

Site Information:

Project: MSU Anemometer Loan Program
Location: Beal City
Elevation: 900

Sensor on channel 1:

NRG #40 Anem, mph
Height: 100
Serial #:

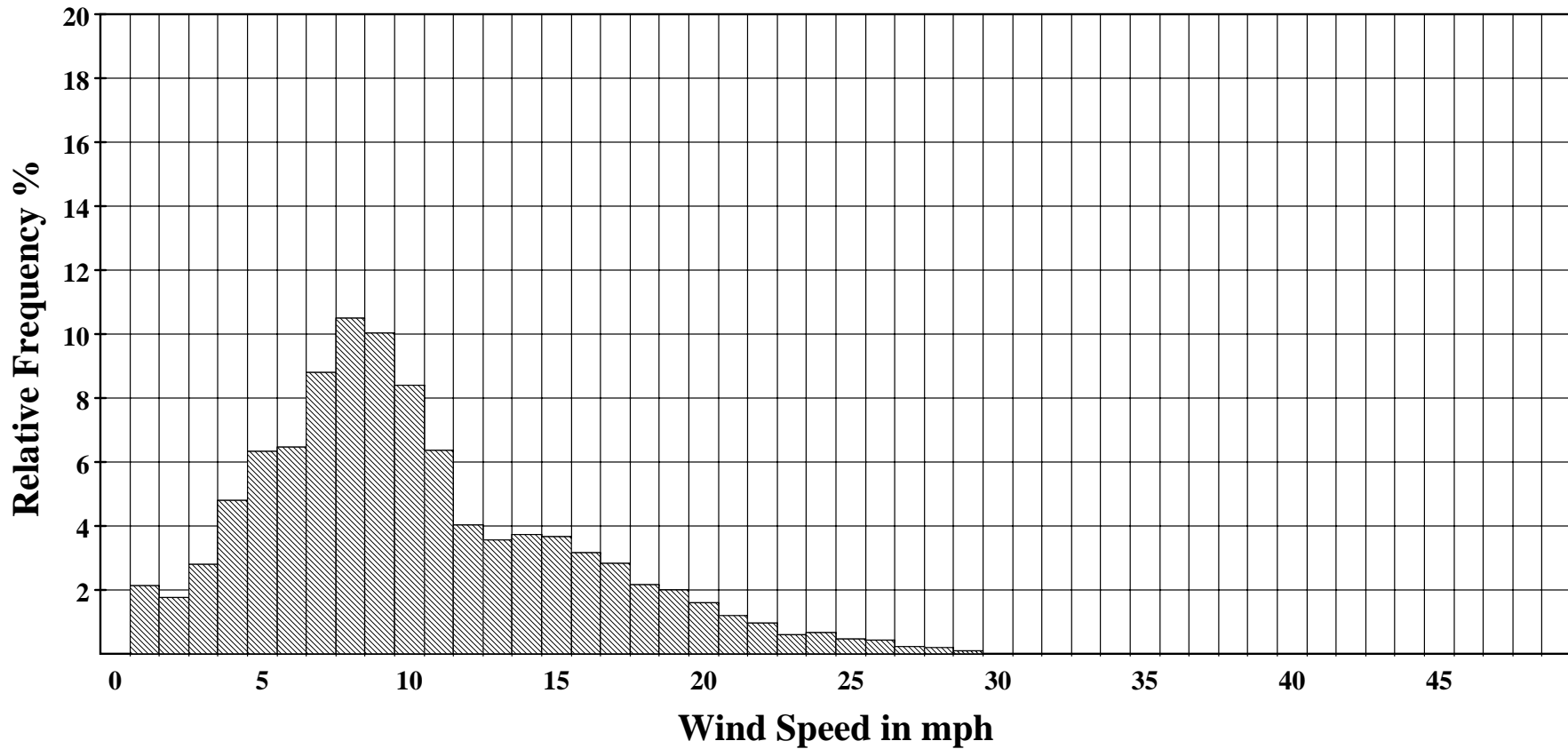
December 2009

Frequency Distribution Ch 1

SITE 1480

Beal City High School

Frequency Distribution



Site Information:

Project: MSU Anemometer Loan Program
Location: Beal City
Elevation: 900

Sensor on channel 2:

NRG #40 Anem, mph
Height: 75
Serial #:

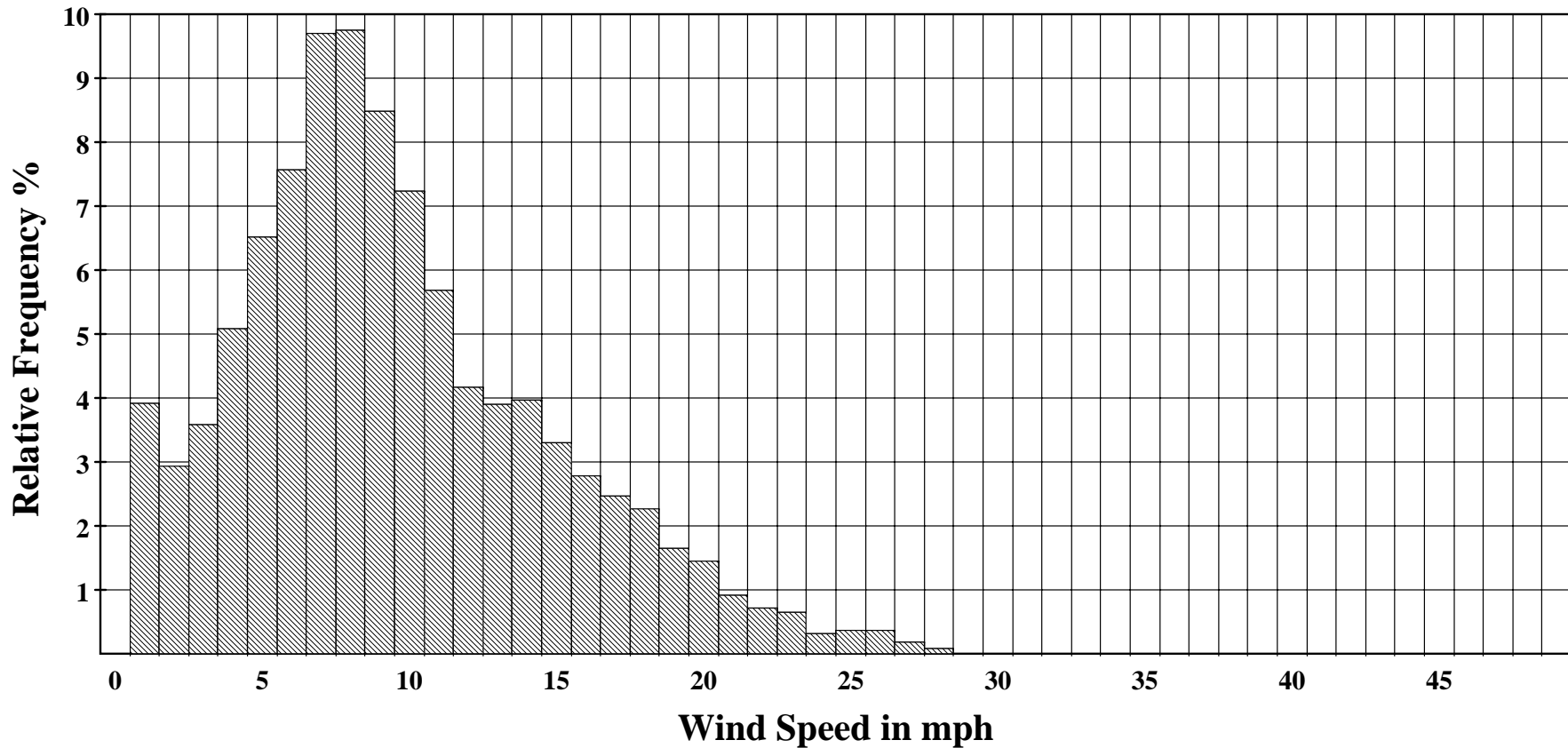
December 2009

Frequency Distribution Ch 2

SITE 1480

Beal City High School

Frequency Distribution



Site Information:

Project: MSU Anemometer Loan Program
Location: Beal City
Elevation: 900

Sensor on channel 1:

NRG #40 Anem, mph
Height: 100
Serial #:

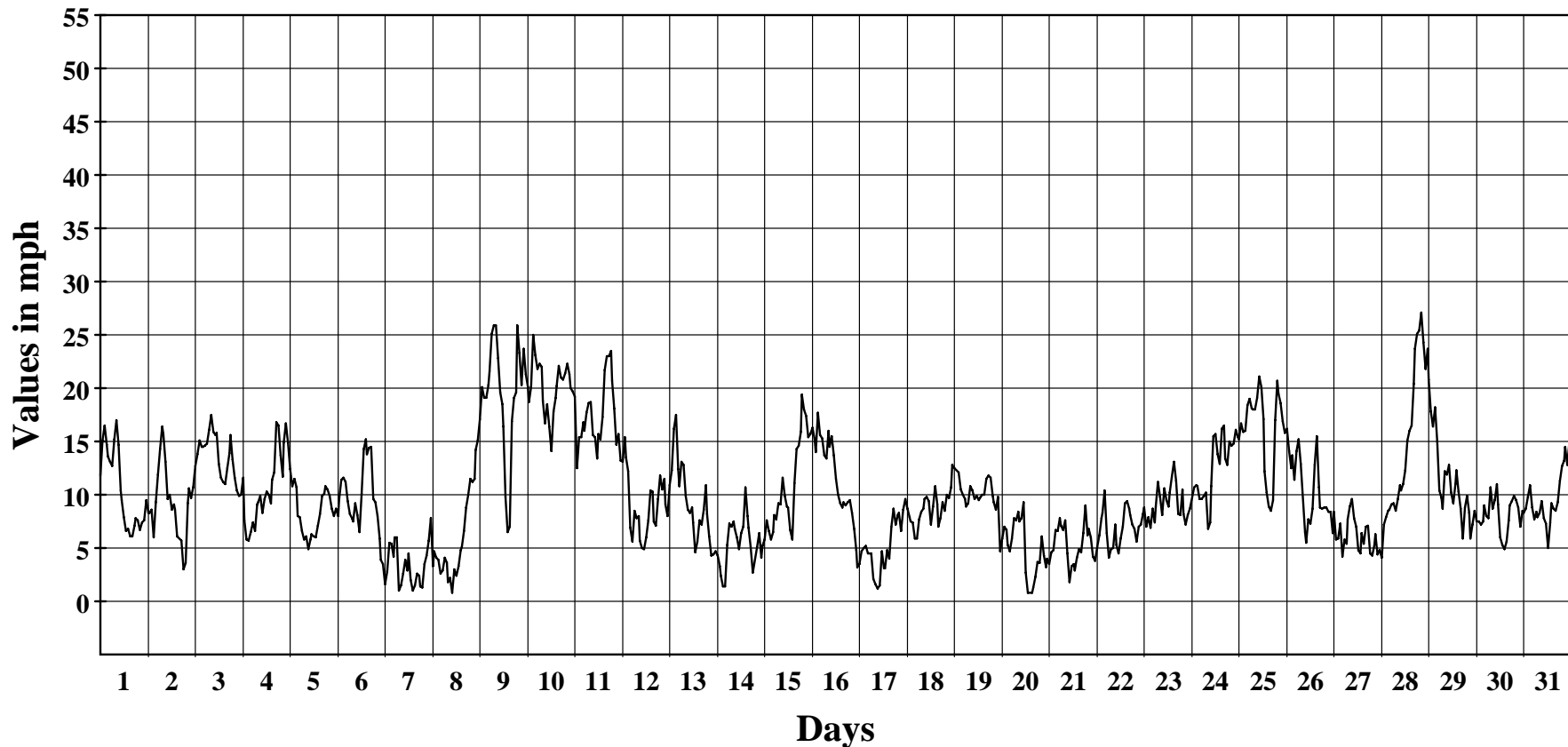
December 2009

Hourly Averages Graph Ch 1

SITE 1480

Beal City High School

Average Hourly Values



Average Value: 10.1

Site Information:

Project: MSU Anemometer Loan Program
Location: Beal City
Elevation: 900

Sensor on channel 2:

NRG #40 Anem, mph
Height: 75
Serial #:

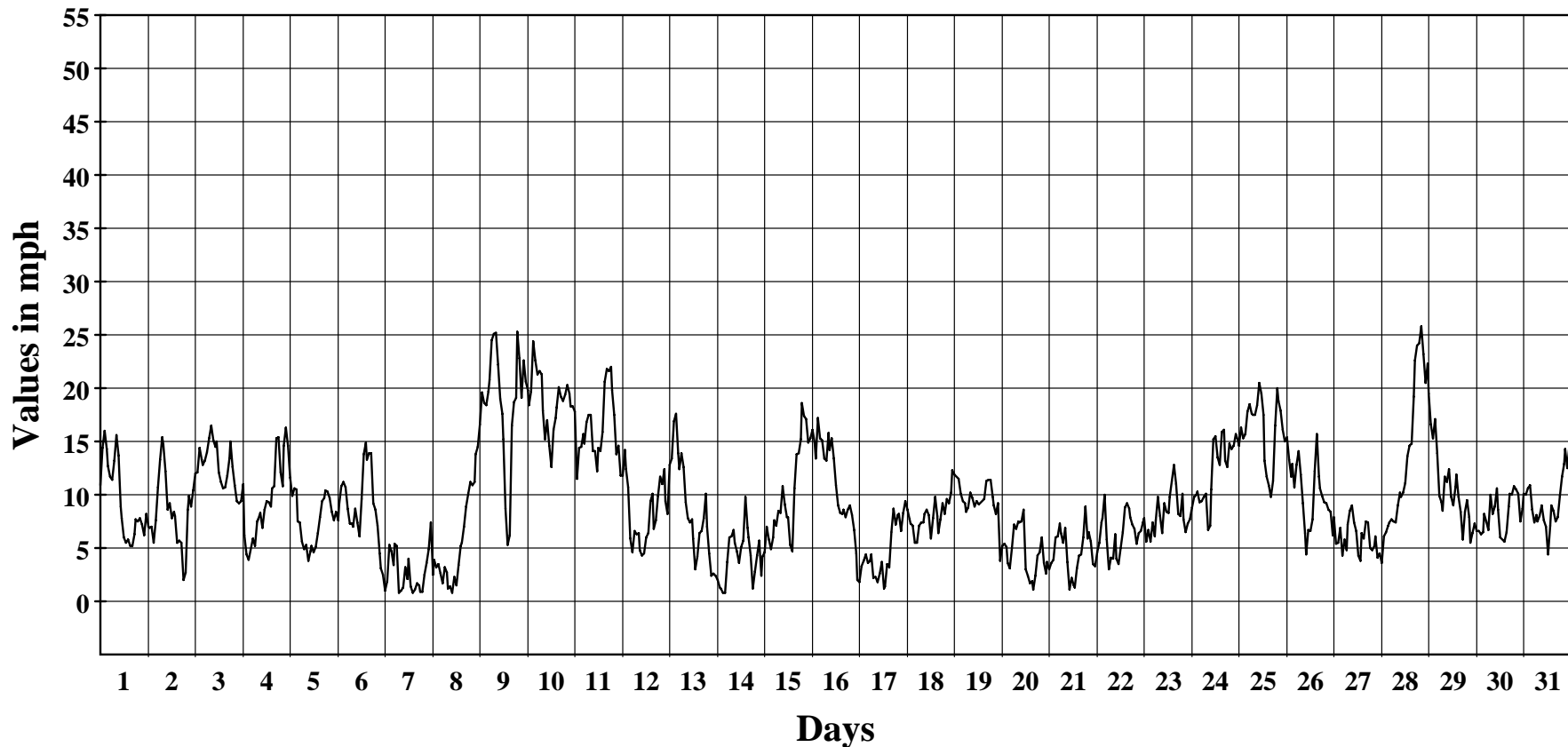
December 2009

Hourly Averages Graph Ch 2

SITE 1480

Beal City High School

Average Hourly Values



Average Value: 9.5

Site Information:

Project: MSU Anemometer Loan Program
Location: Beal City
Elevation: 900

Sensor on channel 9:

NRG 110S Temp, F
Height: 20
Serial #:

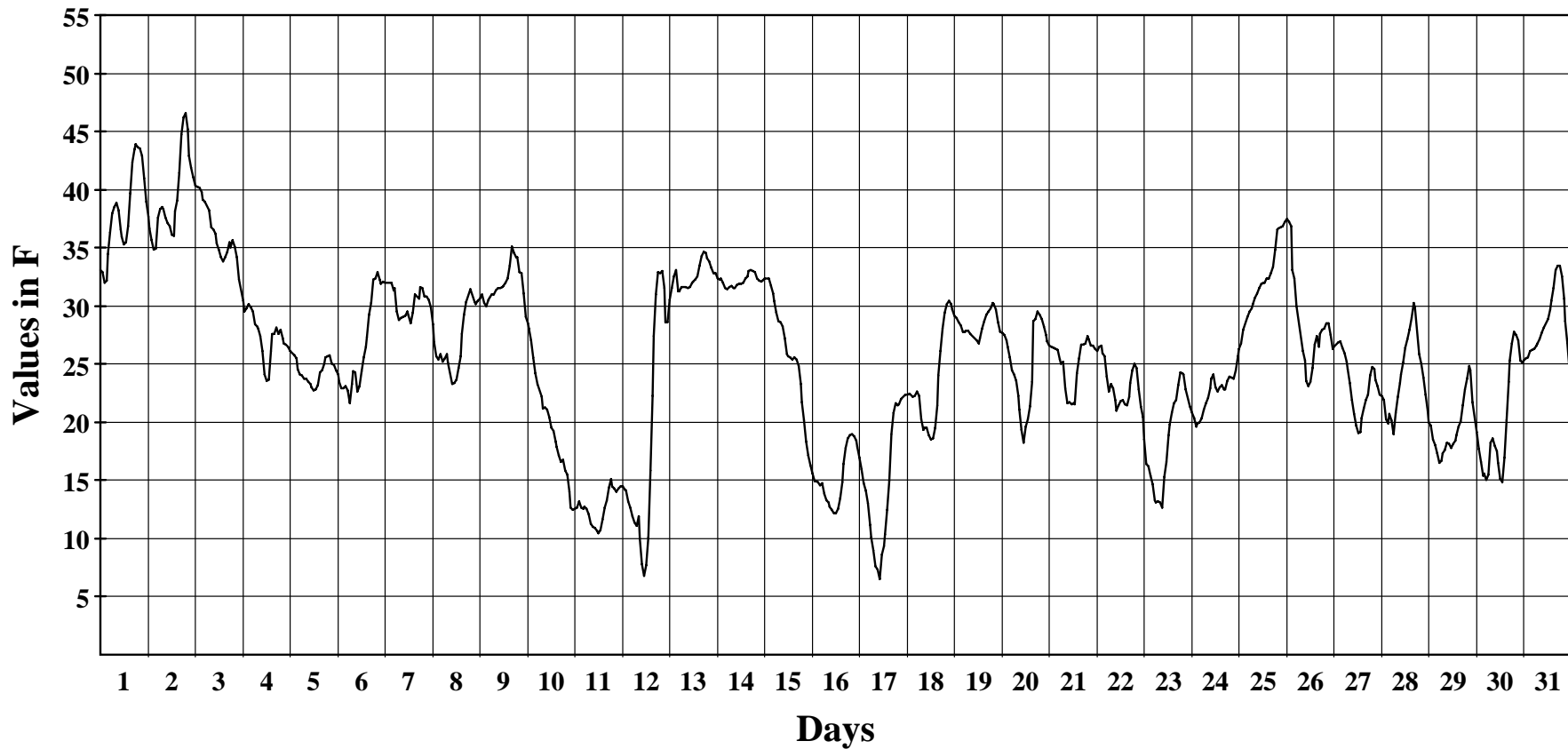
December 2009

Hourly Averages Graph Ch 9

SITE 1480

Beal City High School

Average Hourly Values



Average Value: 25.7

Site Information:

Project: MSU Anemometer Loan Program

Location: Beal City

Elevation: 900

Sensor on channel 1:

NRG #40 Anem, mph

Height: 100 Units: mph

Serial #:

December 2009**Hourly Averages Table Ch 1**

SITE 1480

Beal City High School

Day	Hour																								AVG
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	11.8	15.1	16.5	14.7	13.6	13.1	12.7	15.2	17.0	14.7	10.4	9.5	7.9	6.6	6.8	6.1	6.1	7.1	7.8	7.6	6.7	7.4	7.6	9.5	10.5
2	8.3	8.3	8.6	6.0	9.3	11.9	14.3	16.4	15.7	13.1	9.6	10.0	8.6	9.1	8.6	6.1	5.9	5.7	3.0	3.6	9.2	10.6	9.7	10.7	9.3
3	12.7	13.8	15.1	14.5	14.5	14.6	14.8	16.1	17.5	15.9	15.6	15.8	12.9	11.6	11.2	11.0	12.5	13.9	15.6	13.3	11.6	10.4	9.9	10.0	13.5
4	11.6	7.6	5.8	5.7	6.5	7.4	6.6	9.1	9.3	9.9	8.3	9.6	10.3	10.0	9.2	11.4	12.1	16.8	16.5	13.7	11.7	14.9	16.7	14.9	10.7
5	12.4	10.8	11.5	10.7	8.0	7.9	6.6	5.8	6.1	4.9	5.8	6.3	6.1	6.0	7.1	8.2	9.9	10.1	10.8	10.5	9.9	8.7	8.0	8.7	8.4
6	8.0	9.6	11.4	11.6	11.2	9.4	8.2	7.8	7.5	9.2	8.1	6.5	10.1	14.3	15.3	13.8	14.4	14.5	9.6	9.3	8.0	5.9	3.9	3.5	9.6
7	1.6	2.8	5.5	5.4	4.2	6.0	6.0	1.0	1.5	2.6	3.9	2.9	4.5	2.0	1.0	1.5	2.6	2.4	1.4	1.3	3.5	4.3	5.7	7.8	3.4
8	3.3	4.7	4.1	3.9	2.6	2.9	4.1	3.6	1.8	2.2	0.8	3.0	2.4	3.3	4.8	5.1	6.6	8.8	10.0	11.5	11.2	11.5	14.2	15.1	5.9
9	17.1	20.1	19.1	19.1	20.3	21.6	25.1	25.9	25.9	22.8	19.6	18.5	16.4	9.8	6.5	7.0	16.9	19.1	19.6	25.9	23.3	20.3	23.7	21.3	19.4
10	20.1	18.7	20.1	25.0	23.1	21.8	22.3	22.0	18.8	16.7	18.5	16.4	14.1	17.8	19.1	20.2	22.1	21.0	20.8	21.4	22.3	21.3	20.0	19.7	20.1
11	19.2	12.5	15.4	15.4	16.8	16.0	17.7	18.6	18.7	15.6	15.4	13.4	15.7	15.2	17.3	21.7	23.0	23.0	23.5	20.7	18.1	14.7	15.7	13.2	17.3
12	13.1	15.4	13.5	12.2	6.9	5.6	8.5	7.8	8.0	5.7	5.0	4.9	6.0	7.6	10.4	10.3	7.5	7.1	9.6	11.8	10.5	11.5	9.1	8.0	9.0
13	10.9	12.3	16.2	17.5	12.4	10.8	13.1	12.8	9.9	8.6	8.3	8.8	7.4	4.6	5.6	7.6	7.2	8.6	10.9	8.2	6.1	4.3	4.4	4.7	9.2
14	4.3	3.3	2.4	1.4	1.4	5.3	7.3	7.0	7.5	6.8	6.0	4.9	6.4	7.0	10.7	8.0	6.9	5.1	2.7	3.9	5.1	6.4	4.1	5.3	5.4
15	5.8	7.6	6.6	5.8	6.5	8.1	7.7	9.2	9.1	11.6	9.9	8.9	8.8	6.7	5.8	11.1	14.3	14.6	15.9	19.4	18.0	17.4	15.4	15.7	10.8
16	16.3	15.2	14.0	17.7	15.6	15.3	13.7	13.4	16.0	14.5	15.5	13.7	11.5	10.0	9.2	8.8	9.3	9.0	9.3	9.5	8.3	6.8	4.8	3.2	11.7
17	3.5	4.7	5.0	5.3	4.5	4.5	4.5	2.1	1.6	1.2	1.5	4.7	3.1	3.1	4.8	4.0	7.0	8.7	7.2	8.1	8.3	6.6	8.6	9.6	5.1
18	8.7	7.9	7.5	7.4	5.9	5.9	7.7	8.4	8.7	9.6	9.8	9.4	7.2	8.9	10.8	9.1	7.0	7.8	9.3	8.5	10.0	9.7	10.7	12.8	8.7
19	12.5	12.3	12.1	10.5	10.0	9.6	8.9	9.2	10.8	10.4	9.6	9.9	9.5	9.7	10.0	10.0	11.5	11.8	11.6	9.9	9.3	8.6	9.8	4.7	10.1
20	5.9	7.0	6.7	5.3	4.7	5.9	7.8	7.6	8.4	7.5	7.8	9.3	2.7	0.8	0.8	0.8	1.3	2.3	3.7	3.6	6.1	4.3	3.2	4.0	4.9
21	3.5	4.6	4.8	6.7	6.6	7.8	7.1	6.7	7.6	4.5	1.8	3.3	3.5	2.9	4.1	4.9	4.6	6.4	9.0	6.2	6.8	6.0	4.2	3.8	5.3
22	5.1	6.2	7.8	8.3	10.4	6.4	4.1	4.9	5.0	7.2	5.3	4.5	5.9	7.0	9.2	9.4	8.7	8.1	7.2	6.8	5.6	7.0	7.2	8.3	6.9
23	8.8	7.0	7.9	6.9	8.7	7.4	8.9	11.2	9.8	8.1	10.6	9.5	8.9	10.3	11.7	13.1	11.3	8.2	8.1	10.5	8.2	7.2	8.1	8.7	9.1
24	9.7	10.7	10.9	10.8	9.6	9.6	9.9	10.3	6.8	7.4	10.8	15.5	15.7	13.8	12.9	16.2	16.5	13.4	12.8	15.0	14.6	14.8	16.1	15.4	12.5
25	15.2	16.7	15.9	16.0	18.4	19.0	18.1	18.0	18.0	19.1	21.1	20.1	17.1	12.2	10.3	8.9	8.5	9.5	17.0	20.7	19.5	18.6	16.9	15.8	16.3
26	16.2	14.1	12.5	13.7	11.4	14.1	15.2	12.9	9.7	6.5	5.5	7.7	7.3	8.7	12.8	15.5	10.7	8.8	8.7	8.8	8.8	8.4	8.4	6.4	10.5
27	8.4	5.8	5.9	7.3	4.2	5.8	5.4	7.7	8.9	9.6	7.8	7.0	4.8	4.5	6.4	5.4	7.0	7.1	4.5	4.3	5.3	6.3	4.4	4.8	6.2
28	4.1	7.3	7.9	8.5	8.6	9.1	9.2	8.5	9.6	10.9	10.4	11.0	12.3	15.1	16.0	16.5	20.4	23.7	25.1	25.4	27.1	24.3	21.8	23.7	14.9
29	20.8	17.8	16.4	18.2	15.0	10.4	9.7	8.7	12.2	11.9	12.8	10.2	9.2	11.0	12.3	10.3	8.7	5.9	8.8	9.9	8.3	5.9	7.2	8.5	11.3
30	7.5	7.5	7.2	7.5	9.0	8.0	7.8	10.7	8.7	9.5	11.0	9.1	6.0	5.3	4.9	5.6	7.6	9.0	9.4	9.9	9.5	8.8	7.0	8.5	8.1
31	8.3	8.7	9.8	10.9	8.8	7.7	8.4	7.9	8.3	9.4	7.8	7.3	5.0	7.4	9.2	8.7	8.5	9.3	11.3	12.7	13.2	14.5	12.8	15.0	9.6
AVG	10.2	10.2	10.5	10.7	10.0	10.0	10.4	10.5	10.5	9.9	9.5	9.4	8.6	8.5	9.2	9.6	10.2	10.5	11.0	11.4	11.1	10.6	10.3	10.4	10.1

Site Information:

Project: MSU Anemometer Loan Program

Location: Beal City

Elevation: 900

Sensor on channel 2:

NRG #40 Anem, mph

Height: 75 Units: mph

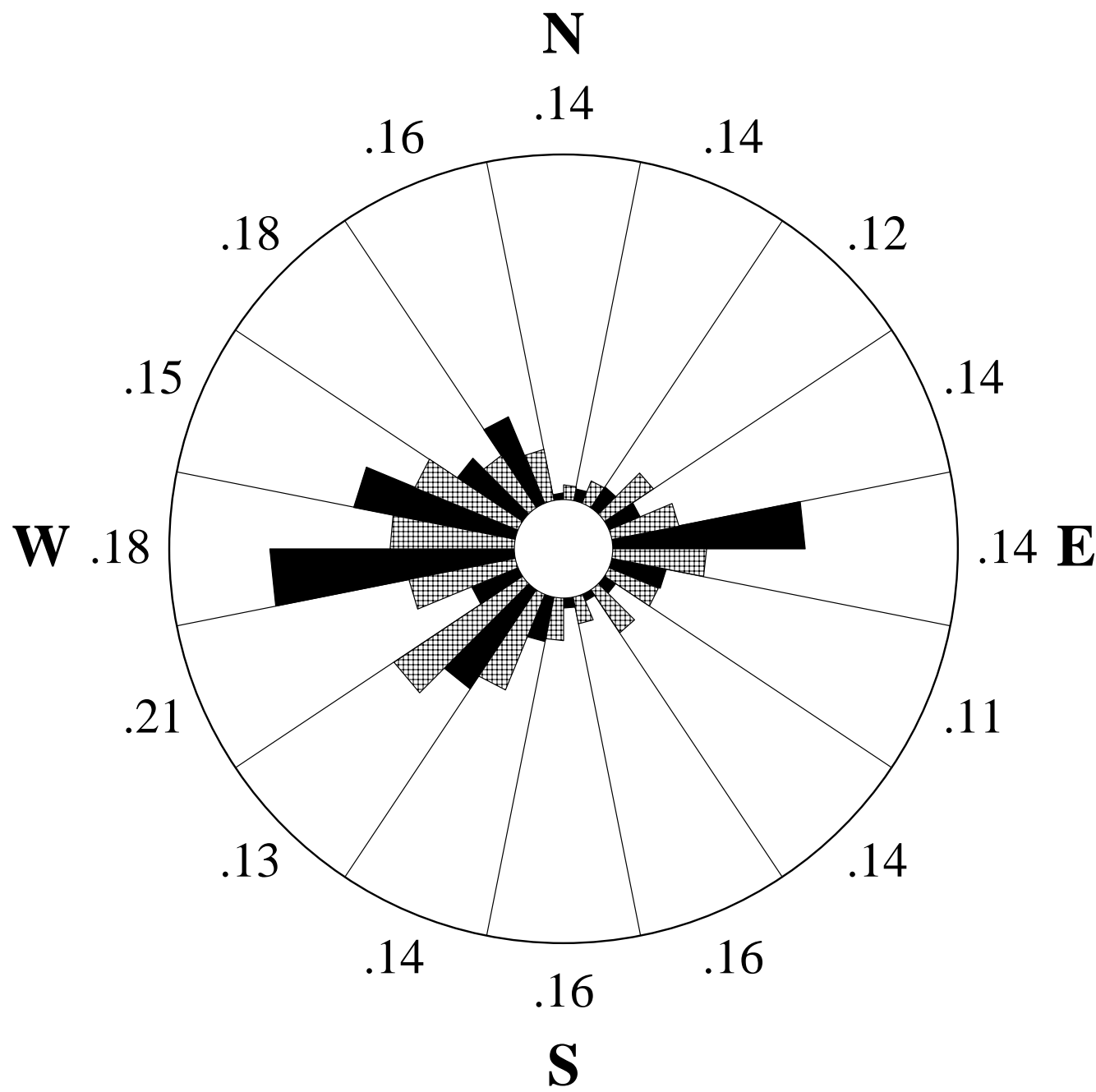
Serial #:

December 2009**Hourly Averages Table Ch 2**

SITE 1480

Beal City High School

Day	Hour																							AVG	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		23
1	10.9	14.4	16.0	14.3	12.7	11.7	11.4	13.2	15.6	13.7	8.9	7.8	6.0	5.5	5.8	5.2	5.2	6.3	7.7	7.5	7.8	7.2	6.2	8.2	9.6
2	7.0	6.9	7.0	5.5	7.6	10.7	13.3	15.4	14.7	12.2	8.6	9.2	7.8	8.4	8.0	5.5	5.7	5.5	2.0	2.7	8.6	9.9	8.9	10.4	8.4
3	12.0	12.1	14.4	13.3	12.8	13.2	14.0	15.3	16.5	15.1	14.5	15.0	12.1	11.3	10.6	10.7	11.8	13.4	15.0	12.6	10.9	9.4	9.2	9.4	12.7
4	11.0	6.2	4.4	3.9	4.9	5.9	5.2	7.5	7.7	8.3	6.9	8.6	9.4	9.3	8.9	10.6	10.8	15.3	15.4	12.1	10.8	14.6	16.3	14.6	9.5
5	11.6	9.9	10.6	10.5	7.5	7.4	5.6	4.9	5.3	3.8	4.7	5.2	4.6	5.1	6.4	7.9	9.4	9.7	10.4	10.3	9.7	8.4	7.6	8.4	7.7
6	7.6	9.1	10.8	11.2	10.7	8.7	7.3	7.3	7.0	8.7	7.4	6.1	9.6	13.8	14.9	13.3	13.9	13.9	9.2	8.6	7.1	4.5	3.1	2.5	9.0
7	1.0	1.9	5.3	4.7	3.4	5.4	5.2	0.8	1.0	1.3	3.3	2.1	4.0	1.4	0.8	1.1	1.7	1.5	0.9	0.9	2.5	3.6	4.9	7.4	2.7
8	2.5	3.9	3.2	3.5	2.6	1.7	3.2	2.7	1.2	1.4	0.8	2.3	1.5	3.4	5.2	5.5	7.0	8.9	10.1	11.2	10.9	11.2	13.8	14.5	5.5
9	16.6	19.6	18.6	18.4	19.7	20.8	24.5	25.1	25.2	22.2	19.0	17.6	15.2	8.7	5.3	6.2	16.5	18.7	19.1	25.3	22.8	19.1	22.6	20.6	18.6
10	19.8	18.4	19.7	24.4	22.6	21.3	21.6	21.3	17.9	15.2	17.0	14.6	12.6	16.1	17.2	18.2	20.1	19.3	18.8	19.4	20.3	19.5	18.3	18.3	18.8
11	17.8	11.5	14.4	14.5	15.7	14.8	16.8	17.5	17.5	14.1	14.1	12.2	14.4	14.1	15.9	20.6	21.8	21.6	22.0	19.8	17.5	13.8	14.6	11.8	16.2
12	11.8	14.2	12.4	10.7	5.9	4.6	6.6	6.3	6.4	4.8	4.3	4.5	6.0	6.4	9.4	10.1	6.8	7.6	9.9	11.7	11.0	12.4	9.4	8.2	8.4
13	12.8	13.4	16.9	17.6	13.9	12.4	13.9	12.6	9.3	7.8	7.4	7.7	5.9	3.0	4.2	6.4	6.6	7.8	10.1	7.0	4.5	2.4	2.6	2.4	8.7
14	2.0	1.3	1.2	0.8	0.8	3.7	6.0	6.1	6.7	5.5	4.7	3.6	5.1	5.7	9.8	6.9	6.0	4.3	1.2	2.8	4.3	5.7	2.4	4.2	4.2
15	4.6	7.0	5.8	4.9	6.0	7.6	7.1	8.5	8.3	10.8	9.1	7.9	7.9	5.3	4.7	10.6	13.8	13.9	15.2	18.6	17.4	17.1	14.9	15.3	10.1
16	16.1	14.9	13.4	17.2	15.3	15.1	13.4	13.2	15.8	14.2	15.3	13.4	10.9	9.0	8.3	8.2	8.6	7.9	8.6	9.0	8.1	6.7	4.5	2.0	11.2
17	1.8	3.3	3.8	4.4	3.6	3.8	4.4	2.2	2.3	1.8	2.6	3.7	1.2	1.4	3.5	3.2	6.5	8.7	7.2	8.1	8.2	6.6	8.3	9.4	4.6
18	8.6	7.7	7.3	7.1	5.5	5.5	7.1	7.4	7.4	8.2	8.6	8.1	5.9	7.8	9.8	8.0	6.4	7.7	9.2	8.2	9.6	9.2	10.2	12.3	8.0
19	11.9	11.7	11.5	10.1	9.4	9.2	8.4	8.8	10.2	9.7	8.9	9.4	9.1	9.2	9.4	9.6	11.3	11.4	11.4	9.8	9.0	8.2	9.2	3.8	9.6
20	5.2	5.4	5.1	3.6	3.1	5.0	7.2	6.8	7.5	7.4	7.5	8.6	3.0	2.4	1.7	1.9	1.1	2.4	4.3	4.6	6.0	3.6	2.6	3.7	4.6
21	3.0	3.6	3.9	6.0	6.1	7.3	6.4	5.5	6.9	3.7	1.1	2.2	1.5	1.3	3.1	4.3	4.4	6.0	8.9	5.9	6.5	5.6	3.5	3.3	4.6
22	4.6	5.5	7.4	7.8	10.0	5.8	3.0	4.1	4.0	6.3	4.0	3.5	5.0	6.5	8.8	9.2	8.7	7.9	7.2	6.8	5.4	6.4	6.6	7.4	6.3
23	7.8	5.6	6.7	5.6	7.4	6.1	7.6	9.8	8.0	6.4	9.2	8.4	8.3	9.8	11.3	12.8	11.0	8.2	8.0	10.1	7.7	6.5	7.3	7.7	8.2
24	8.8	9.8	10.0	10.3	9.3	9.4	9.8	10.1	6.7	7.1	10.5	15.2	15.5	13.5	12.8	15.9	16.1	13.2	12.6	14.8	14.3	14.6	15.7	15.1	12.1
25	14.6	16.3	15.3	15.7	17.8	18.5	17.6	17.5	17.5	18.4	20.5	19.5	17.5	13.2	11.7	10.9	9.8	11.3	16.5	20.0	18.8	17.9	16.1	15.0	16.2
26	15.4	13.3	11.7	12.9	10.7	12.8	14.1	11.9	9.2	6.4	4.4	6.7	6.6	7.7	12.2	15.7	11.7	10.6	9.9	9.3	9.2	8.6	8.4	6.2	10.2
27	7.9	5.4	5.5	6.9	4.3	5.8	4.8	7.2	8.5	9.0	7.4	6.6	4.3	3.8	6.4	5.9	7.5	7.4	5.0	4.8	5.2	6.1	4.1	4.5	6.0
28	3.6	6.1	6.5	7.1	7.4	7.7	7.5	7.4	9.0	10.2	9.8	10.2	11.1	13.6	14.6	14.8	19.2	22.6	24.0	24.2	25.8	23.2	20.5	22.3	13.7
29	19.5	16.6	15.3	17.1	13.9	9.9	9.3	8.5	11.7	11.2	12.4	9.8	9.0	10.7	11.9	9.8	8.4	5.8	8.4	9.5	7.9	5.5	6.4	7.3	10.7
30	6.6	6.6	6.3	6.5	8.2	7.5	6.7	10.0	8.2	8.9	10.6	8.6	6.0	5.8	5.6	6.5	8.9	10.1	10.0	10.8	10.5	10.1	7.5	8.7	8.1
31	10.1	10.0	10.6	10.9	8.6	7.4	8.1	7.5	8.0	9.0	7.6	7.0	4.4	7.1	9.0	8.5	7.5	7.9	9.9	11.7	12.9	14.3	12.5	14.7	9.4
AVG	9.5	9.4	9.7	9.9	9.3	9.2	9.6	9.8	9.7	9.1	8.7	8.5	7.8	7.7	8.6	9.2	9.8	10.2	10.6	10.9	10.7	10.1	9.6	9.7	9.5



December 2009

Wind Rose Ch 1, 7

SITE 1480

Beal City High School

Site Information:

Project: MSU Anemometer Loan I

Location: Beal City

Elevation: 900

Anemometer on channel 1:

NRG #40 Anem, mph

Height: 100

Serial #:

Vane on channel 7:

#200P Wind Vane

Height: 100

Serial #:

Outer Numbers are Average TIs
for speeds greater than 10 mph

Inner Circle = 0%

Outer Circle = 30%



Percent of Total Wind Energy



Percent of Total Time