

NORTH ISLAND NAS CA

Latitude = 32.70 N

Longitude = 117.20 W

Period of Record = 1967 to 1996

WMO No. 722906

Elevation = 26 feet

Average Pressure = 29.91 inches Hg

Design Criteria Data

	Design Value	Mean Coincident (Average) Values			
		Wet Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Dry Bulb Temperature (T)	(°F)				
Median of Extreme Highs	93	65	47	8.8	WNW
0.4% Occurrence	84	66	67	8.1	NW
1.0% Occurrence	80	66	75	8.2	NW
2.0% Occurrence	78	66	80	8.4	NW
Mean Daily Range	11	-	-	-	-
97.5% Occurrence	49	45	36	2.1	E
99.0% Occurrence	47	43	33	1.9	E
99.6% Occurrence	45	40	29	1.8	E
Median of Extreme Lows	40	35	22	2.0	E
	Design Value	Mean Coincident (Average) Values			
		Dry Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Wet Bulb Temperature (T_{wb})	(°F)				
Median of Extreme Highs	74	80	114	6.5	NW
0.4% Occurrence	72	78	106	6.7	NW
1.0% Occurrence	71	77	102	7.0	NW
2.0% Occurrence	69	75	96	7.1	NW
	Design Value	Mean Coincident (Average) Values			
		Dry Bulb Temperature (°F)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Humidity Ratio (HR)	(gr/lb)				
Median of Extreme Highs	119	77	0.80	5.3	NNW
0.4% Occurrence	110	75	0.74	6.2	NW
1.0% Occurrence	104	74	0.69	6.2	NW
2.0% Occurrence	99	74	0.67	6.3	NW
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		4	107	22	617

Other Site Data

Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
9	1.5	85	0.9 + 0.1
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
65.6	N/A	N/A	0

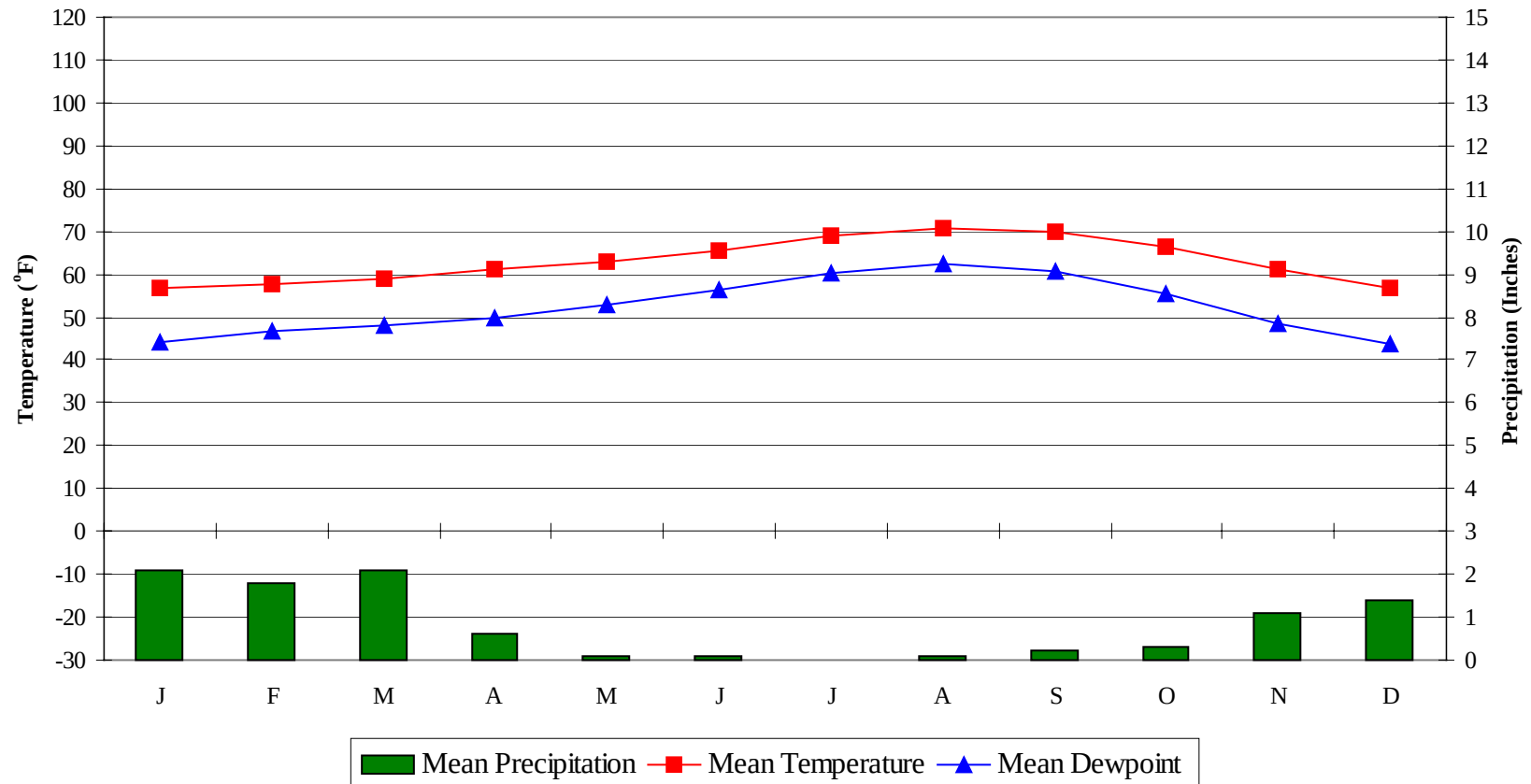
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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Average Annual Climate

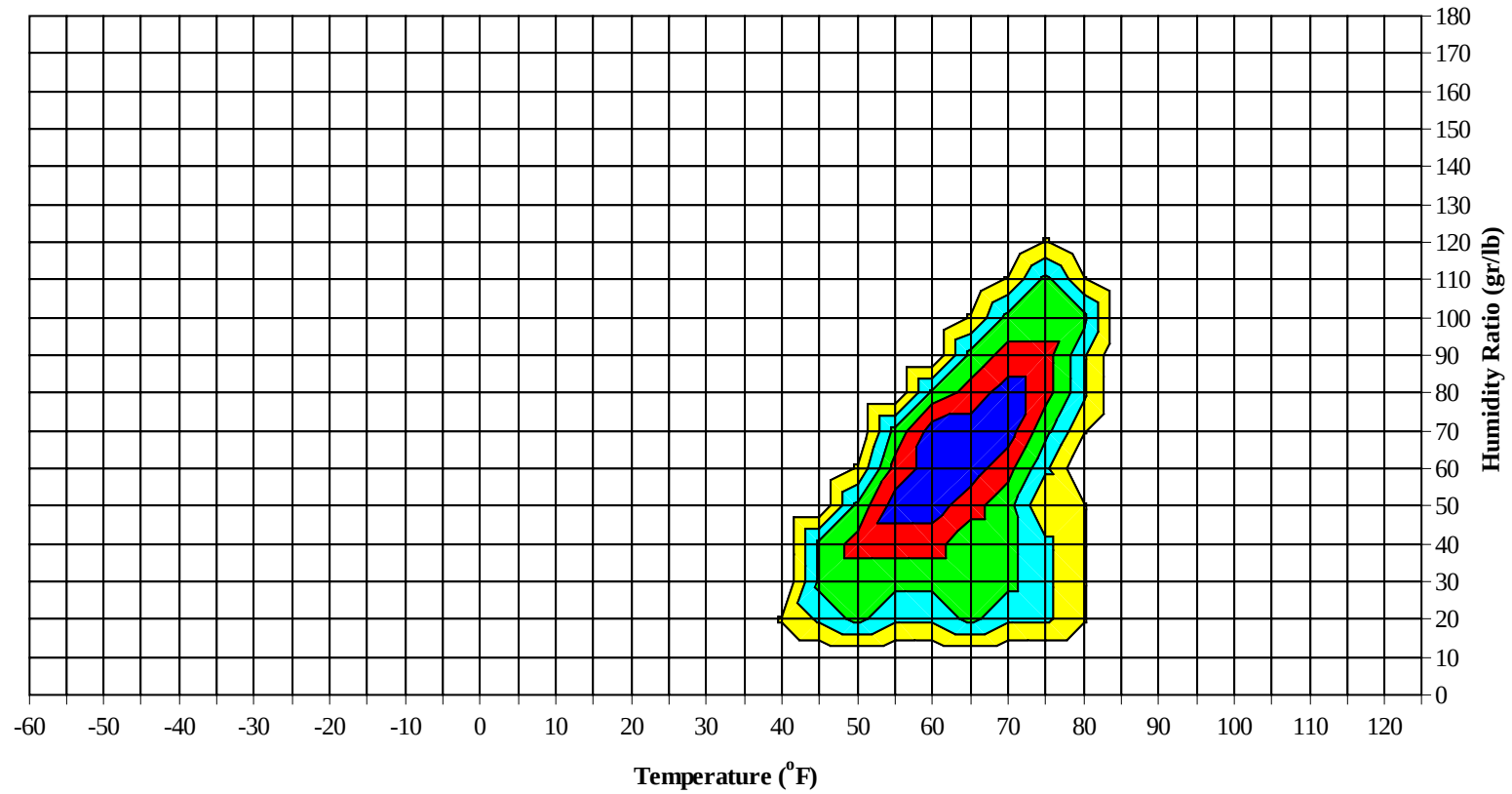


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Long Term Psychrometric Summary



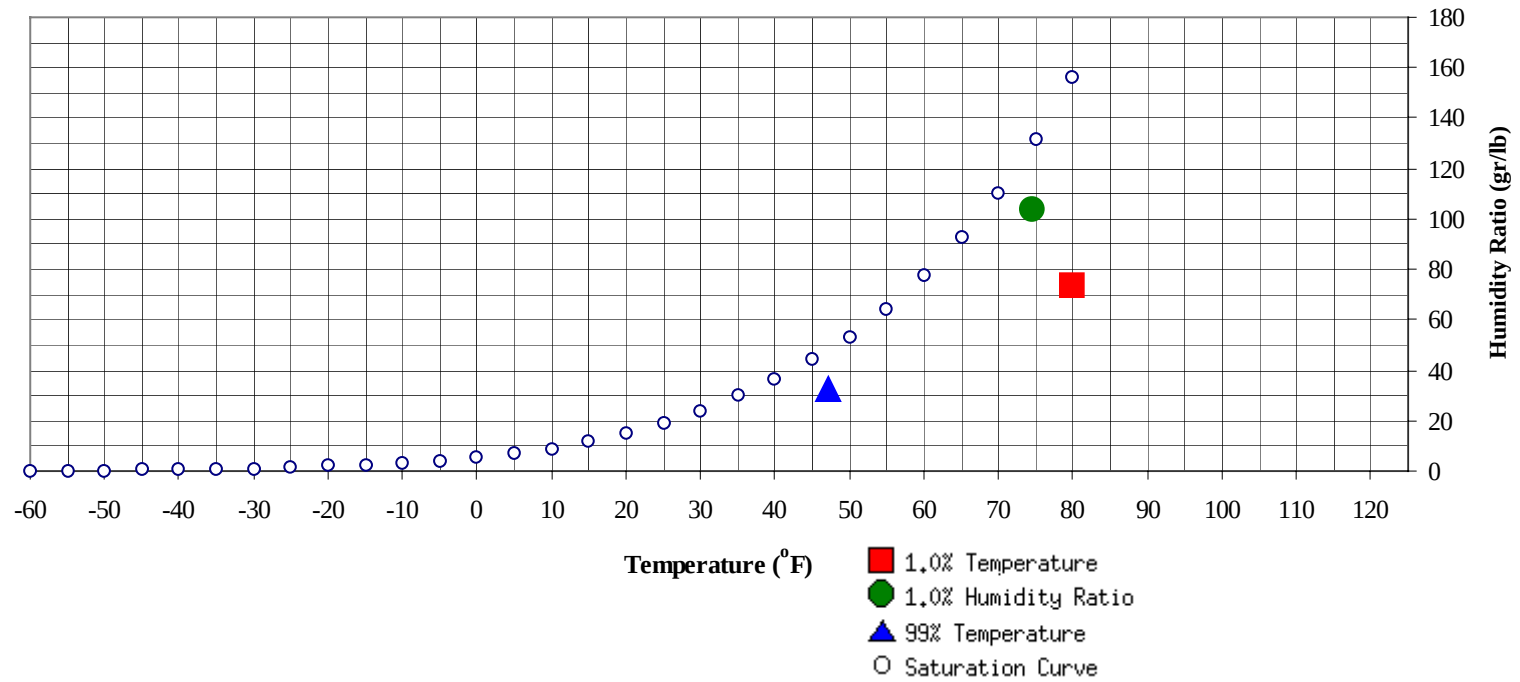
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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Psychrometric Summary of Peak Design Values



99% Dry Bulb	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)	1.0% Humidity Ratio	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
	47	32.2	16.3		103.6	74.4	70.1	68.1	34.0

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	80	73.8	65.8	30.8

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Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	January					February					March				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
105 / 109															
100 / 104															
95 / 99															
90 / 94															
85 / 89		0		0	57.0		0	0	0	58.9		0		0	61.5
80 / 84		2	0	2	56.3		2	0	2	56.8		1	0	1	59.4
75 / 79		6	0	6	54.3		6	1	7	55.7		1		1	57.5
70 / 74	0	15	2	17	53.5	0	14	3	17	54.6	0	4	0	4	56.3
65 / 69	0	30	7	37	53.5	0	33	8	41	54.6	0	12	2	14	55.6
60 / 64	11	97	47	155	54.4	15	94	56	165	55.2	1	42	11	54	56.5
55 / 59	70	74	117	261	51.9	81	62	112	255	52.5	30	125	85	240	55.3
50 / 54	94	21	63	178	47.6	91	12	40	143	48.5	131	57	127	315	52.6
45 / 49	59	2	12	73	42.9	33	1	5	39	43.5	70	6	22	98	48.3
40 / 44	13	0	1	14	37.8	4	0	0	4	38.2	15	0	1	16	43.7
35 / 39	1		0	1	34.1	0			0	31.8	1			1	39.9

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

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Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	April					May					June				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
105 / 109															
100 / 104															
95 / 99															
90 / 94		0	0	0	61.6		0		0	63.6		0		0	63.5
85 / 89		1	0	1	60.6		1		1	61.4	0	1	0	1	63.5
80 / 84	0	4	1	5	58.6	0	2	0	2	60.1	0	3	1	4	65.1
75 / 79	0	9	2	11	58.5	0	4	1	5	62.2	1	12	3	16	65.9
70 / 74	2	20	6	28	59.2	1	23	4	28	62.2	6	54	15	75	63.5
65 / 69	8	66	25	99	58.3	24	113	48	186	59.6	63	126	93	282	60.7
60 / 64	73	112	113	297	55.7	140	96	149	385	56.8	150	42	121	313	58.1
55 / 59	125	27	88	240	52.6	80	8	46	134	53.7	20	1	7	28	54.9
50 / 54	30	1	6	37	48.6	3	0	0	3	50.2					
45 / 49	2		0	2	45.2										
40 / 44															
35 / 39															

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

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Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)**Period of Record = 1967 to 1996**

Temperature Range (°F)	July					August					September				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
105 / 109												0		0	71.6
100 / 104												0		0	67.0
95 / 99												1	0	1	67.0
90 / 94		0		0	69.3		0		0	70.9	0	2	0	2	66.2
85 / 89	0	2	0	2	68.8	0	2	0	2	70.8	0	5	1	6	68.2
80 / 84	0	8	1	9	69.7	1	14	3	18	70.8	1	15	4	20	68.8
75 / 79	5	49	11	65	68.3	10	77	20	107	69.1	7	51	15	73	68.2
70 / 74	46	123	69	238	65.3	78	131	105	313	66.1	47	120	71	238	65.5
65 / 69	138	62	135	334	62.3	139	23	113	275	63.1	136	44	129	309	62.5
60 / 64	59	4	32	95	59.5	19	1	8	28	60.1	47	2	20	69	59.6
55 / 59	0		0	0	55.4	1		0	1	56.3	2		0	2	54.4
50 / 54	0			0							0			0	50.0
45 / 49															
40 / 44															
35 / 39															

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

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Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	October					November					December				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
105 / 109															
100 / 104		0		0	67.8										
95 / 99		0		0	66.6										
90 / 94		2	0	2	63.8		0		0	61.0					
85 / 89	0	4	0	4	62.1		1		1	58.8		0		0	59.0
80 / 84	0	9	1	10	61.4		5	0	5	57.5		1		1	56.2
75 / 79	1	21	5	27	62.9		14	1	15	57.1		5	0	5	53.7
70 / 74	7	85	24	116	62.9	0	30	5	35	57.1		14	1	15	53.2
65 / 69	80	104	121	306	61.0	7	88	29	124	58.0	1	39	5	45	54.5
60 / 64	113	20	86	220	58.2	59	79	110	247	56.1	13	100	49	162	54.4
55 / 59	38	2	10	50	53.3	98	21	78	196	52.5	60	69	115	244	51.5
50 / 54	8	0	1	9	48.0	63	2	17	82	47.7	100	17	66	182	47.3
45 / 49	0		0	0	41.0	13		1	14	42.6	62	2	12	76	42.6
40 / 44						1			1	38.0	12	0	1	13	37.2
35 / 39											1			1	32.2

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

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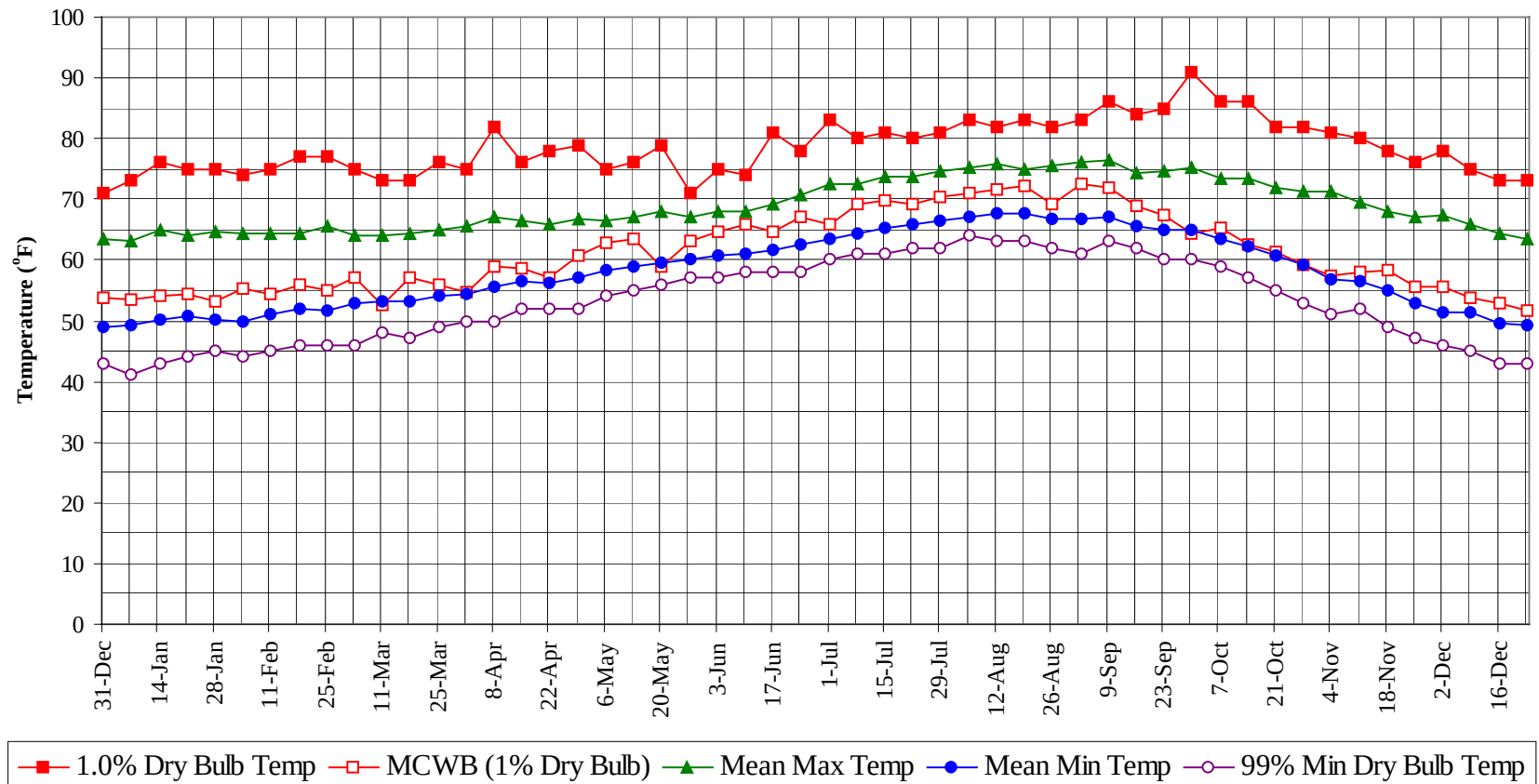
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1967 to 1996

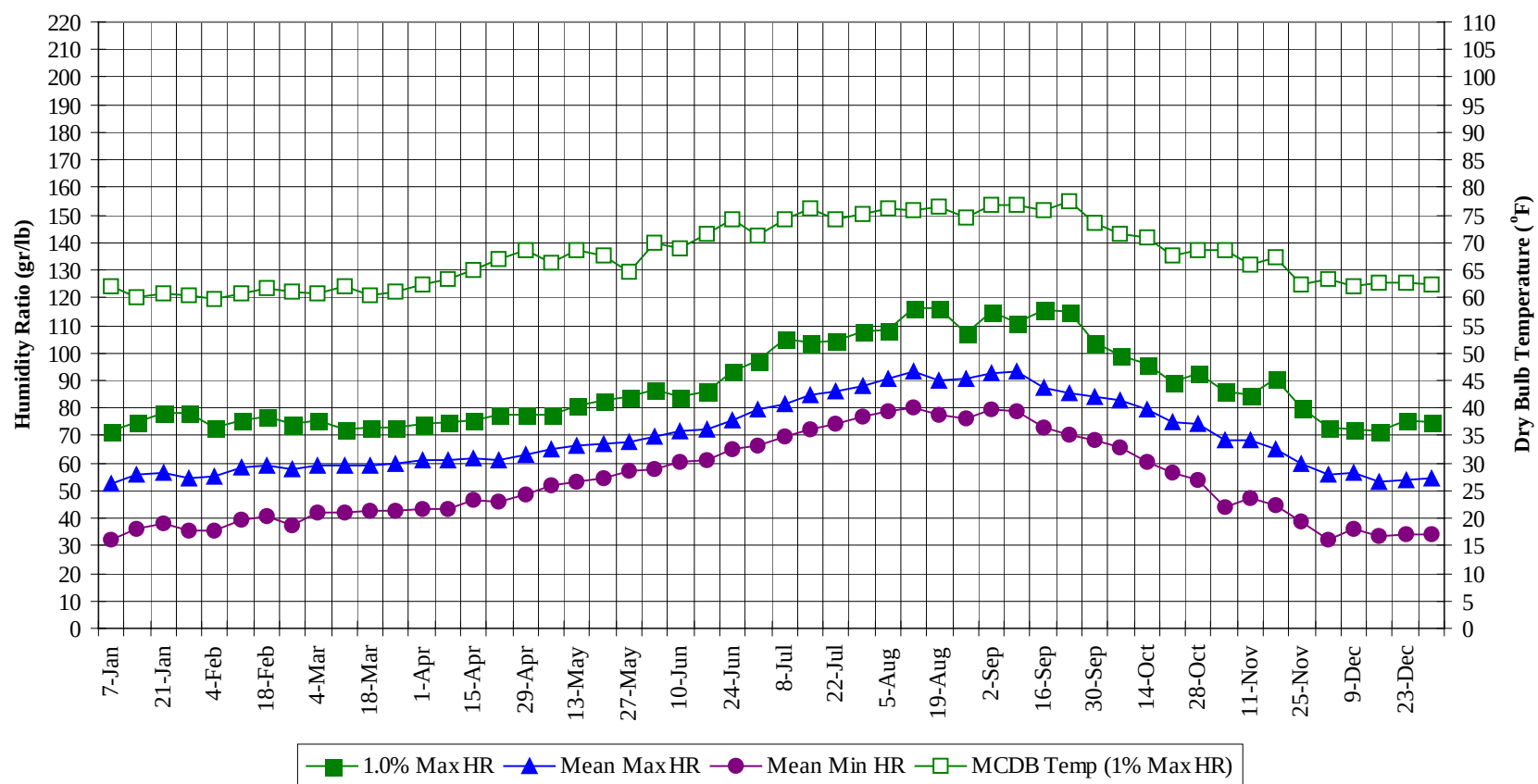
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
105 / 109		0		0	71.6
100 / 104		0		0	67.4
95 / 99		2	0	2	66.2
90 / 94	0	6	0	6	65.0
85 / 89	0	18	3	21	65.5
80 / 84	2	65	11	78	65.7
75 / 79	24	260	59	343	66.2
70 / 74	189	640	307	1136	64.1
65 / 69	597	769	721	2087	60.7
60 / 64	726	774	874	2374	56.5
55 / 59	708	321	699	1728	52.5
50 / 54	459	59	214	732	47.9
45 / 49	184	5	31	220	42.9
40 / 44	30	0	2	32	37.6
35 / 39	2		0	2	33.2

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



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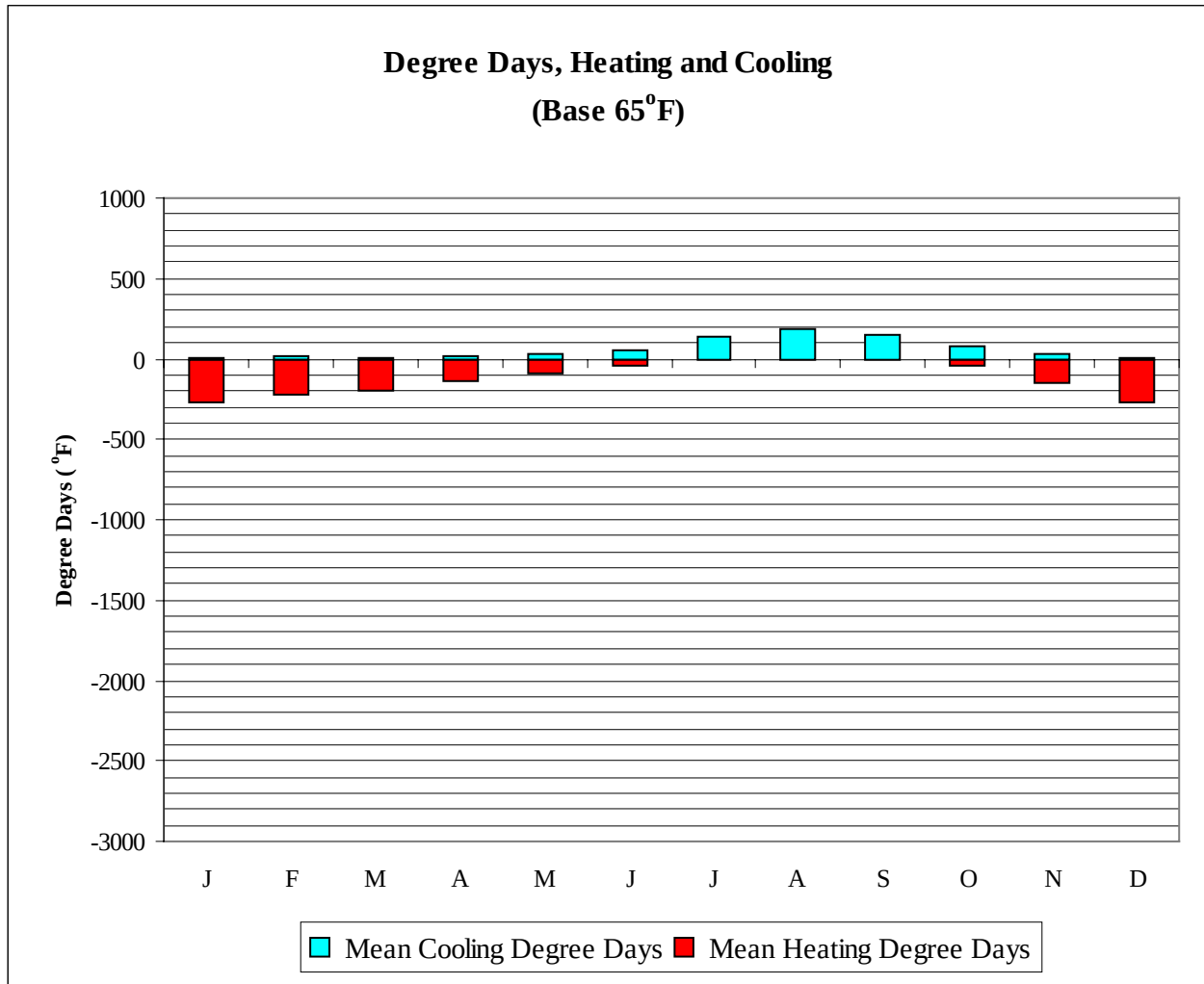
Long Term Dry Bulb Temperature and Humidity Summary

Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	73.0	53.5	63.2	49.3	41.0	71.4	62.0	52.4	32.1
14-Jan	76.0	54.2	64.9	50.3	43.0	74.9	60.2	56.0	36.3
21-Jan	75.0	54.3	64.1	50.7	44.0	78.4	60.6	56.3	38.2
28-Jan	75.0	53.2	64.6	50.1	45.0	78.4	60.6	54.5	35.4
4-Feb	74.0	55.1	64.2	50.0	44.0	72.8	59.8	55.4	35.3
11-Feb	75.0	54.3	64.3	51.1	45.0	75.6	60.8	58.3	39.2
18-Feb	77.0	55.9	64.4	52.0	46.0	77.0	61.6	59.4	40.4
25-Feb	77.0	54.9	65.4	51.5	46.0	74.2	61.1	57.6	37.4
4-Mar	75.0	57.1	64.0	52.9	46.0	75.6	60.8	59.4	42.3
11-Mar	73.0	52.6	64.0	53.3	48.0	72.1	62.1	58.8	42.1
18-Mar	73.0	57.3	64.5	53.3	47.0	72.8	60.4	59.1	42.4
25-Mar	76.0	56.0	65.1	53.9	49.0	72.8	61.0	59.9	43.0
1-Apr	75.0	54.7	65.4	54.5	50.0	74.2	62.3	60.8	43.2
8-Apr	82.0	59.0	67.2	55.6	50.0	74.9	63.4	61.4	43.4
15-Apr	76.0	58.6	66.5	56.5	52.0	75.6	65.0	62.0	46.9
22-Apr	78.0	57.2	66.0	56.3	52.0	77.7	66.9	60.9	45.7
29-Apr	79.0	60.8	66.7	57.2	52.0	77.7	68.8	63.4	48.4
6-May	75.0	62.7	66.6	58.4	54.0	77.7	66.2	64.8	51.7
13-May	76.0	63.5	67.1	58.9	55.0	80.5	68.5	66.0	53.5
20-May	79.0	59.0	67.9	59.5	56.0	82.6	67.7	67.3	54.4
27-May	71.0	63.2	67.1	60.0	57.0	84.0	64.8	67.4	56.9
3-Jun	75.0	64.7	67.8	60.6	57.0	86.8	69.9	69.4	57.9
10-Jun	74.0	65.8	68.1	60.9	58.0	84.0	68.9	71.7	60.4
17-Jun	81.0	64.5	69.3	61.7	58.0	86.1	71.5	72.6	60.9
24-Jun	78.0	67.0	70.6	62.4	58.0	93.1	74.2	75.7	64.7
1-Jul	83.0	66.0	72.4	63.4	60.0	97.3	71.3	79.2	66.6
8-Jul	80.0	69.1	72.4	64.2	61.0	105.0	74.3	81.2	69.9
15-Jul	81.0	69.9	73.7	65.3	61.0	103.6	76.2	84.5	72.0
22-Jul	80.0	69.3	73.9	65.9	62.0	104.3	74.3	86.2	73.9
29-Jul	81.0	70.3	74.6	66.5	62.0	107.8	75.0	88.0	76.6
5-Aug	83.0	70.9	75.1	67.1	64.0	108.5	76.2	90.8	78.8
12-Aug	82.0	71.7	75.8	67.8	63.0	116.2	76.0	93.3	80.2
19-Aug	83.0	72.1	75.0	67.5	63.0	116.2	76.6	90.1	77.5
26-Aug	82.0	69.1	75.5	66.8	62.0	107.1	74.5	90.4	76.4
2-Sep	83.0	72.5	76.0	66.9	61.0	114.8	76.9	92.8	79.4
9-Sep	86.0	72.0	76.4	67.0	63.0	111.3	76.8	93.1	78.7
16-Sep	84.0	68.8	74.2	65.7	62.0	115.5	75.8	87.3	73.2
23-Sep	85.0	67.4	74.6	65.0	60.0	114.8	77.5	85.5	70.2
30-Sep	91.0	64.3	75.2	65.0	60.0	103.6	73.4	84.3	68.3
7-Oct	86.0	65.3	73.5	63.5	59.0	99.4	71.6	82.7	65.4
14-Oct	86.0	62.5	73.3	62.2	57.0	95.9	70.8	79.2	60.3
21-Oct	82.0	61.4	71.9	60.7	55.0	89.6	67.7	75.0	56.2
28-Oct	82.0	59.2	71.2	59.3	53.0	92.4	68.6	74.5	54.0
4-Nov	81.0	57.5	71.2	56.9	51.0	86.1	68.6	68.1	44.1
11-Nov	80.0	58.0	69.3	56.5	52.0	84.7	66.1	68.1	47.4
18-Nov	78.0	58.2	68.0	55.1	49.0	90.3	67.3	65.1	44.4
25-Nov	76.0	55.7	67.0	53.0	47.0	79.8	62.5	59.8	38.7
2-Dec	78.0	55.5	67.4	51.2	46.0	72.8	63.3	55.9	32.0
9-Dec	75.0	53.6	65.7	51.2	45.0	72.1	62.1	56.3	35.9
16-Dec	73.0	53.0	64.4	49.4	43.0	71.4	62.9	53.1	33.2
23-Dec	73.0	51.7	63.5	49.4	43.0	75.6	62.8	53.7	34.0
31-Dec	71.0	53.9	63.3	49.0	43.0	74.9	62.2	54.2	34.0

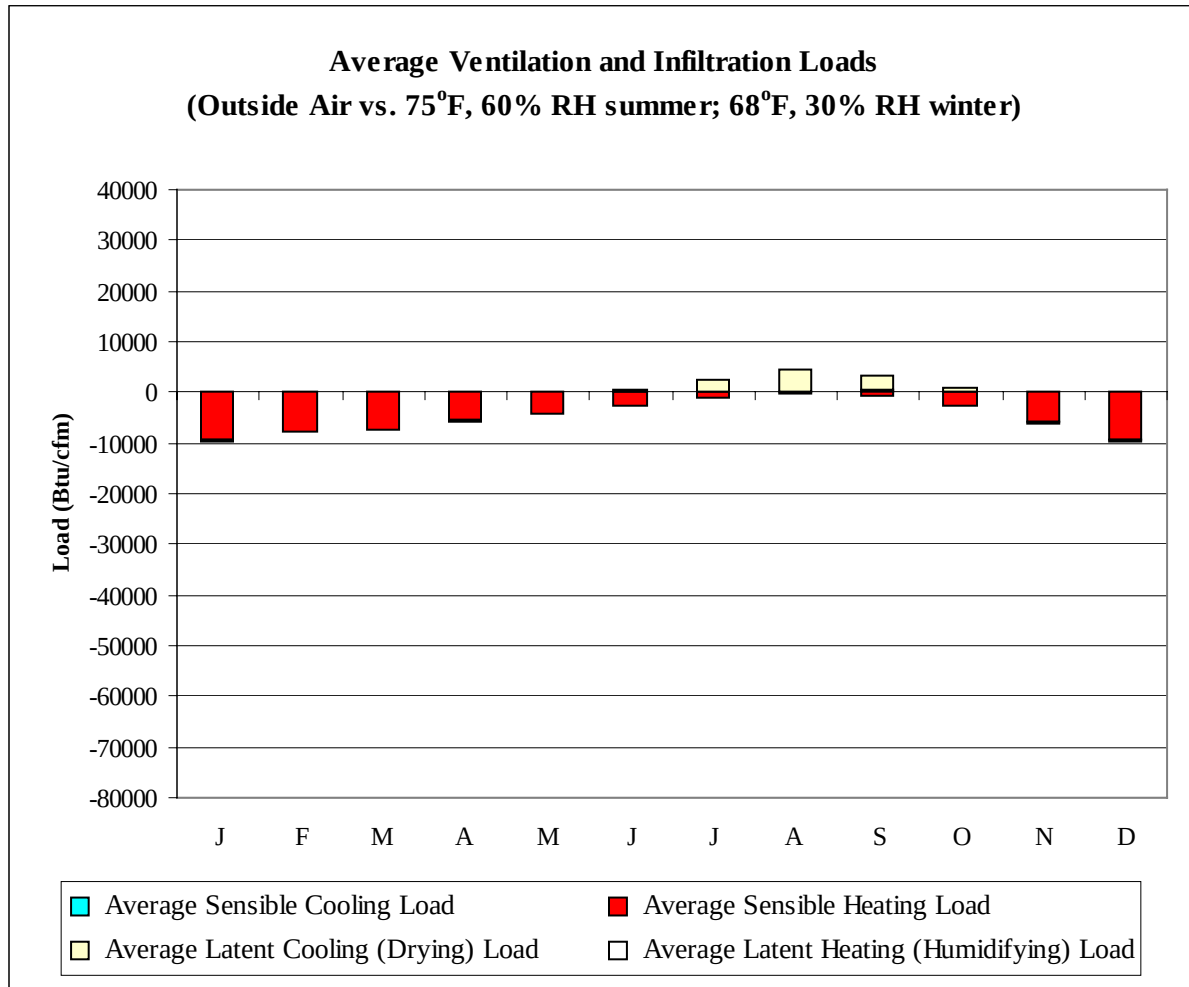
NORTH ISLAND NAS

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WMO No. 722906



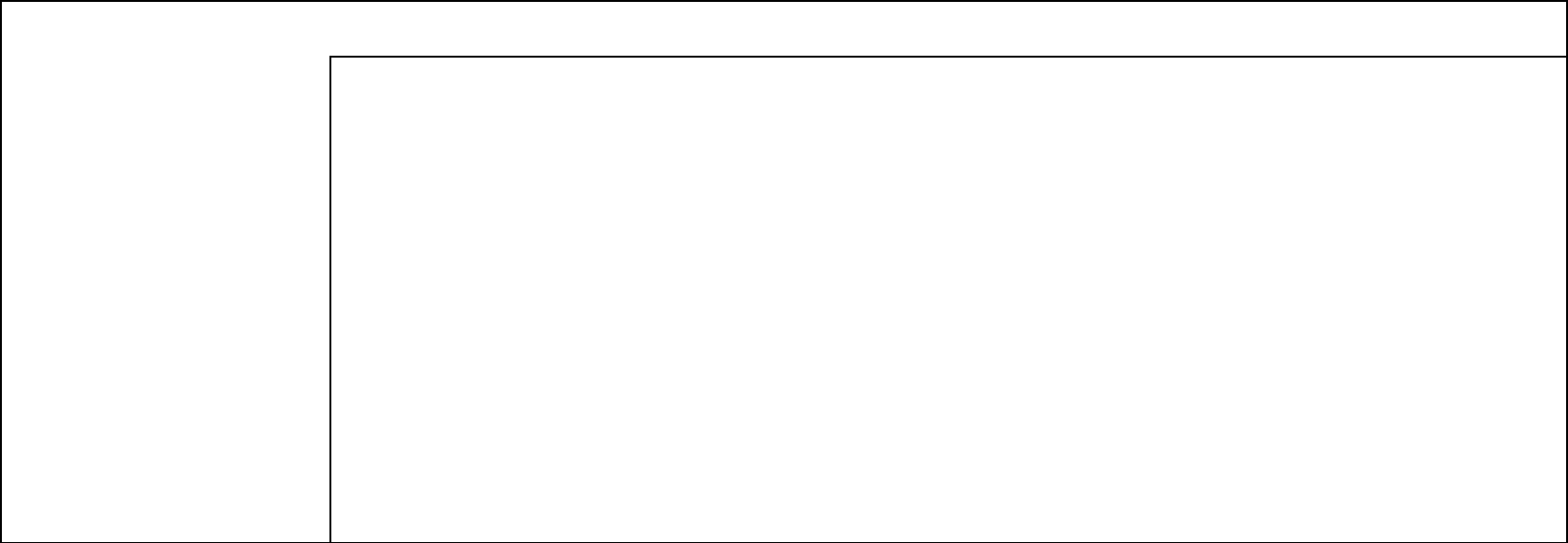
	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	11	271
FEB	12	216
MAR	11	199
APR	23	136
MAY	24	89
JUN	52	41
JUL	134	7
AUG	180	2
SEP	152	6
OCT	80	43
NOV	29	148
DEC	10	269
ANN	719	1427



	Average Sensible Cooling Load	Average Sensible Heating Load	Average Latent Cooling Load	Average Latent Heating Load
	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)
JAN	23	-9310	9	-511
FEB	31	-7659	3	-280
MAR	27	-7413	1	-126
APR	72	-5571	16	-41
MAY	39	-4324	49	-2
JUN	100	-2611	267	-1
JUL	186	-902	2255	0
AUG	309	-403	4081	0
SEP	402	-718	2878	-2
OCT	217	-2468	611	-60
NOV	71	-5783	68	-272
DEC	14	-9253	2	-595
ANN	1491	-56415	10240	-1890

Average Annual Solar Radiation – Nearest Available Site
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

No Solar Radiation
Data Available

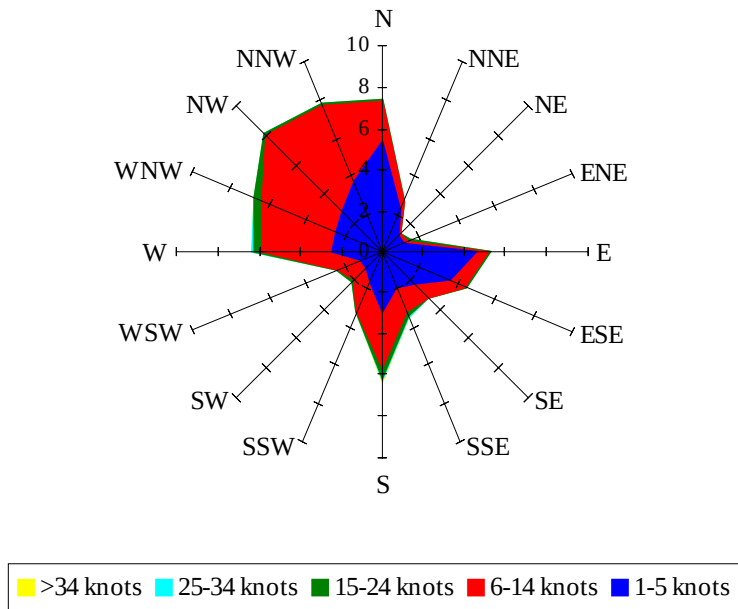


Average Annual Solar Heat and Illumination – Nearest Available Site

(Source: National Renewable Energy Laboratory, Golden CO, 1995)

Wind Summary - December, January, and February

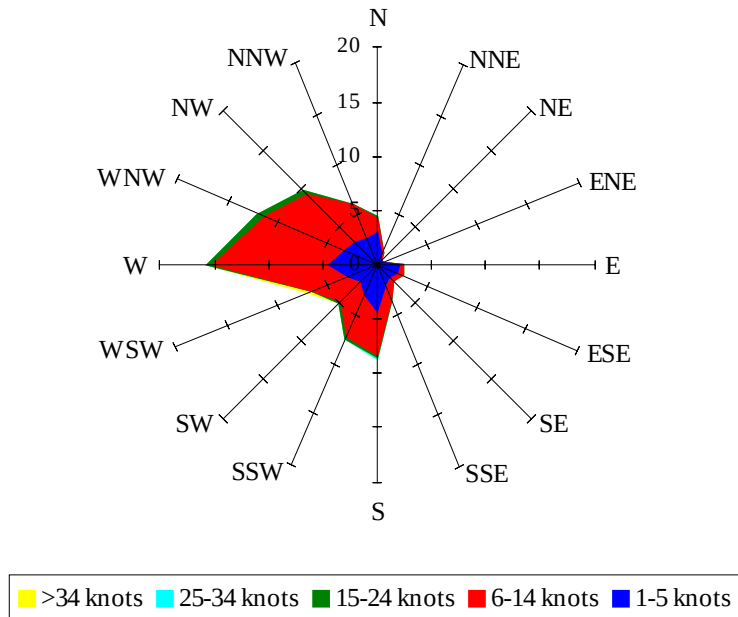
Labels of Percent Frequency on North Axis



Percent Calm = 27.95

Wind Summary - March, April, and May

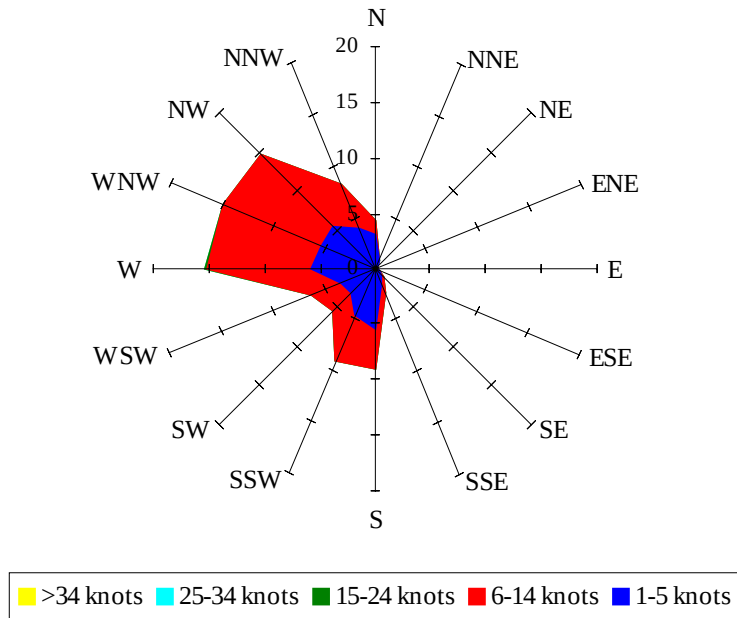
Labels of Percent Frequency on North Axis



Percent Calm = 12.08

Wind Summary - June, July, and August

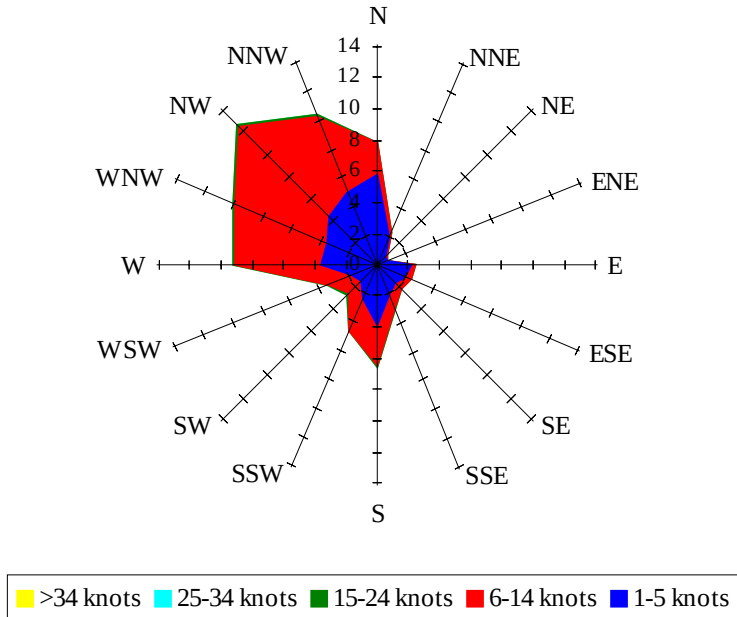
Labels of Percent Frequency on North Axis



Percent Calm = 7.78

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 19.61