

1999

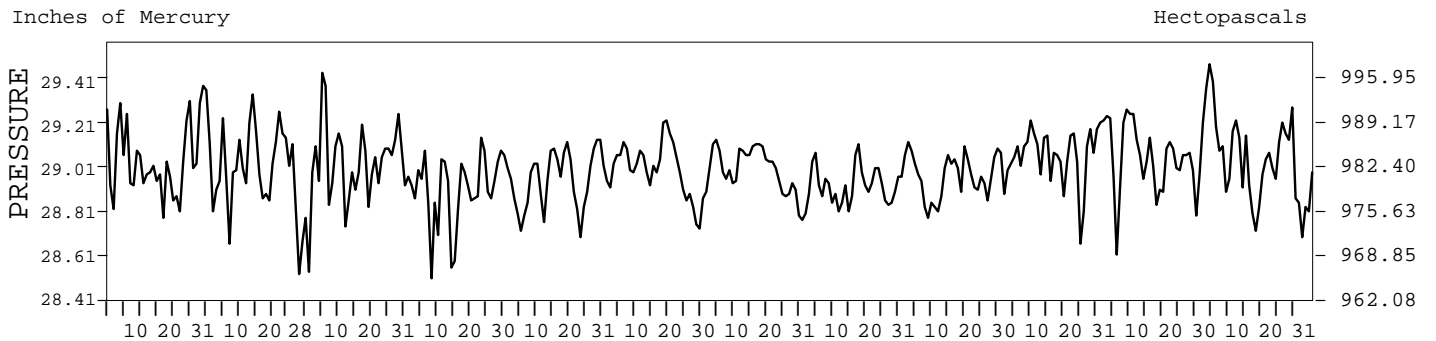
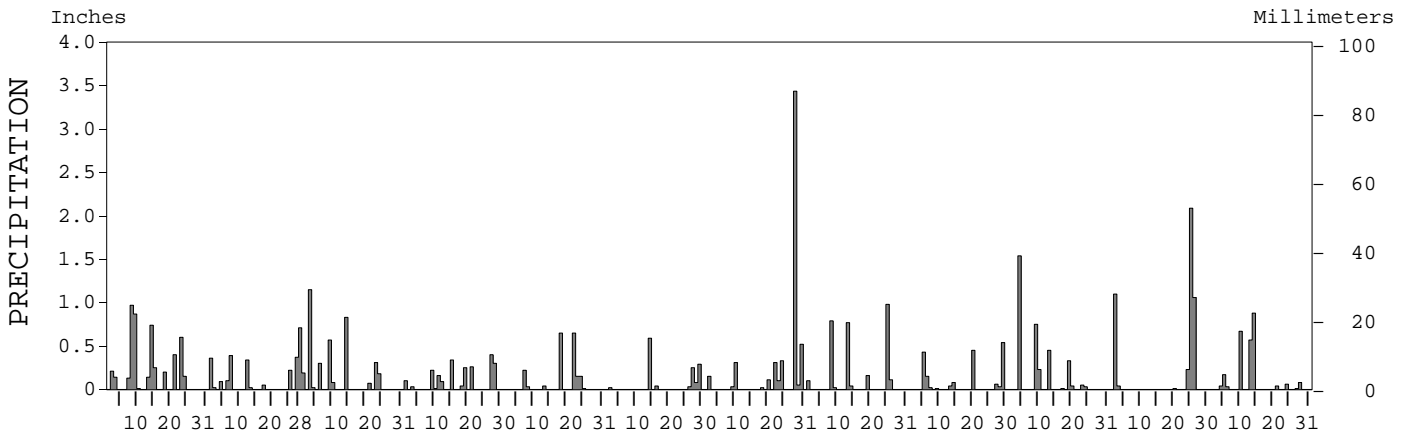
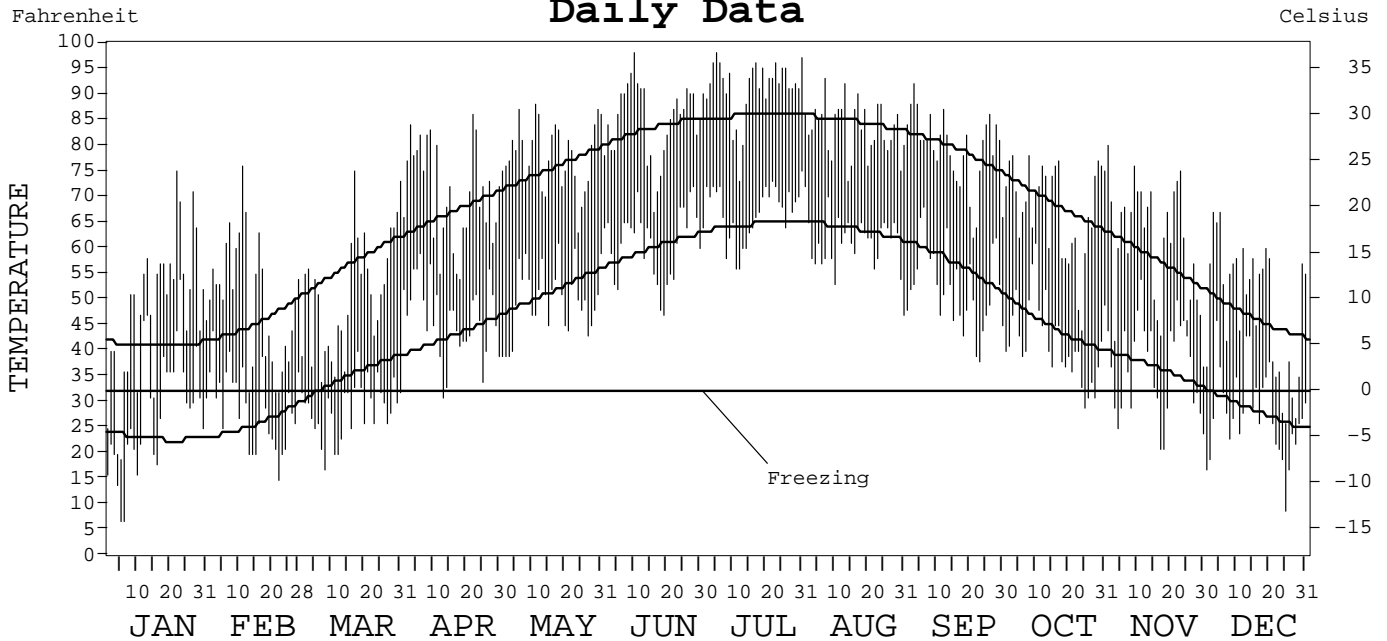
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-5604

CHARLESTON,
WEST VIRGINIA (CRW)

Daily Data



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Thomas R. Karl

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE	NATIONAL SATELLITE, DATA, AND INFORMATION SERVICE	NATIONAL CLIMATIC DATA CENTER ASHEVILLE, NORTH CAROLINA	DIRECTOR NATIONAL CLIMATIC DATA CENTER
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METEOROLOGICAL DATA FOR 1999

CHARLESTON, WV (CRW)

LATITUDE: 38° 22' 46" N LONGITUDE: 81° 35' 29" W ELEVATION (FT): GRND: 1016 BARO: 1016 TIME ZONE: EASTERN (UTC + 5) WBAN: 13866

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	48.1	49.9	51.4	70.6	78.1	84.8	91.2	83.4	79.2	67.6	61.0	48.5	67.8	
	HIGHEST DAILY MAXIMUM	75	76	75	86	88	98	98	93	92	78	80	67	98	
	DATE OF OCCURRENCE	22	11	17	22	11	10	05	07	03	08+	01	05+	JUL 05	
	MEAN DAILY MINIMUM	28.4	28.9	28.8	46.3	49.8	60.9	66.9	61.2	52.4	41.9	36.8	27.9	44.2	
	LOWEST DAILY MINIMUM	7	15	17	31	39	47	56	47	38	29	21	9	7	
	DATE OF OCCURRENCE	06+	22	08	13	03+	19	12+	31	23	25	18+	25	JAN 06+	
	AVERAGE DRY BULB	38.3	39.4	40.1	58.5	64.0	72.9	79.1	72.3	65.8	54.8	48.9	38.2	56.0	
	MEAN WET BULB	35.3	35.4	35.3	51.2	57.0	65.6	71.0	66.2	59.6	50.2	44.4	34.8	50.5	
	MEAN DEW POINT	31.1	30.7	27.8	44.1	51.3	61.2	67.4	63.1	55.5	46.5	39.2	29.2	45.6	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	11	24	3	1	0	0	0	39	
	MAXIMUM ≤ 32°	5	3	0	0	0	0	0	0	0	0	0	4	12	
	MINIMUM ≤ 32°	21	18	25	1	0	0	0	0	0	3	12	22	102	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	821	711	763	213	74	13	0	1	56	312	475	821	4260	
	COOLING DEGREE DAYS	0	0	0	24	48	254	443	236	89	1	0	0	1095	
RH	MEAN (PERCENT)	79	75	66	64	68	70	72	78	75	78	72	72	72	
	HOUR 01 LST	85	79	71	75	87	85	86	93	90	90	81	78	83	
	HOUR 07 LST	87	89	86	83	87	86	88	94	95	94	89	83	88	
	HOUR 13 LST	71	68	57	47	45	53	55	59	53	57	57	59	57	
	HOUR 19 LST	73	66	55	52	53	56	59	67	64	73	63	68	62	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	3	1	0	2	3	5	4	11	8	8	2	2	49	
	THUNDERSTORMS	1	0	1	5	2	3	11	6	2	2	0	1	34	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	29.07	29.02	29.02	28.92	28.97	29.01	29.01	28.95	28.97	29.10	29.08	29.03	29.01	
	MEAN SEA-LEVEL PRESS. (IN.)	30.13	30.09	30.09	29.96	30.00	30.04	30.02	29.98	30.01	30.14	30.17	30.13	30.06	
WINDS	RESULTANT SPEED (MPH)	2.2	1.4	1.2	1.9	0.7	1.0	0.8	0.2	0.1	0.7	1.6	2.0	1.0	
	RES. DIR. (TENS OF DEGS.)	21	24	29	24	21	15	26	15	28	21	26	23	23	
	MEAN SPEED (MPH)	5.4	3.9	4.6	5.1	3.1	3.4	3.5	2.4	2.6	2.3	3.4	4.0	3.6	
	PREVAIL. DIR. (TENS OF DEGS.)	21	18	06	23	21	16	22	22	14	22	22	22	22	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	25	28	25	28	29	21	22	25	23	20	20	22	29	
	DIR. (TENS OF DEGS.)	14	31	30	23	19	21	30	24	29	22	28	19	19	
	DATE OF OCCURRENCE	02	12	18	16	06	14	30	13	29	22	02	15	MAY 06	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	45	46	31	43	32	25	38	39	24	29	31	31	46	
DIR. (TENS OF DEGS.)	27	31	34	26	18	21	30	21	31	23	28	22	31		
DATE OF OCCURRENCE	18	12	21	16	06	14	30	13	29+	22	02	16	FEB 12		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	4.81	2.67	3.70	2.20	1.90	1.30	5.37	2.97	1.81	3.43	4.53	2.55	37.24	
	GREATEST 24-HOUR (IN.)	1.39	0.89	1.17	0.70	0.65	0.59	3.49	0.98	0.54	1.54	2.34	1.09	3.49	
	DATE OF OCCURRENCE	08-09	27-28	03-04	27-28	22+	14	28-29	25	29	04	25-26	13-14	JUL 28-29	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	13	11	10	12	8	7	11	8	10	9	6	10	115	
PRECIPITATION ≥ 0.10	12	7	7	8	5	3	8	6	4	5	4	4	73		
PRECIPITATION ≥ 1.00	0	0	1	0	0	0	1	0	0	1	3	0	6		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)														
	GREATEST 24-HOUR (IN.)														
	DATE OF OCCURRENCE														
	MAXIMUM SNOW DEPTH (IN.)														
	DATE OF OCCURRENCE														
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0															

NORMALS, MEANS, AND EXTREMES

CHARLESTON, WV (CRW)

LATITUDE: 38° 22' 46" N LONGITUDE: 81° 35' 29" W ELEVATION (FT): GRND: 1016 BARO: 1016 TIME ZONE: EASTERN (UTC + 5) WBAN: 13866

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	41.2	45.3	56.7	66.8	75.5	83.1	85.7	84.4	78.8	68.2	57.3	46.0	65.8
	MEAN DAILY MAXIMUM	46	42.5	46.4	56.0	67.4	75.9	82.6	85.7	84.4	78.5	67.9	56.1	46.2	65.8
	HIGHEST DAILY MAXIMUM	52	79	78	89	94	93	98	104	101	102	92	85	80	104
	YEAR OF OCCURRENCE		1950	1997	1990	1990	1991	1999	1988	1988	1953	1951	1993	1982	JUL 1988
	MEAN OF EXTREME MAXS.	51	66.8	69.0	79.4	86.2	89.2	92.3	94.4	92.8	90.5	82.9	76.8	68.3	82.4
	NORMAL DAILY MINIMUM	30	23.0	25.7	35.0	42.8	51.5	59.8	64.4	63.4	56.5	44.2	36.3	28.0	44.2
	MEAN DAILY MINIMUM	46	24.5	26.9	34.3	43.4	51.9	59.7	64.3	63.3	56.2	44.4	35.6	28.3	44.4
	LOWEST DAILY MINIMUM	52	-16	-12	0	19	26	33	46	41	34	17	6	-12	-16
	YEAR OF OCCURRENCE		1994	1996	1980	1982	1966	1972	1963	1965	1983	1962	1950	1989	JAN 1994
	MEAN OF EXTREME MINS.	51	2.9	7.0	16.8	26.3	35.5	46.0	52.8	51.3	40.8	28.6	18.5	8.9	27.9
	NORMAL DRY BULB	30	32.1	35.5	45.9	54.8	63.5	71.4	75.1	73.9	67.7	56.2	46.8	37.0	55.0
	MEAN DRY BULB	51	34.0	36.9	44.9	55.3	63.8	71.4	75.2	73.8	67.4	56.4	45.9	37.4	55.2
	MEAN WET BULB	47	30.5	32.5	38.9	47.5	56.7	64.3	68.3	67.4	61.2	50.5	40.8	33.5	49.3
	MEAN DEW POINT	47	24.1	25.6	30.9	39.2	51.3	60.5	65.1	64.5	57.7	45.7	34.6	27.6	43.9
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.4	1.1	4.6	7.5	4.8	1.9	0.0	0.0	0.0	20.3	
MAXIMUM ≤ 32°	30	8.4	5.2	0.7	*	0.0	0.0	0.0	0.0	0.0	0.0	0.3	4.9	19.5	
MINIMUM ≤ 32°	30	24.0	20.7	13.7	4.8	0.5	0.0	0.0	0.0	0.0	3.8	12.2	21.0	100.7	
MINIMUM ≤ 0°	30	1.2	0.4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.0	
H/C	NORMAL HEATING DEG. DAYS	30	1020	826	592	312	129	10	0	0	44	299	546	868	4646
	NORMAL COOLING DEG. DAYS	30	0	0	0	6	83	202	313	276	125	26	0	0	1031
RH	NORMAL (PERCENT)	30	69	67	61	59	67	72	76	77	78	72	69	70	70
	HOUR 01 LST	30	74	72	67	67	79	86	90	91	90	83	76	75	79
	HOUR 07 LST	30	77	77	74	76	83	86	90	92	92	87	81	78	83
	HOUR 13 LST	30	62	59	52	47	51	54	58	59	58	54	57	62	56
	HOUR 19 LST	30	63	60	52	47	55	61	66	69	73	65	62	66	62
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	52	3.9	3.2	2.7	2.9	7.5	11.0	14.0	18.0	15.8	10.5	4.3	3.6	97.4
	THUNDERSTORMS	52	0.5	0.9	2.3	4.1	6.6	8.1	9.6	7.2	3.2	1.1	0.7	0.3	44.6
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	1					7.2	4.0						8.0	
	MIDNIGHT-MIDNIGHT (OKTAS)														
	MEAN NO. DAYS WITH:														
CLEAR	1	1.0		5.0		7.0	12.0	1.0	7.0	4.0	6.0		3.0		
PARTLY CLOUDY	1		1.0			2.0	3.0	1.0	3.0	1.0	1.0		2.0		
CLOUDY	1	8.0	10.0	8.0		12.0	5.0	2.0	1.0	7.0	4.0		14.0		
PR	MEAN STATION PRESSURE (IN)	27	29.07	29.04	28.99	28.97	28.97	28.99	29.02	29.05	29.06	29.08	29.07	29.07	29.03
	MEAN SEA-LEVEL PRES. (IN)	47	30.12	30.09	30.03	30.00	30.00	30.00	30.03	30.04	30.08	30.11	30.10	30.13	30.06
WINDS	MEAN SPEED (MPH)	33	7.0	6.8	7.6	7.0	5.8	5.0	4.6	4.1	4.3	4.6	6.0	6.3	5.8
	PREVAIL. DIR (TENS OF DEGS)	20	24	23	23	24	23	23	23	23	06	23	23	23	23
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	5	34	31	28	30	31	35	30	25	23	25	32	24	35
	DIR. (TENS OF DEGS)		15	14	25	15	22	35	19	24	29	23	17	27	35
	YEAR OF OCCURRENCE		1996	1997	1998	1996	1995	1998	1995	1999	1999	1996	1998	1997	JUN 1998
	MAXIMUM 5-SECOND:														
SPEED (MPH)	5	46	46	43	44	41	52	66	39	30	39	41	37	66	
DIR. (TENS OF DEGS)		13	31	25	29	22	35	20	21	30	22	17	27	20	
YEAR OF OCCURRENCE		1996	1999	1998	1998	1995	1998	1997	1999	1996	1996	1998	1997	JUL 1997	
PRECIPITATION	NORMAL (IN)	30	2.91	3.04	3.63	3.31	3.94	3.59	4.99	4.01	3.24	2.89	3.59	3.39	42.53
	MAXIMUM MONTHLY (IN)	52	9.11	6.89	8.35	6.46	7.40	10.56	13.54	10.45	7.61	6.49	8.45	8.02	13.54
	YEAR OF OCCURRENCE		1950	1956	1997	1965	1996	1998	1961	1958	1971	1983	1985	1978	JUL 1961
	MINIMUM MONTHLY (IN)	52	1.09	0.64	1.30	0.50	0.84	0.70	1.98	0.66	0.65	0.09	0.64	0.45	0.09
	YEAR OF OCCURRENCE		1981	1968	1987	1976	1977	1966	1993	1957	1959	1963	1965	1965	OCT 1963
	MAXIMUM IN 24 HOURS (IN)	52	2.45	2.45	2.86	2.72	3.31	2.24	5.60	4.17	2.40	2.48	2.88	2.47	5.60
	YEAR OF OCCURRENCE		1994	1951	1967	1948	1982	1962	1961	1958	1956	1961	1991	1978	JUL 1961
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	14.9	13.6	14.4	13.8	13.1	11.4	12.9	11.2	10.0	9.6	12.1	14.2	151.2	
PRECIPITATION ≥ 1.00	30	0.4	0.3	0.5	0.4	0.6	0.7	1.3	0.8	0.8	0.6	0.9	0.5	7.8	
SNOWFALL	NORMAL (IN)	30	12.2	10.3	4.6	1.0	0.*	0.0	0.0	0.0	0.2	1.6	6.1	36.0	
	MAXIMUM MONTHLY (IN)	49	39.5	21.8	20.4	20.7	0.6	T	T	T	T	2.8	25.8	21.9	39.5
	YEAR OF OCCURRENCE		1978	1964	1993	1987	1989	1994	1990	1989	1994	1961	1950	1995	JAN 1978
	MAXIMUM IN 24 HOURS (IN)	49	15.8	11.2	17.1	11.3	0.6	T	T	T	T	2.8	15.1	11.2	17.1
	YEAR OF OCCURRENCE		1978	1983	1993	1987	1989	1994	1990	1989	1994	1961	1950	1967	MAR 1993
	MAXIMUM SNOW DEPTH (IN)	44	23	13	9	17	T	0	0	0	0	2	19	10	23
	YEAR OF OCCURRENCE		1978	1985	1980	1987	1989					1961	1950	1967	JAN 1978
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	3.9	3.1	1.5	0.2	0.0	0.0	0.0	0.0	0.0	0.*	0.7	2.1	11.5	

PRECIPITATION (inches) 1999 CHARLESTON, WV (CRW)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	1.15	3.51	4.23	3.19	1.13	2.35	3.53	4.84	3.55	5.19	2.34	3.81	38.82
1971	2.35	3.40	1.97	1.19	5.17	2.58	6.59	2.12	7.61	1.30	2.83	1.71	38.82
1972	5.47	5.51	2.17	5.16	2.55	4.33	4.13	4.13	3.61	2.48	5.26	6.35	51.15
1973	1.52	2.41	3.40	5.44	5.36	4.48	6.88	2.07	3.91	4.75	5.42	3.68	49.32
1974	4.67	2.50	4.54	3.05	6.06	5.07	2.16	4.22	2.64	1.64	3.72	3.19	43.46
1975	4.84	3.10	6.01	4.03	6.44	4.25	2.71	5.14	4.99	3.08	2.66	3.74	50.99
1976	2.89	2.11	4.21	0.50	3.66	4.24	6.93	2.23	5.37	5.44	1.02	2.18	40.78
1977	1.90	1.08	3.16	4.06	0.84	5.93	4.92	6.58	1.14	4.16	3.78	2.07	39.62
1978	5.59	1.31	2.67	3.31	3.99	2.96	9.83	8.21	1.45	2.68	2.26	8.02	52.28
1979	6.48	3.76	3.00	3.82	3.87	3.54	5.17	4.78	3.95	3.67	4.02	2.81	48.87
1980	2.85	2.25	5.32	4.49	2.67	2.17	8.47	10.32	2.37	2.03	3.02	1.85	47.81
1981	1.09	4.59	1.80	4.04	3.78	6.46	3.02	2.24	2.36	2.43	1.29	2.71	35.81
1982	3.74	3.23	4.96	1.14	6.19	7.00	2.68	2.65	2.58	1.65	4.65	2.71	43.18
1983	1.24	2.72	3.15	3.96	5.98	2.77	4.19	2.54	1.33	6.49	4.80	3.19	42.36
1984	1.67	2.56	2.72	4.00	3.71	2.56	4.37	4.57	2.95	3.28	4.73	3.78	40.90
1985	3.07	2.32	4.23	1.84	5.88	3.07	3.22	2.02	0.71	3.65	8.45	2.71	41.17
1986	2.12	4.35	1.87	1.39	4.86	2.36	7.61	4.71	3.51	2.20	6.88	3.89	45.75
1987	3.23	3.34	1.30	4.05	2.49	3.38	4.23	3.56	3.89	1.10	2.71	4.13	37.41
1988	1.62	2.50	2.71	2.17	2.59	0.94	3.00	2.86	3.46	1.87	5.02	2.66	31.40
1989	2.92	6.05	5.81	4.13	6.79	7.54	3.04	5.62	7.28	4.09	2.87	1.83	57.97
1990	2.86	3.74	1.94	2.89	4.87	3.01	5.35	2.54	4.26	3.51	2.07	7.01	44.05
1991	2.68	2.98	6.07	3.49	1.47	2.49	2.84	2.95	5.51	1.10	5.00	5.89	42.47
1992	1.94	2.72	4.79	2.93	4.66	3.21	6.41	4.41	1.38	0.94	3.15	3.50	40.04
1993	1.87	2.98	6.68	1.78	1.98	5.01	1.98	2.71	5.99	3.50	3.95	3.23	41.66
1994	6.42	5.56	7.73	3.78	3.98	4.43	3.71	6.20	1.95	1.13	1.95	2.52	49.36
1995	6.02	2.98	2.73	2.59	6.15	4.93	2.91	5.81	2.70	2.61	3.31	2.79	45.53
1996	5.18	2.82	4.32	3.77	7.40	3.59	8.50	2.82	7.37	2.49	4.36	2.04	54.66
1997	1.76	1.76	8.35	2.77	3.60	5.24	5.83	4.14	1.94	0.84	2.96	1.57	40.76
1998	3.43	4.23	3.41	4.77	5.27	10.56	3.65	3.70	2.50	1.67	1.89	3.18	48.26
1999	4.81	2.67	3.70	2.20	1.90	1.30	5.37	2.97	1.81	3.43	4.53	2.55	37.24
POR= 98 YRS	3.64	3.27	4.09	3.55	3.84	3.89	4.90	4.13	3.07	2.72	3.21	3.21	43.52

WBAN : 13866

AVERAGE TEMPERATURE (°F) 1999 CHARLESTON, WV (CRW)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	28.5	36.2	43.3	58.2	66.9	73.1	74.6	73.6	70.0	57.4	46.0	38.4	55.5
1971	29.4	35.2	39.7	51.9	59.9	73.5	72.4	71.9	70.7	63.8	45.9	47.3	55.1
1972	38.7	35.2	43.8	54.5	63.7	64.9	73.4	72.7	68.7	52.5	43.4	42.1	54.5
1973	34.3	35.1	52.2	53.8	60.8	73.3	74.5	74.6	70.1	58.9	46.8	38.0	56.0
1974	43.5	37.1	49.1	56.9	64.2	67.8	74.2	73.6	63.2	52.4	45.2	36.8	55.3
1975	35.7	38.0	39.8	50.2	66.1	71.7	74.2	76.7	63.9	57.6	50.2	38.6	55.2
1976	31.7	45.8	51.6	55.2	61.9	71.9	72.4	70.2	63.3	49.5	37.6	31.0	53.5
1977	18.6	33.2	49.8	58.4	67.0	68.6	76.9	73.6	70.2	53.4	49.1	35.1	54.5
1978	24.4	24.2	42.6	56.7	63.1	70.9	73.8	74.9	71.0	53.8	49.4	39.0	53.7
1979	28.1	27.9	50.5	55.1	63.0	68.8	72.9	73.4	67.0	54.6	47.5	38.3	53.9
1980	34.1	29.7	42.0	53.3	63.6	68.8	76.6	76.3	69.8	53.6	43.2	36.3	53.9
1981	28.0	37.2	41.4	59.1	60.4	73.2	75.7	72.8	66.5	54.2	45.3	34.6	54.0
1982	29.8	36.1	47.2	51.5	68.6	68.8	76.2	71.1	65.9	57.7	49.0	44.8	55.6
1983	34.0	37.7	47.0	52.1	61.1	71.6	77.0	78.0	68.4	58.1	47.4	32.0	55.4
1984	30.6	41.5	41.1	54.2	61.4	75.3	73.2	74.9	65.4	64.4	44.6	46.9	56.1
1985	27.2	34.0	49.4	60.8	66.3	71.0	75.8	74.0	69.6	62.3	55.5	33.8	56.6
1986	34.1	40.5	47.1	57.9	65.3	72.2	77.2	71.9	69.5	57.9	46.4	36.4	56.4
1987	33.0	37.2	47.0	52.7	68.4	73.5	77.1	77.0	67.1	50.3	49.0	39.8	56.0
1988	31.1	35.2	46.1	54.1	63.2	71.0	78.6	77.4	66.6	49.3	47.0	37.4	54.8
1989	41.1	34.9	47.8	52.8	59.4	71.7	75.7	73.2	67.0	56.7	46.4	26.0	54.4
1990	42.3	45.2	51.7	55.1	62.9	72.3	75.8	74.1	68.7	58.2	50.7	43.6	58.4
1991	36.5	40.3	47.4	60.3	71.7	73.9	77.9	75.2	68.4	59.1	45.8	41.3	58.2
1992	35.6	41.8	45.4	55.7	61.2	68.8	76.0	70.9	67.4	54.1	47.4	37.9	55.2
1993	40.2	34.0	41.8	55.0	64.9	71.4	79.0	76.4	66.6	55.1	47.1	36.6	55.7
1994	28.1	38.7	45.3	60.5	59.7	74.2	76.1	72.4	65.4	54.8	50.6	41.2	55.6
1995	34.7	34.0	46.9	55.2	61.9	71.4	76.4	77.6	64.6	56.9	40.8	32.5	54.4
1996	32.1	35.5	39.6	54.0	64.7	71.9	71.6	72.8	65.9	55.8	40.2	41.4	53.8
1997	35.6	43.8	47.1	50.8	58.7	70.1	74.5	70.8	65.0	55.1	42.2	36.5	54.2
1998	41.0	42.0	45.9	55.4	65.8	70.3	73.7	73.9	70.2	56.1	46.7	40.4	56.8
1999	38.3	39.4	40.1	58.5	64.0	72.9	79.1	72.3	65.8	54.8	48.9	38.2	56.0
POR= 92 YRS	35.7	37.9	45.8	55.8	64.5	72.1	76.0	74.7	68.9	57.4	46.6	37.9	56.1

HEATING DEGREE DAYS (base 65°F) 1999 CHARLESTON, WV (CRW)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	3	0	40	246	563	817	1097	828	778	387	184	2	4945
1971-72	0	1	13	78	578	543	809	856	649	333	90	81	4031
1972-73	16	2	14	378	642	701	945	832	394	351	157	4	4436
1973-74	0	1	19	202	541	833	659	775	500	277	115	25	3947
1974-75	0	0	110	388	590	869	899	749	772	445	59	4	4885
1975-76	0	0	106	227	441	813	1025	549	427	342	142	4	4076
1976-77	0	9	84	475	814	1047	1432	888	482	242	81	52	5606
1977-78	0	2	19	357	482	919	1249	1138	691	258	137	23	5275
1978-79	0	0	18	344	462	797	1137	1031	456	308	125	19	4697
1979-80	5	10	39	331	519	820	951	1017	707	349	106	27	4881
1980-81	0	0	33	356	650	882	1138	774	727	207	175	2	4944
1981-82	0	1	76	335	585	936	1086	801	545	405	36	2	4808
1982-83	1	2	69	268	480	626	955	757	554	388	153	16	4269
1983-84	4	0	66	227	521	1019	1059	674	734	346	171	5	4826
1984-85	1	0	98	74	613	563	1164	860	488	192	54	18	4125
1985-86	0	0	51	127	294	960	954	679	554	249	83	7	3958
1986-87	0	23	23	255	550	880	989	770	549	374	63	4	4480
1987-88	0	0	37	447	473	774	1043	859	577	326	112	38	4686
1988-89	2	0	37	484	534	849	735	837	536	367	221	2	4604
1989-90	0	7	72	270	553	1203	697	549	446	323	111	8	4239
1990-91	0	0	59	230	428	655	876	685	558	192	21	1	3705
1991-92	0	0	80	229	576	729	904	670	602	319	170	24	4303
1992-93	0	1	67	335	522	834	760	862	713	306	73	24	4497
1993-94	0	0	64	307	540	873	1136	732	607	191	197	3	4650
1994-95	0	4	34	308	424	729	932	861	555	306	138	7	4298
1995-96	0	0	72	262	721	999	1008	848	779	357	105	4	5155
1996-97	2	0	59	278	743	727	908	592	547	429	213	23	4521
1997-98	0	6	53	324	676	877	733	639	626	283	60	38	4315
1998-99	0	0	29	290	541	758	821	711	763	213	74	13	4213
1999-	0	1	56	312	475	821							

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COOLING DEGREE DAYS (base 65°F) 1999 CHARLESTON, WV (CRW)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	40	147	251	310	273	197	18	0	0	1236
1971	0	0	0	0	32	265	237	219	190	49	11	5	1008
1972	0	0	0	24	56	85	283	247	132	0	0	0	827
1973	0	0	4	22	34	256	304	305	181	22	2	0	1130
1974	0	0	14	43	99	118	292	275	62	6	1	0	910
1975	0	0	0	7	99	212	291	372	82	7	4	0	1074
1976	0	1	17	58	54	218	238	175	39	1	0	0	801
1977	0	0	18	50	148	165	373	277	180	4	12	0	1227
1978	0	0	0	16	88	207	279	314	205	4	1	0	1114
1979	0	0	13	18	69	138	257	277	105	17	0	0	894
1980	0	0	0	6	71	147	370	358	182	9	0	0	1143
1981	0	0	2	38	41	256	340	251	126	5	0	0	1059
1982	0	0	0	6	154	122	355	196	101	47	5	6	992
1983	0	0	2	6	39	222	385	407	177	18	0	0	1256
1984	0	0	0	27	64	318	261	312	116	65	7	8	1178
1985	0	0	9	72	105	204	339	285	194	52	14	0	1274
1986	0	0	4	41	100	227	384	244	167	43	0	0	1210
1987	0	0	0	13	177	268	381	379	108	0	2	0	1328
1988	0	0	3	9	64	225	430	392	91	4	3	0	1221
1989	0	0	11	6	55	211	339	273	140	23	2	0	1060
1990	0	0	41	33	54	232	342	286	174	28	7	0	1197
1991	0	0	17	60	236	273	408	324	190	53	5	0	1566
1992	0	0	2	47	57	143	347	192	145	4	0	0	937
1993	0	0	0	14	76	222	444	364	119	7	8	0	1254
1994	0	0	4	62	37	288	353	240	51	0	1	0	1036
1995	1	0	1	20	51	209	363	401	69	23	2	0	1140
1996	0	0	0	34	105	214	213	247	93	2	5	0	913
1997	1	5	0	11	23	182	302	195	61	23	0	0	803
1998	0	0	39	3	93	205	275	283	194	20	0	4	1116
1999	0	0	0	24	48	254	443	236	89	1	0	0	1095

SNOWFALL (inches) 1999 CHARLESTON, WV (CRW)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	0.0	0.0	0.2	10.9	11.6	10.5	11.7	T	0.0	0.0	44.9
1971-72	0.0	0.0	0.0	0.0	4.2	0.8	4.0	9.8	3.5	T	0.0	0.0	22.3
1972-73	0.0	0.0	0.0	0.9	6.9	1.4	3.4	2.9	4.8	0.9	0.0	0.0	21.2
1973-74	0.0	0.0	0.0	0.0	T	6.5	0.3	13.0	0.9	1.2	0.0	0.0	21.9
1974-75	0.0	0.0	0.0	0.6	2.7	8.3	18.1	2.4	8.1	0.1	0.0	0.0	40.3
1975-76	0.0	0.0	0.0	0.0	T	4.0	14.3	2.6	5.4	0.0	0.0	0.0	26.3
1976-77	0.0	0.0	0.0	T	4.7	7.4	22.2	11.1	1.0	1.5	0.0	0.0	47.9
1977-78	0.0	0.0	0.0	0.0	4.4	5.4	39.5	15.6	11.7	0.0	0.0	0.0	76.6
1978-79	0.0	0.0	0.0	0.0	T	1.5	27.5	20.1	5.5	T	0.0	0.0	54.6
1979-80	0.0	0.0	0.0	T	0.9	0.4	11.7	12.7	10.5	T	0.0	0.0	36.2
1980-81	0.0	0.0	0.0	T	0.5	2.6	9.1	6.8	7.5	T	0.0	0.0	26.5
1981-82	0.0	0.0	0.0	T	0.5	8.2	12.1	6.4	7.4	1.0	0.0	0.0	35.6
1982-83	0.0	0.0	0.0	0.0	T	2.9	5.8	15.0	5.2	0.1	0.0	0.0	29.0
1983-84	0.0	0.0	0.0	0.0	0.3	3.8	12.8	9.7	2.4	0.0	0.0	0.0	29.0
1984-85	0.0	0.0	0.0	0.0	T	3.7	17.6	20.1	0.9	1.7	0.0	0.0	44.0
1985-86	0.0	0.0	0.0	0.0	0.0	8.9	13.1	17.7	3.7	T	0.0	0.0	43.4
1986-87	0.0	0.0	0.0	0.0	0.2	0.1	16.3	9.7	3.9	20.7	0.0	0.0	50.9
1987-88	0.0	0.0	0.0	T	2.4	5.7	8.3	7.8	4.6	T	0.0	0.0	28.8
1988-89	0.0	0.0	0.0	T	T	6.9	1.7	4.6	T	1.4	0.6	0.0	15.2
1989-90	0.0	T	T	T	2.0	14.1	11.0	3.8	6.6	1.1	0.0	0.0	38.6
1990-91	T	0.0	0.0	0.0	0.0	1.2	3.5	6.5	5.3	T	0.0	0.0	16.5
1991-92	0.0	0.0	0.0	0.0	4.1	0.7	5.6	1.1	8.6	3.6	T	T	23.7
1992-93	0.0	0.0	0.0	T	2.5	3.7	0.4	12.0	20.4	T	0.0	T	39.0
1993-94	0.0	0.0	0.0	1.5	0.4	12.4	34.2	7.0	3.1	0.0	0.0	T	58.6
1994-95	0.0	0.0	T	0.0	T	T	9.1	7.9	8.7	0.0	0.0	0.0	25.7
1995-96	0.0	0.0	0.0	0.0	13.6	21.9	35.1	14.2	20.4	0.8	0.0	T	106.0
1996-97	0.0	0.0	0.0										
1997-98													
1998-99													
1999-													
POR= 49 YRS	T	T	T	0.1	2.4	5.2	11.1	8.7	5.4	0.9	T	T	33.8

WBAN : 13866

REFERENCE NOTES:

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1961 - 1990). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p>	<p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65° F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.</p> <p>ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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1999
CHARLESTON,
WEST VIRGINIA (CRW)

Charleston lies at the junction of the Kanawha and Elk Rivers in the western foothills of the Appalachian Mountains. The main urban and business areas have developed along the two river valleys, while some residential areas are in nearby valleys and on the surrounding hills. The hilltops are around 1,100 feet above sea level, about 500 feet higher than the valleys. The Kanawha Airport is just over 2 miles northeast of the center-city area, on an artificial plateau constructed from several hilltops.

Weather records are maintained at the Kanawha Airport by National Weather Service personnel. This site tends to be slightly cooler than the river valleys during the afternoons. Conversely, the valleys can become cooler than the hilltops during clear, calm nights. The weather at Charleston is highly changeable, especially from mid-autumn through the spring.

Winters can vary greatly from one season to the next. Snow does not favor any given winter month, heavy snowstorms are infrequent, and most snowfalls are in the 4-inch or less category. Snow and ice usually do not persist on valley roads, but can linger longer on nearby hills and outlying rural roads.

Afternoon temperatures in the 40s and morning readings in the 20s are common during the winter. Yet, every winter typically has two or three extended cold spells when temperatures stay below freezing for a few consecutive days. Northwesterly winds are associated with the cold weather. Air reaching Charleston from the northwest can cause cloudiness and flurries, even when there is no nearby organized storm system. Winter conditions are much more severe over the higher mountains less than 50 miles to the northeast through the southeast. Temperatures warm rapidly in the spring and are accompanied by low daytime humidities.

Summer and early autumn have more day-to-day consistency in the weather. Sunshine is more abundant than in winter. Summer precipitation falls mostly in brief, but sometimes heavy, showers. Flash flooding can occur along small streams, but flooding is rare on the dam-controlled Kanawha and Elk Rivers.

Afternoon summer temperatures are mostly in the 80s. Readings above 95 degrees are rare. However, during a hot spell, haze and humidity can add to the unpleasantness and indoor air conditioning is recommended. Cooler and less humid air often penetrates the area from the north to end a hot spell.

Early morning fog is common from late June into October. Industrial and vehicular pollutants can contribute to limited visibility any time of the year, especially when cooler air becomes trapped in the valleys. Autumn foliage is generally at its peak during the second and third weeks of October. By the end of October, the first 32 degree temperature has usually arrived.

Ample precipitation is well distributed throughout the year. July is quite often the wettest month of the year, while October averages the least rain. Droughts severe enough to limit water use are scarce. Any dry spells during the spring or autumn can cause conditions favorable for brush fires in outlying areas.

STATION LOCATION

CHARLESTON, WEST VIRGINIA

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE										AUCOMPARATION	* Type M = AMOS T = AUTOB S = ASOS W = AWOS	REMARKS	
						SEA LEVEL	GROUND												
							WIND	EMERGENCY	OR	SWITCH	RAIN	WIND	RAIN	RAIN	RAIN				RAIN
COOPERATIVE - - NOTE: For period 1855 through March 18, 1905 refer to previous editions.																			
Quarrier Street Observer Mary E. Hewes	3/19/15	5/31/15																	
Roof Federal Building 1/4 mile West of P. O.	6/1/15	9/25/24		38° 21'	81° 38'	600		70											
No. 1 Brooks Hollow US Corps of Engineers Malden Road	9/26/24	9/30/33	3.25 mi. SE	38° 20'	81° 35'	600		*4									*Heights estimated.		
1001 Virginia Street	10/1/33	12/31/33	2.88 mi. NW	38° 21'	81° 38'	602		*4											
Dam No. 6 South Charleston	2/19/34	8/31/34	3.75 mi. SW	38° 22'	81° 42'	604		*4											
Charleston Daily Mail 1/4 mile West of P. O.	8/16/34	6/1943	3.88 mi. NNE	38° 21'	81° 38'	600		70									No record from April 1942 through April 1943.		
8 Woodward Court	7/1943	5/27/44	1.25 mi. NNW	38° 21'	81° 38'	650		*4											
269 Slack Street	11/22/44	Present	1.75 mi. ENE	38° 21'	81° 38'	615		22											
AIRPORT Terminal Building Kanawha Airport 2.5 miles NE of P. O.	11/29/47	9/13/50	NA	38° 22'	81° 36'	950	26	4	4								Official records from Airport data after 12/7/47.		
Terminal Building Kanawha Airport	9/13/50	5/16/79	100 feet E	38° 22'	81° 36'	950	80	61	61	NA	i3	5	59	g4	NA		a - Effective 3/15/51. b - Minor move 6/2/54. c - Moved to field site 6/2/54. d - Removed 6/2/54. e - Moved to field site 11/30/54. f - Moved to field site 6/22/55. g - Telepsychrometer (5') 6/2/54-12/7/60. Hygro. comm. 1375' NE of tele. site 12/7/60. h - Effective 12/7/60. i - Installed 12/1/61. j - Removed 11/24/62. k - Added 9/8/64. m - Moved 50' E 6/8/72.		
NWS Building Kanawha Airport+	5/16/79	10/01/94	app. 0.7 mi. SSE	38° 22'	81° 36'	939	n32	4	4	NA	3	4	3	n4	NA		n - Not moved 5/16/79. p - Type change 3/17/86. q - Move from field to NWS Bldg 8/3/89.		
Yeager Airport	10/01/94	Present	NA	38°23'	81°35'	1016	q36							p4	S		ASOS Commissioned 10/01/94		

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801.
INQUIRIES/COMMENTS CALL: (828) 271-4800

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Asheville NC 28801-5001

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