Selected Meteorological Data for an Arid Site Near Beatty, Nye County, Nevada, Calendar Year 1987

By James L. Wood and Jeffrey M. Fischer

U.S. GEOLOGICAL SURVEY

Open-File Report 92-59

Carson City, Nevada
1992

U.S. DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., *Secretary*

U.S. GEOLOGICAL SURVEY

Dallas L. Peck, *Director*

For additional information
(after April 4, 1992), write to:

U.S. Geological Survey
333 West Nye Lane
Carson City, NV 89706

Copies of this report may be
purchased from:

U.S. Geological Survey
Books and Open-File Reports Section
Box 25425, Federal Center
Denver, CO 80225

CONTENTS

ILLUSTRATIONS

TABLES

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.

Selected Meteorological Data for an Arid Site Near Beatty, Nye County, Nevada, Calendar Year 1987

By James L. Wood and Jeffrey M. Fischer

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 1987. Data were collected 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. 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.

A discussion of the instrumentation used at the site is presented. Included in the discussion are the type of sensors, their reported accuracy, and mounting height of each sensor.

In 1987, the average hourly air temperatures ranged from -7.6 degrees Celsius, in December, to 43.1 degrees Celsius, in July. Hourly averaged relative humidity ranged from about 12 percent to over 80 percent. Hourly vapor pressures ranged from 0.12 to 1.77 kilopascals. Daily values for maximum incident solar radiation ranged from 118 to 1,067 watts per square meter. Daily mean windspeed ranged from 1.4 to 9.4 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 1987 was 136.4 millimeters, more than 75 percent occurring during January-April and November-December.

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 1987. It is one in a series of meteorological data reports for this site (Wood and Fischer, 1991). 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 situated 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).

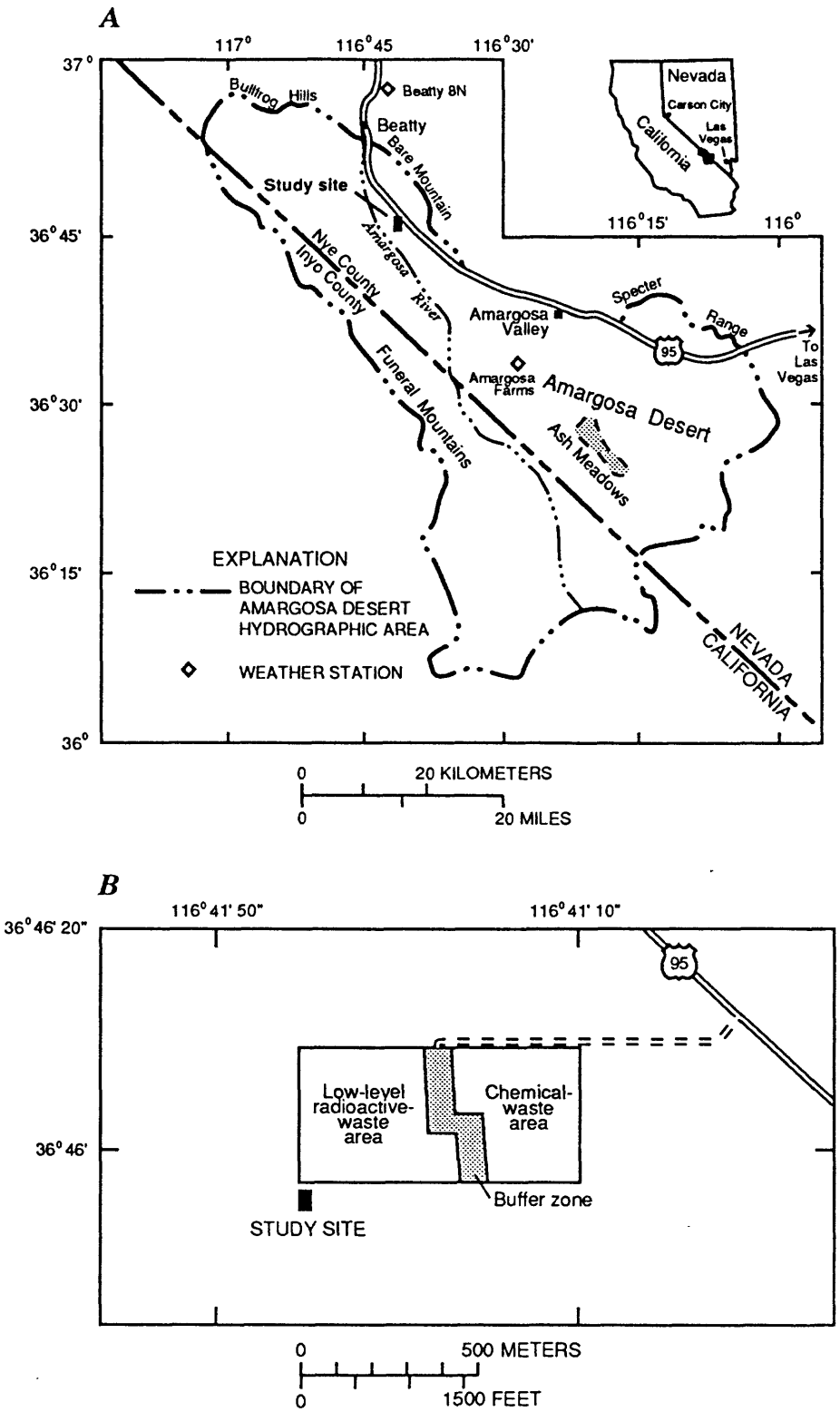

FIGURE 1.--Location of study site and adjacent waste-disposal facility.

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 in 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 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, solar radiation, relative humidity, vapor pressure, 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 total precipitation values were automatically retrieved from the datalogger to 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 malfunctioning equipment or data transmission problems, no data were collected for 17 days in 1987 and one or more hourly values were missing for an additional 60 days. Of those 60 days, 33 had fewer than 20 hourly values reported.

---

[1] All sensor specifications supplied by manufacturers.

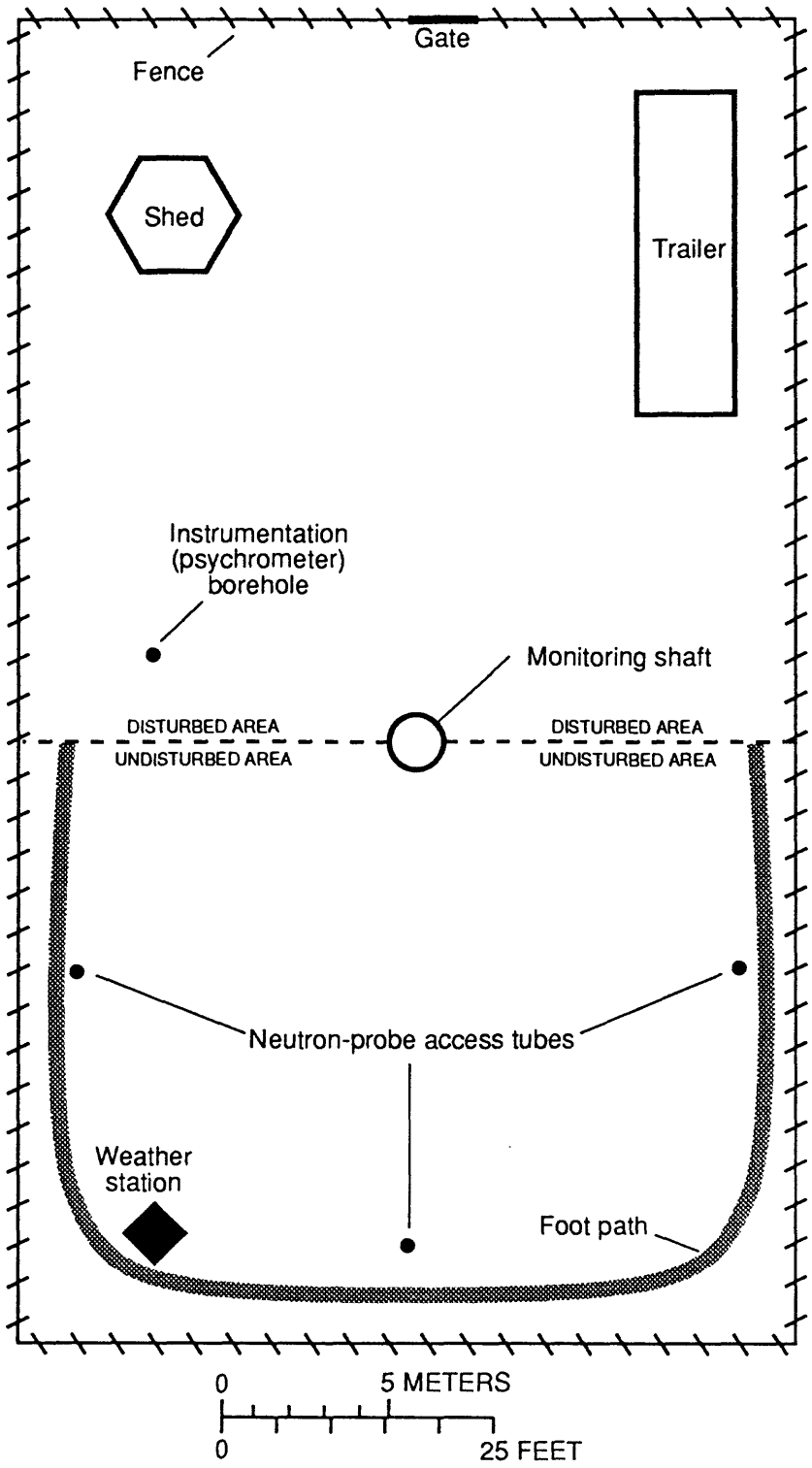

FIGURE 2.--Location of weather station and related unsaturated-zone monitoring shaft, psychrometer borehole, and neutron-probe access tubes at study site. The monitoring shaft is used to measure water potentials and the neutron-probe access tubes are used to measure moisture content. Location of study 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 -7.6°C in December and the maximum was 43.1°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 20°C. Daily mean, maximum, and minimum temperatures for 1987 are shown in figure 3.

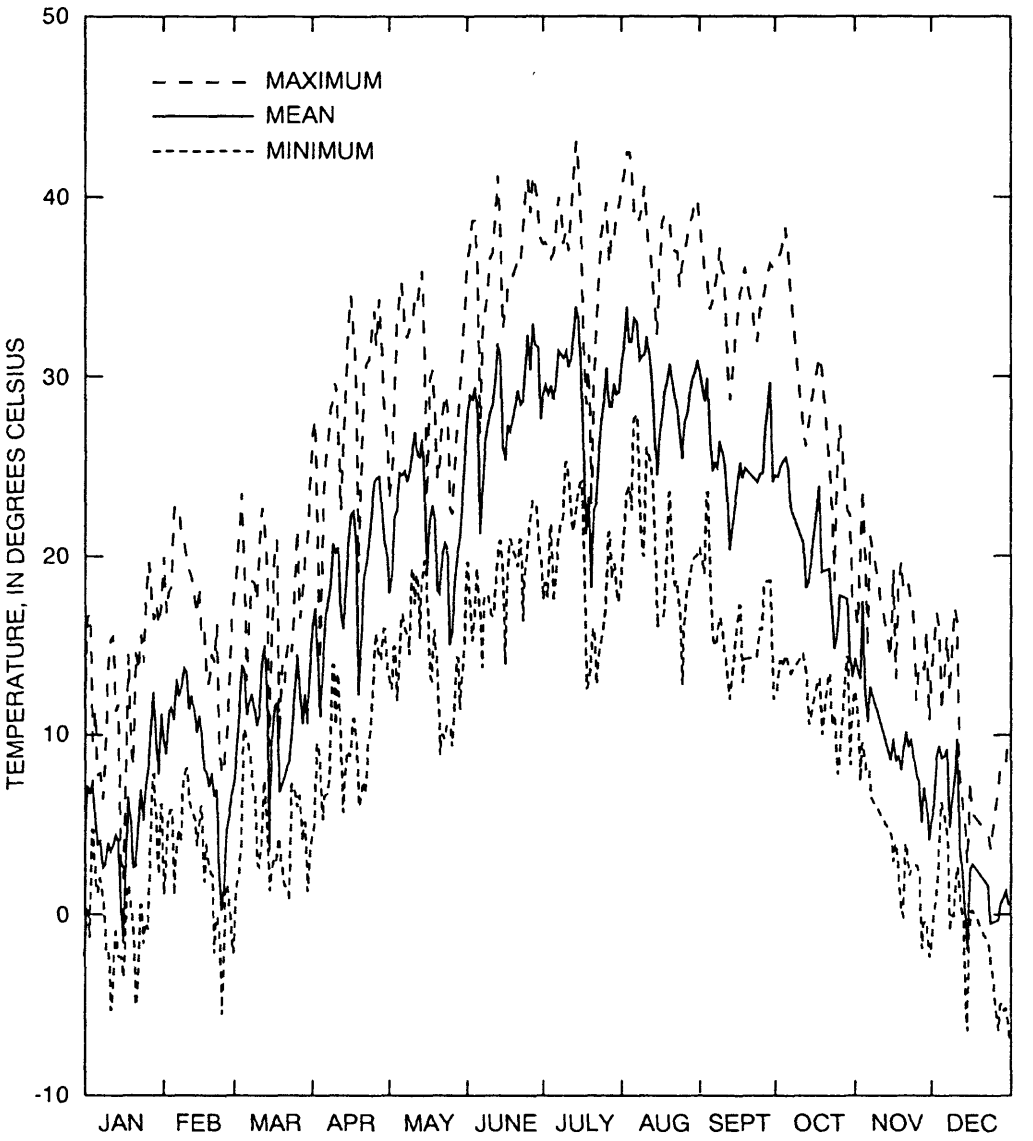

FIGURE 3.--Daily maximum, mean, and minimum air temperatures computed from hourly averaged values for 1987

TABLE 1.--*Monthly maximum, minimum, and mean air temperatures at study site for 1987*

[Times are 24-hour notation and referenced to Pacific Standard Time. Temperatures are degrees Celsius.]

Month	Maximum[1]	Day	Minimum[1]	Day	Mean
January	19.7	26	-5.6	11,21	5.4
February	22.8	5	-6.8	24	8.6
March	23.5	4	-2.4	1	10.9
April	34.5	16	4.3	1	18.9
May	35.9	14	8.0	21	29.7
June	41.2	13,27	12.0	16	28.6
July	43.1	14	12.0	22	28.4
August	42.5	3,4	11.3	25	29.7
September	38.5	1	11.5	13	24.3
October	38.3	5	6.8	30	19.4
November	23.8	4	-2.9	27	9.7
December	17.1	10	-7.6	15	3.8

[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. 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 winter storm events.

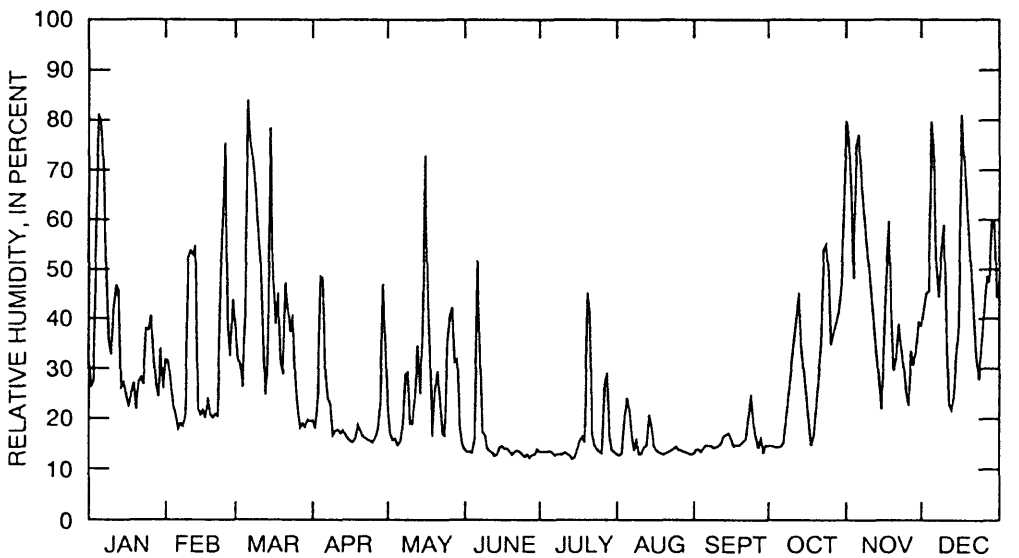

FIGURE 4.--Daily mean relative humidity computed from hourly averaged values for 1987.

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 by definition is 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):

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

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 1.77 kPa in May to a minimum of 0.12 kPa in January. Vapor pressures have generally 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.

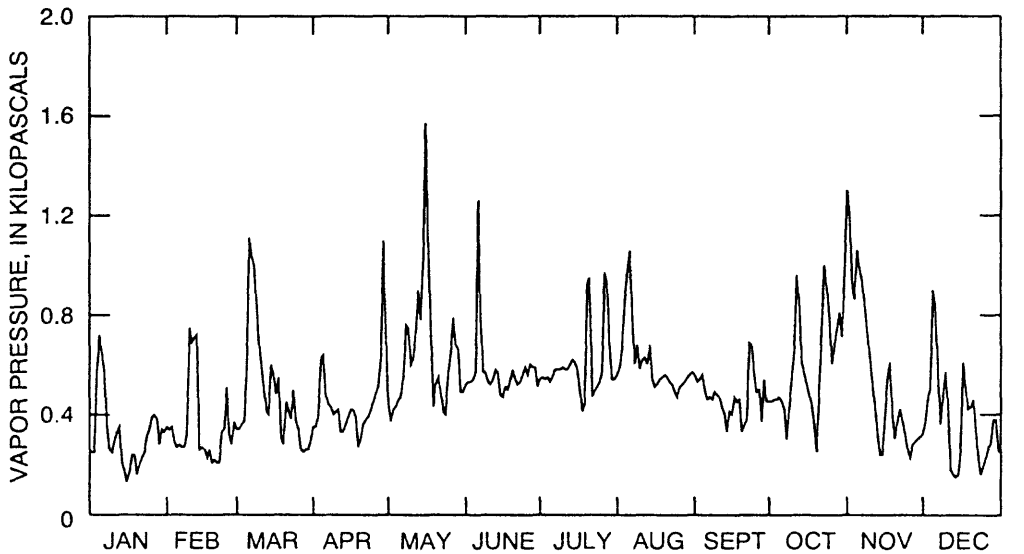

FIGURE 5.--Daily mean vapor pressure computed from hourly averaged values for 1987.

Solar Radiation

Daily average 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 between May and September, and lowest between November and 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 118 W/m^2 on December 17 to 1,067 W/m^2 on May 28.

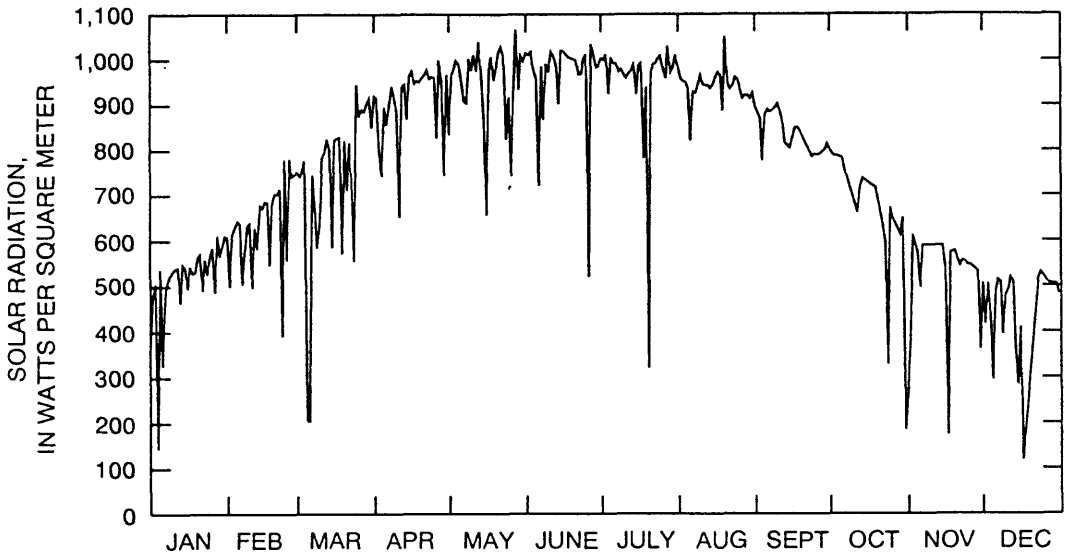

FIGURE 6.--Daily maximum solar radiation computed from hourly averaged values for 1987.

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 1.4 m/s on November 17, to a maximum of 9.4 m/s on December 13. Hourly averages ranged from less than 1 m/s (essentially zero) to more than 14 m/s.

Mean daily 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):

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

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.

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

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 1987. 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 southwest during July. Wind began to gradually shift back to the northwest during August and September until the predominant direction was again from the northwest during October through December.

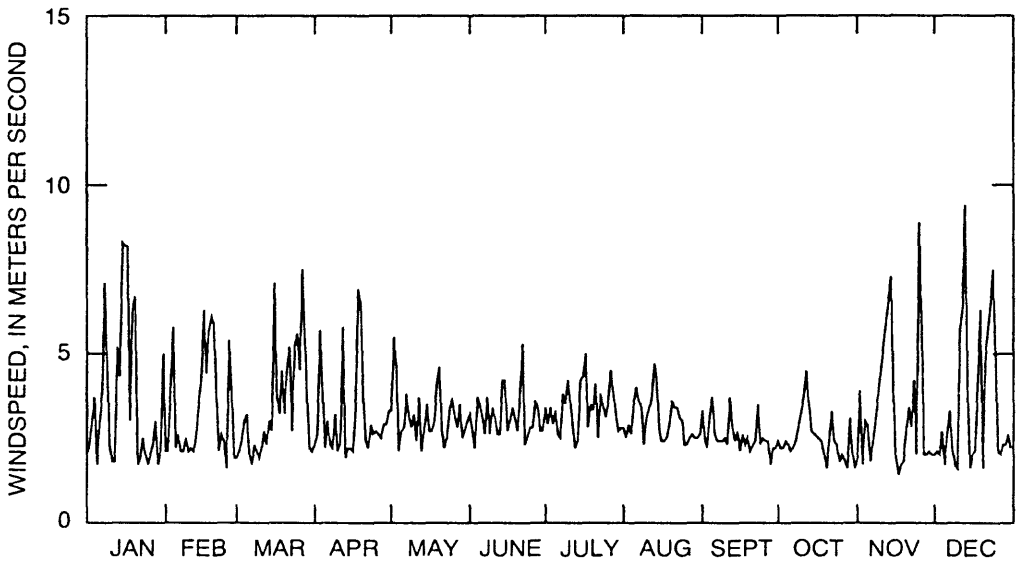

FIGURE 7.--Daily mean windspeed computed from hourly averaged values for 1987.

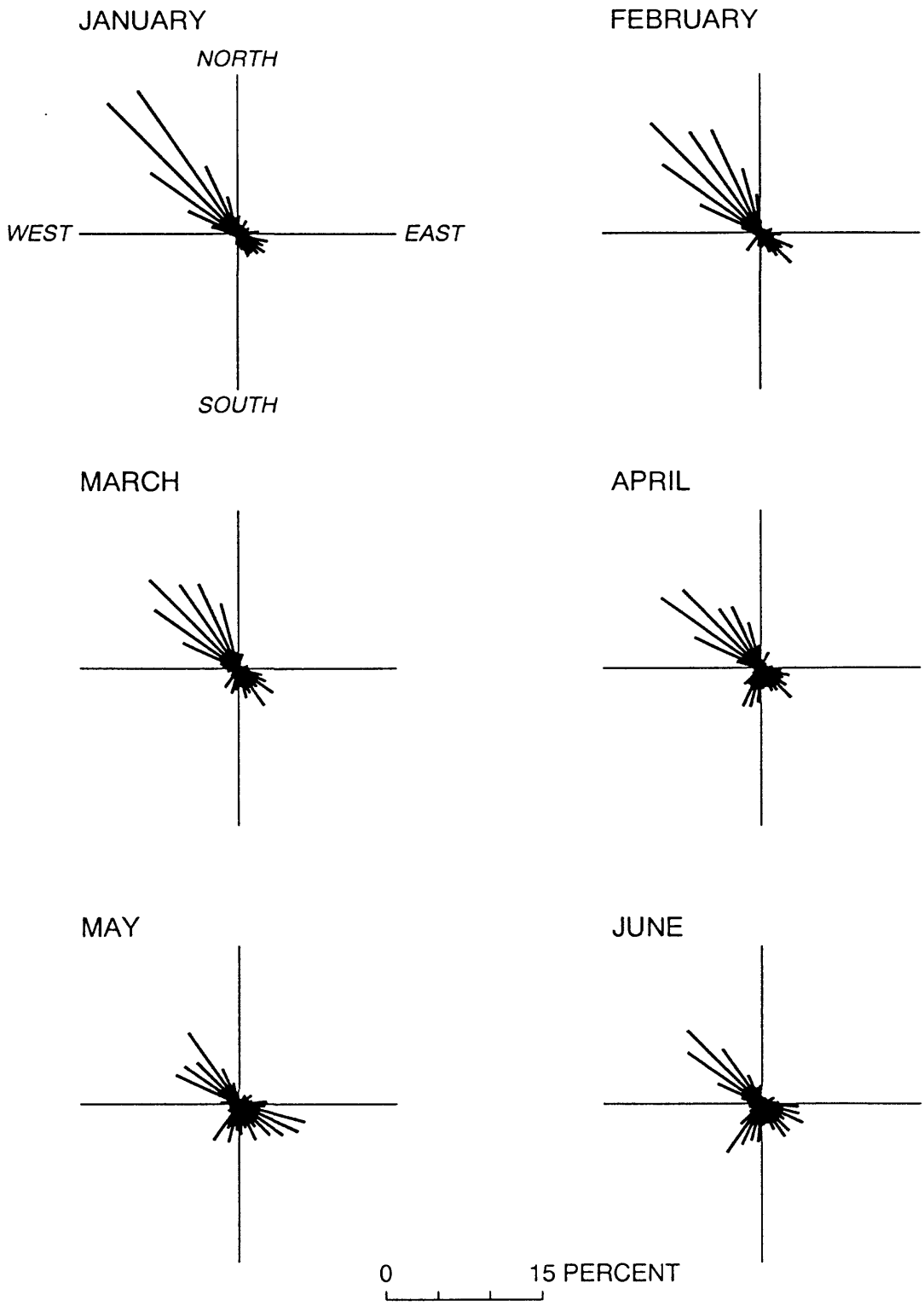

FIGURE 8.--Diagrams showing percentage of time wind is from a given direction for each month during 1987. Wind direction is summed over 10-degree arcs from hourly averaged data.

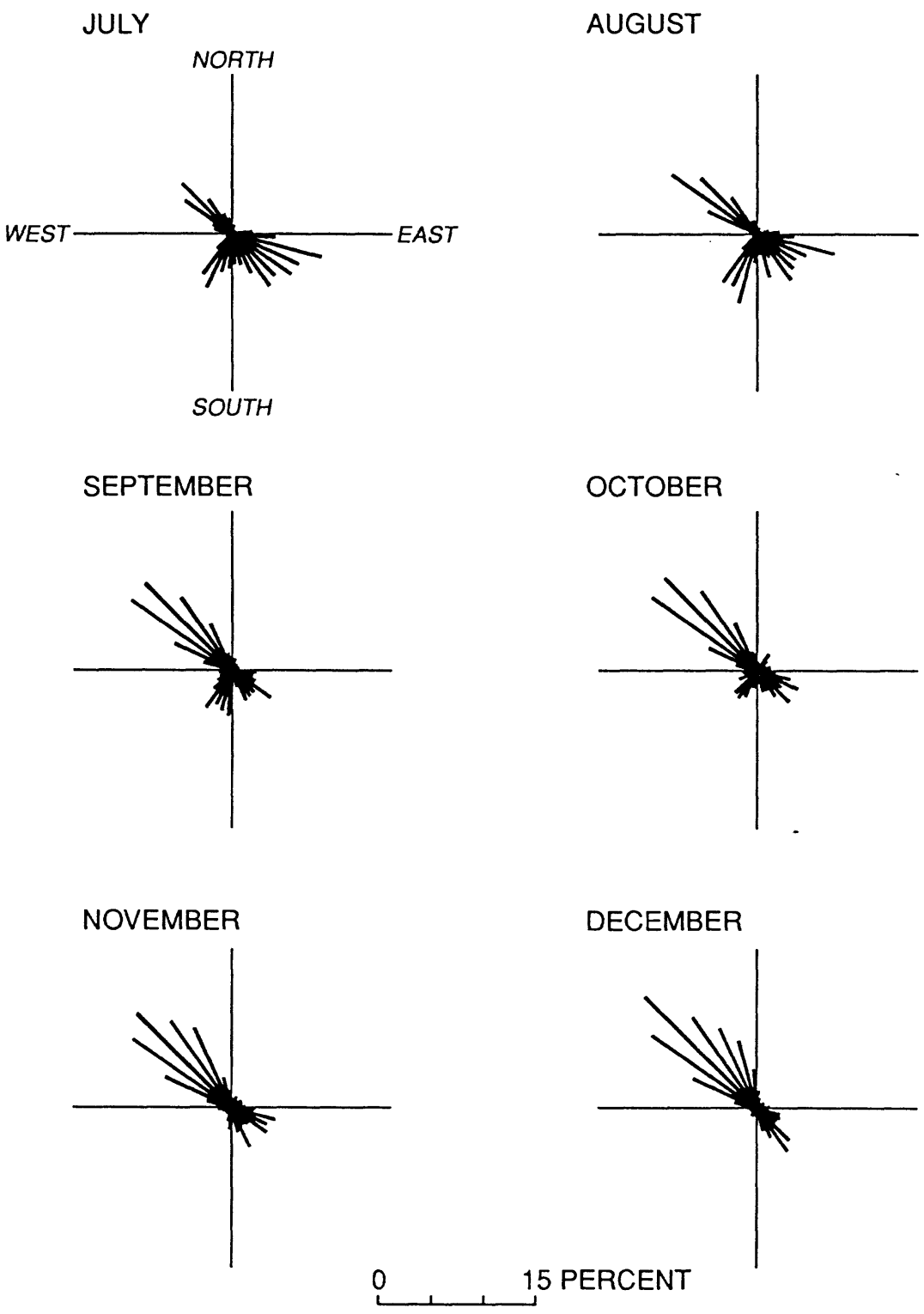

FIGURE 8.--Continued.

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. Total measured precipitation for the year was 136.4 mm.

Monthly precipitation values measured at the study site are shown in figure 9A. Monthly precipitation ranged from 36.4 mm in March to zero in September. Typically, most precipitation occurred during the winter months, and least during the summer. Summer precipitation was from local convective storms, whereas winter events were from regional frontal systems.

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 months. Daily precipitation exceeded 5 mm on six days--one each in January, March, August, October, November, and December. Summer storms are usually of short duration but can be intense. Only one summer storm produced more than 5 mm of precipitation, and that was on August 4.

TABLE 2.--*Daily total precipitation at study site for 1987. All unlisted dates had no precipitation.*

Month	Day	Total precipitation (millimeters)	Month	Day	Total precipitation (millimeters)
January	4	6.9	June	6	0.8
January	5	4.3			
January	6	.8	July	20	.5
			July	21	.3
February	9	.3	July	27	.3
February	23	1.0			
February	24	.3	August	4	7.6
February	25	4.8	August	6	4.6
February	26	1.5			
			October	12	2.3
March	5	4.3	October	31	10.6
March	6	3.6			
March	7	1.3	November	1	3.6
March	15	21.6	November	5	24.4
March	16	4.8	November	6	1.8
March	21	.5			
March	24	.3	December	4	4.1
			December	5	3.0
April	28	2.8	December	17	6.1
April	29	2.0			
May	12	.3			
May	16	.3			
May	17	.8			
May	25	3.3			
May	26	.3			
May	27	.3			

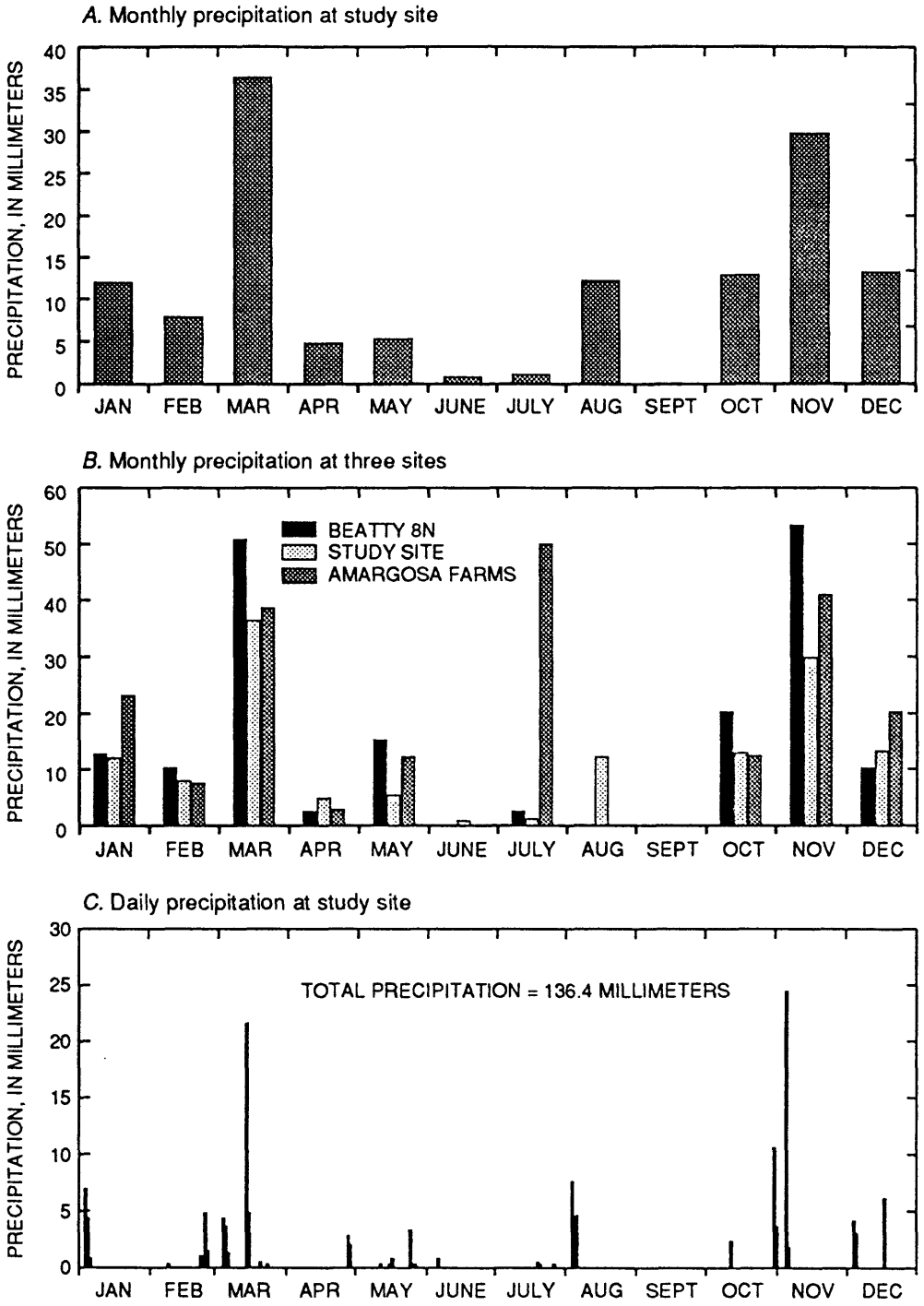

FIGURE 9.--Precipitation at or near study site for 1987. *(A)* Monthly precipitation at study site. *(B)* Comparison of monthly precipitation at study site with monthly precipitation at two National Oceanographic and Atmospheric Administration (NOAA) sites (Beatty 8N and Amargosa Farms) near study site. *(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 1987 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 -7.6°C in December and the maximum was 43.1°C in July. Hourly averaged values for relative humidity ranged from about 12 percent to over 80 percent. Daily values for maximum solar radiation ranged from 118 W/m^2 in December to 1,067 W/m^2 in May. Hourly vapor pressures ranged from a maximum of 1.77 kPa in May to a minimum of 0.12 kPa in January. Daily mean windspeed ranged from 1.4 m/s to 9.4 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 southwest. Total measured precipitation for the year was 136.4 mm. Monthly precipitation ranged from 36.4 mm in March to zero in September. Daily precipitation totaled more than 5 mm six times during 1987.

REFERENCES CITED

Andraski, B.J., 1990, Water movement and trench stability at a simulated arid burial site for low-level radioactive waste near Beatty, Nevada: LaGrange, Ill., American Nuclear Society, Nuclear Waste Isolation in the Unsaturated Zone, Las Vegas, Nev., September 1989, Proceedings, p. 166-173.

Campbell, G.S., 1986, Introduction to environmental biophysics (3d ed.): New York, Springer-Verlag, 159 p.

Campbell Scientific, Inc., 1984, CR21 micrologger operators manual: Logan, Utah, Campbell Scientific, Inc., Revision No. Im CR21-10, 81 p.

Fischer, J.M., 1990, Geohydrology of the near-surface unsaturated zone adjacent to the disposal site for low-level radioactive waste near Beatty, Nevada, *in* Bedinger, M.S., and Stevens, P.R., eds., Safe disposal of radionuclides in low-level radioactive-waste repository sites--Low-level radioactive-waste disposal workshop, U.S. Geological Survey, July 10-16, 1987, Big Bear Lake, California, Proceedings: U.S. Geological Survey Circular 1036, p. 57-61.

Lowe, P.R., 1977, An approximating polynomial for the computation of saturation vapor pressure: Journal of Applied Meteorology, v. 16, no. 1, p. 100-103.

Mórgan, D.S., and Fischer, J.M., 1984, Unsaturated-zone instrumentation in coarse alluvial deposits of the Amargosa Desert near Beatty, Nevada, *in* Proceedings of Sixth Annual Participants' Information Meeting--U.S. Department Of Energy Low-Level Waste Management Program: Available from National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161, CONF-8409115, p. 617-630.

Nichols, W.D., 1987, Geohydrology of the unsaturated zone at the burial site for low-level radioactive waste near Beatty, Nye County, Nevada: U.S. Geological Survey Water-Supply Paper 2312, 57 p.

Wood, J.L., and Fischer J.M., 1991, Selected meteorological data for an arid site near Beatty, Nevada, Nye County, Nevada, calendar year 1986: U.S. Geological Survey Open-File Report 91-189, 27 p.

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 1987.

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*

[Abbreviations: --, data not available; 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.
87/01/01	*21*	4.4	11.5/-2.3	92	356	31	50/19	0.25	0.29/0.22	2.0	3.2/1.2	0.3	267	74
87/01/02	24	7.2	16.6/ .4	105	477	26	39/16	.25	.31/ .20	2.2	5.7/ .9	1.1	319	46
87/01/03	24	6.7	16.8/-2.6	113	505	27	45/16	.25	.31/ .21	3.0	5.4/1.0	1.1	119	63
87/01/04	24	7.5	9.6/ 4.7	22	144	56	85/19	.57	.89/ .22	3.7	5.7/1.6	3.0	98	31
87/01/05	*23*	5.3	11.4/ 1.7	85	536	81	88/59	.72	.81/ .60	1.7	3.1/ .6	.3	350	73
87/01/06	24	3.9	7.8/ .9	70	325	79	87/68	.64	.73/ .57	2.8	5.6/1.1	1.7	123	46
87/01/07	24	4.1	7.9/ 2.0	89	485	70	88/52	.57	.66/ .42	3.9	6.6/ .9	3.1	316	34
87/01/08	24	2.6	6.4/ .8	123	512	49	57/40	.36	.42/ .29	7.1	9.1/4.0	6.9	311	7
87/01/09	24	2.8	9.1/-2.0	126	523	35	49/23	.26	.32/ .20	4.7	9.4/1.7	3.6	325	32
87/01/10	24	4.0	14.2/-1.9	131	532	32	48/17	.25	.28/ .21	2.3	5.3/1.0	.7	349	62
87/01/11	24	3.5	15.3/-5.6	135	538	42	70/16	.29	.37/ .24	1.8	2.8/1.0	.3	332	71
87/01/12	24	3.8	15.5/-5.1	133	540	46	77/16	.33	.38/ .26	1.8	2.6/1.0	1.0	302	50
87/01/13	24	4.4	11.3/-1.0	108	464	45	71/23	.35	.43/ .27	5.2	10.7/1.0	4.9	319	11
87/01/14	24	4.1	11.7/-2.4	137	548	26	49/17	.21	.25/ .16	4.3	10.3/1.0	3.6	320	22
87/01/15	24	0.7	3.5/-2.4	132	541	27	36/22	.18	.24/ .13	8.3	11.0/5.6	8.0	331	9
87/01/16	24	-1.6	1.9/-4.0	103	495	24	26/22	.13	.16/ .12	8.2	10.1/4.0	7.9	325	11
87/01/17	24	2.7	8.0/-2.4	137	544	22	23/19	.17	.21/ .12	8.2	11.9/5.6	7.8	326	13
87/01/18	24	6.6	14.5/ 1.6	128	528	25	34/18	.24	.30/ .19	3.0	5.7/1.3	1.2	298	52
87/01/19	24	5.2	9.5/ .3	103	530	27	50/21	.24	.32/ .16	6.4	9.4/1.5	5.7	344	15
87/01/20	24	2.6	8.2/-1.7	144	564	21	24/19	.16	.21/ .13	6.7	9.9/1.6	6.0	325	18
87/01/21	24	2.7	14.6/-5.6	145	570	27	41/16	.20	.28/ .13	1.7	2.2/1.2	.2	10	75
87/01/22	*17*	5.1	13.5/-4.3	101	490	28	50/17	.23	.27/ .20	1.9	3.1/ .9	.4	296	69
87/01/23	24	7.0	15.6/ .5	141	559	26	37/17	.25	.30/ .22	2.5	4.9/1.1	1.9	311	25
87/01/24	24	5.2	14.0/-2.3	116	525	37	64/19	.31	.38/ .25	2.0	3.1/ .8	.7	301	62
87/01/25	24	7.2	17.8/- .5	136	563	37	58/16	.34	.41/ .30	1.7	2.7/ .8	.9	310	51
87/01/26	24	8.4	19.7/-1.3	143	584	40	77/16	.39	.49/ .31	2.0	3.0/ .9	1.0	301	55
87/01/27	24	10.6	18.1/ 4.2	96	487	33	49/19	.40	.48/ .35	2.3	4.3/1.1	.4	125	73
87/01/28	24	12.4	16.4/ 7.8	119	611	26	41/17	.38	.51/ .24	3.0	6.5/1.0	1.0	18	63
87/01/29	24	9.6	17.3/ 4.1	136	564	24	33/16	.28	.33/ .24	1.7	2.2/1.0	.3	282	70
87/01/30	24	7.8	16.1/ 1.0	121	585	34	49/21	.34	.41/ .28	2.1	3.9/1.0	1.2	312	42
87/01/31	24	11.2	17.3/ 6.1	149	610	25	37/16	.33	.37/ .23	5.0	8.2/1.6	4.5	326	16

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/02/01	*23*	9.7	20.0/ 0.1	165	607	31	55/16	0.35	0.45/0.27	2.1	3.3/ .8	0.4	297	71
87/02/02	24	8.9	16.8/ 2.3	98	498	31	47/18	.34	.43/ .28	2.1	4.3/1.0	.2	323	77
87/02/03	24	11.3	18.0/ 5.4	135	614	26	37/17	.35	.49/ .28	4.3	6.9/1.5	4.0	326	11
87/02/04	*23*	11.5	18.2/ 5.8	175	629	22	30/16	.29	.34/ .25	5.8	8.4/2.8	5.5	317	15
87/02/05	24	10.8	22.8/ .0	171	642	20	33/14	.27	.40/ .19	2.2	6.9/1.2	.6	329	64
87/02/06	*22*	13.1	22.6/ 2.5	185	638	17	22/14	.28	.40/ .16	2.6	4.9/1.2	.8	82	63
87/02/07	24	12.1	22.3/ 4.7	116	504	18	24/14	.27	.39/ .20	2.1	4.2/1.0	.7	318	63
87/02/08	*20*	12.6	21.3/ 3.4	160	570	18	22/14	.27	.38/ .18	2.1	3.3/1.2	.2	331	76
87/02/09	24	13.7	20.9/ 7.6	129	634	20	58/15	.32	.83/ .22	2.5	4.6/1.1	.4	147	73
87/02/10	24	13.5	19.9/ 8.1	158	638	52	81/23	.75	1.03/ .53	2.1	3.2/ .7	.5	252	68
87/02/11	24	11.4	19.2/ 6.3	106	497	53	74/31	.69	.77/ .59	2.2	2.8/1.2	.9	295	58
87/02/12	24	12.2	18.8/ 5.7	130	628	52	77/32	.71	.81/ .58	2.1	3.4/1.0	.2	132	77
87/02/13	24	11.4	17.8/ 5.3	109	581	54	72/39	.72	.87/ .60	2.5	4.6/1.5	.2	44	78
87/02/14	*19*	10.1	16.7/ 3.7	136	677	21	41/16	.26	.33/ .20	3.5	6.5/1.5	3.2	323	18
87/02/15	24	11.1	18.3/ 3.8	181	672	20	26/16	.27	.38/ .19	4.2	10.6/1.2	1.0	329	69
87/02/16	24	10.1	15.5/ 6.0	189	686	21	27/17	.26	.30/ .21	6.3	9.1/2.8	6.0	332	8
87/02/17	*22*	8.5	15.8/ 4.3	174	685	20	23/16	.23	.30/ .20	4.6	6.8/2.2	4.4	322	9
87/02/18	24	7.9	12.8/ 3.8	115	547	24	35/20	.26	.39/ .20	5.7	8.4/3.6	5.2	327	15
87/02/19	24	7.1	12.9/ 2.3	183	684	20	23/17	.21	.27/ .17	6.1	8.3/3.1	5.4	336	17
87/02/20	24	7.9	14.5/ 2.2	195	704	20	23/17	.22	.28/ .17	5.9	8.5/2.8	5.4	338	15
87/02/21	24	6.6	14.0/-3.4	188	704	20	28/17	.21	.28/ .13	3.6	5.6/1.2	.8	124	70
87/02/22	24	7.0	16.2/- .2	188	716	20	24/16	.21	.31/ .14	2.1	3.6/1.1	.5	293	67
87/02/23	24	2.3	9.4/-1.6	86	391	47	84/21	.33	.64/ .13	2.6	7.2/1.1	.5	325	71
87/02/24	*23*	0.2	7.8/-6.8	151	781	58	82/26	.34	.51/ .26	2.4	3.0/1.2	.6	311	69
87/02/25	*22*	1.5	8.4/-3.3	111	557	75	88/52	.51	.64/ .35	1.6	2.6/ .6	.7	311	53
87/02/26	24	4.7	10.0/ 1.6	201	782	38	55/23	.32	.39/ .23	5.4	7.4/1.9	5.0	317	16
87/02/27	24	5.5	12.8/ .0	211	742	32	68/18	.28	.43/ .23	3.8	6.1/1.8	3.3	302	18
87/02/28	24	6.7	16.6/-2.0	206	747	43	75/17	.37	.45/ .28	1.9	3.9/1.0	.8	322	57

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/03/01	24	7.4	18.1/-2.4	210	752	38	73/16	0.34	0.41/0.26	1.9	2.9/1.2	0.5	291	67
87/03/02	24	9.4	19.2/ 1.5	206	743	31	50/16	.34	.41/ .27	2.1	2.7/1.1	.7	296	62
87/03/03	24	11.2	21.3/ 2.2	211	754	30	51/15	.36	.44/ .29	2.4	3.6/1.0	.3	276	74
87/03/04	24	13.9	23.5/ 3.6	198	778	26	46/14	.37	.42/ .31	3.0	6.6/1.0	.9	145	66
87/03/05	24	13.6	19.5/10.3	37	207	40	83/16	.58	1.09/ .28	3.2	6.1/1.1	1.9	153	43
87/03/06	24	11.1	13.0/ 9.6	46	205	84	86/79	1.11	1.20/1.03	2.0	4.3/ .6	.2	79	75
87/03/07	24	11.8	16.5/ 8.9	122	746	76	86/55	1.04	1.16/ .98	1.7	3.7/ .6	.6	295	61
87/03/08	24	12.3	18.6/ 7.3	191	687	71	86/43	1.00	1.23/ .88	2.3	4.4/1.3	.6	220	68
87/03/09	*22*	11.4	18.5/ 6.6	113	584	66	86/37	.84	1.05/ .66	2.1	3.3/1.2	.3	312	73
87/03/10	24	10.5	17.5/ 2.7	145	631	59	86/30	.69	.81/ .59	1.9	2.7/ .6	.3	248	74
87/03/11	24	11.1	20.5/ 2.5	226	783	51	86/16	.58	.79/ .38	2.2	2.9/1.0	.6	297	67
87/03/12	24	14.1	22.7/ 3.6	231	796	37	75/16	.50	.64/ .35	2.7	4.0/1.5	.7	169	68
87/03/13	24	15.0	21.5/ 7.4	227	826	24	43/17	.41	.52/ .29	2.3	4.1/1.0	.6	184	62
87/03/14	24	11.8	18.8/ 3.8	191	804	30	49/19	.40	.48/ .32	3.0	5.8/1.0	1.7	148	49
87/03/15	24	3.5	9.4/ .6	74	586	78	88/45	.60	.69/ .53	2.7	5.6/ .8	.7	84	68
87/03/16	24	9.6	15.4/ 2.3	245	823	48	86/29	.56	.65/ .44	7.1	11.2/2.3	6.7	331	13
87/03/17	24	11.5	20.6/ 3.0	247	827	38	70/18	.48	.71/ .40	3.7	7.9/1.3	2.7	322	35
87/03/18	24	11.8	20.9/ 2.7	241	830	45	81/18	.55	.72/ .26	3.2	6.7/1.1	.8	294	68
87/03/19	24	6.8	9.7/ 4.2	128	572	31	50/20	.31	.48/ .23	4.5	6.6/2.5	3.1	323	41
87/03/20	*17*	7.2	13.9/ 2.0	331	823	28	38/18	.28	.31/ .25	3.2	5.5/2.0	2.1	303	39
87/03/21	*13*	7.7	12.9/ 1.5	189	711	47	87/19	.45	.59/ .26	4.6	6.5/2.3	3.1	143	39
87/03/22	24	8.3	14.8/ 1.5	212	818	42	87/18	.41	.60/ .26	5.2	8.9/ .8	4.7	316	16
87/03/23	*23*	8.6	15.3/- .1	197	689	37	74/18	.38	.52/ .30	2.7	5.7/ .7	.4	50	74
87/03/24	*23*	10.4	14.6/ 7.2	142	556	40	55/25	.50	.58/ .43	5.2	6.9/1.9	4.4	320	24
87/03/25	24	12.4	18.4/ 6.8	258	946	27	41/16	.37	.45/ .30	5.6	8.5/3.6	5.0	325	20
87/03/26	24	14.5	21.5/ 5.7	268	874	21	39/15	.34	.39/ .28	4.5	6.7/2.6	3.6	307	29
87/03/27	24	12.5	16.5/ 6.6	276	891	18	20/16	.26	.32/ .20	7.5	11.1/2.1	7.3	339	6
87/03/28	24	10.6	17.7/ 3.4	275	885	18	22/16	.25	.33/ .17	5.7	8.8/2.6	5.3	329	15
87/03/29	24	12.3	20.1/ 5.1	282	903	18	21/15	.26	.37/ .19	3.6	6.5/1.6	2.6	1	33
87/03/30	24	10.6	20.9/ .3	282	915	19	25/15	.26	.38/ .16	2.2	2.8/1.3	.9	287	57
87/03/31	24	13.7	24.0/ 2.6	259	850	19	31/14	.30	.43/ .20	2.1	3.0/ .9	.7	281	62

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/04/01	24	16.1	26.8/ 4.3	289	921	19	38/13	0.35	0.47/0.23	2.3	4.4/0.9	1.0	269	57
87/04/02	24	17.1	27.6/ 4.8	288	916	17	29/13	.35	.49/ .22	2.6	5.1/1.1	.8	202	66
87/04/03	24	14.3	20.0/ 9.5	199	802	24	35/16	.40	.61/ .27	5.7	8.1/2.6	1.3	124	70
87/04/04	24	11.0	14.1/ 7.4	98	743	48	73/30	.63	.88/ .37	3.9	7.7/ .8	.8	347	70
87/04/05	24	13.6	22.0/ 4.5	265	897	48	84/18	.64	.88/ .45	2.2	4.3/ .8	.8	249	59
87/04/06	24	16.7	25.5/ 6.6	276	855	28	64/14	.48	.65/ .29	3.0	6.1/1.4	2.2	337	23
87/04/07	24	17.3	26.0/ 6.7	256	899	24	51/14	.44	.60/ .29	2.3	3.8/1.2	.8	297	59
87/04/08	24	18.2	28.3/ 7.8	263	942	22	44/13	.43	.50/ .31	2.2	3.6/1.2	.9	264	56
87/04/09	24	20.7	28.7/13.9	285	916	16	19/13	.40	.52/ .32	3.2	6.2/1.3	2.7	321	20
87/04/10	24	20.2	29.6/ 9.2	274	885	17	28/12	.41	.53/ .28	2.1	3.7/1.0	.6	246	64
87/04/11	*23*	20.5	27.0/13.4	196	652	17	29/13	.42	.49/ .35	2.3	5.1/1.1	.3	267	73
87/04/12	24	16.8	22.5/ 8.6	302	940	17	19/15	.33	.41/ .22	5.8	10.7/1.7	5.3	337	14
87/04/13	24	15.9	26.5/ 4.5	304	946	17	23/13	.33	.48/ .19	1.9	2.9/ .9	.2	279	75
87/04/14	24	18.3	29.5/ 8.0	260	868	16	20/12	.36	.52/ .22	2.2	2.9/ .9	.8	287	61
87/04/15	24	20.6	32.6/ 9.1	290	965	16	20/11	.39	.58/ .24	2.2	3.0/1.1	1.1	289	50
87/04/16	24	22.3	34.5/ 8.5	316	975	15	21/11	.42	.61/ .24	2.1	3.6/1.0	1.0	270	54
87/04/17	24	22.5	32.6/10.9	301	947	15	19/11	.42	.58/ .25	3.3	6.2/1.5	.9	183	68
87/04/18	24	20.5	29.2/ 9.4	306	954	15	19/12	.39	.53/ .23	6.9	13.7/3.4	.7	23	76
87/04/19	24	12.2	19.1/ 5.8	310	951	18	21/16	.27	.36/ .20	6.5	11.4/2.5	6.2	337	9
87/04/20	24	14.9	24.6/ 6.2	315	960	17	20/14	.30	.45/ .19	3.6	6.9/ .9	2.1	307	48
87/04/21	24	18.7	29.6/ 7.4	318	967	16	20/12	.36	.53/ .21	2.4	3.3/1.2	.9	286	58
87/04/22	24	19.6	30.7/ 6.2	321	978	16	20/12	.38	.55/ .20	2.2	3.8/1.2	.8	275	60
87/04/23	24	20.6	30.9/ 9.4	269	959	15	19/12	.39	.55/ .23	2.9	6.4/1.3	1.0	253	63
87/04/24	24	22.3	32.3/10.2	314	963	15	20/11	.42	.58/ .25	2.6	4.6/ .9	.8	226	65
87/04/25	24	24.1	33.6/12.8	296	961	15	20/11	.45	.60/ .30	2.7	5.1/1.1	.2	193	77
87/04/26	24	24.3	31.6/15.7	248	827	16	24/12	.48	.58/ .39	2.6	5.1/1.0	.6	171	69
87/04/27	24	24.4	34.3/14.1	275	1,000	17	33/11	.51	.62/ .40	2.5	4.9/1.3	.4	216	72
87/04/28	24	22.7	31.9/14.2	240	957	23	41/12	.63	1.00/ .40	2.9	5.1/1.7	.4	225	73
87/04/29	24	20.9	27.9/15.9	170	744	47	77/21	1.10	1.39/ .78	2.9	7.5/1.1	.1	353	78
87/04/30	24	20.2	26.9/ 3.7	296	968	36	82/14	.75	1.39/ .34	3.3	5.8/1.4	1.9	177	49

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/05/01	24	17.9	23.1/12.9	257	834	21	32/15	0.44	0.55/0.35	3.3	5.0/1.5	1.9	116	48
87/05/02	24	18.9	24.8/12.2	306	965	16	20/14	.37	.45/ .29	5.5	8.0/2.2	5.0	320	16
87/05/03	24	22.2	29.4/14.9	331	981	15	18/13	.42	.54/ .31	4.6	7.1/2.3	3.6	326	30
87/05/04	24	22.5	32.6/11.0	336	999	15	22/12	.43	.59/ .29	2.1	4.3/1.0	.7	242	55
87/05/05	*23*	24.6	34.7/13.3	336	992	14	18/11	.46	.63/ .29	2.7	4.0/1.3	1.1	14	58
87/05/06	24	24.5	35.2/16.7	224	975	15	21/10	.47	.62/ .33	2.8	6.2/1.4	1.1	325	56
87/05/07	24	24.7	33.0/15.8	240	909	18	32/11	.55	.64/ .44	3.8	9.1/1.9	1.3	111	63
87/05/08	24	24.1	32.1/15.5	269	905	28	59/13	.76	1.05/ .57	3.1	6.1/1.1	1.1	144	61
87/05/09	24	24.7	32.6/13.6	339	1,003	29	66/12	.75	1.07/ .50	2.8	5.3/1.3	1.0	152	61
87/05/10	*23*	25.9	32.9/19.3	259	976	18	29/12	.60	.71/ .48	3.2	5.3/1.1	1.9	314	44
87/05/11	*23*	26.9	34.5/16.5	318	1,011	18	35/11	.62	.74/ .53	2.4	4.7/1.2	.5	246	69
87/05/12	24	25.6	34.2/18.9	290	974	24	53/12	.74	1.16/ .55	3.7	7.6/1.3	.9	281	68
87/05/13	24	25.5	34.9/14.0	336	1,040	34	78/12	.90	1.38/ .52	2.1	3.4/1.3	.6	237	62
87/05/14	24	26.5	35.9/18.2	264	969	24	43/11	.78	1.31/ .64	2.7	6.2/1.2	.4	290	73
87/05/15	24	23.4	30.6/19.7	185	867	36	58/17	1.02	1.35/ .77	3.5	8.1/1.0	2.2	126	45
87/05/16	24	18.9	23.2/16.4	119	657	72	84/56	1.57	1.77/1.41	2.7	4.0/1.5	1.5	131	51
87/05/17	24	21.9	29.8/13.2	296	977	46	84/20	1.10	1.51/ .67	2.7	5.8/ .7	.5	246	69
87/05/18	24	22.8	30.3/12.9	331	1,007	32	70/12	.77	1.18/ .37	3.0	5.2/ .8	1.6	172	51
87/05/19	*23*	22.0	28.0/15.8	339	954	16	22/13	.43	.51/ .35	4.1	7.0/2.4	2.7	155	43
87/05/20	24	18.1	24.2/13.0	330	983	26	42/15	.52	.68/ .38	4.6	6.1/2.9	1.5	129	65
87/05/21	24	17.9	25.2/ 8.0	340	1,018	29	56/15	.55	.73/ .44	2.7	4.2/1.3	.7	245	65
87/05/22	24	20.0	27.9/10.0	342	1,029	23	43/13	.49	.65/ .32	2.2	3.6/ .9	.3	166	74
87/05/23	24	20.7	29.0/ 9.6	341	1,008	16	23/13	.41	.54/ .27	2.5	4.3/1.0	.8	206	63
87/05/24	24	20.5	28.3/10.5	302	824	16	20/13	.40	.52/ .26	3.4	6.5/1.6	1.8	179	51
87/05/25	24	15.0	22.6/10.5	211	918	34	65/16	.56	.84/ .35	3.6	8.1/2.3	1.0	51	67
87/05/26	24	15.7	22.3/ 8.7	234	743	40	80/17	.65	.98/ .44	3.1	5.4/1.2	.8	110	67
87/05/27	24	18.7	25.5/11.4	320	942	42	81/15	.79	1.13/ .47	2.8	6.8/ .8	.6	212	70
87/05/28	24	20.1	27.5/14.3	294	1,067	31	49/14	.68	.87/ .52	3.5	7.2/1.3	.5	322	73
87/05/29	24	21.0	29.5/10.5	319	934	31	69/13	.66	.92/ .39	2.5	4.1/1.3	.8	151	63
87/05/30	24	23.3	31.6/13.0	335	1,009	18	29/12	.49	.58/ .38	2.7	4.8/1.3	.8	169	65
87/05/31	24	26.0	34.1/14	35	997	14	19/11	.49	.63/ .32	3.0	4.8/1.5	1.7	167	47

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/06/01	24	28.0	36.4/19.6	358	1,015	13	17/10	0.52	0.67/0.39	3.2	6.0/1.5	2.6	307	19
87/06/02	24	28.9	37.4/16.7	355	1,011	13	17/10	.53	.69/ .33	2.7	4.4/1.5	1.5	312	44
87/06/03	24	28.7	38.7/14.7	341	1,018	13	17/10	.53	.70/ .30	2.2	3.5/0.8	.6	256	64
87/06/04	24	29.4	38.7/16.3	346	977	13	17/10	.54	.70/ .32	3.7	7.1/1.3	1.9	202	54
87/06/05	24	27.7	36.1/19.3	207	959	15	36/11	.57	.98/ .37	3.5	5.7/1.4	.8	115	68
87/06/06	24	21.2	26.8/16.1	178	722	51	79/29	1.26	1.62/ .99	3.1	5.9/1.4	.5	203	73
87/06/07	24	23.6	32.4/12.4	339	986	34	74/12	.80	1.15/ .46	2.6	5.9/1.0	1.2	236	54
87/06/08	24	26.4	33.7/17.6	271	867	17	29/12	.57	.65/ .51	3.7	8.7/1.3	1.1	289	65
87/06/09	24	27.2	34.6/17.8	352	992	16	29/11	.57	.64/ .41	2.6	6.5/1.2	.5	262	69
87/06/10	24	28.0	36.6/16.7	336	972	13	18/10	.53	.67/ .35	3.4	6.6/1.6	1.4	204	59
87/06/11	24	28.4	36.9/16.6	356	1,018	13	17/10	.52	.68/ .33	3.1	5.3/1.5	1.2	211	61
87/06/12	24	29.6	38.9/17.0	357	1,009	13	17/ 9	.54	.71/ .34	2.6	4.8/1.3	1.2	274	54
87/06/13	24	31.8	41.2/19.3	347	992	12	16/ 9	.58	.75/ .38	2.6	4.8/1.1	.7	197	65
87/06/14	24	31.1	38.5/20.8	316	902	12	16/10	.57	.70/ .40	4.2	6.7/2.0	2.6	192	45
87/06/15	24	26.0	32.6/18.3	364	1,020	14	16/12	.48	.61/ .35	4.2	5.9/2.7	2.3	159	50
87/06/16	24	25.3	33.6/12.0	364	1,020	14	18/12	.47	.63/ .27	2.7	4.3/1.2	1.0	180	61
87/06/17	24	27.3	34.8/18.2	361	1,012	13	17/11	.51	.65/ .35	3.0	4.1/1.5	1.9	128	43
87/06/18	*16*	26.9	35.1/20.9	451	1,006	14	16/11	.50	.65/ .40	3.4	4.5/2.1	2.3	104	37
87/06/19	*0*	--	-- --	--	--	--	--	--	-- --	--	-- --	--	--	--
87/06/20	*8*	31.4	36.8/25.8	173	642	12	14/10	.58	.68/ .48	2.7	3.4/2.0	1.9	142	36
87/06/21	24	29.2	36.5/19.1	356	999	13	16/10	.54	.68/ .37	3.7	6.0/1.7	1.7	141	56
87/06/22	24	28.4	36.3/20.9	338	968	13	16/11	.52	.67/ .40	5.3	8.6/1.7	4.4	313	26
87/06/23	24	28.6	38.0/14.9	336	968	13	17/10	.53	.70/ .30	2.3	3.4/1.2	.4	253	69
87/06/24	*23*	30.5	40.3/18.9	360	1,001	12	16/ 9	.56	.73/ .36	2.5	3.7/1.2	.6	270	68
87/06/25	24	32.3	41.0/20.2	367	1,012	12	16/ 9	.59	.75/ .39	2.8	4.6/1.5	1.0	200	60
87/06/26	*21*	30.3	39.1/21.9	161	521	12	15/ 9	.56	.70/ .42	2.8	6.0/1.1	.9	264	64
87/06/27	*23*	32.9	41.2/23.0	331	1,034	12	15/ 9	.60	.75/ .43	3.6	9.1/1.2	1.5	304	58
87/06/28	*20*	31.7	40.6/22.8	339	1,015	12	16/ 9	.59	.74/ .45	3.4	7.3/1.7	1.1	320	62
87/06/29	24	31.6	39.0/20.8	350	983	12	16/10	.59	.72/ .41	2.7	5.6/ .9	.9	234	63
87/06/30	*13*	27.6	37.7/19.5	332	985	13	16/10	.51	.68/ .38	2.7	3.9/1.3	.5	147	72

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/07/01	24	29.0	37.4/17.0	354	1,003	13	17/10	0.54	0.69/ .33	3.4	5.8/1.9	1.6	145	54
87/07/02	24	29.5	37.5/18.5	354	1,000	13	17/10	.55	.70/ .36	2.9	4.5/1.6	1.4	152	54
87/07/03	24	29.0	37.1/17.0	359	1,012	13	17/10	.54	.69/ .34	3.4	5.4/1.7	2.0	144	46
87/07/04	*15*	29.5	36.6/21.7	207	925	13	15/11	.55	.68/ .41	2.9	3.8/1.5	1.6	147	50
87/07/05	24	28.7	36.9/16.8	356	1,006	13	17/10	.53	.69/ .33	3.3	5.0/1.5	1.8	140	49
87/07/06	24	29.5	38.0/18.1	350	993	13	17/10	.55	.70/ .35	2.6	4.2/1.2	.9	229	61
87/07/07	24	31.4	40.0/20.5	351	992	12	16/ 9	.58	.73/ .39	2.5	3.9/1.3	.6	187	68
87/07/08	24	31.2	39.3/21.7	342	974	12	15/10	.58	.72/ .41	3.8	5.8/1.9	2.0	168	52
87/07/09	24	31.0	37.4/21.8	320	979	12	16/10	.58	.70/ .42	3.5	5.0/1.5	2.4	149	40
87/07/10	24	31.4	38.1/25.2	336	968	12	15/10	.59	.71/ .48	4.2	5.5/2.1	2.9	144	40
87/07/11	24	30.5	37.0/24.1	331	960	13	15/11	.58	.70/ .47	3.6	5.2/ .9	2.3	131	42
87/07/12	24	31.0	39.2/21.8	335	970	12	15/10	.58	.72/ .41	2.8	4.8/1.6	.2	157	77
87/07/13	24	32.3	41.3/21.1	323	976	12	16/ 9	.60	.75/ .42	2.2	4.3/1.1	.6	261	63
87/07/14	24	33.9	43.1/22.3	346	988	11	15/ 8	.62	.78/ .42	2.4	4.5/1.1	.8	232	62
87/07/15	24	33.2	41.6/23.5	325	924	12	15/ 9	.61	.76/ .44	4.2	8.3/1.6	1.2	261	67
87/07/16	24	30.1	38.6/24.1	266	986	13	15/10	.58	.72/ .47	4.3	9.9/1.2	1.1	139	67
87/07/17	24	25.6	31.7/19.0	346	992	15	20/12	.50	.59/ .37	5.0	8.2/2.4	3.5	169	39
87/07/18	24	21.2	28.4/12.5	508	982	16	19/13	.41	.53/ .28	2.8	3.9/1.1	1.4	129	50
87/07/19	24	23.3	31.2/12.6	247	941	15	18/12	.44	.57/ .27	3.5	5.8/1.4	2.1	169	46
87/07/20	24	18.2	22.7/13.7	116	321	45	81/15	.92	1.66/ .29	3.3	8.0/1.0	1.9	111	48
87/07/21	24	22.6	29.9/15.9	341	973	41	83/13	.95	1.66/ .39	4.1	6.9/0.7	3.4	136	27
87/07/22	24	22.9	32.3/12.0	346	989	16	28/12	.47	.60/ .28	2.5	4.0/1.0	.3	162	74
87/07/23	24	25.8	35.4/14.0	347	992	14	18/11	.49	.65/ .30	3.8	5.8/1.4	1.9	135	54
87/07/24	24	27.6	37.8/15.1	351	1,004	13	18/10	.51	.69/ .31	3.4	6.0/1.5	1.6	150	54
87/07/25	24	28.7	38.8/16.0	353	1,009	13	17/10	.53	.71/ .32	3.1	4.8/1.5	1.1	174	62
87/07/26	24	30.5	39.7/17.3	339	977	12	17/ 9	.57	.72/ .34	3.6	6.6/1.6	1.4	186	62
87/07/27	24	28.3	36.3/21.3	187	959	26	54/12	.97	1.43/ .65	4.5	6.3/1.5	3.6	114	29
87/07/28	24	28.3	37.8/18.2	343	1,030	28	62/11	.93	1.47/ .66	3.8	8.1/1.0	2.1	133	52
87/07/29	24	29.6	37.6/19.5	334	972	16	27/10	.65	.75/ .46	3.2	4.3/1.4	1.8	138	49
87/07/30	24	29.0	38.8/17.7	341	983	13	18/10	.54	.71/ .37	2.7	4.4/1.4	.7	208	67
87/07/31	24	29.1	39.6/17.2	347	1,010	13	17/ 9	.54	.72/ .34	2.8	4.6/1.2	1.0	238	63

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/08/01	24	30.8	40.6/18.6	336	983	12	16/ 9	0.56	0.74/0.36	2.8	5.7/1.4	0.9	223	64
87/08/02	24	31.7	41.3/20.8	326	959	12	16/ 9	.59	.76/ .40	2.5	3.7/1.0	.5	232	69
87/08/03	24	33.9	42.5/23.4	316	953	12	18/ 9	.67	.78/ .50	2.9	6.5/1.1	.8	125	64
87/08/04	24	31.9	42.5/23.8	293	951	19	45/ 9	.87	1.62/ .54	2.6	5.0/1.5	.5	317	70
87/08/05	24	31.9	41.5/21.5	319	937	24	46/ 9	.97	1.29/ .77	3.5	6.7/1.2	1.4	137	60
87/08/06	24	33.2	39.0/27.6	279	821	21	34/13	1.06	1.38/ .88	4.0	6.0/2.6	3.6	133	17
87/08/07	24	33.0	39.2/27.8	311	929	16	27/10	.79	1.03/ .53	3.6	5.4/1.4	2.7	130	32
87/08/08	24	30.9	38.7/21.8	280	926	13	16/10	.60	.72/ .42	3.4	7.7/1.6	.8	120	69
87/08/09	24	31.1	39.6/20.2	319	946	16	27/10	.68	.74/ .49	2.3	3.6/1.0	.8	202	60
87/08/10	24	31.2	40.6/19.6	325	965	12	16/ 9	.58	.75/ .38	3.1	4.4/2.0	1.0	215	65
87/08/11	24	32.2	38.5/26.0	318	945	12	15/10	.62	.73/ .52	3.4	4.9/1.2	1.9	125	49
87/08/12	24	31.1	37.1/25.2	312	943	14	18/11	.63	.72/ .56	3.6	4.8/1.6	2.4	125	44
87/08/13	24	29.6	36.0/24.1	317	943	14	18/11	.60	.67/ .52	4.7	7.1/2.6	4.0	127	26
87/08/14	24	26.5	34.0/20.7	312	936	20	36/12	.68	.94/ .47	4.3	6.8/3.0	3.4	123	29
87/08/15	24	24.5	32.3/15.6	314	943	18	30/12	.54	.62/ .40	2.7	5.0/1.2	1.3	137	54
87/08/16	24	26.8	36.2/16.4	320	961	14	18/11	.51	.67/ .35	2.4	3.7/1.3	.9	257	60
87/08/17	24	28.0	38.6/16.4	324	972	13	17/10	.52	.71/ .33	2.4	3.2/1.1	.9	269	60
87/08/18	24	29.1	39.0/16.8	321	965	13	17/10	.54	.71/ .33	2.5	4.7/1.2	.9	227	62
87/08/19	24	29.7	39.0/19.9	288	886	13	16/10	.55	.71/ .38	2.9	5.0/1.6	1.0	152	64
87/08/20	24	30.7	38.9/23.5	272	967	12	15/10	.56	.71/ .43	3.6	5.4/1.7	2.3	146	44
87/08/21	24	29.8	37.2/18.8	312	946	13	16/10	.55	.69/ .36	3.4	5.7/1.6	1.5	182	59
87/08/22	24	28.9	37.0/18.3	308	935	13	16/10	.53	.68/ .36	3.4	6.3/1.7	1.5	197	57
87/08/23	24	28.1	37.0/18.6	309	942	13	16/10	.52	.68/ .36	3.1	5.6/1.6	1.2	205	61
87/08/24	24	26.7	35.0/16.3	309	961	14	17/11	.49	.64/ .32	3.0	4.8/2.0	.9	212	66
87/08/25	24	25.4	36.2/11.3	313	957	14	19/10	.47	.66/ .25	2.3	4.1/1.2	.9	260	56
87/08/26	24	27.5	36.9/16.1	300	932	13	17/10	.51	.67/ .32	2.3	4.2/0.9	.7	240	62
87/08/27	24	27.9	37.6/17.9	294	914	13	16/10	.52	.69/ .35	2.5	4.1/1.1	.6	240	68
87/08/28	24	29.0	38.5/18.3	290	922	13	16/10	.53	.70/ .36	2.6	4.4/1.1	.6	226	68
87/08/29	24	29.8	38.9/19.6	296	922	13	16/10	.55	.71/ .38	2.5	4.0/0.8	.6	245	69
87/08/30	24	30.2	39.9/19.9	287	914	13	16/ 9	.56	.72/ .38	2.5	5.4/0.9	.8	248	64
87/08/31	24	30.9	39.7/20.0	291	926	12	16/ 9	.57	.73/ .38	2.6	4.2/0.9	1.2	241	54

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/09/01	24	30.2	38.5/20.4	256	897	13	16/10	0.56	0.70/0.39	3.3	6.5/1.3	2.2	265	41
87/09/02	*12*	28.3	36.2/24.3	29	279	13	15/11	.53	.67/ .46	2.4	4.1/1.4	1.3	267	51
87/09/03	24	28.6	36.0/18.5	236	870	13	18/11	.54	.66/ .38	2.2	4.9/ .9	1.1	307	48
87/09/04	24	29.9	35.9/23.5	227	776	13	15/11	.56	.66/ .45	3.2	6.1/1.1	.4	339	75
87/09/05	24	26.9	33.7/18.0	274	879	14	17/11	.50	.63/ .35	3.7	5.8/1.5	2.6	126	40
87/09/06	24	24.7	34.2/15.3	280	890	14	17/11	.46	.63/ .31	2.6	3.5/1.5	1.0	262	61
87/09/07	24	25.2	34.7/14.8	274	884	14	18/11	.47	.64/ .30	2.4	4.1/1.0	1.0	255	58
87/09/08	*19*	24.9	35.7/15.2	334	888	14	17/10	.46	.65/ .31	2.4	4.0/1.1	1.1	264	54
87/09/09	24	26.4	37.2/16.5	267	894	14	17/10	.49	.68/ .32	2.4	3.4/1.1	.9	264	60
87/09/10	24	25.9	36.0/15.8	281	903	14	17/11	.48	.65/ .31	2.5	3.5/1.1	.5	261	69
87/09/11	24	25.1	35.7/14.3	274	886	14	18/11	.47	.65/ .29	2.3	4.4/1.0	.8	230	62
87/09/12	*17*	23.2	30.6/13.1	327	861	15	18/12	.43	.56/ .28	3.7	6.3/1.5	2.5	135	42
87/09/13	24	20.3	28.7/11.5	239	816	16	18/13	.40	.53/ .26	2.8	4.8/1.3	1.3	126	55
87/09/14	*5*	15.2	16.3/14.1	0	0	19	20/18	.33	.34/ .32	2.4	2.6/2.3	2.4	320	4
87/09/15	*11*	20.4	29.6/15.4	231	805	17	19/13	.41	.54/ .34	2.7	3.8/1.9	1.0	303	63
87/09/16	*5*	21.3	25.4/18.2	0	0	15	16/14	.40	.47/ .35	2.1	2.7/1.8	.8	328	61
87/09/17	24	25.2	34.5/17.2	257	849	14	17/11	.47	.62/ .33	2.6	5.9/1.4	1.1	302	57
87/09/18	24	24.3	35.0/11.9	257	851	14	18/11	.45	.63/ .26	2.3	4.6/1.3	1.1	274	52
87/09/19	24	24.9	36.1/14.2	254	843	14	18/10	.46	.65/ .29	2.5	5.1/1.1	1.1	258	55
87/09/20	*5*	16.7	18.0/15.4	0	0	17	17/16	.33	.35/ .31	2.1	2.4/1.4	1.9	306	12
87/09/21	*0*	--	-- --	--	--	--	--	--	-- --	--	-- --	--	--	--
87/09/22	*10*	20.6	29.1/17.1	92	582	15	17/12	.38	.51/ .33	2.4	3.8/1.4	1.9	300	22
87/09/23	*7*	23.4	29.9/20.0	17	102	25	34/13	.69	.81/ .58	3.5	4.9/1.8	1.8	128	53
87/09/24	24	24.1	31.9/14.3	232	785	24	43/13	.68	.85/ .49	2.3	4.2/1.1	.9	188	58
87/09/25	24	24.6	33.8/15.9	234	791	18	31/12	.56	.66/ .42	2.5	3.4/1.5	.5	231	71
87/09/26	24	24.6	33.7/15.8	233	789	15	21/11	.49	.62/ .38	2.4	3.2/1.2	.9	286	61
87/09/27	*16*	27.1	34.9/18.5	248	791	14	17/11	.50	.63/ .37	2.4	3.9/1.7	1.0	264	58
87/09/28	*11*	19.5	30.7/13.8	147	660	16	18/12	.37	.54/ .29	1.7	2.8/1.4	.9	331	51
87/09/29	*12*	29.7	36.3/18.6	272	801	12	16/10	.54	.65/ .36	2.2	2.6/1.7	.8	304	57
87/09/30	24	24.1	36.1/11.8	240	815	14	18/10	.45	.64/ .26	2.2	3.0/1.1	.9	288	57

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/10/01	24	24.5	36.1/12.1	235	802	14	18/10	0.45	0.64/0.26	2.4	4.0/1.3	1.6	287	40
87/10/02	24	24.4	36.5/12.4	232	792	14	18/10	.45	.65/ .26	2.2	3.2/1.2	1.0	292	56
87/10/03	24	25.0	36.9/14.1	230	788	14	18/10	.46	.65/ .29	2.2	3.1/1.1	.9	288	58
87/10/04	24	25.3	37.5/13.6	227	788	14	18/10	.46	.66/ .28	2.4	4.5/1.2	1.0	276	56
87/10/05	24	25.5	38.3/14.4	227	785	14	17/ 9	.47	.67/ .29	2.3	4.2/1.5	1.1	305	51
87/10/06	24	24.8	36.8/13.7	218	784	14	18/10	.45	.65/ .28	2.1	4.4/1.3	.9	285	57
87/10/07	*23*	22.6	34.6/13.3	223	754	15	18/11	.42	.62/ .28	2.2	3.7/1.0	.6	274	67
87/10/08	*5*	14.8	15.2/13.9	0	0	17	18/17	.30	.31/ .29	2.4	2.7/2.1	2.2	308	13
87/10/09	*0*	--	-- --	--	--	--	--	--	-- --	--	-- --	--	--	--
87/10/10	*0*	--	-- --	--	--	--	--	--	-- --	--	-- --	--	--	--
87/10/11	*3*	20.7	21.2/20.1	0	0	27	32/21	.66	.76/ .53	3.7	4.8/2.3	3.2	121	22
87/10/12	24	20.7	27.0/14.5	132	660	39	68/25	.96	1.15/ .75	4.5	7.7/2.9	3.3	129	39
87/10/13	24	18.2	26.1/13.2	167	719	45	71/16	.86	1.14/ .51	3.5	6.8/1.3	2.3	314	38
87/10/14	*22*	18.5	27.5/10.2	225	737	34	70/13	.61	.92/ .30	2.7	5.1/1.2	2.0	328	31
87/10/15	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/10/16	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/10/17	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/10/18	*15*	23.9	31.1/13.1	297	720	14	18/12	.44	.55/ .28	2.4	5.0/1.4	.7	285	65
87/10/19	24	19.1	30.4/ 9.4	199	718	16	19/12	.36	.54/ .23	2.0	3.0/1.2	.8	309	55
87/10/20	*2*	11.3	11.8/10.8	0	0	18	19/18	.25	.26/ .25	2.1	2.3/2.0	2.0	324	7
87/10/21	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/10/22	*21*	19.3	25.1/13.4	158	635	34	76/19	.73	1.31/ .46	3.3	5.4/1.5	1.4	186	59
87/10/23	24	16.9	22.8/10.0	163	595	53	83/30	1.00	1.34/ .67	2.4	4.7/1.0	.7	177	67
87/10/24	24	14.8	18.6/11.1	79	327	54	73/43	.92	1.18/ .68	2.3	4.3/1.5	.6	133	68
87/10/25	24	15.5	24.8/ 7.4	163	672	49	80/22	.79	1.00/ .66	1.8	3.4/ .9	.3	270	72
87/10/26	24	17.8	27.3/ 8.2	175	648	34	67/14	.60	.82/ .40	2.0	3.0/1.0	1.2	304	42
87/10/27	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/10/28	*4*	16.3	17.8/15.6	0	0	39	42/35	.74	.77/ .72	1.6	2.0/1.2	.8	321	44
87/10/29	24	17.6	22.5/14.3	136	612	41	70/21	.81	1.16/ .52	3.1	4.2/1.5	1.6	148	53
87/10/30	24	14.4	22.3/ 6.8	162	650	46	77/24	.71	.87/ .59	2.0	2.6/1.1	.6	273	63
87/10/31	24	13.2	17.3/10.5	44	184	60	84/38	.92	1.22/ .59	1.6	3.5/ .6	.9	297	47

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/11/01	24	14.3	17.1/12.4	67	265	79	84/69	1.30	1.40/1.21	1.9	3.9/0.6	0.9	147	56
87/11/02	24	13.6	16.1/10.6	75	376	77	83/69	1.21	1.33/1.04	3.9	6.5/1.9	3.7	116	10
87/11/03	24	13.1	20.2/ 6.3	147	611	65	85/32	.93	1.13/ .74	1.7	3.3/ .6	.3	4	70
87/11/04	*21*	17.5	23.8/ 9.5	134	592	47	83/22	.86	1.18/ .63	3.0	6.7/1.0	1.2	73	59
87/11/05	24	12.4	20.1/ 8.0	54	572	74	85/33	1.06	1.23/ .78	2.9	7.0/1.2	2.0	118	38
87/11/06	24	10.7	14.8/ 8.2	99	495	77	84/59	.98	1.06/ .92	1.8	3.6/ .7	.8	127	57
87/11/07	24	12.7	21.1/ 6.5	156	588	67	84/35	.94	1.12/ .81	2.3	4.1/1.0	1.5	314	35
87/11/08	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/11/09	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/11/10	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/11/11	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/11/12	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/11/13	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/11/14	*3*	8.8	9.1/ 8.3	0	0	20	21/20	.24	.24/ .23	7.3	7.9/6.3	7.1	324	4
87/11/15	24	8.6	14.3/ 4.4	152	588	21	34/17	.24	.32/ .20	3.7	6.2/1.1	3.2	323	16
87/11/16	*19*	9.8	19.2/ 2.4	179	537	32	49/18	.37	.43/ .30	1.9	4.6/ .9	.6	252	61
87/11/17	24	8.6	13.1/ 3.9	39	174	49	82/24	.54	.82/ .36	1.4	2.2/ .8	.6	308	58
87/11/18	24	8.8	18.3/ 1.6	146	572	59	85/22	.61	.81/ .46	1.7	2.8/ .8	.7	306	56
87/11/19	24	8.0	19.7/ .0	145	574	42	77/15	.39	.53/ .28	1.8	2.9/0.9	1.1	304	44
87/11/20	24	9.1	18.2/- .3	136	576	29	53/16	.30	.35/ .26	2.7	5.0/1.5	.6	145	71
87/11/21	24	10.2	17.9/ 3.9	142	557	31	49/18	.37	.42/ .31	3.4	6.3/1.4	2.9	313	24
87/11/22	24	9.3	18.3/ 1.9	136	544	38	64/18	.42	.51/ .35	2.8	6.8/ .8	2.3	307	25
87/11/23	24	9.8	17.5/ 2.4	138	556	34	63/16	.37	.49/ .26	4.2	7.4/1.2	3.8	320	15
87/11/24	24	8.7	16.4/ 2.5	138	554	29	46/17	.32	.39/ .26	2.0	5.4/1.0	.3	70	72
87/11/25	24	7.8	11.9/ 2.7	138	545	24	44/19	.26	.33/ .21	8.9	14.2/3.0	8.6	330	6
87/11/26	24	7.4	13.7/ 2.0	137	546	22	32/18	.23	.29/ .20	5.8	10.2/1.6	5.4	322	15
87/11/27	24	5.1	14.0/-2.9	135	542	33	54/18	.28	.31/ .25	2.0	2.6/1.2	.6	298	64
87/11/28	*17*	7.1	13.6/- .5	158	537	30	47/19	.29	.32/ .27	2.0	2.9/ .9	.7	291	61
87/11/29	24	6.2	15.8/- .4	132	532	33	50/17	.30	.35/ .26	2.1	3.7/1.3	.7	333	60
87/11/30	24	4.1	10.8/-2.7	68	361	39	57/23	.31	.35/ .27	2.0	3.1/1.1	1.2	298	47

TABLE 3.--*Summary of meteorological data collected at study site in 1987. Daily mean, maximum, minimum values were determined from hourly measurements*--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.
87/12/01	24	5.2	13.5/-2.1	107	507	38	63/19	0.32	0.38/0.28	2.0	2.7/1.1	0.4	295	70
87/12/02	*23*	6.1	14.8/- .1	101	416	41	58/20	.37	.48/ .32	2.1	3.1/1.1	.9	308	57
87/12/03	*20*	8.8	16.8/ .8	148	506	45	76/22	.46	.56/ .40	2.0	3.2/1.0	.6	279	66
87/12/04	24	9.4	16.0/ 2.7	89	433	45	70/24	.50	.80/ .40	2.7	4.9/1.2	.8	121	66
87/12/05	24	8.7	11.3/ 6.2	61	294	79	84/71	.90	.99/ .80	1.7	2.3/ .9	.7	147	59
87/12/06	24	8.8	13.4/ 5.1	89	487	74	84/59	.84	.96/ .74	2.6	4.5/ .7	1.7	122	43
87/12/07	24	9.2	15.5/ 4.3	126	514	50	84/17	.56	.92/ .26	3.3	5.5/1.3	2.1	328	44
87/12/08	24	4.8	12.3/-1.8	109	509	44	71/20	.36	.42/ .26	2.2	4.4/ .9	.6	296	66
87/12/09	24	6.1	14.4/- .1	95	394	53	72/23	.47	.61/ .38	1.7	2.5/1.0	1.0	304	47
87/12/10	24	7.5	17.1/- .2	117	480	59	81/26	.57	.65/ .49	1.6	2.4/ .7	.5	313	63
87/12/11	24	9.8	16.4/ 2.6	120	491	40	79/18	.44	.70/ .23	5.7	9.7/1.8	5.5	324	9
87/12/12	24	3.8	7.9/ .6	127	519	23	27/19	.18	.22/ .15	6.4	8.0/5.0	5.7	334	21
87/12/13	24	2.4	6.5/- .4	126	512	21	23/19	.16	.19/ .14	9.4	13.5/4.3	9.0	346	8
87/12/14	24	.3	4.9/-4.9	86	367	24	35/20	.15	.18/ .13	3.7	9.1/ .6	2.8	319	33
87/12/15	24	-2.0	2.8/-7.6	50	283	32	47/21	.16	.21/ .14	1.6	3.1/ .8	.3	256	72
87/12/16	24	2.5	7.5/-1.3	64	411	37	85/24	.27	.53/ .18	2.0	4.1/ .9	.3	223	72
87/12/17	24	2.8	5.6/ 0.2	25	118	81	85/70	.61	.71/ .53	2.1	6.3/ .6	1.5	320	38
87/12/18	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/12/19	5	5.2	6.0/ 4.1	0	0	47	48/46	.42	.44/ .40	6.3	6.6/5.9	6.0	319	13
87/12/20	*9*	- .1	4.0/-2.7	11	103	71	82/48	.43	.46/ .39	1.6	4.7/ .8	1.1	321	27
87/12/21	*4*	3.8	7.5/- .5	293	460	58	77/43	.46	.47/ .45	1.5	2.0/1.0	.6	102	55
87/12/22	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/12/23	*18*	1.6	4.5/-1.7	164	515	32	47/23	.22	.32/ .17	6.6	8.9/3.0	6.3	324	10
87/12/24	*23*	- .4	3.6/-2.5	98	531	27	33/21	.16	.18/ .13	7.4	8.6/4.6	7.1	346	8
87/12/25	*0*	--	-- --	--	--	--	-- --	--	-- --	--	-- --	--	--	--
87/12/26	*6*	- .8	1.6/-4.0	0	0	41	62/31	.23	.28/ .21	2.1	2.5/1.7	.6	103	69
87/12/27	24	- .3	7.0/-6.9	112	506	48	74/23	.27	.31/ .22	2.0	2.7/1.2	.5	288	67
87/12/28	24	.6	8.4/-5.0	114	506	47	67/24	.28	.32/ .25	2.3	4.6/1.2	.3	223	74
87/12/29	24	.9	8.4/-5.4	97	505	59	81/35	.38	.55/ .29	2.3	4.1/ .8	.5	263	70
87/12/30	24	1.3	8.4/-5.2	124	505	59	85/26	.38	.55/ .26	2.6	4.8/1.2	2.2	315	19
87/12/31	24	.5	9.9/-6.9	122	482	44	75/19	.25	.30/ .21	2.2	4.7/1.1	1.3	321	19