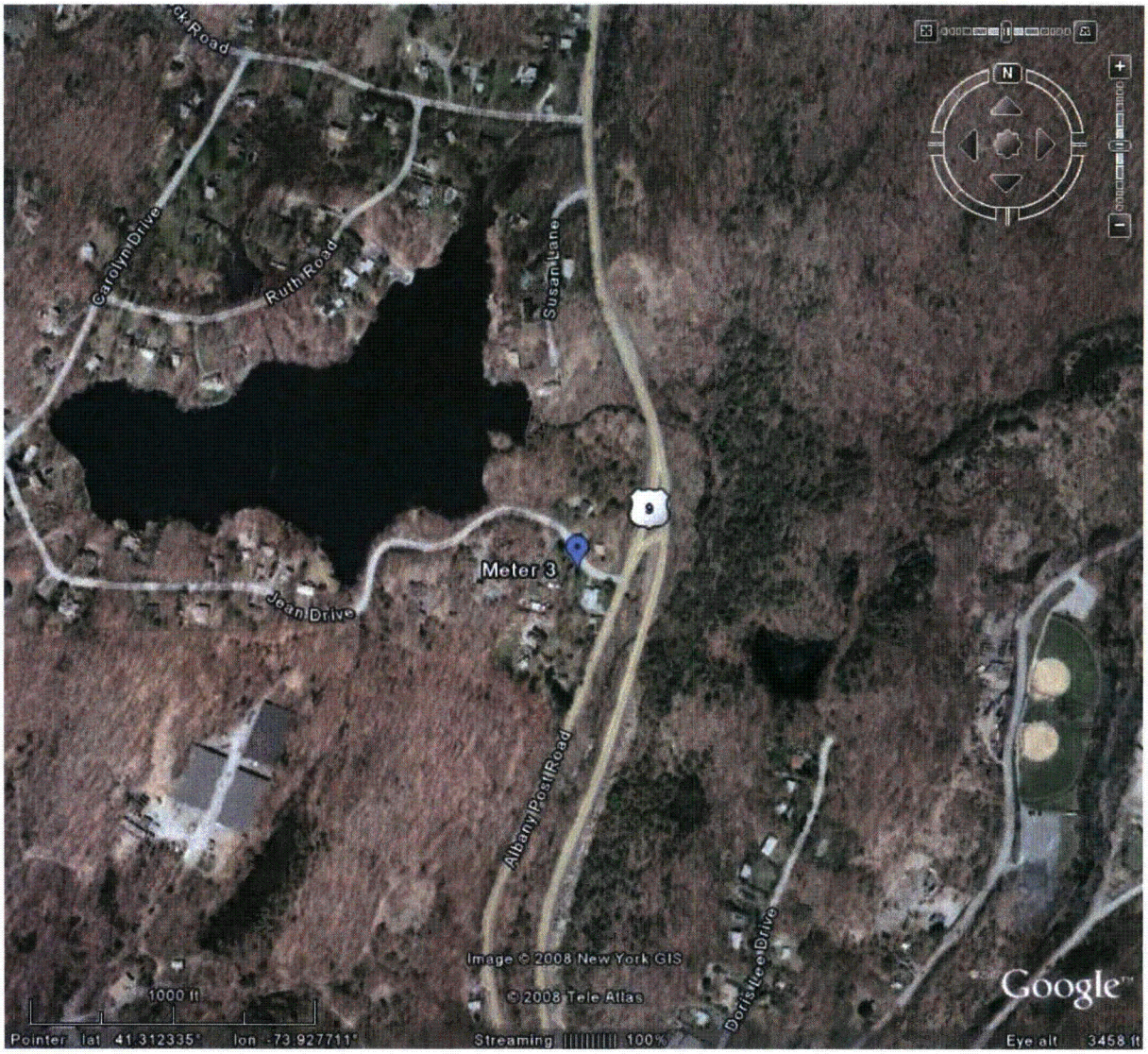


Figure 17. Aerial Photograph of Meter 3 Location, April 15, 2008.

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

Date: 4/15/08 Time: 7:13 am
SLM Model: 831 SLM Serial Number: 0001076 / weather 570050
Tester's Name:
GPS Coordinates: West North
Checked Battery? Yes No 97.90
Checked Clock? Yes No
Memory Checked? Yes No
DOWNLOADED SLM / WEATHER 13
Calibration level before test: 94.0 dBC
30 second calibration tone recorded before test? Yes No
Calibration level after test: 94.0 dBC
30 second calibration tone recorded after test? Yes No
Calibrator Model: B&K 4231 Calibrator SN: 2592139

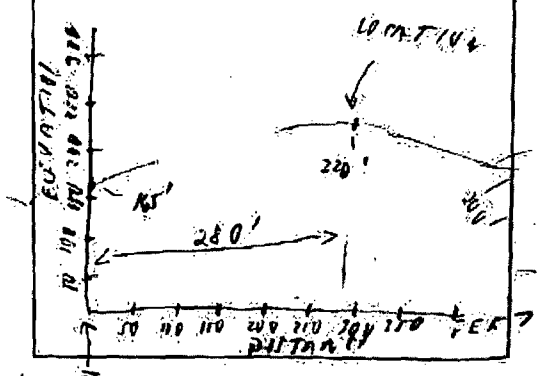
To be filled in be by the field crew at the site

Location Drawing:

Plan View
(Can also use provided map to mark location)

COORD
41° 18.85777 MINUTES
-73° 55.85191 MINUTES

Major Elevation Changes



Measurement Location description: TOP OF HILL
Microphone height: 5' ft.
Photos Taken? Yes No
Meter Recording? Yes No
Weather Station on and wind cover removed? Yes No
Wind Dir: 301° deg.
Wind Spd: 3-8 mph
Temp: 47.8 °F
Ambient noise level before test: 65 dBC
Maximum level observed during the test: 83 dBC
Could you hear the sirens? Yes No
Ambient noise level after test: 65 dBC
Notes about test (including background noise and noise intrusions during the test):
AMBIANT NOISE AT THIS LOCATION IS FROM TRAFFIC ON HWY 9

Tester's Signature: MIKE JEREY

Figure 18. Data Sheet for Meter 3, April 15, 2008

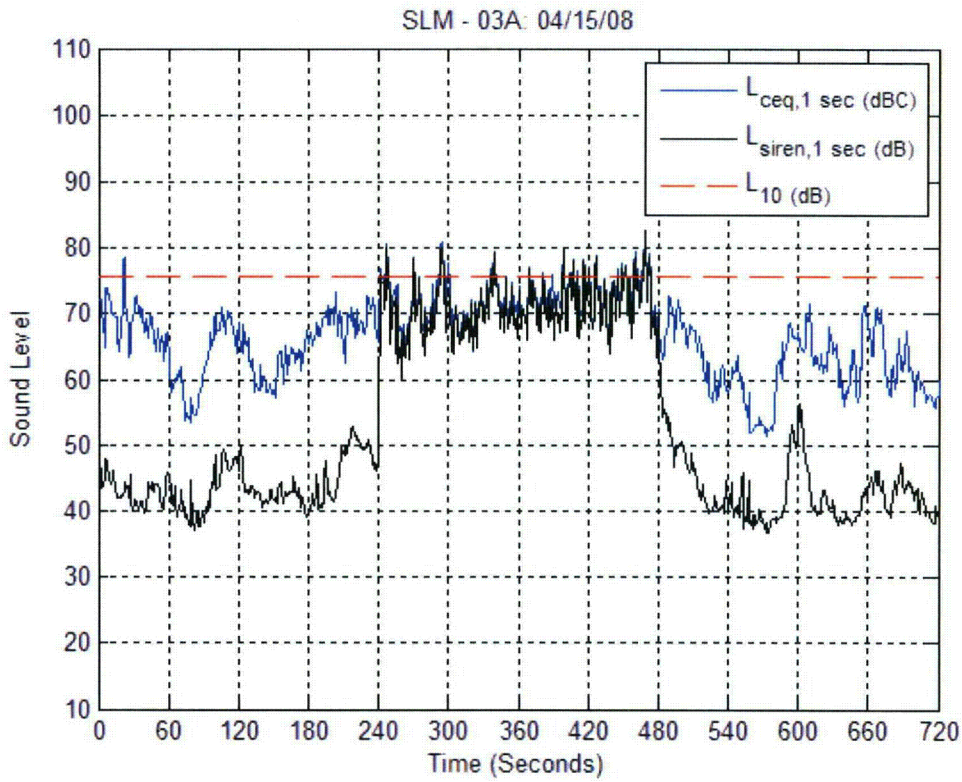


Figure 19. Time History Plot for Meter 3, April 15, 2008

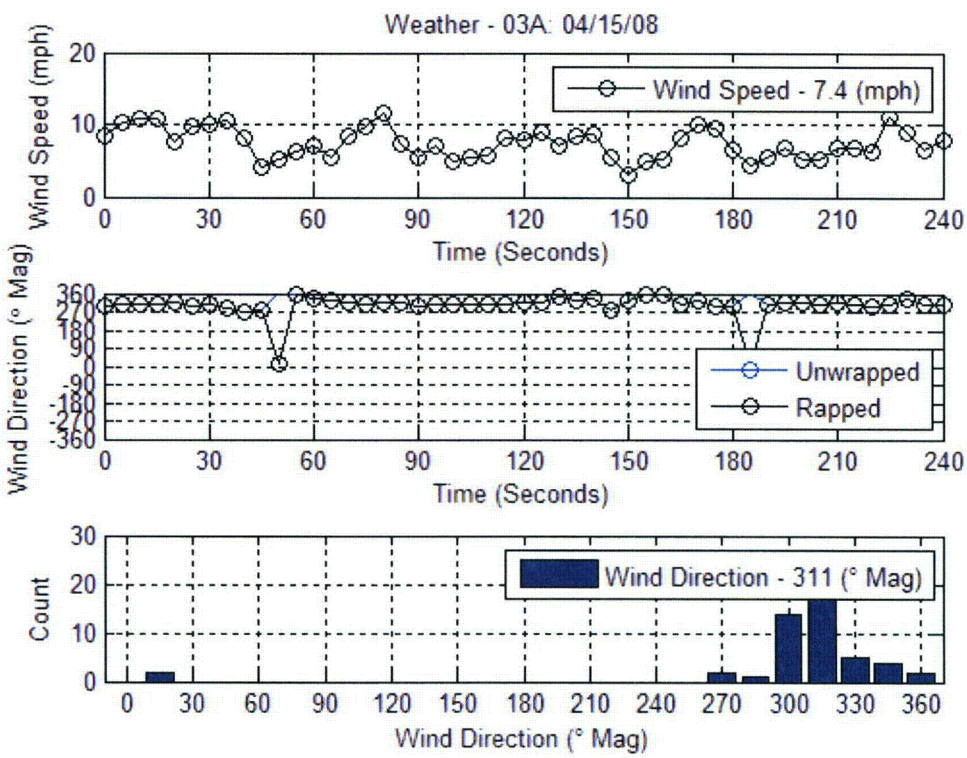


Figure 20. Weather Plots for Meter 3, April 15, 2008

Meter 3, April 16, 2008

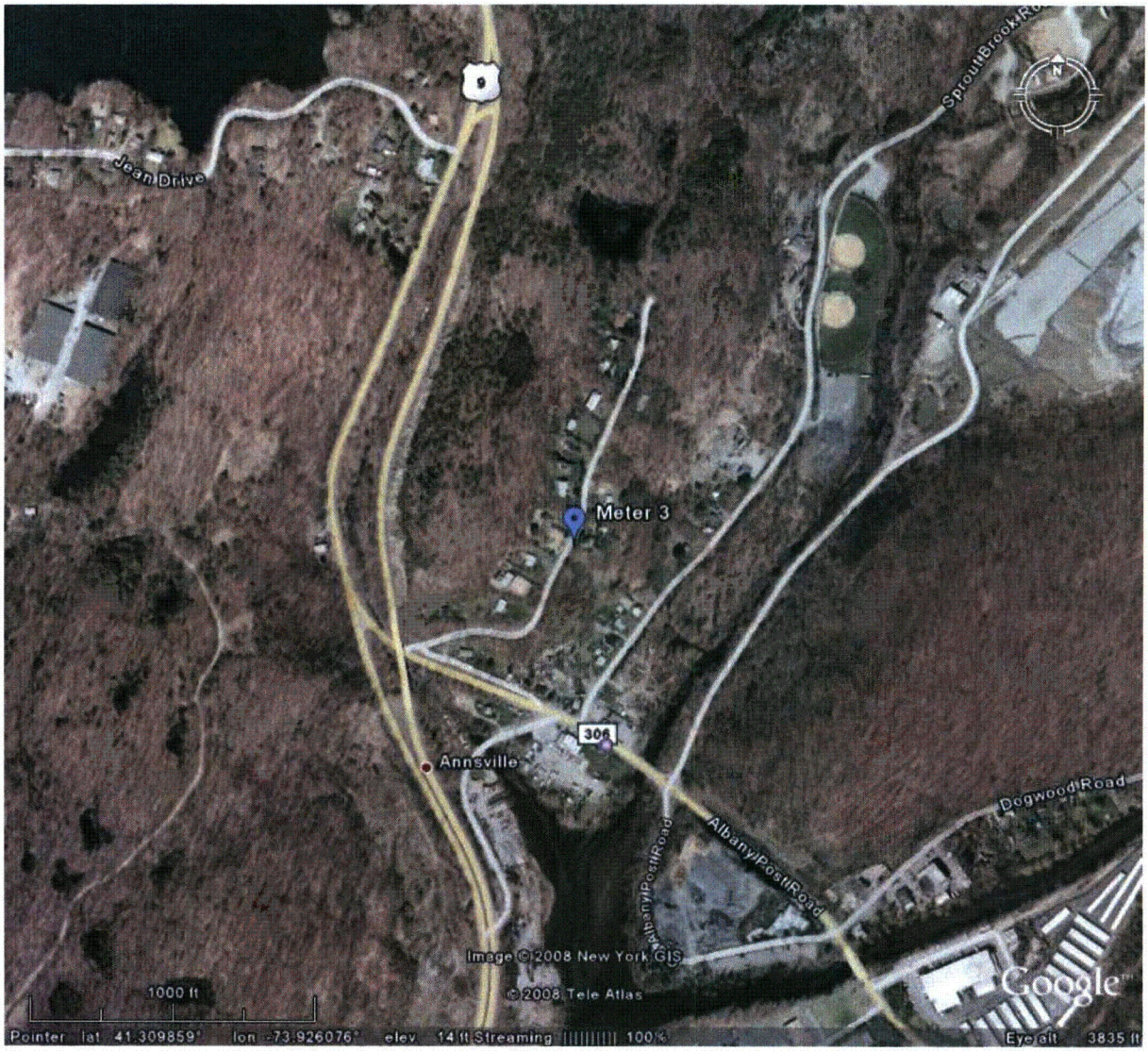


Figure 21. Aerial Photograph of Meter 3 Location, April 16, 2008.

SITE #3

Indian Point Siren Test Data Sheet NEW LOCATION

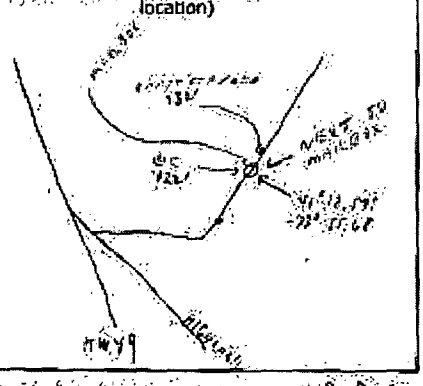
To be filled in be at the EOF by support staff

Date: 4/16/08 Time: 6:55 am
SLM Model: 831 SLM Serial Number: 1076 \ WEATHER 57005°
Tester's Name: MJ
GPS Coordinates: _____ West _____ North
Checked Battery? Yes No
Checked Clock? Yes No
Memory Checked? Yes No
DOWNLOADED SLM ✓ \ WEATHER ✓
Calibration level before test: 94.0 dBC
30 second calibration tone recorded before test? Yes No
Calibration level after test: 94.0 dBC
30 second calibration tone recorded after test? Yes No
Calibrator Model: B+K 4231 Calibrator SN: 2512139

To be filled in be by the field crew at the site

Location Drawing:

Plan View
(Can also use provided map to mark location)



Major Elevation Changes

DURINGS IT GENTLY SLOPES UPWARD AT A 15° ANGLE. THE EQUIPMENT ELEVATION IS 30 FEET FROM ELEVATION EVENT OF THE HOME = (132)

Measurement Location description: 41° 18.763, -73° 55.68 ELEVATION 122'
Microphone height: 5 ft. Wind Dir: 190° deg.
Photos Taken? Yes No Wind Spd: 3.5 mph
Meter Recording? Yes No Temp: 59 °F
Weather Station on and wind cover removed? Yes No
Ambient noise level before test: 58 dBC
Maximum level observed during the test: 78 dBC
Could you hear the sirens? Yes No
Ambient noise level after test: 58 dBC
Notes about test (including background noise and noise intrusions during the test): AMBIENT NOISE IT MOSTLY DUE TO TRAFFIC ON HW 9. THERE IS ALSO SOME COMMERCIAL TRUCKING ACTIVITY THAT CAN BE HEARD

NO FOLIAGE LIVE

Tester's Signature: MIKE TERRY

Figure 22. Data Sheet for Meter 3, April 16, 2008

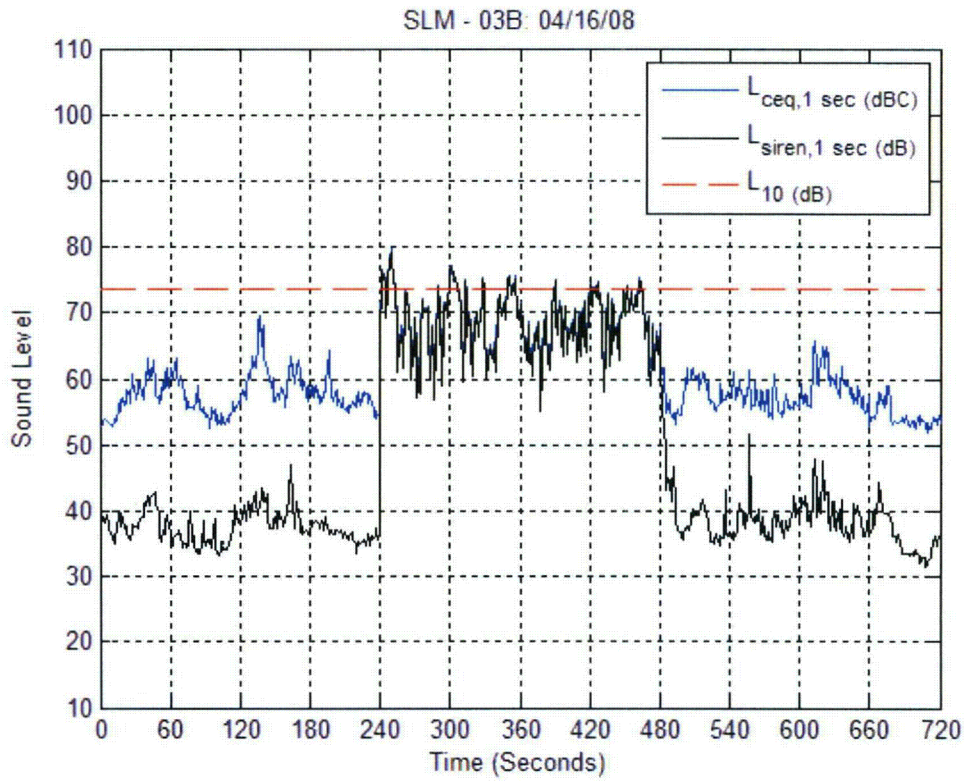


Figure 23. Time History Plot for Meter 3, April 16, 2008

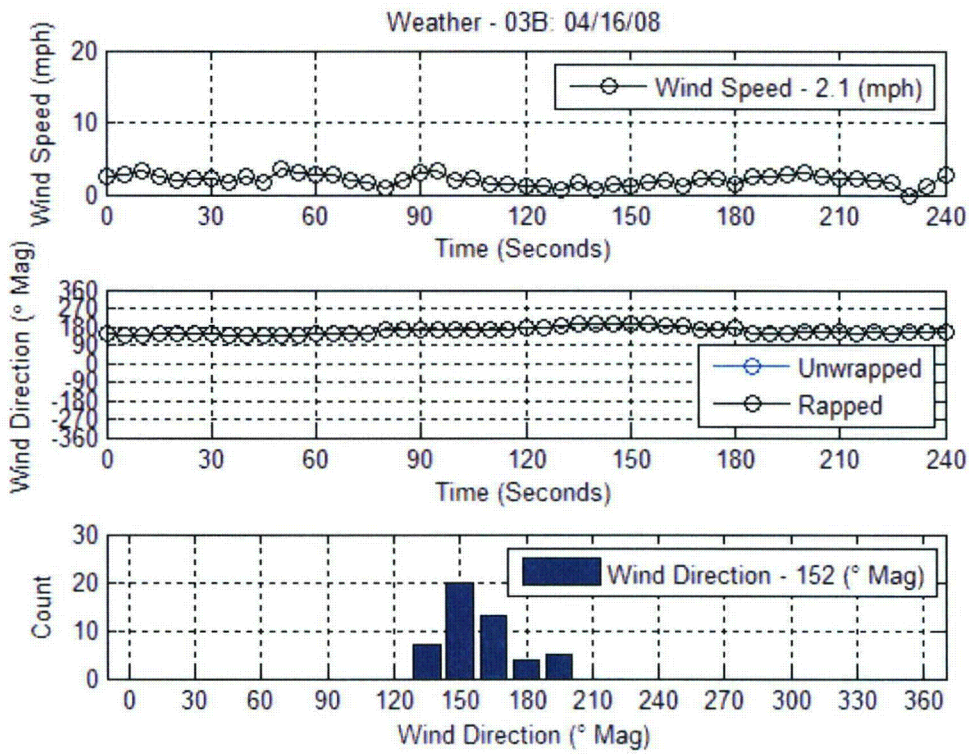


Figure 24. Weather Plots for Meter 3, April 16, 2008

Meter 4, April 15, 2008

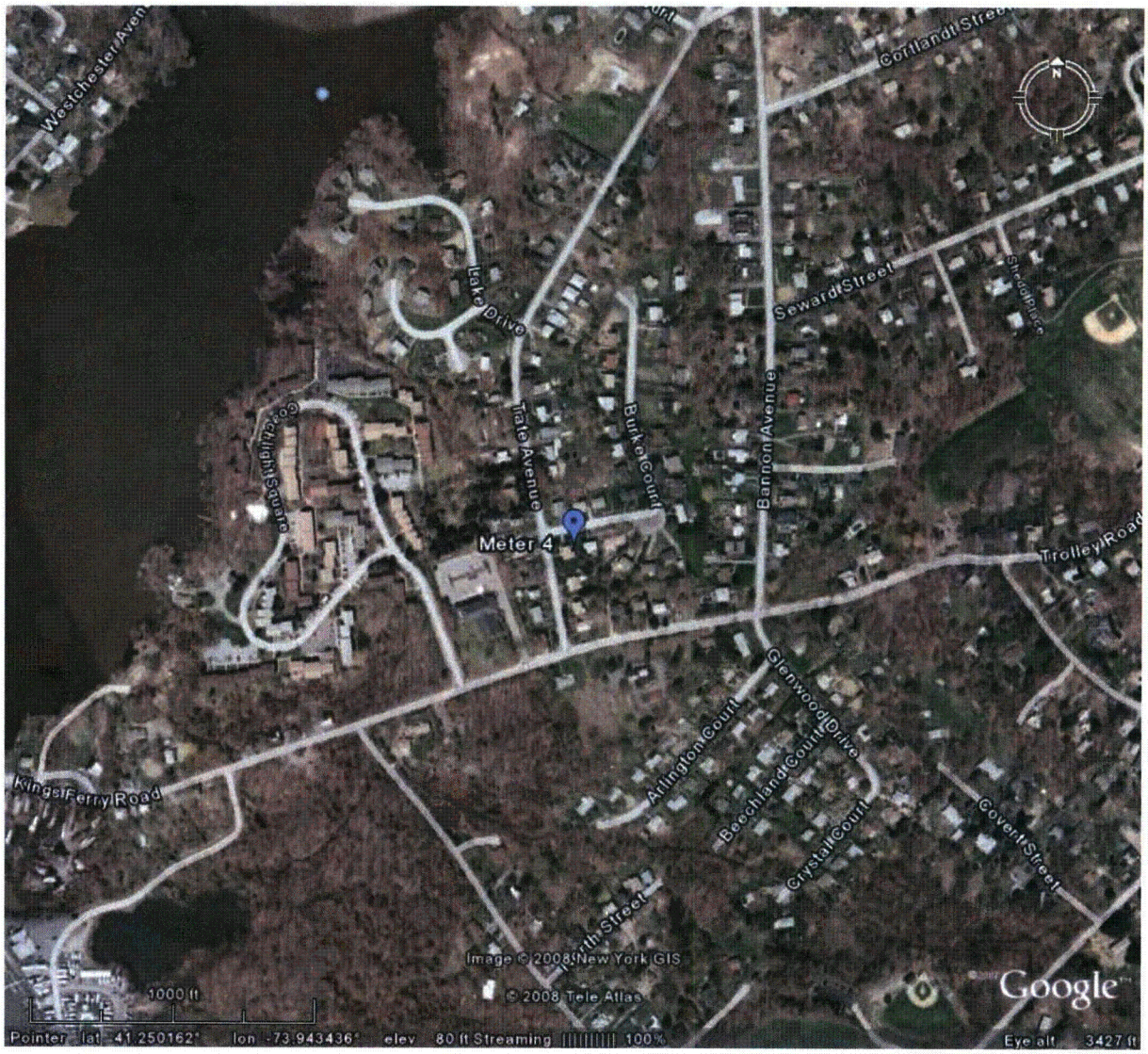


Figure 25. Aerial Photograph of Meter 4 Location, April 15, 2008.

Town loaded weather & SLM - BJI

Indian Point Siren Test Data Sheet

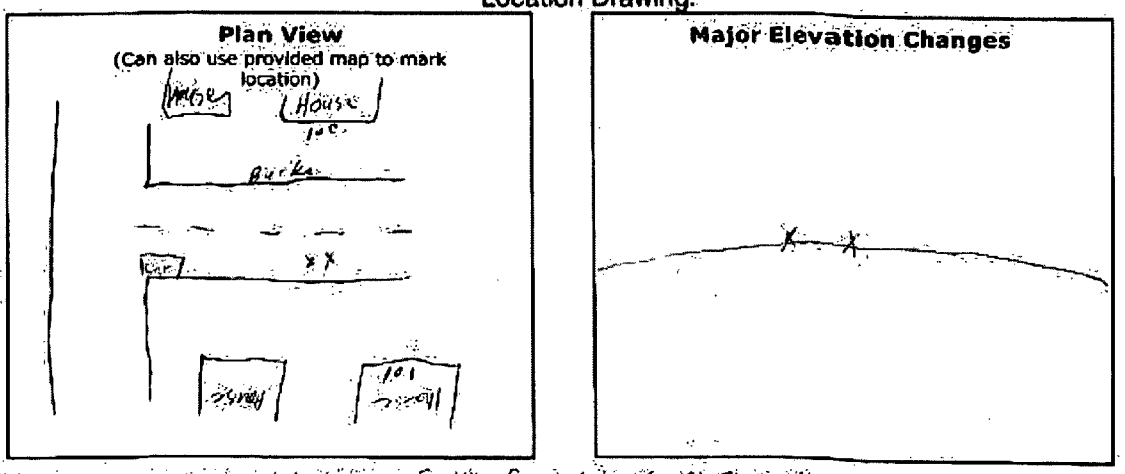
To be filled in be at the EOF by support staff

Date: 4/15/08 Time: 6:45
SLM Model: 824 SLM Serial Number: 3125 / weather 570073
Tester's Name:
GPS Coordinates: 73° 56' 43" West 41° 15' 04" North
Checked Battery? Yes No 95%
Checked Clock? Yes No
Memory Checked? Yes No 100%
Calibration level before test: 94.0 dBC
30 second calibration tone recorded before test? Yes No
Calibration level after test: 94.0 dBC
30 second calibration tone recorded after test? Yes No
Calibrator Model: B&K 4231 Calibrator SN: 2592139

A

To be filled in be by the field crew at the site

Location Drawing:



Measurement Location description: To the front left of 101 Birch St.
Microphone height: 5 ft. Wind Dir: 260° deg.
Photos Taken? Yes No Wind Spd: 1.0 mph
Meter Recording? Yes No Temp: 53.4 °F
Weather Station on and wind cover removed? Yes No
Ambient noise level before test: 56.5 dBC
Maximum level observed during the test: 82 dBC
Could you hear the sirens? Yes No
Ambient noise level after test: 56.8 dBC
Notes about test (including background noise and noise intrusions during the test):
10:30 - Truck Noise 10:33 - Car Drove By

Tester's Signature:

Figure 26. Data Sheet for Meter 4, April 15, 2008

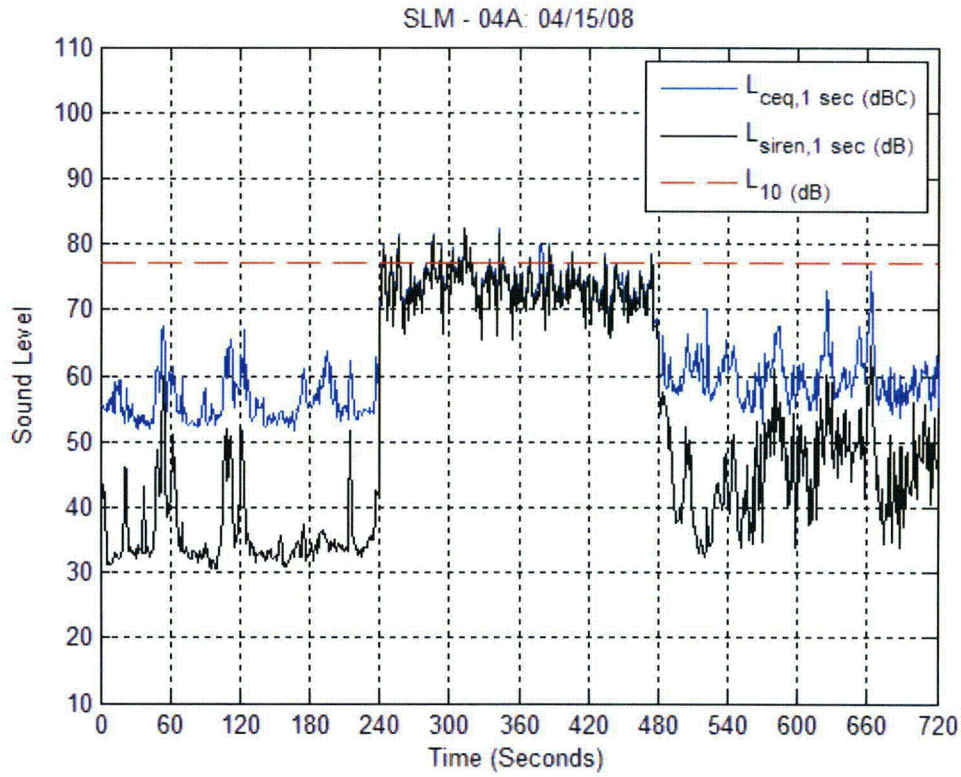


Figure 27. Time History Plot for Meter 4, April 15, 2008

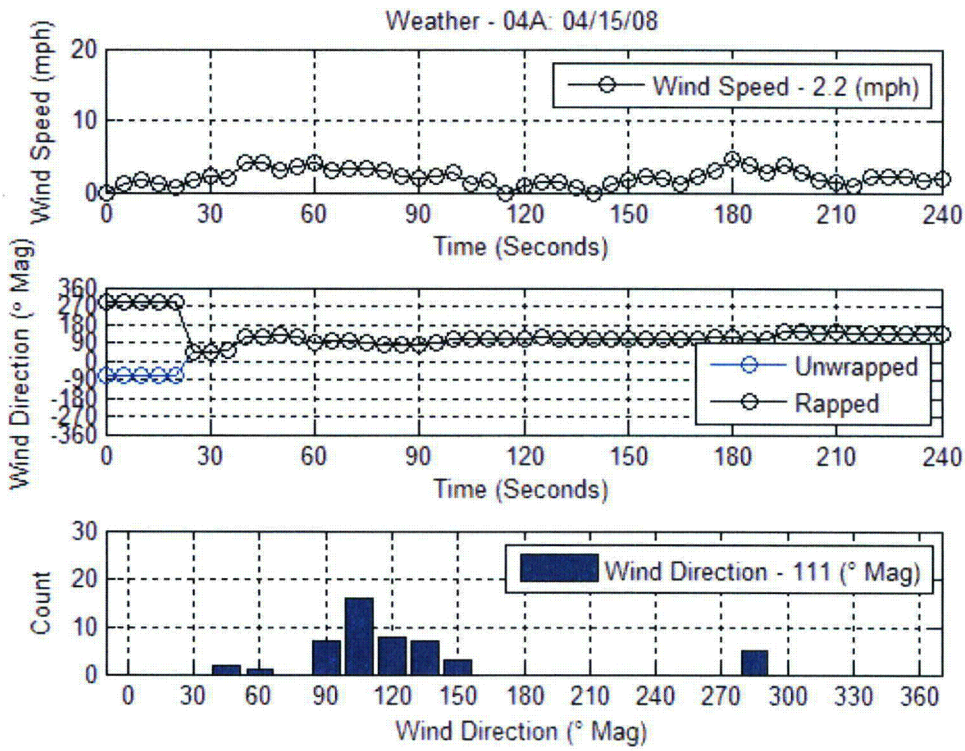


Figure 28. Weather Plots for Meter 4, April 15, 2008

Meter 4, April 16, 2008

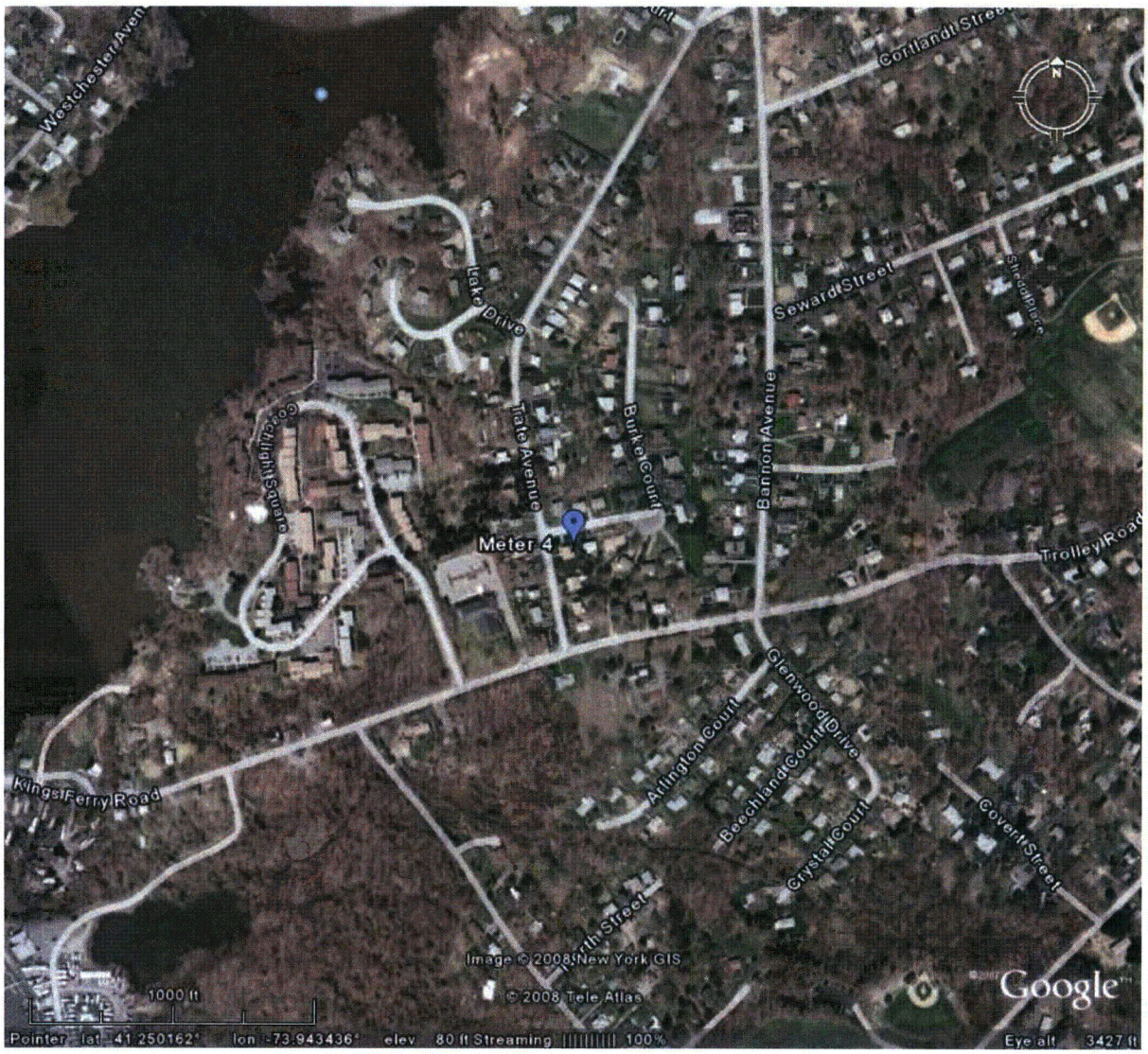


Figure 29. Aerial Photograph of Meter 4 Location, April 16, 2008.

SITE #4

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

Date: 4/16/08 Time: _____

SLM Model: 824 SLM Serial Number: 3125 \WEATHER 370073

Tester's Name: MJ \

GPS Coordinates: _____ West _____ North

Checked Battery? Yes No

Checked Clock? Yes No

Memory Checked? Yes No

DOWNLOADED SLM \WEATHER

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? Yes No

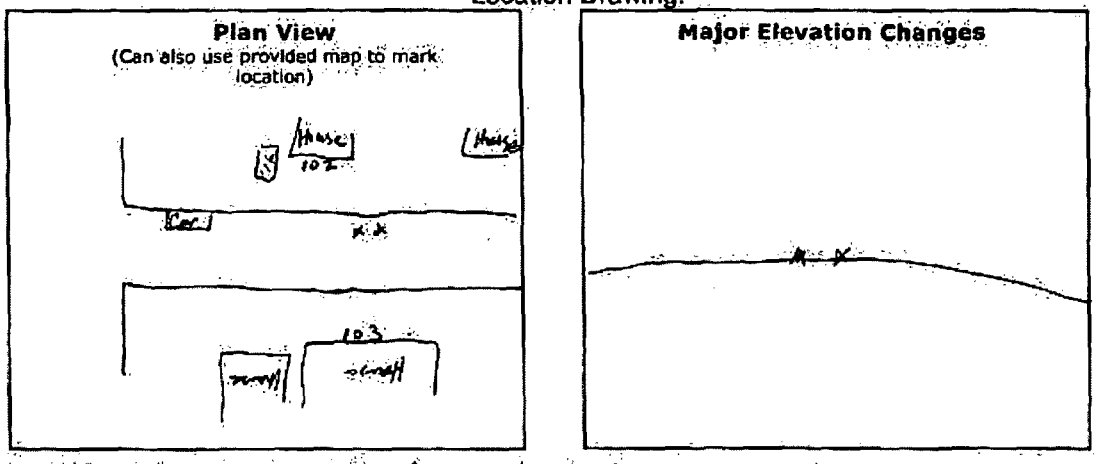
Calibration level after test: _____ dBC

30 second calibration tone recorded after test? Yes No

Calibrator Model: B+K 4231 Calibrator SN: 2592139

To be filled in be by the field crew at the site

Location Drawing:



Measurement Location description: Across street of 103 Burke Ct.

Microphone height: 5 ft. Wind Dir: 319 deg.

Photos Taken? Yes No Wind Spd: 0.3 mph

Meter Recording? Yes No Temp: 57.2 °F

Weather Station on and wind cover removed? Yes No

Ambient noise level before test: 58.2 dBC

Maximum level observed during the test: 81.9 dBC

Could you hear the sirens? Yes No

Ambient noise level after test: 59 dBC

Notes about test (including background noise and noise intrusions during the test):

10:32 Car drove by 10:38 [illegible] 10:39 Car drove by
10:28 – 10:38 Lawn mower in Background

Tester's Signature: Charlie Cipran

Figure 30. Data Sheet for Meter 4, April 16, 2008

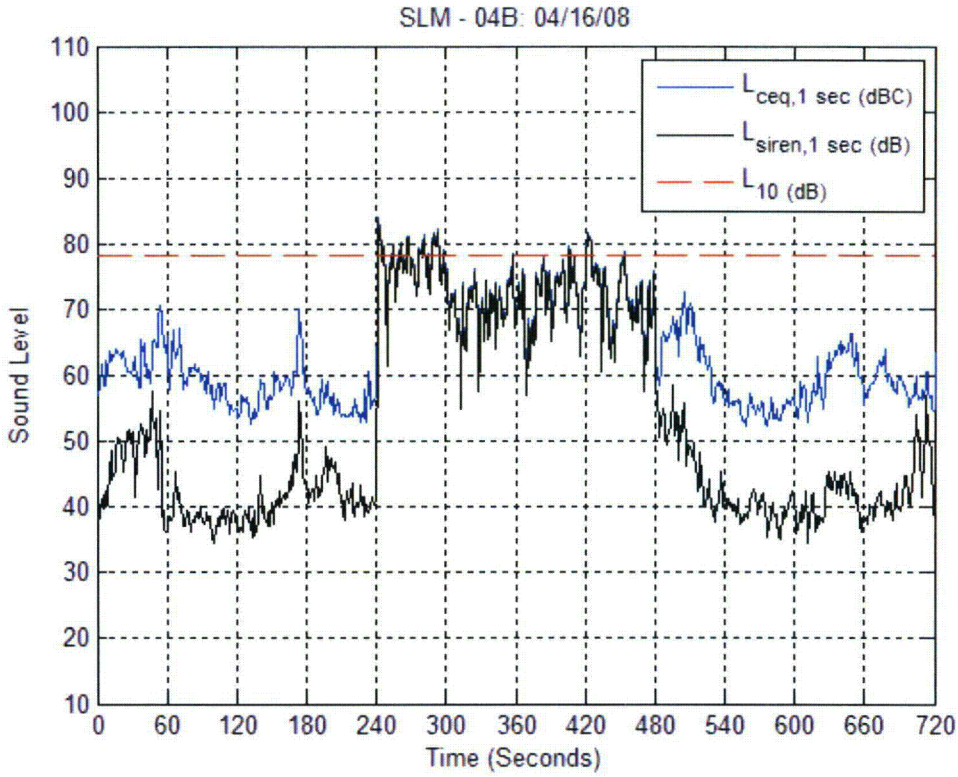


Figure 31. Time History Plot for Meter 4, April 16, 2008

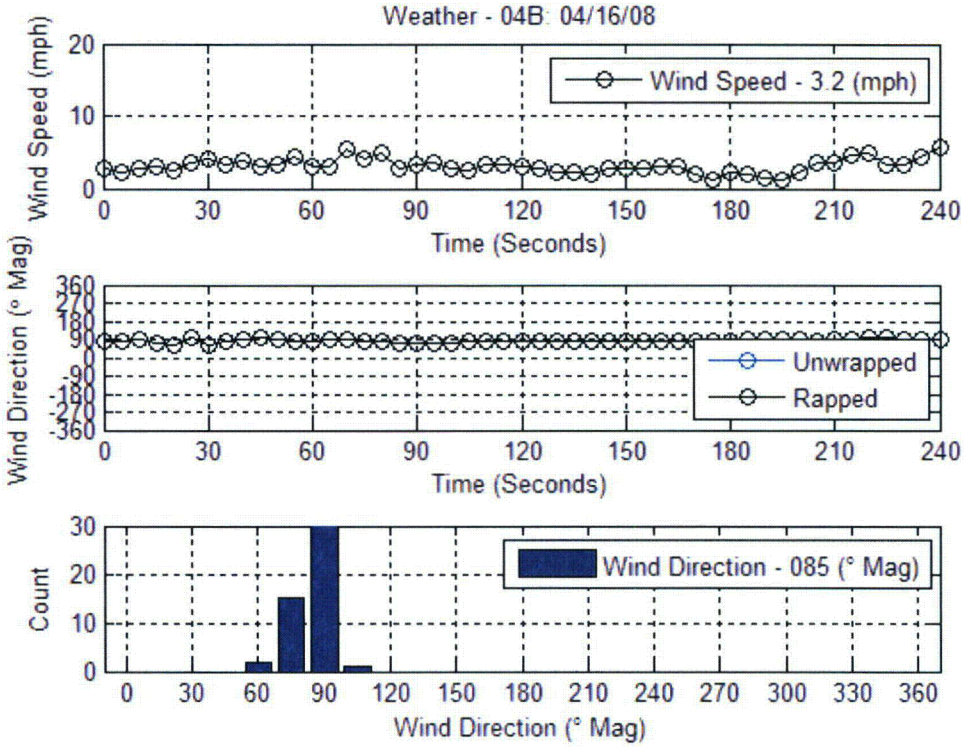


Figure 32. Weather Plots for Meter 4, April 16, 2008

Meter 5, April 15, 2008

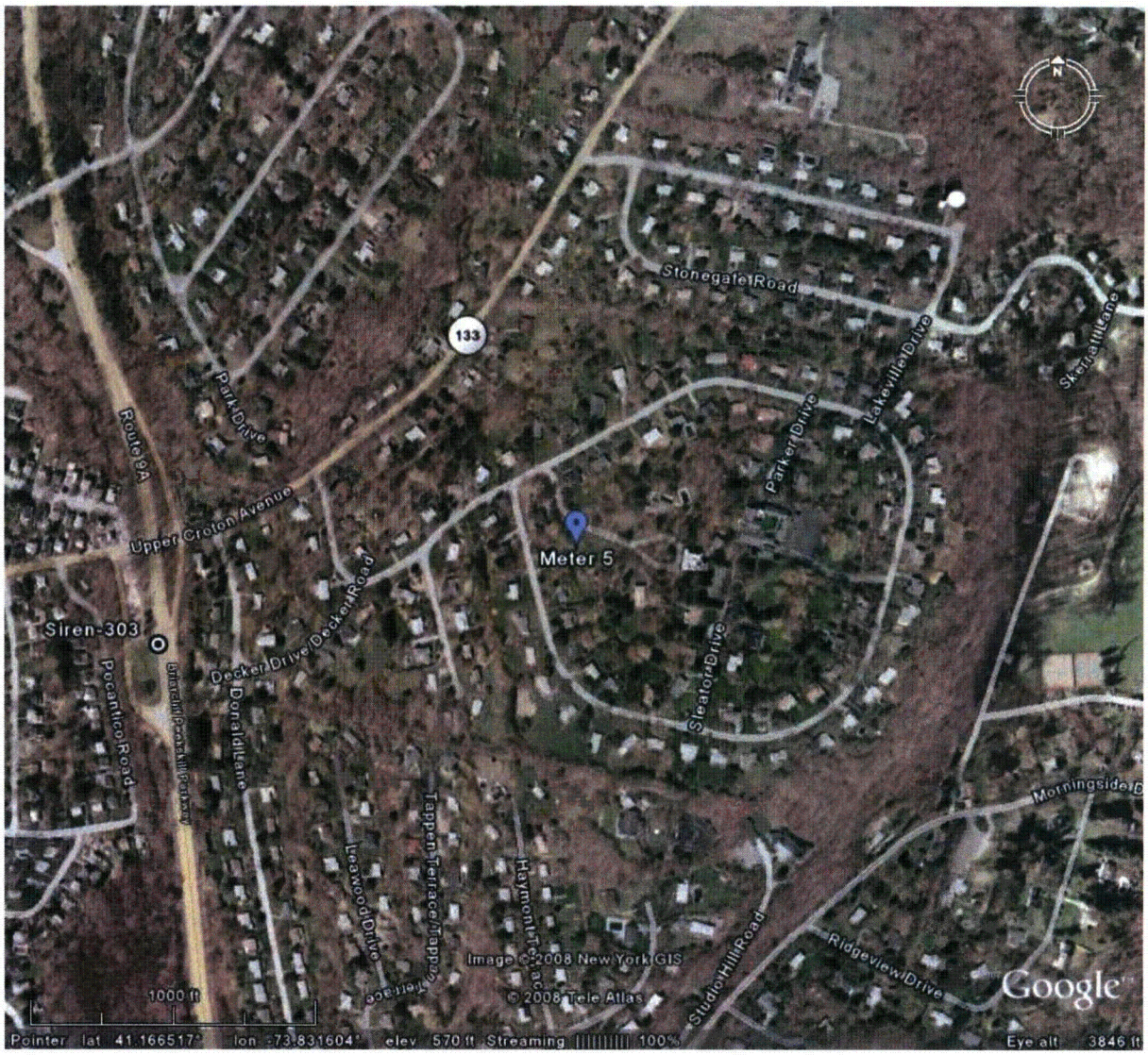


Figure 33. Aerial Photograph of Meter 5 Location, April 15, 2008.

Downloaded weather BJZ

Indian Point Siren Test Data Sheet

(5)

----To be filled in be at the EOF by support staff----

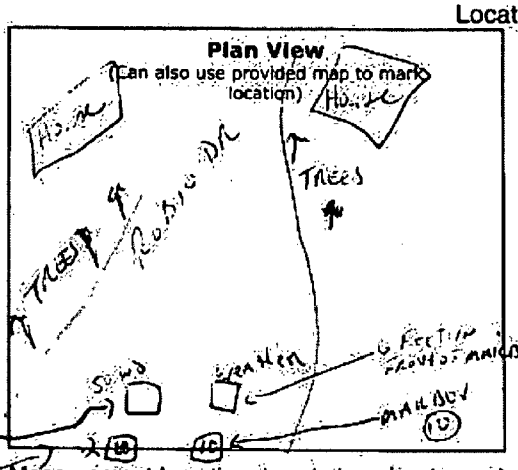
Date: 4/15/08 Time: _____
SLM Model: 831 SLM Serial Number: 1418 / weather 569892
Tester's Name: MJ
GPS Coordinates: 73 49 59 West 41 16 6 North
Checked Battery? (Yes) No
Checked Clock? (Yes) No
Memory Checked? (Yes) No
Calibration level before test: 94.0 dBC
30 second calibration tone recorded before test? (Yes) No
Calibration level after test: 94.0 dBC
30 second calibration tone recorded after test? (Yes) No
Calibrator Model: B+K 4231 Calibrator SN: 2575552

DOWNLOADED SLM // WEATHER

----To be filled in be by the field crew at the site----

Location Drawing:

Plan View
(Can also use provided map to mark location)



Major Elevation Changes

GREY CAR IN PICTURES WAS MOVED WAS MY CAR.
ONLY NOISE IN AREA ARE BIRDS

NO MAJOR ELEVATION CHANGES
TRIPOD WERE LEVEL

Measurement Location description: DEAD END ST IN FRONT OF MAILBOXES 10 + 2
Microphone height: 5 ft.
Photos Taken? (Yes) No
Meter Recording? (Yes) No
Weather Station on and wind cover removed? (Yes) No
Wind Dir: 7 N deg.
Wind Spd: 2.0 mph
Temp: 56.6 °F
Ambient noise level before test: 58 dBC
Maximum level observed during the test: 95.1 dBC
Could you hear the sirens? (Yes) No
Ambient noise level after test: 62.1 dBC
Notes about test (including background noise and noise intrusions during the test):
BIRDS, WATER DRAIN DRIP,
OIL TRUCK DRIVE BY AT 24 MIN 10 SEC
Tester's Signature: _____

Figure 34. Data Sheet for Meter 5, April 15, 2008

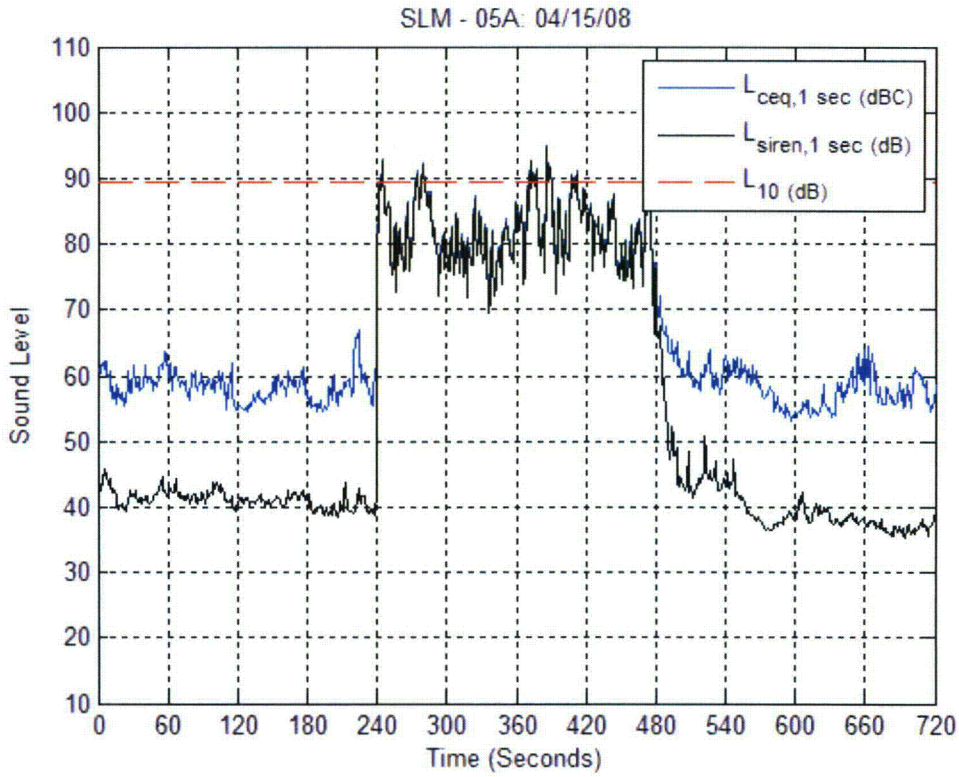


Figure 35. Time History Plot for Meter 5, April 15, 2008

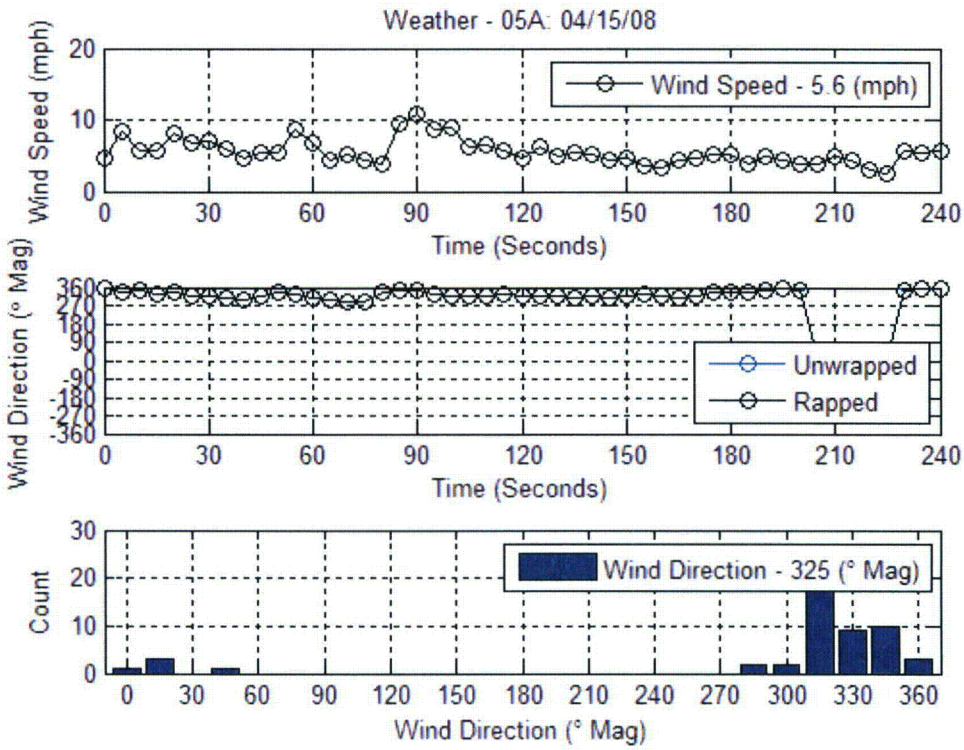


Figure 36. Weather Plots for Meter 5, April 15, 2008

Meter 5, April 16, 2008

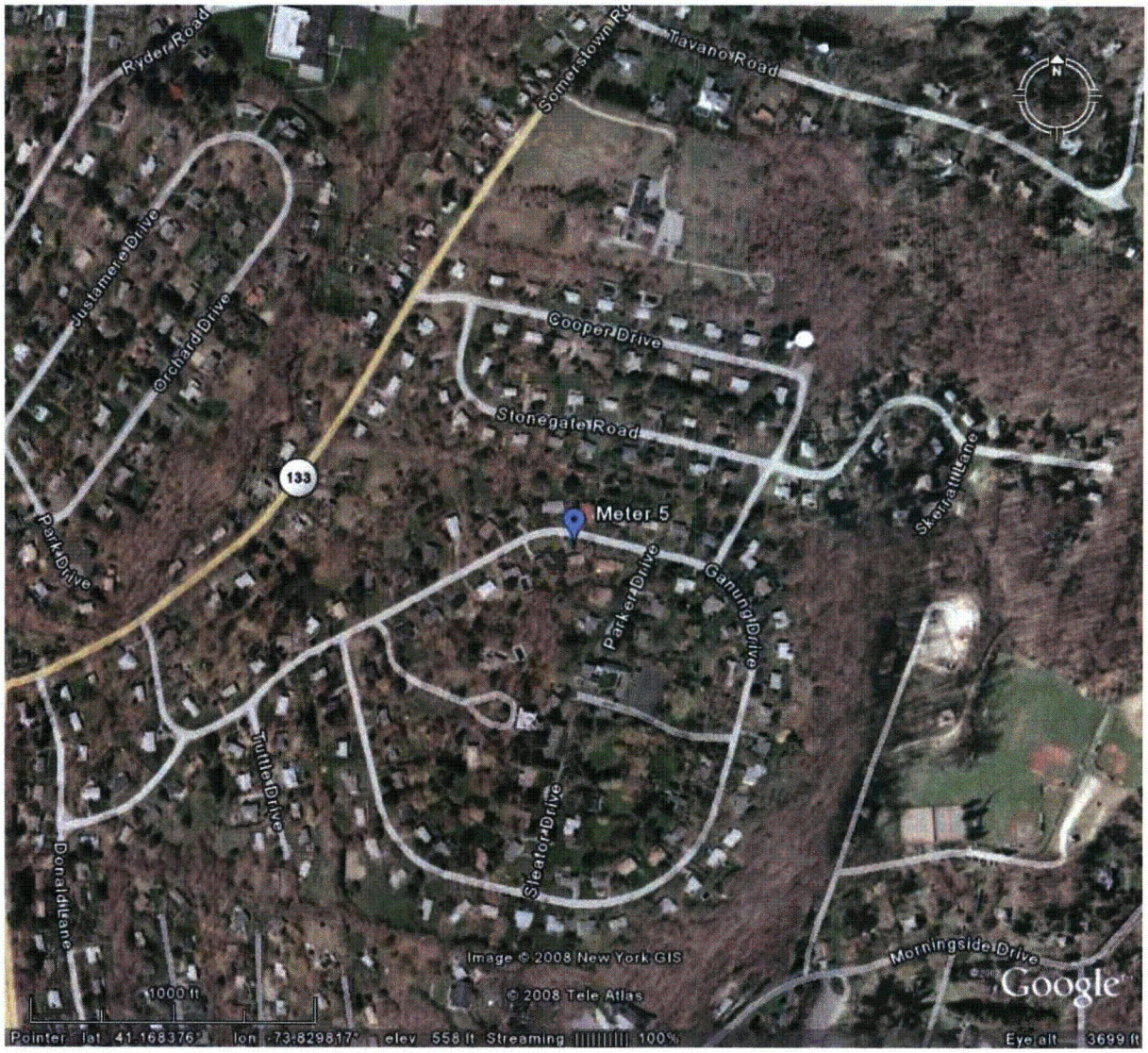


Figure 37. Aerial Photograph of Meter 5 Location, April 16, 2008.

SITE #5

5

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

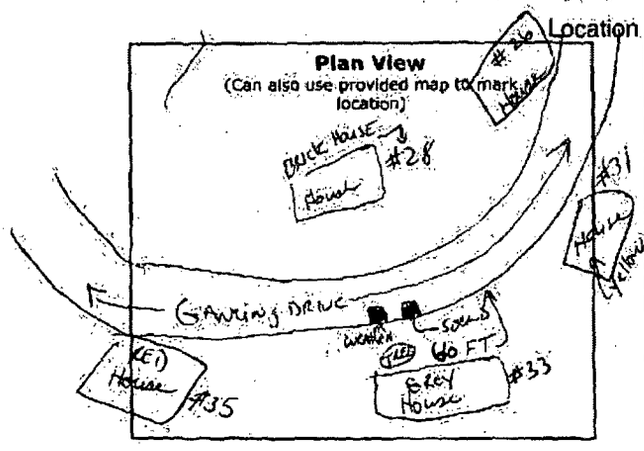
Date: 4/16/08 Time: S69892
SLM Model: 831 SLM Serial Number: 1418 \ WEATHER
Tester's Name: MJ
GPS Coordinates: _____ West _____ North
Checked Battery? (Yes) No 5.2V
Checked Clock? (Yes) No
Memory Checked? (Yes) No
Calibration level before test: 94.0 dBC
30 second calibration tone recorded before test? (Yes) No
Calibration level after test: 94.0 dBC
30 second calibration tone recorded after test? Yes No
Calibrator Model: BtK 4231 Calibrator SN: 2575552

DOWNLOADED SLM ✓ \ WEATHER ✓

To be filled in be by the field crew at the site

Location Drawing:

Plan View
(Can also use provided map to mark location)



Major Elevation Changes

Level Ground
Had to move to New Location
Lawn Mower is Area 100 ft
Away, moved to Gawing Dr
Next to House #33

Measurement Location description: _____
Microphone height: 5 ft. Wind Dir: 299 WNW deg.
Photos Taken? (Yes) No Wind Spd: 2.8 mph
Meter Recording? (Yes) No Temp: 58 °F
Weather Station on and wind cover removed? (Yes) No
Ambient noise level before test: 56 dBC
Maximum level observed during the test: 78.1 dBC
Could you hear the sirens? (Yes) No
Ambient noise level after test: 57 dBC
Notes about test (including background noise and noise intrusions during the test):
People WALK BY AT 10:28.45sec plane Flew over HEAD 10:32.00
:43:46 Car Drove By CAR DROVE BY AT 10:34.30sec CAR DROVE BY 10:35.20 BANG NOISE AT 10:37:30
Tester's Signature: _____ VERY LOUD DIG NOISE 10:38:20
House Being worked on 10:37:06
900 FT Away or
AM STARTED 10:40.57
@ 10:40.01 CAR DROVE By
Ross Street

Figure 38. Data Sheet for Meter 5, April 16, 2008

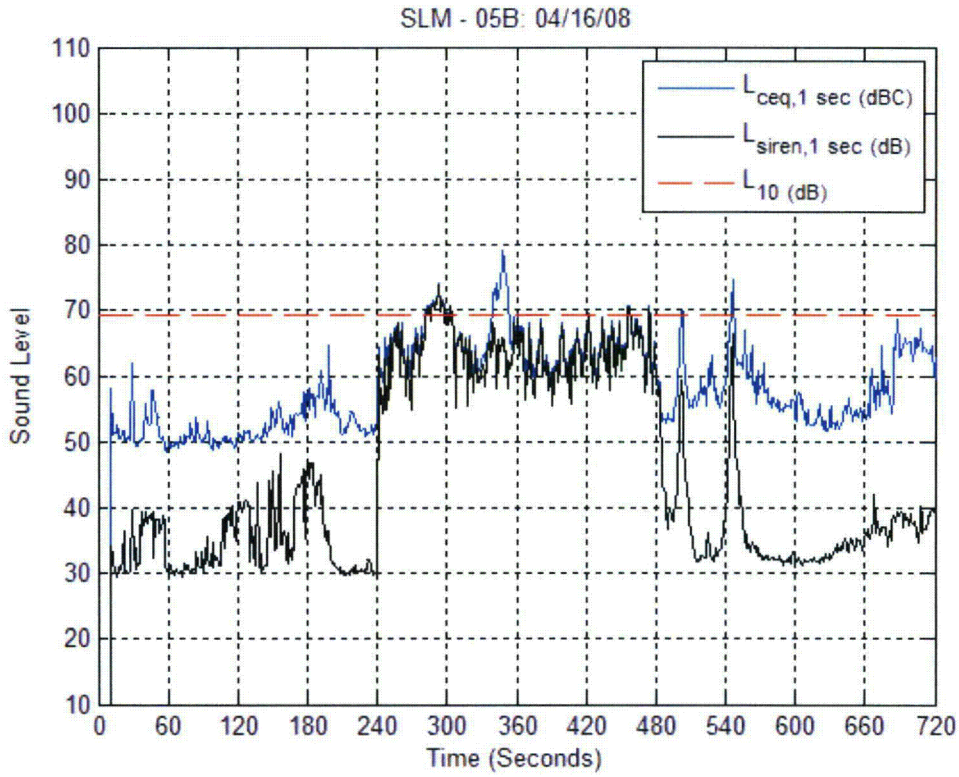


Figure 39. Time History Plot for Meter 5, April 16, 2008

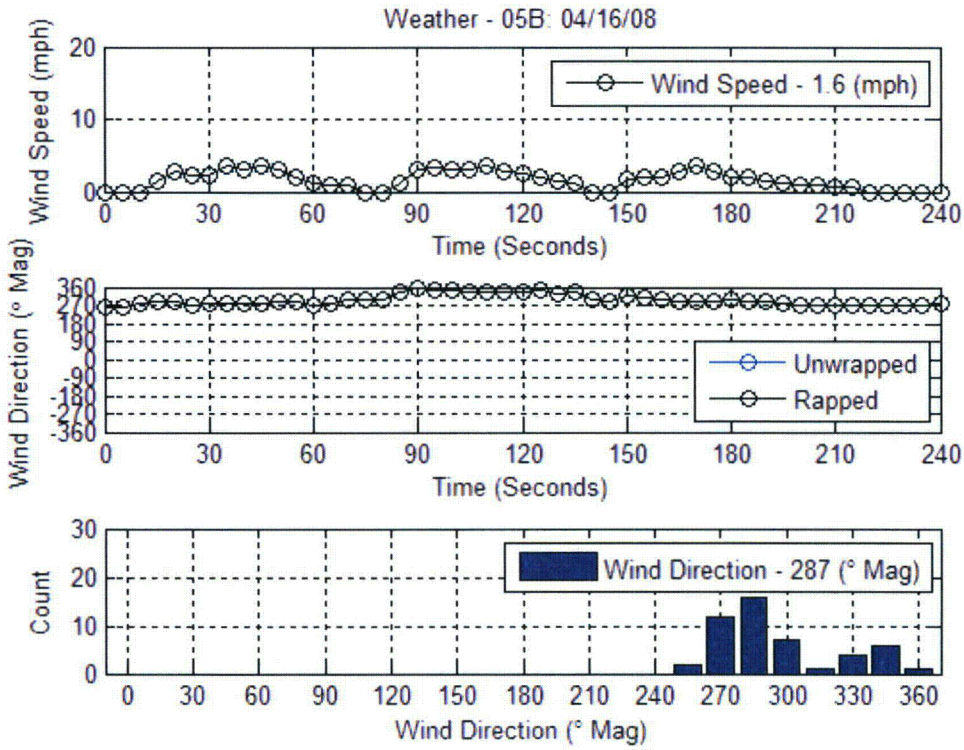


Figure 40. Weather Plots for Meter 5, April 16, 2008

Meter 6, April 15, 2008

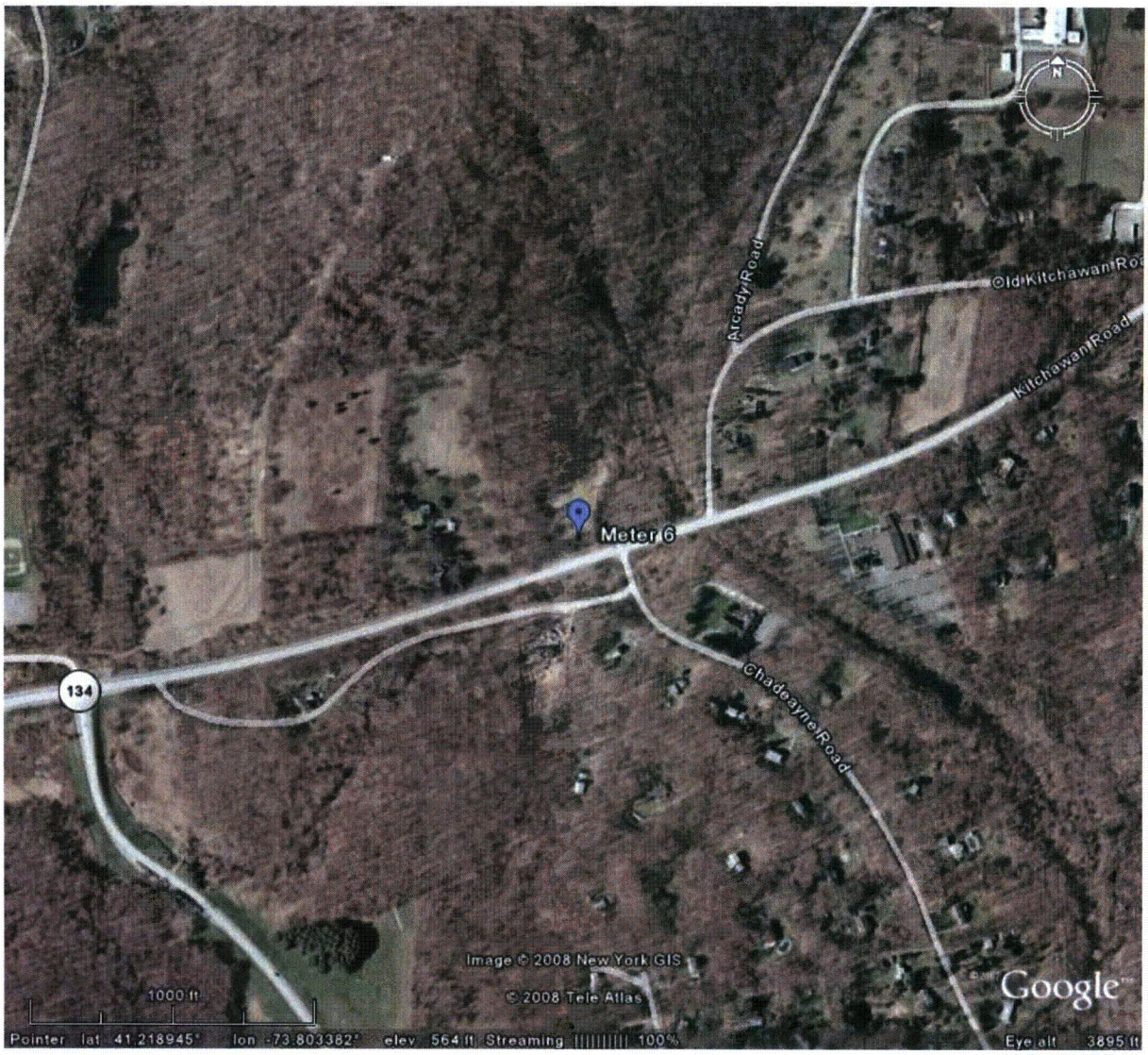


Figure 41. Aerial Photograph of Meter 6 Location, April 15, 2008.

SITE 6

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

Date: 4/15/08 Time: _____

SLM Model: 831 SLM Serial Number: ~~[illegible]~~ / weather 569917

Tester's Name: MJ 1197

GPS Coordinates: 73° 47' 59" West 41° 13' 9" North

Checked Battery? (Yes) No

Checked Clock? (Yes) No

Memory Checked? (Yes) No

DOWNLOADED SLM ✓ WEATHER ✓

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? (Yes) No

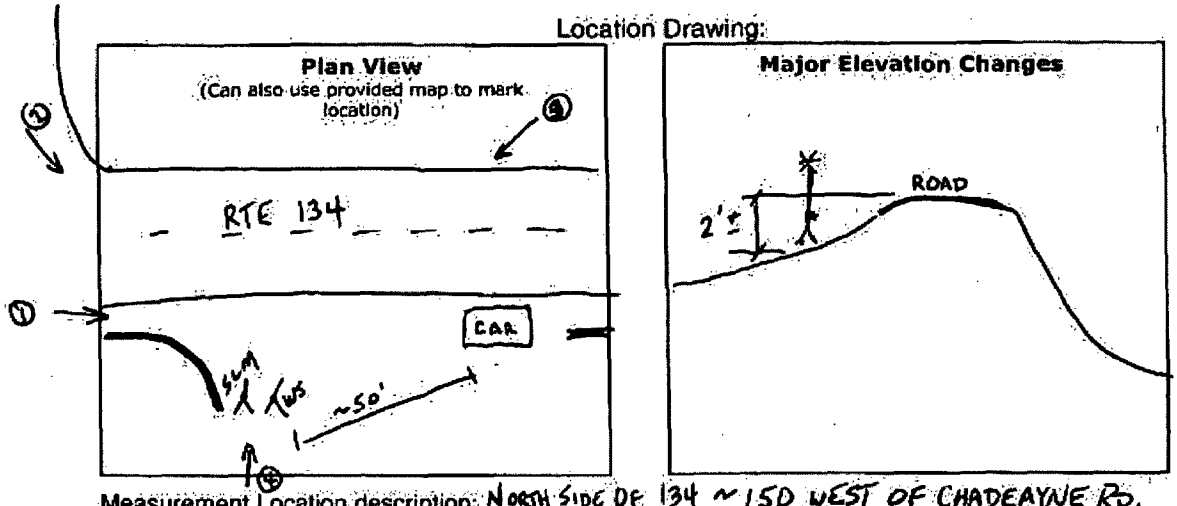
Calibration level after test: 94.0 dBC

30 second calibration tone recorded after test? (Yes) No

Calibrator Model: B&K 4231 Calibrator SN: 2575552

To be filled in be by the field crew at the site

Location Drawing:



Measurement Location description: NORTH SIDE OF 134 ~150 WEST OF CHADEAYNE RD.

Microphone height: 5' ft. Wind Dir: 10° deg.

Photos Taken? (Yes) No Wind Spd: 2.0 mph

Meter Recording? (Yes) No Temp: 53.7 °F

Weather Station on and wind cover removed? Yes No

Ambient noise level before test: 53.5 dBC HIGHER WHEN VEHICLES PASS (~70dB)

Maximum level observed during the test: 71.8 dBC

Could you hear the sirens? (Yes) No

Ambient noise level after test: 56.3 dBC

Notes about test (including background noise and noise intrusions during the test):

Tester's Signature: Tim Gaavey

TIM GAAVEY

Figure 42. Data Sheet for Meter 6, April 15, 2008

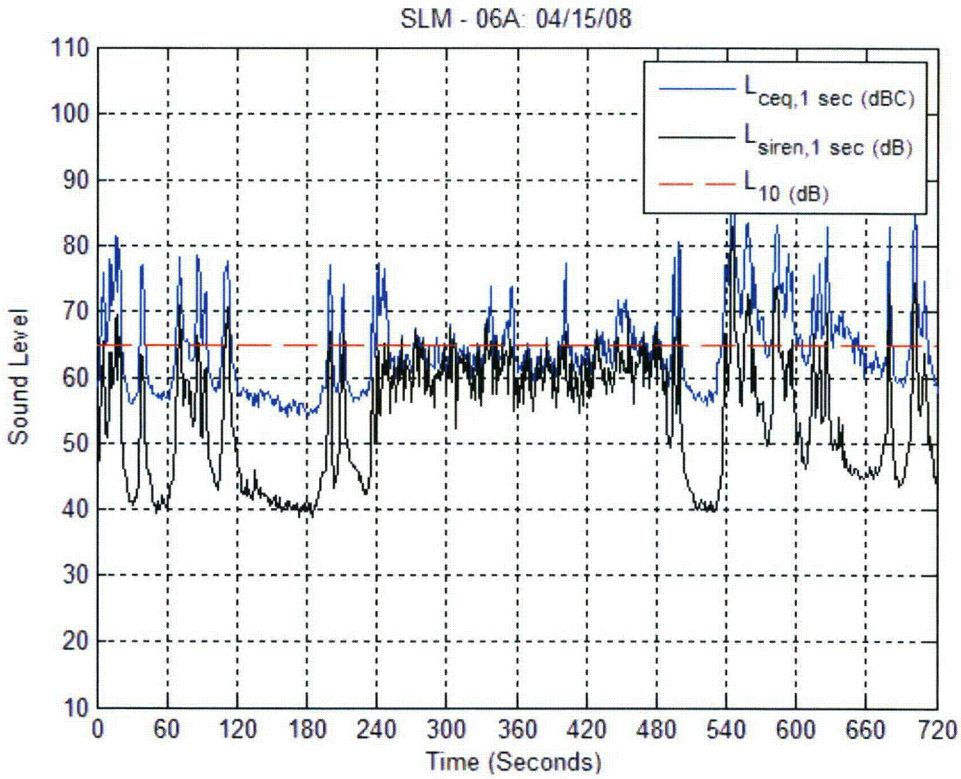


Figure 43. Time History Plot for Meter 6, April 15, 2008

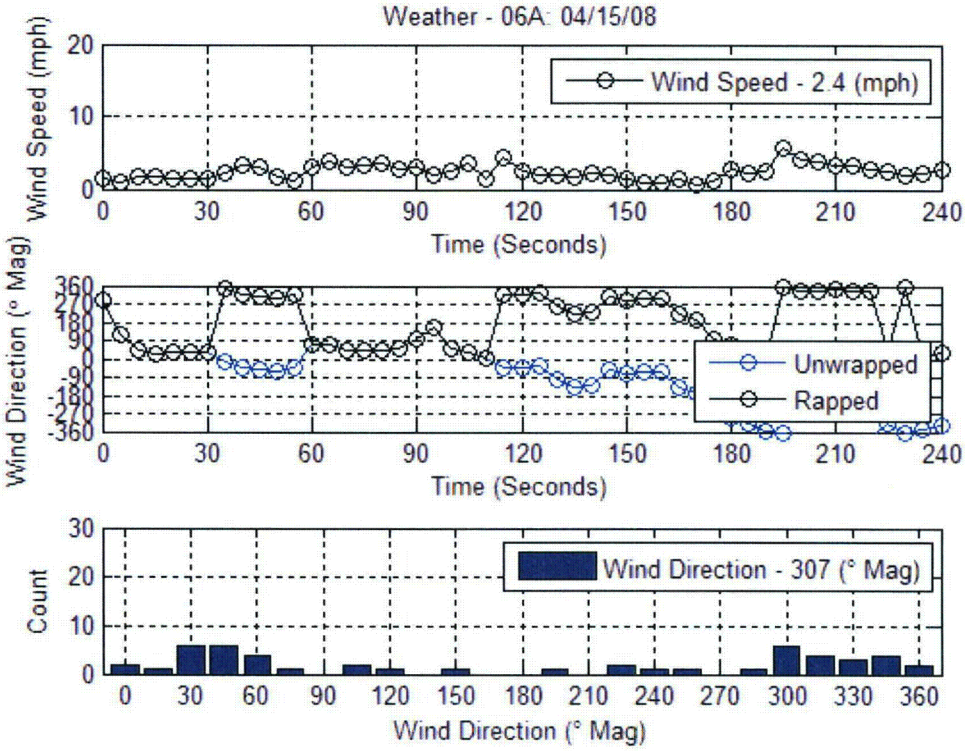


Figure 44. Weather Plots for Meter 6, April 15, 2008

Meter 6, April 16, 2008

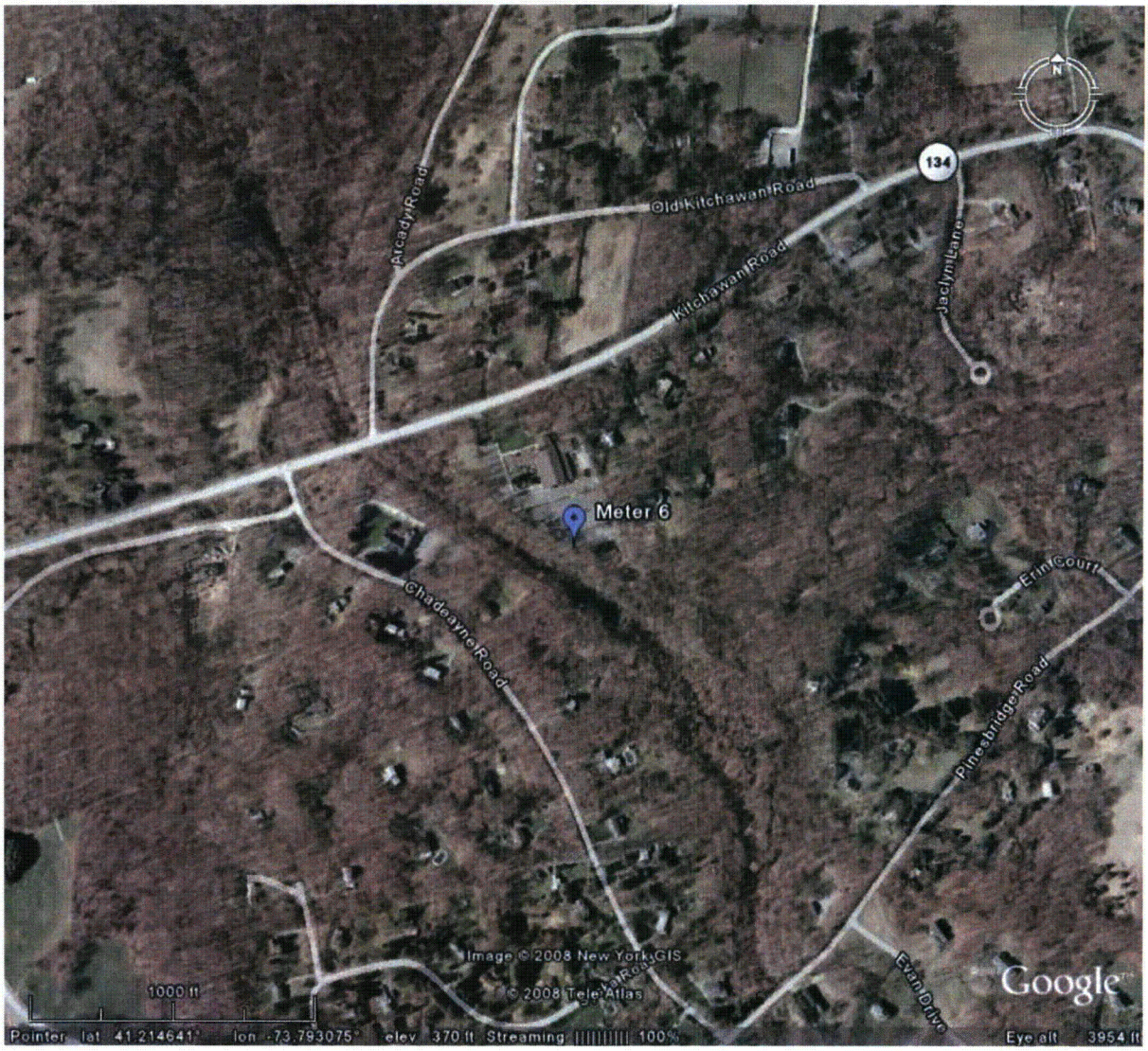


Figure 45. Aerial Photograph of Meter 6 Location, April 16, 2008.

SITE #6

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

Date: 4/16/08 Time: _____ 569917 WEATHER

SLM Model: 831 SLM Serial Number: 1197

Tester's Name: MJ

GPS Coordinates: _____ West _____ North

Checked Battery? (Yes) No 104.8%

Checked Clock? (Yes) No

Memory Checked? (Yes) No

DOWNLOADED SEM ✓ WEATHER ✓

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? (Yes) No

Calibration level after test: 94.0 dBC

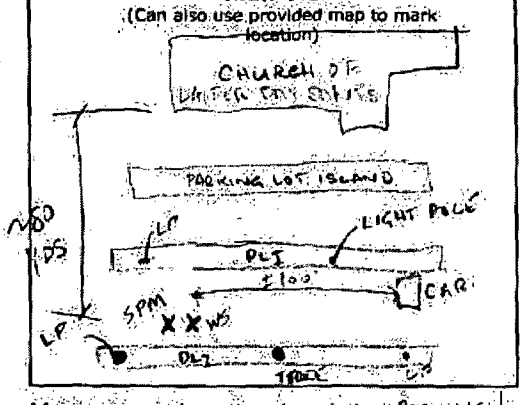
30 second calibration tone recorded after test? (Yes) No

Calibrator Model: B+K 4231 Calibrator SN: 2575552

To be filled in be by the field crew at the site

Location Drawing:

Plan View
(Can also use provided map to mark location)



Major Elevation Changes

PARKING LOT GENERALLY FLAT

Measurement Location description: PARKING LOT BEHIND CHURCH ON SOUTH SIDE OF RTE 134

Microphone height: 5-½" ft. Wind Dir: 87° deg.

Photos Taken? (Yes) No Wind Spd: 3.0 mph

Meter Recording? (Yes) No Temp: 57° °F

Weather Station on and wind cover removed? (Yes) No

Ambient noise level before test: 49.5 dBC

Maximum level observed during the test: 74.5 dBC

Could you hear the sirens? (Yes) No

Ambient noise level after test: 52 dBC

Notes about test (including background noise and noise intrusions during the test):

Tester's Signature: Tim Gravey (Tim Gravey)

ONE PICTURE TAKEN BEFORE "SITE 6" SHOT TAKEN.

Figure 46. Data Sheet for Meter 6, April 16, 2008

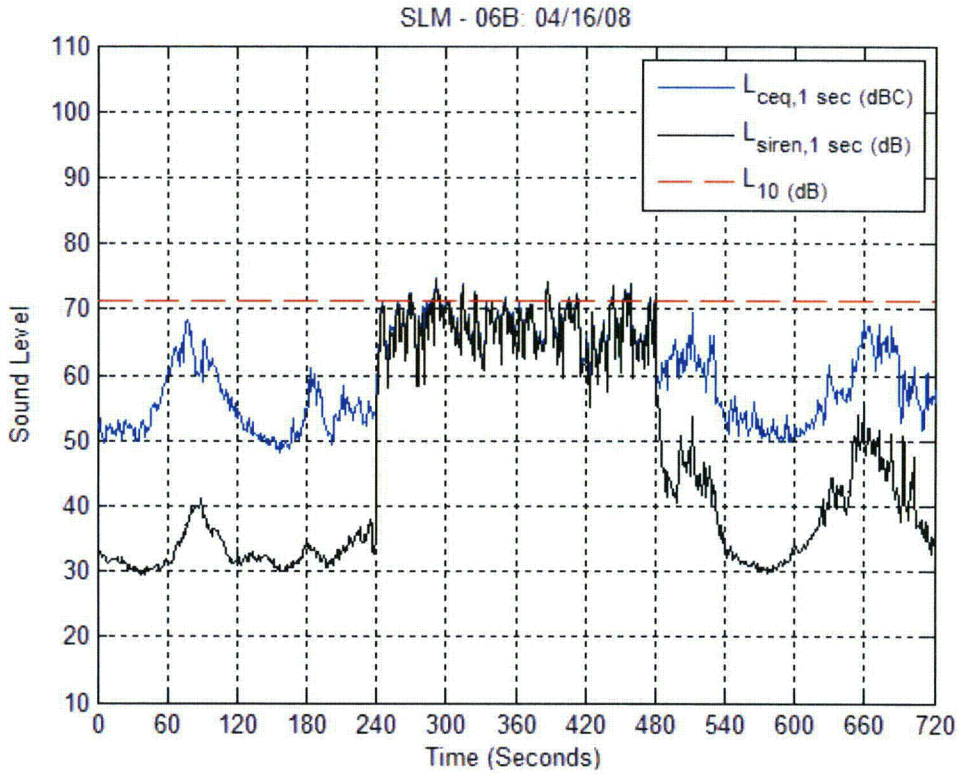


Figure 47. Time History Plot for Meter 6, April 16, 2008

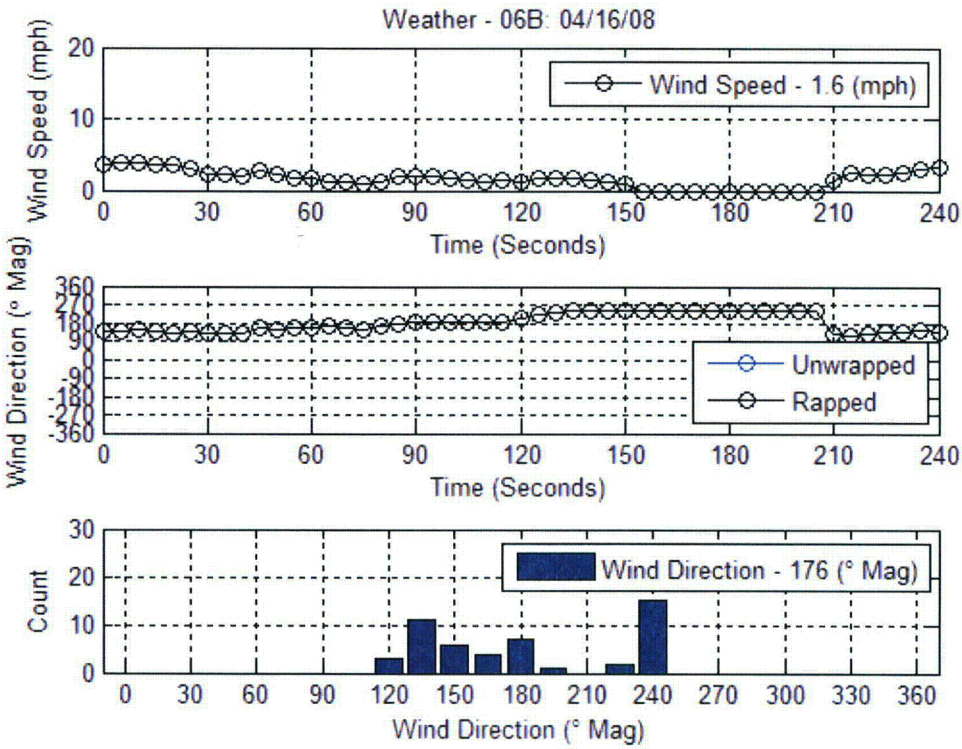


Figure 48. Weather Plots for Meter 6, April 16, 2008

Meter 7, April 15, 2008

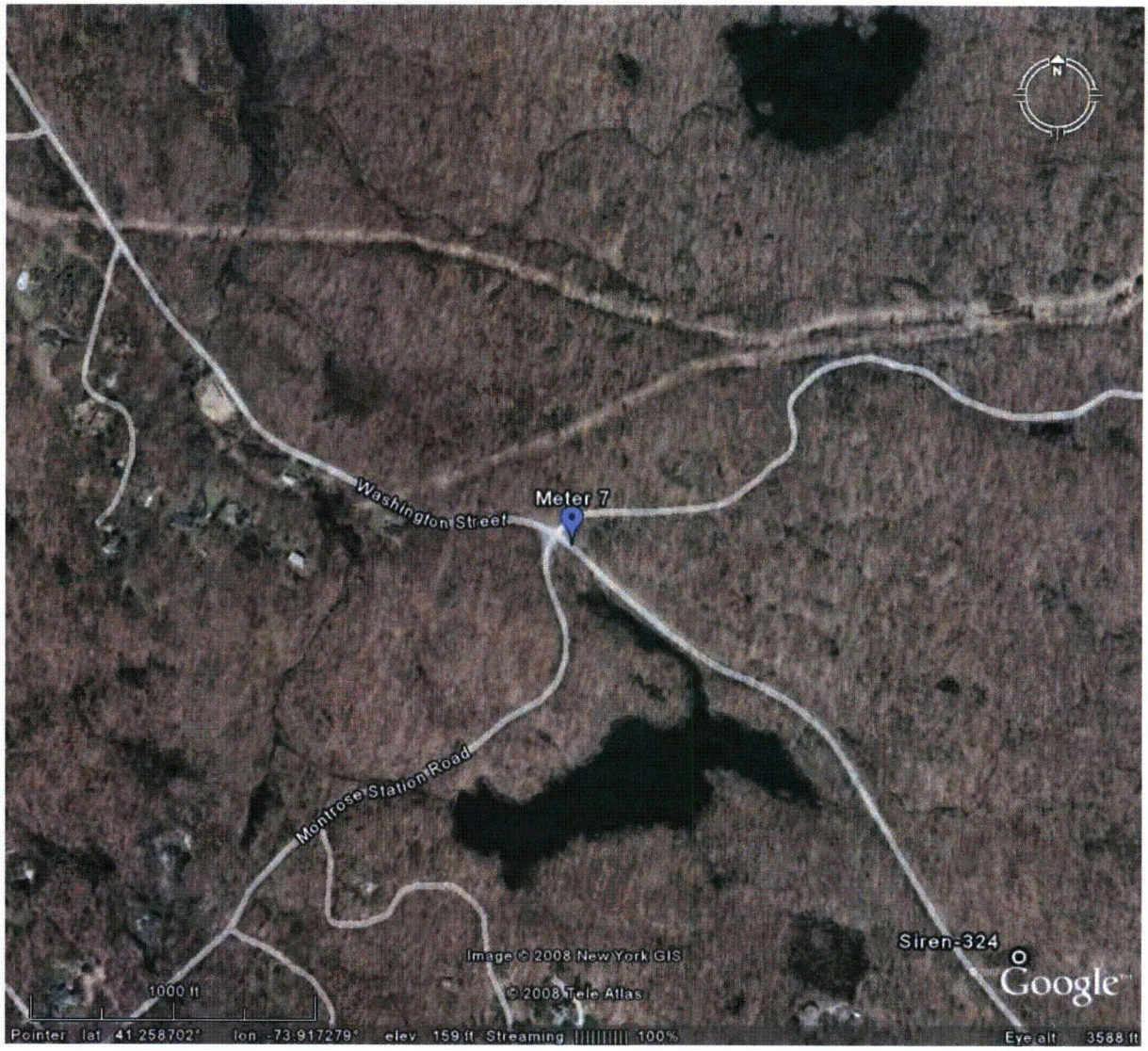


Figure 49. Aerial Photograph of Meter 7 Location, April 15, 2008.

7

Indian Point Siren Test Data Sheet

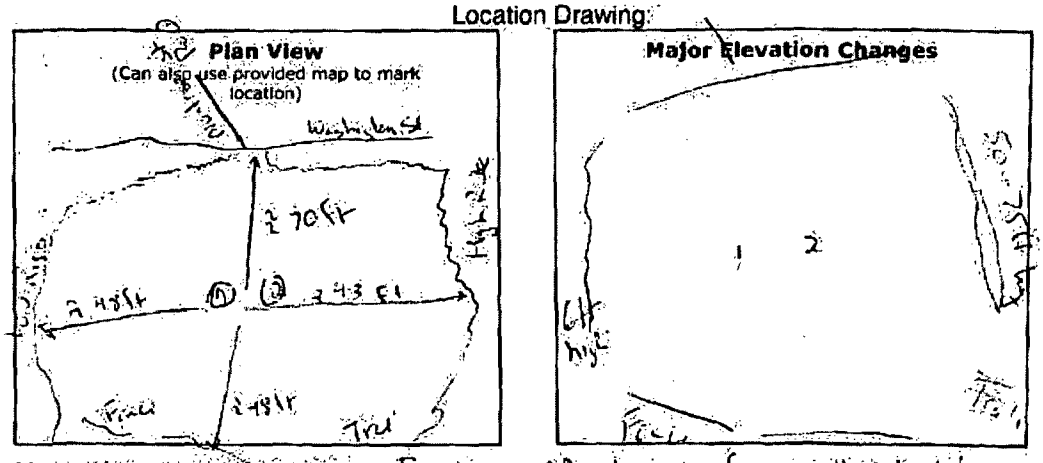
To be filled in be at the EOF by support staff

Date: 04/15/08 Time:
SLM Model: 824 SLM Serial Number: 824A3343 / weather 570067
Tester's Name: MJ
GPS Coordinates: 73° 55 ~~140~~ 9" West 41 15 ~~240~~ 48" North
Checked Battery? (Yes) No 95%
Checked Clock? (Yes) No
Memory Checked? (Yes) No
Calibration level before test: 94.0 dBC
30 second calibration tone recorded before test? (Yes) No
Calibration level after test: 113.9 dBC
30 second calibration tone recorded after test? (Yes) No
Calibrator Model: B+K 4231 Calibrator SN: 2575552

weather & SLM downloaded 13:12
- clock hour is incorrect

To be filled in be by the field crew at the site

Location Drawing:



Measurement Location description: In the middle of a small picky lot road
Microphone height: 5.0" ft. Wind Dir: 054 deg. swinging
Photos Taken? (Yes) No Wind Spd: 2.4 mph
Meter Recording? (Yes) No Temp: 52.4 °F
Weather Station on and wind cover removed? (Yes) No
Ambient noise level before test: ≈ 50.0 dBC
Maximum level observed during the test: ≈ 50.1 dBC
Could you hear the sirens? (Yes) No
Ambient noise level after test: ≈ 52.1 dBC

Approximately 1.4 mph
0.8 m/s

Notes about test (including background noise and noise intrusions during the test):
Could hear railroad whistle before test

Tester's Signature:

Figure 50. Data Sheet for Meter 7, April 15, 2008

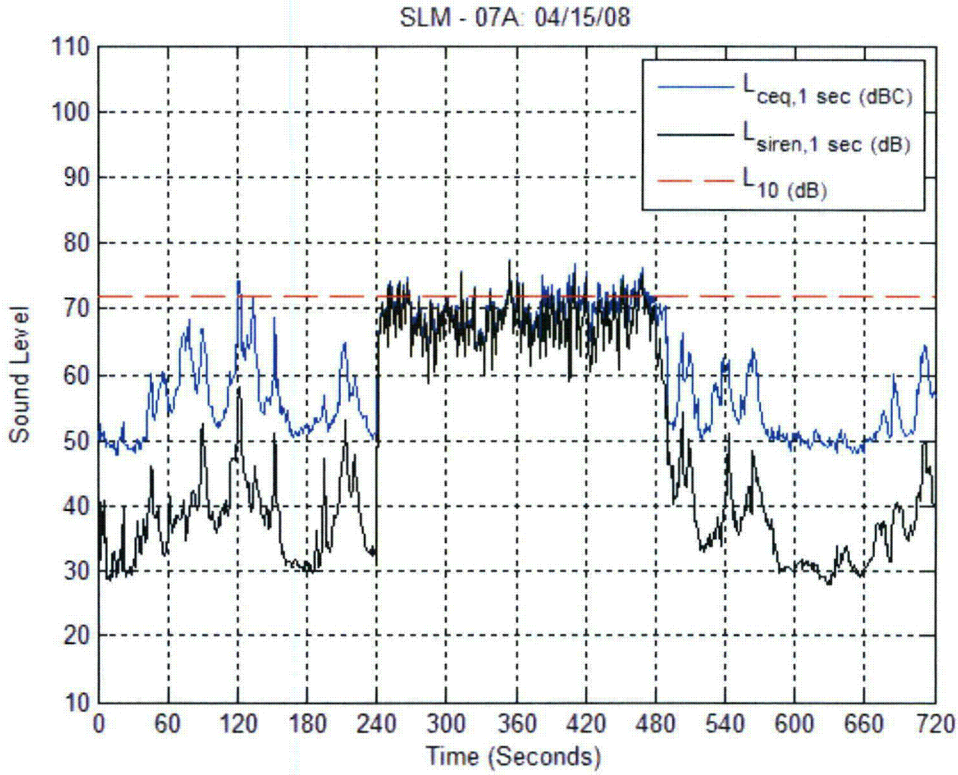


Figure 51. Time History Plot for Meter 7, April 15, 2008

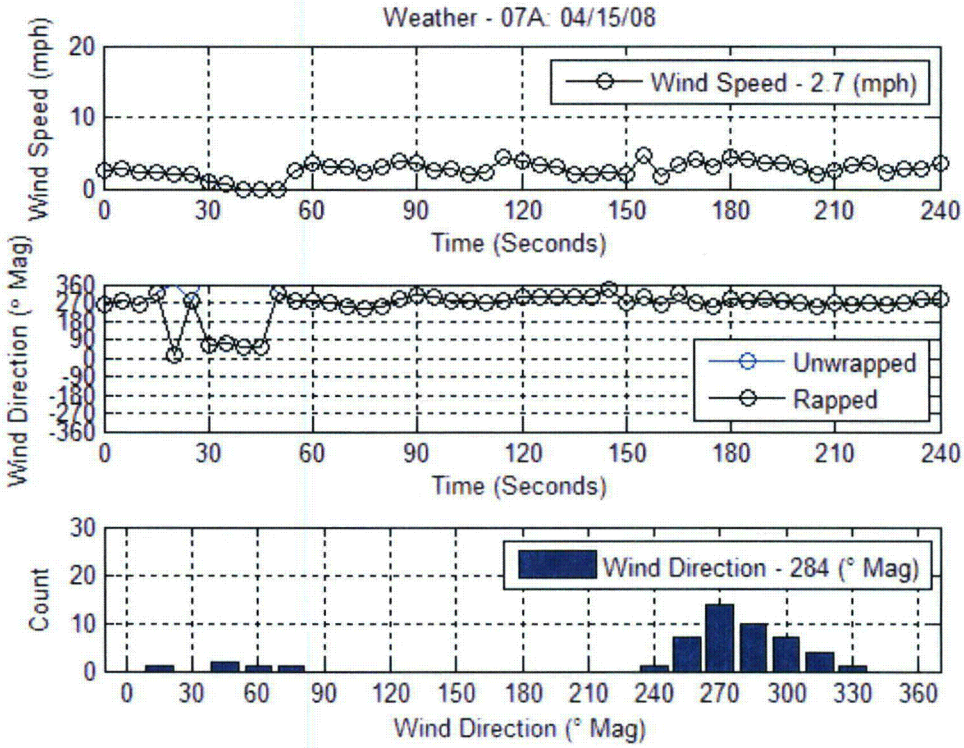


Figure 52. Weather Plots for Meter 7, April 15, 2008

Meter 7, April 16, 2008

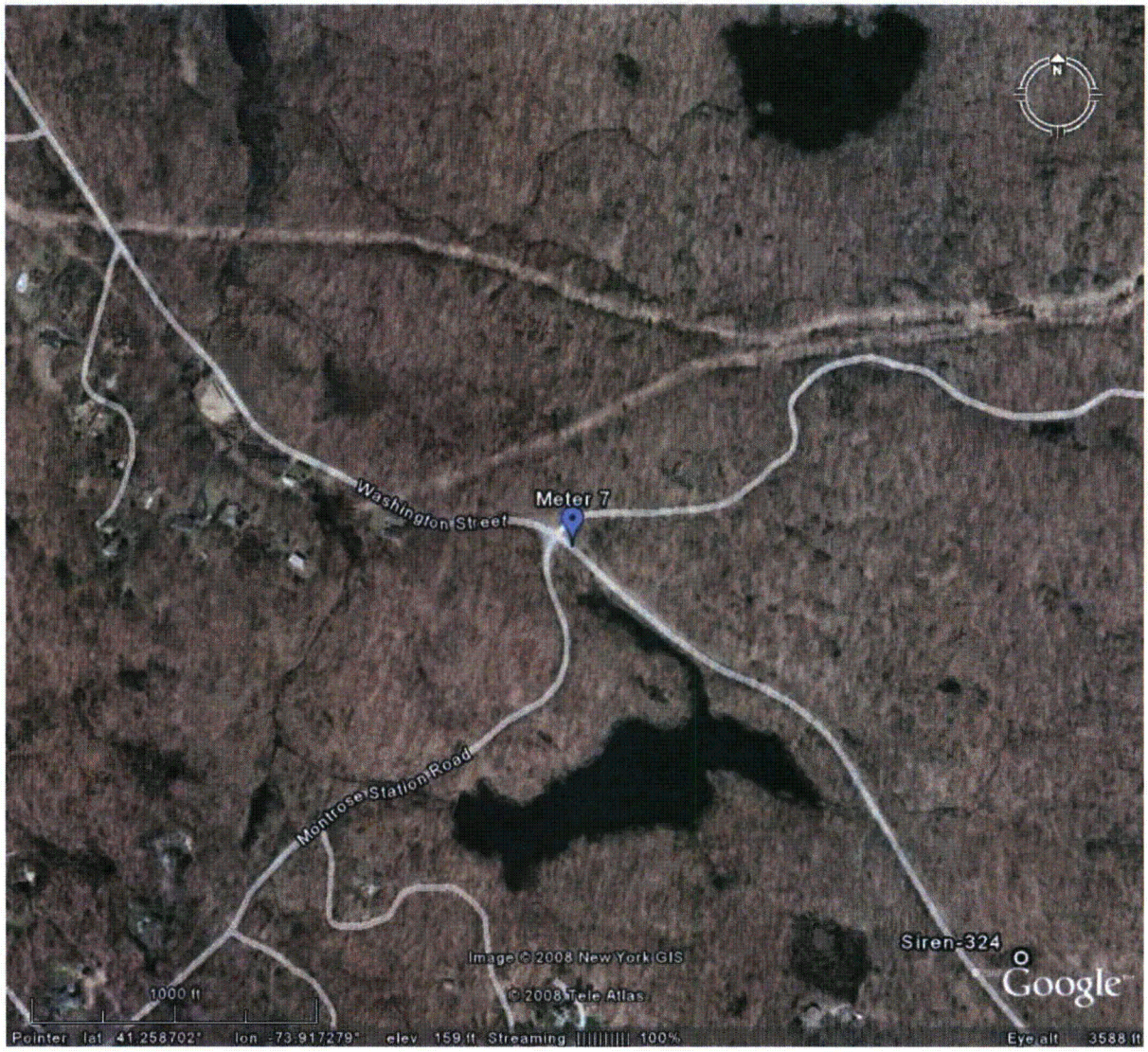


Figure 53. Aerial Photograph of Meter 7 Location, April 16, 2008.

Fred Ducimo

SITE #7

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

Date: 4/16/08 Time: 570067

SLM Model: 824 SLM Serial Number: 3343 \WEATHER

Tester's Name: MJ \

GPS Coordinates: 73 55 145 West 41° 15 704 North

Checked Battery? (Yes) No 96%

Checked Clock? (Yes) No

Memory Checked? (Yes) No

DOWNLOADED SLM \ WEATHER

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? (Yes) No

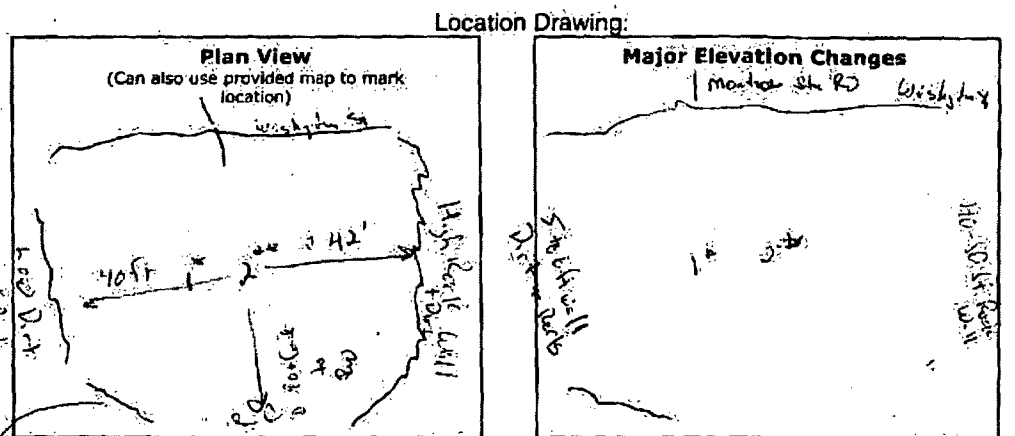
Calibration level after test: 94.0 dBC

30 second calibration tone recorded after test? (Yes) No

Calibrator Model: B+K 4231 Calibrator SN: 2575552

To be filled in be by the field crew at the site

Location Drawing:



Measurement Location description: Middle of Parking Lot

Microphone height: 5' 0" ft.

Photos Taken? (Yes) No

Meter Recording? (Yes) No

Wind Dir: W deg.

Wind Spd: 1.5 2.0 mph

Temp: 57.1 °F

Weather Station on and wind cover removed? (Yes) No

Ambient noise level before test: ≥ 49.2 dBC

Maximum level observed during the test: 70.0 dBC

Could you hear the sirens? (Yes) No

Ambient noise level after test: 54.5 dBC

1 - Weather Station
2 - Sound meter

AT 10:27 a fire siren sounded for 1 min

Notes about test (including background noise and noise intrusions during the test):

At 10:27 a fire siren went off for about 60 seconds. The same thing at about 10:40.

Tester's Signature:

Figure 54. Data Sheet for Meter 7, April 16, 2008

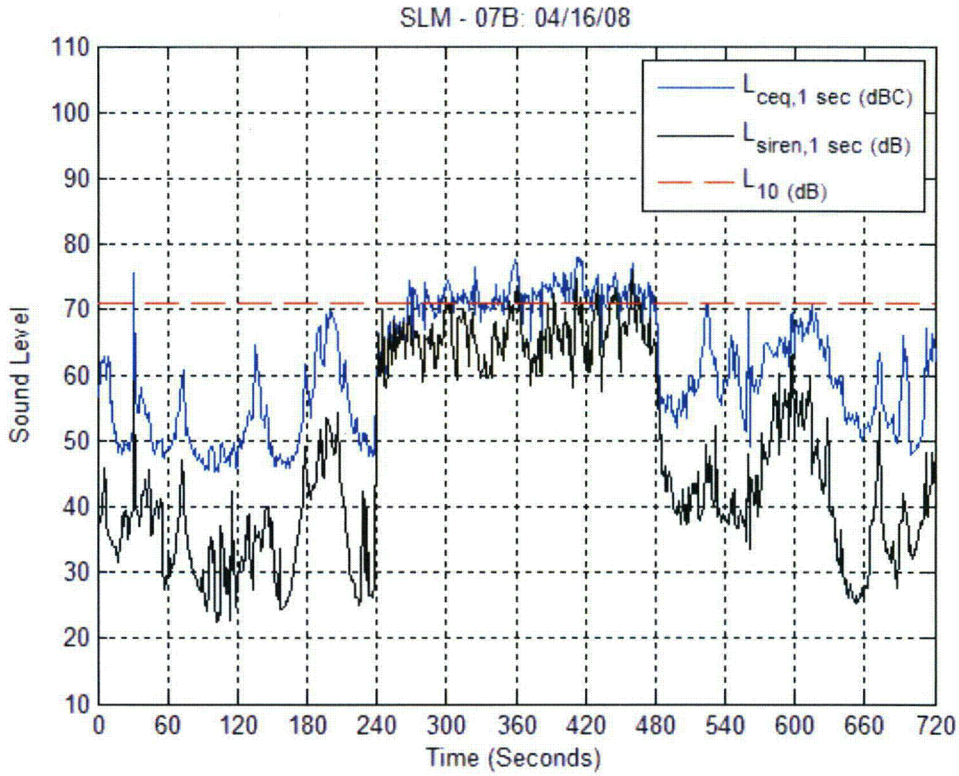


Figure 55. Time History Plot for Meter 7, April 16, 2008

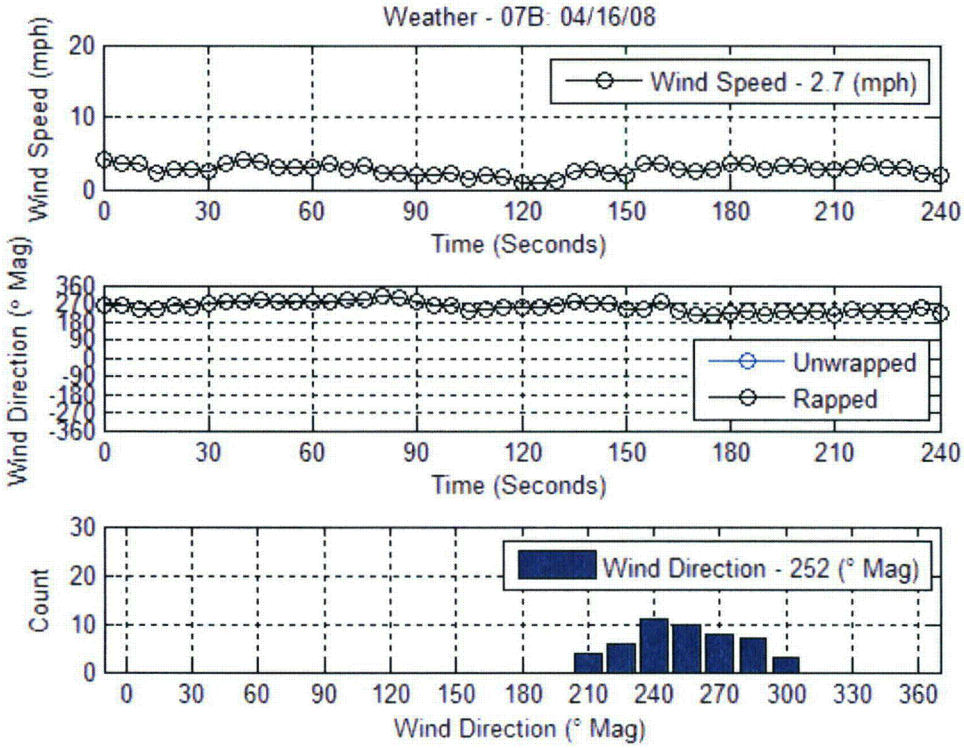


Figure 56. Weather Plots for Meter 7, April 16, 2008

Meter 8, April 15, 2008

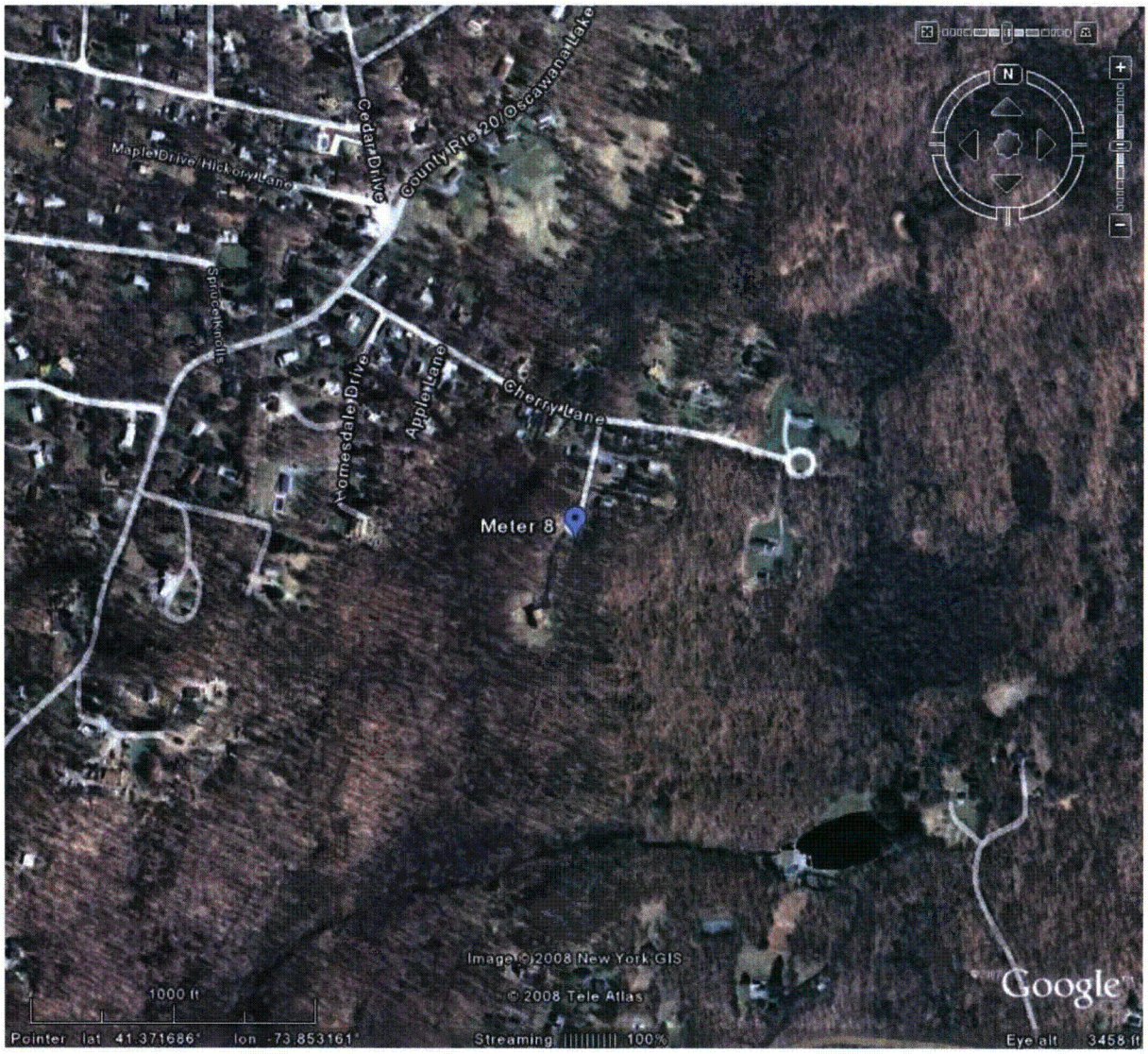


Figure 57. Aerial Photograph of Meter 8 Location, April 15, 2008.

weather & SLM down loader BJI

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

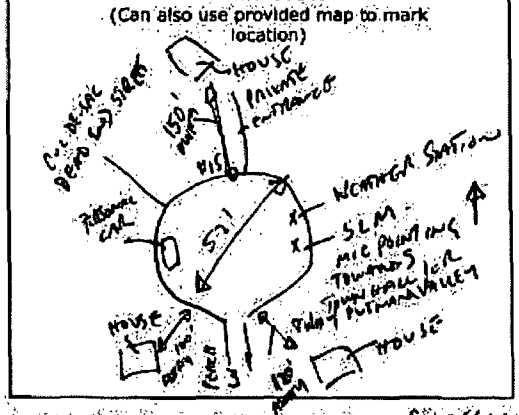
Date: 4/15/08 Time: 6:50 am
SLM Model: 824 SLM Serial Number: 3564 / weather 569916
Tester's Name: FRANK MADERO
GPS Coordinates: 73° 51' 26" West 41° 22' 20" North
Checked Battery? Yes No 91 %
Checked Clock? Yes No
Memory Checked? Yes No 100 %
Calibration level before test: 94.0 dBC
30 second calibration tone recorded before test? Yes No
Calibration level after test: 94.0 - 93.9 dBC
30 second calibration tone recorded after test? Yes No
Calibrator Model: B&K 4231 Calibrator SN: 2592139

SITE #8

To be filled in be by the field crew at the site

Location Drawing:

Plan View
(Can also use provided map to mark location)



Major Elevation Changes
NONE-

Measurement Location description: CUL-DE-SAC DEAD END STREET; 30' from house entrance 15 Peach Lane.
Microphone height: 5' ft. Wind Dir: 45 NE deg.
Photos Taken? Yes No Wind Spd: 6 mph
Meter Recording? Yes No Temp: 49.4 °F
Weather Station on and wind cover removed? Yes No
Ambient noise level before test: 50 dBC
Maximum level observed during the test: 73 dBC
Could you hear the sirens? Yes No
Ambient noise level after test: 50 dBC

STARTED RECORDING @ 10:20 AM
STOPPED RECORDING @ 10:

Notes about test (including background noise and noise intrusions during the test):
~~Much of birds making noise about 200 away~~ NO SIGNIFICANT BACKGROUND NOISE OTHER THAN SOME DISTANT BIRDS SINGING.

Tester's Signature: [signature] 4/15/08

Figure 58. Data Sheet for Meter 8, April 15, 2008

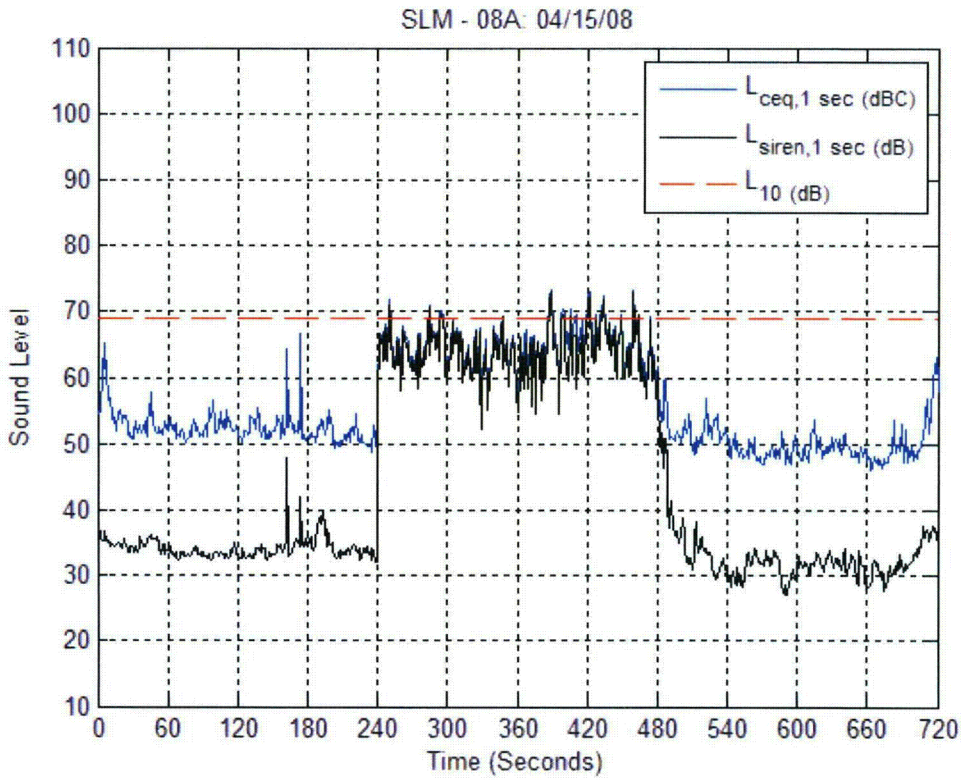


Figure 59. Time History Plot for Meter 8, April 15, 2008

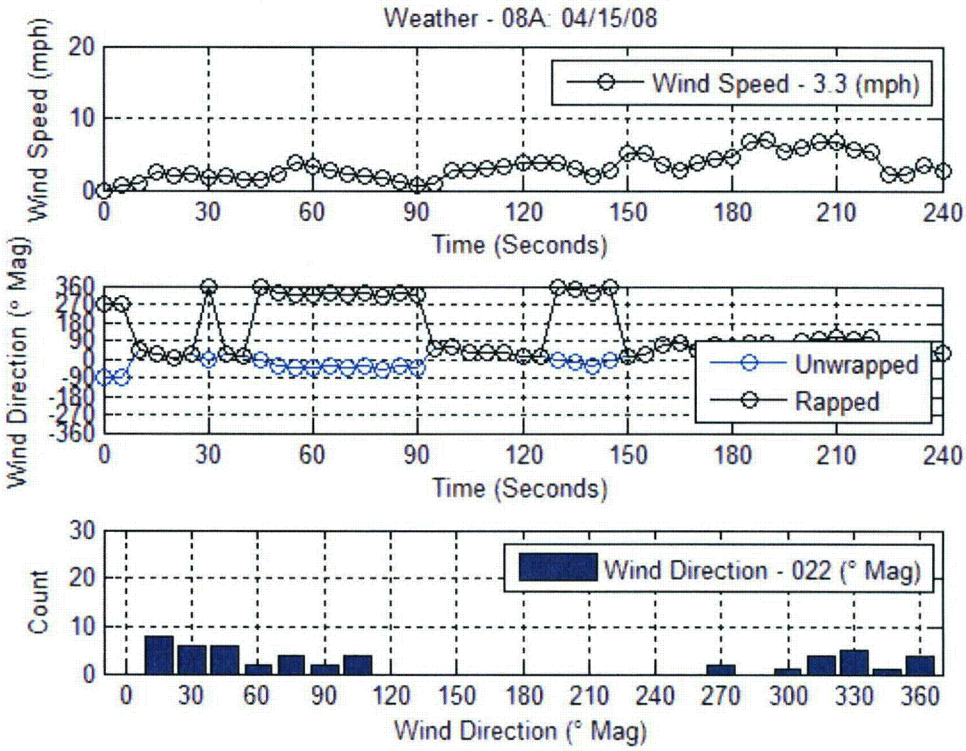


Figure 60. Weather Plots for Meter 8, April 15, 2008

Meter 8, April 16, 2008

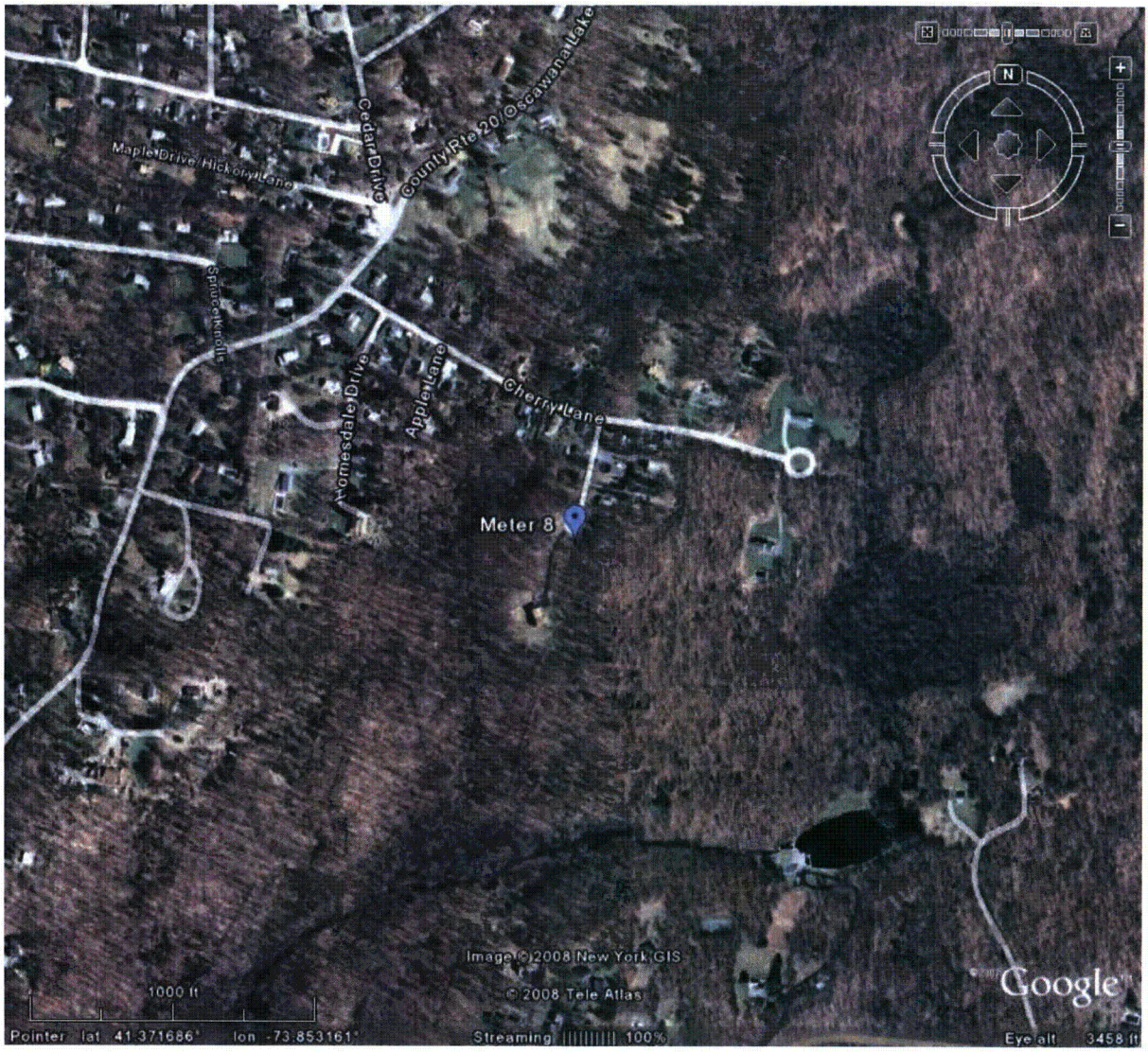


Figure 61. Aerial Photograph of Meter 8 Location, April 16, 2008.

SITE #8

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

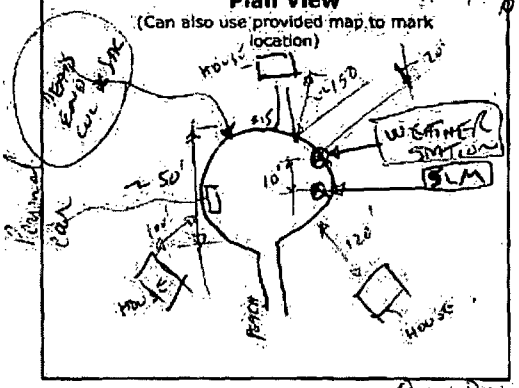
Date: 4/16/08 Time: 10:
SLM Model: 824 SLM Serial Number: 3564 \ WEATHER 569916
Tester's Name: MJ \ FRANK MADERO
GPS Coordinates: _____ West _____ North
Checked Battery? Yes No
Checked Clock? Yes No
Memory Checked? Yes No
Calibration level before test: 94.0 dBC
30 second calibration tone recorded before test? Yes No
Calibration level after test: 94.0 dBC
30 second calibration tone recorded after test? Yes No
Calibrator Model: B+K 4231 Calibrator SN: 2597139

DOWNLOADED SLM \ WEATHER

To be filled in be by the field crew at the site

Layout same as yesterday's 4/15/08 Location Drawing:

Plan View
(Can also use provided map to mark location)



Major Elevation Changes
NO CHANGES
SURFACE PRETTY LEVELED

Measurement Location description: @ 15 PEACH LANE – SEE PLAN VIEW
Microphone height: 5 ft.
Photos Taken? Yes No
Meter Recording? Yes No
Weather Station on and wind cover removed? Yes No
Wind Dir: 273 W deg.
Wind Spd: 1.8 mph
Temp: 61 °F

CAUSE OF LOCATION AIM DEG CONSTANT SWITCHING APPARENT

TEST STARTED @ 10:15 AM
TEST STOPPED @ 10:

(W/OUT PLANE) → Ambient noise level before test: ~50 dBC
Maximum level observed during the test: 69 dBC
Could you hear the sirens? Yes No
Ambient noise level after test: ~50 dBC

NO PLANE DURING TIME = ALL SIREN

SOME HAMMERING BY NEIGHBOR TOO.

Notes about test (including background noise and noise intrusions during the test):
BIRDS SINGING IN THE BACKGROUND – SOME DOG BARKING – [illegible]
PLANE FLYING WHEN METER FIRST STARTED RUNNING – (LOW 60'S) TO 10:15 & 10:21

Tester's Signature: FMadero 4-16-08
FRANK MADERO.

PLANE FLEW OVER @ 10:33

NOTE: ROBERT KAISER FROM NRC WAS A TEST OBSERVER.

Figure 62. Data Sheet for Meter 8, April 16, 2008

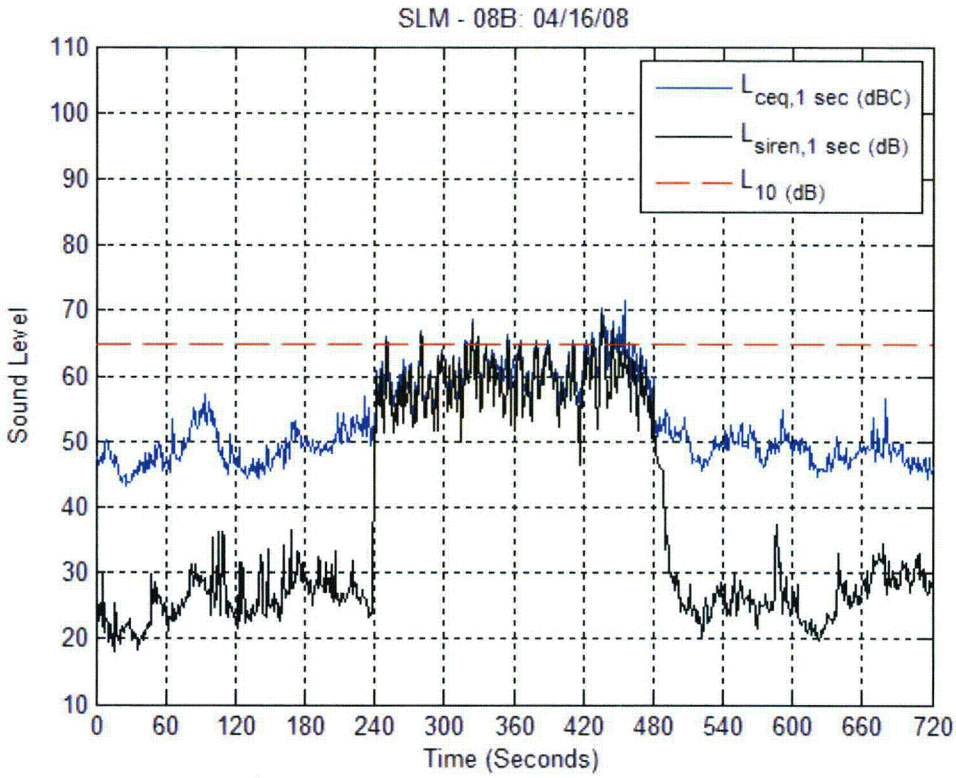


Figure 63. Time History Plot for Meter 8, April 16, 2008

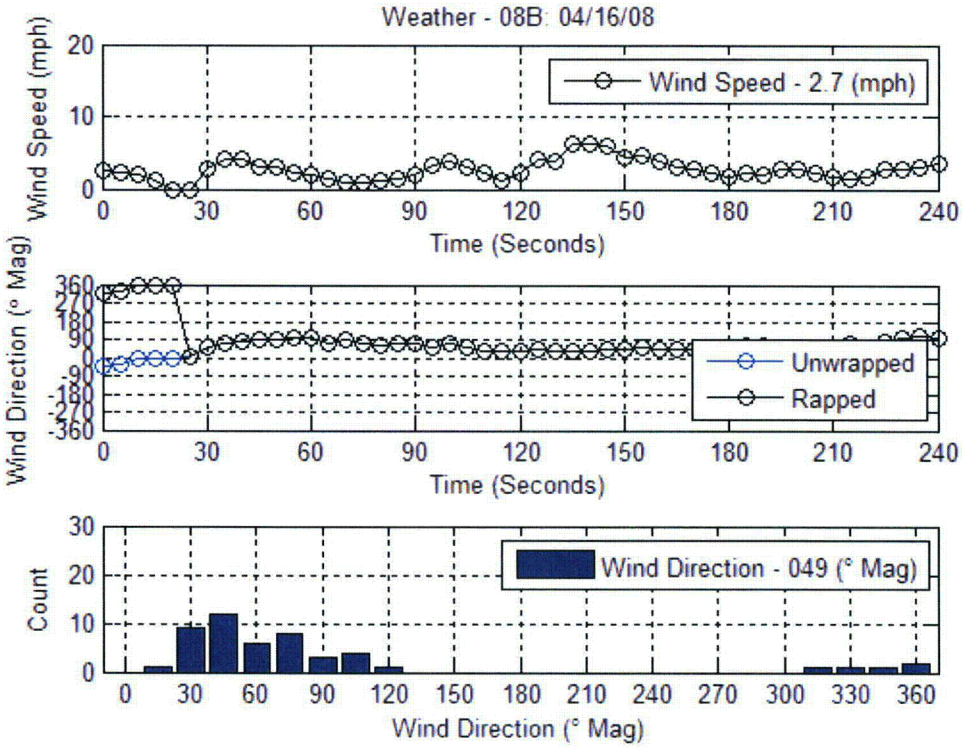


Figure 64. Weather Plots for Meter 8, April 16, 2008

Meter 9, April 15, 2008

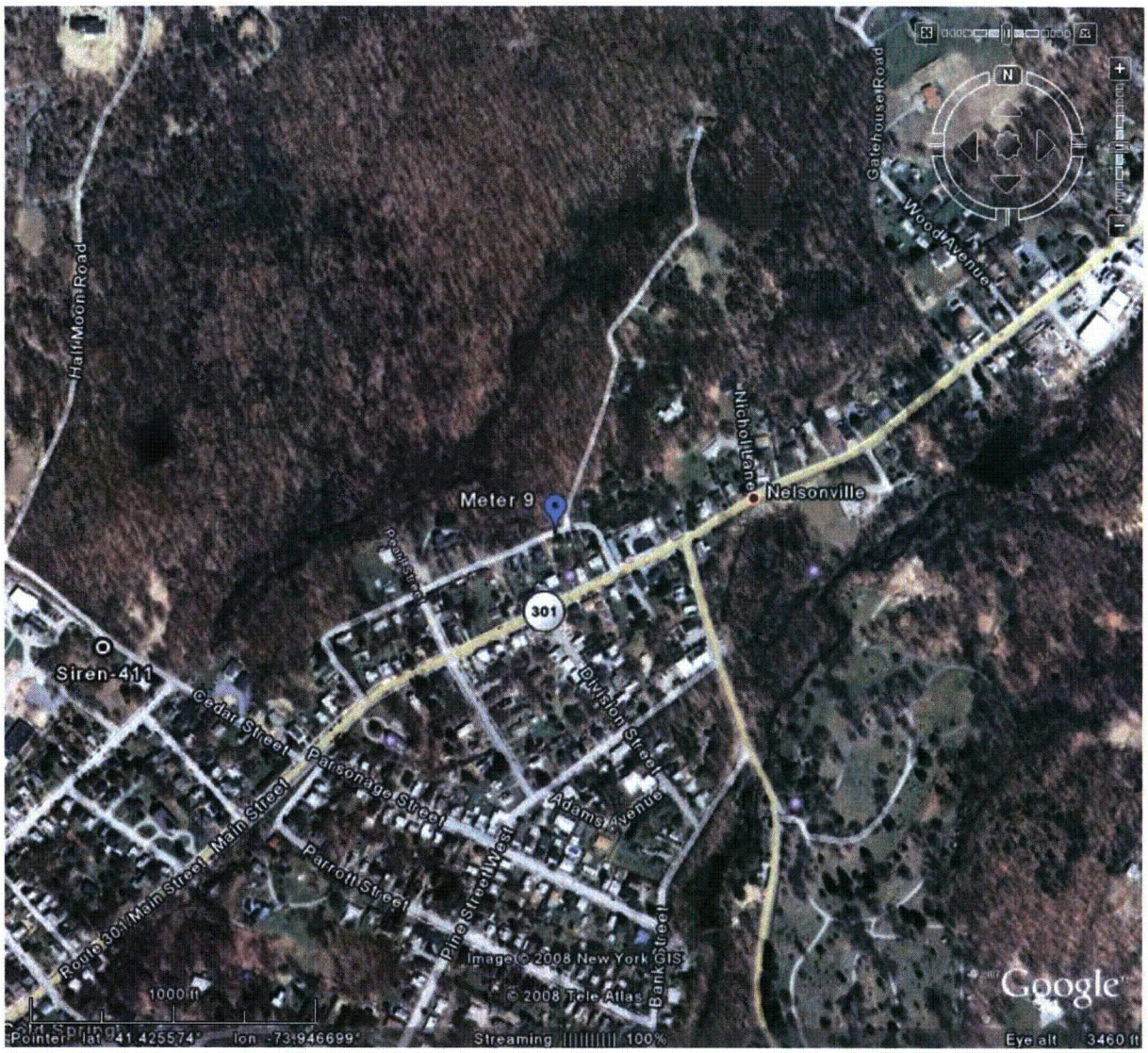


Figure 65. Aerial Photograph of Meter 9 Location, April 15, 2008.

SLM & weather downloaded BJI

Meter Site: 9

Indian Point Siren Test Data Sheet

----------To be filled in be at the EOF by support staff----------

Date: _____ Time: _____

SLM Model: 824 SLM Serial Number: 824A3562 / weather 57007

Tester's Name: Walter Graff

GPS Coordinates: 41° 25' 31" N ~~West~~ 73° 56' 51" ~~North~~ West

Checked Battery? Yes No 96%

Checked Clock? Yes No

Memory Checked? Yes No

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? Yes No

Calibration level after test: 94.0 dBC

30 second calibration tone recorded after test? Yes No

Calibrator Model: B&K 4231 Calibrator SN: 2592139

----------To be filled in be by the field crew at the site----------

Location Drawing:

Plan View
(Can also use provided map to mark location)

Major Elevation Changes

instrument Location

X

Approx 8' foot rise from Roadway

Measurement Location description: _____

Microphone height: 5' ft. Wind Dir: 338 deg.

Photos Taken? Yes No Wind Spd: 3.9 mph

Meter Recording? Yes No Temp: 49.1 °F

Weather Station on and wind cover removed? Yes No

Ambient noise level before test: [redacted] dBC

Maximum level observed during the test: _____ dBC

Could you hear the sirens? Yes No

Ambient noise level after test: 35.2 dBC

Notes about test (including background noise and noise intrusions during the test):

2 minutes into test Lady walking dog past by on roadway
Approx 8½ minutes after test (in the 10 minute window) dog walker returned on ROAD

Tester's Signature: Walter Graff x 6637

Figure 66. Data Sheet for Meter 9, April 15, 2008

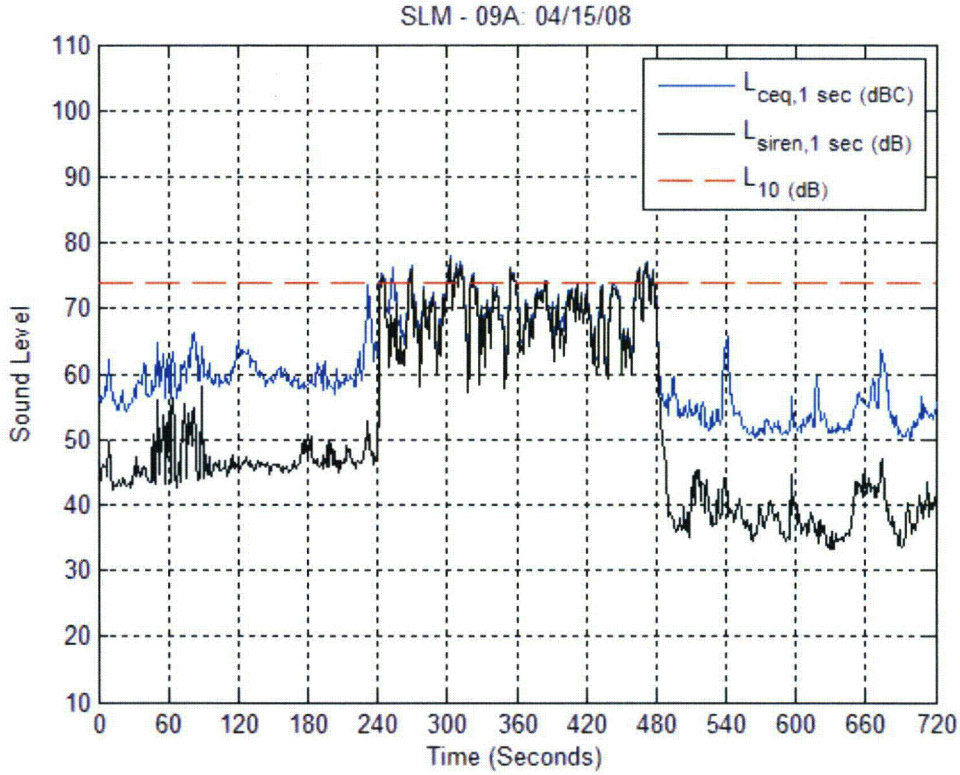


Figure 67. Time History Plot for Meter 9, April 15, 2008

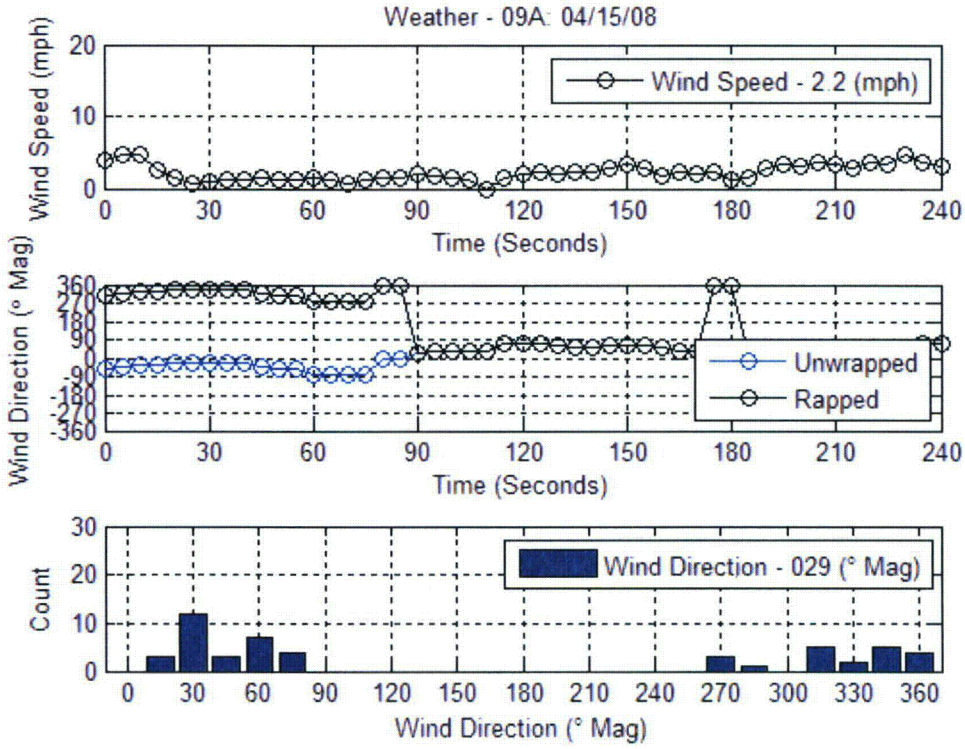


Figure 68. Weather Plots for Meter 9, April 15, 2008

Meter 9, April 16, 2008

Figure 69. Aerial Photograph of Meter 9 Location, April 16, 2008.

SITE #9

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

Date: 4/16/08 Time:

SLM Model: 824 SLM Serial Number: 3562 \ S70072 WEATHER

Tester's Name: MJ

GPS Coordinates: West North

Checked Battery? (Yes) No 99%

Checked Clock? (Yes) No

Memory Checked? (Yes) No

DOWNLOADED SLM \ WEATHER

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? (Yes) No

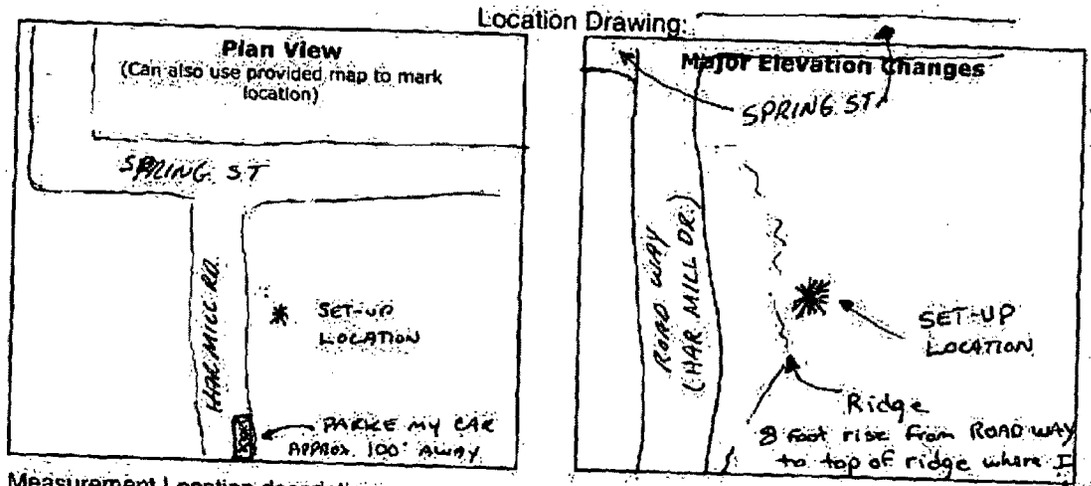
Calibration level after test: 94.0 dBC

30 second calibration tone recorded after test? (Yes) No

Calibrator Model: B+K 4231 Calibrator SN: 2515552

To be filled in be by the field crew at the site

Location Drawing:



Measurement Location description:

Microphone height: 5' ft.

Photos Taken? (Yes) No

Meter Recording? (Yes) No

Weather Station on and wind cover removed? (Yes) No

Wind Dir: 37 deg. *

Wind Spd: 2.2 mph

Temp: 58.4 °F

Ambient noise level before test: 52.6 dBC

Maximum level observed during the test: 70.6 dBC

Could you hear the sirens? (Yes) No

Ambient noise level after test: 57.2 dBC

* during test it read 216°

Notes about test (including background noise and noise intrusions during the test):

NOTE: Prior to Sirens sounding - could hear cars traveling on RTE 9D which is approx 75 yds from my set-up location!

Tester's Signature: Walter D Graff

Figure 70. Data Sheet for Meter 9, April 16, 2008

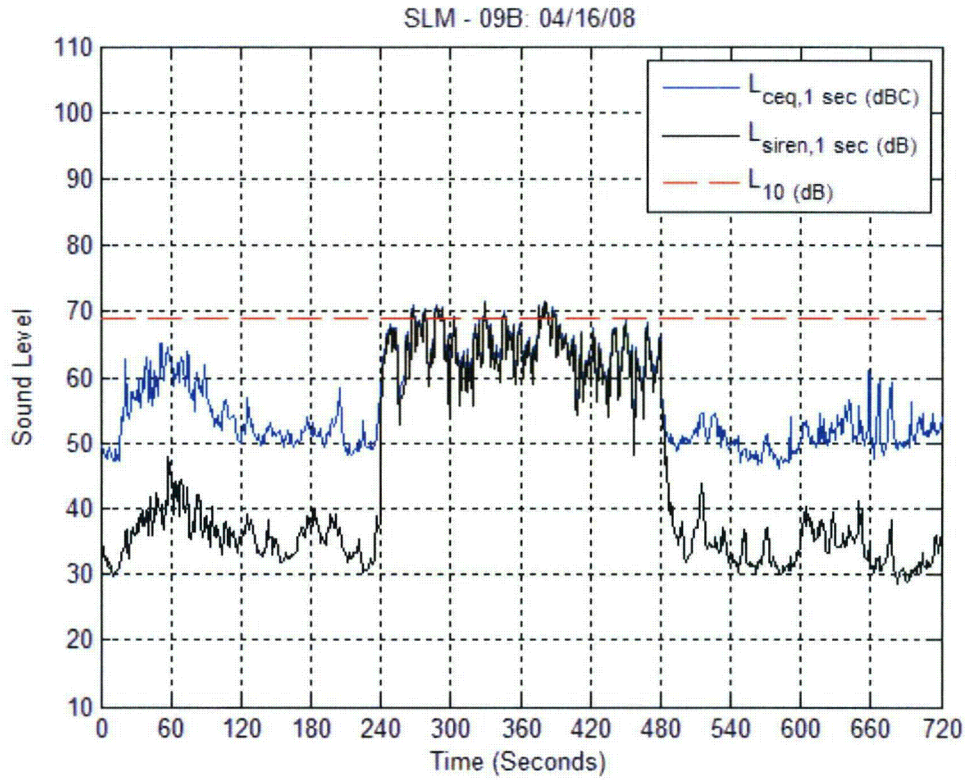


Figure 71. Time History Plot for Meter 9, April 16, 2008

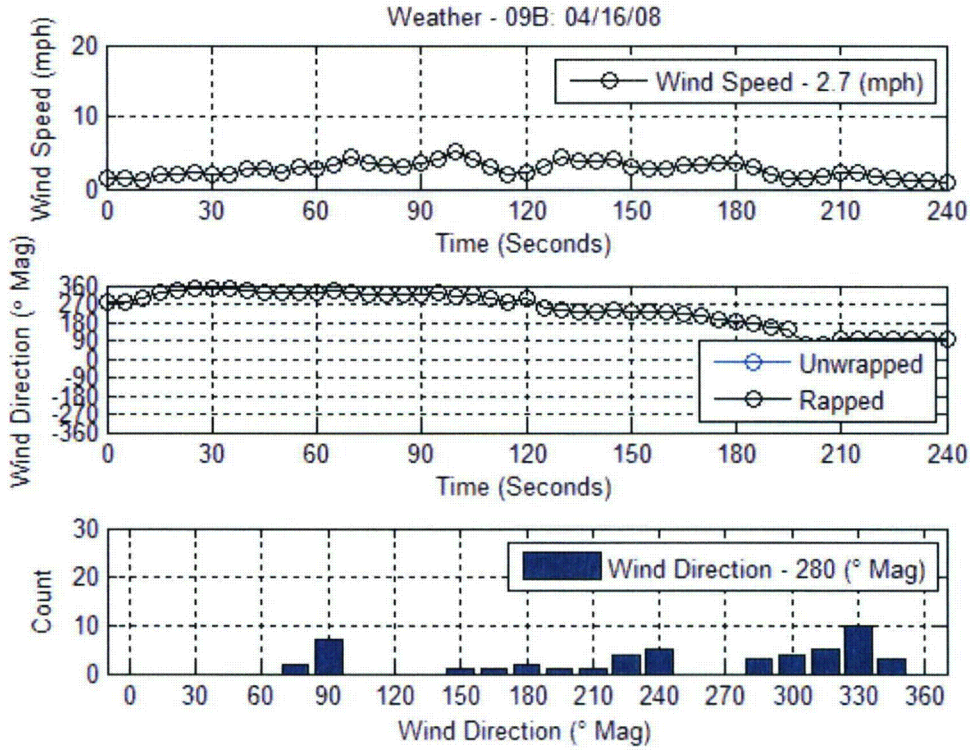


Figure 72. Weather Plots for Meter 9, April 16, 2008

Meter 10, April 15, 2008

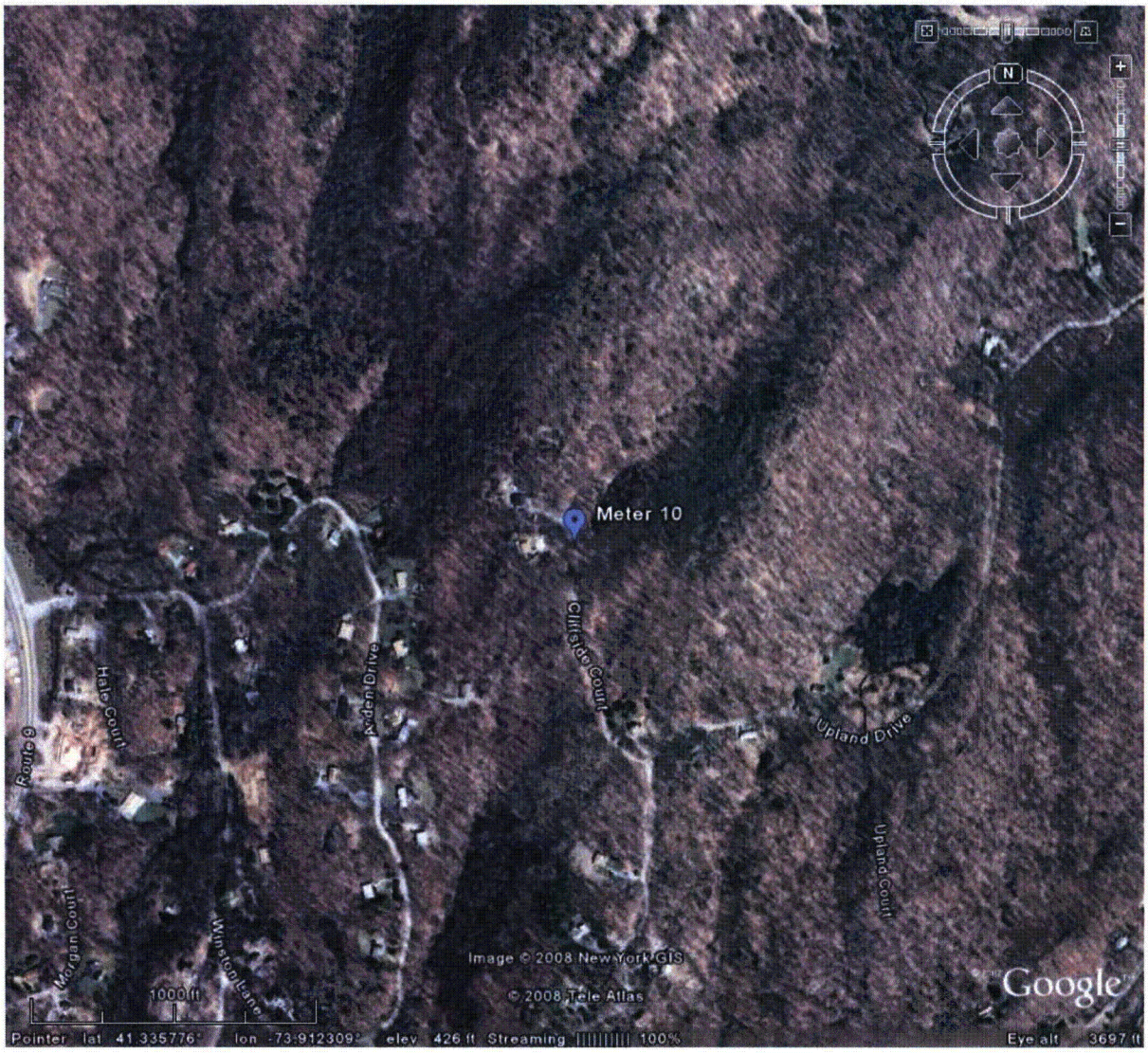


Figure 73. Aerial Photograph of Meter 10 Location, April 15, 2008.

All downloaded

#10

#10

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

Date: 4/15/08 Time: _____

SLM Model: 831 SLM Serial Number: 1306 / Weather 569895

Tester's Name: MSI / Jack Weber

GPS Coordinates: 73° 54' 57" West 91° 20' 28" North

Checked Battery? (Yes) No

Checked Clock? (Yes) No

Memory Checked? (Yes) No

DOWNLOADED SLM ✓ / WEATHER ✓

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? (Yes) No

Calibration level after test: 93.8 dBC

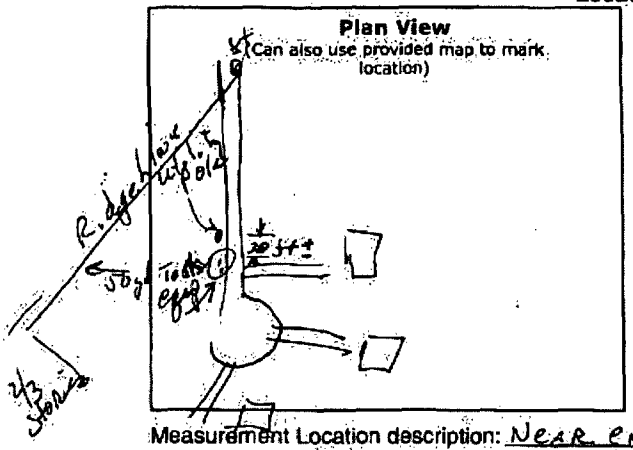
30 second calibration tone recorded after test? (Yes) No

Calibrator Model: B+K 4231 Calibrator SN: 2575552

To be filled in be by the field crew at the site

Location Drawing:

Plan View
(Can also use provided map to mark location)



Major Elevation Changes

Ridge about 50 yds east of test location. Elevation rises to 2 to 3 stories.

Measurement Location description: Near end of Upland Dr. 30 ft ± from utility pole

Microphone height: 5' ft. Wind Dir: 358 deg.

Photos Taken? (Yes) No Wind Spd: 1.7 mph

Meter Recording? (Yes) No Temp: 47.4 °F

10:30

Weather Station on and wind cover removed? (Yes) No

Ambient noise level before test: 46 dBC

Maximum level observed during the test: 73 dBC

Could you hear the sirens? (Yes) No

Ambient noise level after test: 49 dBC

Notes about test (including background noise and noise intrusions during the test):
wooded area – birds, wind chimes, distant road noise etc.

Tester's Signature: [signature]

Figure 74. Data Sheet for Meter 10, April 15, 2008

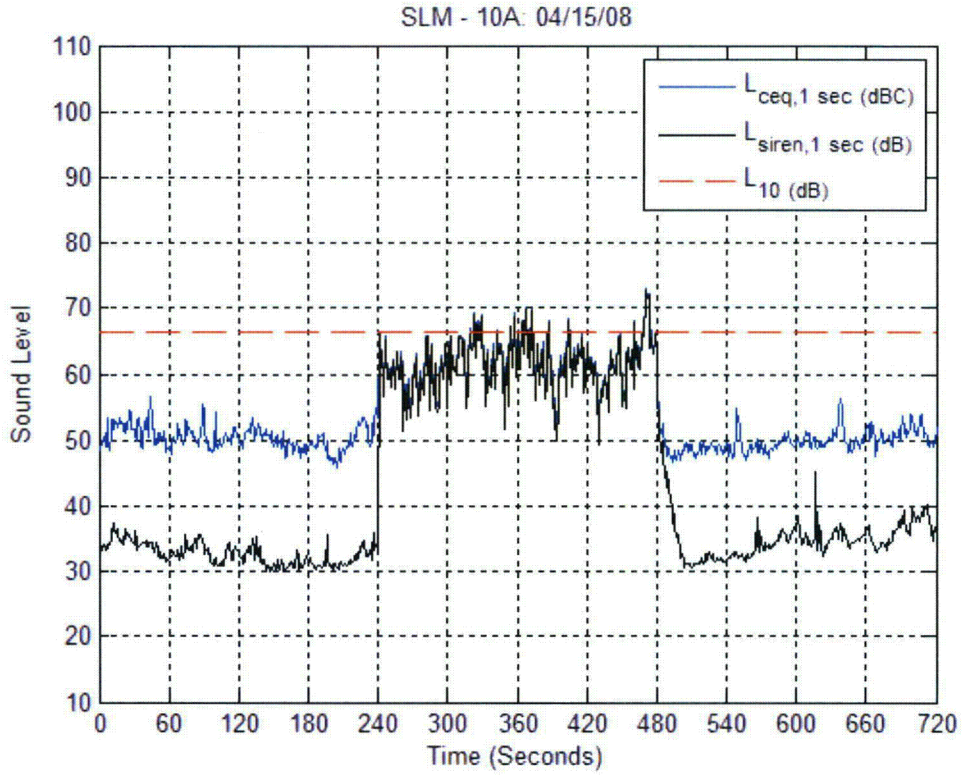


Figure 75. Time History Plot for Meter 10, April 15, 2008

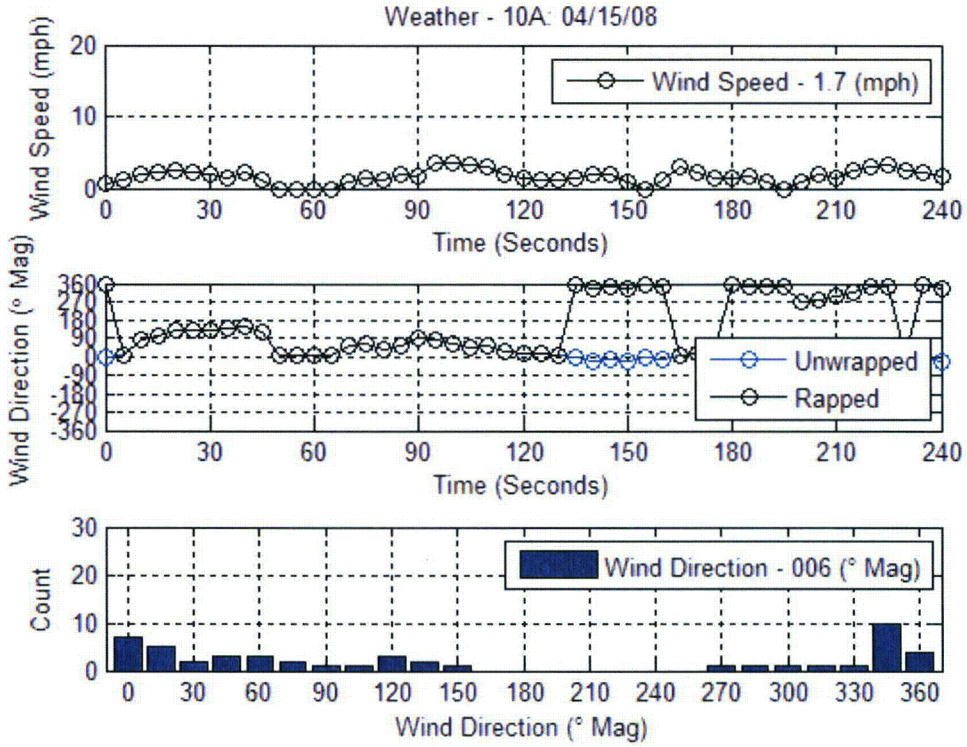


Figure 76. Weather Plots for Meter 10, April 15, 2008

Meter 10, April 16, 2008

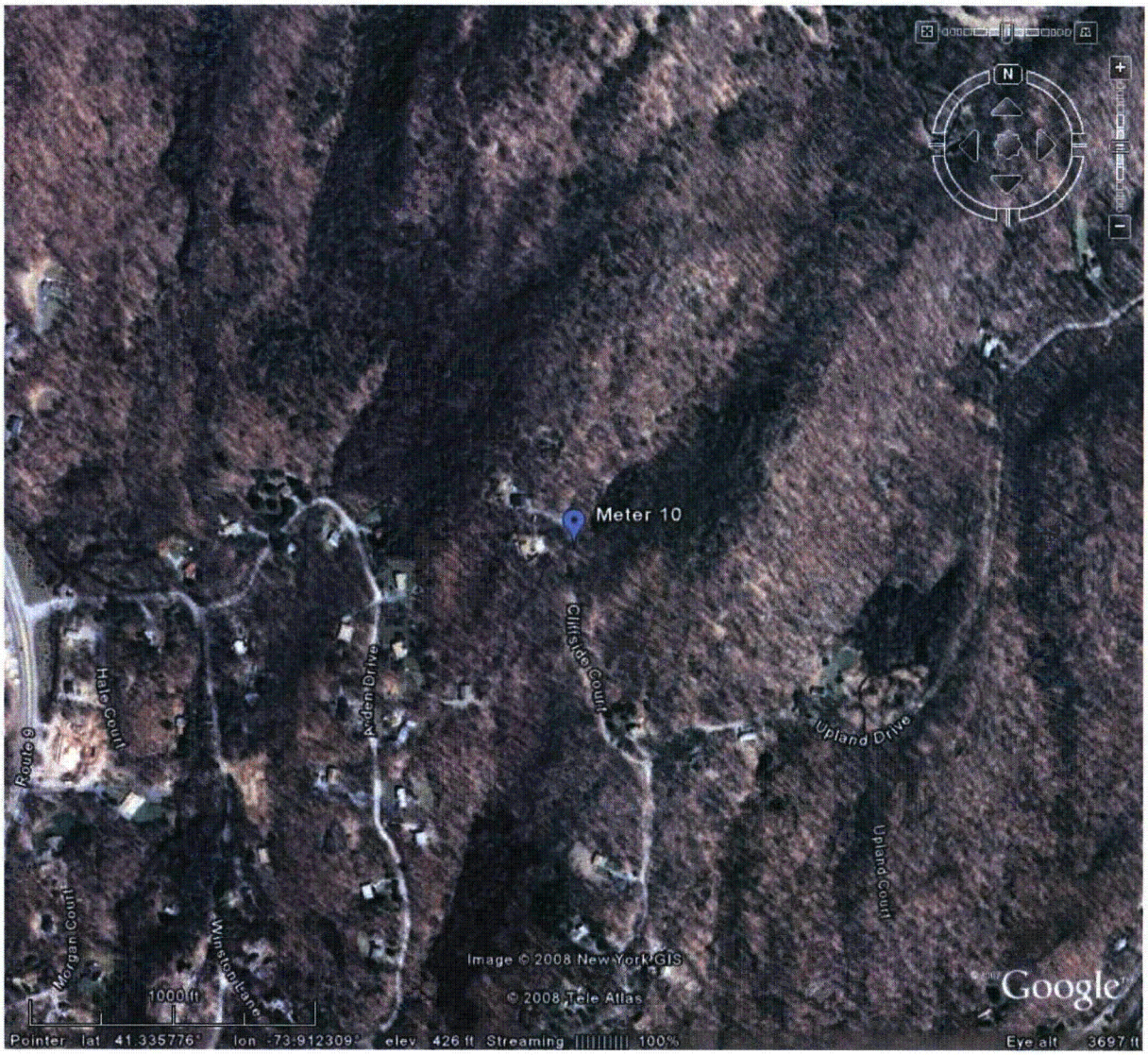


Figure 77. Aerial Photograph of Meter 10 Location, April 16, 2008.

SITE #10

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

Date: 4/16/08 Time: 569895

SLM Model: 831 SLM Serial Number: 1306 \WEATHER

Tester's Name: MJ\ Jack Huber

GPS Coordinates: _____ West _____ North

Checked Battery? (Yes) No. 5.3V

Checked Clock? (Yes) No

Memory Checked? (Yes) No

DOWNLOADED SLM ✓ \WEATHER ✓

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? (Yes) No

Calibration level after test: 94.0 dBC

30 second calibration tone recorded after test? (Yes) No

Calibrator Model: BtK 4231 Calibrator SN: 2575552

To be filled in be by the field crew at the site

Location Drawing:

Plan View
(Can also use provided map to mark location)

see attached google earth map

Major Elevation Changes

Ridge to the East
Rises from the road
to about 3 stories over
150 yd ±.

Measurement Location description: End of cul-de-sac - across street from end of dr. @ #20

Microphone height: 5'0" ft. Wind Dir: 290 deg.

Photos Taken? (Yes) No Wind Spd: 1.1 mph

Meter Recording? (Yes) No Temp: 55 °F

Weather Station on and wind cover removed? (Yes) No

Ambient noise level before test: 44 dBC

Maximum level observed during the test: 67 dBC

Could you hear the sirens? (Yes) No

Ambient noise level after test: 49 dBC

Notes about test (including background noise and noise intrusions during the test):
Wooded area, - birds, wind through trees, distant road noise.
woodpecker after test
(OVER)

Tester's Signature: _____

Figure 78. Data Sheet for Meter 10, April 16, 2008

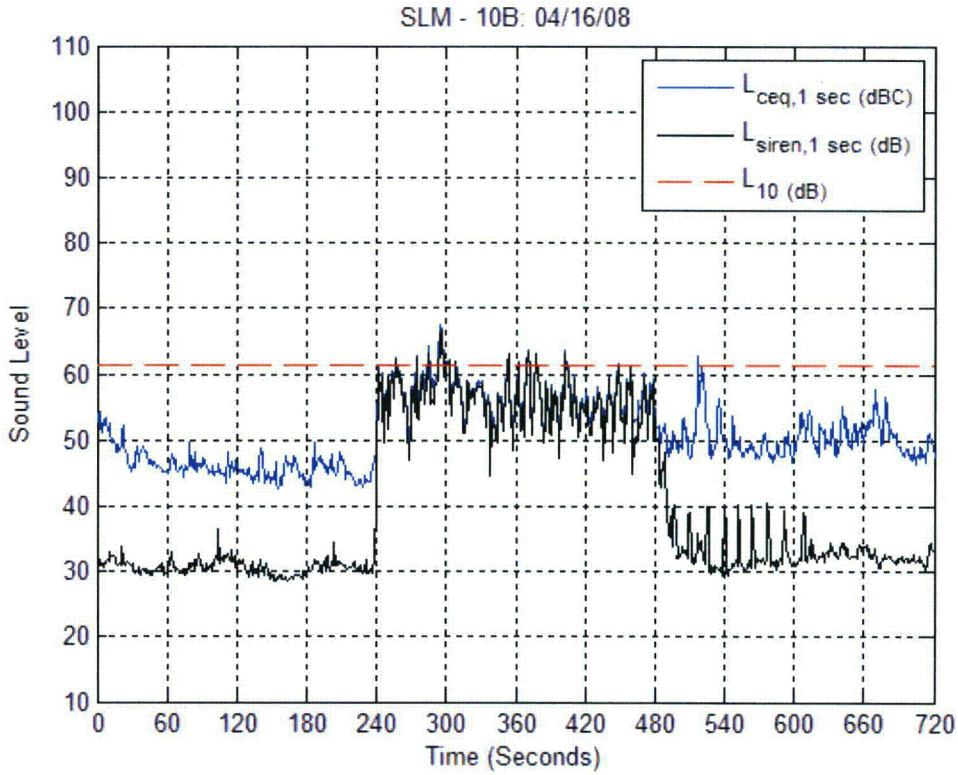


Figure 79. Time History Plot for Meter 10, April 16, 2008

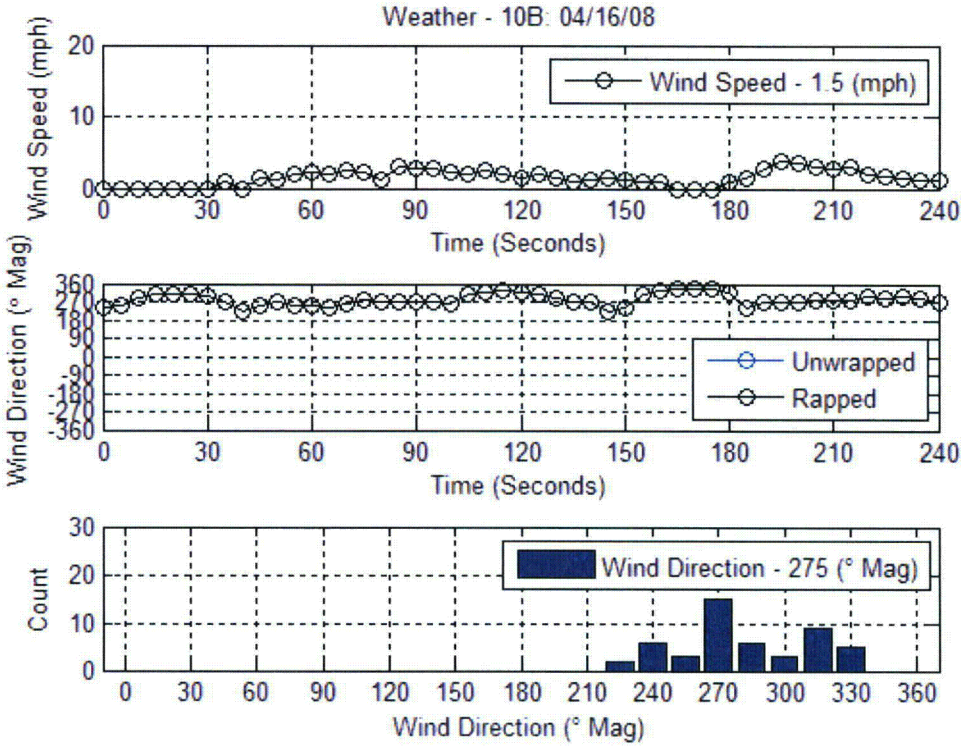


Figure 80. Weather Plots for Meter 10, April 16, 2008

Meter 11, April 15, 2008

Figure 81. Aerial Photograph of Meter 11 Location, April 15, 2008.

Indian Point Siren Test Data Sheet

----------To be filled in be at the EOF by support staff----------

Date: _____ Time: _____

SLM Model: 824 SLM Serial Number: 824A3729 / weather 570049

Tester's Name: _____

GPS Coordinates: 73° 56' 35" West 41° 20' 9" North

Checked Battery? Yes No 95%

Checked Clock? Yes No

Memory Checked? Yes No

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? Yes No

Calibration level after test: 94.0 dBC

30 second calibration tone recorded after test? Yes No

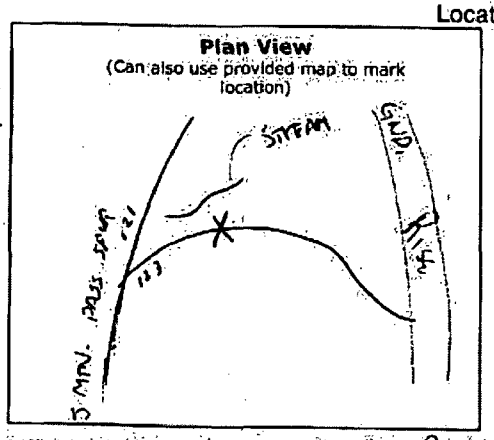
Calibrator Model: B&K 4231 Calibrator SN: 2552139

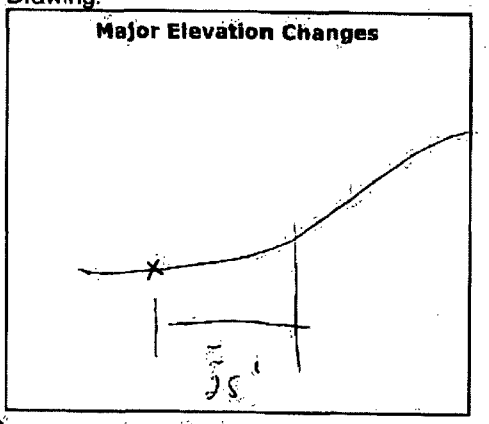
SLM & weather downloaded BJI

SITE #11

----------To be filled in be by the field crew at the site----------

Location Drawing:





Measurement Location description: ON PRIVATE RD TO 123 S. MTN PASS SPUR

Microphone height: 5'-0" ft. Wind Dir: 10 deg. *

Photos Taken? Yes No Wind Spd: 2.5-3.0 mph

Meter Recording? Yes No Temp: 41 °F

Weather Station on and wind cover removed? Yes No

Ambient noise level before test: 47-49 dBC

Maximum level observed during the test: 56 dBC

Could you hear the sirens? Yes No

Ambient noise level after test: 46-48 dBC

* VARIABLE S-SE-SW

Notes about test (including background noise and noise intrusions during the test):

@ 10:22 & 10:26 - cyclist & dog passed by. Dog was barking

Tester's Signature: _____

* There was a babbling brook ~ 25' away from the instruments

~ 10:39 Cyclist & dog returned.

Figure 82. Data Sheet for Meter 11, April 15, 2008

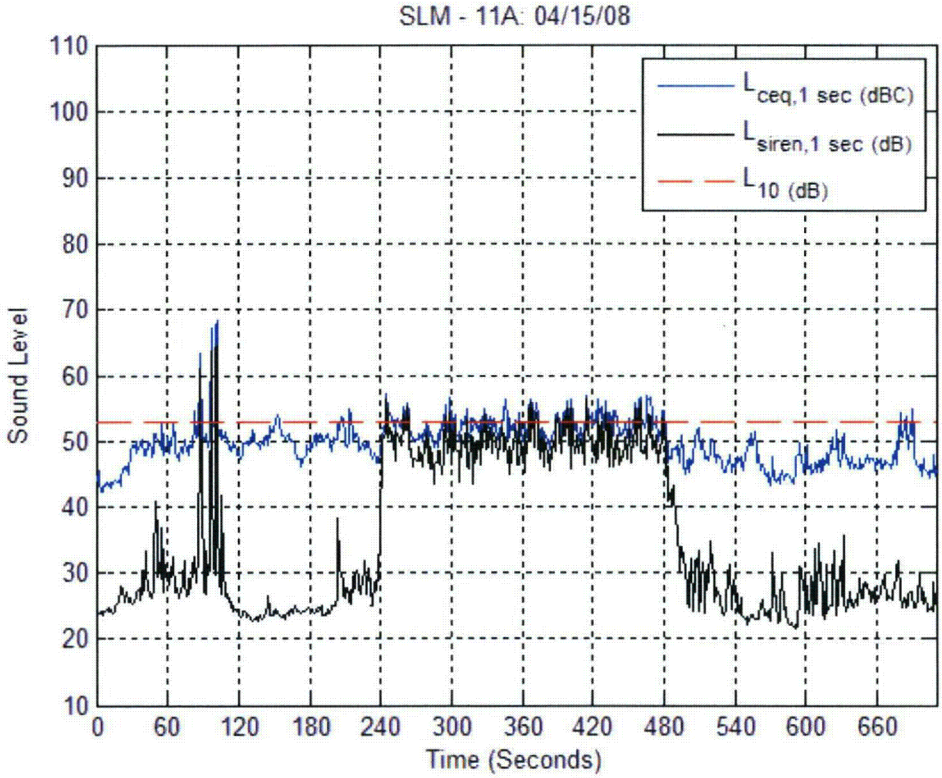


Figure 83. Time History Plot for Meter 11, April 15, 2008

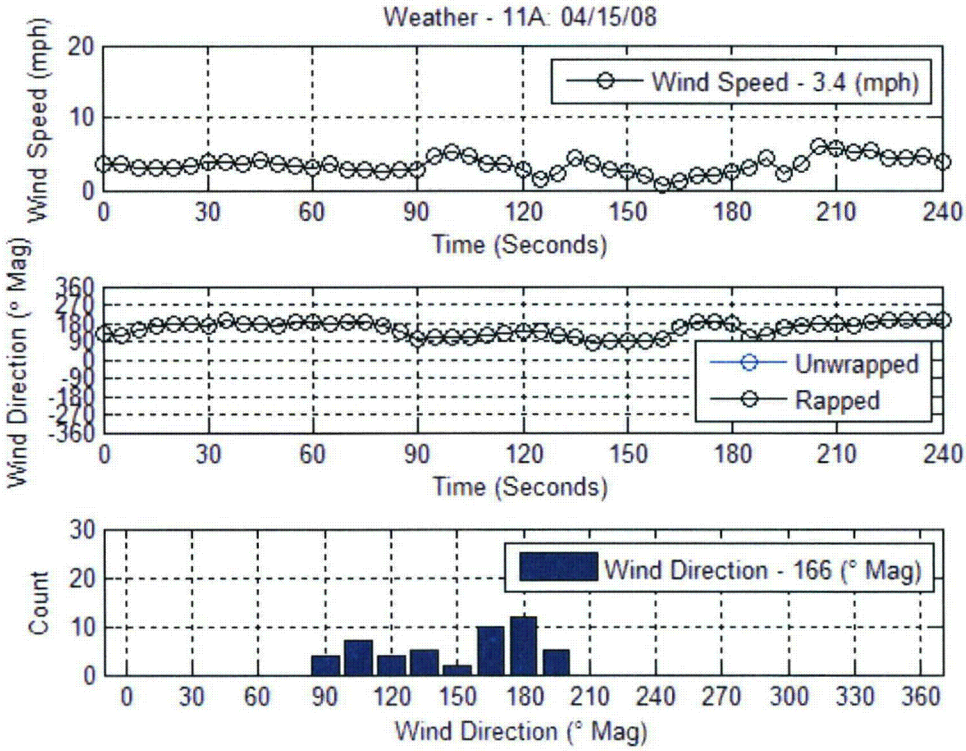


Figure 84. Weather Plots for Meter 11, April 15, 2008

Meter 11, April 16, 2008

Figure 85. Aerial Photograph of Meter 11 Location, April 16, 2008.

SITE #11

Indian Point Siren Test Data Sheet

To be filled in be at the EOF by support staff

Date: 4/16/08 Time: _____

SLM Model: ~~MX~~ 824 SLM Serial Number: 3779 \WEATHER S70049

Tester's Name: MJ

GPS Coordinates: _____ West _____ North

Checked Battery? (Yes) No

Checked Clock? (Yes) No

Memory Checked? (Yes) No

DOWNLOADED SLM✓ \ WEATHER✓

Calibration level before test: 94.0 dBC

30 second calibration tone recorded before test? (Yes) No

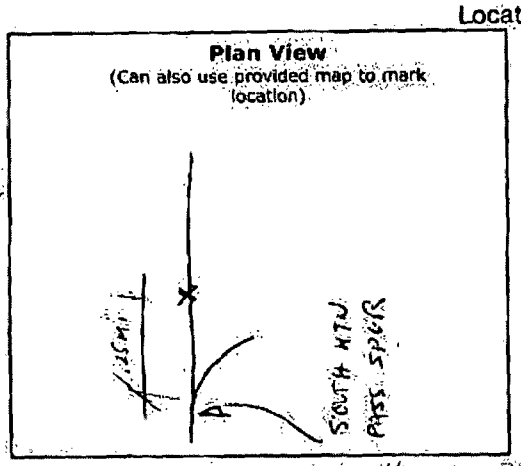
Calibration level after test: 94.0 dBC

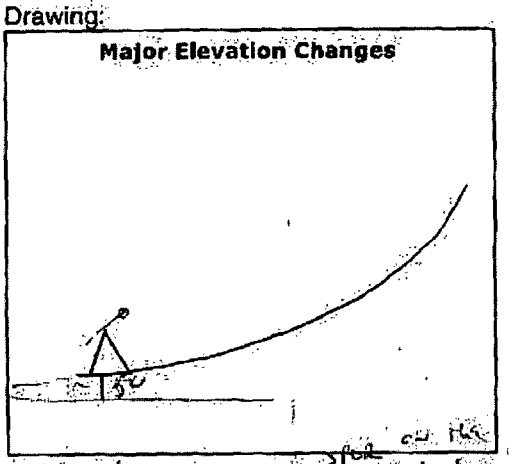
30 second calibration tone recorded after test? (Yes) No

Calibrator Model: B+K 4231 Calibrator SN: 2592139

To be filled in be by the field crew at the site

Location Drawing:





Measurement Location description: 1/4 mile Beyond the Y on SHTN PASS WSW side of road

Microphone height: 4'-0" ft. Wind Dir: 240 deg.

Photos Taken? (Yes) No Wind Spd: 3-5 mph

Meter Recording? (Yes) No Temp: 52.8 °F

Weather Station on and wind cover removed? (Yes) No

Ambient noise level before test: 40 dBC

Maximum level observed during the test: 56 dBC

Could you hear the sirens? (Yes) No

Ambient noise level after test: 45 dBC

Notes about test (including background noise and noise intrusions during the test):

NONE

Tester's Signature: _____

Figure 86. Data Sheet for Meter 11, April 16, 2008

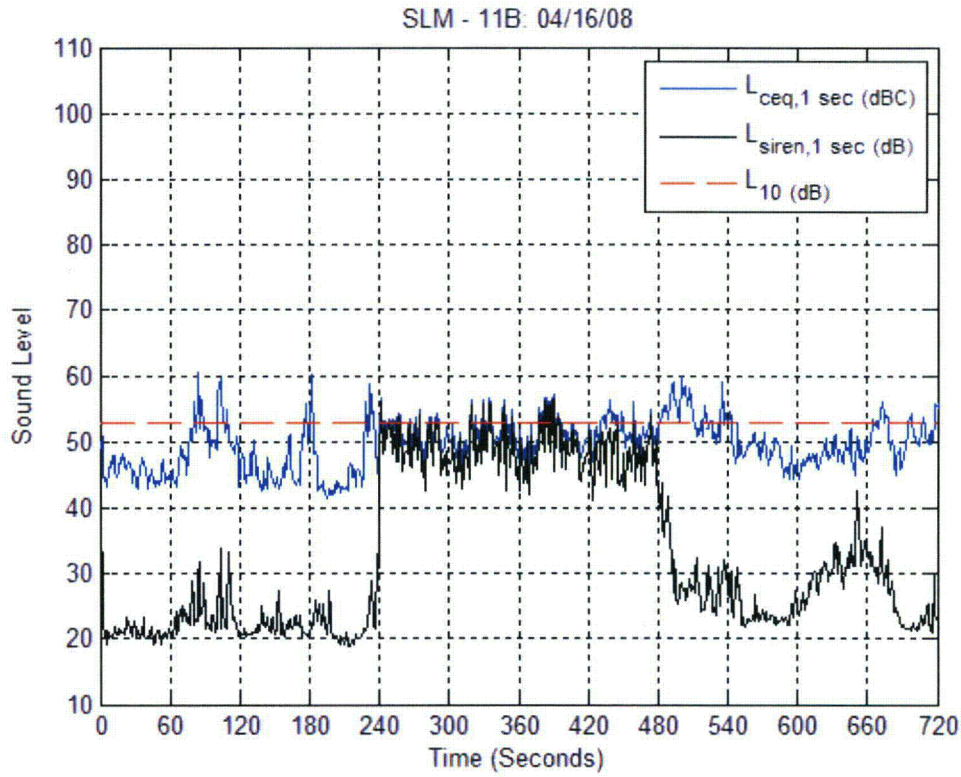


Figure 87. Time History Plot for Meter 11, April 16, 2008

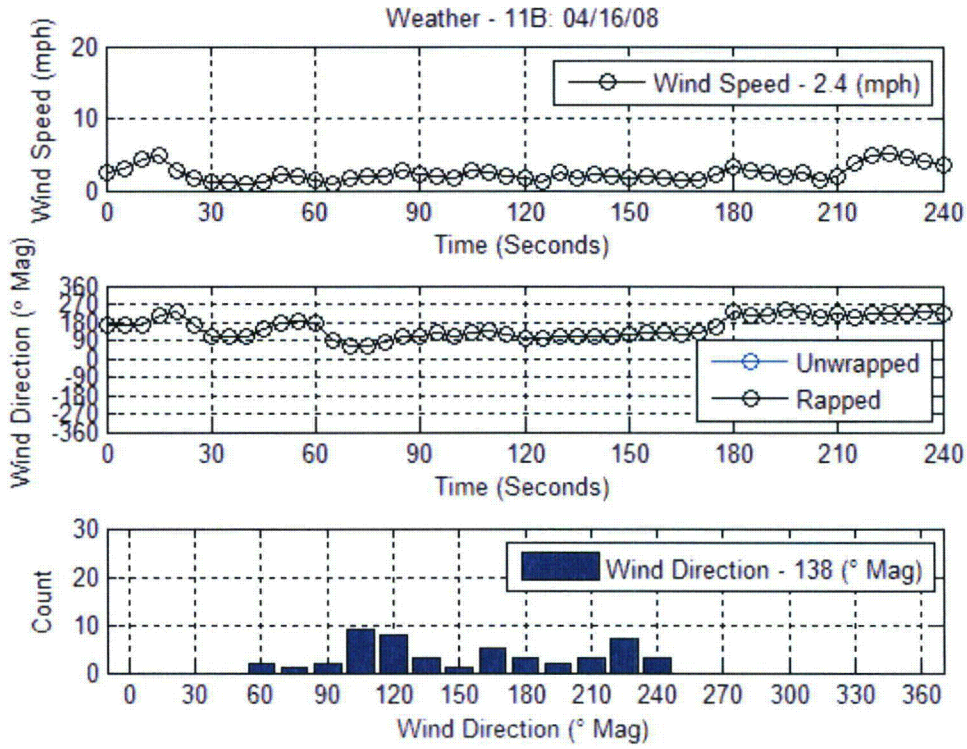


Figure 88. Weather Plots for Meter 11, April 16, 2008