

STATUS REPORT
on
COLORADO COOPERATIVE PROJECT IN CLIMATOLOGY

30 June 1959 - 31 December 1961

by
Richard A. Schleusener

Civil Engineering Section
Colorado Agricultural Experiment Station
in cooperation with
The United States Weather Bureau

December 1961

CER61RAS64

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ABSTRACT

This report is a summary of progress on the status of the Colorado Cooperative Project on Climatology during the period from 30 June 1959 to 30 December 1961. During this period approximately a half million IBM cards were prepared from back weather records and detailed analyses have been made. In this report the types of data included in the punch card program are described and the listing of the stations and years for which weather data are punched is included. Procedures for processing the data are described and detailed instructions are given for processing of weather records from individual stations.

INTRODUCTION

Under a memorandum of understanding between the U. S. Weather Bureau and the Colorado Agricultural Experiment Station dated February 1, 1957, a cooperative program in climatology was established. In the period prior to June 1959 emphasis was placed on the punching of back weather records from selected stations in eastern Colorado for the period prior to 1948.⁽¹⁾ This work was done under funding provided by the U. S. Department of Agriculture Soil Conservation Service. Since June 1959 additional work has been done on this project, largely under funding provided for a joint project between Colorado State University, the Economics Department of Colorado University, and the High-Altitude Observatory of the University of Colorado, from the State of Colorado and other states in the Upper Colorado River Basin. A detailed report of the work done under this joint project has been prepared, so details are not repeated here.⁽²⁾

Precipitation data from additional stations in the vicinity of Denver have been placed on IBM cards as part of a hydrologic study of the South Platte River Basin. This study was conducted at Colorado State University as part of Western Regional Project W-42.

It is the purpose of this report to give the details on the type of data that were included in the punch card program for those stations that were processed between June 1959 and December 1961.

¹Schleusener, Richard A., Status Report on Colorado Cooperative Report in Climatology through 30 June 1959. Civil Engineering Section, Colorado State University, CER59RAS30.

²Schleusener, Richard A. and Loren W. Crow, Analysis of Precipitation Data in the Upper Colorado River Basin, Civil Engineering Section, Colorado State University, CER61RAS52.

SCOPE OF WORK ACCOMPLISHED

Type of Data

Weather records placed on punched cards included a variety of daily observations. Most of the data were taken from original weather records recorded on U. S. Weather Bureau Form 1009. Data transferred to the punched cards included some or all of the following information:

1. Station identification and date.
2. Maximum and minimum temperatures.
3. Set maximum temperature.
4. Precipitation amounts.
5. Days with certain meteorological phenomena, such as thunder, fog, sleet, and other phenomena.
6. Evaporation.

The exact elements transferred to cards for each station depended on the quality of the record and in some cases data were sufficiently complete to permit transfer of all the above elements to the cards. In most cases, however, not all of the elements were suitable for punching for all stations. Details of the exact elements transferred to cards for each station are included in the appendix of this report.

Location of Stations

The locations of stations and inclusive dates for which weather data are available in IBM punch card form are shown in Figure 1. A summary table showing the years of record for which punched cards are available at Colorado State University is shown in Table I. (Table I includes all stations for which weather data have been processed at Colorado State University, including the data processed prior to June 1959.)

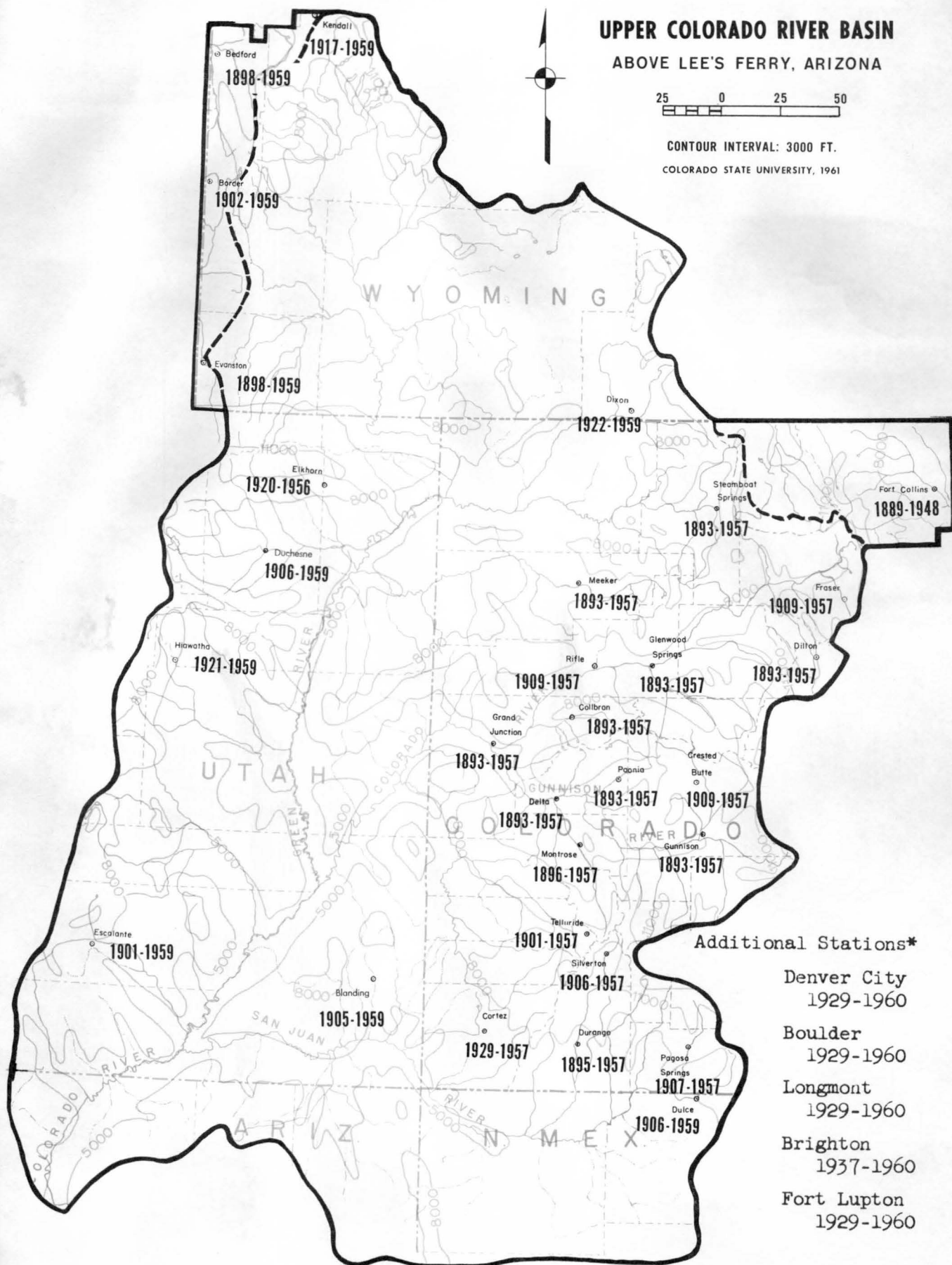


Fig. 1. Stations and inclusive dates for meteorological data used in this study.

*See Footnote on bottom of Table 1

TABLE I
SUMMARY OF PUNCHED CARDS AVAILABLE
IN CSU PUNCHED CARD LIBRARY

(Punched record ends at December 48 otherwise specified)

Station	No.	Record Starts	Remarks
<u>COLORADO</u>			
Akron*	0109-3	1918	Evaporation data punched.
Arriba*	0304-3	1918	
Boulder [#]	0848-4	1929	Precipitation data only.
Brighton [#]	None	1937	Precipitation data only, Sugar Factory records.
Burlington*	1121-3	1918	
Cheyenne Wells*	1564-3	1918	
Collbran	1741-1	1893	Data from 48-57 from USWB.
Cortez	1886-2	1929	Data from 48-57 from USWB.
Crested Butte	1959-2	1909	Data from 48-57 from USWB.
Delta	2192-2	1893	Data from 48-57 from USWB.
Denver City [#]	2225-4	1929	Precipitation data only.
Dillon	2281-2	1893	Data from 48-57 from USWB.
Durango	2432-2	1894	Data from 48-57 from USWB.
Eads*	2446-1	1918	
Fort Collins	3005-4	1889	
Fort Lupton [#]	3027-4	1929	Precipitation data only.
Fraser	3113-2	1909	Data from 48-57 from USWB.
Glenwood Springs	3359-2	1893	Data from 48-57 from USWB.
Grand Junction	3488-2	1893	Data from 48-57 from USWB.
Gunnison	3662-2	1893	Data from 48-57 from USWB.
Haswell*	3828-1	1918	
Julesburg*	4413-4	1918	
Lamar*	4770-1	1918	

Summary Table I (cont)

Station	No.	Record Starts	Remarks
Limon*	5015-1	1918	
Longmont [#]	5116-4	1929	Precipitation data only.
Meeker	5484-2	1893-1927 1941-1948	Data from 48-57 from USWB.
Montrose	5722-2	1895	Data from 48-57 from USWB.
Pagosa Springs	6258-2	1906-1917 1939-1948	Data from 48-57 from USWB.
Paonia	6306-2	1893-1930	Data from 48-57 from USWB.
	6307-2	1930-1948	Data from 48-57 from USWB.
Rifle	7031-2	1910-1948	Data from 48-57 from USWB.
Rocky Ford*	7167-1	1918	
Rush*	7287-1	1918	
Silverton	7656-2	1906	Data from 48-57 from USWB.
Springfield*	7862-1	1918	
Steamboat Springs	7936-2	1893-1898 1908-1948	Data from 48-57 from USWB.
Telluride	8204-2	1900-1904 1911-1948	Data from 48-57 from USWB.
Two Buttes*	8510-1	1918	
Wray*	9243-3	1918	
<u>NEW MEXICO</u>			
Dulce	2608	1906	Data from 48-59 from USWB.
<u>UTAH</u>			
Elkhorn Ashley	2429-3	1920-1948	Data from 48-56 from USWB.
Escalante	2592-1	1901-1913	Data from 29-59 from USWB.
Grayson (Blanding)	0738-4	1904-1928	Data from 29-59 from USWB.
Hiawatha	3896-3	1921-1928	Data from 29-59 from USWB.
Theodore (Duchesne)	2253-1	1906-1928	Data from 29-59 from USWB.

Summary Table I (cont)

Station	No.	Record Starts	Remarks
<u>WYOMING</u>			
Bedford	0605-9	1899	Data from 48-59 from USWB.
Border	0915-4	1902	Data from 48-59 from USWB.
Dixon	2610-4	1922	Data from 48-59 from USWB.
Evanston	3100-1	1898	Data from 48-59 from USWB.
Kendall	5115-4	1916	Data from 48-59 from USWB.

Stations for which precipitation data were processed as part of a hydrologic study. Daily cards were punched with precipitation data for all stations marked # included on a single card.

*Data processed prior to June 1959. See footnote 1 in introduction.

PROCEDURES

Editing

Editing of the original U. S. Weather Bureau records were accomplished under the supervision of the Weather Bureau State Climatologist for Colorado. Additional editing was accomplished at Colorado State University. The original records were checked for consistency and accuracy. Appropriate notations were made on the original records for the guidance of the punch-card operators.

In addition, specific punching instructions for each station were supplied for each station. Significant portions of the instructions are included in Appendix 2.

Punching

Punching of the records was accomplished in accordance with the specific instruction as described above. Considerable difficulty was experienced by the operators in reading some of the entries on the original records.

Verification

Daily cards were listed and monthly totals were obtained on the IBM 402 Tabulator.

Verification was accomplished by comparing monthly computed totals of temperature, precipitation, and days with certain phenomena with totals as listed on the original records. For those cases in which the computed totals did not correspond to the totals indicated on the original records, the listings from the IBM 402 Tabulator were compared with the original records to determine the error. If the discrepancy was caused by erroneous punching, a notation was made to re-punch the card. Erroneous cards were then re-punched from the original records, and verified using the IBM 056 Verifier. Corrected cards were then inserted into the main deck of cards manually.

Duplication

Duplicate cards for the U. S. Weather Bureau were prepared by duplication of the corrected card decks, using the IBM 514 Reproducing punch. The original cards were shipped to the National Weather Records Center at Asheville, North Carolina, and duplicate cards were retained on file in the Civil Engineering Section at CSU.

APPENDIX I

GENERAL PUNCHING INSTRUCTIONS

<u>Field</u>	<u>Columns</u>	<u>Number of Columns</u>	<u>Punch Instructions for Daily 1009 Card</u>
STATION NUMBER	1-6	6	As coded.
DATE (YR. , MO. , DAY)	7-12	6	Punch 1950 as 50 etc. Punch Jan. as 01, Dec. as 12 etc. Punch first day as 01, 21st day as 21 etc.
DIVISION	13	1	Division as coded.
TIME OF TEMP OBS	13	1	"X" overpunch if A. M., leave blank if P. M.
MAX TEMPERATURE	14-16	3	Punch 35 degrees as 035 110 degrees as 110 etc. "X" in column 14 for minus temp; that is, -14 (14 ⁰ below zero) punch as X14. Leave all columns blank if missing or not reported.
MIN TEMPERATURE	17-19	3	Same as MAX TEMPERATURE
TEMPERATURE AT TIME OF OBS	20-22	3	Same as MAX TEMPERATURE
PRECIP	23-26	4	(a) 00.01 OR MORE. Punch as entered (for 1.26 inches, punch 0126). (b) TRACE 000X (c) PRECIP included in measurement reported on subsequent day 00X-. (d) NO PRECIP (observation taken but no rain had fallen, punch X in 23) X--. (e) PRECIP DEFINITELY MISSING (no observation reported), leave blank.

<u>Field</u>	<u>Columns</u>	<u>Number of Columns</u>	<u>Punch Instructions for Daily 1009 Card</u>
SNOWFALL	27-29	3	(a) 00.1 OR MORE, punch as entered. (b) TRACE 00X. (c) SNOWFALL included in measurement on subsequent day 0X-. (d) OBSERVATION REPORTED but no snow had fallen X--. (e) SNOW DEFINITELY MISSING (no observation reported), blank all columns.
SNOW DEPTH	30-32	3	(a) 1" OR MORE, punch as entered. (b) TRACE 00X. (c) NO SNOW on ground X--. (d) NO OBSERVATION REPORTED, blank all columns.
DAY WITH	33-45	13	"1" in appropriate column for each check. Leave blank otherwise. Since counts of DAYS WITH rain or snow can be readily obtained from the amounts fields on the cards, cols. 33, 34 on the 1009 card should be left blank.
AMT OF EVAPORATION	67-69	3	Punch as entered to hundredths blank if not reported. AMT OF EVAPORATION included in total reported on subsequent day 0X-.

Note: A dash, " - ", is used in the above to denote no punch in the column.

APPENDIX II

SPECIAL PUNCHING INSTRUCTIONS

NOTES:

1. Appendix II contains information that is in addition to, or different from, the general punching instructions given on Appendix I.
2. Columns 1-2 were punched with the appropriate state number as follows:
 - 05 - Colorado
 - 29 - New Mexico
 - 42 - Utah
 - 48 - Wyoming

STATE OF COLORADO

Boulder, Colorado 05-0848-4

This is one of five stations used in a hydrologic study for which daily precipitation data have been placed on IBM cards. Data for these cards was taken from the monthly Climatological Bulletin. A double check of the card print-out versus the Climatological Bulletin was made to find errors in card punching. Card errors were re-punched and replaced in the original deck manually. A second check was made by comparing the Climatological Bulletins annual precipitation figure against the annual total obtained from the cards.

The daily data cards are of the following form:

Col	1 - 2	Deck index No. (01 for entire deck).
Col	3 - 8	Year, month, day (1929-1960).
Col	9 - 28	Discharge data on streams and ditches.
Col	29 - 32	Longmont precipitation in inches and hundredths of an inch.
Col	33 - 36	Boulder precipitation in inches and hundredths of an inch.
Col	37 - 40	Denver (city) precipitation in inches and hundredths of an inch.
Col	41 - 44	Brighton (sugar factory) precipitation in inches and hundredths of an inch.
Col	45 - 48	Fort Lupton precipitation in inches and hundredths of an inch.

The format used for punching this precipitation data was identical to that used for the rest of the stations as described in this report. The period of record for Boulder, Denver, Fort Lupton and Longmont begins with May 1, 1929 and is continuous through September 30, 1960.

Brighton, Colorado

These records were obtained from the Brighton Sugar Factory which takes daily precipitation readings from a standard 8" gauge located near their plant. The period of record for the precipitation data began February 8, 1937.

See the discussion on the Boulder, Colorado records for the special instructions for this station.

* * * *

Collbran, Colorado 05-1741-1

Col	3 - 6	1741 is the number for Collbran.
Col	7 - 12	Year, month, day (1893-1957).
Col	13	1 is the division for Collbran. P. M. observation, not overpunched.
Col	14 - 22	Missing for some months.
Col	23 - 32	Precipitation - Snowfall - Snowdepth. Any incomplete data and missing data were not punched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched. Some periods are incomplete.

SPECIAL NOTES:

Missing months:

Sep 1896 through Nov 1896
 Jun 1897
 Jun 1899 through Mar 1900
 Jul 1926 through Sep 1926
 Sep 1929
 Oct 1920 through Mar 1921

Mar 1902

Mar 1908

Aug, Sep 1920

PRECIP data incomplete - not punched.

Dec 1921; Dec 1922

Feb 1924; Oct 1925

Apr 1927; Oct 1928

SNOWFALL not punched.

* * * *

Cortez, Colorado 05-1886-2

Col 3 - 6

1886 is the number for Cortez.

Col 7 - 12

Year, month, day (August 1929-1957).

Col 13

2 is the division for Cortez. Not overpunched.

Col 27 - 29

Snowdepth punched beginning Dec 1931.

Col 33 - 45

Not punched.

SPECIAL NOTES:

Nov 1946

MIN TEMP not punched.

Apr, Dec 1932

Feb, Nov, Dec 1933

Jan 1941

Feb, Mar 1942

Entire year of 1944

Dec 1945

Mar - Nov 1946

Jan 1947

Feb, Mar 1948

SNOWDEPTH not punched.

Crested Butte, Colorado 05-1959-2

Col	3 - 6	1959 is the number for Crested Butte.
Col	7 - 12	Year, month, day (1909-1957).
Col	13	1 is the division for Crested Butte.
Col	14 - 22	Missing data for some months.
Col	23 - 26	Missing data for some months.
Col	27 - 29	Missing data for some months.
Col	30 - 32	Missing data for some months.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Jan through Apr 1929
Feb, Mar 1939

MAX TEMP not punched.

Oct 1928
Oct 1939
Jul, Aug 1941

MIN TEMP not punched.

Apr, Aug 1924
Feb 1930
May 1936

PRECIP data incomplete - not punched.

May 1918
May 1930

SNOWFALL not punched.

Apr, May 1918
Oct 1919
May 10-11, 1922; Nov 1922
Apr 1943

SNOWDEPTH not punched.

Delta, Colorado 05-2192-2

Col	3 - 6	2192 is the number for Delta.
Col	7 - 12	Year, month, day (1893-1957).
Col	13	2 is the division for Delta. P.M. observation, not overpunched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Oct, Nov 1896
 Jun (part of month) 1899
 Mar through Dec 1903
 Jan through Mar, Nov, Dec 1904
 Jan through Apr 1905
 Oct through Dec 1906
 Jan 1907

* * * *

Denver (city), Colorado 05-2225-4

See the discussion on the Boulder, Colorado records for special instructions for this station.

Dillon, Colorado 05-2281-2

Col	3 - 6	2281 is the number for Dillon.
Col	7 - 12	Year, month, day (1893-1957).
Col	13	2 is the division for Dillon. P. M. observation not overpunched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:	Apr 1912
	Mar 1893
	May 1909

Jan through Mar 1893	TEMP not punched.
Mar through Jun 1909	

* * * *

Durango, Colorado 05-2432-2

Col	3 - 6	2432 is the number for Durango.
Col	7 - 12	Year, month, day (1894-1957).
Col	13	2 is the division for Durango. P. M. observation.
Col	27 - 29	Snowfall some months not punched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

Durango, Colorado (cont)

SPECIAL NOTES:

Missing months:

Jun 1896

Jul, Oct 1922

Nov 1895

Dec 1904

Jan through Sep 1913

Dec 1914

Jan 1915

Dec 1916

Jan through May 1917

Jan, Apr, Oct, Nov 1918

Jan through May, Oct 1921

Jan through May, Nov 1922

Entire years of 1923, 1924, 1926, 1927,
1928, 1929

Jan, Feb, Mar, Jun, Nov 1930

Feb through May 1931

Oct 1932

Apr 1941

Dec 1942

SNOWDEPTH not punched.

* * * *

Fort Collins, Colorado 05-3005-4

Col	3 - 6	3005 is the number for Fort Collins.
Col	7 - 12	Year, month, day (1889-1948).
Col	13	4 is the division for Fort Collins. P. M. observation not overpunched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

Fort Lupton, Colorado 05-3027-4

See Boulder, Colorado for special instructions for this station.

* * * *

Fraser, Colorado 05-3113-2

Col	3 - 6	3113 is the number for Fraser.
Col	7 - 12	Year, month, day (1909-1957).
Col	13	2 is the division for Fraser. A. M. observation Dec 1909 through Jun 1914 overpunched. P. M. observation not overpunched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Sep 1929
Oct through Nov 1947
Apr through May 1948

SNOWFALL not punched.

Apr 1911
Mar 1915
Oct 1930
Sep 1936
Mar, Apr 1939
Mar 1940
Mar, Apr, Dec 1941
Jan through Mar, Dec 1942
Jan through Mar 1946
Jan through Apr, Nov 1947
Apr, May 1948

SNOWDEPTH not punched.

Glenwood Springs, Colorado 05-3359-2

Col	3 - 6	3359 is the number for Glenwood Springs.
Col	7 - 12	Year, month, day (1893-1957).
Col	13	2 is the division for Glenwood Springs.
Col	14 - 29	Some months not punched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Sep 1894 through Jul 1899
 Jun 1900 through May 1901
 Aug, Sep 1902
 Sep, Dec 1903
 Sep 1904; Oct, Nov 1906
 Oct, Nov 1904
 Jun through Aug 1909
 Sep through Dec 1914
 Jul, Aug 1917
 Jan, Feb 1918
 Jan through Jul 1919
 Nov, Dec 1924
 Jan through Apr 1925
 Aug 1899 through May 1902

Oct 1902
 May 1909; Sep through Oct 1909

TEMP not punched.

May 1901; Mar 1918
 May 1903; Aug 1919
 Jan 1907; May 1925
 Jan 1915

PRECIP data incomplete - not punched.

Glenwood Springs, Colorado (cont)

Mar, Apr 1894
 Mar through May 1902
 May 1903
 Jan, Feb, Oct 1904
 Apr 1905
 Jan 1906
 May 1909
 Nov 1911
 Jan 1915
 Apr 1916
 Mar, Oct 1917
 Mar 1918
 Aug 1919
 Mar 1924
 May, Nov, Dec 1925
 Apr, Dec 1926
 Mar, Apr, Sep, Nov 1927
 Nov 1928

SNOW FALL not punched.

* * * *

Grand Junction, Colorado 05-3488-2

Col	3 - 6	3488 is the number for Grand Junction.
Col	7 - 12	Year, month, day (1893-1957).
Col	13	2 is the division for Grand Junction.
Col	33 - 45	Not punched.

SPECIAL NOTES:

1893 through 1898

SNOWDEPTH not punched.

Gunnison, Colorado 05-3662-2

Col	3 - 6	3662 is the number for Gunnison.
Col	7 - 12	Year, month, day (1893-1957).
Col	13	2 is the division for Gunnison. P. M. observation not overpunched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Nov 1894
 May, Sep 1897
 Apr, May 1898
 Mar, Apr 1899
 Oct through Dec 1900
 Aug, Sep, Nov 1929
 Jun, Jul 1930
 Jul, Sep, Oct, Nov 1931
 Aug, Sep, Oct, Nov, Dec 1933

Jun 1897
 Mar 1898
 Mar 1931

TEMP not punched.

Oct, Nov 1905

MIN TEMP not punched.

Oct 1929
 Dec 1934

MAX TEMP not punched.

Oct 1894
 Jun 1896
 Apr, Jun, Nov 1897
 Mar, Jun, 1898
 Sep 1900
 Dec 1929
 Aug 1930

PRECIP data incomplete - not punched.

Oct 1894
 Jan, Feb, Mar 1895
 Apr, Jun, Nov 1897
 Mar, Jun 1898
 Sep 1900
 Jan, Feb, Oct 1918
 Nov, Dec 1927
 Jan, Feb, Mar, May, Dec 1929
 Apr, Oct 1947
 Mar 1948

SNOWFALL not punched.

Longmont, Colorado 05-5116-4

See the discussion on the Boulder, Colorado, records for the special instructions for this station.

* * * *

Meeker, Colorado 05-5484-2

Col	3 - 6	5484 is the number for Meeker.
Col	7 - 12	Year, month, day (1893-1927, 1941-1957).
Col	13	2 is the division for Meeker. P. M. observation not overpunched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:	Jun through Dec 1893 Aug through Oct 1927
Aug 1894	TEMP not punched.
Feb, Mar 1899	MAX TEMP not punched.
Jul, Aug 1894 Aug 1924 Jul 1927	PRECIP data incomplete - not punched.
Nov 1946	SNOWFALL not punched.

Montrose, Colorado 05-5722-2

Col	3 - 6	5722 is the number for Montrose.
Col	7 - 12	Year, month, day (1895-1957).
Col	13	2 is the division for Montrose. 1895 through Dec 1936 P. M. observation. 1937 through July 1948 A. M. observation overpunched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Nov, Dec 1897
 Entire year 1898
 Jan through Jul 1899
 Oct 1900
 Jun 1903
 Apr 1907

Aug 1899 through Dec 1903

TEMP not punched.

Sep 1904

Mar, Apr 1905

Jan through Apr 1907

Jan 1908

PRECIP data incomplete - not punched.

Jan, Apr 1896

Mar, Apr 1905

Jan through Apr 1907

Jan 1908

Mar 1928

Nov 1946

SNOWFALL not punched.

Pagosa Springs, Colorado 05-6258-2

Paonia, Colorado 05-6306-2
6307

Col	3 - 6	6306 identification for Paonia 1.5S 5/29/30 to 6/23/44. 6307 identification for Paonia 3.0 SE beginning 6/24/44.
Col	7 - 12	Year, month, day (1893-1957).
Col	13	2 is the division for Paonia. P.M. observation not overpunched.
Col	14 - 22	1893 through 1904 not punched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Feb 1905
 Jun 1922
 Dec 1938
 Jan 1939
 Jul 1941
 Sep 1943

TEMP not punched.

Nov 1932 through Jul 1948

SET MAX were not punched.

Apr 1894
 Jun 1922
 Nov 1930
 Jan 1936
 Jan 1941
 Sep 1943

PRECIP data incomplete - not punched.

Oct 1893
 Apr 1894
 Nov 1895
 Jan 1896
 Oct 1897
 Jun 1922
 Feb 1924
 Nov 1930
 Jan 1936
 Dec 1938
 Jan 1941
 Sep 1943
 Dec 1948

SNOWFALL not punched.

Rifle, Colorado 05-7031-2

Col	3 - 6	7031 is the number for Rifle.
Col	7 - 12	Year, month, day (1910-1948).
Col	13	2 is the division for Rifle. P. M. observation not overpunched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Jan through Aug 1911
 Jan, Feb, Mar, Sep, Oct, Nov, Dec 1929
 Dec 1926
 Jan, Feb 1930
 Oct 1931
 Nov 1941

Apr 1929

TEMP not punched.

Nov 1937

MIN TEMP not punched.

Sep 1910

Feb through Dec 1925

Mar, Apr, May 1926

Apr 1929; Apr 1937

PRECIP data incomplete - not punched.

Mar 1912

Feb 1918

Oct 1919; Apr 1920

Nov 1922

Feb through Dec 1925

Mar through May 1926

Apr 1929

Apr 1937

SNOWFALL not punched.

Rifle, Colorado (cont)

Mar 1912; Jan, Feb 1913; Feb 1914
 Jan 1915; Feb 1916; Feb, Mar 1917
 Feb 1918; Feb, Oct through Dec 1919
 Jan, Feb, Apr, Oct, Dec 1920
 Jan, Feb, Dec, 1921
 Jan, Feb, Mar, Nov, Dec 1922
 Jan, Feb, Mar, Nov, Dec 1923
 Jan, Feb, Mar, Dec 1924
 Entire years of 1925 and 1926
 Apr 1929; Dec 1931; Dec 1937
 Jan, Feb 1938
 Nov, Dec 1940; Mar, Dec 1941
 Jan, Feb, Mar 1942

SNOWDEPTH not punched.

* * * *

Silverton, Colorado 05-7656-2

Col	3 - 6	7656 is the number for Silverton.
Col	7 - 12	Year, month, day (1906-1948).
Col	13	2 is the division for Silverton. P. M. observation not overpunched.
Col	30 - 32	1906 through 1913 not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:	Oct 1906
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Aug 1914

MIN TEMP not punched.

Steamboat Springs, Colorado 05-7936-2

Col	3 - 6	7936 is the number for Steamboat Springs.
Col	7 - 12	Year, month, day (1893-1957).
Col	13	2 is the division for Steamboat Springs. P. M. observation 1893 through 1919 not punched. A. M. observation 1919 through 1921 overpunched. P. M. observation 1922 through 1948 not overpunched.
Col	30 - 32	Some months were not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Aug, Nov, Dec 1894
 Jan through Mar, Aug through Dec 1895
 Jan, May through Aug 1896
 May, Jun, Aug 1898
 Jan 1899 through Aug 1908
 Mar through Aug 1930

Jan through Sep 1909

MAX TEMP not punched.

1893 through Nov 1915
 Oct 1946 through 1948

SNOWDEPTH not punched.

Telluride, Colorado 05-8204-2

Col	3 - 6	8204 is the number for Telluride.
Col	7 - 12	Year, month, day (1901-1948).
Col	13	2 is the division for Telluride. P. M. observation not overpunched.
Col	30 - 32	Punched only from Oct 1911 through Dec 1933.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Feb, Mar, Nov 1902
 Feb 1903
 Jul 1904
 Sep 1904 through May 1911
 Oct 1915
 May 1903 through Apr 1904
 May 1927

Jul 1922

MAX TEMP not punched.

May, Jun, Aug 1904

PRECIP data incomplete - not punched.

Feb 1921

Oct, Nov 1946

Jan 1947

SNOWFALL not punched.

STATE OF NEW MEXICO

Dulce, New Mexico 29-2608

Col	3 - 6	2608 is the number for Dulce, New Mexico.
Col	7 - 12	Year, month, day (1906-1959).
Col	13	<p>Division number not punched.</p> <p>P. M. observation 1906 through Aug 1934 not overpunched.</p> <p>A. M. observation Sep 1934 through Jan 1937 overpunched.</p> <p>P. M. observation Feb 1937 through Jun 1943 not overpunched.</p> <p>A. M. observation Jul 1943 through Jul 1948 overpunched.</p>
Col	14 - 29	Some months not punched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Jun, Sep, Oct through Dec 1908
 Jan, Feb, May, Nov 1909
 Jan through Mar 1912
 Sep, Oct 1915
 Aug through Dec 1916
 Jan, Feb, Mar, Sep, Oct, Nov 1917
 Sep, Oct 1929; Mar, Aug 1939
 May, Jun, Jul, Sep, Oct, Nov 1941
 Nov, Dec 1942
 Feb through Jun 1943
 Mar through Dec 1944
 Jan through Jun 1945

May 1906
 Jul 1916
 Jul 1929
 May 1942

All items not punched.

Dulce, New Mexico (cont)

Dec 1909
Sep 1934

TEMP not punched.

Feb 1916

MIN TEMP not punched.

Aug 1930

MAX TEMP not punched.

Apr 1942
Dec 1912

PRECIP data incomplete - not punched.

Mar, Dec 1909; Dec 1912
Sep, Nov 1913; Apr, May 1914
Feb through May 1916; May 1920
Oct 1923; Oct 1925; May 1926
Apr 1931; Feb 1936
Jan through Mar 1942; Jan 1943

SNOWFALL not punched.

STATE OF WYOMING

Bedford, Wyoming 48-0605-9

Col	3 - 6	0605 is the number for Bedford.
Col	7 - 12	Year, month, day (1898-1959).
Col	13	9 is the division for Bedford. P. M. observations 1899 through 1927 not overpunched. A. M. observation 1928 through 1938 overpunched. P. M. observation 1939 through 1948 not overpunched.
Col	14 - 29	Some months were not punched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Oct 1900
 Jun, Oct 1901
 Sep 1909
 Mar 1911
 Oct 1915
 Oct, Nov 1938
 Feb 1942

Apr 1920
 Mar 1934
 Apr 1935

TEMP not punched.

Sep 1907
 Dec 1926

PRECIP data incomplete - not punched.

Sep 1907
 Dec 1926

SNOWFALL not punched.

Bedford, Wyoming (cont)

Nov 1899

Nov 1900

Oct 1904; Apr, Sep 1908

Nov 1910

Mar 1918

Sep, Oct 1922

Sep, Oct, Nov 1926

Jul 1927; Sep, Oct 1934

Nov 1936; Jul 1937; Sep, Dec 1938

All items not punched.

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Border, Wyoming 48-0915-4

Col	3 - 6	0915 is the number for Border.
Col	7 - 12	Year, month, day (1902-1959).
Col	13	4 is the division for Border. P. M. observation not overpunched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

Border, Wyoming (cont)

SPECIAL NOTES.

Missing months:

Dec 1933
 Jan, Feb, Mar 1948
 Oct 1948
 Nov 1902
 Entire year 1903
 Mar, May, Dec 1904
 Entire years 1905, 1906, 1907, 1908
 Jan, Feb, Mar, Oct, Nov, Dec 1909
 Entire year 1910
 Jan, Feb, Mar, Apr 1911
 Apr, May 1912
 Apr, Nov, Dec 1916
 Feb, Mar, Apr 1917
 Mar 1918
 Entire year 1919
 Mar, Apr, May, Oct, Nov, Dec 1920
 Jan, Feb, Mar, 1921; Oct 1923
 Mar, Apr 1924
 Jan, Feb 1925
 Mar 1927
 Jan, Feb, Mar 1928
 Apr 1932
 Apr, Sep 1934

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Dixon, Wyoming 48-2610-4

Col	3 - 6	2610 is the number for Dixon.
Col	7 - 12	Year, month, day (1922-1959).
Col	13	4 is the division for Dixon. P. M. observation 1899 through 1927. A. M. observation 1928 through 1938. P. M. observation 1939 through 1948.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

Dixon, Wyoming (cont)

SPECIAL NOTES:

Missing months:

Oct 1900
Jun, Oct 1901
Sep 1909
Mar 1911
Oct 1915
Oct, Nov 1938
Feb 1942

Apr 1920
Mar 1934
Apr 1935

TEMP not punched.

Sep 1907
Dec 1926

PRECIP data incomplete - not punched.

Sep 1907
Dec 1926

SNOWFALL not punched.

Nov 1899; Nov 1900; Oct 1904
Apr, Sep 1908; Nov 1910
Mar 1918; Sep, Oct 1922
Sep, Oct, Nov 1926
Jul 1927
Sep, Oct 1934; Nov 1936
Jul 1937; Sep, Dec 1938

All items not punched.

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Evanston, Wyoming 48-3100-1

Col 3 - 6	3100 is the number for Evanston, Wyoming.
Col 7 - 12	Year, month, day (1898-1959).
Col 13	1 is the division for Evanston. P. M. observation 1898 through 1931 not overpunched. A. M. observation Jan 1932; Mar 1932 through Sep 1935 overpunched. P. M. observation Oct 1935 through 1948 not overpunched.
Col 30 - 32	Not punched.
Col 33 - 45	Not punched.

Kendall, Wyoming 48-5115-4

Col	3 - 6	5115 is the number for Kendall, Wyoming.
Col	7 - 12	Year, month, day (1917-1959).
Col	13	4 is the division for Kendall. P. M. observation Oct 1916 through Jan 1926. A. M. observation Feb 1927 through Nov 1944; Mar, Apr, Aug 1945 through 1946. P. M. observation Mar 1927 through Oct 1944; Dec 1944; Jan, Feb, May, Jun, Jul 1947 through 1948.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Feb 1918; Feb 1919
 May, Jun, Aug, Sep, Oct, Dec 1923
 Jun, Aug, Sep, Oct, Nov 1925
 Jan, Feb, Jun, Jul, Aug through Dec 1926
 Jan, May, Jun, Jul 1927
 Oct through Dec 1946
 Jan, Feb 1947

Sep 1917
 Aug, Sep 1918
 Mar, Jul 1919
 May 1920
 Apr, Nov 1921
 Aug, Sep 1935

TEMP not punched.

Oct 1921; Sep, Oct 1922

MAX TEMP not punched.

Jul, Nov, Dec 1920
 May, Jun 1921

MIN TEMP not punched.

Kendall, Wyoming (cont)

Oct 1916

Feb through Mar 1917

Feb, Mar, Sep 1918

Mar, Sep 1919

Jan, Feb, May, Jun 1920

Apr, May, Oct, Nov 1921

PRECIP data incomplete - not punched.

Oct 1916; Feb through Apr 1917

Feb, Mar, Sep 1918

Mar, Jun 1919

Jan, Feb, May, Jun, Sep, Oct,

Nov, Dec 1920

SNOWFALL not punched.

Nov, Dec 1922

Entire years 1924, 1925, 1926

Jan through Aug 1927

Oct 1927

Sep 1938

Sep 1941

Nov 1945

All items not punched.

STATE OF UTAH

Elkhorn, Utah 42-2429-3

Col	3 - 6	2429 is the number for Elkhorn.
Col	7 - 12	Year, month, day (1920-1956).
Col	13	3 is the division for Elkhorn. P. M. observation not overpunched.
Col	14 - 22	Not punched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:	Feb 1923
	Apr, May, Jun 1931

Aug 1920	
Mar through Dec 1922	All items not punched.
Aug 1923	

Escalante, Utah 42-2592-1

Col	3 - 6	2592 is the number for Escalante.
Col	7 - 12	Year, month, day (1901-1959).
Col	13	1 is the division for Escalante. A. M. observation Jun through Dec 1901. Feb through Dec 1902. Jan through Nov 1903. Apr 1904; Dec 1906; Jul 1918 overpunched. P. M. observation Jan 1902 through Dec 1903.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Jun, Jul 1901; Aug, Dec 1902
 Mar 1903; May, Dec 1904
 Apr, Jul through Dec 1905
 Jan through Apr 1906
 Jun 1907; Feb, Nov 1911
 Apr, Jun through Aug 1912
 Jan, Mar, Apr, Jun, Oct, Nov, Dec 1913
 Sep 1919; Aug through Dec 1920
 Jan, Feb, Mar, May 1921; Jun 1925

Jun, Jul, Aug 1921

TEMP not punched.

Jan, Feb 1925

MAX TEMP not punched.

Sep 1902

PRECIP data incomplete - not punched.

Sep 1902

SNOW FALL not punched.

Entire year 1915
 Jun through May 1916

Not punched.

Nov 1904
 Jul 1906
 Apr 1921
 Oct 1923

All items not punched.

Grayson (Blanding), Utah 42-0738-4

Col	3 - 6	0738 is the number for Grayson.
Col	7 - 12	Year, month, day (1905-1959).
Col	13	4 is the division for Grayson. P. M. observation not overpunched.
Col	30 - 32	Not punched.
Col	33 - 45	Not punched.

SPECIAL NOTES:

Missing months:

Jan 1905
Jul 1910 through Dec 1911
Mar 1912
Oct 1922

Aug 1916
Nov 1918

MAX TEMP not punched.

Feb 1905
Jan 1910
Jan through Apr 1912
Mar 1917; Oct 1922

All items not punched.

Hiawatha, Utah 42-3896-3

Col 3 - 6 3896 is the number for Hiawatha.
 Col 7 - 12 Year, month, day (1921-1959).
 Col 13 3 is the division for Hiawatha.
 Col 33 - 45 Not punched.

SPECIAL NOTES:

Nov, Dec 1925 TEMP not punched.

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Theodore (Duchesne), Utah 42-2253-3

Col 3 - 6 2253 is the number for Theodore.
 Col 7 - 12 Year, month, day (1906-1959).
 Col 13 3 is the division for Theodore. P. M. observation
 not punched.
 Col 33 - 45 Not punched.

SPECIAL NOTES:

Dec 1919
 Jan 1920 through Nov 1921 SNOWFALL not punched.