Selected Meteorological Data for an Arid Site Near Beatty, Nye County, Nevada, Calendar Year 1988

By James L. Wood, Kevin J. Hill, and B.J. Andraski

U.S. GEOLOGICAL SURVEY

Open-File Report 92-61

Carson City, Nevada
1992

U.S. DEPARTMENT OF THE INTERIOR

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U.S. GEOLOGICAL SURVEY

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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	*By*	*To obtain*
kilometer (km)	0.6214	mile
kilopascal (kPa)	0.1450	pounds per square inch
meter (m)	3.281	feet
meter per second (m/s)	3.281	feet per second
millimeter (mm)	0.03937	inch
millimeter per hour (mm/hr)	25.40	inch per hour
watt per square meter (W/m^2)	0.005290	British Thermal Unit per square foot per minute

For temperature, degrees Celsius (°C) can be converted to degrees Fahrenheit (°F) by using the formula °F=[(1.8)(°C)]+32.

SEA LEVEL

In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929, formerly called "Sea-Level Datum of 1929"), which is derived from a general adjustment of the first-order leveling networks of both the United States and Canada.

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ABSTRACT

Selected meteorological data were collected at a study site adjacent to a low-level radioactive-waste burial facility near Beatty, Nevada, for calendar year 1988. Data were collected in support of ongoing studies to estimate the potential for downward movement of radionuclides into the unsaturated sediments beneath waste-burial trenches at the facility. The data include air temperature, relative humidity, vapor pressure, incident solar radiation, windspeed, wind direction, and precipitation. The data are summarized in tables and graphs.

Instrumentation used at the site is discussed. The discussion includes the type, reported accuracy, and mounting height of each sensor.

In 1988, the average hourly air temperatures ranged from -10.2 degrees Celsius, in December, to 45.3 degrees Celsius, in July. Hourly averaged relative humidity ranged from about 12 percent to over 80 percent. Hourly vapor pressures ranged from 0.09 to 2.22 kilopascals. Daily values for maximum incident solar radiation ranged from 63 to 1,064 watts per square meter. Daily mean windspeed ranged from 1.2 to 7.8 meters per second. Monthly wind-direction patterns are shown in a series of diagrams in which wind direction is summed over 10-degree arcs from hourly averaged data. Total precipitation for 1988 was 104.5 millimeters, with over 70 percent occurring from January through May.

INTRODUCTION

Meteorological data were collected near the low-level radioactive-waste burial facility near Beatty, Nev., in support of ongoing studies (Andraski, 1990; Fischer, 1990) to estimate the potential for downward movement of radionuclides into the unsaturated sediments beneath waste-burial trenches at the facility (figure 1B). This report presents and summarizes meteorological data collected for calendar year 1988. It is one in a series of meteorological data reports for this site (Wood and Fischer, 1991, 1992). The meteorological data collected include air temperature, relative humidity, vapor pressure, incident solar radiation, windspeed, wind direction, and precipitation.

The waste-burial facility on the Amargosa Desert, 17 km southeast of Beatty and 169 km northwest of Las Vegas, Nev. (figure 1A), has been operating since 1962. The disposal facility was the first commercially operated in the United States. At this facility, wastes are emplaced in 2- to 15-m deep trenches and covered by back filling with previously excavated materials. The Amargosa Desert in the vicinity of the waste-burial facility is a northwest trending valley about 13 km wide. Vegetation is sparse, with creosote bush (*Larrea tridentata*) being the dominant species.

The study site (altitude, 847 m above sea level) is in one of the most arid parts of the United States. Precipitation is highly variable. Mean annual precipitation is about 114 mm at Beatty (altitude, 1,005 m), and 74 mm at Amargosa Valley (formerly Lathrop Wells; altitude, 817 m), 30 km southeast of the site (Nichols, 1987, p. 15). No perennial streams are within 16 km of the site and the dry bed of Amargosa River is the principal drainage channel (figure 1A).

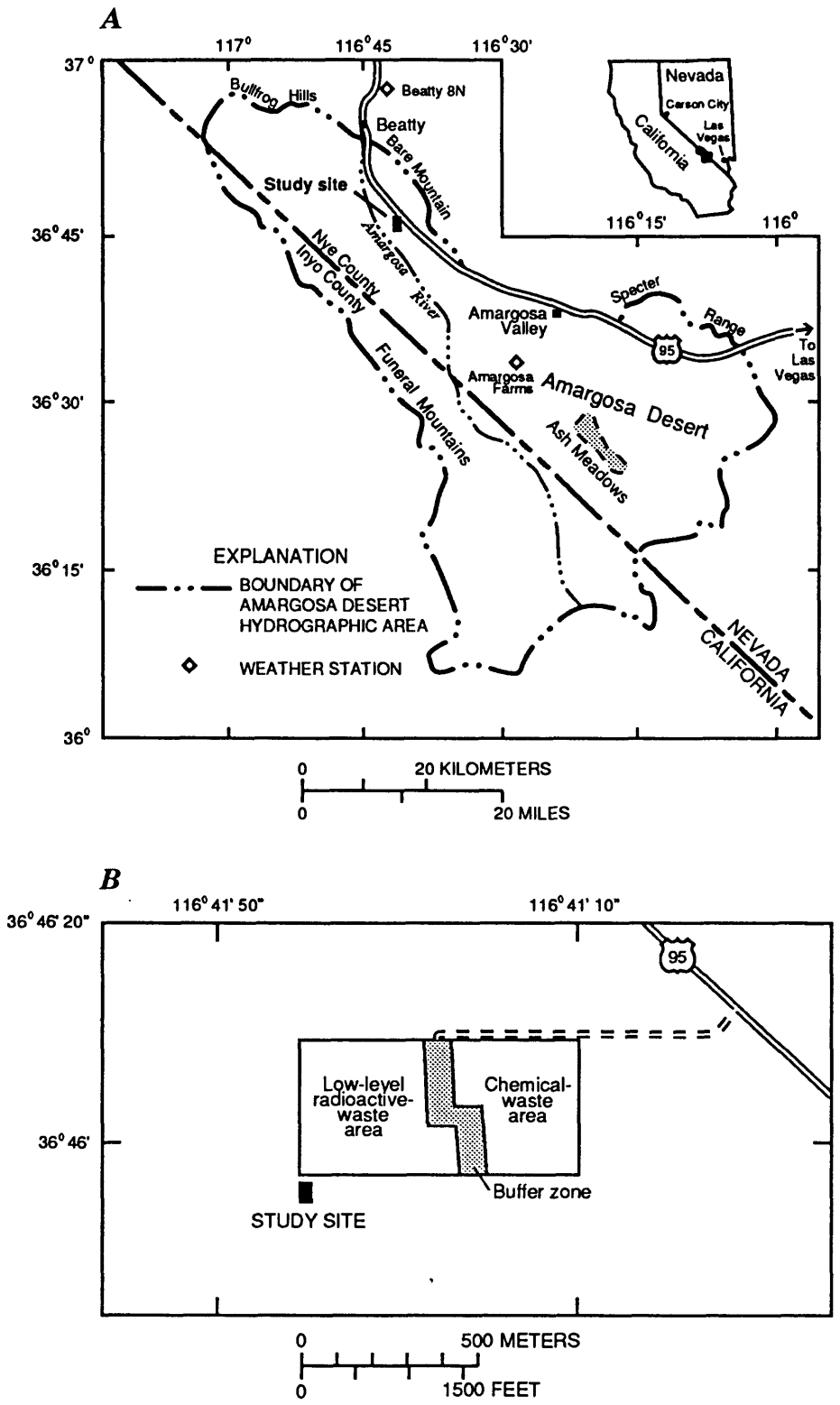

FIGURE 1.--Location of study site and adjacent waste-disposal facility.

A detailed view of part of the study site is shown in figure 2. The site is enclosed by a chain-link fence 2 m high topped with 1/2 m of razor ribbon and is patrolled by security from the adjacent commercial waste-disposal facility; this provides protection against vandalism. Site-maintenance visits are made on a monthly basis and after significant precipitation events. In addition to the meteorological station data, unsaturated-zone data are collected from three neutron-probe access tubes and from sensors installed at several depths in a monitoring shaft (figure 2). An undisturbed area is maintained on one side of the shaft site where no foot or vehicle traffic is allowed except on a designated foot path. A description of this unsaturated-zone monitoring is presented by Morgan and Fischer (1984).

INSTRUMENTATION

Meteorological sensors consisting of an air temperature and relative humidity sensor, silicon pyranometer, anemometer, wind vane, and tipping-bucket rain gage were installed in the fall of 1984. All sensors were factory calibrated prior to installation. Data from the sensors were recorded using a Campbell Scientific, Inc. (CSI) CR21 datalogger. All instruments are mounted on a CSI CM10 tripod. Both the anemometer and wind vane are mounted 3.4 m above land surface. The air temperature/relative humidity (RH) probe is mounted inside a CSI model 041 sensor shield 1.7 m above land surface. The tipping-bucket rain gage is mounted 2.2 m above land surface and the silicon pyranometer 3.7 m above land surface. All heights are approximate. The CSI tripod is located approximately 40 m from the CSI datalogger, which is housed in a shed on the site (figure 2).

The anemometer is a model 014A supplied by MET ONE[1] with an accuracy of 1.5 percent and a threshold of 0.45 m/s. The wind vane is a model 024A also from MET ONE and has a specified accuracy of ±5 degrees and a threshold of 0.45 m/s. The temperature/RH probe is a CSI model 207 with a temperature accuracy of ±0.4°C in a range of -33°C to 48°C and a RH accuracy of ±5 percent over a 12- to 100-percent RH range. The tipping-bucket rain gage is a Weathermeasure model P-501 with a sensitivity and resolution of 0.25 mm and an accuracy of 0.5 percent at 12.7 mm/hr. The silicon pyranometer is a LICOR LI200S calibrated against an Eppley Precision Spectral Pyranometer.

SELECTED METEOROLOGICAL DATA

Measurements from all meteorological instruments, except the tipping-bucket rain gage, were made every 60 seconds. These measurements were used by the CR21 datalogger to compute hourly averages for air temperature, relative humidity, solar radiation, windspeed, wind direction, and a standard deviation of the wind direction. Precipitation was recorded at 5-minute intervals only during events, and totaled for each day. The hourly averaged and totalized precipitation values were automatically retrieved from the datalogger by a Prime minicomputer using telecommunications and a computer program called ADAREPS, which is an acronym for Automatic DAta REtrieval and Processing System (John Walker, U.S. Geological Survey, written commun., 1986). Data from the datalogger were retrieved twice daily. A cassette tape attached to the datalogger was used as a backup to the automatic data-retrieval system. The hourly averaged values were used to compute daily means, maximums, and minimums for air temperature, relative humidity, solar radiation, windspeed, and wind direction, and are summarized in table 3 at the end of this report. Due to communications failures, 13 days during 1988 had missing hourly values, and of these, 5 days in January and 1 day in February had fewer than 20 hourly values reported.

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[1] All sensor specifications supplied by manufacturers.

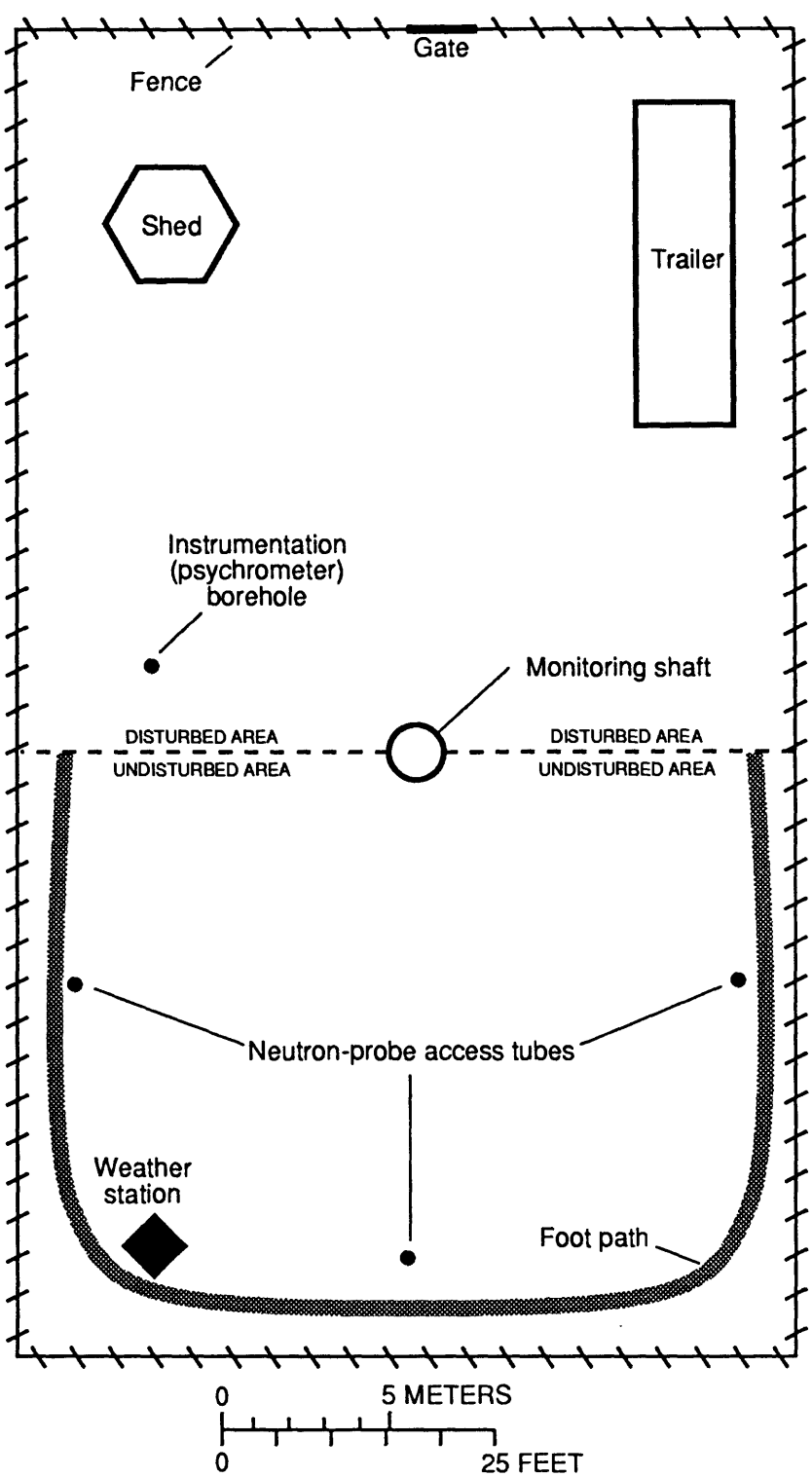

FIGURE 2.--Location of weather station and related unsaturated-zone monitoring shaft, psychrometer borehole, and neutron-probe access tubes at study site. The monitoring shaft is used to measure water potentials and the neutron-probe access tubes are used to measure moisture content. Location of study site is shown in figure 1.

Air Temperature

Hourly averaged values of maximum and minimum air temperatures for each month together with a monthly mean value are listed in table 1. The minimum temperature was -10.2°C in December and the maximum was 45.3°C in July.

Both seasonal and daily temperature fluctuations are large in the vicinity of the study area. Differences between hourly averaged maximum and minimum temperatures commonly exceeded 25°C. Daily mean, maximum, and minimum temperatures for 1988 are shown in figure 3.

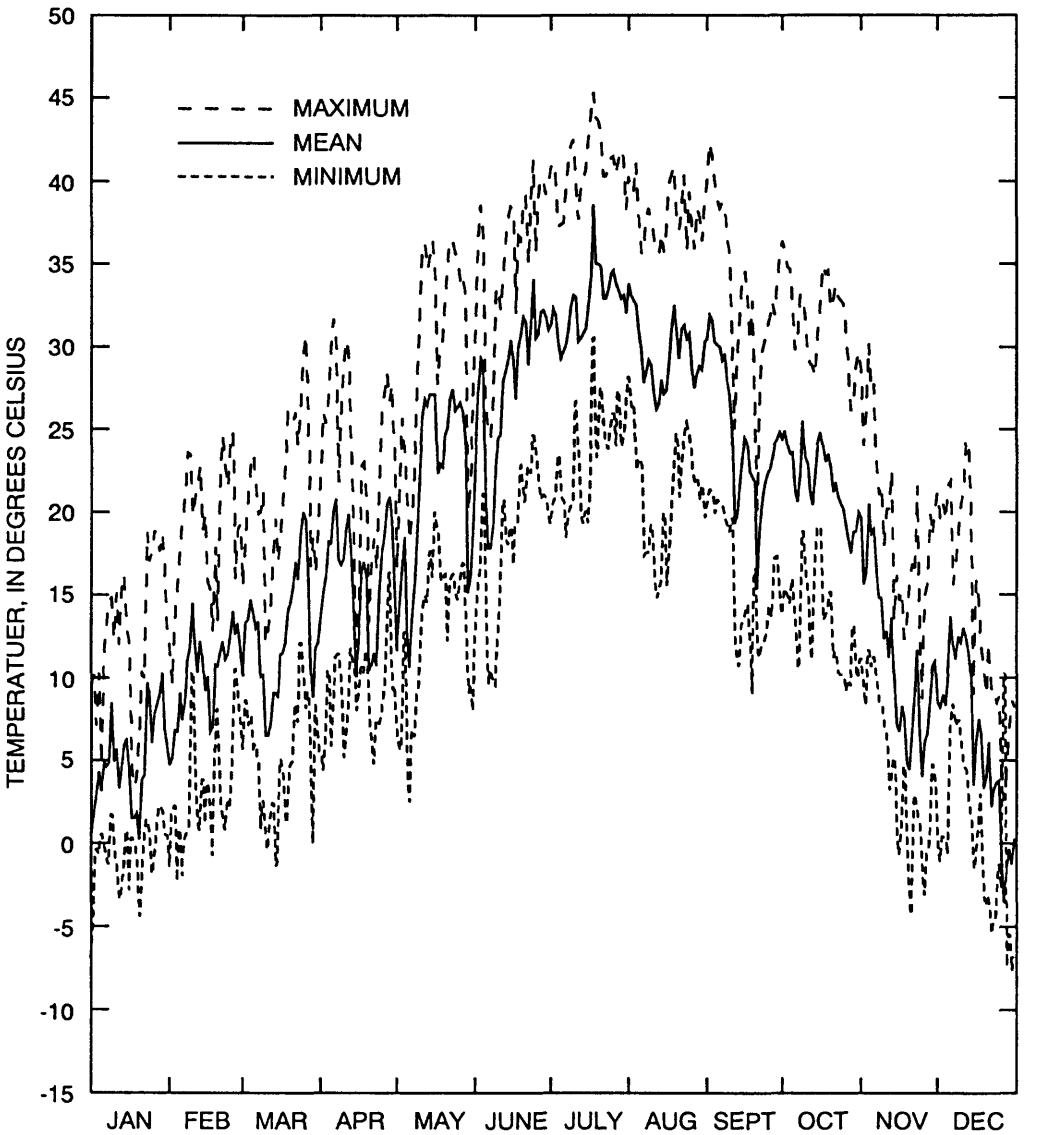

FIGURE 3.--Daily maximum, mean, and minimum air temperatures computed from hourly averaged values for 1988.

TABLE 1.--*Monthly maximum, minimum, and mean air temperatures at study site for 1988*

[Temperatures are degrees Celsius.]

Month	Maximum[1]	Day	Minimum[1]	Day	Mean
January	18.9	26	-6.9	1	5.0
February	24.8	26	-3.9	4	10.2
March	30.7	26	-2.1	29	12.2
April	31.7	6	3.8	2	16.2
May	36.5	22	1.4	6	21.5
June	41.3	24	8.8	6	27.8
July	45.3	18	17.8	7	31.6
August	40.9	19	14.5	16	29.6
September	42.3	2	7.1	19	24.7
October	36.4	1	8.8	26	21.9
November	30.2	4	-4.6	20	11.2
December	24.4	12	-10.2	27	6.3

[1] Hourly averaged values.

Relative Humidity

Relative humidity is the ratio of the amount of water vapor in the air at a specific temperature to the maximum amount of water vapor the air can hold at that temperature and is expressed as a percent. Daily mean, maximum, and minimum relative-humidity values computed from hourly averaged values are listed in table 3. Daily mean relative-humidity values are shown in figure 4. Daily mean values range from about 12 percent (the lower limit of the sensor range) during the drier summer months to more than 80 percent during January storm events.

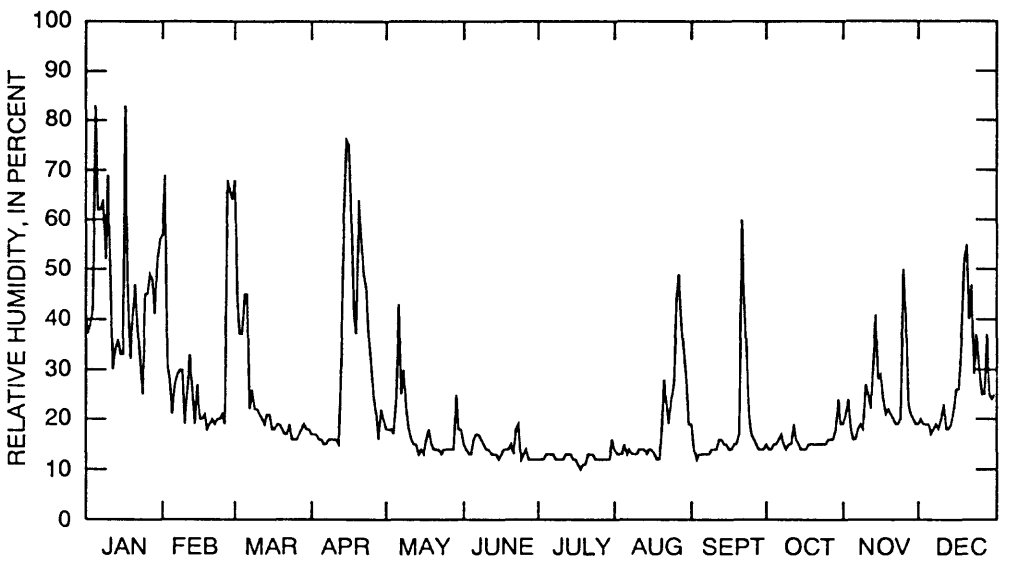

FIGURE 4.--Daily mean relative humidity computed from hourly averaged values for 1988.

Vapor Pressure

Water vapor content of air can be expressed in terms of the partial pressure exerted by the water vapor, or vapor pressure (Campbell, 1986, p. 21). Hourly vapor pressure at a given ambient air temperature was determined by first calculating the saturation vapor pressure at that particular temperature, which is defined as the highest concentration of water vapor that can exist in equilibrium with a plane, free water surface at a given temperature. This value was obtained by using the formula (Lowe, 1977, p. 100):

$$E_s = a_0 + a_1 T + a_2 T^2 + a_3 T^3 + a_4 T^4 + a_5 T^5 + a_6 T^6 \ , \qquad (1)$$

where E_s = saturation vapor pressure, in millibars;
T = temperature, in degrees Celsius; and
a_i $(i=0,1,...6)$ = numerical constants for each term of the polynomial.

The result was then divided by 10 to convert from millibars to kilopascals. Ambient vapor pressure was determined by multiplying the hourly saturation vapor pressure by the hourly averaged relative humidity.

Daily mean, maximum, and minimum values of vapor pressure are listed in table 3. Daily mean vapor pressures computed from hourly averaged values of temperature and relative humidity are shown in figure 5. Hourly vapor pressures ranged from a maximum of 2.22 kPa in August to a minimum of 0.09 kPa in December. Vapor pressures generally have higher base pressures during the warmer summer months and lower base pressures coinciding with cooler winter conditions (figure 5). Vapor-pressure peaks throughout the year generally correlate with precipitation listed in table 2 and shown in figure 9C.

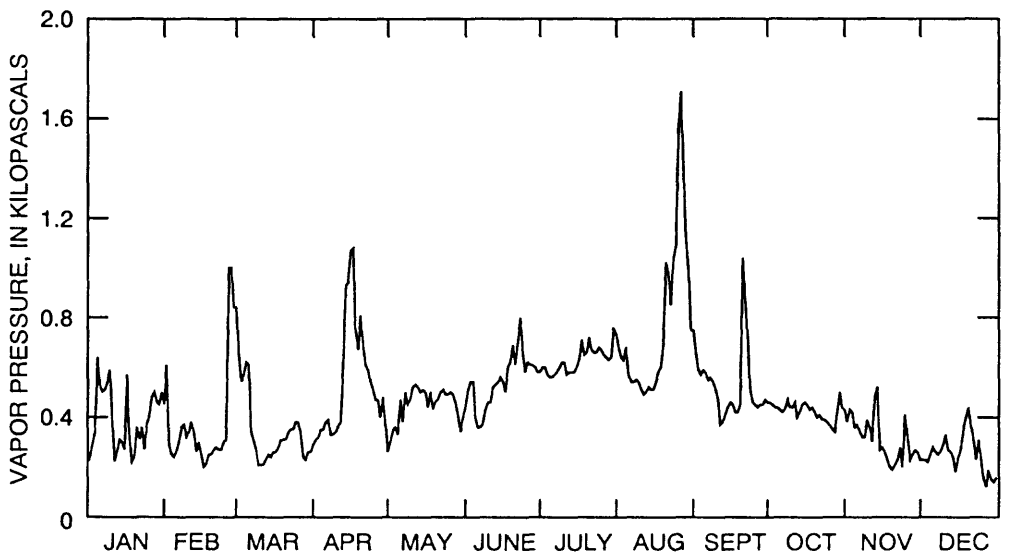

FIGURE 5.--Daily mean vapor pressure computed from hourly averaged values for 1988.

Solar Radiation

Daily averaged and maximum incident solar radiation computed from hourly averaged values are listed in table 3. Incident solar radiation (short wave) is the amount of radiation that reaches the earth without interception. Generally, daily mean and maximum radiation were highest from May through September and lowest from November through February, coinciding with seasonal cycles.

Maximum solar-radiation values computed from hourly averaged values for each day are shown in figure 6. The daily maximum solar-radiation values, for days with 24 values, ranged from 63 W/m^2 on January 5 to 1,064 W/m^2 on July 13.

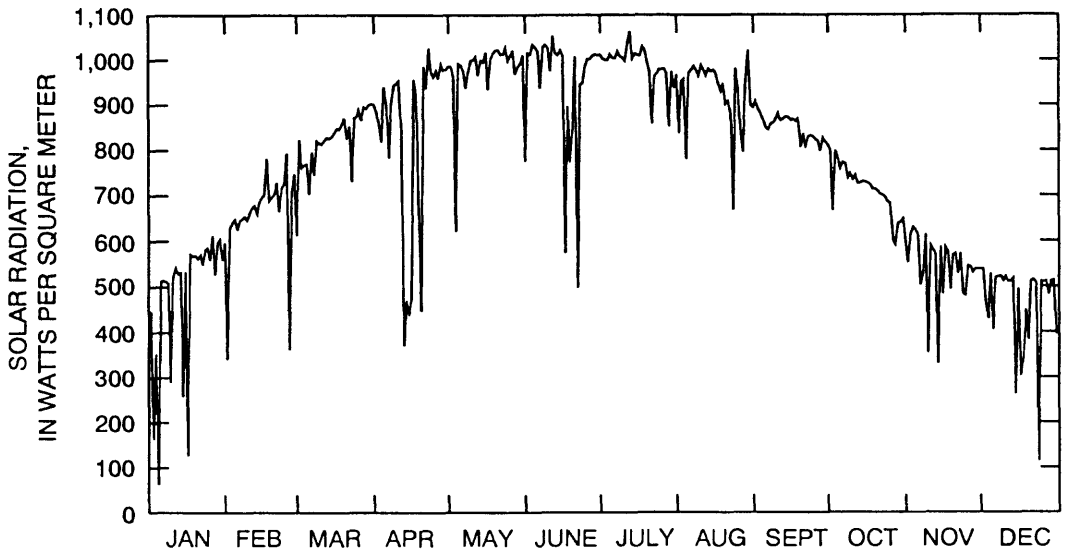

FIGURE 6.--Daily maximum solar radiation computed from hourly averaged values for 1988.

Windspeed and Wind-Vector Direction

Daily mean, maximum, and minimum values of windspeed computed from hourly averaged values are listed in table 3. Daily mean windspeeds are shown in figure 7. Daily mean windspeeds, for days with 24 values, ranged from a minimum of 1.2 m/s on January 3 to a maximum of 7.8 m/s on February 18. Hourly averages ranged from less than 1 m/s (essentially zero) to almost 15 m/s.

Daily mean wind-vector direction (degrees Azimuth) and wind-vector magnitude (meters per second) presented in table 3 were determined from hourly wind-vector direction and magnitude values using the following equations (from Campbell Scientific, Inc., 1984, p. B-6 to B-10):

$$\textit{Daily mean wind-vector direction, in degrees} = \arctan(\overline{x}+\overline{y}) \ , \qquad (2)$$

where $\bar{x}$ = the sum of each hourly wind-vector magnitude multiplied by the sine of the hourly wind-vector direction and divided by the number of hourly values; $\bar{x}$ is positive to the east; and
$\bar{y}$ = the sum of each hourly wind-vector magnitude multiplied by the cosine of the hourly wind-vector direction and divided by the number of hourly values; $\bar{y}$ is positive to the north.

$$Daily\ mean\ wind\text{-}vector\ magnitude = \sqrt{\bar{x}^2 + \bar{y}^2}\ , \qquad (3)$$

Daily mean wind-vector direction in table 3 ranges from 0 to 360 degrees Azimuth (increasing degrees clockwise from north). The wind-vector direction calculated from equation 2 was transformed to degrees Azimuth on the basis of $\bar{x}$ and $\bar{y}$. For positive $\bar{x}$ and $\bar{y}$, the value calculated from equation 2 is the daily mean wind-vector direction in degrees Azimuth. For negative values of $\bar{y}$, the calculated value of wind-vector direction is added to 180 degrees, and for negative value of $\bar{x}$ and positive value of $\bar{y}$, the calculated value is added to 360 degrees. Because equation 2 cannot be used when $\bar{y}$ is zero, the mean wind-vector direction was set to 90 degrees Azimuth for positive values of $\bar{x}$ and 270 degrees Azimuth for negative values of $\bar{x}$.

Wind-vector directions for each month are summarized in diagrams called wind roses (figure 8). The diagrams were determined by: (1) summing the number of hourly wind-vector directions recorded during each month over 10-degree areas, (2) then dividing the sums by the total number of hourly values for each month, and (3) multiplying by 100 to obtain percent.

Trends shown in figure 8 indicate definite interseasonal variability in wind direction for 1988. Wind at the study site was predominantly from the northwest during January through March, but wind direction gradually shifted to the southeast and southwest during April through June. The wind was predominantly from the southeast and northwest during July and August. Wind began to shift back to the northwest during September until the predominant direction was again from the northwest during October through December.

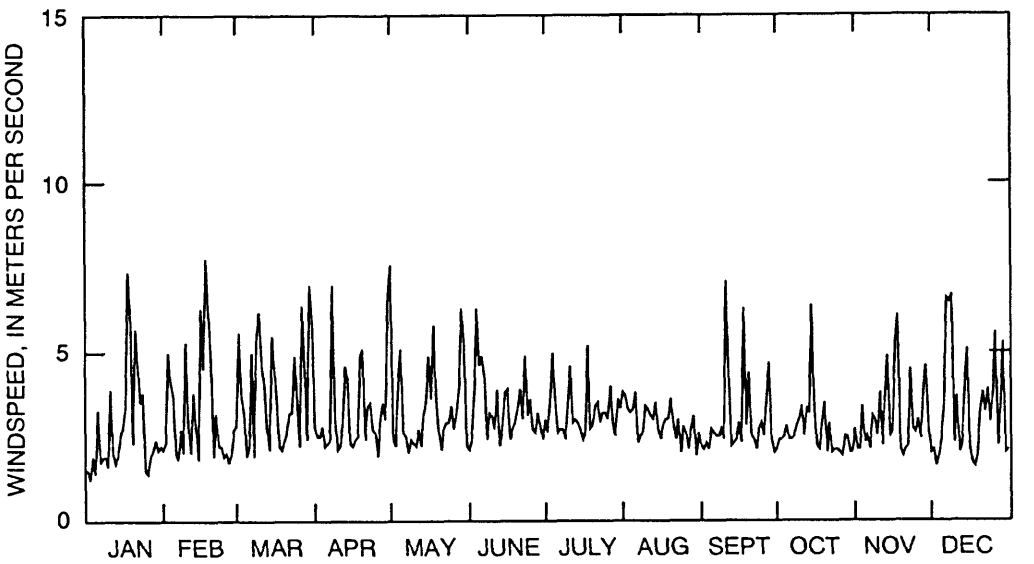

FIGURE 7.--Daily mean windspeed computed from hourly averaged values for 1988.

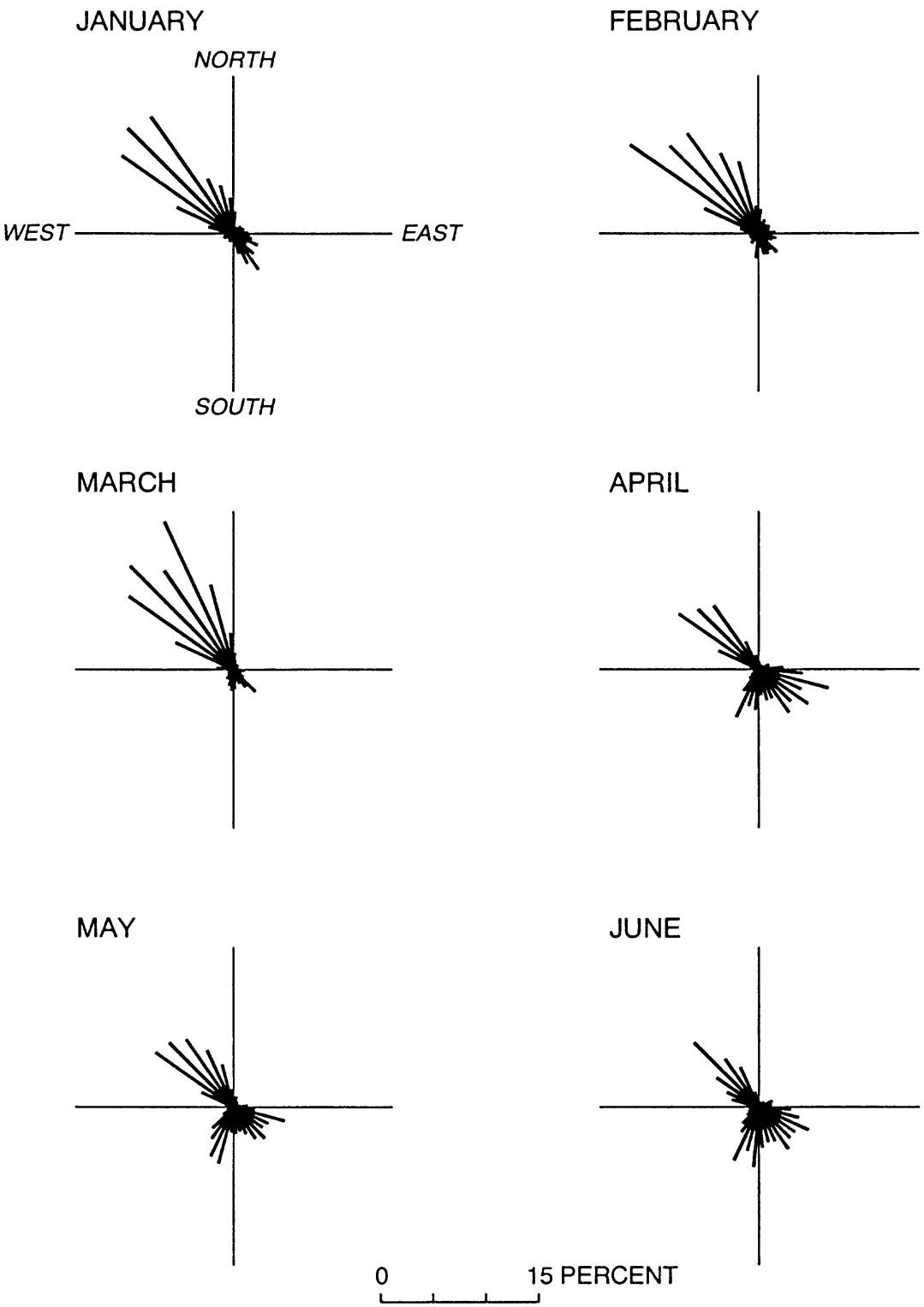

FIGURE 8.--Diagrams showing percentage of time wind is from a given direction for each month during 1988. Wind direction is summed over 10-degree arcs from hourly averaged data.

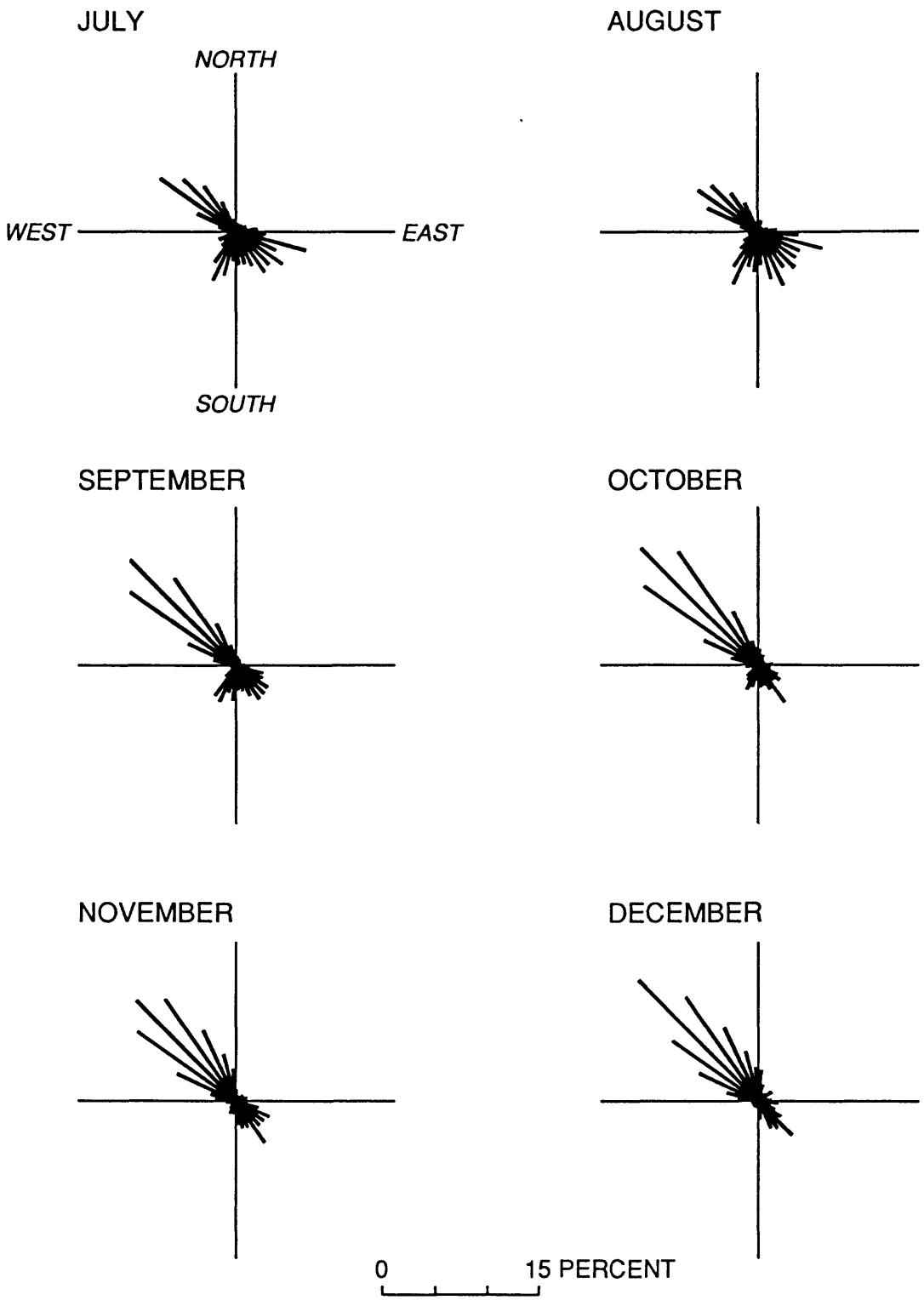

FIGURE 8.--Continued.

Precipitation

Due to the infrequent nature of precipitation at the study site, precipitation is not included in table 3, but is summarized in table 2 and figure 9. Due to malfunctions of the study site rain gage, precipitation totals for January 17 and 18 were based on records from the disposal facility (Robert Marchand, U.S. Ecology, written commun., 1988). Total measured precipitation for the year was 104.5 mm. The 3-year average (1986-88) for the site is 105.5 mm (Wood and Fischer, 1991, p. 12; 1992, p. 12).

Monthly precipitation values measured at the study site are shown in figure 9A. Monthly precipitation ranged from 27.8 mm in April to zero in July, October, and November. Typically, most precipitation occurred during the winter months, and least during the summer. Winter precipitation was from regional frontal systems, whereas summer precipitation was from local convective storms.

Figure 9B compares monthly precipitation at the study site (altitude 847 m) and two National Oceanic and Atmospheric Administration (NOAA) sites. One of the these sites is designated Beatty 8N and is 12.9 km north of Beatty (37° 00′ N., 116° 43′ W.) at an altitude of 1,007 m (figure 1); the other is Amargosa Farms, which is about 35 km southeast of the study site (36° 34′ N., 116° 28′ W.) at an altitude of 747 m. Monthly values differ considerably between sites.

Daily precipitation totals are shown in figure 9C and table 2. The largest events occurred during the winter and spring months. Daily precipitation exceeded 5 mm on six days--one each in January, February, April, and September, and two in August. Summer storms are usually of short duration but can be intense. Only two summer storms produced more than 5 mm of precipitation; those were on August 25 (5.8 mm in 90 minutes) and August 28 (14.2 mm in 30 minutes).

TABLE 2.--*Daily total precipitation at study site for 1988. All unlisted dates had no precipitation*

Month	Day	Total precipitation (millimeters)	Month	Day	Total precipitation (millimeters)
January	4	0.5	May	5	1.5
January	5	1.8	May	29	1.5
January	17	22.1			
January	18	3.3	June	22	.3
February	2	.5	August	25	5.8
February	27	8.6	August	26	1.0
February	28	1.8	August	28	14.2
February	29	2.8	August	30	.3
March	1	2.5	September	21	7.6
			September	23	.3
April	13	.3			
April	14	3.8	December	22	.3
April	15	22.1			
April	16	.3			
April	20	.3			
April	21	1.0			

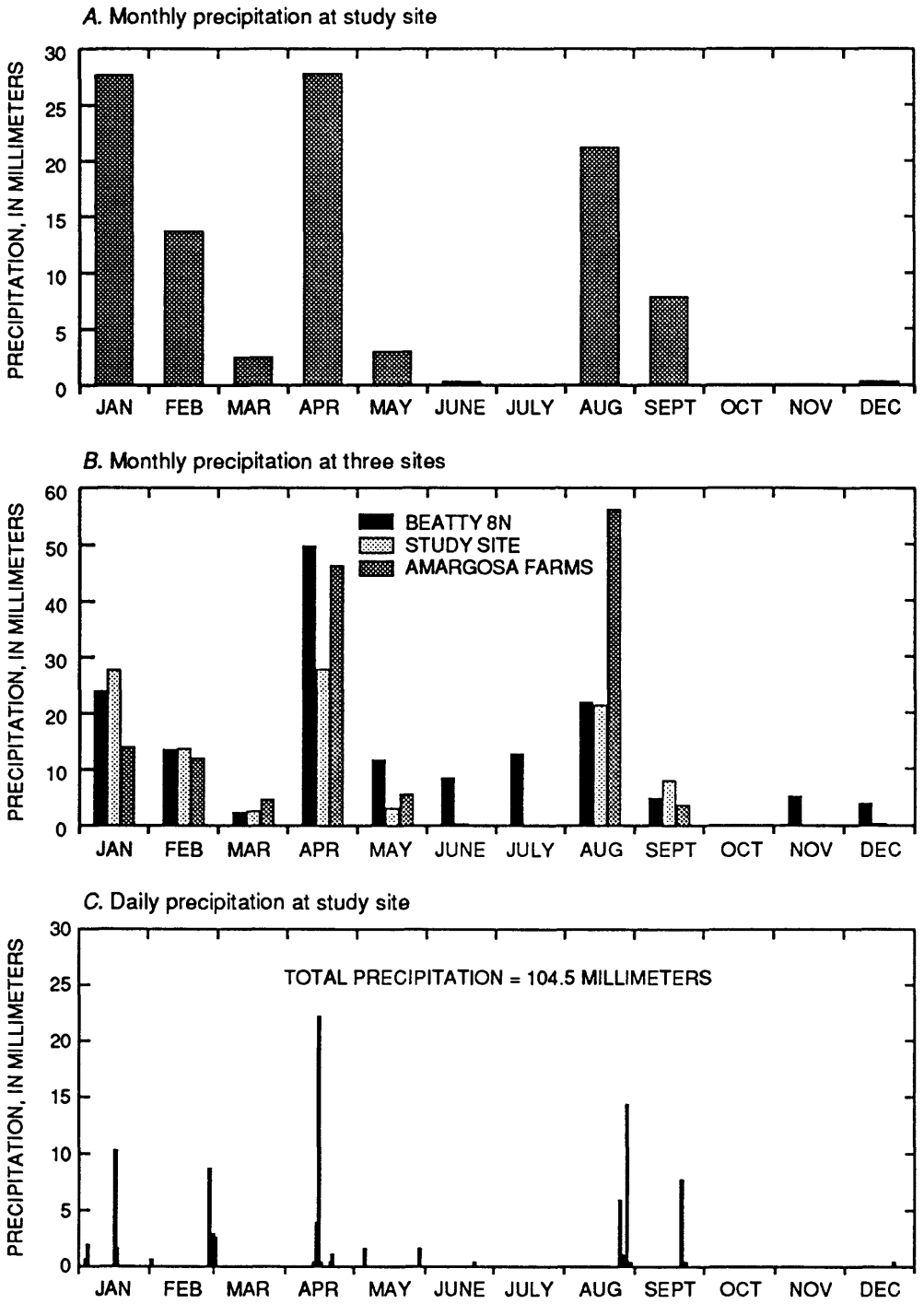

FIGURE 9.--Precipitation at or near study site for 1988. *(A)* Monthly precipitation at study site. *(B)* Comparison of monthly precipitation at study site with monthly precipitation at two National Oceanographic and Atmospheric Administration (NOAA) sites (Beatty 8N and Amargosa Farms) near study site. *(C)* Daily precipitation at study site.

SUMMARY

Meteorological data were collected adjacent to a low-level radioactive-waste facility near Beatty, Nev., during calendar year 1988 in support of an ongoing study to estimate the potential for downward movement of radionuclides into the unsaturated sediments beneath waste-burial trenches at the facility. This report provides daily averaged values of air temperature, relative humidity, vapor pressure, incident solar radiation, windspeed, wind direction, and daily totals of precipitation. A general description of instrumentation used and sensor installation is given.

The minimum hourly averaged air temperature for the year was -10.2°C in December and the maximum was 45.3°C in July. Hourly averaged values for relative humidity ranged from about 12 percent to more than 80 percent. Daily values for maximum solar radiation ranged from 63 W/m^2 in January to 1,064 W/m^2 in July. Hourly vapor pressures ranged from a minimum of 0.09 kPa in December, to a maximum of 2.22 kPa in August. Daily mean windspeed ranged from 1.2 to 7.8 m/s. Wind direction determined from hourly averaged data was predominantly from the northwest from January through March and October through December. The wind shifted during the summer months and was commonly from the southeast and northwest. Total measured precipitation for the year was 104.5 mm. Monthly precipitation ranged from 27.8 mm in April to zero in July, October, and November. Daily precipitation totaled more than 5 mm six times during 1988.

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BASIC DATA

This section contains table 3, which is a listing of daily averaged meteorological data (except precipitation, which is totaled) collected at the study site for 1988.

TABLE 3.--*Summary of meteorological data collected at study site in 1988. Daily mean, maximum, minimum values were determined from hourly measurements*

[Abbreviations: max, maximum; min, minimum; std. dev., standard deviation; °az, degrees Azimuth]

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/01/01	*21*	0.6	9.6/ -6.9	104	382	41	71/19	0.24	0.29/0.19	1.5	2.4/0.8	0.8	320	47
88/01/02	24	1.6	10.2/ -4.9	100	447	37	56/18	.23	.26/ .20	1.5	2.7/1.0	.5	317	61
88/01/03	*23*	2.9	7.1/ - .4	35	163	39	49/23	.29	.35/ .23	1.2	1.9/ .6	.7	314	45
88/01/04	24	4.3	10.3/ - .9	62	353	42	79/22	.34	.58/ .25	1.9	3.9/1.1	.2	350	76
88/01/05	24	3.1	4.7/ .5	11	63	83	84/82	.64	.72/ .54	1.4	2.1/ .7	.9	307	41
88/01/06	24	4.9	11.7/ - .3	127	513	62	84/33	.52	.58/ .45	3.3	6.1/1.2	3.0	318	15
88/01/07	24	4.6	13.0/ -1.1	128	515	62	81/32	.50	.57/ .46	1.7	2.5/1.1	.3	300	70
88/01/08	*16*	4.8	14.6/ -1.5	183	513	64	83/29	.51	.60/ .46	1.9	3.2/1.3	.6	289	65
88/01/09	*13*	8.5	14.8/ 1.7	152	508	52	78/29	.54	.58/ .49	1.9	2.5/1.2	.2	144	76
88/01/10	24	4.9	12.3/ - .5	62	289	69	83/42	.59	.70/ .49	1.6	2.7/ .5	1.2	318	37
88/01/11	24	5.7	15.1/ -1.6	128	523	48	84/19	.40	.69/ .20	3.9	7.6/1.4	2.7	326	38
88/01/12	24	3.3	12.0/ -3.6	131	543	30	52/17	.22	.27/ .18	2.0	5.5/ .8	.8	330	57
88/01/13	24	4.4	15.3/ -3.2	131	529	34	50/16	.26	.29/ .20	1.7	2.9/ .7	.6	328	61
88/01/14	24	5.9	16.2/ -1.7	126	533	36	62/17	.31	.37/ .25	1.9	3.5/ .9	.3	300	73
88/01/15	24	6.3	13.0/ .7	53	257	33	51/19	.30	.34/ .20	2.6	6.1/1.3	1.8	307	35
88/01/16	*17*	4.1	12.2/ -4.3	187	534	33	53/24	.27	.39/ .19	2.7	4.6/1.5	1.0	135	61
88/01/17	*19*	1.5	4.6/ .3	21	126	83	84/72	.57	.66/ .53	3.4	7.7/ .9	.9	61	69
88/01/18	24	1.5	3.4/ .0	140	572	46	74/30	.32	.53/ .20	7.4	11.7/3.2	7.2	327	5
88/01/19	*23*	1.8	4.0/ - .9	149	568	32	35/26	.22	.27/ .19	6.3	8.0/2.6	5.3	310	25
88/01/20	*20*	.2	6.9/ -5.1	166	569	40	74/22	.24	.37/ .18	2.3	6.7/1.1	.3	333	74
88/01/21	24	3.8	10.4/ -3.6	138	562	47	78/33	.36	.46/ .26	5.7	10.1/1.3	5.3	337	14
88/01/22	24	4.1	9.9/ - .3	146	571	38	57/27	.31	.39/ .24	4.6	8.3/1.0	3.4	323	30
88/01/23	24	9.7	18.8/ 1.4	141	549	31	53/20	.36	.45/ .29	3.5	7.1/1.4	2.3	327	34
88/01/24	24	9.1	17.0/ .5	145	583	25	56/16	.27	.36/ .23	3.8	7.1/1.3	1.7	324	57
88/01/25	24	6.0	17.6/ -2.3	153	586	45	71/16	.37	.47/ .30	1.5	2.5/ .8	.6	321	56
88/01/26	*17*	7.8	18.9/ -1.3	188	559	45	74/16	.40	.49/ .33	1.4	2.2/ .6	.7	328	43
88/01/27	*23*	8.4	18.4/ .4	131	613	49	78/17	.48	.60/ .34	1.9	3.0/1.0	.9	296	57
88/01/28	24	9.1	17.6/ 2.2	127	528	48	71/18	.50	.62/ .36	2.1	3.2/ .5	.5	291	68
88/01/29	24	10.3	18.7/ 1.9	154	598	41	75/17	.46	.59/ .34	2.4	3.8/1.2	.3	173	75
88/01/30	24	6.9	16.8/ .5	154	605	52	77/17	.45	.56/ .31	2.1	3.2/1.0	1.4	295	39
88/01/31	24	5.8	13.0/ .4	136	559	56	78/31	.50	.55/ .45	2.2	3.5/1.2	.4	173	72

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/02/01	24	4.7	11.9/ -2.5	155	598	57	83/25	0.45	0.59/0.34	2.1	3.0/1.1	0.6	286	66
88/02/02	24	5.1	9.6/ 1.8	62	341	69	83/53	.61	.76/ .45	2.3	4.0/1.2	8	327	63
88/02/03	24	6.8	13.3/ 2.2	167	629	31	51/18	.29	.42/ .19	5.0	8.2/2.8	4.5	320	16
88/02/04	24	6.7	15.5/ -3.9	171	641	28	56/16	.25	.29/ .20	4.1	7.4/1.3	3.4	333	29
88/02/05	24	9.1	17.8/ .8	174	649	21	38/15	.24	.32/ .18	3.7	7.2/1.5	2.7	320	35
88/02/06	24	7.4	19.6/ -3.0	172	626	27	50/15	.26	.35/ .21	2.0	4.5/1.1	.9	307	53
88/02/07	24	8.5	20.9/ .1	173	646	29	42/15	.30	.37/ .25	1.8	2.4/1.1	.3	337	71
88/02/08	24	11.0	23.6/ .7	171	650	30	51/14	.36	.42/ .31	2.7	5.6/1.5	1.8	328	38
88/02/09	24	11.8	23.5/ 1.0	176	655	30	63/14	.37	.47/ .26	2.0	3.2/1.3	.8	279	58
88/02/10	24	14.5	19.8/ 10.3	174	647	19	23/16	.32	.38/ .27	5.3	9.2/2.0	4.1	329	32
88/02/11	24	11.9	20.9/ 3.4	179	661	26	44/15	.34	.41/ .27	2.8	6.7/1.4	1.4	324	48
88/02/12	24	10.3	21.8/ 1.0	183	673	33	59/15	.38	.46/ .30	2.0	3.1/1.0	.8	307	60
88/02/13	24	12.2	22.8/ .5	179	678	26	53/14	.34	.40/ .24	3.8	7.7/1.6	3.3	322	23
88/02/14	*21*	11.3	18.9/ 3.8	197	661	19	27/15	.26	.35/ .19	2.7	6.3/1.2	.9	319	62
88/02/15	24	9.2	19.9/ .1	167	685	27	44/15	.30	.36/ .25	1.8	2.8/ .9	.7	291	58
88/02/16	24	10.1	15.8/ 3.6	189	696	20	33/16	.25	.30/ .18	6.3	8.6/2.1	5.1	342	30
88/02/17	24	6.7	15.3/ 1.6	194	701	20	22/16	.20	.30/ .15	4.5	9.6/1.5	3.8	331	26
88/02/18	24	7.0	12.8/ -2.3	193	782	21	29/18	.21	.27/ .15	7.8	12.8/1.8	6.9	344	16
88/02/19	24	10.8	17.9/ 5.0	192	689	18	21/16	.25	.33/ .19	6.2	9.5/3.1	5.5	323	21
88/02/20	*11*	10.7	13.4/ 8.1	0	0	19	20/17	.25	.27/ .22	4.7	7.6/1.9	4.3	309	11
88/02/21	24	11.5	22.8/ 2.2	189	703	20	30/14	.27	.40/ .19	1.9	4.4/1.2	.2	319	73
88/02/22	24	12.2	24.6/ 1.3	205	728	19	26/13	.28	.42/ .17	3.2	7.0/1.6	2.3	317	33
88/02/23	24	11.1	22.5/ .4	172	665	20	29/14	.27	.40/ .18	2.2	3.3/ .8	.4	326	72
88/02/24	24	11.4	21.5/ 2.4	176	718	20	25/15	.27	.38/ .19	2.2	2.9/1.2	.9	294	58
88/02/25	24	12.6	24.7/ 1.9	201	724	21	35/13	.30	.43/ .22	1.9	2.7/1.0	1.0	308	46
88/02/26	24	14.0	24.8/ 5.0	177	794	19	27/13	.31	.44/ .22	2.0	3.7/1.1	.2	320	76
88/02/27	24	12.6	16.0/ 10.5	81	362	68	82/20	1.00	1.17/ .29	1.7	2.7/ .9	.4	346	68
88/02/28	24	13.3	19.0/ 8.4	169	707	66	82/42	1.00	1.23/ .85	2.0	3.9/ .8	.9	221	57
88/02/29	24	11.7	19.3/ 6.7	197	748	64	80/29	.84	.96/ .58	2.7	5.5/1.0	.9	201	62

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/03/01	24	10.1	15.5/ 4.9	142	613	68	83/48	0.84	0.97/0.72	2.8	7.8/0.6	0.6	302	69
88/03/02	24	13.3	18.4/ 8.6	197	823	44	68/24	.65	.79/ .50	5.6	7.8/3.7	5.1	325	18
88/03/03	24	13.5	21.1/ 6.7	216	760	37	64/17	.54	.73/ .42	3.7	7.2/1.2	3.1	311	26
88/03/04	24	14.7	23.2/ 7.6	221	767	37	65/16	.57	.69/ .45	3.2	6.1/1.5	2.7	325	20
88/03/05	24	13.9	23.5/ 5.6	222	770	45	76/17	.62	.76/ .46	1.9	2.9/1.1	.6	268	62
88/03/06	24	13.0	21.5/ 5.9	181	704	45	73/18	.61	.75/ .41	2.2	3.1/1.1	.8	296	63
88/03/07	24	13.4	19.9/ 4.6	231	796	22	39/15	.34	.52/ .23	5.0	9.2/1.4	4.3	327	23
88/03/08	24	10.1	20.0/ - .2	216	745	26	49/15	.30	.36/ .24	1.9	2.8/1.1	.2	321	76
88/03/09	24	10.2	21.2/ 2.5	214	820	22	35/15	.27	.38/ .20	5.5	14.8/1.0	3.9	332	40
88/03/10	24	6.5	12.1/ 0.1	244	815	22	34/18	.21	.26/ .17	6.2	10.0/2.0	5.6	337	18
88/03/11	24	6.5	12.8/ - .7	235	813	21	29/18	.21	.27/ .16	4.7	6.9/2.7	4.3	327	14
88/03/12	24	7.2	14.2/ 1.3	245	821	20	23/17	.21	.28/ .16	4.0	5.7/1.9	3.5	322	15
88/03/13	24	9.1	17.6/ 2.4	248	828	19	22/16	.23	.33/ .16	2.7	4.4/1.0	.9	316	61
88/03/14	24	9.1	19.6/ -1.6	248	825	21	32/15	.25	.36/ .17	2.1	4.1/1.1	.5	272	67
88/03/15	24	8.8	17.0/ -1.2	239	830	21	32/16	.24	.32/ .18	5.5	10.3/1.7	5.1	339	13
88/03/16	24	11.4	18.3/ 5.0	252	838	18	21/16	.26	.34/ .19	4.7	8.3/1.2	4.0	322	23
88/03/17	24	11.5	21.0/ 4.0	257	848	18	21/15	.26	.38/ .18	3.6	5.8/1.1	2.3	304	43
88/03/18	24	12.1	23.0/ 1.0	255	846	19	25/14	.28	.41/ .17	2.2	3.7/ .8	.5	283	69
88/03/19	24	14.0	26.0/ 1.4	261	857	19	29/13	.31	.46/ .19	2.1	3.3/ .9	.7	270	63
88/03/20	24	14.5	25.8/ 4.7	266	871	18	22/13	.31	.45/ .20	2.4	3.6/1.4	.6	283	69
88/03/21	24	15.5	25.4/ 4.9	244	824	17	21/13	.31	.45/ .18	2.6	4.9/1.1	1.0	286	62
88/03/22	24	17.0	26.0/ 8.4	259	853	17	22/13	.34	.47/ .24	3.2	6.3/1.6	2.1	302	39
88/03/23	24	15.9	24.0/ 6.4	215	730	19	29/14	.35	.44/ .24	3.2	8.9/1.1	.9	321	68
88/03/24	24	18.7	26.0/ 12.1	265	871	16	18/13	.35	.46/ .26	4.9	6.7/3.6	4.3	319	23
88/03/25	24	20.0	29.5/ 9.8	269	873	16	20/12	.38	.52/ .25	3.6	7.2/1.4	3.0	325	18
88/03/26	24	19.6	30.7/ 7.6	274	888	16	23/12	.38	.54/ .25	2.2	2.9/1.2	.9	286	56
88/03/27	24	16.0	26.0/ 9.1	265	864	17	21/13	.32	.46/ .23	6.4	11.7/1.3	5.5	331	26
88/03/28	24	10.3	16.7/ 3.0	278	895	18	21/16	.24	.32/ .16	4.5	8.1/1.1	3.7	339	25
88/03/29	24	8.8	18.5/ -2.1	271	891	19	23/16	.23	.35/ .12	2.4	3.3/1.1	.4	271	73
88/03/30	24	11.8	16.3/ 8.2	282	900	18	19/16	.26	.31/ .21	7.0	10.1/4.7	6.4	344	18
88/03/31	24	12.1	19.5/ 5.5	283	902	18	20/15	.26	.36/ .19	6.1	8.3/2.4	5.8	334	9

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/04/01	24	13.7	22.7/ 5.4	283	901	17	20/14	0.29	0.41/0.18	2.8	5.0/ 1.6	0.7	271	69
88/04/02	24	15.1	26.0/ 3.8	276	885	17	21/13	.31	.46/ .17	2.5	4.4/ 1.4	.9	257	61
88/04/03	24	16.1	25.3/ 6.2	249	857	17	20/14	.32	.45/ .20	2.5	3.9/ 1.1	.3	292	74
88/04/04	24	18.2	26.8/ 10.4	231	818	16	19/13	.35	.49/ .24	2.8	4.8/ 1.6	.8	135	65
88/04/05	24	18.1	30.0/ 4.6	293	939	16	20/12	.35	.53/ .18	2.2	3.0/ 1.4	.5	277	68
88/04/06	24	20.1	31.7/ 7.6	285	901	15	20/11	.38	.56/ .21	2.3	3.3/ 1.1	.8	282	62
88/04/07	24	20.8	30.4/ 11.2	212	783	15	18/12	.39	.53/ .25	2.4	4.9/ 1.3	.9	288	60
88/04/08	24	17.1	21.8/ 11.4	250	902	16	18/15	.33	.40/ .25	7.0	11.0/ 1.9	6.7	321	7
88/04/09	24	16.8	26.0/ 9.1	301	943	16	19/13	.33	.47/ .22	3.1	6.9/ 1.7	1.0	293	61
88/04/10	24	17.2	28.9/ 4.4	296	947	16	20/12	.34	.51/ .17	2.1	3.2/ .8	.7	289	62
88/04/11	24	19.0	30.4/ 6.0	276	953	16	20/12	.36	.54/ .19	2.2	3.7/ .8	.5	265	69
88/04/12	24	19.9	29.7/ 7.8	245	845	15	19/12	.38	.52/ .21	2.9	5.9/ .9	1.3	216	56
88/04/13	24	17.4	24.0/ 11.7	105	370	33	78/14	.60	1.12/ .29	4.6	8.5/ 1.6	3.9	120	26
88/04/14	24	13.7	17.9/ 10.4	135	471	60	78/39	.93	1.09/ .74	4.3	6.3/ 2.1	2.4	133	49
88/04/15	24	10.0	11.9/ 7.3	100	437	76	82/66	.94	1.01/ .84	2.3	4.1/ 1.0	.2	51	76
88/04/16	24	12.0	14.6/ 9.0	114	472	75	82/67	1.07	1.21/ .94	2.2	4.2/ 1.1	1.7	152	34
88/04/17	24	16.4	22.8/ 10.6	267	956	59	78/38	1.08	1.26/ .94	2.4	4.8/ 1.0	1.3	170	48
88/04/18	24	17.0	23.0/ 10.0	286	921	41	72/23	.75	.90/ .61	2.5	3.7/ 1.1	1.7	148	35
88/04/19	24	16.0	20.8/ 11.6	187	668	37	59/22	.67	.85/ .50	4.9	7.6/ 3.1	4.2	141	27
88/04/20	24	10.4	13.3/ 7.2	96	447	64	77/46	.81	.92/ .71	5.1	7.2/ 1.5	4.4	128	26
88/04/21	24	10.8	17.2/ 5.7	257	985	56	81/27	.69	.85/ .50	2.4	4.2/ 1.1	1.4	293	45
88/04/22	24	11.5	18.4/ 4.1	274	936	49	82/20	.61	.81/ .40	3.4	4.8/ 1.5	1.7	143	53
88/04/23	24	10.7	16.5/ 7.4	218	927	46	67/22	.59	.71/ .43	3.5	4.5/ 2.3	.7	87	71
88/04/24	24	15.1	22.1/ 7.1	321	973	36	66/16	.54	.70/ .41	2.7	4.1/ 1.1	.8	250	64
88/04/25	24	17.5	25.8/ 7.6	326	962	30	63/14	.51	.68/ .36	2.6	4.8/ 1.0	1.9	320	30
88/04/26	24	18.6	27.1/ 8.9	286	976	24	43/13	.47	.57/ .35	1.9	3.5/ .6	.3	170	70
88/04/27	24	20.5	28.4/ 11.0	290	958	21	38/13	.47	.56/ .38	3.1	5.5/ 0.9	1.1	183	63
88/04/28	24	20.9	26.7/ 16.3	310	990	16	18/13	.40	.49/ .33	3.5	4.8/ 1.8	2.2	141	45
88/04/29	24	19.5	27.7/ 8.9	325	976	22	46/14	.48	.62/ .34	3.0	4.8/ 1.5	1.5	138	53
88/04/30	24	15.7	23.8/ 9.5	250	978	20	26/15	.37	.50/ .24	6.7	11.7/ 3.1	2.2	354	64

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/05/01	24	11.6	16.6/ 6.3	332	986	18	21/17	0.26	0.32/0.20	7.6	9.9/2.7	7.3	328	6
88/05/02	24	14.4	22.0/ 5.5	329	986	18	22/15	.30	.41/ .19	2.4	4.0/1.0	.7	267	64
88/05/03	24	16.8	25.7/ 5.7	305	962	18	28/14	.35	.47/ .25	2.2	3.1/ .5	.6	274	66
88/05/04	24	18.5	23.4/ 12.7	142	622	17	20/14	.36	.43/ .31	4.2	7.1/1.6	3.3	165	32
88/05/05	24	12.9	20.6/ 4.0	272	992	24	80/15	.33	.66/ .23	5.1	10.2/2.0	3.2	154	46
88/05/06	24	10.6	18.3/ 1.4	328	988	43	83/17	.47	.71/ .29	2.6	4.2/ .9	1.9	122	32
88/05/07	24	13.7	20.0/ 6.8	319	975	25	44/16	.38	.48/ .31	2.5	4.2/1.3	1.3	145	50
88/05/08	24	15.7	23.2/ 6.0	324	937	30	61/15	.50	.68/ .37	2.0	3.6/ .7	.7	207	60
88/05/09	24	19.0	28.1/ 8.9	330	971	22	42/13	.45	.53/ .34	2.4	3.1/1.3	.5	249	70
88/05/10	24	22.7	33.0/ 9.8	341	998	18	34/11	.47	.60/ .34	2.3	3.8/1.1	.8	270	60
88/05/11	24	25.7	36.2/ 13.5	342	1,000	16	29/10	.52	.65/ .38	2.2	3.6/ .9	.9	293	56
88/05/12	24	26.8	36.2/ 14.9	345	1,007	15	25/10	.53	.66/ .40	2.7	4.8/ .9	1.0	187	62
88/05/13	24	26.4	34.7/ 14.1	338	965	15	25/11	.52	.65/ .39	2.2	3.9/1.2	.5	348	66
88/05/14	24	27.1	35.4/ 17.6	346	999	13	17/11	.50	.65/ .35	3.1	5.6/1.4	1.6	294	50
88/05/15	24	27.1	36.4/ 15.0	342	994	14	19/10	.51	.67/ .33	3.5	6.0/1.6	1.7	163	55
88/05/16	24	27.1	34.3/ 20.0	345	1,017	13	16/11	.50	.63/ .38	4.9	9.2/3.0	3.3	169	43
88/05/17	*23*	22.3	27.7/ 18.6	238	934	16	20/14	.44	.53/ .38	3.6	5.8/1.8	1.0	133	68
88/05/18	24	22.9	29.7/ 15.9	346	1,001	18	28/13	.50	.55/ .39	5.8	7.3/4.3	5.3	322	17
88/05/19	24	22.7	30.4/ 15.7	353	1,015	15	18/12	.43	.56/ .33	3.6	5.0/1.4	3.1	327	17
88/05/20	24	24.6	32.8/ 16.2	357	1,021	14	17/12	.46	.61/ .32	2.7	5.4/1.6	.9	298	58
88/05/21	24	25.1	35.4/ 10.5	356	1,023	14	19/11	.47	.65/ .25	2.1	3.3/1.0	.7	263	61
88/05/22	24	26.9	36.5/ 15.8	340	1,012	14	17/10	.50	.67/ .32	2.7	4.1/1.3	.8	253	65
88/05/23	24	27.4	36.3/ 16.2	355	1,012	13	17/10	.51	.66/ .32	2.9	5.0/1.5	1.2	219	58
88/05/24	24	26.1	35.6/ 15.0	326	1,027	14	17/11	.49	.65/ .31	2.9	4.9/1.1	.9	194	65
88/05/25	24	26.3	35.3/ 14.4	350	998	14	18/11	.49	.65/ .30	3.4	5.8/1.8	1.3	182	61
88/05/26	24	26.6	33.8/ 15.7	345	1,009	14	17/11	.50	.63/ .32	2.7	4.3/1.4	1.3	143	54
88/05/27	24	26.1	34.2/ 16.9	352	1,021	14	17/11	.49	.64/ .34	3.1	5.1/1.5	.8	291	68
88/05/28	24	24.6	33.1/ 13.2	296	968	14	18/12	.46	.61/ .28	4.0	6.7/1.6	2.4	161	48
88/05/29	24	15.1	20.0/ 8.5	247	983	25	68/16	.41	.81/ .27	6.3	10.0/2.6	3.9	319	44
88/05/30	24	15.9	21.6/ 9.6	329	992	18	23/15	.34	.41/ .27	5.3	8.0/3.0	5.0	336	13
88/05/31	24	19.0	27.8/ 6.9	348	1,010	18	32/13	.40	.52/ .26	2.2	3.6/1.0	.8	221	59

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/06/01	24	23.1	31.3/ 12.2	287	776	15	20/12	0.44	0.57/0.28	2.1	3.4/0.9	0.7	244	61
88/06/02	24	27.1	36.6/ 15.1	357	1,015	14	19/10	.51	.67/ .34	2.4	3.8/1.2	.6	192	67
88/06/03	24	29.3	38.6/ 16.5	361	1,012	13	18/10	.54	.70/ .34	3.9	6.4/1.5	2.1	178	52
88/06/04	24	29.0	36.8/ 21.1	345	1,034	13	16/10	.54	.67/ .40	6.3	10.5/1.5	5.1	158	32
88/06/05	24	21.0	27.2/ 14.5	366	1,028	16	18/14	.40	.51/ .30	4.6	7.9/1.8	3.3	151	37
88/06/06	24	17.8	25.0/ 8.8	365	1,020	17	21/14	.36	.46/ .24	4.9	8.6/1.7	4.2	154	25
88/06/07	24	17.8	24.5/ 10.5	332	937	17	20/14	.36	.46/ .25	4.3	6.7/1.7	2.7	158	47
88/06/08	24	19.3	26.9/ 9.6	342	1,029	16	19/14	.37	.50/ .24	2.4	3.8/1.2	.7	279	63
88/06/09	24	23.0	33.3/ 9.4	372	1,034	15	19/11	.43	.61/ .23	3.2	5.7/1.2	1.2	196	62
88/06/10	24	24.5	33.6/ 12.1	348	1,027	14	18/11	.46	.61/ .27	3.1	6.0/1.3	1.5	208	55
88/06/11	24	24.6	32.2/ 14.9	330	975	14	18/12	.46	.59/ .31	2.7	4.2/1.2	1.0	181	58
88/06/12	24	27.9	34.3/ 20.7	338	1,054	13	16/11	.52	.64/ .40	3.9	6.6/1.9	2.9	320	32
88/06/13	24	28.5	36.4/ 18.3	361	1,015	13	17/11	.53	.68/ .36	2.2	3.4/ .8	.5	266	67
88/06/14	24	29.2	37.8/ 17.8	343	1,010	13	17/10	.54	.70/ .35	2.7	4.8/1.4	.9	213	62
88/06/15	24	30.4	38.5/ 19.1	364	1,022	12	16/10	.56	.71/ .37	3.8	6.4/1.6	2.2	148	48
88/06/16	24	29.2	38.3/ 15.8	361	1,009	13	17/10	.54	.70/ .32	3.9	7.3/1.5	2.3	164	49
88/06/17	24	26.8	32.0/ 19.3	151	575	14	18/12	.50	.59/ .37	2.4	5.5/1.2	.8	119	61
88/06/18	24	29.9	37.2/ 19.3	302	897	14	23/10	.60	.69/ .51	2.7	4.5/1.4	1.5	262	45
88/06/19	24	30.7	36.3/ 22.8	252	772	14	17/11	.62	.70/ .47	2.9	4.5/1.5	.8	139	66
88/06/20	24	31.8	38.9/ 20.6	281	849	15	32/10	.69	.86/ .51	3.3	6.7/1.3	1.7	152	52
88/06/21	24	31.5	39.1/ 20.7	357	1,007	13	16/10	.61	.73/ .40	3.9	6.0/1.6	2.2	144	49
88/06/22	24	28.9	35.0/ 22.7	156	499	18	40/11	.71	1.19/ .49	3.0	4.6/1.6	1.4	275	52
88/06/23	24	31.4	38.8/ 22.0	332	945	19	49/10	.80	1.30/ .58	4.9	7.4/1.3	4.0	313	22
88/06/24	24	34.1	41.3/ 24.6	281	947	12	17/ 9	.66	.75/ .53	3.1	6.1/1.1	1.7	140	49
88/06/25	24	30.5	35.7/ 23.1	350	985	13	16/11	.58	.67/ .45	3.6	7.2/1.1	1.6	185	56
88/06/26	24	30.7	38.8/ 21.5	355	1,001	14	22/10	.62	.73/ .44	2.7	5.7/1.1	.8	279	64
88/06/27	24	32.1	40.2/ 20.6	357	1,001	12	17/10	.61	.75/ .42	2.6	4.6/1.1	1.1	215	57
88/06/28	24	32.2	40.1/ 21.0	359	1,009	12	16/10	.61	.75/ .42	3.2	4.5/1.5	1.1	182	63
88/06/29	24	31.8	39.2/ 20.8	360	1,012	12	16/10	.60	.73/ .41	2.8	5.1/1.4	.9	196	64
88/06/30	24	31.0	39.7/ 19.5	352	1,010	12	16/10	.58	.74/ .38	2.4	5.3/1.0	.9	206	58

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/07/01	24	31.3	40.8/ 19.1	360	1,012	12	16/ 9	0.58	0.75/0.37	3.0	5.8/1.3	1.2	214	60
88/07/02	24	32.3	41.1/ 20.5	355	1,003	12	16/ 9	.60	.77/ .40	2.6	4.1/1.1	.8	214	66
88/07/03	24	31.9	40.3/ 20.9	351	1,000	12	16/ 9	.60	.75/ .40	3.8	5.8/1.5	2.1	160	51
88/07/04	24	30.2	37.3/ 23.4	357	999	13	15/11	.57	.70/ .45	5.0	6.6/2.0	4.4	134	23
88/07/05	24	29.3	37.4/ 20.8	363	1,013	13	16/11	.56	.71/ .41	3.5	5.3/2.0	2.6	144	33
88/07/06	24	29.7	37.5/ 20.6	357	1,004	13	16/10	.56	.71/ .40	2.6	4.3/1.6	1.2	167	52
88/07/07	24	30.1	39.2/ 17.8	357	1,003	13	17/10	.57	.73/ .35	2.7	4.5/1.3	.9	192	64
88/07/08	24	31.1	41.1/ 19.5	359	1,019	12	16/ 9	.58	.77/ .38	2.7	4.0/1.2	.5	221	72
88/07/09	24	32.4	42.1/ 20.3	356	1,008	12	16/ 9	.60	.78/ .39	2.4	4.0/1.1	1.1	258	55
88/07/10	24	33.1	42.5/ 20.4	352	1,005	12	16/ 9	.62	.79/ .39	3.6	5.4/1.8	1.5	170	60
88/07/11	24	33.0	40.1/ 26.6	353	998	12	14/10	.62	.75/ .50	4.6	6.5/2.3	3.4	132	37
88/07/12	24	30.3	37.7/ 22.9	347	1,034	13	15/10	.57	.72/ .44	2.9	4.5/1.8	1.9	128	40
88/07/13	24	30.5	39.4/ 19.6	317	1,064	13	16/10	.58	.73/ .38	3.0	4.3/1.9	1.0	179	65
88/07/14	24	30.8	40.0/ 19.1	351	1,003	13	16/10	.58	.75/ .37	2.9	4.2/1.7	.9	164	64
88/07/15	24	31.1	40.7/ 20.0	355	1,015	12	16/ 9	.58	.76/ .39	2.7	3.9/1.4	.2	138	78
88/07/16	24	32.3	42.3/ 18.8	356	1,010	12	16/ 9	.60	.78/ .37	2.4	3.7/1.1	.5	247	69
88/07/17	24	34.2	44.0/ 21.7	353	1,009	11	16/ 8	.63	.80/ .41	2.6	5.2/1.2	1.0	244	59
88/07/18	24	38.6	45.3/ 30.5	364	1,030	10	13/ 8	.71	.82/ .57	5.2	7.6/3.6	4.6	334	18
88/07/19	24	35.0	43.8/ 22.6	359	1,022	11	15/ 8	.65	.80/ .43	2.7	3.9/1.4	.7	167	65
88/07/20	24	35.0	43.6/ 23.9	343	995	11	15/ 9	.66	.81/ .47	2.8	6.1/1.1	.9	222	62
88/07/21	24	34.8	42.9/ 27.5	308	974	13	19/ 9	.72	.81/ .54	3.4	7.3/1.5	2.0	120	45
88/07/22	24	32.9	40.3/ 24.9	220	858	13	18/10	.67	.77/ .55	3.5	7.4/1.4	.7	153	70
88/07/23	24	32.9	40.3/ 24.0	267	964	13	18/10	.66	.76/ .55	2.9	5.9/1.2	1.6	258	48
88/07/24	24	33.5	40.8/ 23.6	303	969	12	17/ 9	.66	.77/ .50	3.2	6.2/1.4	.4	194	74
88/07/25	24	34.4	41.4/ 25.0	314	979	12	17/ 9	.68	.79/ .54	3.2	7.4/1.1	1.5	278	52
88/07/26	24	34.6	41.5/ 25.9	333	979	12	16/ 9	.67	.79/ .54	3.0	6.4/1.3	1.1	222	61
88/07/27	24	33.8	40.4/ 22.9	315	980	12	16/10	.65	.77/ .46	4.0	7.8/1.2	2.4	320	44
88/07/28	24	33.4	41.2/ 27.3	280	969	12	14/ 9	.64	.77/ .53	2.9	5.5/1.5	1.6	309	45
88/07/29	24	32.9	41.9/ 23.7	249	852	12	15/ 9	.63	.78/ .46	2.5	8.4/ .9	.7	2	66
88/07/30	24	33.1	41.4/ 24.2	279	974	12	15/ 9	.64	.78/ .47	3.6	8.3/1.2	1.5	132	59
88/07/31	24	32.0	38.3/ 25.3	270	937	16	24/11	.76	.98/ .63	3.3	7.1/1.5	1.2	118	60

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/08/01	24	33.8	40.3/ 28.1	318	967	14	19/10	0.73	0.77/0.66	3.8	6.0/2.5	2.2	127	49
88/08/02	24	33.1	39.4/ 26.1	292	836	13	20/10	.68	.76/ .57	3.7	5.9/1.3	2.0	168	52
88/08/03	24	32.8	39.3/ 26.5	321	952	13	15/10	.64	.76/ .52	3.3	5.7/1.6	2.0	137	45
88/08/04	24	32.5	41.1/ 21.9	323	957	13	17/ 9	.63	.78/ .43	3.2	8.8/1.3	1.3	162	58
88/08/05	24	30.9	37.7/ 23.2	267	780	15	22/11	.68	.76/ .54	3.3	5.5/1.2	2.1	170	42
88/08/06	24	29.8	35.6/ 22.8	332	970	13	16/11	.57	.68/ .46	3.8	5.5/2.3	.9	152	69
88/08/07	24	27.8	36.5/ 17.2	332	977	14	19/11	.54	.69/ .36	2.3	3.3/1.4	.7	206	62
88/08/08	24	28.5	37.7/ 17.5	334	986	13	17/10	.54	.71/ .35	2.5	4.2/1.3	.6	213	69
88/08/09	24	29.2	38.4/ 17.5	331	976	13	17/10	.55	.73/ .35	2.6	4.4/1.6	.6	238	69
88/08/10	24	28.9	37.6/ 19.2	326	964	13	16/10	.54	.71/ .37	3.4	6.1/1.5	1.1	173	64
88/08/11	24	27.2	36.7/ 15.9	334	988	14	17/10	.51	.68/ .32	3.3	6.8/1.1	1.6	211	55
88/08/12	24	26.2	35.7/ 14.7	330	979	14	18/11	.49	.66/ .30	3.1	4.8/1.7	1.1	175	62
88/08/13	24	26.5	35.7/ 14.8	326	965	14	18/11	.50	.66/ .31	3.0	4.6/1.5	1.5	149	54
88/08/14	24	28.0	36.8/ 15.8	330	980	13	17/10	.52	.68/ .32	3.5	5.9/1.6	2.4	140	39
88/08/15	24	27.1	35.7/ 19.9	326	974	14	16/11	.51	.67/ .38	2.7	3.6/1.5	.7	135	65
88/08/16	24	27.3	37.3/ 14.5	328	978	14	18/10	.51	.69/ .30	2.4	3.9/1.2	.6	257	67
88/08/17	24	29.0	39.8/ 17.0	324	970	13	17/ 9	.54	.73/ .34	2.8	4.3/1.4	1.0	245	61
88/08/18	24	31.2	40.4/ 19.7	314	948	12	16/ 9	.58	.74/ .38	3.0	6.7/1.0	1.5	248	55
88/08/19	24	32.5	40.9/ 22.7	294	931	12	15/ 9	.60	.75/ .43	3.0	5.2/1.7	.9	210	65
88/08/20	24	30.7	37.8/ 24.7	228	948	16	37/11	.69	1.16/ .52	3.6	5.2/1.3	2.9	116	25
88/08/21	24	29.3	37.1/ 19.8	298	902	28	58/12	1.02	1.37/ .72	2.9	5.2/1.4	1.1	153	61
88/08/22	24	31.1	38.4/ 22.7	298	909	23	44/11	.98	1.44/ .61	2.4	4.4/1.0	1.0	164	57
88/08/23	24	31.3	40.4/ 24.1	279	880	19	29/11	.85	1.09/ .57	3.0	8.7/1.0	.2	47	76
88/08/24	24	30.5	35.8/ 25.4	159	668	24	38/15	1.04	1.27/ .82	2.0	2.9/1.3	.9	166	52
88/08/25	24	30.8	39.4/ 24.5	242	980	27	59/11	1.09	1.83/ .81	2.8	7.0/0.7	.5	158	70
88/08/26	24	28.6	37.1/ 22.5	217	937	44	74/16	1.55	2.09/ .94	2.6	4.6/1.0	.4	185	71
88/08/27	24	27.5	35.9/ 21.5	235	840	49	76/23	1.71	2.22/1.28	2.1	5.3/1.0	.5	276	67
88/08/28	24	28.3	38.4/ 21.9	231	795	39	62/17	1.42	1.70/0.78	2.7	6.7/1.0	.7	311	66
88/08/29	24	28.8	38.0/ 20.3	291	953	33	68/11	1.11	1.63/0.66	3.1	7.4/ .9	.1	23	78
88/08/30	24	28.6	36.4/ 21.6	236	922	28	57/12	.99	1.49/0.70	1.9	4.1/1.0	.7	254	58
88/08/31	24	30.3	38.7/ 19.2	286	900	19	43/10	.75	1.01/0.62	2.6	5.7/1.0	.8	216	62

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/09/01	24	30.5	39.9/ 20.3	263	894	19	42/10	0.75	1.04/ .57	2.2	5.3/1.1	0.5	317	68
88/09/02	24	31.9	42.3/ 21.3	276	908	14	25/ 9	.66	.77/ .48	2.1	2.9/1.3	.2	285	75
88/09/03	24	31.6	41.6/ 21.1	281	891	12	17/ 9	.59	.76/ .43	2.3	3.5/1.3	1.1	287	50
88/09/04	24	30.3	40.2/ 19.5	271	882	13	17/ 9	.57	.74/ .39	2.1	3.2/1.3	.4	253	70
88/09/05	24	30.1	38.9/ 20.7	266	867	13	18/10	.59	.73/ .44	2.7	4.5/1.6	.6	151	70
88/09/06	24	30.0	38.4/ 20.4	257	849	13	19/10	.58	.72/ .45	2.6	3.7/ .9	.4	202	73
88/09/07	24	29.2	38.7/ 20.3	258	845	13	17/10	.55	.72/ .41	2.5	4.4/1.2	.8	272	64
88/09/08	24	29.6	38.7/ 19.5	266	859	13	17/10	.56	.72/ .39	2.5	3.4/1.2	.8	235	60
88/09/09	24	27.9	36.5/ 19.1	255	859	14	19/11	.54	.68/ .40	2.7	5.0/1.3	1.0	225	62
88/09/10	24	27.0	35.6/ 18.6	268	867	14	17/11	.51	.66/ .37	2.4	4.4/1.2	0.7	243	66
88/09/11	24	25.0	30.3/ 19.6	263	881	14	16/12	.47	.56/ .38	7.1	9.7/4.6	6.8	320	7
88/09/12	24	19.3	25.0/ 12.1	262	864	16	19/14	.37	.46/ .27	4.4	8.3/1.7	3.8	326	20
88/09/13	24	19.8	29.5/ 10.9	265	867	16	19/13	.38	.54/ .25	2.2	2.8/1.3	.7	293	60
88/09/14	24	21.6	31.8/ 10.4	267	873	15	19/12	.41	.58/ .25	2.3	4.0/ .9	.8	261	61
88/09/15	24	23.3	34.1/ 13.2	268	873	15	18/11	.44	.62/ .28	2.4	3.3/1.0	.7	259	65
88/09/16	24	24.5	34.6/ 13.4	265	865	14	18/11	.46	.63/ .28	2.9	4.5/1.7	.7	210	70
88/09/17	24	24.2	33.4/ 14.3	265	868	14	18/11	.45	.61/ .30	2.3	3.9/1.3	.8	258	60
88/09/18	24	22.4	30.4/ 11.7	264	863	15	19/12	.42	.56/ .26	6.3	10.7/1.6	6.0	312	9
88/09/19	24	22.1	32.8/ 7.1	251	868	15	20/11	.42	.59/ .21	2.8	4.9/1.2	1.1	154	61
88/09/20	24	21.8	26.2/ 16.5	169	806	17	37/14	.45	.71/ .37	4.4	6.7/2.2	2.2	130	55
88/09/21	24	15.3	20.1/ 11.5	170	836	60	80/42	1.04	1.21/ .75	2.5	5.9/1.0	.9	266	59
88/09/22	24	19.0	26.8/ 11.0	241	804	44	76/18	.87	1.08/ .61	2.4	4.4/1.3	.6	223	67
88/09/23	24	20.7	29.7/ 11.9	250	829	33	62/14	.71	.92/ .49	2.1	3.1/0.9	.7	260	65
88/09/24	24	21.7	30.4/ 12.1	250	832	21	38/12	.51	.59/ .39	2.7	4.1/1.4	.8	163	67
88/09/25	24	22.3	31.2/ 12.6	244	830	17	28/12	.46	.57/ .37	2.9	5.0/1.5	.8	206	68
88/09/26	24	22.6	31.8/ 14.3	245	823	16	22/12	.45	.59/ .32	2.5	3.5/1.3	.8	267	66
88/09/27	24	23.3	32.7/ 13.0	232	821	15	20/11	.44	.59/ .29	3.7	6.8/1.1	3.1	320	27
88/09/28	24	24.1	31.9/ 17.2	243	797	14	17/12	.45	.58/ .34	4.7	7.7/2.0	4.4	327	13
88/09/29	24	24.4	34.1/ 17.3	234	826	14	17/11	.45	.61/ .33	2.4	3.6/1.5	.2	246	76
88/09/30	24	24.8	35.7/ 14.3	242	818	14	19/11	.47	.65/ .31	2.0	2.9/1.3	.3	301	71

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/10/01	24	24.4	36.4/ 13.4	239	810	15	19/10	0.46	0.65/0.30	2.1	3.7/1.3	0.9	276	59
88/10/02	24	24.9	35.7/ 15.3	233	800	14	18/10	.46	.64/ .32	2.4	3.9/1.1	1.1	280	56
88/10/03	24	24	34.8/ 14.8	201	667	14	18/11	.45	.63/ .31	2.4	3.1/1.2	.9	285	62
88/10/04	24	23.5	34.7/ 14.1	228	799	15	18/11	.44	.62/ .30	2.5	4.9/1.0	.8	269	64
88/10/05	24	23.6	32.4/ 15.9	217	786	15	18/12	.44	.59/ .33	2.8	5.0/1.7	.8	209	67
88/10/06	24	21.3	29.8/ 13.0	218	759	16	23/13	.43	.55/ .31	2.4	3.8/1.4	.4	273	72
88/10/07	24	20.6	30.3/ 10.5	223	773	17	26/12	.42	.55/ .32	2.4	3.3/1.0	.7	271	66
88/10/08	24	22.3	33.1/ 10.5	221	770	15	21/11	.43	.60/ .27	2.5	5.8/1.3	.8	296	63
88/10/09	24	25.5	33.1/ 18.8	206	739	14	16/11	.47	.60/ .36	2.8	4.3/1.6	1.5	328	45
88/10/10	24	23.3	31.8/ 16.3	205	749	15	17/12	.44	.58/ .32	3.0	9.0/1.6	.8	39	67
88/10/11	24	22.9	29.6/ 15.0	181	735	15	19/13	.44	.55/ .33	3.4	5.3/1.0	2.2	130	46
88/10/12	24	21.2	29.0/ 11.6	208	745	19	37/13	.46	.57/ .30	2.5	4.1/1.2	.8	203	64
88/10/13	24	20.4	28.8/ 10.5	183	726	16	22/13	.40	.53/ .28	3.3	5.6/1.6	1.3	170	60
88/10/14	24	22.3	28.2/ 16.5	191	726	15	17/13	.42	.52/ .34	3.2	5.8/1.5	2.2	317	38
88/10/15	24	24.2	31.0/ 19.1	206	730	14	17/12	.45	.56/ .38	6.4	8.7/2.6	5.9	311	18
88/10/16	24	24.8	32.8/ 18.9	204	729	14	16/11	.46	.60/ .37	3.4	6.5/1.3	2.5	312	34
88/10/17	24	24	34.9/ 13.2	203	727	14	19/11	.45	.63/ .29	2.2	3.5/1.3	1.0	319	51
88/10/18	24	23	34.4/ 13.6	202	723	15	18/11	.43	.61/ .29	2.1	4.3/ .9	.7	263	61
88/10/19	24	23.5	34.6/ 13.9	199	713	15	18/11	.44	.61/ .30	2.9	4.6/1.3	2.5	305	17
88/10/20	24	22.7	32.3/ 15.1	199	714	15	17/11	.42	.58/ .31	3.5	8.1/1.4	2.9	323	18
88/10/21	24	21.2	32.8/ 10.8	197	710	15	19/11	.40	.59/ .25	2.0	2.6/1.1	.7	302	60
88/10/22	24	21.8	33.7/ 11.5	193	702	15	19/11	.41	.60/ .26	2.9	6.1/1.7	2.5	318	20
88/10/23	24	20.9	33.0/ 10.2	193	701	15	19/11	.39	.59/ .24	2.0	3.0/ .8	.7	302	62
88/10/24	24	20.5	32.8/ 10.1	190	695	15	19/11	.39	.59/ .24	2.1	3.0/1.2	1.0	303	54
88/10/25	24	20.2	32.6/ 10.1	186	686	15	19/11	.38	.58/ .24	2.1	2.8/1.5	.7	302	62
88/10/26	24	19.2	31.2/ 8.8	186	683	16	19/12	.37	.55/ .22	2.0	3.0/ .9	.9	296	56
88/10/27	24	18.3	28.9/ 9.8	158	600	16	19/12	.35	.52/ .23	1.9	3.1/1.0	.4	290	72
88/10/28	24	17.5	26.1/ 9.1	151	592	16	19/13	.34	.47/ .23	2.5	4.4/1.2	.8	290	65
88/10/29	24	18.8	26.4/ 13.1	149	638	18	24/15	.42	.60/ .31	2.5	4.2/1.4	.3	299	75
88/10/30	24	18.8	28.8/ 10.1	172	641	24	42/15	.50	.62/ .36	2.0	2.5/ .9	1.3	302	35
88/10/31	24	20	29.7/ 9.8	166	649	19	30/13	.44	.55/ .35	2.0	4.3/1.0	.4	293	71

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/11/01	24	19.7	28.7/ 11.1	164	595	19	30/13	0.43	0.53/0.27	2.7	5.3/1.4	0.6	220	71
88/11/02	24	15.6	24.0/ 8.8	147	553	21	30/16	.38	.49/ .27	2.1	3.3/1.0	.5	291	67
88/11/03	24	16.3	25.8/ 7.9	162	615	24	38/15	.43	.51/ .35	2.1	2.7/1.3	.6	297	65
88/11/04	24	20.5	30.2/ 11.6	167	630	18	28/12	.42	.53/ .32	3.4	6.5/1.3	2.5	320	28
88/11/05	24	18.7	27.4/ 10.3	161	625	16	20/13	.36	.49/ .25	2.3	4.6/ .9	.0	284	80
88/11/06	24	19.0	27.8/ 11.2	150	614	16	19/13	.37	.51/ .26	2.5	5.7/1.4	1.6	303	39
88/11/07	24	16.5	23.1/ 9.5	120	503	18	22/15	.34	.43/ .26	2.1	5.5/1.2	.1	78	77
88/11/08	24	14.8	21.0/ 8.4	96	530	19	26/15	.32	.39/ .28	3.1	5.7/1.3	1.3	286	57
88/11/09	24	14.8	21.6/ 8.3	157	615	18	21/15	.32	.41/ .23	3.0	6.6/1.1	1.5	304	51
88/11/10	24	12.3	17.9/ 6.9	93	353	27	41/20	.39	.49/ .25	2.5	4.1/1.2	.5	104	70
88/11/11	24	12.8	20.2/ 6.2	153	590	25	45/15	.36	.48/ .22	3.8	6.5/1.2	3.3	304	24
88/11/12	24	11.2	20.2/ 2.8	150	581	22	32/16	.30	.40/ .19	2.2	3.8/1.1	.2	293	77
88/11/13	24	13.6	22.5/ 3.6	146	572	31	44/17	.48	.68/ .32	3.7	5.4/2.3	1.5	144	60
88/11/14	24	10.0	13.4/ 5.1	74	330	41	72/20	.52	.92/ .23	4.9	9.0/2.7	2.3	341	56
88/11/15	24	7.1	16.2/ .2	152	588	28	46/17	.27	.33/ .22	2.5	4.0/1.4	1.7	304	40
88/11/16	24	6.7	14.6/ -1.2	128	482	29	50/18	.28	.34/ .20	2.6	4.6/1.1	1.1	126	59
88/11/17	24	8.3	15.2/ .8	138	586	24	37/17	.26	.29/ .21	5.4	8.7/2.4	4.7	332	22
88/11/18	24	7.6	12.3/ 4.6	146	577	21	25/18	.23	.26/ .20	6.1	8.1/3.4	5.7	323	13
88/11/19	24	4.8	13.1/ - .8	111	493	22	27/17	.20	.27/ .14	2.1	4.7/1.3	.4	290	70
88/11/20	24	4.4	15.6/ -4.6	142	569	21	26/16	.19	.30/ .11	1.9	2.5/1.1	.6	293	65
88/11/21	24	6.7	16.9/ -4.0	141	573	20	26/16	.21	.32/ .12	2.1	3.3/ .9	.3	317	74
88/11/22	24	9.2	16.2/ 2.9	95	528	19	22/16	.23	.31/ .17	2.2	3.8/1.1	.5	325	69
88/11/23	24	11.7	21.6/ 1.7	125	574	19	22/16	.28	.43/ .16	4.5	8.3/1.8	2.5	217	52
88/11/24	24	6.7	13.3/ .9	93	484	20	22/17	.20	.27/ .15	2.7	5.3/1.4	1.9	311	29
88/11/25	24	4.0	8.7/ -2.2	51	480	50	76/21	.41	.61/ .17	2.6	5.1/1.0	1.3	113	54
88/11/26	24	6.1	14.9/ -3.8	137	545	41	80/17	.32	.46/ .23	3.0	5.3/1.2	2.2	322	28
88/11/27	24	6.6	15.6/ - .3	136	544	23	33/17	.23	.30/ .16	2.4	4.5/1.2	.7	304	66
88/11/28	24	8.9	19.9/ - .2	123	531	21	28/15	.25	.36/ .16	3.9	7.2/1.1	3.5	328	20
88/11/29	24	10.7	18.6/ 4.7	135	539	20	28/16	.27	.34/ .22	4.6	6.8/2.4	3.7	308	28
88/11/30	24	11.0	20.5/ 3.5	134	538	19	22/15	.26	.37/ .17	2.8	5.4/1.2	1.3	316	53

TABLE 3.--*Summary of meteorological data collected at study site in 1988*--Continued

Date	Number of hourly values	Temperature (degrees Celsius)		Solar radiation (watts per square meter)		Relative humidity (percent)		Vapor pressure (kilopascals)		Windspeed (meters per second)		Wind vector		
												Magnitude (meters per second)	Direction	
		Mean	Max/min	Mean	Max	Mean	Max/min	Mean	Max/min	Mean	Max/min		°az	Std. dev.
88/12/01	24	8.5	21.2/ -0.4	134	539	19	24/14	0.23	0.38/0.14	2.0	3.2/1.1	0.8	319	59
88/12/02	24	8.2	19.6/ -1.5	130	539	20	25/15	.23	.35/ .14	2.1	3.1/ .9	.9	301	59
88/12/03	24	9.0	20.5/ .4	100	470	19	24/15	.23	.36/ .15	1.6	2.7/ .8	1.3	314	24
88/12/04	24	8.3	19.5/ .2	107	428	19	24/15	.22	.35/ .15	1.9	2.8/ .7	1.1	311	51
88/12/05	24	10.3	21.6/ -1.5	126	529	19	24/14	.25	.38/ .13	2.4	5.6/1.3	1.0	299	57
88/12/06	24	13.7	21.9/ 6.9	97	405	17	20/14	.28	.38/ .20	3.4	8.5/1.1	1.8	310	51
88/12/07	24	12.0	15.6/ 8.4	122	520	18	20/17	.26	.31/ .23	6.6	8.8/4.5	5.7	347	21
88/12/08	24	11.1	16.7/ 6.8	129	521	19	21/16	.25	.32/ .22	6.5	10.3/4.1	5.3	327	27
88/12/09	24	12.5	18.9/ 7.4	121	523	18	19/15	.26	.34/ .20	6.7	8.3/5.0	6.3	320	14
88/12/10	24	12.1	20.5/ 5.8	126	513	20	32/16	.29	.39/ .22	2.3	7.1/1.2	.8	324	58
88/12/11	24	13.0	21.5/ 4.6	130	522	23	40/15	.33	.38/ .26	3.7	6.7/1.4	2.9	321	24
88/12/12	24	12.5	24.4/ 4.4	125	511	18	22/13	.27	.42/ .17	2.0	4.2/1.1	.6	358	61
88/12/13	24	11.6	24.2/ 2.4	124	512	18	21/13	.26	.42/ .16	2.2	4.7/1.1	.8	327	63
88/12/14	24	10.1	19.4/ 1.5	127	518	19	24/15	.24	.35/ .17	4.0	11.4/1.1	2.2	330	51
88/12/15	24	3.5	9.0/ -1.8	57	263	22	33/19	.18	.23/ .15	5.1	8.9/0.9	4.6	321	21
88/12/16	24	6.2	15.9/ -1.3	117	496	26	36/17	.24	.31/ .19	2.1	3.4/ .9	.5	5	69
88/12/17	24	7.5	14.7/ .8	65	302	26	40/18	.27	.33/ .20	1.7	2.4/1.1	1.0	319	45
88/12/18	24	6.6	12.1/ 3.0	75	343	36	42/25	.35	.40/ .32	1.6	2.8/ .9	.4	264	67
88/12/19	24	3.3	10.4/ -3.2	84	449	52	75/31	.40	.50/ .31	1.9	2.5/1.2	.4	316	70
88/12/20	24	4.0	9.0/ -3.8	60	382	55	77/42	.44	.60/ .33	3.2	5.7/1.2	1.7	141	54
88/12/21	24	6.1	12.1/ -3.3	124	512	40	72/18	.37	.73/ .18	3.8	7.4/1.5	.5	31	75
88/12/22	24	2.2	9.0/ -6.0	118	516	47	75/23	.31	.49/ .25	3.2	5.6/1.1	.1	319	79
88/12/23	24	3.3	9.1/ -4.6	123	508	29	48/19	.23	.38/ .15	3.9	6.2/1.8	3.5	313	16
88/12/24	24	3.7	8.5/ -4.4	29	113	37	75/20	.31	.63/ .16	2.9	6.2/1.3	1.3	138	58
88/12/25	24	3.8	8.9/ -1.3	111	512	30	72/19	.24	.59/ .16	3.8	6.4/1.8	2.5	297	40
88/12/26	24	- .5	3.8/ -4.2	124	510	25	32/21	.15	.17/ .12	5.6	8.0/3.1	5.1	326	19
88/12/27	24	-3.6	2.6/-10.2	121	513	25	32/21	.12	.16/ .09	2.2	3.7/1.2	.2	122	75
88/12/28	24	-1.7	4.3/ -9.3	118	481	37	64/24	.19	.25/ .14	3.3	6.5/ .9	2.5	323	32
88/12/29	24	- .3	7.0/ -5.5	126	513	25	33/19	.15	.20/ .12	5.3	8.0/1.8	4.8	293	15
88/12/30	24	-1.3	8.6/ -8.2	122	514	24	32/19	.14	.22/ .09	2.0	3.5/1.1	.2	298	75
88/12/31	24	.3	8.2/ -6.8	77	394	25	29/20	.16	.23/ .10	2.1	3.4/1.2	.7	311	75