

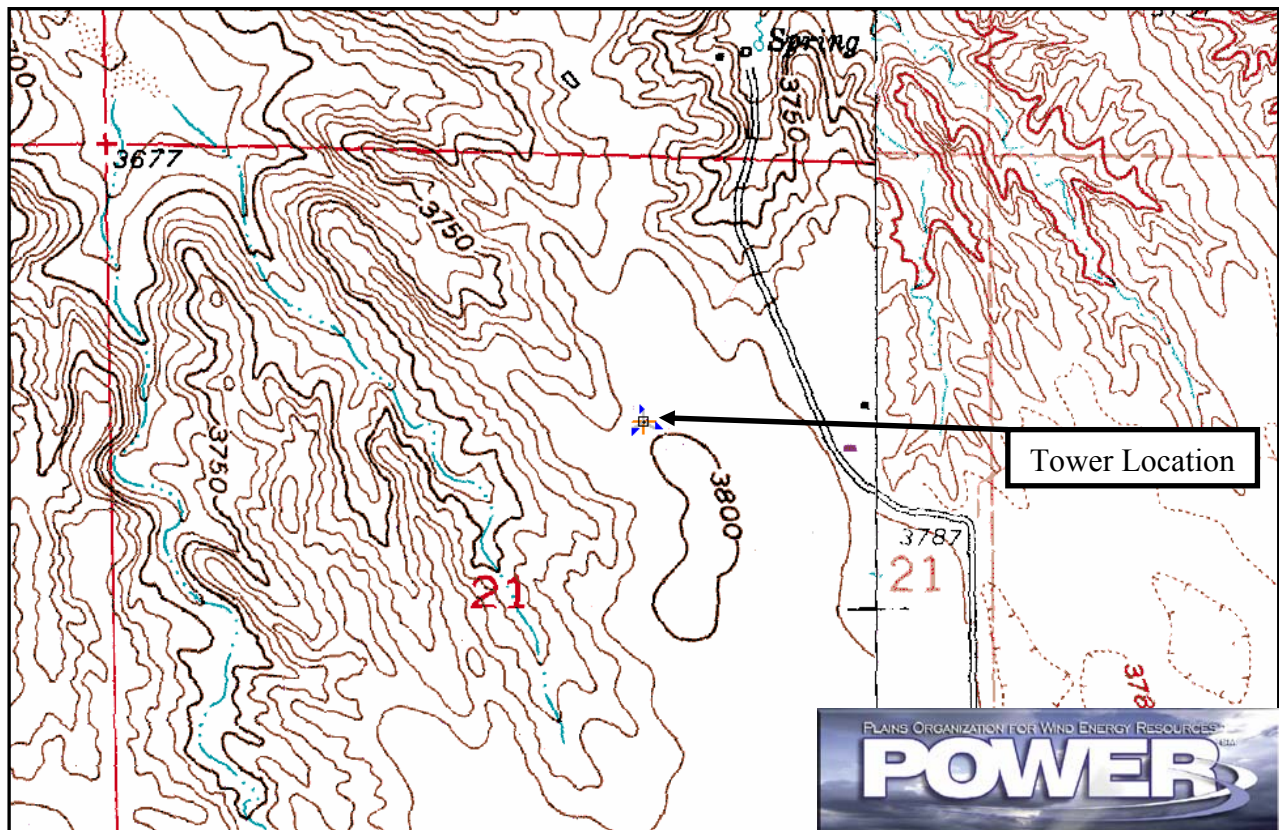
# Wind Resource Summary for Julesburg #2 Site

Sedgwick County Cooperative Extension Office  
Monitoring Period<sup>a</sup>: 1/16/2004 – 9/14/2004 & 11/27/2004 – 11/22/2005

## Site Description:

Latitude: N 40° 55' 11"	Township: 11 N
Longitude: W 102° 15' 21"	Range: 44 W
Elevation: 3795 feet	Section: 21
Tower Type: Custom Tilt-Up	Tower Height: 146 feet

The site is 4.8 miles southeast of the town of Julesburg, Colorado. The tower was erected a couple hundred feet away from the original Julesburg tower, which has since been removed from the site. The tower is instrumented at four levels: 65 ft (20 m), 105 ft (32 m), 129 ft (39 m), and 146 feet (44 m). The tower is located in a pasture that is situated on a plain above the South Platte River.



Summary Wind Data	65 ft AGL <sup>b</sup>	105 ft AGL	129 ft AGL	146 ft AGL
Mean Wind Speed	13.9 mph <sup>c</sup>	15.6 mph	15.8 mph	16.6 mph
Maximum, 10-min Mean Wind Speed	55.0 mph at 146 ft AGL – 11/12/2005 3:30 p.m.			
Estimated Wind Power Class <sup>d</sup>	Class 3 (367 W/m <sup>2</sup> at 146 ft AGL)			

<sup>a</sup> Data recovery rates at 65, 105, 129 and 146 feet were 40%, 99%, 99% and 99%, respectively.

<sup>b</sup> Above ground level.

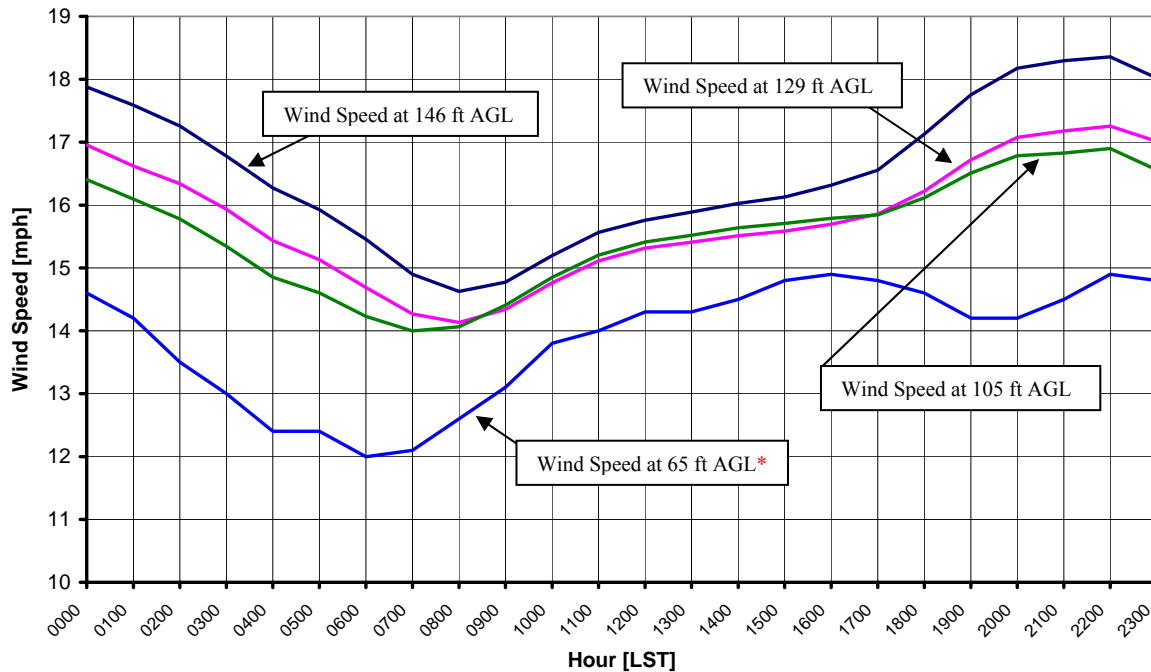
<sup>c</sup> Data is bad from 11/27/2004 to 11/22/2005. Statistics exclude bad data.

<sup>d</sup> Air temperature was not factored into calculations.

## Average Hourly Wind Speeds

LST <sup>c</sup>	146 ft AGL		129 ft AGL		105 ft AGL		65 ft AGL*	
	mph	m/s	mph	m/s	mph	m/s	mph	m/s
0000	17.9	7.99	17.0	7.58	16.4	7.33	14.6	6.51
0100	17.6	7.86	16.6	7.43	16.1	7.19	14.2	6.33
0200	17.3	7.72	16.3	7.30	15.8	7.05	13.5	6.04
0300	16.8	7.50	15.9	7.12	15.3	6.86	13.0	5.79
0400	16.3	7.27	15.4	6.90	14.9	6.64	12.4	5.54
0500	15.9	7.12	15.1	6.76	14.6	6.53	12.4	5.53
0600	15.5	6.91	14.7	6.57	14.2	6.36	12.0	5.38
0700	14.9	6.66	14.3	6.38	14.0	6.26	12.1	5.42
0800	14.6	6.54	14.1	6.32	14.1	6.29	12.6	5.63
0900	14.8	6.60	14.3	6.41	14.4	6.44	13.1	5.88
1000	15.2	6.79	14.8	6.60	14.8	6.64	13.8	6.17
1100	15.6	6.96	15.1	6.76	15.2	6.80	14.0	6.25
1200	15.8	7.04	15.3	6.85	15.4	6.89	14.3	6.38
1300	15.9	7.10	15.4	6.89	15.5	6.94	14.3	6.4
1400	16.0	7.16	15.5	6.94	15.6	6.99	14.5	6.5
1500	16.1	7.21	15.6	6.97	15.7	7.02	14.8	6.6
1600	16.3	7.29	15.7	7.02	15.8	7.06	14.9	6.65
1700	16.6	7.40	15.9	7.09	15.8	7.08	14.8	6.64
1800	17.1	7.66	16.2	7.25	16.1	7.20	14.6	6.53
1900	17.8	7.94	16.7	7.47	16.5	7.38	14.2	6.33
2000	18.2	8.13	17.1	7.63	16.8	7.50	14.2	6.35
2100	18.3	8.18	17.2	7.68	16.8	7.52	14.5	6.49
2200	18.4	8.21	17.3	7.71	16.9	7.55	14.9	6.65
2300	18.0	8.05	17.0	7.61	16.6	7.40	14.8	6.6

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<sup>c</sup> Local standard time.  
 \* 1/16/2004 to 9/14/2004 only

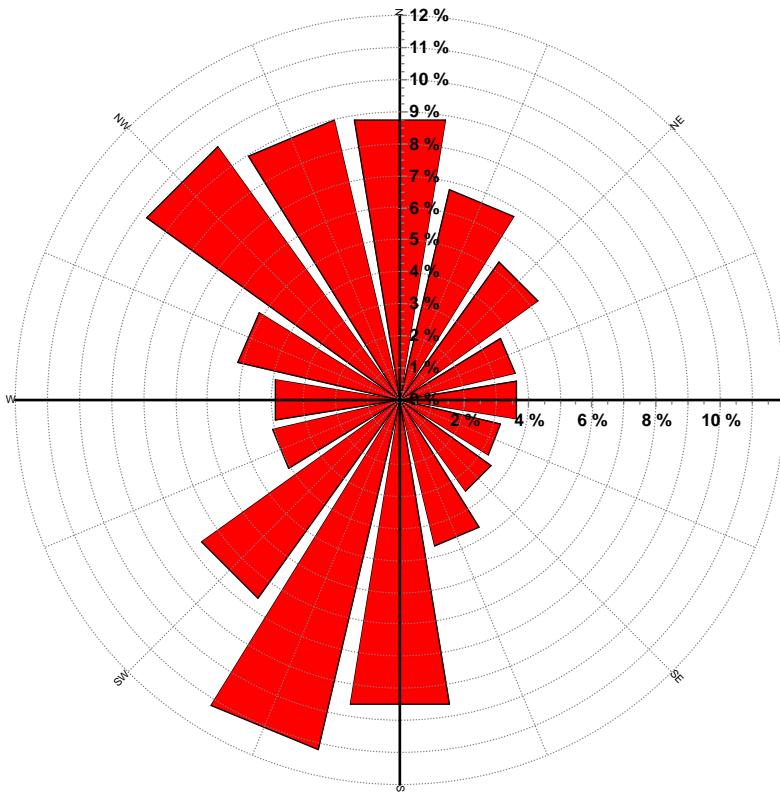


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## Wind Directional Frequency

Winds from the...	Frequency (%)
NNW	9.0
NW	9.7
WNW	5.2
W	3.9
WSW	4.1
SW	7.6
SSW	11.2
S	9.6
SSE	4.7
SE	3.5
ESE	3.2
E	3.7
ENE	3.7
NE	5.3
NNE	6.7
N	8.9

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 Wind Rose for 105 ft AGL  
 1/16/2004 – 9/14/2004 & 11/27/2004 – 11/22/2005

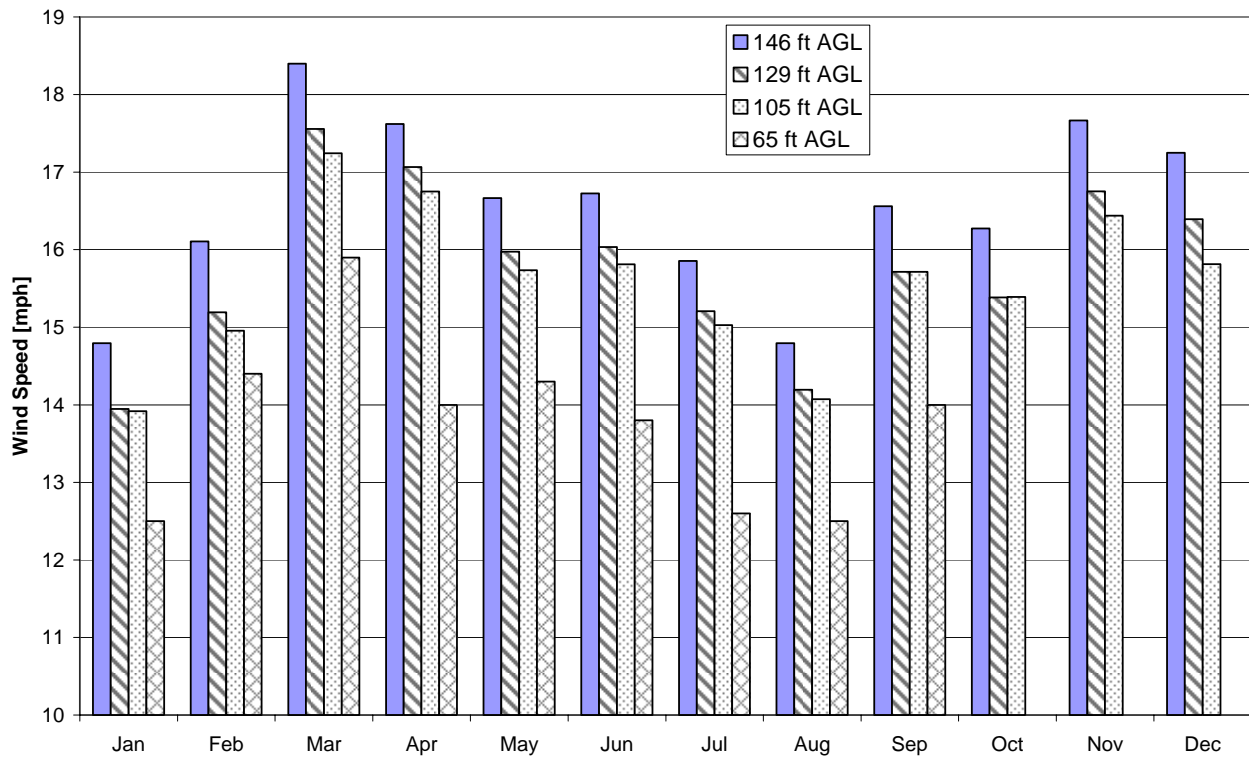


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## Monthly Wind Speed Averages

Month	146 ft AGL		129 ft AGL		105 ft AGL		65 ft AGL*	
	mph	m/s	mph	m/s	mph	m/s	mph	m/s
Jan	14.8	6.61	13.9	6.23	13.9	6.22	12.5	5.6
Feb	16.1	7.20	15.2	6.79	15.0	6.69	14.4	6.45
Mar	18.4	8.22	17.6	7.85	17.2	7.71	15.9	7.1
Apr	17.6	7.88	17.1	7.63	16.7	7.49	14.0	6.28
May	16.7	7.45	16.0	7.14	15.7	7.03	14.3	6.41
Jun	16.7	7.48	16.0	7.17	15.8	7.07	13.8	6.18
Jul	15.9	7.09	15.2	6.80	15.0	6.72	12.6	5.63
Aug	14.8	6.61	14.2	6.35	14.1	6.29	12.5	5.58
Sep	16.6	7.40	15.7	7.02	15.7	7.03	14.0	6.26
Oct	16.3	7.27	15.4	6.88	15.4	6.88	N/A	N/A
Nov	17.7	7.90	16.8	7.49	16.4	7.35	N/A	N/A
Dec	17.2	7.71	16.4	7.33	15.8	7.07	N/A	N/A

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\*Good data available only from 1/16/2004 to 9/14/2004.



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