

Ag 84M
1070
C.2

**HYDROLOGIC DATA
FOR
EXPERIMENTAL AGRICULTURAL
WATERSHEDS IN THE
UNITED STATES
1962**



Miscellaneous Publication No. 1070

**Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE**

**In Cooperation With
State Agricultural Experiment Stations**

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



Hydrologic Data
for
Experimental Agricultural Watersheds
in the United States
1962

Compiled by
HAROLD W. HOBBS

Soil and Water Conservation Research Division

Miscellaneous Publication No. 1070

Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE

In Cooperation With

State Agricultural Experiment Stations

Washington, D.C.

Issued June 1968

★ U. S. GOVERNMENT PRINTING OFFICE : 1968 O—298-576

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price \$3.25



FOREWORD

This publication presents annual basic data on monthly precipitation and runoff; long-term monthly precipitation means for the locality; annual maximum discharges and volumes of runoff; daily air temperature, precipitation, and discharge (for some areas); and selected runoff events, with associated data on rainfall, land use, and antecedent conditions for agricultural watersheds where research studies were in progress during the calendar year 1962. Its presentation is a continuation of the activity of processing and releasing hydrologic data of general interest gathered cooperatively with other agencies. Throughout the life of the watershed studies the State agricultural experiment stations have collaborated in the selection, planning, and operation of the research studies. In several cases, the U.S. Geological Survey and State and local agencies, such as State water boards and highway departments or local drainage and conservation districts, have assisted in the work. The classification and correlation of soils and evaluation of other watershed characteristics in the descriptions have been based mostly on field surveys of the Soil Conservation Service.

The data included here are primarily in response to a request by the Soil Conservation Service, but the information will also be useful to other governmental agencies, private engineers, and others concerned with the development and conservation of the Nation's water resources.

A handwritten signature in cursive script, reading "Cecil H. Wadleigh". The signature is written in dark ink and is positioned above the printed title.

Director, Soil and Water Conservation
Research Division

Contents

	Page
Publications of earlier data	1
Form of data presentation	2
Continuing watersheds	2
New watersheds	3
Watershed descriptions	3
Standard symbols for tabular data	6
Revisions of previously published data	6
Personnel responsible for compilations	6
Additional publications by location	7
United States index map and related data	11
Location of experimental agricultural watersheds of the Agricultural Research Service—land resource regions and major land resource areas of the United States	12
Legend for land resource regions and major land resource areas of the 48 States	13
Table 1—Watersheds, listed by States, where observations were discon- tinued before January 1, 1962	14
Table 2—Experimental agricultural watershed research locations under study for 1962 hydrologic data, by States	15
Table 3—List, by States, of additions or revisions made herein to old data published prior to 1962	16
Watershed data by location number and decimal paging [5.6-1 to 69.13-4, a total of 420 data sheets]	20
Table 4—Index to selected runoff events for currently operating watersheds, by States, published through 1962	440

The decimal system of paging is used to index the watershed data. Pages are numbered at the bottom according to location and watershed number, and the data for each watershed are given on one or more pages. For example, page 5.6-2 is location 5 (College Park, Md.), watershed 6 (W-6 at College Park), and page 2 of the data for that watershed.

For convenience in finding items listed in tables 2 and 3 and in the "Contents" above, pages are also numbered consecutively at the top.

In table 1, page 14, discontinued watersheds are listed by State, locality, land resource area, number of units, record period, and location number. Table 2, page 15, shows a list of continuing or new watersheds by State, locality, land resource area, assigned location numbers, watershed units, and number of selected runoff events that are reported for 1962 in this publication. Table 3, pages 16 and 17, lists revisions or additions to watershed descriptions or data. Table 4, pages 440 to 447, indexes the 861 selected runoff events, by location, watershed number, drainage area, and peak rates, that have been published for the currently operating watersheds through 1962.

HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962

This publication presents selected hydrologic data for the calendar year 1962. The data include monthly precipitation and runoff for 164 watersheds, annual maximum discharges and annual maximum volumes of runoff for 155 of the watersheds for time intervals of 1, 2, 6, and 12 hours and for 1, 2, and 8 days, daily precipitation and discharge and/or daily air temperature on 51 watersheds, and detailed information for one or more selected typical storm events for 136 of them. Decimal page numbers for older watersheds at the various locations are the same as those given at bottom of pages in five previous publications (see next section), so that old records and general descriptions can be readily found and consulted. New watersheds—the 13 not included in the previous publications—were generally assigned higher location numbers. Nine experimental watersheds were discontinued.

Information on selected storm events includes (1) tabular data for the 30-day antecedent rainfall and runoff prior to the events, (2) data on rainfall and runoff intensity or rate for the event and on accumulated depths of rainfall and runoff, (3) description of watershed conditions at the time of the selected events, (4) graphs of hydrographs and rainfall histograms, (5) watershed maps, and (6) for some of the larger drainage areas, isohyetal maps of storm rainfall distribution.

For newly established watersheds, descriptions of watershed physical characteristics, instrumentation, graphs, maps, land management, and recommended area of application of the results are also given. On 100 old watersheds, original descriptions of characteristics have been revised or updated.

PUBLICATIONS OF EARLIER DATA

Hydrologic data for past years on many of the currently operating experimental agricultural watersheds have been previously summarized in three looseleaf publications by the Agricultural Research Service of the U.S. Department of Agriculture, Washington, D.C. 20402. These reports are listed and summarized below as references 1, 2, and 3. Beginning with the hydrologic data for 1956–59 calendar years, the types of data previously published separately in these three references

were combined in U.S. Department of Agriculture Miscellaneous Publications Nos. 945 and 994. These are listed below as references 4 and 5. All five publications have been assigned these reference numbers to simplify citations to them in this and future publications:

Reference 1.—MONTHLY PRECIPITATION AND RUNOFF FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Branch, 691 pp. 1957. (Includes physical descriptions and land use of 334 experimental agricultural watersheds at 60 locations in 27 States for the period 1923–57. Many of these watersheds had been discontinued prior to 1955.)

Reference 2.—ANNUAL MAXIMUM FLOWS FROM SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Division, 330 pp. 1958. (Includes records from 322 watersheds at 59 locations in 27 States for the period 1923–57. Many of these watersheds had been discontinued prior to 1957.)

Reference 3.—SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Division, 374 pp. 1960. (Includes a sampling of 1 to 6 typical runoff events from 68 watersheds at 40 locations in 25 States for the period 1933–59. The publication presents maps of each watershed, watershed conditions for each event, including the 30-day antecedent rainfall and runoff, and tabular as well as graphical data on each storm.)

Reference 4.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956–59. Harold W. Hobbs, Soil and Water Conservation Research Division, Agricultural Research Service, USDA Miscellaneous Publication No. 945, 672 pp. 1963. (Includes monthly precipitation and runoff from 157 watersheds, including 45 newly established watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 142 watersheds; and one or more typical selected runoff events for 134 watersheds. The publication presents watershed maps, when new or revised, and graphs of each selected event, together with tabular data. Locations of experimental studies

are shown on U.S. fold-in map of land resource areas in 48 States.)

Reference 5.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61. Harold W. Hobbs and Florence B. Crammatte, Soil and Water Conservation Research Division, Agricultural Research Service, Miscellaneous Publication No. 994, 496 pp. 1965. (Contains monthly precipitation and runoff from 160 watersheds, including 24 newly established watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 145 watersheds; and one or more typical selected runoff events for 133 watersheds. The publication presents watershed maps, when new or revised, and graphs of each selected event, together with corresponding tabular data. Table 4 gives a listing of selected runoff events published through 1961, for each watershed.)

The above five publications have been furnished to the Soil Conservation Service and to other governmental agencies—Federal, State, and local. They have also been distributed to State agricultural experiment stations, university libraries and engineering departments, and, when requested, to private engineers and individuals. Distribution has also been made to similar foreign institutions and individuals.

FORM OF DATA PRESENTATION

The data in this volume are presented for each watershed in the following order: (1) watershed description, if not previously published; (2) monthly precipitation and runoff; (3) average monthly precipitation and runoff for period of record; (4) local mean monthly (formerly called normal) precipitation; (5) annual maximum flows; (6) daily temperature extremes, daily precipitation, and discharge for some watersheds; (7) tabulations of data for selected runoff events; (8) graphs of selected runoff events; (9) watershed maps, if not previously published or if revised; and (10) isohyetal maps (in some cases) of storm rainfall distribution for selected runoff events.

Four new two-part continuous tabulator forms for listing data by accounting machines from punch cards are used in this volume for some locations. The forms permit the direct listing of location and watershed titles, calendar years, daily precipitation, discharge, and air temperatures, and antecedent *precipitation* and *runoff*, rainfall intensities, and runoff rates for selected events, including footnotes to tables. The footnotes, of necessity, are listed in capital letters. For the rest of the locations, the old table formats are also used this year for the current 1962 data.

Continuing Watersheds

Since the descriptions of 151 of the current watersheds have been published in *References 1, 4, or 5*, the tabular data presentation for these begins at the top of the first page. Above the border at the center, the numerical page number is given, and the decimal page number is shown at the bottom.

In the space to the right of the first table title MONTHLY PRECIPITATION AND RUNOFF (inches), the location *name*, watershed *number* (or designation), and watershed *size* are given. In the table, for the current *calendar year*, the *precipitation* (P) in inches is listed in the monthly columns, with the yearly total given in the last column headed *annual*. In the line below, the corresponding *runoff* (Q) in inches is similarly listed for each month and the total for the year. Underneath, in two lines, is given the (P) and (Q) station average (STA AV) by months with annual total for the period of record. On the bottom line of the table is given the long-term monthly and annual precipitation means (averages) for the nearest U.S. Weather Bureau Station.

In the second table, entitled ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS, data are also given for the *calendar year* listed in the first column. Under the *maximum discharge* heading, the date column shows the day and month the instantaneous peak rate in inches per hour occurred. In computing the rate, corrections were made for any significant pondage above the runoff measuring device. Under the *maximum volume* heading, the date refers to the day and month on which the interval began; for example, if the interval began on August 30 at 2359, the entry in the date column will be 8-30. The depths for *1 hour to 8 days* are the annual maximum values recorded, without regard to even clock hours or days; thus, if the 6-hour interval began at 1332, the interval would end exactly 6 hours later at 1932. The volume given is in inches of average depth over the watershed for each of the seven selected time intervals (1, 2, 6, and 12 hours, and 1, 2, and 8 days). In the last section of the table the maximum discharges and depths for the various time periods are given under MAXIMUMS FOR PERIOD OF RECORD.

Notes and footnotes in explanation of the data given below the first two tables include (1) a statement on the quality of records based on the following criteria: *excellent* indicates in general that the records are probably accurate within 5 percent, *good* within 10 percent, *fair* within 15 percent, and *poor* that the records may be in error by over 15 percent; (2) a general statement as to watershed conditions and

other physical changes for the period covered; (3) corrections or revisions for previously reported data; (4) source of long-term precipitation means or averages and years covered; and (5) other pertinent material or explanations of the hydrologic data in the two tables.

For some watersheds, tables of DAILY AIR TEMPERATURE (maximum and minimum in degrees Fahrenheit), DAILY PRECIPITATION (inches), and DAILY DISCHARGE (c.f.s.) are given next with appropriate footnotes in explanation of the data at the end of each table. The multiplier to convert mean daily discharge in cubic feet per second to inches per day is given as first note to the daily discharge table. The conversion factor for daily inches to acre-feet is sometimes given.

If no daily tables are given, the tabular data for SELECTED RUNOFF EVENTS begin in the remaining space on the first page and then are carried forward on continuation sheets (or pages) until completed. One to four storm runoff events were chosen, from data available, for presentation. In general, the *selected runoff events* were those in which runoff was produced by a relatively uniform rainfall excess of short duration. The information for each event includes tabulation of (1) *antecedent* daily rainfall and runoff for 30 days before the event or reference made to daily tables, if used; (2) rainfall *intensities* and *accumulated amounts* for the event; (3) *runoff rates* and *accumulated amounts* for the event; and (4) specific *watershed conditions* at the time of the event. Simple graphs of the rates of rainfall and runoff are shown for all events on pages following the tabular data.¹ Maps follow the graphs unless previously published in *References 3, 4, or 5*, or if they were shown herein on the map of another watershed. Isohyetal maps, if any, generally follow the regular maps.

In the "Notes" space at the bottom of the first page for runoff events, the multiplier to convert runoff rates in inches per hour to cubic feet per second, or vice versa, is given, followed by references to maps, if required, and explanatory notes or footnotes relating to the tabular data. Below the bottom border and above the first index page number, the cooperating agencies are listed. The notes on continuation pages contain the statement on the multiplier and similar explanations of the data on each page.

New Watersheds

For the 13 watersheds installed in recent years that have not been reported previously, the presentation begins with the watershed de-

scription in the upper part of the first page. The explanations and definitions upon which the description is based are given in the next section.

The first line, centered at the top of the sheet, gives the *project location*, which is the nearest city or town, and the *number or name* of the watershed as used locally. The descriptive material is then given under the 12 major topics listed generally down the left side of the sheet: *Location, Area, Slopes, Soils, Erosion, Land Capability, Geology, Surface Drainage, Character of Flow, Instrumentation, Watershed Conditions, and Generally Represents.*

After this description, the tabular data are then summarized in the first two tables and notes as previously described for "Continuing Watersheds." The tabular data for daily air temperatures, precipitation, and discharge, if presented, precede the tabular data for SELECTED RUNOFF EVENTS. The rest of the material of the series for the particular watershed follows in the same order as previously indicated.

WATERSHED DESCRIPTIONS

The following definitions and explanations were used in describing watershed location, watershed characteristics, instrumentation, land management, and recommended area of application of the hydrologic data.

LOCATION gives county and State, distance and direction of the runoff gaging station from the nearest city or town, and the major river basin in which it lies. When two or more basins are involved, the tributary or subbasin is given first, followed by the major basin.

AREA of watershed is given in acres if under 640 acres, in both acres and square miles (in parentheses) if over 1 square mile. If areas are revised, additional values are given with notes on date of change.

SLOPES are given in terms of the ranges commonly used in soil survey work in the locality. The percentages of the watershed lying in each slope class are listed. As an example, "8% is in 0-2% class" means that 8 percent of the watershed area has slopes ranging from 0 to 2 percent.

SOILS are described briefly, according to definitions from the U.S. Department of Agriculture SOIL SURVEY MANUAL, Agriculture Handbook 18, published in 1951. Soil descriptions were revised on 40 of the continuing watersheds and descriptions given for 12 new watersheds.

Soil texture refers to the relative proportions of the various size groups (or separates) of individual soil grains in a mass of soil. Specifically, it refers to the proportions of clay, silt,

¹In some cases, noncritical points were eliminated from original tabulations to reduce the number of lines required in the tables for times, rates, and accumulations.

and sand below 2 millimeters in diameter. The various classes of texture in order of increasing percentages of the smaller size groups and decreasing percentages of the larger size groups are (1) sands, (2) loamy sands, (3) sandy loams, (4) loam, (5) silt loam, (6) silt, (7) sandy clay loam, (8) clay loam, (9) silty clay loam, (10) sandy clay, (11) silty clay, and (12) clay. In some of the descriptions, the broader classification of coarse, moderately coarse, medium, moderately fine, and fine has been used—the coarse soils are the sands and the fine soils the clays.

Soil structure refers to the aggregation of primary soil particles into compound particles, or clusters of primary particles, that are separated from adjoining aggregates by surfaces of weakness. Structure *grade*, or the durability of the aggregates when subjected to disturbance, is described as *structureless*, *weak*, *moderate*, or *strong*. In some cases, the structureless grade is described as *massive*, if coherent, or *single grain*, if non-coherent. The *size* of the aggregates is described as *very fine*, *fine*, *medium*, *coarse*, or *very coarse*. Structure *shape* is described as being *platy*, *prismatic*, *columnar*, *angular blocky*, *subangular blocky*, *granular*, or *crumb*.

Permeability is the quality of a soil that enables it to transmit water or air. This quality is described by the terms *very slow*, *slow*, *moderately slow*, *moderate*, *moderately rapid*, *rapid*, or *very rapid*.

Internal soil drainage is the quality of a soil that permits the downward flow of excess water through it. Internal drainage is reflected in the frequency and duration of periods of saturation with water. It is determined by the texture, structure, and other characteristics of the soil profile and of underlying layers and by the height of the water table, either permanent or perched, in relation to the water added to the soil. *Internal drainage* is described as *none*, *very slow*, *slow*, *medium*, *rapid*, or *very rapid*.

EROSION conditions on the watershed are described in accordance with the following classification for water and wind erosion, also briefed from Agriculture Handbook 18. The percentage of the watershed in the following erosion classes is given.

Class 1.—The soil has a few rills or places with thin A horizons that give evidence of accelerated erosion, but not to an extent to alter greatly the thickness and character of the A horizon. Except for soils having very thin A horizons (less than 8 inches), the surface soil consists entirely of A horizon throughout nearly all of the delineated areas. Up to about 25 percent of the original A horizon, or original plowed layer in soils with thin A horizons, has

been removed from most of the area. This class also includes the areas of no erosion.

Class 2.—The soil has been eroded to the extent that ordinary tillage implements reach through the remaining A horizon or well below the depth of the original plowed layer in soils with thin A horizons. Generally, the plow layer consists of a mixture of the original A horizon and the underlying horizons. Mapped areas of eroded soil usually have patches in which the plow layer consists wholly of the original A horizon and others in which it consists wholly of underlying horizons. Shallow gullies may be present. Approximately 25 to 75 percent of the original A horizon or surface soil may have been lost from most of the area.

Class 3.—The soil has been eroded to the extent that all or practically all of the original surface soil, or A horizon, has been removed. The plow layer consists essentially of materials from the B or other underlying horizons. Patches in which the plow layer is a mixture of the original A horizon and the B horizon or other underlying horizons may be included within mapped areas. Shallow gullies, or a few deep ones, are common in some soil types. More than about 75 percent of the original surface soil, or A horizon, and commonly part or all of the B horizon or other underlying horizons has been lost from most of the area.

Class 4.—The land has been eroded until it has an intricate pattern of moderately deep or deep gullies. Soil profiles have been destroyed except in small areas between the gullies. Such land is not useful for crops in its present condition. Reclamation for crop production or for improved pasture is difficult, but may be practicable if other characteristics of the soil are favorable and erosion can be controlled.

Class +.—Recent alluvial and colluvial deposition.

LAND CAPABILITY is given as classified by Klingebiel and Montgomery in U.S. Department of Agriculture LAND-CAPABILITY CLASSIFICATION, Agriculture Handbook 210, published in 1961. The classification expresses the suitability of land for use without deterioration. The eight land-capability classes are distinguished according to the risk of land damage or difficulty of land use. The following classes I to IV are suitable for cultivation and other uses, whereas classes V to VIII are not suitable for cultivation.

Class I.—Very good land for cultivation; nearly level and productive; not subject to erosion; needs only ordinary good farming methods.

Class II.—Good land for cultivation; mostly gently sloping; not more than moderately subject to erosion; some land may be rather wet;

can be farmed safely with easily applied practices.

Class III.—Moderately good land for cultivation; mostly moderately sloping; some areas too wet or too dry; can be farmed safely with practical conservation measures, carefully applied; usually a combination of two or more measures is needed.

Class IV.—Fairly good land, suitable for occasional cultivation; generally strongly sloping; often shallow or very sandy; often found in dry climate.

Class V.—Land very well suited for grazing or forestry; requires good range or woodland management.

Class VI.—Land well suited for grazing or forestry; steeply sloping land, stony or shallow soil, eroded land, droughty land, or wet land; requires careful management.

Class VII.—Land fairly well suited for grazing or forestry; severely limited in use by such factors as very steep slope, shallow or droughty soil, wetness, severe erosion, or excessive salinity; requires very careful management.

Class VIII.—Land not suitable for cultivation, grazing, or forestry; may be useful for wildlife, recreation, or protection of water supplies.

GEOLOGY of 12 of the new watersheds is described herein, together with that of 71 of the old "Continuing Watersheds." A brief description of the portion of the watershed occupied by various geological formations or series is given, together with strike and dip of the strata, thickness, and relative position, when known. Faults, perched water tables, outcrops, if present, and other details that relate to the movement of water within the drainage area or that affect the hydrology of the watershed are described. Four geologic maps are presented to aid in the understanding of the formations on four major watersheds that contain 59 sub-watersheds.

SURFACE DRAINAGE refers to the ease with which excess water flows from the watershed area. The length of principal waterway is the distance from the gaging station to the most remote point on the watershed boundary, measured along the flood plain of the watercourse.

CHARACTER OF FLOW describes the flow of the principal watercourse with respect to permanence and space. The following definitions are from Meinzer's OUTLINE OF GROUND-WATER HYDROLOGY, U.S. Geological Survey Water-Supply Paper 494, published in 1923.

With respect to permanence, streams may be divided into perennial streams, intermittent streams, and ephemeral streams.

A *perennial stream*, or stretch of a stream, is one that flows continuously. Perennial streams

are generally fed in part by springs, and their upper surfaces generally stand lower than the water table in the localities through which they flow.

Intermittent streams may be divided, with respect to the source of their water, into spring-fed intermittent streams and surface-fed intermittent streams. They also flow in direct response to precipitation.

A *spring-fed intermittent stream*, or stretch of a stream, is one that flows only at certain times when it receives water from springs. The intermittent character of streams of this type is generally caused by fluctuations of the water table whereby the stream channels stand a part of the time below and part of the time above the water table. This is the ordinary type of intermittent stream.

A *surface-fed intermittent stream*, or stretch of a stream, is one that flows during protracted periods when it receives water from some surface source, generally the gradual and long-continued melting of snow in a mountainous or other cold tributary area. The term may be arbitrarily restricted to streams or stretches of streams that flow continuously during periods of at least 1 month.

An *ephemeral stream*, or stretch of a stream, is one that flows only in direct response to precipitation. It receives no water from springs and no long-continued supply from melting snow or other surface source. Its stream channel is at all times above the water table. The term may be arbitrarily restricted to streams or stretches of streams that do not flow continuously during periods of as much as 1 month.

With respect to continuity in space, streams may be divided into continuous streams and interrupted streams. An *interrupted stream* is one that contains (1) perennial stretches with intervening intermittent or ephemeral stretches or (2) intermittent stretches with intervening ephemeral stretches. These two classes of interrupted streams are designated, respectively, *perennial interrupted streams* and *intermittent interrupted streams*. A *continuous stream* is one that does not have interruptions in space. It may be perennial, intermittent, or ephemeral, but it does not habitually have wet and dry stretches.

INSTRUMENTATION describes type of runoff control or measuring device, number and type of precipitation gages, type of charts used, and snow courses, if employed.

WATERSHED CONDITIONS describes the general use and farm, forest, or range practices prior to the period of record and the conservation measures, crops, yields, and general cultural operations and practices during the period of record. Rotation crops are listed in the order

that they were grown. Operations are described with commonly used agricultural terms, and only those that appear to have a significant relationship to the hydrology of the watershed are mentioned.

GENERALLY REPRESENTS gives the broad area application for which the data of the specific watershed are recommended. The areas named are those delineated on the map "Location of Experimental Agricultural Watersheds of the Agricultural Research Service," previously published as cover page 3 of *Reference 4* for 1956-59. The location of each project is shown by number on this Soil Conservation Service base map of numbered land resource areas in the United States prepared in January 1963. Solid red circles show the location of "continuing" or "new" watersheds, and open red circles show areas where experimental studies have been discontinued, but for which records have been previously published in *References 1, 2, 3, 4, or 5*. A smaller index map, showing less detail, can be found on pages 12 and 13 of this volume, together with a legend for the land resource areas and major land resource regions.

In some cases there is an apparent contradiction between the watershed location on the maps and the descriptive information given under "Generally Represents." This is due to the small scale of the maps; it is difficult to show many small local variations in boundaries of the land resource areas. The descriptive statements, rather than the map location, should be the guide to the application of the data.

STANDARD SYMBOLS FOR TABULAR DATA

The following capital letters have been used as standard symbols throughout this volume to designate specific items or meanings:

- A—precipitation of unknown time of occurrence, amount generally carried forward.
- E—shows that a figure is estimated or partially estimated.
- H—precipitation in the form of hail.
- L—precipitation which is sleet or freezing rain.
- M—mixed precipitation of rain, snow, and sleet.
- N—precipitation in form of rain and snow.
- NR—used in place of a figure to indicate "no record."
- P—designates monthly or annual precipitation in inches.
- Q—designates monthly or annual runoff in inches.
- RG—designates rain gage, generally followed by gage number.

R—followed by hyphen and a number is recording rain gage.

S—followed by hyphen and a number is standard rain gage.

S—precipitation in form of snow.

STA AV (or AVG)—designates station average for period of record.

T—denotes a trace, generally less than 0.005 inch of precipitation and 0.01 inch of runoff (or 0.0001 inch of runoff, if 4 decimal places are used).

Time of day symbols or designations *a, p, m,* and *n* used in previous publications through 1961 have been dropped and Military Time (0001 to 2400) substituted for 1962 forward. Unless stated otherwise, time used in tables is Eastern, Central, Mountain, or Pacific Standard Time, whichever applies to the given location.

REVISIONS OF PREVIOUSLY PUBLISHED DATA

In some instances, it has been necessary to revise previously published data on specific watersheds. If the corrections involve changed values of monthly precipitation or runoff or annual maximum discharges or maximum volumes for various durations, whole lines for the year are republished with the changed items *underlined*. These revisions are explained in footnotes following the tables in which they appear.

If additions or revisions are made to watershed descriptions, they are placed following the above-mentioned tables. In 71 cases, a statement on geology has been added to the original descriptions. The geology of 12 of the 13 new watersheds is described. In several cases, revised map pages have been inserted and labeled, for example: "(1956-59 Map) 26. 32-5 (Revision)" and are placed immediately preceding the current 1962 sheets for the particular watershed. All of the above changes are listed by States in table 3, page 16.

PERSONNEL RESPONSIBLE FOR COMPILATIONS

At each research location, many individuals have contributed to the planning and establishment of the watersheds and the collection, compilation, and analysis of the data. Some of those who made substantial contributions to the success of the research work behind this report are as follows:

<i>Location</i>	<i>Name or names</i>
5	Harold W. Hobbs
8	William H. Speir John C. Stephens
10	Aurelius P. Barnett
13, 66	James B. Burford, Vernon O. Shanholtz
21, 25, 61	Keith E. Saxton
26	Lloyd L. Harrold
29, 31, 32	Neal E. Minshall
42	Walter G. Knisel Ralph W. Baird
34, 37	Wendell R. Gwinn William O. Ree
44	John A. Allis Frank J. Dragoun
45, 47, 63, 64	Herbert B. Osborn Robert V. Keppel Don L. Chery
62	W. Russell Hamon Farris E. Dendy
65	John W. Neuberger
67	George H. Comer Martin L. Johnson
69	Monroe A. Hartman Donn G. DeCoursey

ADDITIONAL PUBLICATIONS BY LOCATION

In References 1, 4, and 5 (see pp. 1 and 2), references to other publications that presented watershed data and interpretations of results in various journals, bulletins, and periodicals were given at the end of the introductions for many of the locations. Below is a listing, by location number, of additional references to results that have been reported through 1962. Included are citations to the county or regional soil surveys for all locations not covered in the 1960-61 volume. At the end, a number of items that could not be readily tied to a specific location are listed in a general group.

6. Hagerstown, Md.

MATTHEWS, E. D., and others.
1962. SOIL SURVEY OF WASHINGTON COUNTY, MARYLAND. U.S. Dept. Agr. SCS 1959 (17), 136 pp., maps.

8. Vero Beach, Fla.

SPEIR, W. H.
1962. INSTALLATION AND OPERATION OF NON-WEIGHING LYSIMETERS. Soil and Crop Sci. Soc. Fla. Proc. 22: 167-176, illus.

11. High Point, N.C.

JURNEY, R. C., PERKINS, S. O., DAVIS, W. A., and LEE, W. D.
1923. SOIL SURVEY OF GUILFORD COUNTY, NORTH CAROLINA. U.S. Dept. Agr. BS 1920: 167-199, illus., map.

HARDISON, R. B., and PERKINS, S. O.
1915. SOIL SURVEY OF RANDOLPH COUNTY, NORTH CAROLINA. U.S. Dept. Agr. BS 1913, 34 pp., illus., map.

13. Blacksburg, Va.

BENNETT, H. H., and MCLENDON, W. E.
1905. SOIL SURVEY OF LOUISA COUNTY, VIRGINIA. U.S. Dept. Agr. BS 1905: 191-212, illus., map No. 6. [Applies to Fosters Creek watershed, 13.14.]

COLEMAN, C. S., and others.
1952. SOIL SURVEY OF CULPEPER COUNTY, VIRGINIA. U.S. Dept. Agr. BPISAE 1941 (3), 126 pp., maps, illus. [Applies to Pony Mountain Branch watershed, 13.12.]

JURNEY, R. C., and others.
1938. SOIL SURVEY OF HALIFAX COUNTY, VIRGINIA. U.S. Dept. Agr. BCS 1934(5), 56 pp., maps. [Applies to Powells Creek and Little Winns Creek watersheds 13.9 and 13.10.]

MOONEY, C. N., MARTIN, F. O., and CAINE, T. A.
1901. SOIL SURVEY OF THE BEDFORD AREA, VIRGINIA. U.S. Dept. Agr. BS 1901: 239-257, illus., map. [Applies to Chestnut Branch watershed 13.15.]

WATSON, R. A., and LEE, O., Jr.
1907. SOIL SURVEY OF MONTGOMERY COUNTY, VIRGINIA. U.S. Dept. Agr. BS 1907: 193-225, illus., map No. 5. [Applies to Blacksburg watersheds 13.2 to 5, Crab Creek watershed, 13.7, and Brush Creek watershed, 13.8.]

14. Chatham (Danville), Va.

KIRK, N. M., STEVENS, E. H., DRINKARD, C. H., and PATTERSON, G. W., Jr.
1922. SOIL SURVEY OF PITTSYLVANIA COUNTY, VIRGINIA. U.S. Dept. Agr. BS 1918, 46 pp., maps.

15. Staunton, Va., (Revision).

JURNEY, R. C., and others.
1937. SOIL SURVEY OF AUGUSTA COUNTY, VIRGINIA. U.S. Dept. Agr. BCS 1932 (13), 46 pp., maps.²

19. Lafayette, Ind.

BERTRAND, A. R., and SOR, K.
1962. EFFECTS OF RAINFALL ENERGY ON PERMEABILITY AND MIGRATION OF COLLOIDAL MATERIALS IN SOILS. Soil Sci. Soc. Amer. Proc. 26(3) : 297-300, illus.³

SOR, K., and BERTRAND, A. R.
1962. EFFECTS OF RAINFALL ENERGY ON PERMEABILITY OF SOILS. Soil Sci. Soc. Amer. Proc. 26(3) : 293-297, illus.³

20. Clarinda, Iowa.

O'NEAL, A. M., JR., and DEVEREUX, R. E.
1924. SOIL SURVEY OF PAGE COUNTY, IOWA. U.S. Dept. Agr. BS 1921: 349-373, maps. [Applies also to location 22, Shenandoah, Iowa.]

² Erroneously reported in USDA Misc. Pub. 994, p. 6, as published in 1939.

³ Included are effects on Chalmers silty clay loam and Crosby silt loam, which occur on watersheds discontinued in 1952 and 1953.

21. *Iowa City, Iowa.*

HOWE, J. W., and WARNOCK, R.

1960. AN ANALYSIS OF THE RALSTON CREEK HYDROLOGIC RECORD. Iowa Highway Res. Bd. Bul. 16, 58 pp., illus., maps. (Based on period 1924-57.)

JOHNSON, H. P., and HOWE, J. W.

1956. INFILTRATION FREQUENCY ON RALSTON CREEK WATERSHED. Amer. Geophys. Union Trans. 37(5): 593-594, illus. (Covers period 1924-53.)

THARP, W. E., and ARTIS, G. H.

1922. SOIL SURVEY OF JOHNSON COUNTY, IOWA. U.S. Dept. Agr. BS 1919, 52 pp., illus., maps.

23. *East Lansing, Mich.*

VEATCH, J. O., and others.

1941. SOIL SURVEY—INGHAM COUNTY, MICHIGAN. U.S. Dept. Agr. BPI 1933(36), 43 pp., maps.

24. *Bethany, Mo.*

VANATTA, E. S., and KNOBEL, E. W.

1916. SOIL SURVEY OF HARRISON COUNTY, MISSOURI. U.S. Dept. Agr. BS 1914, 36 pp., maps.

25. *McCredie, Mo.*

KRUSEKOPF, H. H., AGEE, J. H., and HALL, R. S.

1919. SOIL SURVEY OF CALLAWAY COUNTY, MISSOURI. U.S. Dept. Agr. BS 1916, 38 pp., maps.

26. *Coshocton, Ohio*

BRAKENSIEK, D. L., and AMERMAN, C. R.

1962. DISCUSSION: AN IMPROVED STATISTICAL MODEL FOR EVALUATING PARAMETERS AFFECTING WATER YIELDS OF RIVER BASINS by B. Harris, A. L. Sharp, A. E. Gibbs, and W. J. Owen, [Jour. Geophys. Res. 66(10): 3319-3328, Oct. 1961.] Jour. Geophys. Res. 67(9): 3638-3639.

DREIBELBIS, F. R.

1962. SOME ASPECTS OF WATERSHED HYDROLOGY AS DETERMINED FROM SOIL MOISTURE DATA. Jour. Geophys. Res. 67(9): 3425-3435, illus. (Abst. Jour. Geophys. Res. 67(9): 3554, 1962.)

FRERE, M. H., and ROBERTS, H.

1962. RADIOACTIVE FALLOUT IS LOST FROM CROPLAND. Crops and Soils 14(3-4): 23.

HARROLD, L. L.

1960. THE WATERSHED HYDROLOGY OF PLOW-PLANT CORN. Jour. Soil and Water Conserv. 15(4): 183-184, illus.

1961. APPLICATION OF LYSIMETER DATA TO STUDIES IN WATERSHED HYDROLOGY.⁴ 2d Canadian Hydrology Symp. Proc. 2: 128-134, illus.

1962. ESTIMATING FLOOD VOLUMES AND HYDROGRAPHS CORRESPONDING TO PEAK FLOWS OF GIVEN FREQUENCIES FOR SMALL AGRICULTURAL WATERSHEDS. Jour. Geophys. Res. 67(11): 4341-4346, illus.

1962. EXPLANATION OF THE COSHOCTON WATERSHED HYDROLOGY RESEARCH STATION. In 9th Ann. Natl. Watershed Cong. 104-120, illus.

⁴ A discussion of W. L. Pelton's paper on "The Use of Lysimetric Methods to Measure Evapotranspiration," pp. 106-122, illus.

HARROLD, L. L.

1962. STUDIES IN—HYDROLOGY OF AGRICULTURAL WATERSHEDS, COSHOCTON, OHIO. Ohio Agr. Expt. Sta. Brochure; 16 pp., illus.

— and DREIBELBIS, F. R.

1962. ERRORS IN EVALUATIONS OF DEW AMOUNTS BY THE COSHOCTON LYSIMETER. Internatl. Jour. Hydrol. VI(3): 73.

— BRAKENSIEK, D. L., MCGUINNESS, J. L., AMERMAN, C. R., and DREIBELBIS, F. R.

1962. INFLUENCE OF LAND USE AND TREATMENT ON THE HYDROLOGY OF SMALL WATERSHEDS AT COSHOCTON, OHIO, 1938-1957. U.S. Dept. Agr. Tech. Bul. 1256, 194 pp., illus.

MCGUINNESS, J. L., and HARROLD, L. L.

1962. SEASONAL AND AREAL EFFECTS ON SMALL-WATERSHED STREAMFLOW. Jour. Geophys. Res. 67(11): 4327-4334, illus. (Abst. Jour. Geophys. Res. 67(9): 3577.)

27. *Hamilton, Ohio*

FOWLER, E. D., and GREEN, T. C.

1931. SOIL SURVEY OF BUTLER COUNTY, OHIO. U.S. Dept. Agr. BCS 1927(12), 41 pp., illus., map.

28. *Zanesville, Ohio*

PHILLIPS, S. W., and others.

1930. SOIL SURVEY OF MUSKINGUM COUNTY, OHIO. U.S. Dept. Agr. BCS 1925(26), 46 pp., maps.

30. *Coon Valley, Wis.*

EDWARDS, M. J., and others.

1928. SOIL SURVEY OF VERNON COUNTY, WISCONSIN. U.S. Dept. Agr. BCS 1928(21), 43 pp., maps.

GEIB, W. J., and others.

1929. SOIL SURVEY OF MONROE COUNTY, WISCONSIN. U.S. Dept. Agr. BCS 1923(40): 1315-1373, maps, illus.

33. *Bentonville, Ark.*

WILDER, H. J., and SHAW, C. F.

1907. SOIL SURVEY OF THE FAYETTEVILLE AREA, ARKANSAS. U.S. Dept. Agr. BS 1907, 45 pp., map.

34. *Cherokee, Okla.*

MCCALLA, T. M., ARMY, T. J., and WHITFIELD, C. J.

1962. STUBBLE-MULCH FARMING. Jour. Soil and Water Conserv. 17(5): 204-208, illus.

ZINGG, A. W., and WHITFIELD, C. J.

1957. STUBBLE-MULCH FARMING IN THE WESTERN STATES. U.S. Dept. Agr. Tech. Bul. 1166, 56 pp., illus.

36. *Muskogee, Okla.*

JONES, G. B., VAN DUYN, C., SCOTT, E., and HAWKER, H. W.

1915. SOIL SURVEY OF MUSKOGEE COUNTY, OKLAHOMA. U.S. Dept. Agr. BS 1913, 43 pp., illus., map.

38. *Garland, Tex.*

CARTER, W. T., JR., and others.

1924. SOIL SURVEY OF DALLAS COUNTY, TEXAS. U.S. Dept. Agr. BS 1920: 1213-1254, illus., map.

39. *Spur, Tex.*

CARTER, W. T., JR., HENDRICKSON, B. H., and STRIKE, W. W.

1926. SOIL SURVEY OF DICKENS COUNTY, TEXAS. U.S. Dept. Agr. BS 1922: 479-520, illus., map.

40. *Tyler, Tex.*
SCHOENMANN, L. R., and others.
1917. SOIL SURVEY OF SMITH COUNTY, TEXAS. U.S. Dept. Agr. BS 1915, 51 pp., map.
41. *Vega, Tex.*
CARTER, W. T., JR., and party.
1911. RECONNAISSANCE SOIL SURVEY OF THE PANHANDLE REGION OF TEXAS. U.S. Dept. Agr. BS 1910, 59 pp., illus., map. (Includes Oldham County, Tex.)
42. *Riesel (Waco), Tex.*
BECK, M. W.
1932. SOIL SURVEY OF FALLS COUNTY, TEXAS. U.S. Dept. Agr. BCS 1932(7), 40 pp., illus., map.
MAGEE, A. C., BAIRD, R. W., and POPE, J. B.
1962. CONSERVATION PAYS IN THE BLACKLANDS. Tex. Agr. Expt. Sta. MP-602, 11 pp., illus., map.
43. *Hays, Kans.*
COFFEY, G. N., RICE, T. D., and party.
1912. RECONNAISSANCE SOIL SURVEY OF WESTERN KANSAS. U.S. Dept. Agr. BS 1910, 104 pp., illus., map. (Includes Ellis County, Kans.)
44. *Hastings, Nebr.*
ALLIS, J. A.
1962. COMPARISON OF STORM RUNOFF VOLUMES FROM SMALL, SINGLE-CROP WATERSHEDS AND FROM A LARGER, MIXED-CROP WATERSHED. Agr. Engin. 43(4): 220-223, illus.
DRAGON, F. J.
1962. RAINFALL ENERGY AS RELATED TO SEDIMENT YIELD. Jour. Geophys. Res. 67(4): 1495-1504, illus.
MAZURAK, A. P., and RAMIG, R. E.
1962. AGGREGATION AND AIR-WATER PERMEABILITIES IN A CHERNOZEM SOIL CROPPED TO PERENNIAL GRASSES AND FALLOW-GRAIN. Soil Sci. 94(3): 151-157, illus.⁵
WEAKLY, H. E.
1962. AGGREGATION OF SOIL CARRIED IN RUNOFF FROM SIMULATED RAINFALL. Soil Sci. Soc. Amer. Proc. 26(5): 511-512, illus.
1962. HISTORY OF DROUGHT IN NEBRASKA. Jour. Soil and Water Conserv. 17(6): 271-273, 275, illus.
WOLFANGER, L. A., and WOOD, R. D.
1929. SOIL SURVEY OF WEBSTER COUNTY, NEBRASKA. U.S. Dept. Agr. BCS 1923(45): 1505-1555, map.
50. *Placerville, Calif.*
STORIE, R. E., and TRUSSELL, D. F.
1932. SOIL SURVEY OF THE PLACERVILLE AREA, CALIFORNIA. U.S. Dept. Agr. BCS 1927(34), 35 pp., illus., map.
51. *Santa Paula, Calif.*
NELSON, J. W., and others.
1920. SOIL SURVEY OF THE VENTURA AREA, CALIFORNIA. U.S. Dept. Agr. BS 1917, 87 pp., illus., map.
52. *Sebastopol, Calif.*
WATSON, E. B., and others.
1917. SOIL SURVEY OF THE HEALDSBURG AREA, CALIFORNIA. U.S. Dept. Agr. BS 1915, 59 pp., illus., map.
53. *Vacaville, Calif.*
CROSBY, S. W., and CARPENTER, E. J.
1935. SOIL SURVEY OF THE DIXEN AREA, CALIFORNIA. U.S. Dept. Agr. BCS 1931(7), 47 pp., illus., map.
54. *Watsonville, Calif.*
STORIE, R. E., and others.
1944. SOIL SURVEY OF THE SANTA CRUZ AREA, CALIFORNIA. U.S. Dept. Agr. BPISAE 1935(25), 99 pp., illus., map.
56. *Moscow, Idaho.*
AGEE, J. H., GRAVES, G. W., and MICKELWAITE, C. B.
1917. SOIL SURVEY OF LATAH COUNTY, IDAHO. U.S. Dept. Agr. BS 1915, 66 pp., illus., map.
NEFF, E. L., and BLOOMSBURG, G. L.
1962. PRECIPITATION CHARACTERISTICS IN THE PALOUSE AREA OF IDAHO AND WASHINGTON. U.S. Dept. Agr. ARS 41-66, 16 pp., illus.
57. *Newberg, Oreg.*
KOCHER, A. E., CARPENTER, E. J., RUZEK, C. V., and COOTER, J. E.
1920. SOIL SURVEY OF YAMHILL COUNTY, OREGON. U.S. Dept. Agr. BS 1917, 66 pp., illus., map. [Watersheds W-2, 3, and 4.]
WATSON, E. B., ECKMAN, E. C., FLUHARTY, A. L., and RUZEK, C. V.
1923. SOIL SURVEY OF WASHINGTON COUNTY, OREGON. U.S. Dept. Agr. BS 1919, 51 pp., illus., map. [W-1 watershed.]
62. *Oxford, Miss.*
COLEMAN, N. L.
1962. BEHAVIOR OF A DH-48 HAND SAMPLER AMONG SAND DUNES. Ole Miss. Engin. 2(4): 6-8, illus.
1962. OBSERVATIONS OF RESISTANCE COEFFICIENTS IN A NATURAL CHANNEL. Internatl. Assoc. Sci. Hydrol. Comm. of Land Erosion 59: 336-352, illus.
DOTY, C. W., and DENDY, F. E.
1962. IMPROVED MANAGEMENT REDUCES SOIL AND WATER LOSSES. Miss. Farm Res. 25(4): illus. (Also Miss. Agr. Expt. Sta. Inform. Sheet 761, 2 pp., illus.)
LONG, F. W., and BOWIE, A. J.
1962. SEDIMENT CONCENTRATIONS OF THREE SELECTED RISES ON PIGEON ROOST CREEK. (Abstract) Assoc. South Agr. Workers, Inc. Proc. 59th Ann. Conv., p. 46.
MCHENRY, J. R., and MCDOWELL, L. L.
1962. THE USE OF RADIOACTIVE TRACERS IN SEDIMENTATION RESEARCH. Jour. Geophys. Res. 67(4): 1465-1471, illus.
MILLER, C. R.
1962. SOIL EROSION: U.S. SEDIMENTATION LABORATORY SCIENTISTS SEARCH FOR ANSWERS TO CONTROL SOIL MOVEMENT. Cotton Gin and Oil Mill Press, 63(9), 2 pp., illus.
WOODBURN, R., and TURNER, H. R.
1962. UPLAND GULLY SEDIMENT PRODUCTION. Internatl. Assoc. Sci. Hydrol. Comm. of Land Erosion 59: 83-104, illus.

⁵ The Holdrege silt loam is major soil on Hastings watersheds, although samples came from plots at North Platte, Nebr.

SOIL AND WATER CONSERVATION RESEARCH DIVISION STAFF.

1962. SEDIMENTATION RESEARCH FROM FIELD TO LABORATORY TO CONTROL. U.S. Dept. Agr. Picture Story 137, 4 pp., illus.

63. *Tombstone, Ariz.*

KEPPEL, R. V., and RENARD, K. G.

1962. TRANSMISSION LOSSES IN EPHEMERAL STREAM BEDS. Amer. Soc. Civ. Engin. Proc. Hydraul. Div. Jour. 88 (HY3): 59-68, illus.

65. *Newell, S. Dak.*

ALLIS, J. A., and KUHLMAN, A. R.

1962. RUNOFF AND SEDIMENT YIELD STUDIES ON RANGELAND WATERSHEDS. Jour. Soil and Water Conserv. 17(2): 68-71, illus.

COFFEY, G. N., and party.

1911. RECONNAISSANCE SOIL SURVEY OF WESTERN SOUTH DAKOTA. U.S. Dept. Agr. BS 1909, 80 pp., illus., map.

WILLIS, W. O., and CARLSON, C. W.

1962. CONSERVATION OF WINTER PRECIPITATION IN THE NORTHERN PLAINS. Jour. Soil and Water Conserv. 17(3): 122-123, 128, illus.

66. *Moorefield, W. Va.*

WILLIAMS, B. H., and FRIDLEY, H. M.

1930. SOIL SURVEY OF HARDY AND PENDLETON COUNTIES, WEST VIRGINIA. U.S. Dept. Agr. BCS 1930(14), 47 pp., maps.

67. *North Danville, Vt.*

JOHNSON, M. L.

1962. WATERSHED RESEARCH FOR THE NORTHEAST POINTS UP WATER CONSERVATION NEEDS. U.S. Dept. Agr. Soil Conserv. 27(10): 237-238, illus.

69. *Chickasha, Okla.*

GOKE, A. W., and HOLLOPETER, C. A.

1935. SOIL SURVEY OF KIOWA COUNTY, OKLAHOMA. U.S. Dept. Agr. BCS 1931(14), 39 pp., illus., map.

HOLLOPETER, C. A., and FISHER, C. F.

1941. SOIL SURVEY OF WASHITA COUNTY, OKLAHOMA. U.S. Dept. Agr. BPI 1935(17), 44 pp., illus., map.

RHOADES, E. D., and GAMBLE, M. D.

1962. RESEARCHERS STUDY FLOODING TOLERANCES OF GRASSES. Okla. Farmer Stockman 75 (2): 24, illus.

SMIES, E. H.

1919. SOIL SURVEY OF CANADIAN COUNTY, OKLAHOMA. U.S. Dept. Agr. BS 1917, 60 pp., map.

General References

BRAKENSIEK, D. L.

1962. DISCUSSION: GENERAL SOLUTION FOR OPEN CHANNEL PROFILES by J. A. Liggett, [Amer. Soc. Civ. Engin. Proc. paper 2983, Hydraul. Div. Jour. 87(HY6): 89-107, Nov. 1961.] Amer. Soc. Civ. Engin. Proc. Hydraul. Div. Jour. 88 (HY3): 255-257.

1962. DISCUSSION: METHODS FOR MEASURING THE EFFECT OF ENVIRONMENTAL FACTORS ON CHANNEL PROPERTIES by Mark A. Melton. [Jour. Geophys. Res. 67(4): 1485-1490, illus.] Jour. Geophys. Res. 67(4): 1491-1492.

CARLSON, C. W.

1962. SOIL AND WATER RESEARCH SPANS A CEN-

General References, continued

TURY. U.S. Dept. Agr. Soil Conserv. 27 (11): 257-258, illus.

CHEPIL, W. S., SIDDOWNAY, F. H., and ARBRUST, D. V.

1962. CLIMATIC FACTOR FOR ESTIMATING WIND ERODIBILITY OF FARM FIELDS. Jour. Soil and Water Conserv. 17(4): 162-165, illus.

CROOK, C. B.

1962. ABSTRACTS OF RECENT PUBLISHED MATERIAL ON SOIL AND WATER CONSERVATION, NO. 22. U.S. Dept. Agr. ARS 41-58, 201 pp.

GRAY, D. M.

1962. DERIVATION OF HYDROGRAPHS FOR SMALL WATERSHEDS FROM MEASURABLE PHYSICAL CHARACTERISTICS.⁶ Iowa State Univ. Agr. Expt. Sta. Bul. 506: 514-570, illus.

HERSHFIELD, D. M.

1962. AN EMPIRICAL COMPARISON OF THE PREDICTIVE VALUE OF THREE EXTREME-VALUE PROCEDURES. Jour. Geophys. Res. 67(4): 1535-1542, illus.

1962. A NOTE ON THE VARIABILITY OF ANNUAL PRECIPITATION. Jour. Appl. Met. 1(4): 575-578, illus.

1962. EFFECTIVE RAINFALL. U.S. Dept. Commerce, Weather Bureau Weekly Weather and Crop Bul. XLIX (46): 7-8, illus.

1962. EXTREME RAINFALL RELATIONSHIPS. Amer. Soc. Civ. Engin. Proc., Hydraul. Div. Jour. 88(HY6): 73-92, illus.

HICKOK, R. B.

1962. DISCUSSION: SYNTHETIC UNIT HYDROGRAPH FOR SMALL WATERSHEDS by Don M. Gray.⁷ [Amer. Soc. Civ. Engin. Proc. paper 2854, Hydraul. Div. Jour. 87(HY4): 33-54, July 1961.] Amer. Soc. Civ. Engin. Proc. Hydraul. Div. Jour. 88(HY1): 137.

INTER-AGENCY COMMITTEE ON WATER RESOURCES, SUBCOMMITTEES ON HYDROLOGY AND SEDIMENTATION.

1962. ANNOTATED BIBLIOGRAPHY ON HYDROLOGY AND SEDIMENTATION, UNITED STATES AND CANADA. 1955-58. U.S. Geol. Survey Water-Supply Paper 1546, 236 pp.

1964. ANNOTATED BIBLIOGRAPHY ON HYDROLOGY AND SEDIMENTATION, 1959-62. UNITED STATES AND CANADA. Joint Hydrology-Sedimentation Bul. 8, 323 pp.

IPPEN, A. T., and DRINKER, P. A.

1962. BOUNDARY SHEAR STRESSES IN CURVED TRAPEZOIDAL CHANNELS. Amer. Soc. Civ. Engin. Proc., Hydraul. Div. Jour. 88 (HY5): 143-179, illus.

DRINKER, P. A., JOBIN, W. R., and SHEMDIN, O. H.

1962. STREAM DYNAMICS AND BOUNDARY SHEAR DISTRIBUTIONS FOR CURVED TRAPEZOIDAL CHANNELS. Mass. Inst. Technol. Tech. Rpt. 47, 81 pp., illus.

MILLER, C. R.

1962. DISCUSSION: THE PROCESS OF CHANNEL DEGRADATION by Dr. E. R. Tinney. [Jour. Geophys. Res. 67(4): 1473-1480.] Jour. Geophys. Res. 67(4): 1481-1483.

⁶ Utilized data from ARS watersheds at locations 17, 21, 31, and 44.

⁷ Gray used data from locations 17, 21, 26, 31, and 44.

General References, Continued

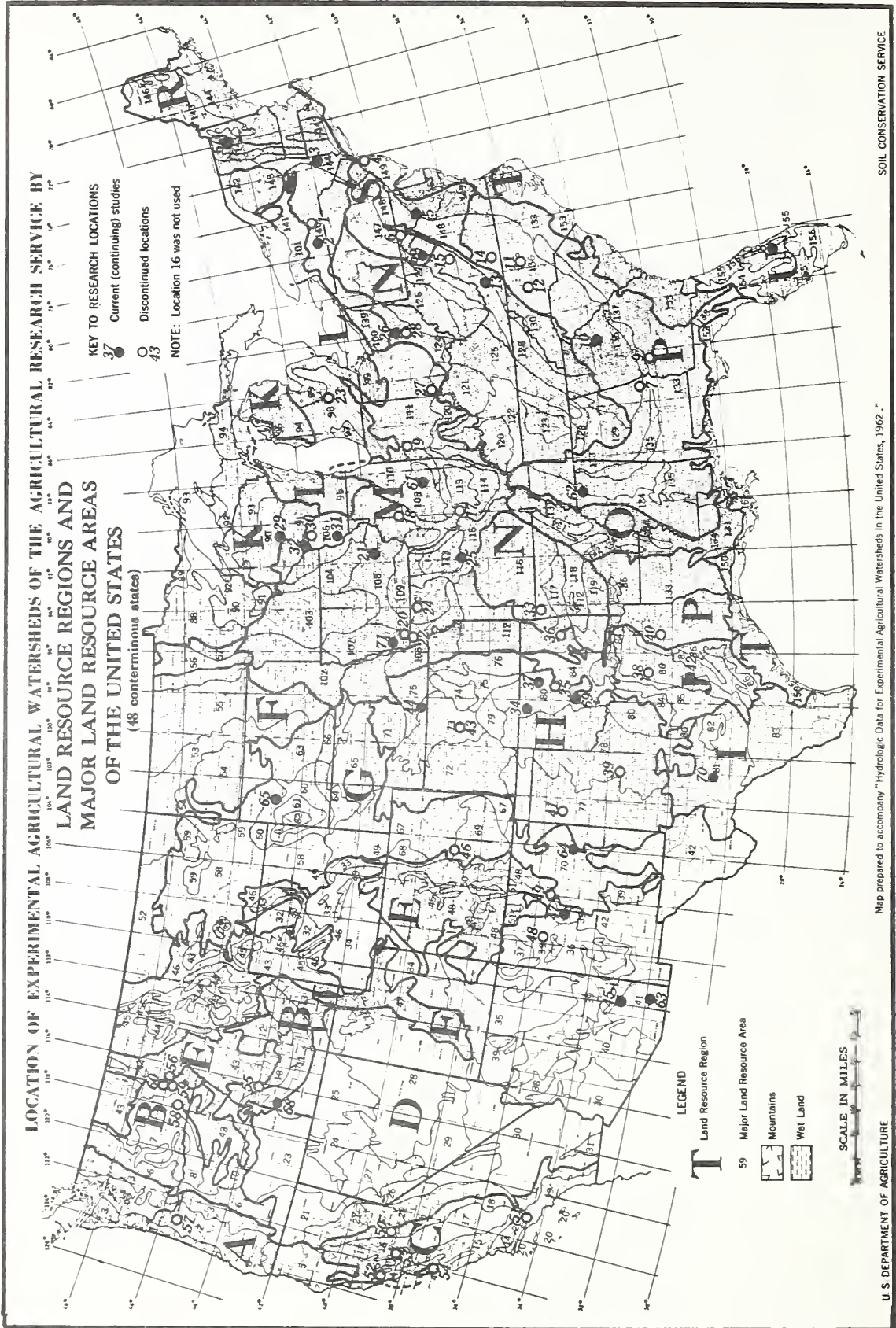
- MINSHALL, N. E.
1962. NORTH CENTRAL WATERSHED RESEARCH CENTER.⁸ Mo. Agr. Expt. Sta. Brochure, 8 pp., illus.
- and WOOLHISER, D. A.
1962. DISCUSSION: UNIT HYDROGRAPH CHARACTERISTICS FOR SEWERED AREAS by P. S. Eagleson. [Amer. Soc. Civ. Engin. Proc. paper 3069, Hydraul. Div. Jour. 88(HY2): 1-25, illus. Mar. 1962] Amer. Soc. Civ. Engin. Hydraul. Div. Jour. 88(HY6): 184-186.
- SEWELL, J. I., and VAN SCHILFGAARDE, J.
1962. PREDICTION OF WATER YIELDS FROM AGRICULTURAL WATERSHEDS.⁹ Soil Sci. Soc. Amer. Proc. 26(1): 82-85, illus.
- SHARP, A. L., and SAXTON, K. E.
1962. TRANSMISSION LOSSES IN NATURAL STREAM VALLEYS. Amer. Soc. Civ. Engin. Proc. Hydraul. Div. Jour. 88(HY5): 121-142.
- VAN BAVEL, C. H. M.
1962. ACCURACY AND SOURCE STRENGTH IN SOIL MOISTURE NEUTRON PROBES. Soil Sci. Soc. Amer. Proc. 26(4): 405.
- 1962. LIGHTWEIGHT RATE METER FOR SOIL MOISTURE MEASUREMENT. Soil Sci. 94(6): 418-419, illus.
- ⁸ Present studies are in Missouri and Iowa, but results can also be applied in Indiana, Illinois, Minnesota, Wisconsin, Nebraska, Kansas, and Oklahoma.
- ⁹ Rainfall and runoff data from locations 5, 10, and 14 used in analyses.
- VAN BAVEL, C. H. M., and MYERS, L. E.
1962. AN AUTOMATIC WEIGHING LYSIMETER. Agr. Engin. 43(10): 580-583, 586-588, illus.
- SMITH, D. D., and WISCHMEIER, W. H.
1962. RAINFALL EROSION.¹⁰ Advances in Agronomy Vol. 14, pp. 109-148. Academic Press, Inc., New York, N.Y.
- U.S. DEPARTMENT OF AGRICULTURE YEARBOOK.
1962. AFTER A HUNDRED YEARS. WATER by William W. Donnan and A. L. Sharp, 181-186; THE SOIL SURVEY by Charles E. Kellogg, 187-201; THE WEATHER by Edward M. Vernon, 433-437.
- U.S. DEPARTMENT OF COMMERCE, NATIONAL BUREAU OF STANDARDS.
1962. HYDRAULIC RESEARCH IN THE UNITED STATES. U.S. Dept. Com. Misc. Pub. 245, 86-110.
- WISCHMEIER, W. H.
1962. RAINFALL EROSION POTENTIAL: GEOGRAPHIC AND LOCATION DIFFERENCES OF DISTRIBUTION. Agr. Engin. 43(4): 212-215, illus.
- 1962. STORMS AND SOIL CONSERVATION. Jour. Soil and Water Conserv. 17(2): 55-59, illus.
- and SMITH, D. D.
1962. SOIL-LOSS ESTIMATION AS A TOOL IN SOIL AND WATER MANAGEMENT PLANNING. Internatl. Assoc. Sci. Hydrol. Comm. on Land Erosion 59: 148-159, illus.
- ¹⁰ Small watershed data of locations 19, 20, 24, 26, 28, 32, 35, 40, and 43 used to evaluate erosion-control practice factor P.

UNITED STATES INDEX MAP AND RELATED DATA

[Pages 12 through 17]

**LOCATION OF EXPERIMENTAL AGRICULTURAL WATERSHEDS OF THE AGRICULTURAL RESEARCH SERVICE BY
LAND RESOURCE REGIONS AND
MAJOR LAND RESOURCE AREAS
OF THE UNITED STATES**
(48 conterminous states)

- KEY TO RESEARCH LOCATIONS**
- 37 Current (continuing) studies
 - 43 Discontinued locations
- NOTE:** Location 16 was not used



Map prepared to accompany "Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962."

SOIL CONSERVATION SERVICE

U. S. DEPARTMENT OF AGRICULTURE

LEGEND FOR LAND RESOURCE REGIONS AND MAJOR LAND RESOURCE AREAS (of the 48 states)

A NORTHWESTERN FOREST, FORAGE, AND SPECIALTY CROP REGION

- 1 Northern Pacific Coast Range and Valleys
- 2 Willamette and Puget Sound Valleys
- 3 Olympic and Western Slope Cascade Mountains
- 4 California Coastal Redwood Belt
- 5 Siskiyou-Trinity Area

B NORTHWESTERN WHEAT AND RANGE REGION

- 6 Eastern Slope Cascade Mountains
- 7 Columbia Basin
- 8 Columbia Plateau
- 9 Palouse and Nez-Perce Prairies
- 10 Upper Snake River Lava Plains and Hills
- 11 Snake River Plains
- 12 Lost River Valley and Mountains
- 13 Eastern Idaho Plateaus

C CALIFORNIA SUBTROPICAL FRUIT, TRUCK AND SPECIALTY CROP REGION

- 14 Central California Valleys
- 15 Central California Coast Range
- 16 Central Valley
- 17 Sacramento and San Joaquin Valleys
- 18 Sierra Nevada Foothills
- 19 Southern California Coastal Plain
- 20 Southern California Mountains

D WESTERN RANGE AND IRRIGATED REGION

- 21 Klamath and Shasta Valleys and Basins
- 22 Sierra Nevada Range
- 23 Malheur High Plateau
- 24 Humboldt Area
- 25 Owyhee High Plateau
- 26 Carson Basin and Mountains
- 27 Fallon-Lovelock Area
- 28 Great Salt Lake Area
- 29 Southern Nevada Basin and Range
- 30 Sonoran Basin and Range
- 31 Imperial Valley Mountain Desertic Basins
- 32 Colorado Plateau
- 33 San Jacinto Mountains
- 34 Central Desertic Basins, Mountains and Plateaus
- 35 Colorado and Green Rivers Plateaus
- 36 New Mexico and Arizona Plateaus and Mesas
- 37 San Juan River Valley Mesas and Plateaus
- 38 Black, Hualapai, and Cerbat Mountains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

E ROCKY MOUNTAIN RANGE AND FOREST REGION

- 43 Northern Rocky Mountains
- 44 Northern Rocky Mountain Valleys
- 45 Alpine Meadows and Rockland
- 46 Northern Rocky Mountain Foothills
- 47 Waasatch and Uinta Mountains
- 48 Southern Rocky Mountains
- 49 Southern Rocky Mountain Foothills
- 50 San Luis Valley
- 51 High-Intermountain Valleys

F NORTHERN GREAT PLAINS SPRING WHEAT REGION

- 52 Brown Glaciated Plain
- 53 Dark Brown Glaciated Plain
- 54 Rolling Soft Shale Plain
- 55 Red River Valley of the North
- 56 Red River Valley of the North
- 57 Western Minnesota Forest-Prairie Transition

G WESTERN GREAT PLAINS RANGE AND IRRIGATED REGION

- 58 Northern Rolling High Plains
- 59 Northern Smooth High Plains
- 60 Pierre Shale Plains and Badlands
- 61 Black Hills Foothills
- 62 Black Hills
- 63 Rolling Pierre Shale Plains
- 64 Mixed Sandy and Silty Tableland
- 65 Nebraska Sand Hills
- 66 Dakota High Plateau and Tableland
- 67 Central High Plateau
- 68 Irrigated Upper Platte River Valley
- 69 Upper Arkansas Valley Rolling Plains
- 70 Pecon-Canadian Plains and Valleys

H CENTRAL GREAT PLAINS WINTER WHEAT AND RANGE REGION

- 71 Central Nebraska Loess Hills
- 72 Central High Tableland
- 73 Rolling Plains and Breaks
- 74 Central Kansas Sandstone Hills
- 75 Central Loess Plains
- 76 Bluestem Hills
- 77 Southern High Plains
- 78 Great Bend Rolling Red Plains
- 79 Great Bend Sand Plains
- 80 Central Rolling Red Prairies

I SOUTHWESTERN PLATEAUS AND PLAINS, RANGE AND COTTON REGION

- 81 Edwards Plateau
- 82 Texas Central Basin
- 83 Rio Grande Plain

J SOUTHWESTERN PRAIRIES, COTTON AND FORAGE REGION

- 84 Cross Timbers
- 85 Grand Prairie
- 86 Texas Blackland Prairie
- 87 Texas Claypan Area

K NORTHERN LAKE STATES FOREST AND FORAGE REGION

- 88 Northern Minnesota Swamps and Lakes
- 89 Minnesota Rockland and Minnesota Thin Loess and Till
- 90 Wisconsin and Minnesota Sandy Outwash
- 91 Superior Lake Plain
- 92 Northern Michigan and Wisconsin Stony, Sandy and Rocky Plains and Hills
- 93 Northern Michigan Sandy Drift
- 94 Northern Michigan Sandy Drift

L LAKE STATES FRUIT, TRUCK, AND DAIRY REGION

- 95 Southeastern Wisconsin Drift Plain
- 96 Western Michigan Fruit Belt
- 97 Southwestern Michigan Fruit and Truck Belt
- 98 Southern Michigan Drift Plain
- 99 Erie-Huron Lake Plain
- 100 Erie Fruit and Truck Area
- 101 Ontario-Molokaw Plain

M CENTRAL FEED GRAINS AND LIVESTOCK REGION

- 102 Loess, Till, and Sandy Prairies
- 103 Central Iowa and Minnesota Till Prairies
- 104 Eastern Iowa and Minnesota Till Prairies

(continued)

- 105 Northern Mississippi Valley Loess Hills
- 106 Nebraska and Missouri Deep Loess Hills
- 107 Illinois and Iowa Deep Loess and Drift
- 108 Illinois and Iowa Heavy Till Plain
- 109 Iowa and Missouri Heavy Till Plain
- 110 Northern Illinois and Indiana Heavy Till Plain
- 111 Indiana and Ohio Till Plain
- 112 Cherokee Prairies
- 113 Central Claypan Areas
- 114 Southern Illinois and Indiana Thin Loess and Till Plain
- 115 Central Mississippi Valley Wooded Slopes

EAST AND CENTRAL GENERAL FARMING AND FOREST REGION

- 112 (See M Above)
- 116 Ohio Highland
- 117 Boston Mountains
- 118 Arkansas Valley and Ridges
- 119 Ouachita Mountains
- 120 Kentucky and Indiana Sandstone and Shale Hills and Valleys
- 121 Kentucky Bluegrass
- 122 Highland Rim and Pennyroyal
- 123 Nashville Basin
- 124 Western Allegheny Plateau
- 125 Cumberland Plateau and Mountains
- 126 Central Allegheny Plateau
- 127 Eastern Allegheny Plateau and Mountains
- 128 Southern Appalachian Ridges and Valleys
- 129 Mountain
- 130 Blue Ridge

MISSISSIPPI DELTA COTTON AND FEED GRAINS REGION

- 131 Southern Mississippi Valley Alluvium
- 132 Eastern Arkansas Prairies
- 134 (See P below)

SOUTH ATLANTIC AND GULF SLOPE CASH CROP, FOREST, AND LIVESTOCK REGION

- 86 (See J Above)
- 133 Southern Coastal Plain
- 134 Southern Mississippi Valley Silty Uplands
- 135 Alabama and Mississippi Blackland Prairies
- 136 Southern Piedmont
- 137 Carolina and Georgia Sandhills
- 138 North Central Florida Ridge

NORTHEASTERN FORAGE AND FOREST REGION

- 139 Eastern Ohio Till Plain
- 140 Glaciated Allegheny Plateau and Catskill Mountains
- 141 Tughill Plateau
- 142 St. Lawrence-Champlain Plain
- 143 Northeastern Mountains
- 144 New England and Eastern New York Upland
- 145 Connecticut Valley
- 146 Aroostook Area

NORTHERN ATLANTIC SLOPE TRUCK, FRUIT, AND POULTRY REGION

- 147 Northern Appalachian Ridges and Valleys
- 148 Northern Piedmont
- 149 Northern Coastal Plain

ATLANTIC AND GULF COAST LOWLANDS, FOREST AND TRUCK CROP REGION

- 150 Gulf Coast Prairies
- 151 Gulf Coast Marsh
- 152 Gulf Coast Flatwoods
- 153 Atlantic Coast Flatwoods

FLORIDA SUBTROPICAL FRUIT, TRUCK CROP AND RANGE REGION

- 154 South Central Florida Ridge
- 155 Southern Florida Flatwoods
- 156 Florida Everglades and Associated Areas

Information from SCS, State, and other Offices

Compiled by Morris E. Austin

TABLE 1.—Watersheds, listed by State, where observations were discontinued before January 1, 1962

[Hydrologic data were published in References 1 to 5, given on pages 1 and 2]

State	Locality	Major land resource area <u>1/</u>	Discontinued watershed units		
			Number	Record period <u>2/</u>	Location No.
Alabama	Auburn	P-133	1	1945-47	7
Arkansas	Bentonville	N-116	6	1933-47 (SE)	33
California	Placerville	C-18	1	1936-44 (SE)	50
	Santa Paula	C-19	9	1934-43	51
	Sebastopol	C-14	2	1936-43 (SE)	52
	Vacaville	C-16	1	1936-42	53
	Watsonville	C-14	4	1938-42 (SE)	54
Colorado	Colorado Springs	G-67	4	1938-46 (SE)	46
Georgia	Americus	P-133	4	1938-43 (SE)	9
Idaho	Emmett	B-10, B-11	2	1938-41 (SE)	55
	Moscow	B-9	2	1937-42 (SE)	56
Illinois	Edwardsville	M-113	4	1938-55 (SE)	17
	Elmwood	M-108	12	1945-46	18
Indiana	Lafayette	M-110	20	1940-53 (SE)	19
Iowa	Clarinda	M-107	5	1932-42	20
	Shenandoah	M-107	2	1934-40	22
Kansas	Hays	H-73	2	1932-47	43
Maryland	College Park	S-149	8	1939-54 (SE)	5
	Hagerstown	S-147	2	1938-47 (SE)	6
Michigan	East Lansing	L-98	3	1941-59 (SE)	23
Missouri	Bethany	M-109	8	1932-42 (SE)	24
Mississippi	Oxford	P-133, P-134	1	1957-59 (SE)	62
Nebraska	Hastings	H-71, H-73, H-75	15	1939-54 (SE)	44
			1	1939-61 (SE)	44
New Jersey	Freehold	S-149	3	1938-43 (SE) <u>3/</u>	4
New Mexico	Mexican Springs	D-39	12	1937-42 (SE)	48
	Santa Fe	G-70, E-48	3	1939-48 (SE)	49
New York	Arnot Forest	R-140	2	1941-47	1
	Cohocton	R-140	2	1938-45 (SE)	2
North Carolina	High Point	P-136	3	1934-58 (SE)	11
	Statesville	P-136	2	1933-38	12
Ohio	Coshocton	N-124	4	1937-47 (SE)	26
	Hamilton	M-111	4	1938-44 (SE)	27
	Zanesville	N-124	3	1934-45	28
Oklahoma	Cherokee	H-80	9	1942-60 (SE)	34
	Guthrie	J-84	11	1930-55 (SE) <u>4/</u>	35
	Muskogee	M-112	3	1938-47	36
Oregon	Newberg	A-2	4	1938-42 (SE)	57
South Dakota	Newell	G-60	8	1958-61	65
Texas	Garland	J-86	3	1938-47	38
	Riesel (Waco)	J-86	14	1937-43 (SE)	42
	Spur	J-78	9	1927-45	39
	Tyler	P-133	4	1931-44 (SE)	40
	Vega	H-77	2	1938-43 (SE)	41
Virginia	Chatham (Danville)	P-136	3	1938-48 (SE)	14
	Staunton	N-128	3	1948-56 (SE)	15
Washington	Dayton	B-9	1	1939-42	58
	Pullman <u>5/</u>	B-9	3	1934-40	59
	Pullman <u>6/</u>	B-9	8	1931-47 (SE)	60
Wisconsin	Coon Valley	M-105	2	1934-40	30
	La Crosse	M-105	4	1933-54 <u>7/</u>	32

1/ See location map and legend, pages 12 and 13.2/ (SE) indicates locations where selected runoff events were published in References 3, 4, and/or 5.3/ 1 watershed also operated during 1950-55.4/ Watersheds operated for varying periods of 12 to 23 yr.5/ SCS Demonstration Project.6/ Soil and Water Conservation Experiment Station.7/ 1 watershed discontinued in 1942, 2 in 1947.

TABLE 2.--Experimental agricultural watershed research locations under study for 1962 hydrologic data, by States 1/

State	Locality	Major land resource area <u>2/</u>	Assigned location No.	Watershed units (number)	Events reported (number)	Pages (inclusive)
Arizona.....	Safford.....	D-41, D-42.....	45	4	1	279-284
	Tombstone.....	D-41.....	63	5	3	341-353
Florida.....	Vero Beach.....	U-155.....	8	<u>4/</u> 4	7	25-48
Georgia.....	Watkinsville....	P-136.....	10	1	1	49-51
Illinois.....	Monticello <u>3/</u> ...	M-108.....	61	---	---	---
Iowa.....	Iowa City.....	M-108.....	21	1	1	90,91
Maryland.....	College Park....	S-149.....	5	2	2	20-24
Mississippi.....	Oxford.....	P-133, P-134.....	62	17	20	287-340
Missouri.....	McCredie.....	M-113.....	25	2	2	92-95
Nebraska.....	Hastings.....	H-71, H-73, H-75...	44	<u>1/5/</u> 14	14	245-278
New Mexico.....	Albuquerque.....	D-42.....	47	3	0	285,286
	Santa Rosa.....	G-70.....	64	1	1	354-358
Ohio.....	Coshocton.....	N-124.....	26	35	34	96-168
Oklahoma.....	Cherokee.....	H-80.....	34	6	12	178-195
	Chickasha.....	H-78, H-80, J-84...	69	<u>6/</u> 10	0	396-439
	Stillwater.....	H-80.....	37	3	3	196-201
South Dakota.....	Newell.....	G-60.....	65	<u>1/</u> 7	0	359-372
Texas.....	Riesel (Waco)...	J-86.....	42	20	20	202-244
Vermont.....	North Danville..	R-144.....	67	4	4	383-395
Virginia.....	Blacksburg.....	N-128, S-147, N-130, P-136, S-148	13	14	14	52-89
West Virginia....	Moorefield.....	N-128, S-147.....	66	4	4	373-382
Wisconsin.....	Colby.....	K-90.....	29	1	2	169,170
	Fennimore.....	M-105.....	31	4	4	171-176
	La Crosse.....	M-105.....	32	2	0	177

1/ W-5 watershed at Hastings, Nebr. (44), and 8 of 15 at Newell, S. Dak. (65), have been discontinued.

2/ See location map and legend, pages 12 and 13.

3/ Report deferred on the 2 watersheds.

4/ Includes data on 1 new watershed, W-4.

5/ Includes data on 2 old watersheds reinstated, 22-H and 23-H.

6/ Includes data on 10 new watersheds.

TABLE 3.—List, by States, of additions or revisions made herein to old data published prior to 1962

State	Locality	Location page No.	Page No. <u>1/</u>	Nature of addition or revision <u>2/</u>
Arizona	Safford	45.1-1 to 4-1	<u>279-284</u>	GENERALLY REPRESENTS <u>revised</u> for the 4 watersheds.
		45.2-1,2	281,282	Tabular data and hydrograph for W-II for 8-22-61 selected runoff event published in Ref. 5 <u>revised</u> .
		45.2-1	281	Aug. 1961 Q and maximum volumes published in Ref. 5 <u>revised</u> .
Tombstone	63.2 to 4-1,2	342,343	247,350	Tabular data, hydrographs, and isohyets for W-2, 3, and 4 for 8-17,18-61 selected event, published in Ref. 5, <u>revised</u> .
Florida	Vero Beach	8.1 to 3-1	25,29,34	SLOPES, EROSION, and LAND CAPABILITY for W-1, 2, and 3 <u>revised</u> and GEOLOGY descriptions <u>added</u> .
		8.4-1 to 11	38-48	Data <u>added</u> for new W-4 watershed, beginning in 1959.
Georgia	Watkinsville	10-1-1	49	Maximum discharge for 4-25-45 and volumes, dates for 1, 2, 8 days published in Ref. 2, <u>revised</u> . GENERALLY REPRESENTS <u>revised</u> .
Maryland	College Park	5.6-1	20	Monthly P and Q for 1945, 1946, and 1951-55 <u>revised</u> for W-6. Annual maximum discharge and volumes of runoff for selected time intervals <u>revised</u> for 1951-55.
		5.6-1,5.7-1	20,22	SOILS and GENERALLY REPRESENTS <u>revised</u> and GEOLOGY <u>added</u> .
		5.7-1	22,23	Monthly P for 1945, 1946, and 1953 <u>revised</u> for W-7. Daily air temperatures for 1962 and average monthly air temperatures for 1940-62 <u>added</u> .
Mississippi	Oxtord	62.1-1	287	<u>Revisions</u> : Lower graph should be labeled "Rain gages 7, 8, and 18 Thiessen weighted" not "Rain gage 7" as shown in Ref. 4, p. 62.1-3. On topographic map for W-4 gaging station, stream bed elev. should read 454 ft. above MSL instead of 397 ft. as shown on map in Ref. 4, p. 62.1-4.
		62.3-1	294	<u>Revision</u> ; on topographic map for W-10 gaging station, stream bed elev. should read 397 ft. above MSL instead of 454 ft. as shown on map in Ref. 4, p. 62.3-3.
		62.7-1	308	AREA <u>changed</u> from 511 to 512 acres after 12-31-61 for W-24.
		62.1-1 to 16-1	<u>287-332</u>	SOILS descriptions in Ref. 4 <u>revised</u> and GEOLOGY descriptions <u>added</u> , except for W-30 discontinued 12-31-59, p. 62.9-1.
		62.17-1,18-1	334,338	SOILS descriptions in Ref. 5 <u>revised</u> .
Missouri	McCredie	25.1-1	92	AREA <u>revised</u> from 153 to 154 acres for W-1, on more precise measurements. Previous date <u>revised</u> from 4-4 to 5-5 for 6 hr. volume for 1961. Maximum discharge and columns for 2 hr. to 2 days <u>revised</u> for 1941. Location <u>revised</u> for S-6.
		25.2-1	94	Location of terrace, omitted from map in Ref. 4, is <u>described</u> in NOTES, together with omitted extension of 4 terraces.
Nebraska	Hastings	44.1-1	245	SLOPES, SOILS, EROSION, LAND CAPABILITY, and GENERALLY REPRESENTS <u>revised</u> for W-3, 8, 11, 1-H, 2-H, 3-H, 4-H, 5-H, 6-H, 7-H, 8-H, and 18-H. GEOLOGY descriptions <u>added</u> .
		44.3-1 to 12-1	<u>249-269</u>	
		44.22-1	271	
		44.26-1,27-1	<u>273-278</u>	Watersheds 22-H and 23-H reactivated and descriptions <u>updated</u> .
New Mexico	Santa Rosa	64.1-3,64.1-6	354	Tabular data and hydrograph for W-1 for 8-16,17-57 selected runoff event in Ref. 4 <u>revised</u> .
Ohio	Coshocton	26.1,10,11,12,13,15,16,17,18,20,29,30-1	<u>96,109-115,119-125,129-145-147</u>	LOCATION (drainage basin, Tuscarawas River) and GENERALLY REPRESENTS <u>revised</u> for watersheds 102, 123, 115, 127, 109, 110, 113, 118, 111, 106, 183, and 196. GEOLOGY descriptions <u>added</u> .
		26.3,4,5,7,8,14,19,21,23,26,27,28,31,32,33,34,35,36,37-1	<u>98-107,117,127,131,133,139-143,150-163</u>	GENERALLY REPRESENTS <u>revised</u> for watersheds 129, 135, 130, 131, 132, 103, 121, 188, 185, 172, 169, 177, 10, 5, 92, 94, 95, 97, and 994. GEOLOGY descriptions <u>added</u> .
				26.8-2

1/ Underlined page series (example 279-284) include some pages which do not have additions or revisions.

2/ References 1, 2, and 3 generally cover years 1924-55; Ref. 4, 1956-59; and Ref. 5, 1960-61.

TABLE 3.—List, by States, of additions or revisions made herein to old data published prior to 1962—Continued

State	Locality	Location page No.	Page No.	Nature of addition or revision ^{1/}
Ohio	Coshocton Continued....	26.24-1,26.25-1	135,137	LOCATION (drainage basin, Tuscarawas River) and GENERALLY REPRESENTS <u>revised</u> and CEOLOCY <u>added</u> . For Watershed 187, monthly P for Nov. and Dec. for 1951 were transposed in initial publication (Ref. 1), <u>revised</u> values are shown; P and Q for June 1961 <u>reduced</u> in magnitude. For Watershed 192 monthly Q for April 1940 and annual total in Ref. 1 are <u>revised</u> upward.
		26.32-5	152	Graphic scale for watersheds 5 and 92 published in Ref. 4 was incorrect, map page <u>revised</u> .
		26.38-1,26.39-1	165,167	CEOLOCY <u>repeated</u> for watersheds 174 and 194.
Oklahoma	Chickasha	69.1,2,4,7,8,9 69.10,11,12,13	396-423 424-439	Data <u>begins</u> Oct. 1961 on 4 main stem reaches of Washita River and 2 subwatersheds; in latter part of 1962 on 4 other subareas.
South Dakota	Newell	65.14-1	369	Monthly Q totals for April and May 1959 in Ref. 4 <u>revised</u> .
		65.15-1	371	Monthly Q total for July 1958 <u>revised</u> to 1.242 in. from 1.240, in Ref. 4 and 5. Rounded annual total of 2.29 in. <u>unchanged</u> . Daily P of .45 in. shown in Ref. 5 for 8-23-60 should be <u>deleted</u> . Monthly and annual totals <u>remain the same</u> .
Vermont	North Danville	67.1-1,67.2-1	383,386	CEOLOCY description <u>added</u> for W-1 and W-2.
Virginia	Blacksburg	13.6-1 to 13.15-1	59 65 62 69 72 75 78 81 84,87	<u>Revised</u> explanations of errors in footnote descriptions of Normal P in <u>Ref. 4</u> : For Claytor Dam, Radford, Va. (Thorne Creek, 13.6); for Blacksburg, Va. (Brush Creek, 13.8); and in <u>Ref. 5</u> : For Blacksburg, Va. (Crab Creek, 13.7); Danville, Va. (Powells Creek, 13.9); Halifax, Va. (Little Winns Creek, 13.10); Emporia, Va. (Rocky Run Branch, 13.11); Culpeper, Va. (Pony Mountain Branch, 13.12); Luray, Va. (Chub Run, 13.13); Louisa, Va. (Fosters Creek, 13.14), and Bedford, Va. (Chestnut Branch, 13.15).
West Virginia	Moorefield	66.1-1,66.1-3	374,373	AREA, SOILS, EROSION, INSTRUMENTATION, and WATERSHED CONDITIONS and topographic map from Ref. 4 <u>revised</u> for W-1 and CEOLOCY <u>added</u> .
		66.2-1,66.2-3	377,376	AREA, SOILS, SURFACE DRAINAGE, INSTRUMENTATION, WATERSHED CONDITIONS and topographic map from Ref. 4 <u>revised</u> for W-2 and CEOLOCY <u>added</u> .
		66.4-1,66.5-1	379,381	SOILS, SURFACE DRAINAGE, INSTRUMENTATION, and WATERSHED CONDITIONS from Ref. 4 <u>revised</u> for watersheds W-4 and W-5 and CEOLOCY <u>added</u> .
Wisconsin	LaCrosse	32.4-1	177	AREA was erroneously reported as 3.06 ac. on p. 225 of Ref. 5. Correct area <u>remains</u> 2.95 ac.

^{1/} References 1, 2, and 3 generally cover years 1924-55; Ref. 4, 1956-59; and Ref. 5, 1960-61.



**WATERSHED DATA BY LOCATION NUMBER
AND
DECIMAL PAGING**

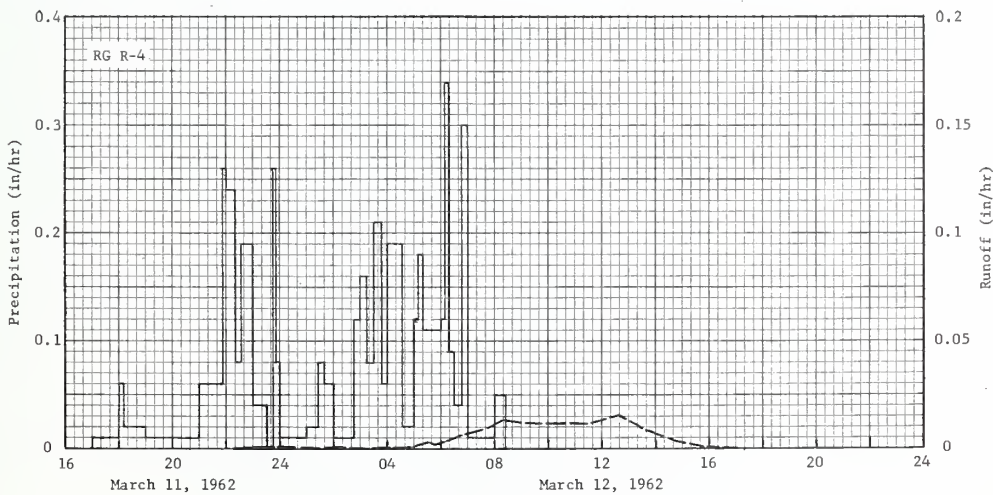
[5.6-1 TO 69.13-4, A TOTAL OF 420 DATA SHEETS]

For location by States and Land Resource Areas
and Regions, see U.S. Index Map, page 12.

MONTHLY PRECIPITATION AND RUNOFF (inches)						COLLEGE PARK, MARYLAND WATERSHED W-6 AREA— 3.53 ACRES								0506		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{1/} Q	1.84 .01	4.00 .01	4.05 .10	2.50 T	3.17 .03	3.24 .02	1.75 T	.09 .00	3.32 .01	3.21 .01	6.15 .02	2.90 T	36.22 .21			
STA AV ^{2/} (40-62) Q	2.79 .15	2.58 .08	3.67 .06	3.19 .03	3.87 .06	3.96 .14	3.88 .18	4.58 .25	3.23 .12	2.96 .13	3.42 .25	3.02 .13	41.15 1.58			
MEAN P ^{3/} 74 YR	3.18	2.95	3.59	3.51	3.90	3.86	4.04	6.45	3.40	2.89	2.73	3.03	41.53			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962	5-23	.07	5-23	.02	3-12	.03	3-12	.07	3-12	.09	3-11	.09	3-11	.09	3-6	.10
MAXIMUMS FOR PERIOD OF RECORD																
1940 to 1962	11-8 1943	<u>4/3.09</u>	7-17 1945	.95	11-8 1943	1.54	11-8 1943	1.90	11-8 1943	1.93	11-8 1943	1.93	11-8 1943	1.93	11-2 1943	1.97
NOTES: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Pasture did not receive usual fertilization in spring; moderately grazed from Apr. to Aug. by 11 Angus steers; pasture mowed to 3 in. for control of excess growth and weeds June 4 and July 30; animals removed because forage ceased growing and turned brown by Aug. 20; bluegrass recovered and was 5 to 10 in. high by Oct. 29, but had no fall grazing. 1/ Precipitation from rain gage R-4. Water equivalent of snowfall, inches: Jan. (.04), Feb. (1.68), Mar. (1.23), Nov. (.50) and Dec. (1.51). 2/ Precipitation and runoff records began Sept. 1940; discontinued Jan. 1, 1963. 3/ Mean P based on 74-yr (1889-1962) U. S. Weather Bureau record period at College Park, Md. 4/ Previous maximum discharge, listed for 1954, in Maximum Annual Flows from Small Agricultural Watersheds in the United States, June 1958, has been revised to .36 in/hr (from 3.85) by deducting estimated outside inflow to watershed. See revised table below.																
MONTHLY PRECIPITATION AND RUNOFF (inches): (Revised) Changed values <u>underlined</u> .																
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1945 P Q	2.99 1.45	2.89 .07	1.12 .01	2.99 .03	4.69 .28	5.41 .80	13.09 2.75	2.84 .45	4.60 .16	1.23 T	4.65 .32	<u>5.59</u> .49	<u>52.09</u> 6.81			
1946 P Q	1.65 T	2.74 .01	1.97 T	1.35 .00	5.89 .02	3.49 .07	5.07 .54	2.71 .03	3.05 .04	<u>2.42</u> T	1.32 .00	2.00 .01	<u>33.66</u> .72			
1951 P Q	2.63 .02	2.71 .10	2.99 .01	4.04 .12	2.11 T	10.51 .99	1.88 .02	.72 T	2.69 .07	1.76 T	5.08 .08	4.51 .79	41.63 <u>2.20</u>			
1952 P Q	4.58 T	1.91 .00	4.31 T	7.68 .03	6.93 .05	3.32 T	3.48 .04	6.05 .12	5.00 .94	.55 T	7.34 .80	3.25 .01	54.40 <u>1.99</u>			
1953 P Q	3.73 .04	2.49 T	7.57 .75	4.81 .01	7.24 .24	1.84 T	2.31 T	3.17 .12	4.19 .05	2.67 .01	<u>1.97</u> T	3.54 .05	<u>45.53</u> <u>1.27</u>			
1954 P Q	2.14 T	.88 .00	3.76 T	3.26 .01	2.34 T	3.21 .17	2.35 .11	5.93 .04	1.48 T	3.91 .01	2.08 T	3.11 .00	34.45 <u>.34</u>			
1955 P Q	.28 .00	3.28 .16	3.90 T	3.04 T	1.91 T	4.99 .05	.37 .00	14.59 .69	1.10 T	5.28 .20	1.68 T	.22 .00	40.64 <u>1.10</u>			
ANNUAL MAXIMUM DISCHARGES (in/hr) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (in.) FOR SELECTED TIME INTERVALS: (Revised) <u>5/</u>																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1951	6-3	<u>.87</u>	6-3	<u>.56</u>	6-3	<u>.67</u>	6-3	<u>.68</u>	6-3	<u>.68</u>	12-20	<u>.78</u>	12-20	.78	6-3	<u>.82</u>
1952	9-1	<u>1.23</u>	9-1	<u>.73</u>	9-1	<u>.88</u>	9-1	<u>.94</u>	8-31	<u>.94</u>	8-31	<u>.94</u>	8-31	<u>.94</u>	8-31	<u>.94</u>
1953	8-8	<u>.33</u>	3-25	<u>.17</u>	3-25	<u>.28</u>	3-25	<u>.48</u>	3-25	<u>.51</u>	3-25	<u>.51</u>	3-24	<u>.55</u>	3-18	<u>.55</u>
1954	6-15	<u>.36</u>	6-15	<u>.16</u>	6-15	<u>.16</u>	6-15	<u>.16</u>	6-15	<u>.16</u>	6-15	<u>.16</u>	6-15	<u>.16</u>	6-15	<u>.16</u>
1955	8-18	<u>6/24</u>	8-13	<u>.14</u>	8-13	<u>.21</u>	8-13	<u>.24</u>	8-12	<u>.42</u>	8-12	<u>.49</u>	8-12	<u>.49</u>	8-12	<u>.61</u>
<u>5/</u> Changed values underlined. <u>6/</u> Peak rate also equalled on 10-14-55.																
SOILS: (Revision) Coastal plain soils; derived from unconsolidated silty, sandy, and gravelly materials or deposits in which some compact layers have developed in certain subsoils, the position of which largely determines the degree of restriction, if any, in the profile drainage and water storage capacity of specific soils.																
Soil	Per- cent of area	Avg. depth (in.)	Topsoil			Subsoil			Substratum		Internal drainage					
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability								
Sassafras sandy loam	48	10	Weak <u>fine</u> <u>granular</u>	Moderately rapid	Moderate medium subangular blocky	Moderate	30	Rapid	Medium							
Chillum loam	32	9	Weak <u>fine</u> <u>granular</u>	Moderate	Moderate medium subangular blocky	Moderate	28	Moderately slow	Medium							
Beltsville silt loam	14	6	Weak <u>fine</u> <u>granular</u>	Moderate	Moderate medium subangular blocky	Moderately slow	18	Slow	Slow							
Sassafras loam (Clayey substratum)	6	20	Weak <u>fine</u> <u>granular</u>	Moderate	Moderate medium subangular blocky	Moderate	46	Moderate	Medium							
GEOLOGY: Watershed lies near the westward extent of the Coastal Plain sediments of Cretaceous age which dip approximately 50 feet to the mile southeast. Alluvial fan deposits comprise 100 percent of the surface area. For a general description of the surface and underlying geologic formations and their hydrologic properties, see lower table on page 5.7-1 of this volume, which is deemed to apply to this watershed as well as to the adjacent W-7 watershed.																
GENERALLY REPRESENTS: (Revision) Northern Coastal Plain problem area (A1) redesignated Northern Coastal Plain land resource area (S-149) in southern New Jersey, northern Delaware, eastern Maryland and eastern Virginia.																

1962			SELECTED RUNOFF EVENTS				COLLEGE PARK, MARYLAND				WATERSHED W-6		0506	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)				
Event of March 11-12, 1962														
	RG R-4		3-11	RG	R-4		3-11	2216	.0000	.0000				
2-19	.88L	.0018		1700	.00	.00		2300	.0002	.0001				
2-21	.04	.0000		1800	.01	.01		2400	.0002	.0002				
2-22	.04	.0000		1810	.06	.02	3-12	0140	.0000	.0004				
2-23	.07	.0000		1900	.02	.04		0200	.0002	.0004				
2-24	.13	.0000		2000	.01	.05		0310	.0000	.0005				
2-26	1.14	.0048		2100	.01	.06		0400	.0002	.0006				
2-27	.52	.0019		2153	.06	.11		0500	.0006	.0010				
2-28	.12	.0000		2200	.26	.14		0512	.0021	.0012				
3-5	.17S	.0000		2220	.24	.22		0530	.0029	.0020				
3-6	.91S	.0019		2235	.08	.24		0544	.0021	.0026				
3-7	.15S	.0000		2300	.19	.32		0620	.0040	.0044				
3-9	.14	.0003		2330	.04	.34		0700	.0066	.0079				
3-10	.00	.0000		2345	.00	.34		0746	.0097	.0142				
				2352	.26	.37		0820	.0132	.0207				
				2400	.08	.38		0910	.0114	.0309				
			3-12	0100	.01	.39		1130	.0114	.0575				
				0125	.02	.40		1240	.0151	.0730				
				0140	.08	.42		1302	.0132	.0782				
				0200	.06	.44		1330	.0097	.0835				
				0245	.01	.45		1350	.0081	.0865				
				0300	.12	.48		1446	.0029	.0916				
				0315	.16	.52		1548	.0006	.0934				
				0330	.08	.54		1700	.0000	.0938				
				0350	.21	.61								
				0400	.06	.62								
				0435	.19	.73								
				0500	.02	.74								
				0510	.12	.76								
				0520	.18	.79								
				0600	.11	.86								
				0610	.12	.88								
				0617	.34	.92								
				0630	.09	.94								
				0646	.04	.95								
				0700	.30	1.02								
				0800	.01	1.03								
				0825	.05	1.05								

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.56. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 5.6-6.

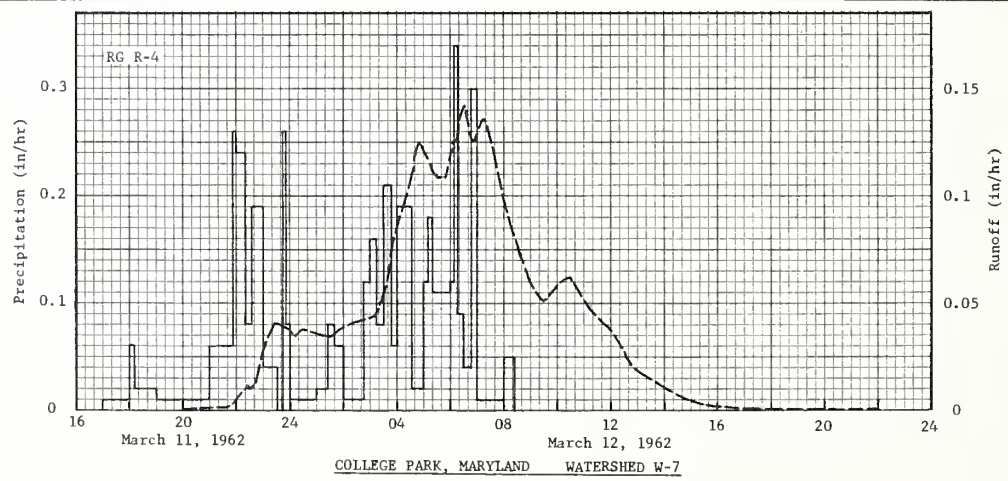


COLLEGE PARK, MARYLAND WATERSHED W-6

MONTHLY PRECIPITATION AND RUNOFF (inches)						COLLEGE PARK, MARYLAND WATERSHED W-7 0507										
						AREA— 3.52 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ¹ / Q	1.84 .01	4.00 .14	4.05 .99	2.50 .01	3.17 .03	3.24 .03	1.75 .01	.09 .00	3.32 .01	3.21 .02	6.15 .17	2.90 .01	36.22 1.43			
STA AV ² /P (40-62) Q	2.79 .10	2.58 .12	3.67 .23	3.19 .11	3.87 .05	3.96 .12	3.88 .14	4.58 .34	3.23 .15	2.96 .16	3.42 .27	3.02 .16	41.15 1.95			
MEAN P ³ / 74 YR	3.18	2.95	3.59	3.51	3.90	3.86	4.04	4.45	3.40	2.89	2.73	3.03	41.53			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	3-12 .14	3-12 .13	3-12 .25	3-12 .61	3-11 .87	3-11 .98	3-11 .98	3-11 .98	3-11 .98	3-6 .99						
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962	8-10 1942	2.42	10-15 1942	.98	10-15 1942	1.54	11-8 1943	1.92	11-8 1943	1.97	11-8 1943	1.97	10-15 1942	1.99	10-14 1942	2.05
NOTES: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Pasture did not receive usual fertilization in spring; moderately grazed from Apr. to Aug. by 11 Angus steers; pasture mowed to 3 in. for control of excess growth and weeds June 4 and July 30; animals removed because forage ceased growing and turned brown by Aug. 20; bluegrass recovered and was 5 to 10 in. high by Oct. 29, but had no fall grazing. 1/ Precipitation from rain gage R-4. Water equivalent of snowfall, in inches: Jan. (.04), Feb. (1.68), Mar. (1.23), Nov. (.50), and Dec. (1.51). 2/ Precipitation and runoff records began Sept. 1940; discontinued Jan. 1, 1963. 3/ Mean P based on 74-yr (1889-1962) U. S. Weather Bureau record period at College Park, Maryland.																
MONTHLY PRECIPITATION AND RUNOFF (inches): (Revised items <u>underlined></u>).																
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1945	2.99	2.89	1.12	2.99	4.69	5.41	13.09	2.84	4.60	1.23	4.65	<u>5.59</u>	<u>52.09</u>			
Q	.63	.00	T	T	.08	.34	2.06	.45	.05	.00	.19	.73	4.53			
1946 P	1.65	2.74	1.97	1.35	5.89	3.49	5.07	2.71	3.05	<u>2.42</u>	1.32	2.00	<u>33.66</u>			
Q	T	T	T	.00	T	.01	.46	.01	.01	T	.00	T	.49			
1953 P	3.73	2.49	7.57	4.81	7.24	1.84	2.31	3.17	4.19	2.67	<u>1.97</u>	3.54	<u>45.53</u>			
Q	.22	T	1.75	.03	.40	T	T	.13	.01	.01	.01	.04	2.60			
SOILS: (Revision) Coastal plain soils; derived from unconsolidated silty, sandy, and gravelly materials or deposits in which compact layers have generally developed at varying depths in the subsoil, the position of which largely determines the degree of restriction, if any, in the profile drainage and lowers the water storage capacity of the profile.																
Soil	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Beltsville silt loam	72	8	Weak <u>fine granular</u>	Moderate	Moderate medium subangular blocky	Moderately slow	19	Slow	Slow							
<u>Sassafras loam</u> (clayey substratum)	16	28	Weak <u>fine granular</u>	Moderate	Moderate medium subangular blocky	Moderate	48+	Moderate	Medium							
Leonardtown silt loam	6	6	Weak <u>fine granular</u>	Moderate	Moderate medium platy	Slow	15	Very slow	Very slow							
Croom gravelly loam	6	8	Weak <u>fine granular</u>	Moderate	- -	-	8	Moderate	Medium							
GEOLOGY: Watershed lies near the westward extent of the Coastal Plain sediments which dip approximately 50 feet to the mile southeast. Alluvial fan deposits comprise 100 percent of the surface area.																
System	Formation	Thickness in water- shed (ft) ²	Description, structure, and hydrologic properties of formations													
Cretaceous	Patapsco alluvial fan deposit	35 - 45	Gravel, sand, silt, and clay, poorly sorted. Gravel is mostly hard, subround quartz and quartzite, with some rounded sandstone. Some of sandstone is friable. Maximum diameter of gravel is about 18 inches. Sand occurs with the gravel and in beds and lenses and clay occurs mostly as lenses, as much as 5 feet thick, and 1000 feet in diameter. Formation generally permeable; some perched water tables may exist on top of clay lenses.													
Cretaceous	Unconformity Patuxent (not exposed)	15 - 20	Gravel, sand, silt, and clay. Gravel well sorted, round to subround, quartz and quartzites; sandstone rare. Sand light brown, subangular quartz; silt and clay in lenses, mixed with sand and gravel, generally white kaolinite. Upper part of formation cemented with iron, 2 feet or less thick; thicker sections in gravel. Formations generally permeable; iron cemented layers and clay lenses may restrict downward percolation of water.													
Early Paleozoic	Unconformity Wissahickon/ Sykesville ¹ / (not exposed)	2 - 5 5 - 40 Unknown	Zone 1: Residual clay; sticky, red-brown, micaceous; impervious to water. Zone 2: Saprolite; spongy, porous, reddish material from which much of the feldspars in the original mica-schist have been altered to clay and removed; saprolite retains the original structure the parent rock; upper contact sharp, grades downward into Zone 3. Formation is porous; water generally concentrated at contact with unweathered rock. Zone 3: Unweathered rock; mica-schist, with veins, stringers, and nodules of quartz. Formation is impervious, even along fractures.													
Source of data: After C. F. Withington, U. S. Geological Survey, personal communication (1965). ¹ / Undifferentiated. ² / Approximate thickness.																
GENERALLY REPRESENTS: (Revision) Northern Coastal Plain problem area (A1) redesignated Northern Coastal Plain land resource area (S-149) in southern New Jersey, northern Delaware, eastern Maryland and eastern Virginia.																

1962 SELECTED RUNOFF EVENTS			COLLEGE PARK, MARYLAND				WATERSHED W-7				0507
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of March 11-12, 1962											
2-19	RG R-4 .88L	.0028	3-11	RG	R-4	.00	3-11	2000	.0000	.0000	
2-21	.04	.0000		1700	.00	.00		2040	.0013	.0004	
2-22	.04	.0000		1800	.01	.01		2140	.0021	.0021	
2-23	.07	.0000		1810	.06	.02		2154	.0030	.0027	
				1900	.02	.04		2204	.0066	.0035	
2-24	.13	.0000		2000	.01	.05		2222	.0115	.0062	
2-26	1.14	.1115		2100	.01	.06		2225	.0098	.0068	
2-27	.52	.0245		2153	.06	.11		2242	.0133	.0100	
2-28	.12	.0000		2200	.26	.14		2259	.0265	.0157	
3-5	.17S	.0000		2220	.24	.22		2310	.0346	.0213	
3-6	.91S	.0055		2235	.08	.24		2326	.0408	.0313	
3-7	.15S	.0000		2300	.19	.32	3-12	2400	.0377	.0536	
3-9	.14	T		2330	.04	.34		0012	.0346	.0608	
3-10	.00	.0000		2345	.00	.34		0030	.0377	.0716	
				2352	.26	.37		0128	.0291	.1039	
			3-12	2400	.08	.38		0151	.0318	.1156	
				0100	.01	.39		0220	.0408	.1331	
				0125	.02	.40		0312	.0439	.1698	
				0140	.08	.42		0338	.0583	.1920	
				0200	.06	.44		0356	.0834	.2132	
				0245	.01	.45		0419	.0977	.2480	
				0300	.12	.48		0438	.114	.2815	
				0315	.16	.52		0440	.119	.2854	
				0330	.08	.54		0450	.125	.3057	
				0350	.21	.61		0530	.1082	.3834	
				0400	.06	.62		0548	.1082	.4159	
				0435	.19	.73		0600	.119	.4386	
				0500	.02	.74		0616	.125	.4711	
				0510	.12	.76		0620	.136	.4798	
				0520	.18	.79		0634	.142	.5123	
				0600	.11	.86		0654	.125	.5568	
				0610	.12	.88		0716	.136	.6046	
				0617	.34	.92		0732	.125	.6394	
				0630	.09	.94		0800	.0977	.6914	
				0646	.04	.95		0838	.0701	.7445	
				0700	.30	1.02		0900	.0583	.7680	
				0800	.01	1.03		0930	.0510	.7954	
				0825	.05	1.05		1000	.0583	.8227	
								1028	.0620	.8507	
								1114	.0473	.8926	
								1200	.0377	.9252	
								1224	.0291	.9386	
								1256	.0193	.9515	
								1405	.0098	.9682	
								1506	.0040	.9752	
								1540	.0021	.9770	
								1640	.0006	.9783	
								2200	.0000	.9799	

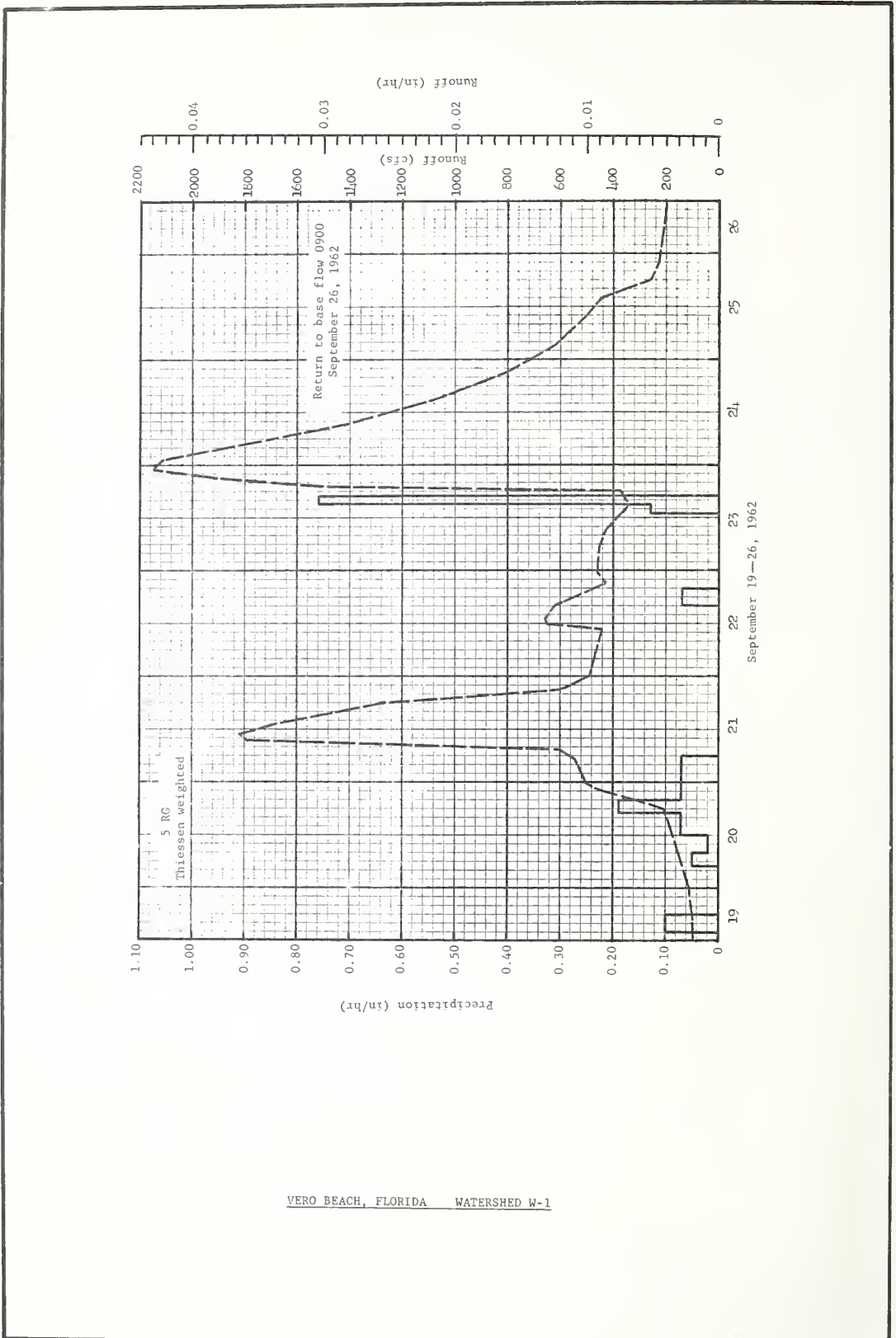
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.549. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 5.6-6.



MONTHLY PRECIPITATION AND RUNOFF ^{1/2/} (inches)						VERO BEACH, FLORIDA (NORTH, MAIN & SOUTH CANALS) WATERSHED W-1 8.1 AREA—49,915 ACRES (78.0 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P	.55	.84	2.53	2.78	1.81	7.79	5.99	7.20	8.16	.49	3.14	.48	41.76			
Q	1.01	.77	1.22	1.17	.94	2.04	1.93	2.54	4.16	1.51	1.98	1.28	20.55			
STA AV ^{3/} P	2.32	2.42	3.87	4.20	3.62	5.95	5.54	5.90	8.10	6.12	2.24	1.19	51.47			
(51-62) Q	1.58	1.21	1.86	1.56	1.29	2.24	1.86	1.85	3.85	4.05	1.62	1.16	25.95			
MEAN P ^{4/} 62 YR	2.35	2.35	3.04	3.40	4.28	5.87	5.52	5.67	7.87	7.34	2.76	2.01	52.46			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962	9-25	.04	9-25	.04	9-25	.08	9-25	.20	9-25	.37	9-24	.58	9-23	.97	9-20	2.14
MAXIMUMS FOR PERIOD OF RECORD																
19 51 to	9-25	.105	9-25	.105	9-25	.205	9-25	.612	9-25	1.22	9-25	2.37	9-23	4.51	9-22	15.31
19 62	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960
Notes: Quality of records: P, excellent; Q, good to poor. 1/ All monthly precipitation is Thiessen weighted averages of 5 rain gages. 2/ Includes artesian irrigation inflow during winter drought periods. 3/ Precipitation and runoff (U. S. Geological Survey) records began Apr. 1951; part year 1951 monthly records included. 4/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Ft. Pierce, Fla. Monthly records for July 1933 and for Feb. 1950 and 1951 were estimated from nearby station.																
SLOPES: 100% is in 0-2% class.																
SOILS: (Revision) Predominantly fine sand surface layers which have above average infiltration and low runoff until saturated by rising water table during storms. Generally underlain at varying depths by organic hardpan or clay or marl of variable thicknesses.																
Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage							
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability								
Leon-Immokalee fine sand	50	4	Structureless fine single grain	Rapid	Structureless (hardpan)	Moderate	36	Rapid	Medium							
Felda-Manatee loamy fine sand	26	8	Weak fine granular	Moderate	Weak fine granular (massive when wet)	Slow	30	Slow	Slow							
Pompano fine sand	16	2	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow							
Adamsville fine sand	5	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Moderate	Medium							
Sunniland-Brad-enton fine sand	2	4	Structureless fine single grain	Rapid	Weak subangular blocky	Moderate	36 to 84	Slow	Medium							
St.Lucie-Pomello fine sand	1	4	Structureless fine single grain	Very rapid	Structureless fine single grain	Very rapid	60	Very rapid	Very rapid							
EROSION: 1 - 100% (Little or no erosion).																
LAND CAPABILITY:																
			Class	I	II	III	IV									
			Percent of area	0	0	20	80									
GEOLOGY: Pleistocene (Pamlico) and Recent sediments, which consist chiefly of gray to brown medium grained quartzitic sand, cover a predominate portion of the watershed. The shallow Pleistocene sand and shell beds of the Pamlico, Anastasia, and Fort Thompson Formations constitute a fairly permeable upper aquifer that contains nonartesian ground water, except under local conditions where fine grained sand or clay lenses cause artesian conditions. Irrigation water is derived chiefly from deep wells that penetrate the Floridian aquifer at approximately 350 feet below the surface. The aquifer is made up of the following formations in their ascending order: Avon Park and Lake City Limestone (Middle Eocene), Ocala Limestone (Upper Eocene), Suwannee Limestone (Oligocene), Tampa Limestone and permeable portions at the bottom of the Hawthorne Formation that are in hydrologic contact with the rest of the aquifer (Miocene). It is suspected that little if any recharge to the lower aquifer occurs in the vicinity of the watershed. Source of Data: G. G. Parker, et al., Water Resources of Southeastern Florida, U. S. Geological Survey Water Supply Paper 1255, Washington, D. C., 1955.																
GENERALLY REPRESENTS: (Revision) Flatwoods of Coastal Plain problem area (A2) changed to Southern Florida Flatwoods land resource area (U-155).																

1962 SELECTED RUNOFF EVENTS			VERO BEACH, FLORIDA				WATERSHED W-1			8.1	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches) _{1/}	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 19-26, 1962											
5 RG AVG <u>1/</u>											
9-19	<u>2/</u> .00	<u>3/</u> .0283	9-19	1400	.00	.00	9-19	1600	92.8	.0000	
				1800	.10	.40		2400	109	.0160	
9-20			9-20	0500	.00	.40	9-20	1800	208.4	.0727	
				0800	.05	.55		2400	507	.1154	
				1200	.02	.63	9-21	0500	546	.1677	
				1700	.07	.98		0730	601	.1962	
9-21			9-21	2000	.19	1.55	0930	1791	.2437		
				0600	.07	2.25	1100	1815	.2974		
9-22			9-22	1600	.00	2.25	1330	1678	.3841		
				2000	.07	2.53	1800	1263	.5156		
9-23			9-23	1300	.00	2.53	2100	600	.5711		
				1500	.13	2.79	2400	490	.6036		
Watershed conditions: Approximate land use: (from SCS) 40% in citrus groves (85% of groves irrigated from canals and artesian wells) 32% in improved pasture 22% unimproved range and forest 6% urban development			1700	.76	4.31	9-22	1030	442	.7008		
							1200	652	.7171		
									1300	655	.7301
									1600	622	.7682
									2100	429	.8204
									2330	457	.8424
								9-23	0530	452	.8966
									0900	433	.9274
									1500	340	.9734
									1800	372	.9947
									1900	1521	1.0135
									2100	1925	1.0975
						2300	2150	1.1785			
						9-24	0100	2113	1.2632		
							0900	1436	1.5453		
							1500	1074	1.6949		
						9-25	2100	804	1.8068		
							0300	628	1.8922		
							1400	446	2.0096		
							1800	263	2.0364		
						9-26	0900	<u>4/</u> 200	2.1067		

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00001987. FOR MAP OF WATERSHED SEE PAGE 8.1-7 IN SELECTED RUN-OFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960. 1/ALL PRECIPITATION THRESHOLD WEIGHTED, USING 5 RAIN GAGES. 2/PRIOR TO 1400. 3/RUNOFF PRIOR TO 1600 ON SEPT. 19, 1962. FOR 30-DAY ANTECEDENT P AND Q SEE PRECEDING TABLES. 4/RETURN TO NORMAL BASE FLOW.



VERO BEACH, FLORIDA WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-2 AREA—63,170 ACRES (98.7 SQ. MILES)							8.2	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P	.53	.40	5.72	2.17	5.80	11.25	7.74	9.27	6.49	1.21	2.51	.36	51.25
	Q	.02	.02	.03	.08	.10	1.58	5.98	2.94	6.20	.58	.13	.09	17.75
STA AV ^{2/} (55-62)	P	1.98	2.00	4.27	2.78	4.99	7.70	6.20	6.20	7.26	4.29	1.16	1.54	50.46
	Q	.50	.54	1.36	.29	.49	2.25	1.99	2.05	3.93	2.66	.35	.17	16.56
MEAN P ^{3/} 14 YR		1.61	1.72	2.79	3.40	3.95	7.10	6.06	6.08	7.18	4.92	1.70	1.45	47.96

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	7-14	.021	7-14	.021	7-14	.042	7-14	.125	7-14	.248	7-14	.48	7-14	.92	7-12	2.61

MAXIMUMS FOR PERIOD OF RECORD

19 56 to 19 62	10-16 1956	.11	10-16 1956	.11	10-16 1956	.21	10-16 1956	.62	10-16 1956	1.25	10-16 1956	2.28	10-16 1956	4.16	10-16 1956	8.05
----------------	------------	-----	------------	-----	------------	-----	------------	-----	------------	------	------------	------	------------	------	------------	------

Notes: Quality of records: P, excellent; Q, good. 1/ All precipitation Thiessen weighted, using 7 rain gages. 2/ Precipitation and runoff (U. S. Geological Survey) records began July 1955. 3/ Mean P based on 44-yr (1919-62) record period at Okeechobee Hurricane Gate 6, Florida.

SLOPES: 100% is in 0-2% class.

SOILS: (Revision) Predominantly fine sand surface which is very friable and has above average infiltration rates and little surface runoff until it becomes saturated. Generally underlain at varying depths by organic hardpan or clay or marl layers of variable thickness and hardness.

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Leon-Immokalee fine sand	65	4	Structureless fine single grain	Rapid	Structureless (hardpan)	Moderate	36	Rapid	Medium
Plummer fine sand	8	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	40	Slow	Slow
Felda-Manatee loamy fine sand	6	8	Weak fine granular	Moderate	Weak fine granular (massive when wet)	Slow	30	Slow	Slow
Sunniland-Brad- enton fine sand	4	4	Structureless fine single grain	Rapid	Weak subangular blocky	Moderate	36-84	Slow	Medium
Pompano-Char- lotte fine sand	3	2	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow
Rutlege fine sand	3	8	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	45	Slow	Slow
Fresh water swamp & marsh	3	3	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	40	Slow	Slow
St. Lucie-Pomello fine sand	2	4	Structureless fine single grain	Very rapid	Structureless fine single grain	Very rapid	60	Very rapid	Very rapid
Everglades peat	2	12	Fibrous	Rapid	Structureless	Rapid	48	Slow	Slow
Adamsville fine sand	2	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Moderate	Medium
Delray fine sand	1	12	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow
Parkwood fine sand	1	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	30	Slow	Slow

EROSION: 1 - 100% (Little or no erosion with small areas of +, deposition).

LAND CAPABILITY:

Class	I	II	III	IV
Percent of area	0	3	9	88

GEOLOGY: Undifferentiated marine terrace sands of Pleistocene age are found as surface deposits. Generally the sands are white to gray in the upper part, and grade into tan, orange and red at depth. They are sub-rounded to sharp, non-frosted detrital sediments characteristic of marine deposits. In the field it is impossible to separate these terrace sands except on the basis of their respective altitudes. The strand line of the Penholoway Terrace is about 68 feet, m.s.l., and that of the Talbot occurs at about 40 feet, m.s.l. Inasmuch as the upper sub-watershed W-3 composes an integral part of area, it is discussed as part of the whole 98.7 square mile watershed. The Penholoway Terrace, which covers approximately 40 per cent of the area, lies in the northeastern part of the watershed. It forms a broad, flat, little dissected plain that slopes gently to the south where it is abruptly broken by the wave cut cliff of the lower Talbot surface. Approximately 15 per cent of the watershed is occupied by this marked 20 to 25 ft. step-like feature. The Talbot Terrace occupies the remaining 45 per cent of the watershed area. It is remarkably flat; drainage is sluggish; sloughs, shallow ponds, and swamps are abundant. The outer limit of the Talbot Terrace is generally indefinitely marked along the lower section of Taylor Creek by the 22 ft. strand line of the old Pamlico sea. Source of Data: G. G. Parker and N. D. Hay, Geology and Ground Water of the Kissimmee River - Lake Okeechobee Area, Florida, Proc. Soil Sci. Soc. Fla., Vol. V-b, 1943, Gainesville, Fla.

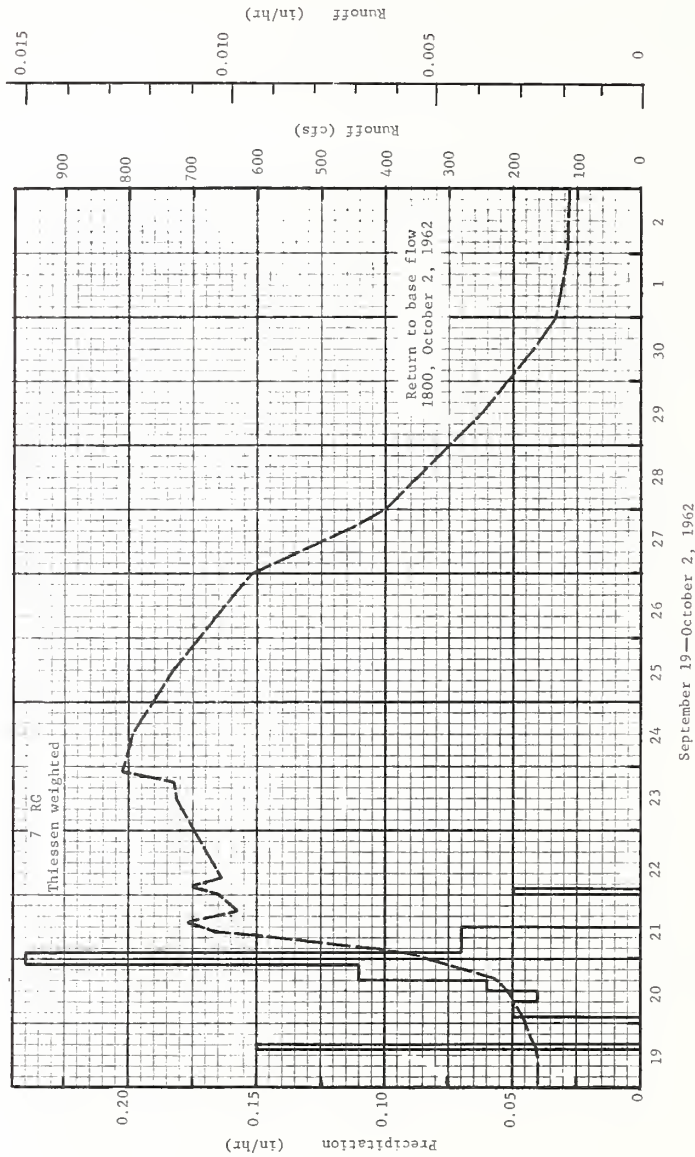
GENERALLY REPRESENTS: (Revision) Flatwoods of Coastal Plain problem area (A2) changed to Southern Florida Flatwoods land resource area (U-155).

1962 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA		WATERSHED W-2					8.2
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	2.0	1.3	.9	6.2	2.7	18.0	44.0	64.0	1,070.0	130.0	5.3	4.8	
2	1.6	1.3	1.0	6.0	2.4	21.0	912.0	57.0	1,080.0	115.0	5.3	4.8	
3	1.5	1.5	1.0	5.4	2.4	20.0	1,190.0	51.0	1,100.0	125.0	5.2	4.8	
4	1.5	1.6	1.0	5.4	2.6	15.0	1,040.0	54.0	1,100.0	150.0	5.2	4.7	
5	1.4	1.7	1.0	5.4	6.0	11.0	824.0	58.0	1,000.0	170.0	5.2	6.0	
6	1.3	1.8	1.0	5.4	19.0	8.5	620.0	62.0	900.0	150.0	5.2	6.9	
7	1.7	2.0	1.0	9.5	19.0	6.9	478.0	63.0	800.0	125.0	5.2	7.2	
8	1.9	2.1	1.0	25.0	15.0	5.8	357.0	81.0	650.0	100.0	5.2	7.6	
9	1.8	2.1	1.0	27.0	17.0	5.2	302.0	142.0	550.0	85.0	21.0	7.9	
10	1.8	2.2	1.0	22.0	18.0	23.0	425.0	204.0	450.0	70.0	27.0	8.1	
11	1.8	2.3	1.2	15.0	19.0	89.0	467.0	226.0	350.0	54.0	28.0	8.4	
12	2.0	2.4	1.2	9.3	18.0	100.0	662.0	223.0	300.0	45.0	27.0	8.6	
13	1.9	2.3	1.3	8.5	15.0	105.0	1,140.0	251.0	270.0	35.0	26.0	8.8	
14	2.0	2.2	1.6	6.9	11.0	116.0	1,280.0	414.0	300.0	27.0	25.0	8.9	
15	2.0	2.2	1.6	5.4	7.8	110.0	1,160.0	445.0	210.0	22.0	21.0	9.0	
16	1.8	2.0	1.3	4.6	6.0	108.0	992.0	409.0	190.0	18.0	18.0	9.1	
17	1.6	1.8	1.4	4.6	5.2	149.0	739.0	366.0	175.0	15.0	16.0	9.2	
18	1.5	1.6	1.3	4.3	4.4	171.0	554.0	344.0	160.0	13.0	14.0	9.2	
19	1.4	1.3	1.2	3.8	4.0	167.0	420.0	351.0	155.0	11.0	12.0	9.3	
20	1.4	1.2	1.0	3.6	3.6	156.0	327.0	323.0	225.0	10.0	11.0	9.3	
21	1.4	1.2	.8	3.4	3.3	154.0	258.0	298.0	582.0	9.0	9.6	9.2	
22	1.2	1.0	.8	3.1	4.9	161.0	211.0	261.0	674.0	8.0	8.5	9.1	
23	1.1	1.0	.8	2.6	12.0	176.0	180.0	228.0	739.0	7.2	7.5	9.0	
24	1.0	.9	1.3	2.5	13.0	204.0	156.0	217.0	787.0	6.6	7.0	9.0	
25	1.0	1.2	2.2	2.3	10.0	302.0	138.0	228.0	716.0	6.2	6.5	8.8	
26	1.0	1.1	7.5	2.5	7.2	380.0	195.0	248.0	644.0	5.9	6.0	8.6	
27	1.0	1.0	12.0	3.5	5.6	394.0	111.0	220.0	500.0	5.6	5.6	8.4	
28	1.1	.9	8.9	3.4	4.6	362.0	99.0	251.0	350.0	5.4	5.3	8.2	
29	1.2	-----	6.0	3.3	4.4	327.0	95.0	302.0	250.0	5.3	5.1	8.0	
30	1.2	-----	4.6	3.0	4.0	327.0	86.0	512.0	170.0	5.3	5.0	7.8	
31	1.3	-----	5.2	-----	6.6	-----	75.0	872.0	-----	5.3	-----	7.6	
MEAN	1.30	1.61	2.36	7.10	8.83	140.0	512.0	252.0	548.0	49.7	11.8	7.95	
INCHES	.02	.02	.03	.08	.10	1.58	5.98	2.94	6.20	.58	.13	.09	

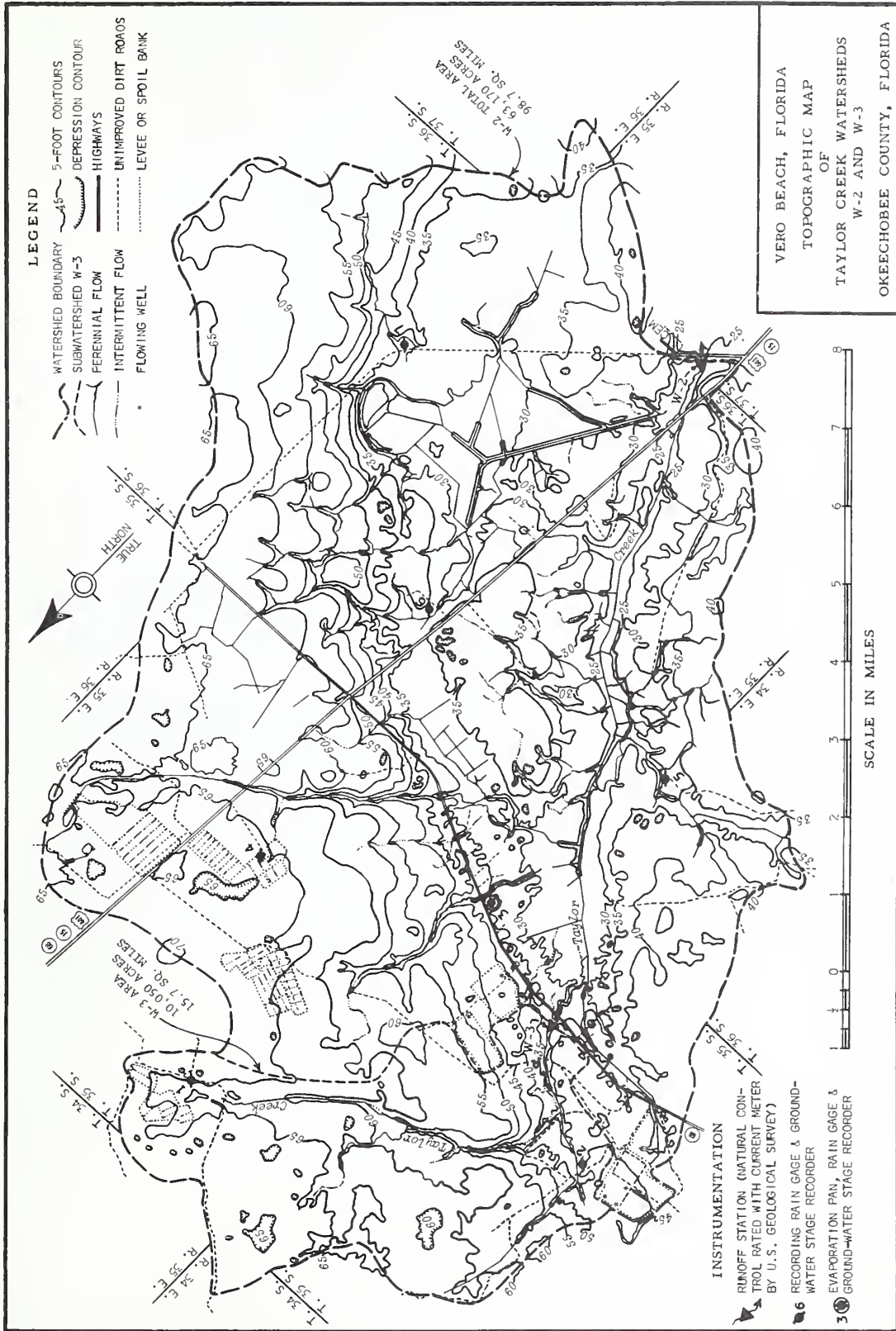
NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0003768. DAILY DISCHARGE DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.

1962 SELECTED RUNOFF EVENT			VERO BEACH, FLORIDA		WATERSHED W-2			8.2			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-OAY	RAINFALL (inches) 1/	RUNOFF (inches)	DATE MO-OAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
			Event of September 19-October 2, 1962								
			7 RG				AVG 1/				
9-19	.00	2/ .0290	9-19	1400	.00	.00	9-19	1200	160	.0000	
			9-19	1600	.15	.30	9-20	2400	180	.0320	
			9-20	0200	.00	.30	9-20	1200	206	.0684	
			9-20	0800	.05	.60	9-20	1600	225	.0819	
			9-20	1200	.04	.76	9-21	0200	360	.1278	
			9-21	1600	.06	1.00	9-21	0600	490	.1515	
			9-21	2200	.11	1.66	9-21	1000	665	.1908	
			9-21	0200	.24	2.62	9-21	1400	705	.2338	
			9-21	1200	.07	3.32	9-21	1800	630	.2757	
			9-21	2400	.00	3.32	9-21	2400	660	.3365	
			9-22	0200	.05	3.42	9-22	0300	700	.3685	
			9-22	0600			9-22	0600	655	.4004	
			9-23	1200			9-23	1200	725	.4254	
			9-23	1800			9-23	1800	750	.4940	
			9-24	2200			9-24	2200	810	.8423	
			9-24	1200			9-24	1200	795	1.0187	
			9-25	1200			9-25	1200	750	1.3060	
			9-26	1200			9-26	1200	650	1.5660	
			9-26	2400			9-26	2400	608	1.6845	
			9-27	1800			9-27	1800	445	1.8333	
			9-28	2400			9-28	2400	400	1.8731	
			9-29	1200			9-29	1200	250	2.0568	
			9-30	1200			9-30	1200	170	2.1359	
			10-1	2400			10-1	2400	135	2.1647	
			10-2	1800			10-2	1800	118	2.2123	
			10-2	1800			10-2	1800	3/ 112	2.2448	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0001570. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P.8-2-4. 1/ ALL PRECIPITATION THIESSEN WEIGHTED, USING 7 RAIN GAGES. 2/ RUNOFF PRIOR TO 1200 on SEPT. 19, 1962. FOR ANTECEDENT P AND Q SEE TABLES ON PRECEDING PAGE. 3/ RETURN TO NORMAL BASE FLOW.



VERO BEACH, FLORIDA WATERSHED W-2



MONTHLY PRECIPITATION AND RUNOFF (inches)						VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-3 AREA—10,050 ACRES (15.7 SQ. MILES)								8.3		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P	.66	.59	2.92	1.75	5.08	9.20	7.88	10.77	6.64	1.05	2.99	.35	49.88			
Q	.01	.00	.05	.03	.18	.77	3.10	4.78	5.17	.45	.13	.03	14.68			
STA AV ² /P (55-62)	1.98	1.77	4.57	3.62	4.93	7.04	6.51	6.25	6.62	4.43	1.02	1.39	49.93			
MEAN P ³ / 44 YR	1.61	1.72	2.79	3.40	3.95	7.10	6.06	6.08	7.18	4.92	1.70	1.45	47.96			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-2	.035	9-2	.035	9-2	.070	9-2	.204	9-2	.400	9-2	.770	9-21	.992	8-28	2.78
MAXIMUMS FOR PERIOD OF RECORD																
19 56 to 19 62	10-15 1956	.25	10-15 1956	.24	10-15 1956	.47	10-15 1956	1.35	10-15 1956	2.55	10-15 1956	5.14	10-15 1956	6.21	10-15 1956	8.57
Notes: Quality of records: P, excellent; Q, good. ¹ / All precipitation Thiessen weighted, using 2 rain gages. ² / Precipitation and runoff (U. S. Geological Survey) began Oct. 1955. ³ / Mean P based on 44-yr (1919-62) record period at Okeechobee Hurricane Gate 6, Florida.																
SLOPES: 100% is in 0-2% class.																
SOILS: (Revision) Predominantly fine sand surface which is very friable and has above average infiltration rates and little surface runoff until it becomes saturated. Generally underlain at about 3 feet by an organic hardpan of variable thickness and hardness.																
Soil	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Leon-Immokalee fine sand	77	4	Structureless fine single grain	Rapid	Structureless (hardpan)	Moderate	36	Rapid	Medium							
Plummer fine sand	8	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	40	Slow	Slow							
Pompano-Char- lotte fine sand	5	2	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow							
Rutlege fine sand	4	8	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	45	Slow	Slow							
Adamsville fine sand	2	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Moderate	Medium							
Fresh water swamp & marsh	2	3	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	40	Slow	Slow							
St. Lucie-Pomello fine sand	1	4	Structureless fine single grain	Very rapid	Structureless fine single grain	Very rapid	60	Very rapid	Very rapid							
Delray fine sand	1	12	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow							
EROSION: 1 - 100% (Little or no erosion with small areas of +, deposition).																
LAND CAPABILITY:																
Class		I	II	III	IV											
Percent of area		0	1	3	96											
GEOLOGY: Sharp to sub-rounded marine sand grains of Pleistocene age cover the watershed. These sands are white to gray at the surface and grade into tan, orange, and red at depth. Approximately 80 per cent of the watershed is represented by terrace deposits of Penholoway age. These superficial sands form a broad, flat little dissected plain that slopes gently southward to its outer edge. It is marked by an abrupt drop of 20 to 25 feet to the strand line of the younger Talbot surface. The ground water level on the upper terrace is generally within 1.5 to 3 feet of the surface and shows very marked response to the local climatic conditions. Source of Data: G. G. Parker and N. D. Hay Geology and Ground Water of the Kissimmee River - Lake Okeechobee Area, Florida, Proc. Soil.Sci. Soc. Fla., Vol. V-b, 1943, Gainesville, Fla.																
GENERALLY REPRESENTS: (Revision) Flatwoods of Coastal Plain problem area (A2) changed to <u>Southern Florida Flatwoods land resource area (U-155)</u> .																

1962 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA WATERSHED W-3						8.3
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.02	.00	.00	.00	.05	.37	.33	.28	.43	.11	.00	.00
2	.05	.00	.00	.19	.64	.00	.00	.00	.47	.00	.00	.00
3	.00	.00	.00	.00	.00	.34	.00	.06	.00	.66	.00	.00
4	.00	.00	.00	.00	2.29	.00	.00	.06	.20	.00	.05	.00
5	.00	.00	.00	.00	.44	.27	.00	.80	.00	.00	.00	.05
6	.42	.20	.00	.00	.10	.00	.00	1.71	.10	.00	.00	.00
7	.00	.00	.00	.18	.00	.00	.00	.40	1.69	.00	.00	.00
8	.00	.00	.00	.00	.00	.06	.95	.09	.00	.00	1.04	.00
9	.00	.00	.00	.00	.00	.32	1.35	.04	.00	.02	1.60	.05
10	.00	.39	.00	.00	.00	.26	.73	.82	.00	.00	.00	.00
11	.00	.00	.00	.00	.27	.11	.65	.88	.13	.00	.00	.00
12	.00	.00	.00	.85	.00	.33	.00	.06	.20	.00	.05	.00
13	.00	.00	.00	.00	.00	.00	.86	.00	.08	.00	.00	.00
14	.08	.00	.00	.00	.00	.09	.00	.10	.00	.00	.00	.00
15	.05	.00	.00	.00	.00	.01	.00	.57	.00	.00	.00	.00
16	.00	.00	.15	.00	.00	.21	.00	.37	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.78	.22	.00	.00	.11	.00	.00
18	.00	.00	.00	.00	.00	.00	.31	.05	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.47	.46	.00	.32	.00	.00	.00
20	.00	.00	.00	.00	.00	.66	.30	.00	1.42	.00	.00	.00
21	.00	.00	.00	.00	1.12	.81	.00	.06	1.05	.00	.00	.00
22	.00	.00	.04	.00	.00	.51	.00	.45	.55	.09	.27	.00
23	.00	.00	.51	.00	.00	.06	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.13	.00	.69	.00	.00	.00	.18
25	.00	.00	1.63	.00	.00	.00	.28	.14	.00	.00	.00	.00
26	.00	.00	.20	.53	.00	.00	.00	.36	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.09	.00	.95	.02	.00	.00	.00
28	.08	.00	.00	.00	.00	.10	.00	.33	.00	.00	.00	.00
29	.00	-----	.00	.00	.00	1.67	.00	.77	.00	.00	.00	.00
30	.00	-----	.39	.00	.00	1.55	.85	.44	.00	.00	.00	.07
31	.00	-----	.00	-----	.19	.00	.65	.51	.00	.06	.00	.00
TOTAL	.66	.59	2.92	1.75	5.08	9.20	7.88	10.77	6.64	1.05	2.99	.75
STA AV	1.98	1.77	4.37	3.62	4.93	7.04	6.51	6.25	6.62	4.43	1.02	1.39

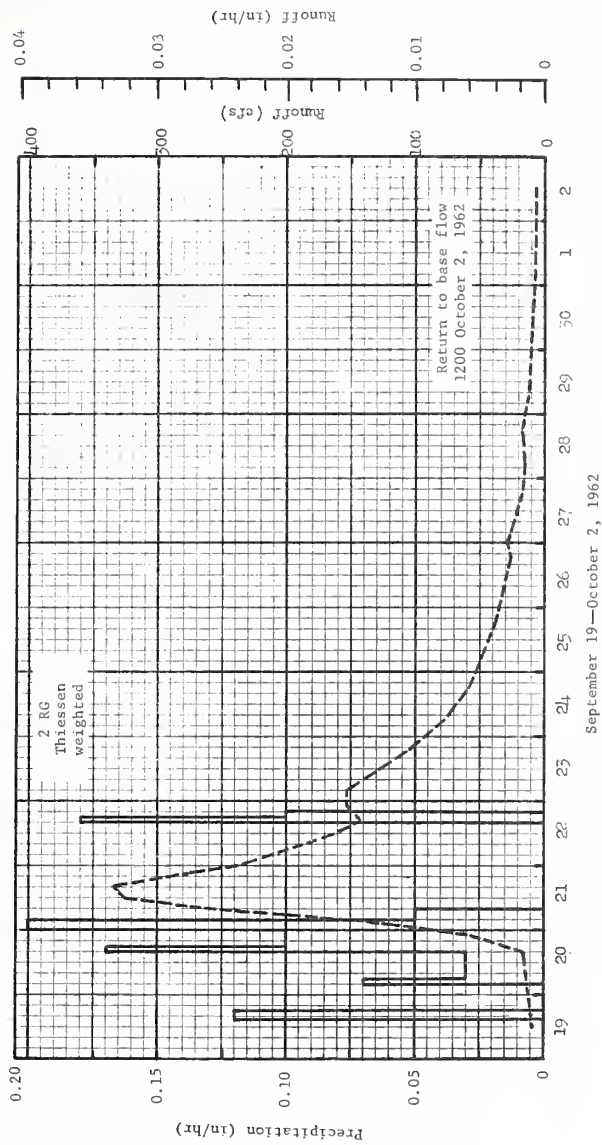
NOTES: THIESSEN WEIGHTED, USING 2 RAIN GAGES. STA AV. IS BASED ON PERIOD FROM OCT. 1, 1955 THROUGH 1962.

1962 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA WATERSHED W-3						8.3
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.0	.0	.0	3.2	.1	.5	175.0	5.4	176.0	7.8	.1	.6
2	.0	.0	.0	2.5	.1	.5	105.0	5.2	232.0	7.0	.1	.6
3	.0	.0	.0	1.6	.1	.5	33.0	4.2	142.0	36.0	.1	.6
4	.0	.0	.0	.8	.9	.3	15.0	3.4	76.0	67.0	.1	.5
5	.0	.0	.0	.5	36.0	.5	9.0	3.0	111.0	20.0	.1	.5
6	.0	.0	.0	.4	18.0	.5	5.8	8.5	101.0	12.0	.1	.5
7	.1	.0	.0	.4	7.7	.2	4.0	94.0	76.0	8.2	.1	.4
8	.1	.0	.0	.4	2.7	.2	3.0	85.0	178.0	5.3	.2	.4
9	.1	.0	.0	.4	1.6	.2	11.0	53.0	83.0	4.0	9.9	.4
10	.1	.0	.0	.4	1.1	.2	43.0	55.0	50.0	3.4	11.0	.4
11	.1	.0	.0	.5	.8	.4	99.0	124.0	38.0	2.8	5.6	.4
12	.1	.0	.0	.5	.6	.8	198.0	212.0	35.0	2.3	4.0	.4
13	.1	.0	.0	.5	.6	.9	88.0	130.0	51.0	2.0	3.0	.4
14	.1	.0	.0	.5	.4	1.0	152.0	78.0	28.0	1.8	2.4	.5
15	.1	.0	.0	.5	.4	1.0	60.0	58.0	21.0	1.6	2.0	.5
16	.1	.0	.0	.2	.3	1.1	33.0	113.0	15.0	1.4	1.8	.5
17	.1	.0	.0	.2	.3	1.8	19.0	138.0	13.0	1.2	1.7	.4
18	.1	.0	.0	.2	.3	4.6	27.0	66.0	11.0	1.2	1.4	.4
19	.1	.0	.0	.1	.2	2.6	42.0	41.0	9.1	1.2	1.3	.4
20	.1	.0	.0	.1	.2	1.8	76.0	28.0	21.0	1.0	1.2	.4
21	.1	.0	.0	.1	.3	6.7	52.0	20.0	248.0	.7	1.1	.4
22	.1	.0	.0	.1	.6	42.0	28.0	15.0	169.0	.6	1.4	.5
23	.1	.0	.0	.1	.7	32.0	15.0	12.0	127.0	.6	1.4	.5
24	.1	.0	.0	.1	.7	11.0	10.0	12.0	72.0	.6	1.4	.5
25	.1	.0	.0	.1	.6	5.3	7.2	29.0	41.0	.5	1.2	.5
26	.0	.0	.1	.1	.4	3.0	5.2	41.0	27.0	.4	.9	.4
27	.0	.0	1.6	.1	.3	2.1	4.0	42.0	194.0	.3	.8	.4
28	.0	.0	.7	.1	.3	1.8	3.1	135.0	14.0	.1	.7	.5
29	.0	-----	.4	.1	.3	49.0	2.5	96.0	10.0	.0	.7	.5
30	.0	-----	.5	.1	.2	154.0	2.2	152.0	8.4	.0	.6	.5
31	.0	-----	.5	-----	.2	-----	2.7	159.0	-----	.1	.-----	.5
MEAN	.06	.0	.38	.46	2.48	10.8	42.2	65.1	72.7	6.16	1.88	.39
INCHES	.005	.0	.03	.03	.18	.77	3.10	4.78	5.17	.45	.13	.03

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.002368. RUNOFF DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.

1962 SELECTED RUNOFF EVENT			VERO BEACH, FLORIDA			WATERSHED W-3			8.3	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches) <u>1/</u>	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of September 19 - October 2, 1962										
9-19	.00	<u>2/</u> .0100	9-19	2 RG	AVG <u>1/</u>		9-19	1200	9	.0000
				1500	.00	.00	9-20	1600	16	.0546
				1800	.12	.36	9-20	2200	56	.0559
			9-20	0400	.00	.36	9-21	0400	152	.1388
				0600	.07	.50		0700	232	.1956
				1600	.05	.80				
Watershed conditions:				1800	.17	1.14		0930	284	.2595
Approximate land use: (from SCS)				2400	.10	1.74		1200	326	.3446
37% in improved pasture			9-21	0400	.20	2.54		1600	333	.4646
53% in range and forest				0800	.05	2.74		2030	284	.6017
10% in miscellaneous			9-22	1600	.00	2.74		2400	258	.6918
				1800	.18	3.10	9-22	1200	162	.9287
				2000	.10	3.30		1630	142	.9962
								2200	152	1.0760
							9-23	0400	153	1.1663
								1800	108	1.3466
							9-24	0600	78	1.4568
								1800	59	1.5379
							9-25	1800	38	1.6528
							9-26	1800	26	1.7286
								2400	28	1.7446
							9-27	1800	18	1.7355
							9-28	0600	15	1.8050
								1800	18	1.8246
							9-29	0600	12	1.8423
							9-30	2400	8	1.8838
							10-2	1200	<u>3/</u> 7	1.9104

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00009868. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 8.2-4. 1/ ALL PRECIPITATION THIESSEN WEIGHTED, USING 2 RAIN GAGES. 2/ RUNOFF PRIOR TO 1200, SEPT. 19, 1962. FOR ANTECEDENT P AND Q, SEE DAILY TABLES ON PRECEDING PAGE. 3/ RETURN TO NORMAL BASE FLOW.



VERO BEACH, FLORIDA WATERSHED W-3

VERO BEACH, FLORIDA MONREVE RANCH CANAL, WATERSHED W-4

LOCATION: Martin County, Florida; 10 miles southwest of Stuart; subdrainage of St. Lucie Canal, Lake Okeechobee, and the Everglades.

AREA: 3,968 acres (6.20 sq. miles)

SLOPES: 100% of area in 0-2% class.

SOILS: Predominantly poorly drained sands, developed from unconsolidated marine deposits underlain and influenced by either acid or calcareous sediments.

Soil	Per-cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme-ability	Structure	Perme-ability	Avg. depth to (in.)	Perme-ability	
Pompano-Charlotte fine sand	35	2	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow
Adamsville fine sand	28	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	36	Moderate	Medium
Immokalee fine sand	25	4	Structureless fine single grain	Rapid	Structureless (hardpan)	Moderate	36	Rapid	Medium
Felda-Manatee loamy fine sand	7	8	Weak fine granular	Moderate	Weak fine granular (massive when wet)	Slow	30	Slow	Slow
Sunniland-Bradenton fine sand	5	4	Structureless fine single grain	Rapid	Weak subangular blocky	Moderate	36-84	Slow	Medium

EROSION: 100% of area in class 1. (No erosion)

LAND CAPABILITY:

Class	I	II	III	IV
Percent of area	0	0	7	93

GEOLOGY: Pamlico sand of Pleistocene age extends to a depth of 60 feet or more. This is largely an unconsolidated mixture of quartz sand and shell fragments. A layer of consolidated sand one foot thick exists at a depth of approximately 20 feet. Source of data: Observations by USGS personnel during excavation of the St. Lucie Canal.

SURFACE DRAINAGE: This watershed is a diked area with water control system. Approximately half of area has good drainage through a system of canals and laterals, a principal waterway approximately 2.54 miles long, and a drainage density of 240 ft. per acre. Unimproved portion of area has poor surface drainage which occurs mainly by slow flow through interconnected ponds. Entire area drained by gravity through single outfall canal which has a stoplog control below irrigation access canal.

CHARACTER OF FLOW: Perennial stream, sustained by ground-water seepage from water table maintained by pumping.

INSTRUMENTATION: Runoff: Water-stage recorder and steel-plate control, operated by the U. S. Geological Survey. Precipitation: 5 Friez 9-inch capacity weighing recorders with 192-hour gears. Irrigation water: Stage recorder to determine pumping lift, rated propeller-type, low lift axial flow pump, and recorder for determining time of pump operation.

WATERSHED CONDITIONS: Approximately 30% of area improved permanent pasture and 70% native range. Good cover on entire area, height of grass 3 to 6 inches. Conditions essentially unchanged during period of record.

GENERALLY REPRESENTS: Ranch-size area of partially developed rangeland of low relief with gravity drainage and sub-irrigation in Southern Florida Flatwoods land resource area (U-155).

MONTHLY PRECIPITATION ^{1/} AND RUNOFF ^{2/} (inches)						VERO BEACH, FLORIDA WATERSHED W-4								8.4
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1959 P	2.99	.24	7.30	5.01	5.06	10.66	5.67	6.49	7.94	9.80	6.44	3.90	71.50	
Q							2.86	1.66	2.71	5.36	3.65	1.96	---	
1960 P	.11	3.74	.99	6.31	4.35	8.44	8.15	4.55	19.82	3.50	1.29	.42	61.67	
Q	.68	1.34	.57	1.71	1.26	1.99	3.63	1.28	11.70	2.65	.19	.08	27.08	
1961 P	4.04	.56	2.21	1.62	11.28	5.26	2.02	7.59	.95	3.84	1.47	.26	41.10	
Q	.89	.25	.54	.41	2.32	1.73	.65	.91	.32	.14	.13	.15	8.44	
1962 P	1.52	.79	4.52	5.60	3.01	5.69	8.98	11.27	9.02	.26	.68	.27	51.61	
Q	.13	.07	.65	.83	.32	.10	1.89	5.17	4.48	.90	.20	.50	15.24	
STA AVG (59-62) P	2.16	1.33	3.75	4.64	5.92	7.51	6.20	7.48	9.43	4.35	2.47	1.21	56.45	
Q	.57	.55	.59	.98	1.30	1.27	2.26	2.25	4.80	2.26	1.04	.67	18.54	
MEAN P 4/ 62 YR	2.35	2.35	3.04	3.40	4.28	5.87	5.52	5.67	7.87	7.34	2.76	2.01	52.46	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1960	9-23	.19	9-23	.19	9-23	.37	9-23	1.02	9-23	1.68	9-24	2.33	9-23	1.08	9-22	9.20
1961	5-26	.05	5-26	.05	5-26	.10	5-26	.25	5-26	.36	5-29	.44	5-29	.82	5-26	2.51
1962	8-19	.04	8-19	.04	8-19	.08	8-19	.21	8-19	.36	8-20	.55	8-19	1.05	8-17	3.12
MAXIMUMS FOR PERIOD OF RECORD																
19 60 to 19 62	9-23 1960	.19	9-23 1960	.19	9-23 1960	.37	9-23 1960	1.02	9-23 1960	1.68	9-24 1960	2.33	9-23 1960	1.08	9-22 1960	9.20

Notes: Quality of Records: P and Q, excellent. 1/ Thiessen weighted averages, using 5 rain gages. 2/ Includes artesian irrigation inflow during drought periods. 3/ P records began Jan. 1959; Q records (U. S. Geologic Survey) July 1959. Part-year amounts for 1959 included in runoff averages. 4/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Ft. Pierce, Fla. Monthly records for July 1933 and Feb. 1950 and 1951 were estimated from nearby station.

1959 DAILY PRECIPITATION (inches)					VERO BEACH, FLORIDA WATERSHED W-4								8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.82	.56	.00	.00	.00	.00	.05	.00	.00	.00	
2	.00	.00	.10	1.06	.00	.00	.00	.00	.00	.00	.00	.00	
3	.00	.00	.00	.05	.00	.00	.07	.82	.86	.04	.00	.00	
4	.00	.00	.00	.00	.00	.00	.17	1.22	.15	.00	.00	.00	
5	.00	.00	.00	.00	.00	.22	.88	.00	.58	.00	.00	.00	
6	.00	.07	.00	.00	.00	.55	.00	.00	.00	.02	.00	.00	
7	.00	.00	.00	.00	.00	.55	1.06	.17	.00	.55	.00	.00	
8	.00	.00	.14	.00	.00	.00	.00	.12	.00	.26	1.19	.00	
9	.00	.00	.72	.00	.00	.00	.17	.21	.04	.00	.00	.00	
10	.00	.00	.00	.00	.00	.00	.00	.57	.06	.00	.00	.00	
11	.00	.00	.00	.00	.01	.00	.11	.07	.51	.19	.00	.00	
12	.00	.00	.00	.00	.09	.00	.08	1.59	.89	.09	1.84	.00	
13	.00	.08	.04	.00	.01	.00	.08	.00	.86	.00	.00	.00	
14	.00	.00	.00	.00	.02	.14	.78	.01	.01	.00	.00	.00	
15	.00	.00	.00	.00	.10	.09	.11	.70	.00	.00	.00	.00	
16	.00	.00	.21	.00	.00	.26	1.04	.15	.55	.00	.00	.00	
17	.20	.00	.66	.07	.48	1.67	.14	.00	.03	.18	.49	.00	
18	.00	.09	.78	.00	.70	4.97	.00	.00	.00	2.57	.17	.00	
19	.00	.00	.28	.00	.58	.80	.08	.00	.01	1.50	.28	.00	
20	.00	.00	2.62	.24	.91	.01	.01	.52	1.25	5.92	.25	.00	
21	.00	.00	.14	.94	.00	.90	.00	.02	.44	.05	1.54	.06	
22	.00	.00	.14	2.11	.00	.01	.12	.00	1.16	.00	.26	.85	
23	.18	.00	.00	.00	.00	.00	.44	.00	.27	.05	.00	.00	
24	.10	.00	.22	.00	.00	.00	.19	.25	.27	.17	.00	1.20	
25	.77	.00	.00	.00	.00	.00	.01	.09	.05	.45	.54	1.77	
26	1.74	.00	.00	.00	.00	.00	.05	.00	.05	.00	.00	.01	
27	.00	.00	.00	.00	.00	.00	.07	.00	.06	.00	.00	.00	
28	.00	.00	.00	.00	.00	.00	.05	.00	.01	.00	.00	.00	
29	.00	-----	.00	.00	2.16	.00	.00	.00	.19	.00	.00	.05	
30	.00	-----	.00	.00	.00	.55	.00	.22	.00	.00	.00	.00	
31	.00	-----	.43	-----	.00	-----	.00	.58	-----	.00	-----	.00	
TOTAL	2.99	.24	7.50	5.01	5.06	10.66	5.67	6.49	7.94	9.80	6.44	5.90	

NOTES: THIESSEN WEIGHTED RAINFALL, USING 5 RAIN GAGES.

1960 DAILY PRECIPITATION (inches)					VERO BEACH, FLORIDA WATERSHED W-4								8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.59	.00	.05	.00	.82	.65	.00	.97	.00	
2	.00	.00	.00	.00	1.01	.57	.07	.00	.22	.00	.00	.00	
3	.00	.00	.00	.00	.89	.19	.84	.00	.05	.00	.00	.01	
4	.00	.21	.04	.00	.25	.21	.15	.00	2.28	.00	.00	.00	
5	.00	1.16	.00	.78	.00	.27	.04	.05	.06	.00	.00	.00	
6	.00	1.20	.00	.00	.00	.00	.79	.00	.18	.00	.00	.00	
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
8	.00	.00	.00	.00	.00	.00	.50	.00	.80	.24	.00	.00	
9	.00	.00	.00	.00	.00	.01	.00	.00	.01	.84	.00	.00	
10	.00	.00	.00	.00	.00	.00	.04	.02	.96	.00	.00	.00	
11	.00	.00	.00	.00	.00	.19	.00	.10	.79	.25	.00	.00	
12	.00	.00	.11	.00	.00	.00	.00	.62	.00	.00	.00	.10	
13	.00	.00	.00	.00	.00	.00	.10	.10	.00	.00	.28	.00	
14	.00	.10	.00	.00	.00	.00	.28	.44	.00	.55	.00	.00	
15	.00	.00	.00	.00	.00	.00	1.44	.91	.00	.98	.02	.00	
16	.00	.00	.28	.00	.00	.11	.00	.08	.00	.00	.00	.51	
17	.00	.00	.00	.00	.00	1.18	.10	.00	.00	.00	.00	.00	
18	.00	.00	.11	.00	.00	.30	.40	.00	1.59	.15	.00	.00	
19	.00	.00	.45	.74	.00	.50	1.29	.00	.00	.39	.00	.00	
20	.00	.00	.00	.11	.00	2.35	.00	.02	.04	.00	.00	.00	
21	.00	.00	.00	1.08	.00	.65	.00	.00	.10	.00	.00	.00	
22	.00	.00	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	
23	.00	.00	.00	.35	.00	.00	.00	.02	4.66	.12	.00	.00	
24	.00	.00	.00	.25	.00	.88	.00	.25	5.01	.00	.00	.00	
25	.00	.11	.00	1.75	.02	.56	.45	.06	.00	.00	.00	.00	
26	.00	.31	.00	.46	.18	.00	1.25	.46	.96	.00	.02	.00	
27	.00	.00	.00	.22	.07	.00	.25	.25	.00	.00	.00	.00	
28	.00	.00	.00	.00	.10	.00	.05	.00	1.00	.00	.00	.00	
29	.00	.00	.00	.00	.94	.05	.19	.05	.52	.00	.00	.00	
30	.08	-----	.00	.00	.00	.59	.20	.54	.00	.00	.00	.00	
31	.05	-----	.00	-----	.89	-----	.00	.00	-----	.00	-----	.00	
TOTAL	.11	5.74	.99	6.51	4.55	8.44	8.15	4.55	19.82	5.50	1.29	.42	

NOTES: THIESSEN WEIGHTED RAINFALL, USING 5 RAIN GAGES.

1961 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA WATERSHED W-4						8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	1.17	.00	.00	.00	.00	.00	.05	.00	.00
2	.00	.00	.00	.00	.40	.00	.00	.00	.02	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00
4	.00	.56	.00	.00	.00	.00	.05	.00	.00	.00	.00	.10
5	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.40	.16
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	.17	.00
7	.00	.00	.00	.00	.00	.00	.01	.00	.04	.00	.00	.00
8	.00	.00	.00	.15	.00	.05	.09	.00	.19	.02	.00	.00
9	.45	.00	.00	.00	.01	.83	.00	.00	.00	.46	.00	.00
10	.27	.00	.00	.00	.41	.35	.00	.66	.00	.11	.00	.00
11	.00	.00	.00	.00	.00	.06	.11	.00	.00	.08	.00	.00
12	.09	.00	.00	.00	.00	.00	.00	.04	.00	.00	.11	.00
13	1.83	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	1.40	.00	2.18	.00	.00	.00	.00	.00	.00	.00	.01	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.19	.11	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	1.50	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.11	.06	.25	2.33	.00	.00
19	.00	.00	.05	.00	.00	.00	.88	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.47	.01	.00	.05	.00
21	.00	.00	.00	.00	.00	.00	.13	.25	.04	.00	.06	.00
22	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	1.27	.00	1.30	.00	.00	.49	.00
24	.00	.00	.00	.00	.00	.07	.00	.27	.00	.06	.00	.00
25	.00	.00	.00	.00	.13	.00	.00	.00	.00	.06	.00	.00
26	.00	.00	.00	.00	2.36	.00	.17	1.25	.00	.00	.00	.00
27	.00	.00	.00	.00	5.05	.28	.32	1.02	.00	.00	.00	.00
28	.00	.00	.00	.00	.05	1.22	.00	.02	.00	.12	.00	.00
29	.00	-----	.00	.00	1.06	.92	.00	.46	.10	.05	.00	.00
30	.00	-----	.00	.00	1.81	.21	.00	.10	.05	.00	.18	.00
31	.00	-----	.00	-----	.00	-----	.00	.00	-----	.00	-----	.00
TOTAL	4.04	.56	2.21	1.62	11.28	5.26	2.02	7.59	.95	3.84	1.17	.26

NOTES: THIESSEN WEIGHTED RAINFALL, USING 5 RAIN GAGES.

1962 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA WATERSHED W-4						8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.14	.00	.00	.00	.00	.49	.05	.10	.00	.01	.19	.00
2	.00	.00	.00	.66	1.05	.44	.09	.00	.00	.00	.00	.00
3	.00	.00	.33	.00	.00	.00	.00	.00	.03	.00	.00	.00
4	.00	.00	.00	.00	.46	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	1.07	.00	.00	.00	.00	.00	.00	.00
6	.74	.05	.00	.00	.31	.00	.00	.19	.35	.00	.00	.05
7	.00	.00	.00	3.13	.00	.00	.24	.07	.62	.00	.00	.00
8	.00	.00	.00	.22	.00	.00	.33	.00	.22	.00	.03	.00
9	.00	.00	.00	.00	.00	.00	.09	.11	.00	.02	.20	.00
10	.00	.74	.00	.00	.00	.21	.00	.32	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.81	.08	.00	.00	.00	.00
12	.10	.00	.00	.00	.00	.43	.00	.04	.57	.00	.00	.00
13	.00	.00	.00	.00	.00	.06	.05	.02	.01	.09	.00	.00
14	.00	.00	.00	.00	.00	.21	.03	1.57	2.13	.02	.00	.00
15	.05	.00	.00	.00	.00	.61	.12	1.65	.06	.00	.00	.00
16	.00	.00	.07	.00	.00	.09	.00	1.77	.00	.01	.00	.00
17	.00	.00	.00	.00	.00	.02	.00	1.03	.03	.03	.00	.00
18	.00	.00	.00	.00	.00	.00	.30	.26	.03	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	2.33	2.02	.40	.00	.00	.00
20	.00	.00	.00	.00	.00	.90	2.86	.04	1.48	.00	.00	.00
21	.00	.00	.00	.00	.00	1.09	1.04	.00	1.51	.00	.21	.00
22	.00	.00	.00	.00	.00	.03	.02	.96	.12	.03	.00	.00
23	.42	.00	.23	.00	.00	.52	.00	.00	.56	.00	.00	.00
24	.00	.00	.01	.00	.00	.00	.10	.02	.40	.00	.00	.22
25	.00	.00	2.70	.00	.00	.00	.00	.07	.00	.00	.00	.00
26	.00	.00	.93	1.29	.00	.00	.00	.09	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.38	.24	.00	.00	.00	.00
28	.07	.00	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00
29	.00	-----	.15	.00	.00	.11	.00	.05	.00	.00	.00	.00
30	.00	-----	.10	.00	.00	.48	.00	.33	.00	.00	.00	.00
31	.00	-----	.00	-----	.12	-----	.16	.21	-----	.00	-----	.00
TOTAL	1.52	.79	4.32	5.60	3.01	5.69	8.98	11.27	9.02	.26	.68	.27
STA AV	2.16	1.33	3.75	4.64	5.92	7.51	6.20	7.48	9.43	4.35	2.47	1.21

NOTES: THIESSEN WEIGHTED RAINFALL, USING 5 RAIN GAGES. STA AV IS BASED ON 1959-62 PERIOD.

1960 DAILY IRRIGATION (inches)					VERO BEACH, FLORIDA				WATERSHED W-4				8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.06	
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
11	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	
12	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	
13	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	
14	.00	.00	.13	.14	.00	.00	.00	.00	.00	.00	.00	.00	
15	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	
16	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	
17	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.05	.00	
18	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.12	.00	
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.06	
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.12	
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.12	
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
26	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
27	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	
28	.14	.00	.14	.00	.00	.00	.00	.00	.00	.00	.12	.06	
29	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.12	
30	.00		.14	.00	.00	.00	.00	.00	.00	.00	.00	.09	
31	.00		.14		.00		.00		.00			.00	
TOTAL	.32	.00	.69	1.08	.00	.00	.00	.00	.00	.00	.63	1.11	

NOTES: IRRIGATION COMPUTED FROM STAGE-LIFT CURVE AGAINST HOURS OF PUMP OPERATION. THIS 1960 DATA NOT INCLUDED IN STA AV ON NEXT PAGE.

1961 DAILY IRRIGATION (inches)					VERO BEACH, FLORIDA				WATERSHED W-4				8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
2	.06	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.12	
3	.12	.00	.12	.00	.00	.00	.00	.12	.00	.00	.00	.12	
4	.12	.00	.05	.00	.00	.00	.00	.00	.00	.04	.00	.12	
5	.06	.06	.00	.00	.00	.00	.00	.00	.00	.04	.00	.11	
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
7	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
8	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	
9	.00	.05	.12	.00	.00	.00	.00	.00	.00	.00	.04	.00	
10	.00	.06	.06	.00	.00	.00	.00	.00	.00	.04	.04	.00	
11	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	
13	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.12	
14	.00	.05	.00	.12	.00	.00	.00	.00	.00	.00	.00	.12	
15	.00	.12	.00	.12	.00	.00	.00	.00	.00	.00	.00	.12	
16	.00	.12	.00	.00	.00	.00	.00	.00	.00	.03	.06	.12	
17	.00	.06	.00	.05	.00	.00	.00	.00	.00	.04	.04	.12	
18	.12	.00	.00	.09	.00	.05	.00	.00	.00	.00	.00	.12	
19	.09	.00	.00	.12	.06	.00	.00	.00	.00	.00	.00	.12	
20	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.12	
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.12	
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.12	
23	.00	.00	.00	.09	.00	.00	.00	.00	.12	.00	.00	.12	
24	.05	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
25	.12	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
26	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.12	
27	.00	.06	.06	.00	.00	.00	.00	.00	.00	.00	.00	.12	
28	.00	.12	.12	.12	.00	.00	.00	.00	.00	.00	.00	.12	
29	.00		.06	.00	.00	.00	.00	.00	.00	.00	.04	.12	
30	.00		.00	.00	.00	.00	.00	.00	.00	.05	.12	.12	
31	.00		.00		.00		.00		.00			.12	
TOTAL	.75	.84	.69	.75	.06	.05	.00	.12	.35	.29	.44	2.91	

NOTES: IRRIGATION COMPUTED FROM STAGE-LIFT CURVE AGAINST HOURS OF PUMP OPERATION. THIS 1961 DATA INCLUDED IN STA AV ON NEXT PAGE.

1962 DAILY IRRIGATION (inches)						VERO BEACH, FLORIDA WATERSHED W-4							8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.12	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.08	
2	.04	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.05	
3	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
5	.00	.05	.00	.00	.00	.05	.00	.00	.00	.00	.00	.04	
6	.00	.12	.00	.00	.00	.01	.00	.00	.00	.00	.05	.05	
7	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.04	.09	
8	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
9	.04	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	
10	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	
12	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.12	
13	.08	.00	.07	.00	.00	.00	.00	.00	.00	.00	.05	.12	
14	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.12	
15	.04	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.12	
16	.04	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.12	
17	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
18	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
19	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
20	.12	.08	.12	.00	.00	.00	.00	.00	.00	.00	.00	.12	
21	.12	.12	.12	.00	.04	.00	.00	.00	.00	.00	.04	.12	
22	.12	.12	.12	.00	.07	.00	.00	.00	.00	.00	.09	.08	
23	.12	.12	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	
24	.04	.12	.12	.04	.00	.00	.00	.00	.00	.00	.00	.00	
25	.00	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	
26	.00	.12	.00	.00	.05	.00	.00	.00	.00	.08	.08	.00	
27	.00	.12	.00	.00	.00	.00	.00	.00	.00	.05	.12	.00	
28	.00	.12	.00	.00	.04	.00	.00	.00	.00	.00	.04	.00	
29	.00		.00	.00	.02	.00	.00	.00	.00	.05	.00	.00	
30	.00		.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	
31	.00		.00		.00		.00	.00		.09		.00	
TOTAL	1.15	1.61	1.43	.08	.22	.04	.00	.00	.00	.22	.56	1.71	
STA AV	.25	1.23	1.06	.12	.14	.03	.00	.06	.16	.26	.50	2.31	

NOTES: IRRIGATION COMPUTED FROM STAGE-LIFT CURVE AGAINST HOURS OF PUMP OPERATION. STA AV BASED ON 1961-62 PERIOD ONLY.

1959 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA WATERSHED W-4							8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1							15.0	3.7	3.0	6.4	18.0	2.3	
2							13.0	3.7	2.2	7.2	17.0	8.6	
3							11.0	16.0	2.2	7.2	15.0	9.6	
4							11.0	21.0	4.9	6.2	7.7	7.6	
5							16.0	12.0	6.9	5.7	3.1	6.6	
6							18.0	8.0	5.7	5.1	3.1	6.0	
7							24.0	8.0	4.4	7.2	3.6	5.1	
8							22.0	6.6	3.7	8.0	17.0	4.6	
9							20.0	6.4	3.1	6.6	27.0	4.2	
10							17.0	6.6	2.8	6.0	13.0	3.7	
11							16.0	12.0	4.7	6.2	3.8	3.7	
12							14.0	29.0	12.0	5.7	46.0	3.5	
13							17.0	16.0	26.0	4.9	31.0	3.1	
14							20.0	11.0	19.0	4.2	13.0	2.8	
15							22.0	19.0	12.0	3.5	6.7	2.6	
16							38.0	18.0	20.0	3.1	9.2	2.5	
17							27.0	13.0	17.0	6.8	21.0	2.3	
18							21.0	9.2	12.0	61.0	21.0	2.0	
19							18.0	7.2	10.0	66.0	24.0	1.9	
20							16.0	7.2	27.0	149.0	22.0	1.8	
21							13.0	6.2	34.0	115.0	58.0	2.7	
22							14.0	5.1	41.0	80.0	48.0	6.0	
23							14.0	4.9	41.0	61.0	37.0	5.4	
24							11.0	4.6	35.0	53.0	29.0	39.0	
25							10.0	4.4	27.0	48.0	30.0	52.0	
26							9.2	3.9	21.0	39.0	24.0	42.0	
27							8.0	3.3	17.0	27.0	20.0	31.0	
28							6.9	2.6	15.0	27.0	19.0	26.0	
29							5.4	2.3	14.0	25.0	15.0	15.0	
30							4.9	2.6	8.1	22.0	6.4	11.0	
31							4.2	3.5		20.0		12.0	
MEAN							15.4	8.94	15.1	28.8	20.3	10.5	
INCHES							2.86	1.66	2.71	5.36	3.65	1.96	

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .005998. RUNOFF DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.

1960 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA WATERSHED W-4							8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	10.0	1.9	3.5	2.3	12.0	10.0	12.0	27.0	6.0	43.0	7.8	.2	
2	9.6	1.9	3.0	12.0	20.0	6.9	17.0	10.0	6.2	33.0	5.4	.3	
3	8.8	2.6	2.8	5.4	30.0	4.6	26.0	14.0	15.0	27.0	.9	.5	
4	8.0	9.1	2.5	3.1	28.0	4.2	18.0	9.6	20.0	18.0	1.6	.4	
5	7.2	39.0	2.2	6.2	20.0	4.7	18.0	7.6	24.0	15.0	2.0	.4	
6	6.6	39.0	2.0	4.9	15.0	3.5	22.0	6.2	26.0	12.0	1.8	.3	
7	6.5	23.0	1.9	2.8	9.6	2.3	17.0	5.4	17.0	10.0	1.4	.3	
8	4.4	1.0	1.9	5.1	9.2	1.7	16.0	4.9	25.0	9.2	1.1	.3	
9	4.4	5.7	2.2	2.2	4.3	1.3	15.0	3.4	13.0	13.0	1.0	.3	
10	3.9	6.2	3.5	1.8	2.2	1.2	15.0	2.2	32.0	17.0	.8	.2	
11	3.3	5.7	3.7	1.4	3.4	.8	10.0	3.7	32.0	14.0	.7	.2	
12	2.3	4.9	3.0	1.4	3.7	.7	9.2	4.2	30.0	10.0	.6	.2	
13	2.6	5.4	2.3	2.5	3.3	2.0	8.8	3.5	24.0	10.0	.6	.2	
14	2.5	5.7	2.3	3.0	2.6	3.0	15.0	12.0	10.0	25.0	.6	.2	
15	2.2	5.1	2.8	2.8	2.0	1.8	31.0	10.0	11.0	32.0	.6	.2	
16	2.0	4.4	14.0	2.6	1.8	6.5	20.0	10.0	7.8	23.0	.6	.2	
17	1.9	4.2	6.0	2.5	1.7	3.5	20.0	7.2	11.0	10.0	.5	.2	
18	1.8	3.7	5.5	2.2	1.6	3.0	34.0	6.0	24.0	16.0	.5	.2	
19	1.7	3.1	5.4	0.9	1.5	7.3	41.0	4.9	20.0	18.0	.5	.2	
20	1.6	2.8	3.0	22.0	1.4	34.0	27.0	3.1	16.0	15.0	.4	.2	
21	1.5	2.8	1.8	20.0	1.3	29.0	20.0	2.8	15.0	12.0	.4	.2	
22	1.4	2.6	1.3	5.5	1.4	23.0	15.0	3.0	96.0	9.6	.3	.2	
23	1.4	0.9	1.0	6.9	2.0	32.0	11.0	2.5	285.0	8.8	.3	.3	
24	1.3	4.9	1.0	8.0	3.0	5.0	2.8	2.5	378.0	6.3	.3	.8	
25	1.3	4.9	.9	42.0	3.1	30.0	16.0	5.3	226.0	5.5	.3	1.0	
26	1.8	6.2	1.5	37.0	3.3	23.0	32.0	6.8	194.0	5.4	.3	1.0	
27	2.6	6.0	1.8	27.0	3.5	17.0	23.0	4.9	159.0	4.9	.2	.8	
28	3.1	4.6	2.0	19.0	3.7	13.0	22.0	3.5	101.0	3.9	.2	.7	
29	2.8	3.9	2.0	14.0	3.3	13.0	21.0	2.8	75.0	2.9	.2	1.0	
30	2.0	---	2.3	9.3	3.0	17.0	14.0	5.5	56.0	.9	.2	1.3	
31	2.8	---	2.2	---	9.0	---	20.0	4.6	---	.9	---	1.5	
MEAN	3.65	7.73	3.04	9.49	6.77	11.10	19.50	6.91	65.0	14.3	1.07	.45	
INCHES	.68	1.34	.57	1.71	1.26	1.99	3.63	1.28	11.70	2.65	.19	.08	
NOTES: TO CONVERT DISCHARGE IN GFS TO IN/DAY, MULTIPLY BY .005998. RUNOFF DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.													
1961 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA WATERSHED W-4							8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	1.0	.6	2.3	24.0	.8	30.0	15.0	.5	5.1	1.0	.8	.9	
2	.8	.8	2.8	8.8	.7	22.0	11.0	.4	4.2	.9	.7	.9	
3	1.0	1.9	3.3	4.1	.7	17.0	7.6	1.0	3.7	.7	.6	1.0	
4	1.7	1.1	2.5	2.5	.6	13.0	6.6	1.0	3.1	.6	.6	1.1	
5	2.6	1.3	2.0	1.7	.6	8.1	5.1	.6	2.6	.8	.6	1.1	
6	2.6	1.2	2.0	1.3	.5	7.2	4.2	.5	2.3	1.0	.6	1.1	
7	2.8	.9	1.8	1.1	.4	6.2	3.9	.5	2.0	.8	.6	.9	
8	2.8	.8	1.7	1.0	.4	6.8	3.7	.5	1.9	.6	.5	.8	
9	2.2	.6	2.1	.8	1.1	15.0	3.7	.6	1.7	.6	.5	.7	
10	1.5	.6	2.8	.7	1.6	15.0	3.9	.8	1.5	.6	1.0	.7	
11	1.3	.6	2.2	.6	1.5	11.0	3.1	6.3	1.0	.6	.9	.6	
12	21.0	.6	2.8	.5	1.4	8.4	2.6	6.2	.6	.6	.8	.6	
13	40.0	.6	4.0	.4	1.3	6.6	2.0	2.5	.5	.5	.7	.6	
14	30.0	.5	27.0	1.4	1.3	5.4	1.7	1.5	.6	.5	.6	.8	
15	15.0	.6	7.7	2.9	1.0	4.6	1.3	6.2	3.2	.5	.5	.9	
16	5.9	1.8	3.9	1.6	.8	4.2	1.0	12.0	1.6	.4	.5	.8	
17	1.3	3.4	2.6	1.0	.7	2.5	1.2	4.9	.9	.9	.9	.8	
18	1.5	3.5	1.8	1.4	.6	1.8	3.0	2.5	.7	1.7	1.0	.8	
19	1.8	3.3	1.4	1.6	.6	1.9	4.6	2.0	.6	1.4	.8	.8	
20	1.7	3.1	1.1	1.5	.6	1.5	4.2	2.2	3.4	1.1	.8	.8	
21	1.5	2.2	1.0	1.2	.5	1.0	3.7	2.0	1.2	.9	.7	.8	
22	1.3	1.8	.8	1.1	.5	1.6	3.1	3.3	.7	.8	1.0	.8	
23	1.1	1.7	.6	1.2	1.2	6.5	2.6	5.4	2.8	.7	1.2	.8	
24	1.0	1.2	.6	1.2	1.8	4.4	2.2	4.4	.8	.7	1.0	.8	
25	1.0	1.6	.5	1.0	2.5	3.3	1.8	7.6	.7	.7	.8	.8	
26	1.0	1.4	.5	.8	62.0	3.1	1.4	16.0	1.8	.7	.8	.8	
27	.9	1.4	.5	.7	73.0	6.5	1.0	17.0	1.9	.6	.7	.8	
28	.8	2.2	1.6	1.0	41.0	21.0	.8	14.0	1.3	.6	.6	.8	
29	.7	---	2.3	1.0	74.0	30.0	1.0	15.0	.9	.6	.6	.8	
30	.7	---	2.3	1.0	64.0	22.0	.7	8.8	.7	.6	1.0	.8	
31	.6	---	2.3	---	46.0	---	.6	6.2	---	.6	---	.8	
MEAN	4.81	1.48	2.93	2.30	12.5	9.62	3.49	4.92	1.80	.75	.75	.82	
INCHES	.89	.25	.54	.41	2.32	1.73	.65	.91	.32	.14	.13	.15	
NOTES: TO CONVERT DISCHARGE IN GFS TO IN/DAY, MULTIPLY BY .005998. RUNOFF DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.													

1962 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA WATERSHED W-4 8.4						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.1	.5	.4	.9	.6	.3	.6	11.0	18.0	19.0	.9	1.2
2	1.2	.4	.5	1.9	2.5	.3	.6	9.6	15.0	17.0	.8	3.7
3	.8	.4	.6	2.3	2.2	.2	.6	8.8	13.0	14.0	.7	2.8
4	.7	.4	.5	1.7	3.7	.2	.6	8.0	12.0	12.0	.7	1.4
5	.6	.4	.4	1.4	13.0	.2	.5	7.2	10.0	10.0	.6	1.5
6	.6	.5	.4	1.0	12.0	.2	.4	6.6	9.6	8.8	.6	2.5
7	.6	.6	.4	26.0	6.0	.2	3.3	6.2	10.0	7.6	.9	3.1
8	.5	.6	.3	39.0	2.6	.2	1.6	5.7	14.0	6.9	.8	2.8
9	.5	.6	.3	18.0	1.7	.2	.7	5.1	12.0	6.0	.9	2.8
10	.6	.7	.3	5.7	1.4	.2	.5	4.9	10.0	4.6	.7	4.2
11	.6	.6	.3	4.2	1.0	.2	.5	4.9	8.8	3.9	.7	4.4
12	.6	.5	.2	3.5	.8	.2	.5	4.6	8.4	2.6	.7	4.4
13	.6	.4	.2	3.0	.6	.2	.5	3.9	9.2	2.5	1.2	4.4
14	.7	.4	.3	2.6	.4	.2	.5	6.4	34.0	1.6	.9	4.4
15	.6	.4	.4	2.2	.3	.2	.5	23.0	39.0	1.5	.7	4.2
16	.6	.4	.4	1.8	.3	.2	.5	44.0	25.0	1.7	.7	3.7
17	.6	.4	.4	1.5	.3	.2	.5	69.0	18.0	1.6	.7	3.9
18	.6	.4	.3	1.4	.2	.2	.5	64.0	15.0	1.6	.6	4.2
19	.7	.3	.3	1.1	.2	.2	6.9	83.0	13.0	1.4	.6	3.9
20	.7	.3	.4	.9	.2	.2	23.0	92.0	25.0	1.2	.6	3.9
21	.7	.4	.4	.8	.2	.2	52.0	57.0	87.0	1.1	.7	3.9
22	.8	.4	.4	.6	.9	.3	46.0	56.0	63.0	1.0	2.8	3.1
23	.8	.4	1.0	.5	.7	2.8	32.0	57.0	47.0	1.0	1.2	1.4
24	.9	.4	2.3	.4	.4	3.1	26.0	44.0	49.0	.9	3.3	1.2
25	.8	.4	39.0	.4	.3	1.8	22.0	36.0	43.0	.8	1.1	1.0
26	.7	.4	38.0	5.4	.3	1.2	19.0	31.0	35.0	1.2	.8	1.0
27	.7	.4	14.0	5.1	.3	.9	18.0	27.0	29.0	7.7	2.5	1.0
28	.7	.4	2.3	3.1	.3	.7	17.0	25.0	26.0	5.7	3.0	.9
29	.6	-----	1.2	1.8	.3	.6	14.0	21.0	27.0	2.5	1.4	.9
30	.6	-----	1.4	1.0	.3	.5	13.0	19.0	22.0	2.0	1.2	.9
31	.5	-----	1.2	-----	.2	-----	13.0	21.0	-----	1.2	-----	.8
MEAN	.69	.44	3.50	4.64	1.74	.54	10.2	27.8	24.9	4.86	1.10	2.69
INCHES	.13	.07	.65	.83	.32	.10	1.89	5.17	4.48	.90	.20	.50

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .005998. RUNOFF DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.

1959 SELECTED RUNOFF EVENT			VERO BEACH, FLORIDA WATERSHED W-4 8.4								
ANTECEDENT CONDITIONS 1/			RAINFALL			RUNOFF					
DATE MO-DAY	RAINFALL (inches) 2/	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of October 16-30, 1959											
10-16	.00	3/.0190	10-16	5 RG	AVG 2/		10-16	2400	3	.0000	
				1200	.00	.00		1400	3	.0105	
				1230	.30	.15		2100	17	.0280	
				1400	.00	.15		10-18	0300	20	.0557
				1500	.95	1.10		0600	28	.0737	
				1600	.30	1.40					
				1700	.10	1.50			0700	71	.0861
				2000	.05	1.65			1000	54	.1330
				0300	.00	1.65		10-18	1500	91	.2236
				0500	.38	2.41		0500	1800	91	.2916
				1200	.14	3.39		10-19	0600	68	.5302
				1400	.35	4.09			2100	55	.7608
				2000	.00	4.09		10-20	0230	155	.9051
				2400	.45	5.89		0400	157	.9636	
				0200	.25	6.39		0900	124	1.1422	
				1000	.04	6.71		1200	126	1.2360	
				1200	.14	6.99			1400	161	1.3076
1400	.26	7.51		1800	170	1.4731					
1600	.10	7.71		2400	143	1.7078					
2000	.07	7.99	10-21	1200	111	2.0887					
1200	.00	7.99	2400	98	2.4019						
1300	.10	8.14	10-22	1200	79	2.6674					
1200	.00	8.14	10-23	1200	60	3.0843					
1500	.17	8.65	10-24	1200	49	3.4111					
			1800	55	3.4891						
			0600	52	3.6495						
				1800	45	3.7950					
			10-26	1200	39	4.2021					
			10-28	1200	27	4.5982					
			10-30	0600	4/ 23	4.8607					

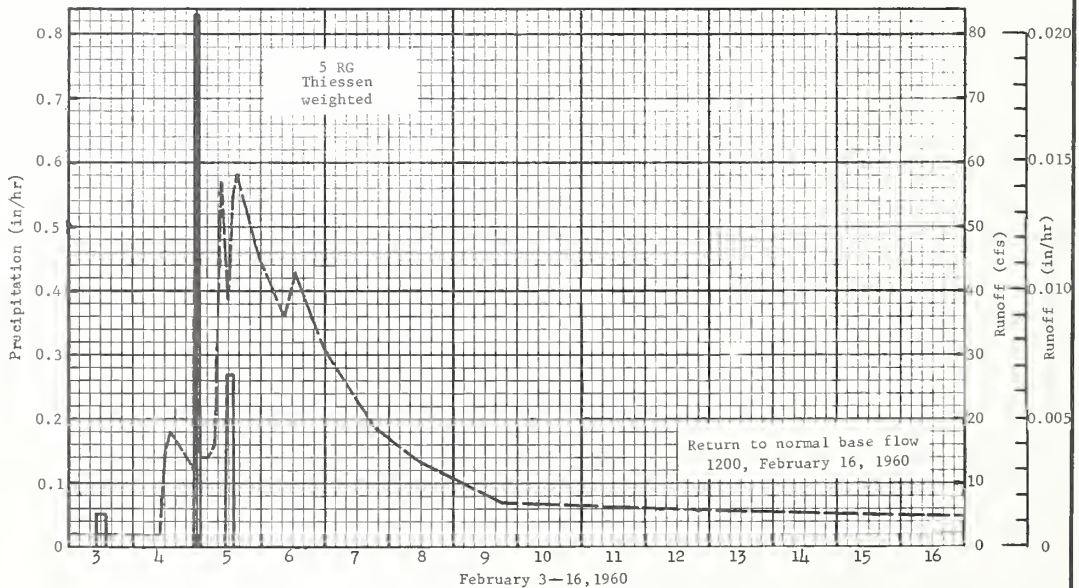
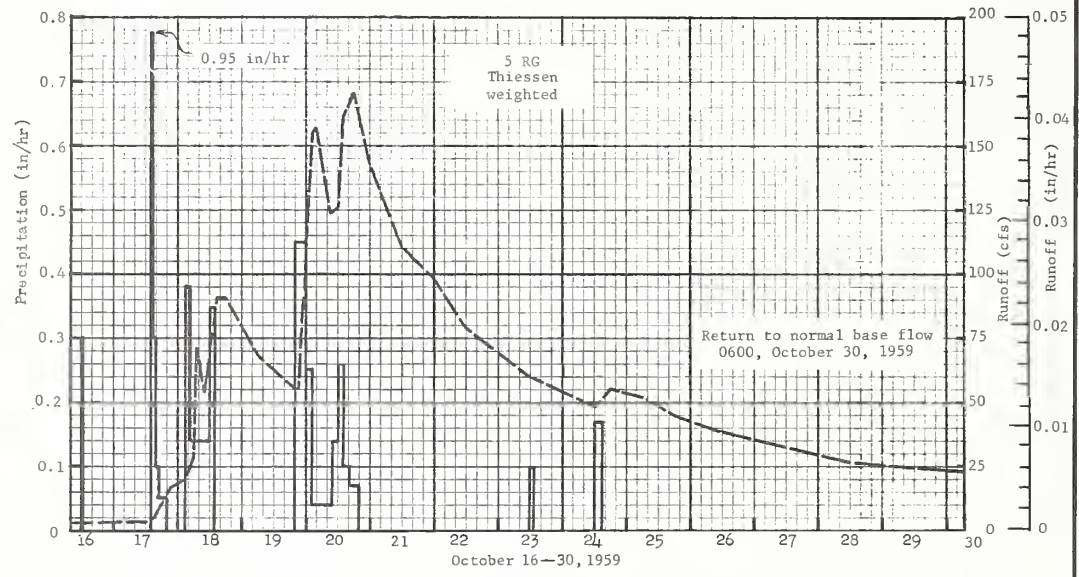
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0002499. 1/ FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY PRECIPITATION TABLE ON P. 8.4-2 AND DAILY DISCHARGE TABLE ON P. 8.4-5. 2/ ALL PRECIPITATION THIESSEN WEIGHTED, USING RAIN GAGES 1, 2, 3, 4, and 5. 3/ RUNOFF PRIOR TO 2400, OCT. 16, 1959. 4/ NORMAL BASE FLOW.

1960, 1961 SELECTED RUNOFF EVENTS			VERO BEACH, FLORIDA				WATERSHED W-4				8.4
ANTECEDENT CONDITIONS <u>1/</u>			RAINFALL				RUNOFF				
DATE MD-DAY	RAINFALL (inches) <u>2/</u>	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
<p>2-3 .00 <u>3/</u>.0160</p> <p><u>Watershed conditions:</u> Approximate land use (from SCS) 70% in native range 30% in improved pasture Good cover on entire area; height of grass, 3 to 6 in.</p>			Event of February 3-16, 1960								
			5 RG	AVG <u>2/</u>							
			2-3	1000	.00	.00	2-3	2400	2	.0000	
				1400	.05	.20	2-4	1000	2	.0050	
			2-4	2300	.00	.20		1200	15	.0092	
			2-5	0100	.85	1.86		1400	18	.0175	
				1100	.00	1.86		2330	12	.0531	
				1400	.27	2.67		2400	17	.0549	
							2-5	0200	14	.0626	
								0400	14	.0697	
								0630	16	.0790	
								0900	57	.1018	
								1130	39	.1318	
								1330	55	.1553	
								1500	58	.1765	
								2400	45	.2923	
							2-6	0900	36	.3834	
								1300	43	.4229	
								2400	31	.5246	
							2-7	1800	19	.6372	
				2-8	0900	14	.6989				
				2-9	1800	7	.8267				
				2-12	2400	6	.9530				
				2-16	1200	<u>4/</u> 5	1.0681				
<p>9-22 .00 <u>5/</u>.0030</p> <p><u>Watershed conditions:</u> Approximate land use (from SCS) 70% in native range 30% in improved pasture Good cover on entire area; height of grass, 3 to 6 in.</p>			Event of September 22-October 4, 1960								
			5 RG	AVG <u>2/</u>							
			9-22	0600	.00	.00	9-22	0100	15	.0000	
				0700	.40	.40		1000	15	.0337	
				0900	.05	.50		1330	190	.1234	
				1000	1.85	2.35		1500	199	.1963	
				1100	1.50	3.85	9-23	0300	126	.6836	
				1200	.70	4.55		0700	144	.8185	
				1400	.05	4.65		1300	136	1.0284	
			9-23	0300	.00	4.65		1500	170	1.1049	
				0330	.80	5.05		2000	703	1.6503	
				0430	.05	5.10		2100	765	1.8338	
				0500	.70	5.45		2400	604	2.3469	
				1300	.02	5.61	9-24	1200	357	3.7878	
				1400	.54	6.15		2400	237	4.6785	
				1500	1.20	7.35	9-25	0600	219	5.0204	
				1600	1.50	8.85		1200	180	5.3195	
			9-25	1200	.00	8.85		1600	184	5.5014	
				1230	.60	9.15		1800	277	5.6166	
				1500	.04	9.25		2000	300	5.7608	
	1600	.90	10.15	9-26	0500	240	6.2341				
	1800	.30	10.75		1600	180	6.9163				
9-26	1300	.00	10.75	9-27	1200	118	7.6610				
	1330	1.20	11.35		1400	170	7.7330				
9-27	1300	.00	11.35		2000	137	7.9632				
	1400	.90	12.25	9-28	1200	100	8.4370				
9-28	1600	.00	12.25	9-30	1200	55	9.3666				
	1700	.40	12.65	10-2	2400	30	10.0039				
				10-4	1600	<u>4/</u> 21	10.2586				
<p>1-12 .00 <u>6/</u>.0004</p> <p><u>Watershed conditions:</u> Approximate land use (from SCS) 70% in native range 30% in improved pasture Good cover on entire area; height of grass, 3 to 6 in.</p>			Event of January 12-21, 1961								
			5 RG	AVG <u>2/</u>							
			1-12	0400	.00	.00	1-12	0100	1	.0000	
				0600	.05	.10		0700	1	.0015	
				1600	.00	.10		0800	27	.0050	
				1700	.15	.25		0930	28	.0153	
				1800	.75	1.00		1500	21	.0490	
				1900	.40	1.40		1530	31	.0522	
				2000	.20	1.60		1730	36	.0690	
				2200	.07	1.74	1-13	0830	25	.1833	
	2400	.03	1.80		1130	39	.2073				
1-13	0400	.00	1.80		1230	68	.2207				

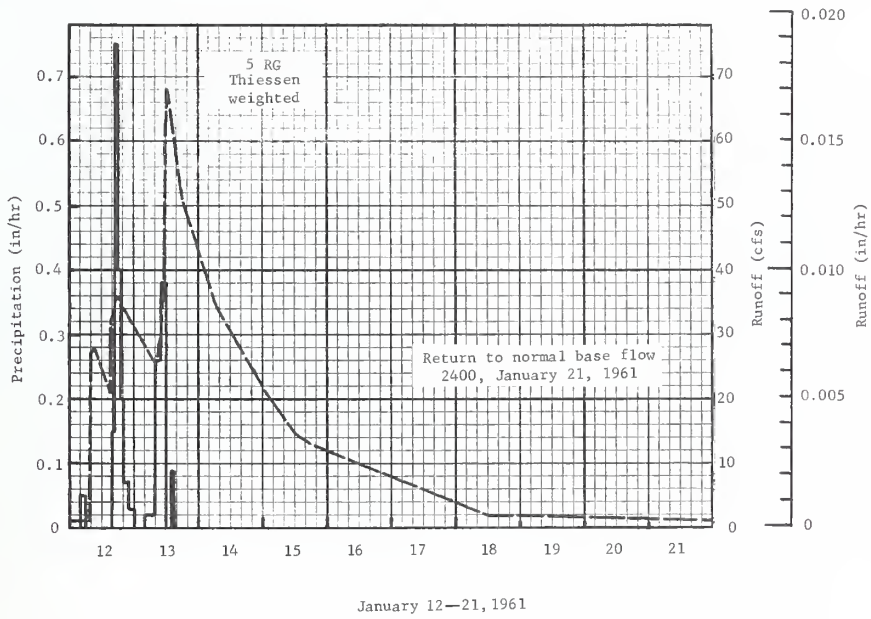
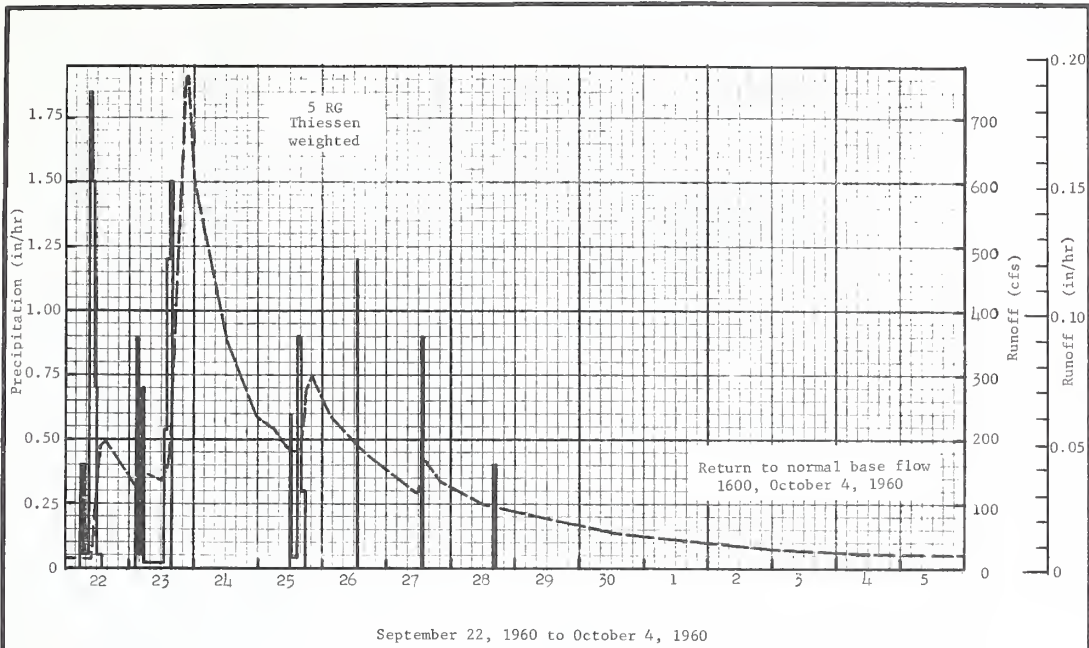
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0002499. 1/ FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY PRECIPITATION TABLES ON PP. 8.4-2, 3 AND DAILY DISCHARGE TABLES ON P. 8.4-6. FOR IRRIGATION, SEE DAILY IRRIGATION TABLES ON P. 8.4-4. 2/ ALL PRECIPITATION THIESSEN WEIGHTED, USING RAIN GAGES 1, 2, 3, 4, and 5. 3/ RUNOFF PRIOR TO 2400, FEB. 3, 1960. 4/ NORMAL BASE FLOW. 5/ RUNOFF PRIOR TO 0100, SEPT. 22, 1960. 6/ RUNOFF PRIOR TO 0100, JAN. 12, 1961.

1961 SELECTED RUNOFF EVENT			VERO BEACH, FLORIDA			WATERSHED W-4			8.4	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of January 12-21, 1961--Continued										
			1-13	5 RG	AVG 1/		1-13	1800	51	.3024
				0800	.02	1.88	1-14	0600	35	.4514
				1200	.26	2.14		2100	22	.5596
				1400	.00	3.16	1-15	1200	15	.6151
				1500	.09	3.25		1800	13	.6360
							1-16	1200	10	.6878
							1-18	1200	2	.7597
							1-21	2100	2/ 1	.7912

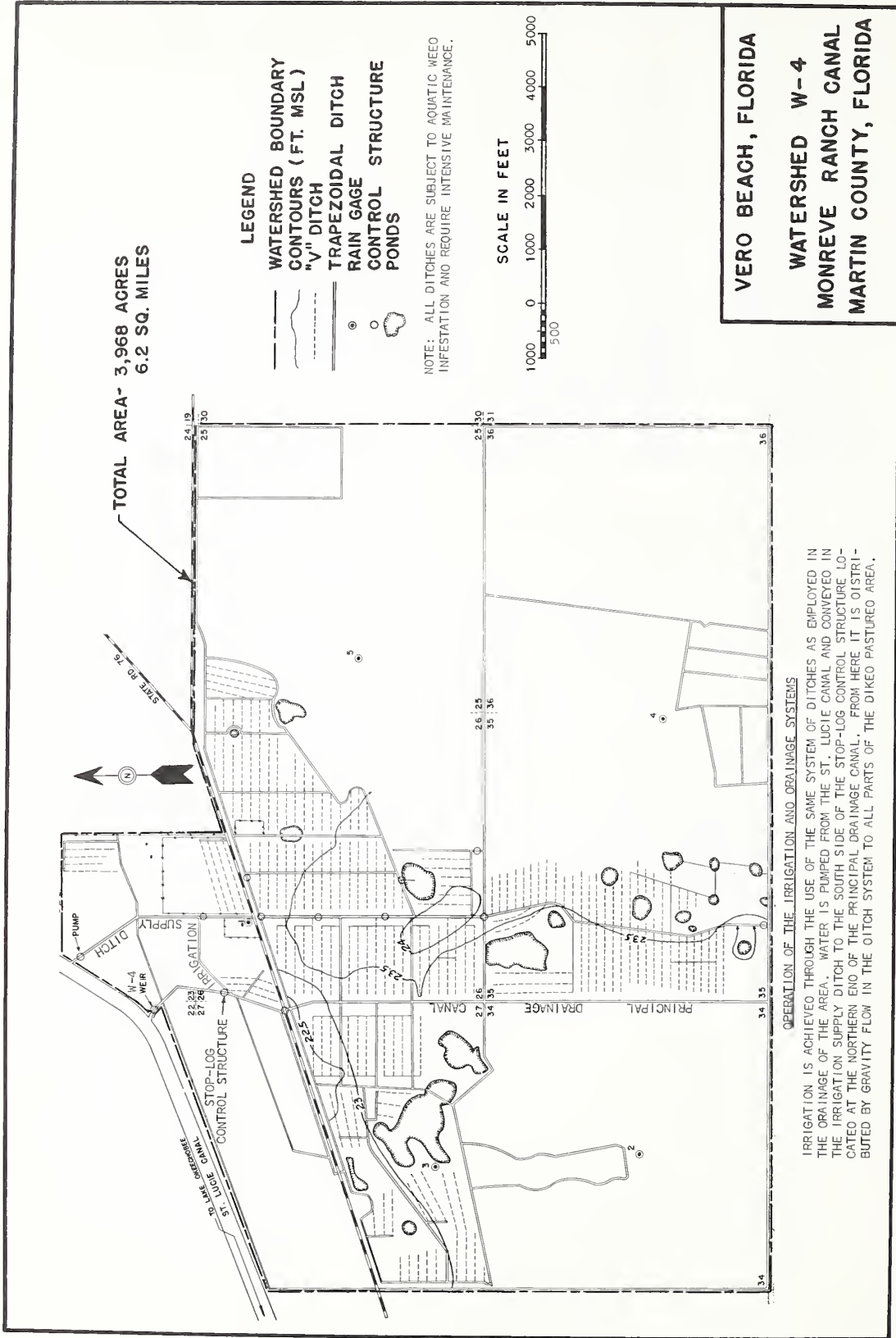
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0002499. 1/ PRECIPITATION THIESSSEN WEIGHTED, USING RAIN GAGES 1, 2, 3, 4, AND 5. 2/ NORMAL BASE FLOW.



VERO BEACH, FLORIDA WATERSHED W-4



VERO BEACH, FLORIDA WATERSHED W-4



TOTAL AREA - 3,968 ACRES
6.2 SQ. MILES

- LEGEND**
- WATERSHED BOUNDARY
 - CONTOURS (FT. MSL)
 - - - "V" DITCH
 - TRAPEZOIDAL DITCH
 - RAIN GAGE
 - CONTROL STRUCTURE
 - POND

NOTE: ALL DITCHES ARE SUBJECT TO AQUATIC WEED INFESTATION AND REQUIRE INTENSIVE MAINTENANCE.

SCALE IN FEET



VERO BEACH, FLORIDA
WATERSHED W-4
MONREVE RANCH CANAL
MARTIN COUNTY, FLORIDA

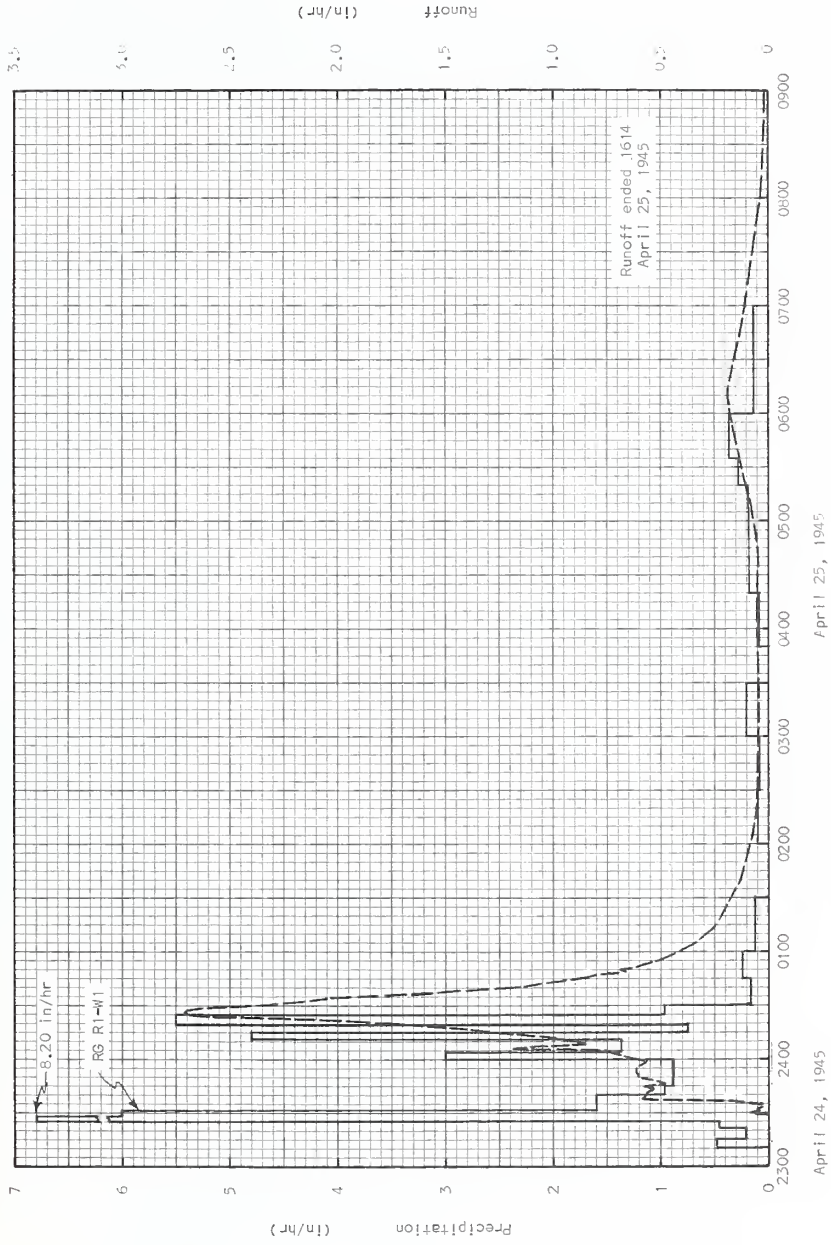
OPERATION OF THE IRRIGATION AND DRAINAGE SYSTEMS

IRRIGATION IS ACHIEVED THROUGH THE USE OF THE SAME SYSTEM OF DITCHES AS EMPLOYED IN THE DRAINAGE OF THE AREA. WATER IS PUMPED FROM THE ST. LUCIE CANAL AND CONVEYED IN THE IRRIGATION SUPPLY DITCH TO THE SOUTH SIDE OF THE STOP-LOG CONTROL STRUCTURE LOCATED AT THE NORTHERN END OF THE PRINCIPAL DRAINAGE CANAL. FROM HERE IT IS DISTRIBUTED BY GRAVITY FLOW IN THE DITCH SYSTEM TO ALL PARTS OF THE DIKEED PASTURED AREA.

MONTHLY PRECIPITATION AND RUNOFF (inches)						WATKINSVILLE, GEORGIA WATERSHED W-1 AREA — 19.2 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ₁ / Q	5.44 .15	4.88 1.09	5.94 .35	5.68 .19	1.41 .00	5.89 .01	2.08 T	3.47 .02	5.84 .04	2.10 T	4.80 .08	2.57 T	50.10 1.93		
	STA AV ² / _P (39-62) Q	4.55 .49	4.64 .43	5.76 .52	4.06 .39	3.43 .28	3.23 .09	4.58 .29	3.78 .42	2.94 .02	2.44 .06	3.28 .35	4.36 .24	47.05 3.59		
	MEAN P ₃ / 78 YR	4.67	4.91	5.19	3.84	3.62	3.99	5.09	4.39	3.36	2.95	2.83	4.39	49.23		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-22	.14	2-22	.20	2-22	.34	2-22	.45	2-22	.53	2-21	.62	2-21	.63	2-21	1.09
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962 ⁴	4-25 1945	<u>2.71</u>	1-6 1946	1.56	1-6 1946	1.94	1-6 1946	2.20	1-6 1946	2.94	11-28 1948	<u>3.03</u>	11-26 1948	<u>5.68</u>	11-22 1948	<u>6.64</u>
NOTES: Quality of records: P, excellent; Q, good, due to minor recording problems from livestock traffic near stilling well. Watershed conditions: Excellent Coastal Bermudagrass pasture; heavily grazed by beef cattle May to Oct. (9200 cow-days); moderately grazed Nov. and Dec. when overseeded in wheat and barley (400 cow-days); fertilized with 1000 lb/ac 6-12-12 and 160 lb. N in April and May. 1/Precipitation from RG R-1-W1. 2/P and Q measurements began Sept. 1, 1939. 3/Mean P based on 78-yr (1885-1962) U.S. Weather Bureau record period at Athens, Ga. 4/Maximum discharge for 4-25-45 and volumes and dates for 1, 2, and 8 days are revised and supersede those previously published (underlined items).																
GENERALLY REPRESENTS: (Revision) Southern part of Piedmont Plateau problem area (B10) redesignated southern part of Southern Piedmont land resource area (P-136).																
1945 SELECTED RUNOFF EVENT				WATKINSVILLE, GEORGIA WATERSHED W-1												
ANTECEDENT CONDITIONS			RAINFALL						RUNOFF ^{5/}							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
			Event of April 24-25, 1945 ^{6/}													
	RG R1-W1		4-24	RG	R1-W1		4-24									
	3-26	1.01		2310	.00	.00		2330	.0000	.0000						
	4-2	.72		2315	.48	.04		2331	.0819	.0007						
	4-16	.16		2321	.20	.06		2332	.0351	.0017						
	4-17	1.74		2325	.45	.09		2333	.0534	.0024						
									.0260	.0030						
	4-22	.64		2328	8.20	.50		2334	.0362	.0035						
	4-23	.91		2331	6.00	.80		2336	.1432	.0062						
				2340	1.60	1.04		2337	.3453	.0103						
				2345	.96	1.12		2338	.5871	.0181						
				2400	.88	1.34		2339	.5695	.0277						
Watershed conditions: Vegetated bench terraces with 1-year old kudzu growing in 10-foot rows between them; poor cover of young weeds and grass between rows.			4-25	0004	3.00	1.54		2341	.5644	.0466						
				0011	1.37	1.70		2343	.5356	.0649						
				0015	4.80	2.02		2344	.5768	.0742						
				0019	.75	2.07		2345	.5068	.0832						
				0025	5.50	2.62		2346	.4787	.0914						
							0030	.96	2.70		2348	.5391	.1083			
							0045	.16	2.74		2349	.5897	.1177			
							0100	.24	2.80		2350	.6037	.1276			
							0130	.12	2.86		2352	.6068	.1476			
							0200	0	2.86		2353	.6172	.1578			
							0230	.10	2.91		2355	.6146	.1783			
							0300	.08	2.95		2359	.5630	.2175			
							0330	.20	3.05		2400	.6172	.2273			
							0350	0	3.05	4-25	0002	.6720	.2488			
				0420	.08	3.13		0005	.7648	.2847						
				0520	.18	3.31		0006	1.1895	.3010						
				0535	.28	3.38		0008	.8551	.3351						
				0600	.36	3.53		0012	.9846	.3955						
				0700	.13	3.66		0014	1.1748	.4313						
								0016	1.3425	.4737						
								0017	1.3782	.4964						
								0018	1.4691	.5201						
								0019	1.6131	.5458						
								0020	1.7248	.5736						
								0021	1.8969	.6038						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.3599. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 10.1-8. ^{5/} RUNOFF RATES CORRECTED FOR PONDAGE BACK OF WEIR. ^{6/} SINCE NO SUITABLE RUNOFF EVENT OCCURRED IN 1962, THIS PREVIOUSLY UNREPORTED SELECTED EVENT FOR 1945 IS PRESENTED.																

1945 SELECTED RUNOFF EVENT			WATKINSVILLE, GEORGIA				WATERSHED W-1			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF ^{1/}			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
<u>Event of April 24-25, 1945 - Continued</u>										
							4-25	0023	2.2685	.6732
								0024	2.5979	.7138
								0025	2.6911	.7579
								0026	2.7113	.8029
								0028	2.6298	.8919
								0029	2.4494	.9342
								0030	2.3555	.9742
								0032	2.1693	1.0496
								0034	2.0286	1.1196
								0036	1.6771	1.1814
								0038	1.4279	1.2332
								0040	1.2218	1.2774
								0042	1.0968	1.3160
								0044	.9447	1.3500
								0046	.8399	1.3797
								0047	.8035	1.3934
								0048	.7380	1.4062
								0049	.6632	1.4179
								0050	.6916	1.4292
								0051	.6122	1.4401
								0053	.5757	1.4600
								0056	.4849	1.4865
								0100	.4168	1.5165
								0105	.3414	1.5481
								0110	.2901	1.5744
								0115	.2434	1.5966
								0120	.2181	1.6158
								0135	.1513	1.6620
								0140	.1337	1.6739
								0200	.0814	1.7098
								0205	.0730	1.7162
								0220	.0593	1.7328
								0240	.0537	1.7514
								0255	.0463	1.7639
								0305	.0440	1.7714
								0335	.0449	1.7936
								0405	.0497	1.8172
								0435	.0483	1.8417
								0505	.0762	1.8728
								0605	.1830	2.0024
								0610	.1872	2.0178
								0615	.1807	2.0331
								0630	.1578	2.0758
								0640	.1421	2.1008
								0700	.1073	2.1424
								0800	.0355	2.2138
								0830	.0238	2.2286
								0900	.0175	2.2389
								1000	.0108	2.2531
								1100	.0074	2.2621
								1200	.0051	2.2683
								1300	.0035	2.2725
								1430	.0013	2.2761
								1614	.0000	2.2772

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.3599. ^{1/} RUNOFF RATES CORRECTED FOR PONDAGE BACK OF WEIR.



WATKINSVILLE, GEORGIA WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-III AREA—19.3 ACRES							13.02
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P 1/ Q	3.20 T	3.38 T	3.75 T	2.22 T	3.46 T	2.02 T	4.61 T	1.55 T	3.95 T	2.09 T	3.32 T	4.53 T	38.08 .01
STA AV2/P (40-62) Q	2.65 T	2.88 .01	3.25 T	3.07 .04	3.68 .06	3.96 .13	3.94 .07	3.65 .04	2.88 .01	2.30 .01	2.18 .01	2.84 T	37.28 .38
MEAN P 3/ 72 YR	3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86

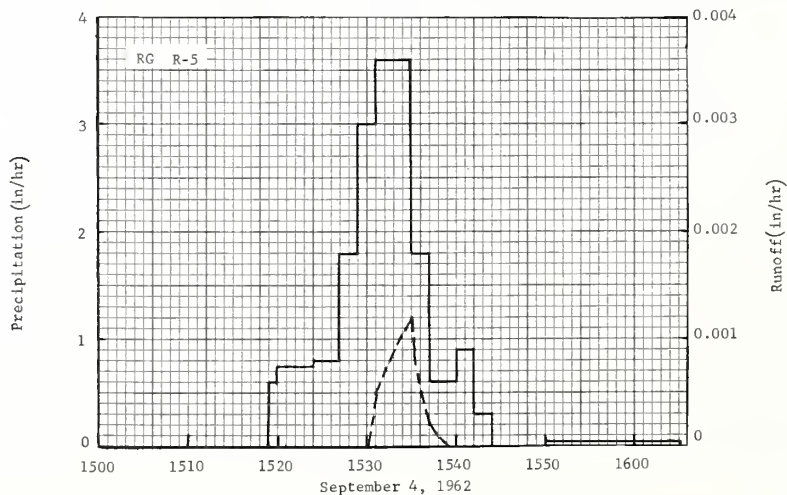
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-4	.002	5-28	.001	5-28	.0011	5-28	.0012	5-28	.0013	5-28	.0013	5-27	.0014	5-22	.0019

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-5 1942	1.90	6-16 1942	.488	6-16 1942	.504	6-16 1942	.504	6-16 1942	.504	6-16 1942	.504	6-16 1942	.504	6-5 1942	1.002

Notes: Quality of records: P and Q, excellent. Watershed conditions: 89% cultivated; contour strips with a rotation of corn, small grain, and clover. 9% pasture, usually good cover. 2% woodland. 1/ Precipitation obtained from rain gage R-5. 2/ Determined from continuous records, 1940-62. Precipitation and runoff records began May 1939. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.

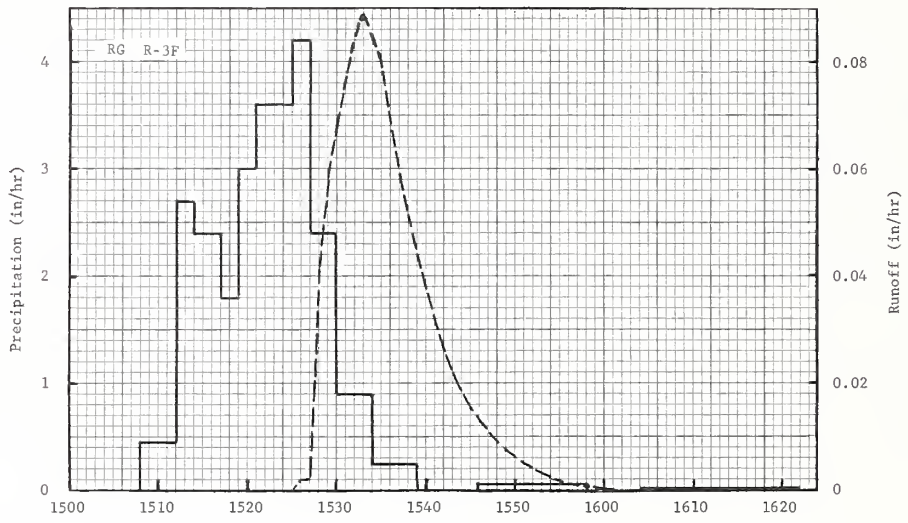
1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA WATERSHED W-III							13.02
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of September 4, 1962							
8-7	RG R-5 .07	.0000	9-4	RG	R-5		9-4	1519	.00	.0000
8-13	.70	.0000		1520	.60	.01		1531	.0005	T
8-17	.09	.0000		1524	.75	.06		1535	.0012	.0001
9-3	.06	.0000		1527	.80	.10		1537	.0002	.0001
9-4	4/ .74	5/ .0002		1529	1.80	.16		1538	T	.0001
Watershed conditions: 24.5% in corn 8 to 10 ft. high, beginning to ripen. 31.0% in second-year clover, 10 to 11 in. high regrowth after August 10 cutting. 20.5% in second-year clover 26 to 28 in. high, dormant regrowth after cutting of June 30. 12.6% in barley stubble—first-year clover 10 in. high regrowth after August 10 cutting. 8.9% in pasture, good cover. 2.5% in wooded pasture, good cover.				1531	3.00	.26		1539	.0000	.0001
				1535	3.60	.50				
				1537	1.80	.56				
				1540	.60	.59				
				1542	.90	.62				
			1544	.30	.63					
			1550	.00	.63					
			1605	.04	.64					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.4544. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN, 1960, P. 13.2-4. 4/ FROM 0721 TO 1212. 5/ FROM 0730 TO 1130.



BLACKSBURG, VIRGINIA WATERSHED W-III

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-IV 13.03 AREA — 3.49 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 1/	3.08	2.97	3.03	2.16	3.87	1.74	5.71	1.24	3.97	2.08	3.56	4.19	37.60			
Q	.02	.00	.00	.00	T	.00	.07	.00	.02	.00	.01	.00	.12			
STA AV2/P (52-62) Q	2.46	3.33	3.42	3.09	3.21	3.49	3.06	3.52	3.02	2.32	2.24	2.95	36.11			
	.03	.02	T	.02	.02	.01	.01	.05	.02	T	T	.01	.19			
MEAN P 3/ 72 YR	3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	7-3	.254	7-3	.068	7-3	.068	7-3	.068	7-3	.068	7-3	.068	7-3	.068	7-3	.068
MAXIMUMS FOR PERIOD OF RECORD																
1951 TO 1962	5-5 1958	.75	5-5 1958	.206	5-5 1958	.213	5-5 1958	.228	5-5 1958	.241	5-5 1958	.241	5-5 1958	.244	5-5 1958	.244
Notes: Quality of record: P and Q, excellent. Watershed conditions: All cultivated; contour strips with rotation of corn, small grain, and hay. A mulch tillage program is practiced. No crop is removed except one clover hay crop each year. 1/Precipitation obtained from rain gage R-3F. 2/ Determined from continuous records, 1952-62. Precipitation and runoff records began Sept. 1951. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.																
1962 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA WATERSHED W-IV 13.03												
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of September 4, 1962																
	RG R-3F			RG	R-3F											
8-3	.55	.000	9-4	1508	.00	.00	9-4	1525	.000	.000						
8-7	.07	.000		1512	.45	.03		1526	.002	T						
8-13	.50	.000		1514	2.70	.12		1527	.002	T						
8-22	.12	.000		1517	2.40	.24		1528	.041	.001						
9-3	.07	.000		1519	1.80	.30		1529	.059	.002						
9-4	4/ .79	.000		1521	3.00	.40		1530	.067	.003						
				1525	3.60	.64		1532	.084	.005						
				1527	4.20	.78		1533	.089	.006						
				1530	2.40	.90		1534	.084	.008						
				1534	.90	.96		1535	.080	.009						
				1539	.24	.98		1537	.059	.012						
				1546	.00	.98		1539	.044	.013						
				1558	.05	.99		1541	.032	.015						
				1604	.00	.99		1543	.022	.015						
				1622	.03	1.00		1545	.015	.016						
								1549	.007	.017						
								1554	.002	.017						
								1558	.001	.017						
								1601	.000	.017						
Watershed conditions: 48.5% in corn 7 to 9 ft. high, beginning to mature. 20.8% in clover-out stubble-grass mixture 5 to 6 in. high, fair cover. 30.7% in clover, second year, 12 to 15 in. high, regrowth after June 14 cutting.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.519. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.3-5. 4/ FROM 0720 TO 1322.																



September 4, 1962

BLACKSBURG, VIRGINIA WATERSHED W-IV

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-V 13.04 AREA — 6.08 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P 1/	3.08	2.97	3.03	2.16	3.87	1.74	5.71	1.24	3.97	2.08	3.56	4.19	37.60
	Q	.02	.00	.00	.00	.00	.00	.02	.00	T	.00	.00	.00	.04
	STA AV 2/P (52-62) Q	2.46	3.33	3.42	3.09	3.21	3.49	3.06	3.52	3.02	2.32	2.24	2.95	36.11
		.03	.02	T	T	.02	.01	T	.02	.01	T	T	.01	.12
	MEAN P 3/ 72 YR	3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	7-3	.097	1-6	.02	1-6	.02	1-6	.02	1-6	.02	1-6	.02	1-6	.02	1-6	.02

MAXIMUMS FOR PERIOD OF RECORD																
1952 to 1962	5-5 1958	.704	5-5 1958	.154	5-5 1958	.157	2-26 1958	.173	5-5 1958	.176	5-5 1958	.178	2-24 1958	.180	2-23 1958	.184

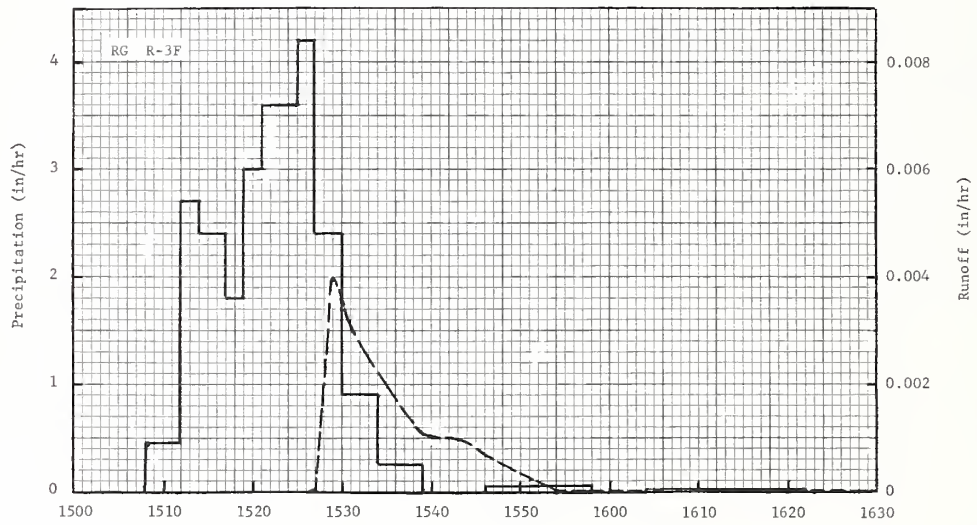
Notes: Quality of records: P and Q, excellent. Watershed conditions: All cultivated; contour strips with a rotation of corn, small grain, and clover. A mulch tillage program is practiced. No crop residue is removed except one clover hay crop each year. 1/ Precipitation obtained from rain gage R-3F. 2/ Determined from continuous record, 1952-62. Precipitation and runoff records began Jan. 1952. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta at Blacksburg, Va.

1962 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA WATERSHED W-V 13.04							
----------------------------	--	--	--	--	--	--	--	--	--	--	--

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-OAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF OAY	RATE (in/hr)	ACC. (inches)
	RG R-3F		Event of September 4, 1962							
8-3	.55	.000	9-4	RG	R-3F		9-4	1526	.000	.000
8-7	.07	.000		1508	.00	.00		1527	T	T
8-13	.50	.000		1512	.45	.03		1528	.002	T
8-22	.12	.000		1514	2.70	.12		1529	.004	T
				1517	2.40	.24				
9-3	.07	.000	1519	1.80	.30	1531	.003	T		
9-4	4/ .79	.000	1521	3.00	.40	1535	.002	T		
			1525	3.60	.64	1539	.001	T		
			1527	4.20	.78	1543	.001	T		
			1530	2.40	.90	1554	T	.001		
			1534	.90	.96	1608	T	.001		
			1539	.24	.98	1630	.000	.001		
			1546	.00	.98					
			1558	.05	.99					
			1604	.00	.99					
			1622	.03	1.00					

Watershed conditions: 32.2% in corn 7 to 9 ft. high, beginning to mature. 24.8% in clover-oat stubble-grass mixture 5 to 6 in. high, fair cover. 33.6% in clover, second-year, 12 to 15 in. high regrowth after June 14 cutting. 9.4% in grassed waterway, good cover.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 6.131. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.3-5. 4/ FROM 0720 TO 1322.



September 4, 1962

BLACKSBURG, VIRGINIA WATERSHED W-V

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-VI 13.05 AREA — 7.70 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P 1/	3.08	2.97	3.03	2.16	3.87	1.74	5.71	1.24	3.97	2.08	3.56	4.19	37.60
Q	.06	.01	.01	.00	T	.00	.10	.00	.02	.00	.00	.00	.20
STA AV 2/P	2.46	3.33	3.42	3.09	3.21	3.49	3.06	3.52	3.02	2.32	2.24	2.95	36.11
(52-62) Q	.04	.06	.06	.05	.05	.02	.02	.07	.05	.01	.01	.06	.50
MEAN P 3/ 72 YR	3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	7-3	.325	7-3	.093	7-3	.102	7-3	.102	7-3	.102	7-3	.102	7-3	.102	7-3	.102

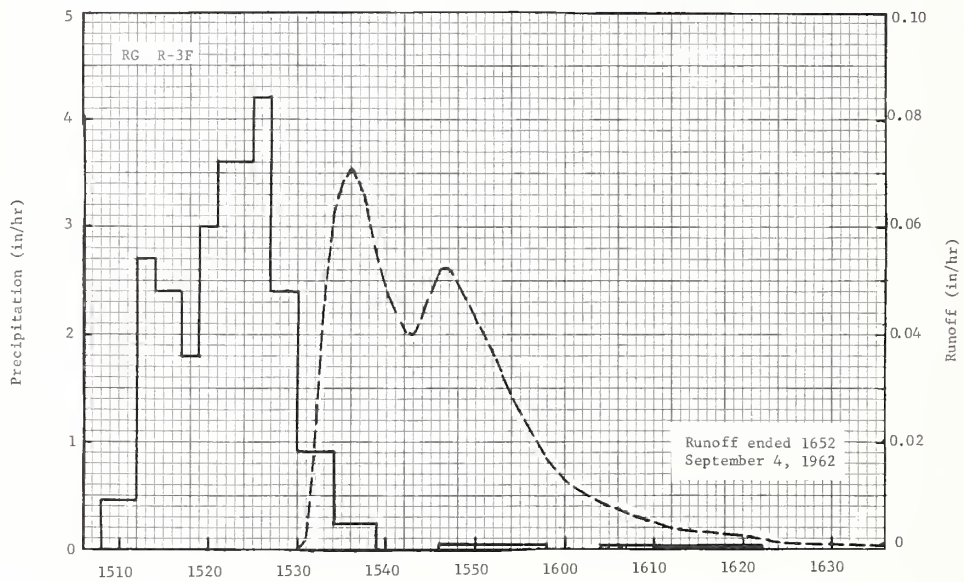
MAXIMUMS FOR PERIOD OF RECORD																
1951 TO 1962 4/	5-5	.953	8-8	.273	8-8	.300	5-5	.320	5-5	.347	5-5	.386	5-5	.443	5-5	.456
	1958		1958		1958		1958		1958		1958		1958		1958	

Notes: Quality of records: P and Q, excellent. Watershed conditions: All cultivated; contour strips with a rotation of corn, small grain, and clover. A mulch tillage program is practiced. No crop residue is removed except one clover hay crop per year. 1/ Precipitation obtained from rain gage R-3F. 2/ Determined from continuous records, 1952-62. Precipitation and runoff records began Sept. 1951. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.

1962 SELECTED RUNOFF EVENT BLACKSBURG, VIRGINIA WATERSHED W-VI 13.05

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of September 4, 1962											
	RG R-3F			RG	R-3F						
8-3	.55	.000	9-4	1508	.00	.00	9-4	1530	.000	.000	
8-7	.07	.000		1512	.45	.03		1531	.002	T	
8-13	.50	.000		1514	2.70	.12		1532	.022	T	
8-22	.12	.000		1517	2.40	.24		1533	.047	.001	
9-3	.07	.000		1519	1.80	.30		1534	.062	.002	
9-4	5/ .79	.000		1521	3.00	.40		1535	.068	.003	
				1525	3.60	.64		1536	.071	.004	
				1527	4.20	.78		1537	.068	.005	
				1530	2.40	.90		1540	.047	.008	
				1534	.90	.96		1542	.040	.010	
				1539	.24	.98		1543	.040	.010	
				1546	.00	.98		1544	.045	.011	
				1558	.05	.99		1546	.052	.013	
				1604	.00	.99		1547	.052	.014	
				1622	.03	1.00		1552	.036	.017	
								1555	.025	.019	
								1558	.017	.019	
								1600	.013	.020	
								1605	.008	.021	
								1608	.006	.022	
								1612	.004	.022	
								1621	.002	.023	
								1624	.001	.023	
								1652	.000	.023	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.764. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.3-5. 5/ FROM 0720 TO 1322.



September 4, 1962

BLACKSBURG, VIRGINIA WATERSHED W-VI

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA								THORNE CREEK WATERSHED W-I		13.06
						AREA — 3,054 ACRES (4.77 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	2.59	3.17	3.15	2.47	3.67	2.88	5.19	5.10	3.31	3.29	3.71	4.90	43.43		
	Q	.31	.40	1.00	.46	.36	.34	.11	.40	.10	.18	.19	.52	4.37		
	STA AVG (57-62)	1.84	3.06	3.67	3.17	4.05	2.89	3.58	4.16	3.82	2.81	2.64	3.44	39.13		
	Q	.45	.51	.85	1.09	.87	.49	.32	.33	.20	.19	.20	.36	5.86		
	MEAN P 3/ 57 YR	2.94	2.70	3.26	2.79	3.29	3.48	4.22	3.35	2.75	2.75	2.19	2.85	36.57		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	10-14	.11	10-14	.05	10-14	.07	12-4	.11	12-4	.13	12-4	.15	12-4	.17	3-11	.35

MAXIMUMS FOR PERIOD OF RECORD

19 57 TO 1962	5-17 1958	.12	5-17 1958	.10	5-17 1958	.18	5-17 1958	.30	5-17 1958	.34	5-17 1958	.38	5-17 1958	.47	3-30 1960	1.09
---------------	-----------	-----	-----------	-----	-----------	-----	-----------	-----	-----------	-----	-----------	-----	-----------	-----	-----------	------

Notes: Quality of records: P - excellent, Q - good. Watershed conditions: Pasture, usually good cover of bluegrass and other native grasses and clovers, 62%; cultivated, common rotation is corn, small grain and hay, 27%; woods, 5%; idle, 5%; roads, 1%. 1/ Precipitation Thiessen weighted from R-1, R-2, and R-3. 2/ Determined from continuous records from June 1957 through 1962, precipitation Thiessen weighted. 3/ Mean P based on 57-yr (1906-62) U. S. Weather Bureau record period at Claytor Dam, Radford, Va.

Revision to 1956-59 Normal P: The monthly and annual Normals previously published were actually the U. S. Weather Bureau 25-yr (1931-55) Normals and not averages for 53-yr (1907-59) record period at Radford, Va., (Claytor Dam) as stated in footnote of USDA Misc. Pub. 945, p. 13.6-1.

1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA								THORNE CREEK WATERSHED W-I		13.06
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.235	.04	.01	.13	.14	.00	.00	.00	.00	.00	.00	.00				
2	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00				
3	.00	.00	.00	.00	.00	.06	1.37	.59	.25	.21	.25S	.00				
4	.00	.00	.02	.00	.00	.00	.00	.00	.65	1.18	.00	1.76				
5	.07	T	.49	.00	.00	.05	.01	.16	.00	.07	.00	.23N				
6	.77	.00	.12	.25	.00	.17	.01	.00	.00	.00	.00	.00				
7	.00	.00	.00	.16	.00	.00	.00	.38	.00	.06	.00	.00				
8	.045	.00	.00	.48	.24	.00	.28	.01	.00	.00	.00	.00				
9	.00	1.08N	.53	.00	.00	.00	.00	.00	.00	.00	2.40	.00				
10	.00	.00	.04	.00	.00	.00	.00	.00	.09	.00	.04	.00				
11	.00	.085	.30	.13	.35	.27	.00	.00	.00	.00	.00	.06S				
12	.00	.035	.26	.36	.00	1.08	.00	.00	.00	.00	.00	.00				
13	.00	.00	.00	T	.00	.00	.00	.27	.00	.08	.00	.00				
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.16	.00	.00				
15	.35	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00	.00				
16	.00	.27	.00	.00	1.22	.00	.00	1.91	1.20	.00	.00	.00				
17	.00	.00	.00	.00	.00	.00	.04	.00	.68	.00	.01	.00				
18	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.42	.00				
19	.045	.15	.07N	.00	.06	.00	.00	.00	T	.00	.00	.00				
20	.00	.00	.08	.00	.00	.61	.00	1.12	.06	.00	.03	.20M				
21	.00	.29N	.87	.00	.02	T	.00	.14	.00	.21	.29	.60N				
22	.04	T	.00	.00	.03	.18	.53	.52	.00	.00	.01	.18N				
23	.05	.32	.00	T	.00	.27	.48	.00	.00	.00	.00	.00				
24	.17	.23	.00	.00	.04	.02	.00	.00	.00	.00	.00	.22N				
25	.03	.00	.00	.00	.11	.00	.41	.00	.16	.03	.24S	.61N				
26	.06	.17	.00	.49	.24	.09	.05	.00	.22	.00	.02S	.07				
27	.23	.00	.00	.00	.64	.08	.00	.00	T	.00	.00	.00				
28	.43	.49	.00	.00	.32	.00	.04	.00	.00	.00	.00	.00				
29	.00	-----	.00	.16	.00	.00	.57	.00	.00	.00	.00	.97M				
30	.08N	-----	.03	.31	.00	.00	1.38	.00	.00	.09	.00	.00				
31	.00	-----	.31	-----	.00	-----	.02	.00	-----	.20	-----	.00				
TOTAL	2.59	3.17	3.15	2.47	3.67	2.88	5.19	5.10	3.31	3.29	3.71	4.90				
STA. AV.	1.84	3.06	3.67	3.17	4.05	2.89	3.58	4.16	3.82	2.81	2.64	3.44				

NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1, R-2 AND R-3. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, MISC. PUB. 945, P, 13.6-5.

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA		THORNE CREEK WATERSHED W-I				13.06
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.86	1.48	3.11	3.11	1.57	1.48	.46	.28	.49	.31	.34	.43
2	.86	1.45	3.08	2.80	1.54	1.51	.46	.25	.46	.31	.31	.43
3	.86	1.35	3.08	2.56	1.45	1.63	.95	.37	.46	.31	.34	.43
4	.86	1.29	3.08	2.37	1.39	1.63	1.02	.43	.68	.95	.31	18.14
5	.89	1.35	3.08	2.22	1.35	1.72	.52	.46	.55	.52	.28	3.51
6	1.79	1.35	3.26	2.16	1.20	1.72	.52	.43	.46	.40	.25	3.33
7	1.94	1.26	3.08	2.31	1.11	1.66	.49	.77	.46	.40	.25	2.86
8	1.85	1.20	3.08	2.59	1.20	1.66	.46	.46	.46	.37	.18	2.62
9	1.72	2.16	3.08	2.03	1.14	1.69	.46	.34	.46	.34	7.30	2.37
10	1.66	2.16	3.39	1.97	1.11	1.76	.46	.46	.43	.34	2.86	2.03
11	1.63	1.97	4.40	2.06	1.26	1.69	.46	.43	.43	.34	1.11	1.88
12	1.48	2.03	7.45	2.28	1.11	2.25	.46	.43	.40	.31	.92	1.72
13	1.35	2.00	6.93	2.00	1.08	1.72	.46	.43	.37	.31	.80	1.69
14	1.29	1.91	6.25	1.91	1.08	1.72	.46	.49	.34	10.96	.74	1.66
15	1.88	1.82	5.70	1.88	1.23	1.69	.46	.37	.34	1.02	.71	1.57
16	1.45	2.00	5.11	1.66	5.73	1.69	.43	12.44	.59	.52	.62	1.42
17	1.26	1.76	4.53	1.66	1.48	1.54	.43	1.23	.77	.43	.59	1.20
18	1.17	1.69	4.22	1.66	1.32	1.54	.40	.80	.46	.40	.74	1.11
19	1.11	1.76	4.03	1.66	1.23	1.66	.40	.71	.43	.34	.62	1.05
20	1.11	1.54	3.79	1.66	1.26	1.88	.37	8.44	.40	.34	.52	1.05
21	1.08	1.63	7.05	1.66	1.26	1.42	.34	1.60	.40	.40	.62	1.39
22	1.05	1.63	4.53	1.60	1.29	1.42	.37	12.78	.40	.40	.71	1.32
23	1.05	1.76	4.28	1.60	1.29	1.35	.49	1.26	.34	.40	.55	1.26
24	1.11	2.19	4.10	1.57	1.29	.92	.37	1.02	.34	.40	.52	1.08
25	1.11	2.09	3.91	1.57	1.29	.99	.37	.89	.34	.40	.52	1.08
26	1.08	2.46	3.76	2.34	1.69	.95	.37	.77	.34	.40	.52	1.20
27	1.05	2.37	3.51	1.66	1.51	.74	.31	.74	.37	.37	.46	1.23
28	1.23	3.20	3.26	1.57	2.37	.49	.28	.68	.40	.37	.46	1.32
29	1.35	-----	3.20	1.57	1.57	.46	.43	.62	.37	.43	.43	2.25
30	1.54	-----	3.14	1.79	1.57	.43	.55	.55	.31	.40	.43	2.74
31	1.48	-----	3.23	-----	1.54	-----	.59	.49	-----	.40	-----	1.26
MEAN	1.30	1.82	4.12	1.98	1.50	1.44	.47	1.66	.44	.76	.83	2.15
INCHES	.31	.40	1.00	.46	.36	.34	.11	.40	.10	.18	.19	.52

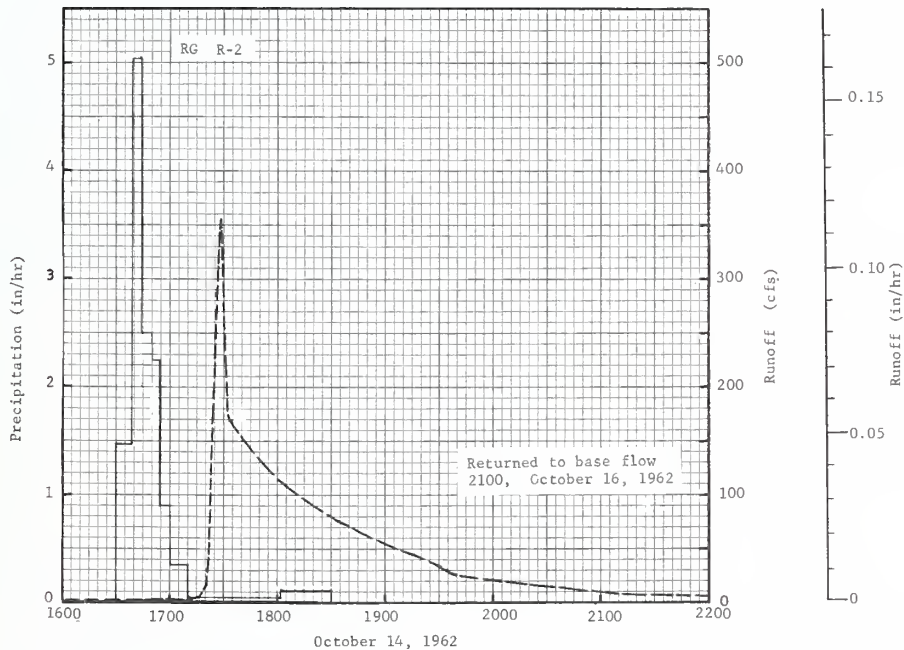
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.0077935.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA		THORNE CREEK WATERSHED W-I			13.06			
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (cfs)	ACC. (inches)	
<u>Event of October 14--16, 1962</u>											
10-14	RC R-2 .00	1/.0011	10-14	RC	R-2		10-14				
				1630	.00	.00		1100	.308	.0000	
				1639	1.47	.22		1340	.277	.0003	
				1644	5.04	.64		1640	.708	.0008	
				1650	2.50	.89		1648	1.417	.0008	
				1654	2.25	1.04		1652	1.139	.0008	
				1700	.90	1.13		1704	1.047	.0009	
				1710	.36	1.19		1716	4.558	.0011	
				1802	.03	1.22		1720	16.875	.0013	
				1830	.11	1.27		1722	47.362	.0017	
			10-14	RC	R-3			1724	161.548	.0028	
				1618	.00	.00		1728	354.907	.0084	
				1625	1.11	.13		1732	174.790	.0141	
				1627	2.40	.21		1736	161.086	.0178	
				1628	3.60	.27		1800	115.017	.0357	
				1630	6.00	.47		1818	91.336	.0457	
				1634	4.50	.77		1840	71.782	.0554	
				1638	1.95	.90		1916	45.483	.0669	
				1644	1.30	1.03		1928	34.829	.0695	
				1648	.15	1.04		1938	24.697	.0711	
				1651	.80	1.08		1944	24.574	.0719	
				1655	.15	1.09		2000	21.495	.0739	
				1707	.05	1.10		2028	14.966	.0766	
				1731	.08	1.13		2124	8.007	.0801	
				1815	.03	1.15		2200	5.851	.0815	
				1930	.03	1.19		2216	5.266	.0819	
								2248	4.280	.0828	
								2316	3.788	.0834	
								2352	3.449	.0841	
								2400	3.511	.0842	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0003247. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ RUNOFF PRIOR TO 1100.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				THORNE CREEK WATERSHED W-I				13.06
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of October 14-16, 1962-Continued											
							10-15				
				RG	R-1	1.07		0040	2.895	.0849	
								0224	1.786	.0863	
				3 RG	AVG <u>1/</u>	1.16		0328	1.478	.0868	
								0448	1.170	.0874	
								0620	.985	.0879	
								0800	.893	.0885	
								0928	.831	.0889	
								1400	.739	.0900	
								1520	.739	.0904	
								1900	.647	.0912	
								2400	.647	.0923	
							10-16				
								0200	.585	.0927	
								0820	.524	.0938	
								1652	.524	.0952	
								2100	<u>2/</u> .462	.0959	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0003247. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2, AND R-3. 2/ NORMAL BASE FLOW.



BLACKSBURG, VIRGINIA THORNE CREEK WATERSHED W-I

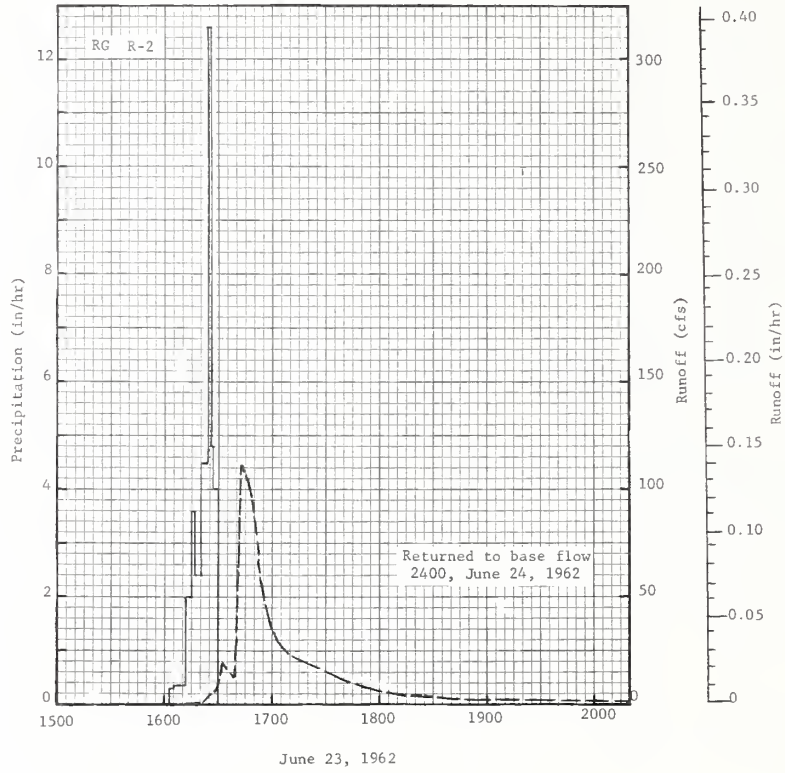
MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA AREA — 786 ACRES (1.23 SQ. MILES)								CRAB CREEK WATERSHED W-I	13.07	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ^{1/}	2.43	3.58	3.49	1.83	1.87	3.76	6.03	1.04	2.68	2.96	3.96	4.06	37.71		
	Q	.97	1.12	1.70	.90	.51	.47	.45	.27	.15	.19	.33	.48	7.54		
	STA AV ^{2/}	1.87	3.10	3.47	2.88	3.28	2.95	3.66	2.92	3.22	2.83	2.64	3.29	36.11		
	(57-62) Q	.76	.96	1.48	1.38	.91	.43	.37	.37	.29	.30	.36	.71	8.32		
	MEAN P ^{3/}	3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86		
	72 YR															
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		8 DAYS			
1962	6-23	.14	6-23	.05	6-23	.06	3-12	.11	3-11	.16	3-11	.23	3-12	.32	3-10	.68
MAXIMUMS FOR PERIOD OF RECORD																
1957 to 1962	8-25 1961	.17	4-3 1960	.13	4-3 1960	.22	4-3 1960	.32	4-3 1960	.42	4-3 1960	.52	4-3 1960	.73	3-27 1960	1.76
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Permanent pasture, usually good cover of native bluegrass combined with other grasses and clovers, 57%; alfalfa and other hay crops, 19%; small grain, 10%; farm woods (hardwood predominating), 12%; idle land, 1%; roads, 1%. (Total cultivated, 29%) 1/ Precipitation Thiessen weighted from rain gages R-1 and R-2. 2/ Determined from continuous records from Aug. 1957 through Dec. 1962. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.																
Revision to 1960-61 Normal P: The monthly and annual Normals previously published on p. 60 of USDA Misc. Pub. 994, were based on 69-yr (1893-1961) U.S. Weather Bureau record period at Blacksburg, Va. combined with information from stations at or near Blacksburg, Va.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA CRAB CREEK WATERSHED W-I								13.07		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.12S	.10	.02	.22	.00	.00	.06	.00	.00	.00	.00	.00				
2	.00	.00	.00	.00	.00	.00	.18	.00	.00	T	.00	.00				
3	.00	.00	.00	.00	.00	.00	1.31	.40	.09	.53	.70S	.00				
4	.00	.00	.06S	.00	.00	.00	.00	T	.67	.90	.02	1.03				
5	.03	.06	.49S	.00	.00	T	.00	.06	T	.03	.05	.29S				
6	.81	.00	.03S	.04	.00	.30	.00	.04	.00	.00	.00	T				
7	.00	.00	.00	.25	.00	.00	.08	.09	.00	T	.00	.00				
8	.00	.00	.00	.60	T	.00	.10	.00	.00	.00	.00	.00				
9	.02S	.93N	.36S	.00	.00	.00	.00	.05	.00	.00	2.09	T				
10	.06S	.00	.04	.00	.00	.00	.00	.00	.00	.00	T	.00				
11	.00	.07S	.58	.18	.43	.18	.00	.00	.00	.00	.00	.04S				
12	.00	.02S	.45	.32	.00	.86	T	.00	.00	.00	.00	.00				
13	.00	.00	.00	.00	.00	.00	.00	.22	.00	.79	.00	.00				
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00				
15	.31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
16	.00	.34	.00	.00	T	.00	T	.00	1.02	.00	T	.00				
17	.00	.00	.00	.00	.00	.00	.04	.10	.46	.00	.00	.00				
18	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.45	.00				
19	.04S	.14	.09S	.00	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.00	.01	.00	.00	.18	.00	.00	T	.00	.04	.11				
21	.00	.24N	.83	.00	.00	.04	T	.00	.00	.23	.35	.62S				
22	.03	.02	.00	.00	.03	.22	.63	.08	.00	.00	T	.21S				
23	.07	.32	.00	.00	.00	1.62	.24	.00	.00	.00	.00	T				
24	.12	.55	.00	.00	.03	.00	.00	.00	.00	.00	.00	.17S				
25	T	.00	.00	.00	.35	.00	.43	.00	.11	.00	.24S	.59				
26	.09	.19	.00	.00	.06	.27	.04	.00	.23	.00	.02S	.08S				
27	.32	.00	.00	.00	.45	.09	.00	.00	.10	.00	.00	T				
28	.41	.56	.00	.00	.52	.00	T	.00	.00	T	.00	.00				
29	.00		.00	.07	.00	.00	.73	.00	.00	.01	.00	.92S				
30	T		.00	.15	.00	.00	2.16	.00	.00	.10	.00	.00				
31	.00		.53		.00		.03	.00		.32		.00				
TOTAL	2.43	3.58	3.49	1.83	1.87	3.76	6.03	1.04	2.68	2.96	3.96	4.06				
STA AV	1.87	3.10	3.47	2.88	3.28	2.95	3.66	2.92	3.22	2.83	2.64	3.29				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 AND R-2. STA AV IS FOR PERIOD AUGUST 1957 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.7-6.																

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA CRAB CREEK WATERSHED W-I							13.07	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.71	1.50	1.93	1.66	.62	.44	.35	.48	.16	.13	.13	.22		
2	.68	1.21	1.58	1.01	.62	.44	.36	.41	.16	.13	.13	.22		
3	.69	1.05	1.40	1.01	.62	.44	1.15	.50	.16	.16	.19	.21		
4	.84	1.00	1.36	1.01	.62	.44	.72	.42	.28	.49	.23	1.24		
5	.84	.94	1.34	.97	.62	.44	.45	.37	.21	.22	.23	1.02		
6	2.80	.88	1.30	.97	.62	.48	.39	.35	.19	.17	.17	.93		
7	2.01	.78	1.55	1.04	.62	.47	.39	.35	.19	.16	.16	.55		
8	1.47	.78	1.47	1.84	.62	.44	.39	.35	.19	.14	.16	.52		
9	1.05	2.16	1.42	1.28	.62	.44	.37	.35	.19	.13	2.26	.46		
10	.97	1.55	1.69	1.17	.62	.44	.35	.32	.16	.13	1.34	.36		
11	.92	1.21	2.78	1.27	.69	.46	.35	.30	.13	.13	.48	.31		
12	.90	1.30	7.48	1.39	.59	.71	.35	.30	.13	.13	.36	.30		
13	.82	1.09	3.26	1.26	.56	.53	.35	.30	.13	1.40	.32	.28		
14	.78	.94	2.27	1.11	.53	.39	.35	.33	.13	.36	.26	.27		
15	1.51	.93	1.95	1.06	.50	.39	.34	.30	.13	.18	.23	.52		
16	1.03	1.11	1.65	.99	.50	.39	.30	.30	.20	.16	.22	.48		
17	.85	1.04	1.43	.93	.50	.39	.30	.30	.28	.16	.22	.27		
18	.80	1.14	1.36	.93	.45	.39	.30	.30	.15	.14	.39	.28		
19	.85	1.11	1.39	.89	.44	.39	.30	.30	.13	.13	.29	.28		
20	.77	.94	1.32	.85	.44	.45	.30	.25	.13	.13	.25	.28		
21	.77	.99	3.12	.81	.44	.41	.30	.19	.13	.14	.38	.29		
22	.78	1.17	1.79	.76	.44	.39	.33	.19	.13	.15	.39	.52		
23	.86	1.31	1.55	.74	.44	2.69	.39	.19	.13	.13	.27	.48		
24	.79	3.45	1.39	.68	.44	.71	.33	.19	.13	.13	.25	.37		
25	.81	1.88	1.29	.68	.48	.44	.38	.19	.14	.13	.25	.39		
26	.77	1.89	1.25	.68	.50	.46	.35	.19	.15	.13	.25	.43		
27	1.09	1.62	1.21	.68	.47	.41	.33	.17	.16	.13	.25	.56		
28	1.26	2.06	1.11	.65	.74	.39	.32	.16	.16	.13	.24	.62		
29	1.24	-----	1.01	.62	.50	.37	.46	.16	.16	.13	.22	1.44		
30	1.25	-----	1.15	.67	.47	.35	2.33	.16	.16	.13	.22	1.22		
31	1.28	-----	1.42	-----	.44	-----	1.13	.16	-----	.18	-----	.69		
MEAN	1.04	1.32	1.81	.99	.54	.52	.48	.29	.16	.20	.36	.52		
INCHES	.97	1.12	1.70	.90	.51	.47	.45	.27	.15	.19	.33	.48		

NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.030282.

1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA CRAB CREEK WATERSHED W-I							13.07	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF								
DATE MO-DAY	RAINFALL (inches)	RUNOFF (cfs)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
<u>Event of June 23-24, 1962</u>														
6-23	RG R-2 1/.29	2/.0088	6-23	RG R-2			6-23							
				1603	.00	.00		1612	.539	.0000				
				1605	.30	.01		1619	.721	.0001				
				1612	.34	.05		1622	1.466	.0002				
				1615	2.00	.15		1624	3.994	.0003				
				1617	3.60	.27		1628	6.356	.0007				
				1620	2.40	.39		1632	19.465	.0018				
				1624	4.50	.69		1638	13.006	.0038				
				1626	12.60	1.11		1640	28.310	.0047				
				1627	4.80	1.19		1643	111.163	.0091				
				1630	4.00	1.39		1648	94.947	.0199				
								1652	66.741	.0267				
				RG R-1		.90		1701	34.000	.0363				
				2 RG AVG 3/		1.34		1708	23.349	.0405				
								1716	21.645	.0443				
								1740	10.890	.0525				
								1814	4.391	.0580				
								1840	2.798	.0599				
								1912	2.029	.0616				
								2020	1.411	.0640				
								2100	1.316	.0652				
								2120	1.339	.0657				
								2140	2.092	.0664				
								2152	2.370	.0670				
								2216	2.346	.0682				
								2400	1.649	.0726				
								0220	.999	.0765				
								0620	.682	.0807				
								2400	4/.499	.0940				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0012618. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/1429 TO 1440. 2/PRIOR TO 1612. 3/THIESSEN WEIGHTED FOR RG R-1 AND R-2. 4/NORMAL BASE FLOW.



BLACKSBURG, VIRGINIA CRAB CREEK WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA AREA—893 ACRES (1.40 SQ. MILES)								BRUSH CREEK WATERSHED W-I 13.08		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{1/}	3.10	2.99	3.87	2.83	1.88	1.59	6.82	1.34	2.85	2.10	5.51	3.72	38.60			
Q	2.21	2.17	2.90	2.56	1.46	1.00	1.23	.81	.72	.85	1.87	1.78	19.56			
STA AV ^{2/} /P	2.06	3.47	3.39	3.39	3.92	2.60	3.75	4.10	4.66	2.95	2.81	3.51	40.61			
(57-62) Q	1.86	2.41	2.70	2.54	2.05	1.21	1.12	1.12	1.69	1.54	1.58	2.14	21.96			
MEAN P ^{3/}																
72 YR	3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	11-9	.07	11-9	.06	11-9	.12	11-9	.28	11-9	.42	11-9	.55	11-9	.63	3-10	1.15
MAXIMUMS FOR PERIOD OF RECORD																
1957 to 1962	9-30 1959	1.16	9-30 1959	.62	9-30 1959	.91	9-30 1959	1.62	9-30 1959	2.17	9-29 1959	2.59	9-29 1959	2.81	9-29 1959	3.23
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Permanent pasture, usually a fair cover of native grasses, 60%; cultivated, a common rotation of corn, small grain and hay, 11%; farm woods, a mixture of hardwoods and conifers, 29%. Very few soil conservation practices have been applied to area. 1/ Precipitation Thiessen weighted from rain gages R-1 and R-2. 2/ Determined from continuous records from Aug. 1957 through Dec. 1962. Precipitation Thiessen weighted. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.																
Revision to 1956-59 Normal P: The monthly and annual Normals previously published on p. 13.8-1 of USDA Misc. Pub. 945 were based on 67-yr (1893-1959) U.S. Weather Bureau record period at Blacksburg, Va. combined with information from stations at or near Blacksburg, Va.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA BRUSH CREEK WATERSHED W-I 13.08										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.38S	.11	.01	.24	.02	.00	.10	.00	.00	.00	.00	.00				
2	.00	.00	.00	.00	.00	.02	.09	.00	.00	.06	.00	.00				
3	.00	.00	.00	.00	.00	.00	1.42	.30	.07	.83	.62S	.03				
4	.00	.00	.05S	.00	.00	.00	.00	.05	.47	.52	.43	1.09				
5	.10	.04	.36S	.00	.00	.03	.00	.00	.00	.00	.10	.17S				
6	.74	.00	.15S	.24	.00	.00	.00	.29	.00	.00	.00	.00				
7	.00	.00	.00	.53	.00	.00	.01	.00	.00	.01	.00	.00				
8	.00	.00	.00	.65	.04	.00	.02	.00	.00	.00	.00	.00				
9	.00	.51S	.29S	.00	.00	.00	.00	.03	.03	.00	2.97	.04S				
10	.09S	.00	.03	.00	.00	.00	.00	.00	.03	.00	.01	.00				
11	.00	.05S	.44	.24	.22	.14	.00	.00	.00	.00	.00	.00				
12	.00	.03S	.45	.17	.00	.90	.00	.00	.00	.00	.00	.00				
13	.00	.00	.00	.01	.00	.00	.00	.29	.00	.00	.00	.00				
14	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01	.00	.00				
15	.35	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00	.00				
16	.00	.34	.00	.00	.02	.00	.53	.00	1.20	.00	.01	.00				
17	.00	.00	.00	.00	.00	.00	.00	.00	.34	.00	.05	.00				
18	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.64	.00				
19	.10S	.10	.08S	.00	.00	.03	.00	.00	.00	.00	.00	.00				
20	.00	.00	.03	.00	.00	.11	.00	.00	.00	.00	.06	.11S				
21	.00	.19S	.60	.00	.00	.00	.00	.34	.00	.20	.33	.94S				
22	.09	.03	.00	.00	.06	.07	.62	.03	.00	.00	.01	.00				
23	.08	.43	.00	.00	.00	.01	.33	.00	.00	.00	.00	.01				
24	.18	.74	.00	.00	.00	.00	T	.00	.00	.00	T	.12S				
25	.04	.00	.00	.00	.28	.24	.55	.00	.09	.00	.23S	.60S				
26	.08	.19	.00	.37	.08	.04	.00	.00	.47	.00	.00	.13				
27	.38	.00	.00	.00	.44	.00	.00	.00	.15	.00	.00	.00				
28	.49S	.20	.00	.00	.50	.00	.01	.00	.00	.00	.05	.00				
29	.00	-----	.00	.10	.00	.00	.94	.00	.00	.02	.00	.48S				
30	.00	-----	.00	.28	.00	.00	2.17	.00	.00	.12	.00	.00				
31	.00	-----	1.38	-----	.00	-----	.03	.00	-----	.33	-----	.00				
TOTAL	3.10	2.99	3.87	2.83	1.88	1.59	6.82	1.34	2.85	2.10	5.51	3.72				
STA AV	2.06	3.47	3.39	3.39	3.92	2.60	3.75	4.10	4.66	2.95	2.81	3.51				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED TOTALS FROM R-1 AND R-2. STA AV IS FOR PERIOD AUGUST 1957 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 13.8-5.																

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA		BRUSH CREEK WATERSHED W-I				13.08
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.88	3.81	2.79	7.39	2.22	1.34	.91	1.41	.68	.81	1.03	1.37
2	1.85	2.96	2.54	3.80	2.03	1.33	1.11	1.22	.61	.85	.95	1.39
3	1.98	2.61	2.47	3.14	1.87	1.40	3.79	1.59	.68	1.92	1.69	1.35
4	2.36	2.31	2.40	2.88	1.85	1.42	1.64	1.40	1.33	3.08	1.78	6.17
5	2.61	2.12	2.47	2.68	1.85	1.39	1.13	1.19	.88	1.38	2.01	3.43
6	9.24	2.08	2.51	2.85	1.89	1.35	1.04	1.29	.78	1.08	1.60	2.58
7	4.57	1.93	2.74	5.47	1.94	1.31	.98	1.27	.74	.96	1.31	2.00
8	3.04	2.04	2.65	8.21	1.82	1.28	.95	1.07	.72	.95	1.19	1.89
9	2.37	3.37	2.50	4.51	1.94	1.24	.90	.97	.79	.91	16.54	1.76
10	2.22	2.50	3.55	3.49	1.94	1.12	.81	.94	.81	.87	6.96	1.74
11	2.11	2.23	5.32	3.92	2.13	1.23	.78	.87	.71	.86	2.42	1.74
12	2.48	2.35	15.48	3.74	1.94	2.75	.77	.86	.63	.84	1.89	1.68
13	1.93	2.17	5.69	3.31	1.86	1.76	.85	1.00	.62	.83	1.62	1.63
14	1.91	2.11	3.84	2.87	1.72	1.35	1.07	1.13	.60	.85	1.47	1.63
15	3.82	2.01	3.35	2.80	1.92	1.23	1.00	.93	.60	.85	1.41	1.58
16	2.43	2.68	3.01	2.75	1.78	1.19	1.54	.93	2.22	.85	1.37	1.53
17	2.04	2.36	2.70	2.55	1.63	1.10	1.02	.87	1.94	.85	1.37	1.66
18	1.94	2.19	2.55	2.60	1.54	1.03	.86	.82	.92	.85	3.30	1.70
19	2.02	2.94	2.74	2.49	1.43	1.03	.77	.79	.77	.85	1.93	1.70
20	1.96	2.43	2.61	2.41	1.43	1.25	.73	.76	.77	.85	1.79	1.64
21	1.95	2.08	5.22	2.31	1.39	1.08	.71	.98	.73	1.00	2.26	1.58
22	2.28	2.09	3.25	2.16	1.49	1.13	1.06	1.04	.71	.96	2.03	3.36
23	2.40	3.56	2.86	2.05	1.37	1.03	1.65	.88	.79	.92	1.62	2.44
24	2.38	10.83	2.60	2.05	1.34	1.02	.96	.86	.78	.92	1.49	1.90
25	2.36	3.87	2.49	2.05	1.48	1.01	1.74	.82	.90	.88	1.59	1.86
26	2.22	3.67	2.43	2.46	1.51	1.31	1.08	.83	1.45	.86	1.60	2.44
27	2.94	2.99	2.30	2.22	1.76	1.03	.83	.85	1.28	.83	1.57	2.55
28	3.39	3.02	2.24	2.05	3.19	1.04	.77	.77	.96	.88	1.57	2.36
29	2.75	-----	2.21	2.22	1.67	.95	2.56	.70	.87	.92	1.46	3.29
30	2.64	-----	2.21	2.68	1.48	.90	8.71	.70	.82	1.04	1.40	2.70
31	2.94	-----	7.13	-----	1.42	-----	3.30	.70	-----	1.45	-----	2.70
MEAN	2.68	2.90	3.51	3.21	1.77	1.25	1.48	.98	.90	1.03	2.34	2.17
INCHES	2.21	2.17	2.90	2.56	1.46	1.00	1.23	.81	.72	.85	1.87	1.78

NOTES:

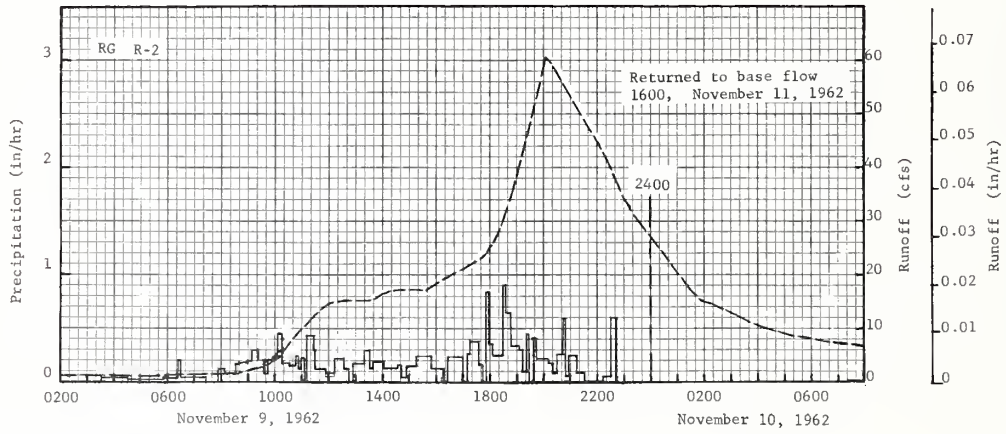
TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.026654.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA		BRUSH CREEK WATERSHED W-I				13.08	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of November 9-11, 1962										
11 -9	RG R-2 0	1/.0030	11 -9	RG	R-2		11 -9			
				0335	.00	.00		0220	1.135	.0000
				0430	.04	.04		0336	1.135	.0016
				0530	.03	.07		0540	1.216	.0043
				0550	.03	.08		0740	1.432	.0073
				0624	.04	.10		0832	1.657	.0087
				0627	.20	.11		0904	2.107	.0099
				0727	.05	.16		0936	2.845	.0113
				0755	.00	.16		1008	4.736	.0136
				0806	.11	.18		1040	8.014	.0174
				0830	.08	.21		1104	10.571	.0215
				0840	.18	.24		1200	14.659	.0346
				0859	.19	.30		1220	15.326	.0401
				0911	.20	.34		1236	15.659	.0447
				0923	.30	.40		1332	15.659	.0609
				0935	.20	.44		1400	16.388	.0692
				0943	.08	.45		1428	17.081	.0779
				0957	.21	.50		1540	17.090	.1007
				1007	.24	.54		1708	21.187	.1319
				1015	.45	.60		1740	23.042	.1450
				1034	.19	.66		1800	24.942	.1539
				1045	.16	.69		1840	32.776	.1752
				1050	.24	.71		1924	46.193	.2074
				1059	.13	.73		2004	60.077	.2467
				1107	.23	.76		2016	59.888	.2601

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.001106. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ PRIOR TO 0220.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				BRUSH CREEK WATERSHED W-1				13.08
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MD-DAY	RAINFALL (inches)	RUNOFF (cfs)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
<u>Event of November 9-11, 1962-Continued</u>											
			11-9	1116	.00	.76	11-9	2040	56.107	.2858	
				1130	.43	.86		2202	44.212	.3619	
				1136	.30	.89		2300	34.082	.4040	
				1155	.13	.93		2324	30.714	.4184	
				1217	.08	.96		2400	27.635	.4378	
				1234	.21	1.02	11-10				
				1245	.11	1.04		0128	17.739	.4748	
				1253	.00	1.04		0152	15.551	.4822	
				1320	.18	1.12		0220	14.506	.4900	
				1330	.30	1.17		0400	10.679	.5133	
				1339	.13	1.19		0500	9.076	.5242	
				1401	.19	1.26		0630	7.564	.5381	
				1432	.12	1.32		0840	6.042	.5545	
				1440	.15	1.34		0952	5.430	.5621	
				1454	.04	1.35		1240	4.556	.5777	
				1518	.15	1.41		1540	3.845	.5917	
				1550	.24	1.54		2040	3.296	.6115	
				1618	.13	1.60		2400	3.016	.6232	
				1625	.00	1.60	11-11				
				1650	.24	1.70		1308	2.260	.6617	
				1700	.24	1.74		1600	$\frac{1}{2}$ 2.152	.6687	
				1709	.00	1.74					
				1718	.27	1.78					
				1737	.38	1.90					
				1745	.15	1.92					
				1750	.00	1.92					
				1755	.84	1.99					
				1807	.35	2.06					
				1831	.23	2.15					
				1837	.90	2.24					
				1848	.65	2.36					
				1903	.32	2.44					
				1915	.30	2.50					
				1921	.10	2.51					
				1925	.45	2.54					
				1938	.00	2.54					
				1941	.40	2.56					
				2010	.21	2.66					
				2020	.18	2.69					
				2028	.08	2.70					
				2043	.24	2.76					
				2045	.60	2.78					
				2058	.05	2.79					
				2115	.25	2.86					
				2128	.09	2.88					
				2215	.00	2.88					
				2231	.04	2.89					
				2240	.60	2.98					
				2242	.60	3.00					
				RG	R-1	2.94					
				2 RG	AVG $\frac{2}{1}$	2.96					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.001106. $\frac{1}{2}$ NORMAL BASE FLOW. $\frac{2}{1}$ THIESSEN WEIGHTED FOR RG R-1, R-2.



BLACKSBURG, VIRGINIA BRUSH CREEK WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA POWELLS CREEK WATERSHED W-I 13.09 AREA → 182 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ² / _Q	5.70	3.66	4.05	2.94	5.65	3.42	2.72	4.92	4.08	.62	6.88	2.29	46.93			
	3.48	2.37	2.85	2.17	1.27	.64	.25	.51	.39	.25	2.56	.91	17.65			
STA AV ² / _P (58-62)	3.28	3.44	3.66	3.98	4.23	2.78	3.36	4.76	2.68	3.43	2.61	3.62	41.83			
Q	2.29	2.25	2.24	2.14	1.28	.42	.25	.43	.33	.73	.89	1.63	14.88			
MEAN P ³ / _{72 YR}	3.52	3.38	3.76	3.45	3.90	3.81	4.48	4.39	3.45	2.79	2.63	3.30	42.86			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	5-31	1.31	5-31	.78	5-31	.87	5-31	.92	1-6	1.64	1-6	1.88	1-6	1.96	1-3	2.21
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1962	5-31 1962	1.31	5-31 1962	.77	5-31 1962	.87	12-28 1958	.98	1-6 1962	1.64	12-28 1958	1.95	12-28 1958	2.25	12-28 1958	2.85
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Pasture, native grass mixtures, usually good to excellent cover, 50%; alfalfa and other hay crops, 19%; row crops, mostly corn and tobacco, 7%; small grain, 7%; farm woods, predominantly hardwood, 17%. (Total cultivated, 33%) 1/ Precipitation Thiessen weighted from rain gages R-1 and R-2. 2/ Determined from continuous records from Jan. 1958 through Dec. 1962. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Danville, Va. Missing monthly totals for July and Aug. 1946 were estimated from nearby Weather Bureau records at Danville, Va., Airport.																
Revision to 1960-61 Normal P: The monthly and annual Normals previously published were actually the U.S. Weather Bureau 25-yr (1931-55) Normals and <u>not</u> averages for the 72-yr (1890-1961) record period at Danville, Va., as stated in footnote 2/, of USDA Misc. Pub. 994, p. 69.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA POWELLS CREEK WATERSHED W-I 13.09										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.69	.00	.06	.33	.00	.00	.02	.01	.00	.00	.00	.00				
2	.00	.00	.00	.00	.00	.23	.02	.00	.00	.00	.06	.00				
3	.00	.00	.00	.00	.00	.00	.67	.62	.00	.00	.85S	.02				
4	.00	.00	.03S	.00	.00	.07	.20	.00	.10	.22	.07S	.03				
5	.02	.00	.62S	.00	.00	T	.00	1.23	.00	.02	.34	.21				
6	2.53	.00	.24S	.07	.00	.03	.00	.35	.00	.00	.00	.01				
7	.00	.00	.06S	.43	.00	.00	.00	.00	.00	.00	.00	.00				
8	.00	.00	.03S	.95	.20	.00	.02	.01	.00	.00	.00	.00				
9	.00	.47S	.43	.00	.00	.00	.00	1.47	.02	.00	2.87	.00				
10	.25S	.00	.02	.00	.00	.00	.00	.00	.01	.00	.02	.00				
11	.00	.00	.46	.30	.38	.00	.00	.00	.00	.00	.00	.00				
12	.00	.03S	.21	.27	.01	1.06	.00	.00	.00	.00	.00	.00				
13	.01	.01	.00	.00	.00	1.20	.13	.00	.00	.00	.00	.00				
14	.00	.00	.00	.00	.00	.00	.03	.00	.00	.09	.00	.00				
15	.32	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00				
16	.00	.37	.00	.00	.00	.00	.00	.04	1.73	.00	.00	.00				
17	.00	.00	.00	.00	.00	.00	.00	.33	1.00	.00	.00	.00				
18	.00	.16	.00	.08	.00	.00	.00	.00	.00	.00	1.21	.00				
19	.02	.80	.05	.00	.01	.09	.00	.00	.00	.00	.00	.00				
20	.01	.00	.00	.00	.00	.20	.00	.00	.04	.00	.08	.00				
21	.00	.21	.87	.00	.00	.00	.01	.83	.01	.12	.84	.29S				
22	.00	.09	.00	.00	.00	.03	.00	.00	.00	.00	.30	.19S				
23	.08	.63	.00	.00	.00	.08	.37	.00	.00	.00	.00	.00				
24	.19	.10	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00				
25	.00	.00	.00	.00	.70	.01	.32	.00	.00	.00	.19S	.66S				
26	.01	.68	.10	.00	1.04	.40	.00	.00	.86	.00	.05	.20				
27	.62S	.01	.00	.00	.05	.00	.00	.03	.31	.00	.00	.00				
28	.93S	.10	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00				
29	.00	-----	.00	.50	.00	.00	.88	.00	.00	.00	.00	.68S				
30	.02	-----	.00	.01	.00	.02	.00	.00	.00	.00	.00	.00				
31	.00	-----	.87	-----	2.62	-----	.00	.00	-----	.17	-----	.00				
TOTAL	5.70	3.66	4.05	2.94	5.65	3.42	2.72	4.92	4.08	.62	6.88	2.29				
STA AV	3.28	3.44	3.66	3.98	4.23	2.78	3.36	4.76	2.68	3.43	2.61	3.62				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED TOTALS FROM R-1 AND R-2. STA AV IS FOR PERIOD JANUARY 1958 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.9-8.																

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA POWELLS CREEK WATERSHED W-I						13.09
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.18	.31	.45	2.35	.10	.27	.06	.05	.05	.07	.06	.12
2	.20	.28	.36	.26	.09	.17	.06	.06	.05	.06	.06	.12
3	.22	.22	.33	.21	.08	.15	.16	.12	.05	.06	.25	.12
4	.45	.19	.32	.26	.08	.15	.16	.07	.06	.09	.09	.12
5	.41	.18	.59	.33	.07	.12	.08	.08	.06	.09	.19	.15
6	13.99	.15	.77	.41	.06	.11	.06	.61	.06	.08	.09	.17
7	1.03	.14	3.05	.55	.06	.09	.06	.07	.04	.07	.08	.12
8	.34	.13	.50	6.85	.07	.07	.06	.06	.04	.07	.08	.12
9	.22	.59	.49	.49	.08	.07	.06	1.32	.04	.06	6.62	.12
10	.21	.25	2.59	.29	.07	.06	.06	.08	.04	.06	.98	.11
11	.19	.19	2.62	.76	.12	.06	.06	.06	.04	.06	.24	.10
12	.18	.18	2.40	1.05	.07	.21	.05	.06	.04	.06	.19	.09
13	.16	.17	.34	.67	.06	.56	.05	.06	.04	.06	.17	.08
14	.17	.16	.25	.15	.06	1.38	.04	.06	.04	.06	.14	.09
15	.95	.13	.20	.15	.06	.18	.04	.05	.04	.06	.13	.09
16	.27	.33	.17	.15	.06	.13	.04	.06	.19	.06	.12	.11
17	.19	.19	.15	.15	.06	.11	.04	.07	.71	.06	.12	.12
18	.18	.20	.15	.16	.04	.09	.04	.06	.08	.06	2.73	.11
19	.17	3.44	.14	.16	.04	.08	.04	.06	.06	.06	.33	.12
20	.17	.36	.12	.13	.04	.12	.04	.05	.06	.06	.28	.11
21	.17	.40	1.92	.12	.04	.08	.04	.21	.06	.06	2.58	.10
22	.17	.49	.33	.11	.04	.06	.04	.08	.06	.06	2.18	.26
23	.18	3.39	.22	.10	.04	.06	.05	.06	.06	.06	.31	.15
24	.23	.71	.18	.09	.05	.06	.04	.05	.06	.06	.24	.12
25	.19	.29	.17	.09	.09	.06	.06	.05	.06	.06	.28	.37
26	.17	4.10	.22	.09	.48	.11	.05	.05	.18	.05	.29	.67
27	.67	.59	.19	.08	.09	.06	.05	.05	.39	.05	.21	.39
28	2.13	.39	.19	.08	.19	.06	.05	.05	.10	.05	.19	.25
29	.74	-----	.19	.23	.08	.06	.12	.05	.08	.05	.19	1.72
30	1.62	-----	.16	.12	.06	.06	.06	.05	.07	.05	.14	.42
31	.46	-----	2.06	-----	7.13	-----	.05	.05	-----	.06	-----	.20
MEAN	.86	.65	.70	.55	.31	.16	.06	.13	.10	.06	.65	.23
INCHES	3.48	2.37	2.85	2.17	1.27	.64	.25	.51	.39	.25	2.56	.91

NOTES:

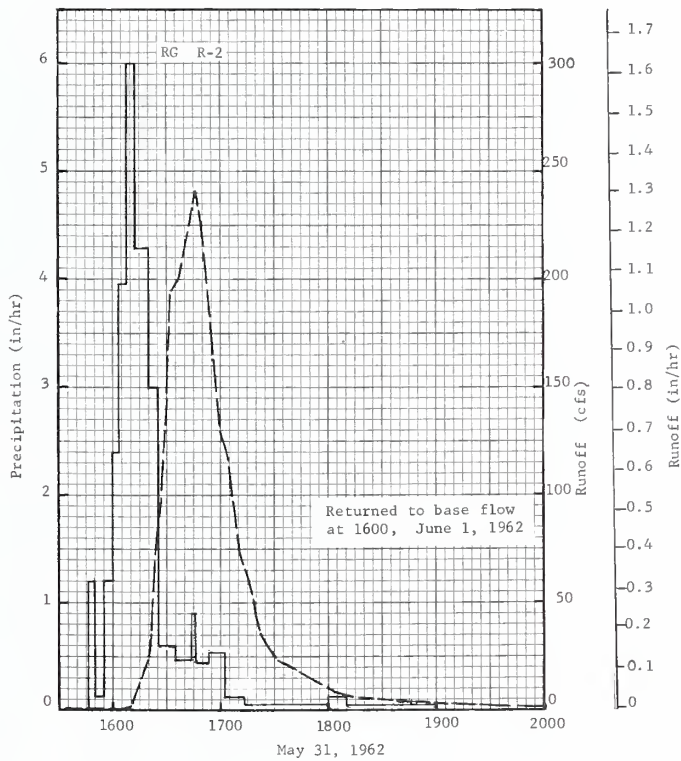
TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.130779.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA			POWELLS CREEK WATERSHED W-I			13.09	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of May 31 -- June 1, 1962										
5-31	RG, R-2 1/.02	2/.0055	5-31	RG	R-2		5-31			
				1546	.00	.00		1600	.108	.0000
				1548	1.20	.04		1604	.351	.0001
				1550	1.20	.08		1608	1.452	.0004
				1555	.12	.09		1612	3.913	.0014
				1600	1.20	.19		1620	25.256	.0120
				1603	2.40	.31		1622	39.471	.0179
				1608	3.96	.64		1624	83.342	.0290
				1613	6.00	1.14		1626	91.679	.0449
				1620	4.29	1.64		1630	144.881	.0879
				1622	3.00	1.74		1632	193.482	.1186
				1625	3.00	1.89		1636	198.967	.1899
				1635	.60	1.99		1646	241.163	.3898
				1644	.47	2.06		1650	222.362	.4739
				1646	.90	2.09		1654	187.499	.5484
				1653	.43	2.14		1700	128.931	.6346
				1703	.54	2.23		1704	116.726	.6792
				1713	.12	2.25		1708	88.020	.7164
				1800	.05	2.29		1710	73.616	.7311
				1810	.12	2.31		1712	70.142	.7441
				1900	.04	2.34		1718	51.311	.7772
								1720	43.952	.7859
								1722	35.589	.7931
								1728	27.550	.8103
				RG	R-1	2.82		1732	23.747	.8196
				2 RG	AVG 3/	2.62				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0054491. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ 1347 TO 1354. 2/ PRIOR TO 1600. 3/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				POWELLS CREEK WATERSHED W-I				13.09
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of May 31—June 1, 1962—Continued											
							5-31	1738	20.495	.8317	
								1804	9.104	.8666	
								1820	6.027	.8776	
								1840	4.313	.8870	
								1956	1.764	.9080	
								2036	1.233	.9134	
								2116	.943	.9174	
								2212	.697	.9215	
								2340	.495	.9263	
								2400	.497	.9272	
							6 -1	0400	.378	.9368	
								1120	.246	.9492	
								1600	1/.171	.9546	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0054491. 1/ NORMAL BASE FLOW.



BLACKSBURG, VIRGINIA POWELLS CREEK WATERSHED W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK WATERSHED W-I 13.10 AREA—1,471 ACRES (2.30 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ¹ / _Q	5.61 2.17	3.30 1.44	3.96 1.71	2.75 1.52	4.29 .82	4.92 .89	2.22 .54	3.79 .56	3.59 .48	.47 .48	6.77 1.38	2.15 .80	43.82 12.79			
STA AV ² / _P (58-62) Q	3.40 1.25	3.58 1.42	3.68 1.40	4.16 1.48	3.86 1.20	3.54 .85	2.96 .43	5.62 .78	3.16 .51	3.32 .85	2.60 .70	3.52 1.10	43.40 11.97			
MEAN P ³ / _{32 YR}	3.40	3.21	3.87	3.78	3.81	4.29	4.75	4.35	3.71	2.75	3.12	3.24	44.28			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	1-6	.19	1-6	.17	1-6	.27	1-6	.47	1-6	.70	1-6	.88	1-6	.97	1-4	1.18
MAXIMUMS FOR PERIOD OF RECORD																
1958 To 1962	10-10 1959	1.12	10-10 1959	.71	10-10 1959	1.03	10-10 1959	1.41	10-10 1959	1.51	10-10 1959	1.58	10-10 1959	1.62	10-10 1959	1.91
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Pasture, native grass mixture, usually fair cover, 9%; row crops, mostly corn and tobacco, 13%; small grain, 4%; alfalfa and other hay crops, 5%; farm woods, mixture of hardwoods and conifers, with pine predominating, 58%; idle land, 11%. (Total cultivated, 22%) Conditions are consistent from year to year. 1/ Precipitation Thiessen weighted from rain gages R-1, R-2, and R-3. 2/ Determined from continuous records from Jan. 1958 through Dec. 1962. 3/ Mean P based on 32-yr (1931-62) U. S. Weather Bureau record period at Halifax, Va. (1 mile north).																
Revision to 1960-61 Normal P: The monthly and annual Normals previously published were actually the U.S. Weather Bureau 1956 to 61 Halifax Normals and not averages for 29-yr (1933-61) record period at Halifax, Va., as stated in footnote 2/, of USDA Misc. Pub. 994, p. 77.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK WATERSHED W-I 13.10										
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.73	T	.12	.32	.00	.00	.00	.00	.00	.00	.00	.00				
2	T	T	.00	.00	.03	.14	T	.00	.00	.00	.06S	.00				
3	.00	.00	.00	.00	.00	.03	.50	.71	.00	.00	.98S	.00				
4	.00	.00	.01S	.00	.00	.04	.12	T	.05	.20	.03	.04				
5	.00	.00	.70S	.00	.00	.14	.00	.08	.00	.03	.28	.10				
6	2.17	.00	.21S	.08	.00	.04	.00	.60	.00	T	.00	.01				
7	.00	.00	.07S	.56	.00	.00	.00	.00	.00	.00	.00	.00				
8	.00	.00	.00	1.07	.17	.00	.00	.00	.00	.00	.00	.00				
9	.00	.48	.43S	.00	T	.00	.00	.96	.00	.00	2.77	.00				
10	.26S	.00	.01	T	.00	.00	.00	.00	.00	.00	.00	.00				
11	.00	.00	.46	.32	.47	.00	.00	.00	.00	.00	.00	.00				
12	.00	T	.19	.32	.00	.94	.00	.00	.00	.00	.00	.00				
13	.00	T	.00	.01	.00	.95	.00	.00	.00	.00	.00	.00				
14	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00				
15	.34	.00	.00	.00	.29	.00	.00	.00	.00	.00	.00	.00				
16	.00	.31	.00	.00	.00	.00	.00	.04	1.48	.00	.00	.00				
17	.00	.00	.00	.00	.00	.00	.00	.49	.86	.00	.00	.00				
18	.00	.18	.00	.01	.00	.00	.00	.00	.00	.00	1.23	.00				
19	.04	.62	.03	.00	.00	.21	.00	.00	.00	.00	.00	.00				
20	.03	.00	T	.00	.00	1.42	.00	.00	.02	.00	.06	.00				
21	.00	.17	.80	.00	.00	.01	.04	.73	.00	.11	.78	.27S				
22	.00	.16	.00	.00	.00	.02	.00	.01	.00	.00	.36	.18S				
23	.05	.63	.00	.00	.00	.14	.31	.00	.00	.00	.00	.01				
24	.19	.09	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00				
25	.00	.23	.02	.00	.83	.02	.45	.00	.00	.00	1.2S	.74S				
26	.01	.40	.14	.00	1.00	.72	.00	.02	.86	.00	.10	.11				
27	.67S	.01	.00	.00	.04	.00	.00	.15	.32	.00	.00	.00				
28	1.11S	.02	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00				
29	.01	-----	.00	.05	.00	.00	.80	.00	.00	.00	.00	.69S				
30	.00	-----	.00	.01	.00	.03	T	.00	.00	.00	.00	.00				
31	.00	-----	.77	-----	.82	-----	.00	.00	-----	.13	-----	.00				
TOTAL	5.61	3.30	3.96	2.75	4.29	4.92	2.22	3.79	3.59	.47	6.77	2.15				
STA AV	3.40	3.58	3.68	4.16	3.86	3.54	2.96	5.62	3.16	3.32	2.60	3.52				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1, R-2, AND R-3. STA AV IS FOR PERIOD JANUARY 1958 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.10-8.																

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK WATERSHED W-1 13.10						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.47	3.20	2.86	6.57	1.56	1.87	1.20	.98	.80	.92	.99	1.36
2	1.47	2.79	2.46	3.23	1.51	1.51	1.19	.99	.79	.95	.99	1.38
3	1.44	2.43	2.30	2.43	1.45	1.47	1.59	1.50	.83	.95	1.60	1.44
4	1.71	2.15	2.17	2.20	1.41	1.42	1.48	1.08	.93	1.07	1.07	1.44
5	1.91	1.93	2.36	2.03	1.39	1.42	1.28	1.02	.86	1.02	1.29	1.42
6	51.05	1.72	2.40	2.00	1.36	1.35	1.19	1.93	.79	.98	1.02	1.39
7	8.77	1.56	4.45	2.67	1.36	1.22	1.14	1.11	.80	.95	.99	1.35
8	3.37	1.53	4.42	19.62	1.39	1.20	1.13	1.01	.80	.93	.99	1.32
9	2.30	2.30	4.88	4.91	1.35	1.14	1.10	2.54	.79	.90	17.31	1.28
10	2.05	1.91	6.47	3.17	1.33	1.14	1.01	1.07	.80	.90	6.19	1.23
11	1.68	1.62	8.10	3.71	1.77	1.11	1.01	1.01	.76	.90	1.90	1.19
12	1.60	1.59	14.43	4.17	1.38	1.47	1.01	1.01	.73	.90	1.50	1.19
13	1.45	1.51	4.35	4.24	1.29	3.22	.99	1.01	.73	.90	1.38	1.19
14	1.44	1.48	2.91	3.04	1.29	2.92	.95	1.01	.73	.92	1.29	1.19
15	4.21	1.38	2.27	2.70	1.59	1.53	.98	1.01	.71	.96	1.28	1.19
16	2.71	1.69	2.14	2.28	1.29	1.33	.99	1.01	1.51	.95	1.20	1.19
17	1.88	1.57	1.94	2.09	1.29	1.22	.99	1.42	2.95	.95	1.19	1.19
18	1.66	1.56	1.88	2.02	1.29	1.19	.95	1.02	.98	.92	8.93	1.19
19	1.56	8.94	1.94	1.94	1.29	1.19	.93	1.01	.92	.92	2.70	1.19
20	1.47	3.20	1.94	1.82	1.17	9.29	.90	.95	.90	.92	1.93	1.19
21	1.44	2.66	5.96	1.79	1.14	3.00	.86	1.77	.89	.98	6.70	1.23
22	1.44	3.09	3.35	1.79	1.10	1.71	.83	1.14	.88	.93	8.78	1.39
23	1.38	11.93	2.42	1.72	1.10	1.54	1.01	.95	.86	.98	2.67	1.29
24	1.44	4.75	2.12	1.69	1.08	1.42	.86	.90	.88	.99	1.94	1.19
25	1.44	3.00	1.94	1.69	1.65	1.33	1.17	.90	.89	.99	1.78	1.66
26	1.38	9.79	2.03	1.69	5.04	2.24	.98	.88	1.26	.99	1.65	2.21
27	2.33	4.38	1.85	1.69	2.30	1.45	.93	.99	1.72	.96	1.53	2.12
28	11.48	3.23	1.79	1.69	2.43	1.33	.93	.95	1.02	.92	1.48	1.78
29	4.58	-----	1.79	1.65	1.50	1.31	1.57	.86	.95	.92	1.44	5.44
30	7.42	-----	1.79	1.60	1.38	1.29	1.10	.86	.92	.92	1.44	4.02
31	4.67	-----	3.95	-----	4.33	-----	1.04	.85	-----	1.01	-----	1.71
MEAN	4.33	3.17	3.41	3.13	1.64	1.83	1.07	1.12	.98	.95	2.84	1.60
INCHES	2.17	1.44	1.71	1.52	.82	.89	.24	.56	.48	.48	1.38	.80

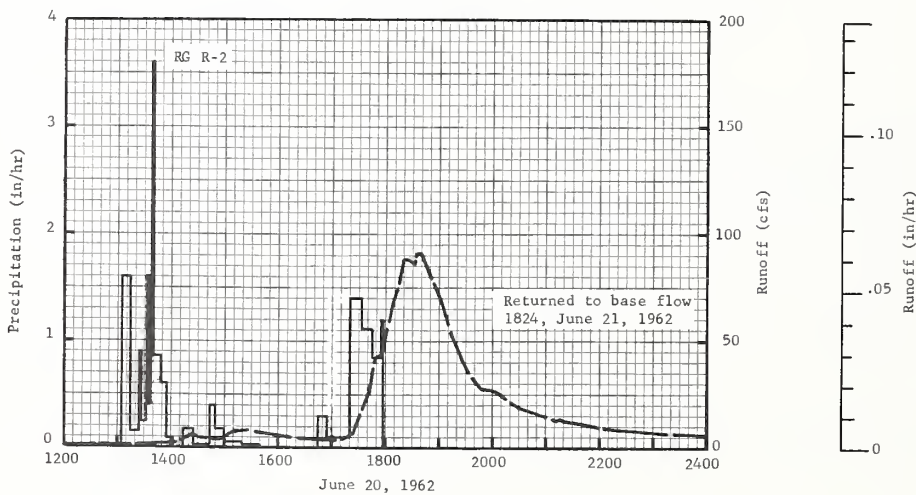
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.016181.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA LITTLE WINNS CREEK WATERSHED W-1 13.10									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
			<u>Event of June 20-21, 1962</u>									
6-20	RG R-2 1/.03	2/.0005	6-20	RG	R-2		6-20					
				1240	.00	.00		0020	1.884	.0000		
				1305	.02	.01		0032	1.854	.0003		
				1314	1.60	.25		0044	1.869	.0005		
				1325	.16	.28		0120	1.661	.0012		
				1327	.90	.31		0200	1.587	.0019		
				1332	.24	.33		0328	1.335	.0034		
				1335	1.60	.41		0428	1.276	.0043		
				1338	.40	.43		1200	1.187	.0105		
				1340	3.60	.55		1316	1.231	.0116		
				1349	.87	.68		1324	1.394	.0117		
				1355	.60	.74		1408	2.566	.0127		
				1402	.09	.75		1420	5.147	.0132		
				1413	.00	.75		1424	6.378	.0134		
				1426	.18	.79		1428	5.310	.0137		
				1444	.03	.80		1452	4.020	.0150		
				1450	.40	.84		1456	4.539	.0152		
				1500	.18	.87		1505	6.615	.0157		
				1510	.06	.88		1512	7.683	.0163		
				1520	.06	.89		1524	8.306	.0174		
				1540	.03	.90		1528	8.069	.0177		
				1645	.00	.90		1636	4.880	.0227		
				1655	.30	.95		1704	4.257	.0241		
				1720	.10	.99		1712	4.583	.0245		
				1732	1.40	1.27		1724	7.387	.0253		
				1745	1.11	1.51		1728	11.332	.0257		
				1755	.84	1.65		1740	24.503	.0282		
				1757	1.20	1.69		1744	32.113	.0294		
								1746	37.764	.0302		
								1750	41.680	.0320		

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0006742. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/.02 INCH RAIN, 0031 TO 0045; .01 INCH RAIN, 1000 TO 1034. 2/PRIOR TO 0020.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA			LITTLE WINNS CREEK WATERSHED W-I			13.10	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of June 20-21, 1962--Continued										
6-20	RG R-3 1/.02	.0000	6-20	RG	R-3	R-3	6-20	1756	44.320	.0349
				1235	.00	.00		1759	46.129	.0364
				1240	.24	.02		1808	66.168	.0421
				1255	.00	.02		1812	74.756	.0453
				1258	.80	.06		1820	87.512	.0526
				1303	.12	.07		1824	88.165	.0565
				1320	.14	.11		1832	85.851	.0643
				1324	1.80	.23		1834	90.479	.0663
				1327	.80	.27		1840	90.716	.0724
				1329	1.50	.32		1848	83.181	.0802
				1337	.75	.42		1903	67.192	.0929
				1340	.20	.43		1913	53.115	.0997
				1343	.80	.47		1924	42.762	.1056
				1345	.30	.48		1932	35.049	.1091
				1400	.04	.49		1941	30.600	.1124
				1410	.18	.52		1948	27.633	.1147
				1433	.08	.55		1952	27.618	.1159
				1437	.30	.57		1957	27.589	.1175
				1446	.33	.62		2004	26.150	.1196
				1513	.11	.67		2012	23.421	.1218
				1635	.00	.67		2030	18.867	.1261
				1640	.24	.69		2100	14.773	.1318
				1713	.04	.71		2112	12.993	.1337
				1716	.20	.72		2116	13.720	.1343
				1722	4.00	1.12		2120	12.623	.1348
				1725	.80	1.16		2200	9.597	.1398
				1730	.12	1.17		2240	7.535	.1437
								2400	5.770	.1497
			6-21							
			RG	R-1	1.42		0520	3.649	.1666	
			3 RG	AVG 2/	1.41					
							1012	2.922	.1774	
							1640	2.077	.1884	
							1824	3/1.988	.1907	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0006742. 1/ 0040 TO 0100. 2/ THIESSEN WEIGHTED FOR RG R-1, R-2, AND R-3. 3/ NORMAL BASE FLOW.



BLACKSBURG, VIRGINIA LITTLE WINNS CREEK WATERSHED W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA AREA — 555 ACRES								ROCKY RUN BRANCH WATERSHED W-I 13.11	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	P ¹ / Q	5.54 1.80	3.52 1.50	4.61 2.11	3.12 1.69	3.27 .58	6.93 .80	3.88 .87	1.95 .26	4.69 .31	.52 .24	5.39 .68	2.64 .73	46.06 11.57	
	STA AV ² / (58-62) Q	3.17 1.18	3.76 1.73	3.50 1.48	3.22 1.36	4.72 1.43	4.60 1.03	4.69 .74	3.49 .40	3.12 .36	3.38 .52	2.64 .79	3.25 1.04	43.54 12.06	
	MEAN P ³ / 32 YR	3.25	3.36	3.53	3.43	4.06	4.24	6.15	5.04	3.96	2.47	2.91	3.04	45.44	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-20	.08	6-20	.06	6-20	.10	1-6	.21	1-6	.34	1-6	.47	1-6	.56	3-5	1.02

MAXIMUMS FOR PERIOD OF RECORD																
1958 TO	6-7	.22	6-7	.19	5-6	.34	5-6	.71	5-6	.98	5-6	1.45	5-5	2.09	4-30	2.86
1962	1961		1961		1958		1958		1958		1958		1958		1958	

Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Permanent pasture, usually a good cover of native grass and clover mixture, 9%; alfalfa and other hay crops, 6%; corn, 4%; soybeans, usually drilled and cut as forage, 3%; small grain, usually followed by lespedeza, 2%; tobacco, 2%; cotton, 1%; farm woods, a mixture of hardwood and conifer, 54%; idle, usually a good cover of tall weeds, vines, and short growing plants, 18%; road surface, 1%. (Total cultivated, 18%) ¹/ Precipitation Thiessen weighted from rain gages R-1 and R-2. ²/ Determined from continuous records from April 1958 through Dec. 1962. ³/ Mean P based on 32-yr (1931-62) U. S. Weather Bureau record period at Emporia (1WNNW), Va.

Revision to 1960-61 Normal P: The monthly and annual Normals previously published were actually the U. S. Weather Bureau 25-yr (1931-55) Normals and not averages for 31-yr (1931-61) record period at Emporia Va., as stated in footnote 2/, of USDA Misc. Pub. 994, p. 85.

1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA ROCKY RUN BRANCH WATERSHED W-I 13.11							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.81	.08	.07	.47	.00	.24	.01	.00	.00	.00	.00	.00	
2	.00	.00	.00	.00	.92	.21	.00	.00	.00	.00	.00	.00	
3	.00	.00	.00	.00	.00	.08	2.21	.37	.10	.00	.88S	.01	
4	.00	.00	.00	.00	.00	.00	.06	.04	.27	.27	.00	.04	
5	.00	.00	.62	.00	.00	.04	T	.00	.22	.00	.19	.16	
6	1.71	.00	.18	.00	.00	.00	.00	.13	.01	.00	.00	.11	
7	.00	.00	.09	.52	.00	.00	.00	.00	.00	.00	.00	.00	
8	.00	.00	.00	1.08	.26	.00	.00	.00	.00	.00	.00	.00	
9	.00	.46	.31	.00	.00	.00	.00	.33	.00	.00	1.79	.00	
10	.31S	.00	.02	.00	.00	.00	.00	T	.87	.00	.07	.00	
11	.00	.00	.54	.39	.24	.00	.00	.00	.00	.00	.00	.00	
12	.00	.12	.31	.05	.03	.92	.00	.00	.00	.00	.00	.00	
13	T	.00	.00	.20	.92	.20	.00	.00	.00	.00	.00	.00	
14	.00	.00	.00	.00	.00	.26	.00	T	.93	.00	.00	.00	
15	.34	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
16	.00	.40	.00	.00	.00	.00	.07	.46	.08	.00	.00	.00	
17	.00	.00	.00	.00	.00	.00	.00	.00	1.09	.00	.00	.00	
18	.00	.09	.00	.00	.00	.00	.22	.00	.00	.00	.92	.00	
19	.04S	.60	.05	.00	.00	.58	.00	.00	.00	.00	.00	.00	
20	.03S	.00	.00	.00	.00	2.08	.00	.00	.00	.00	.13	.02S	
21	.00	.22	1.04	.00	.00	.01	.05	.57	.00	.00	.80	.19S	
22	.00	.23	.02	.00	.00	.00	.00	.01	.00	.00	.23	.37S	
23	.09	.61	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	
24	.33	T	.00	.00	.45	.39	.00	.00	.00	.00	.00	.01S	
25	.06	.00	.00	.00	.06	.00	.87	.00	.00	.00	.38S	.80S	
26	.23	.63	.21	.00	.18	1.73	.02	.00	.46	.00	.00	.25	
27	.37S	.06	.00	.00	T	.08	.00	.04	.66	.00	.00	.00	
28	1.22S	.02	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	
29	.00	-----	.00	.41	.09	.00	.32	.00	.00	.00	.00	.68S	
30	.00	-----	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00	
31	.00	-----	1.15	-----	.00	-----	.00	.00	-----	.25	-----	.00	
TOTAL	5.54	3.52	4.61	3.12	3.27	6.93	3.88	1.95	4.69	.52	5.39	2.64	
STA AV	3.17	3.76	3.50	3.22	4.72	4.60	4.69	3.49	3.12	3.38	2.64	3.25	

NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1 AND R-2. STA AV IS FOR PERIOD APRIL 1958 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.11-8.

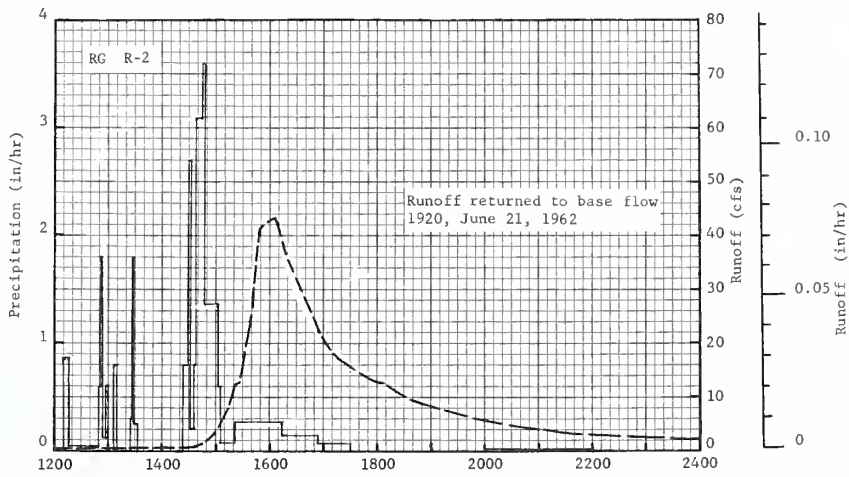
1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA ROCKY RUN BRANCH WATERSHED W-I 13.11						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.03	1.40	1.09	4.73	.47	.29	.41	.20	.13	.21	.18	.42
2	1.14	1.33	.91	1.81	1.02	.29	.35	.18	.12	.20	.17	.39
3	.83	1.21	.86	1.27	.85	.30	7.34	.26	.16	.18	.36	.38
4	.74	1.11	.79	1.08	.56	.30	2.62	.22	.20	.23	.22	.39
5	.63	.95	1.98	.97	.46	.30	1.38	.18	.22	.22	.22	.38
6	9.28	.79	2.41	.91	.39	.26	.84	.20	.17	.20	.20	.49
7	3.74	.68	2.60	1.62	.42	.22	.59	.18	.17	.20	.20	.39
8	1.48	.65	2.46	6.28	.41	.22	.48	.16	.15	.20	.20	.36
9	.96	1.06	2.88	2.54	.43	.20	.42	.21	.15	.20	1.04	.36
10	.77	.90	2.68	1.47	.41	.19	.37	.23	.43	.20	1.30	.35
11	.68	.71	2.32	1.80	.47	.18	.34	.22	.20	.18	.45	.34
12	.62	.68	6.05	1.49	.42	.34	.32	.20	.15	.17	.35	.33
13	.60	.65	2.28	1.65	1.24	.32	.30	.21	.13	.17	.31	.32
14	.60	.63	1.51	1.15	.55	.41	.28	.24	.64	.17	.29	.33
15	1.30	.58	1.25	1.05	.45	.27	.28	.21	.24	.17	.28	.34
16	.99	.88	1.06	.93	.41	.22	.28	.30	.21	.17	.28	.34
17	.73	.85	.90	.85	.37	.21	.26	.22	.77	.17	.28	.34
18	.65	.68	.86	.78	.35	.18	.25	.19	.29	.17	.99	.34
19	.60	2.12	.82	.73	.31	.21	.30	.18	.21	.17	.55	.34
20	.59	1.24	.79	.68	.31	4.72	.25	.17	.19	.16	.47	.34
21	.53	1.12	2.43	.65	.31	1.05	.21	.25	.18	.15	1.50	.34
22	.50	1.55	1.68	.62	.28	.46	.20	.21	.18	.15	1.61	.52
23	.51	3.88	1.18	.59	.27	.34	.20	.18	.19	.15	.74	.47
24	.63	2.05	1.02	.53	.31	.32	.17	.17	.20	.15	.57	.39
25	.68	1.25	.95	.55	.31	.31	.39	.17	.20	.15	.61	.92
26	.89	2.76	1.00	.53	.28	2.42	.27	.16	.22	.15	.71	1.21
27	.93	1.83	.86	.49	.34	2.23	.20	.18	.53	.16	.54	1.05
28	2.37	1.33	.79	.46	.30	.81	.18	.18	.27	.17	.48	.74
29	1.71	-----	.73	.59	.30	.55	.25	.15	.22	.17	.44	1.69
30	2.96	-----	.68	.56	.28	.50	.24	.14	.21	.17	.42	1.76
31	2.19	-----	1.52	-----	.26	-----	.22	.13	-----	.20	-----	.72
MEAN	1.35	1.25	1.59	1.31	.44	.62	.65	.20	.24	.18	.53	.55
INCHES	1.80	1.50	2.11	1.69	.58	.80	.87	.26	.31	.24	.68	.73

NOTES:

TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.042886.

1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA ROCKY RUN BRANCH WATERSHED W-I 13.11						
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of June 20-21, 1962												
6-20	RG R-2 1/.56	2/.0202	6-20	RG R-2			6-20					
				1210	.00	.00		1300	.308	.0000		
				1217	.86	.10		1340	.308	.0004		
				1250	.04	.12		1425	.403	.0009		
				1252	.60	.14		1444	1.063	.0013		
				1253	1.80	.17		1500	3.492	.0024		
				1258	.12	.18		1512	7.807	.0044		
				1300	.60	.20		1516	9.474	.0054		
				1307	.00	.20		1524	12.547	.0080		
				1310	.80	.24		1528	12.765	.0095		
				1325	.00	.24		1541	27.304	.0173		
				1327	.30	.25		1548	40.640	.0244		
				1328	1.80	.28		1608	43.024	.0493		
				1333	.24	.30		1616	37.836	.0589		
				1424	.00	.30		1656	22.083	.0946		
				1430	.80	.38		1716	17.259	.1063		
				1432	2.70	.47		1800	12.748	.1260		
				1435	.20	.48		1808	12.743	.1290		
				1438	.80	.52		1844	8.971	.1407		
				1445	3.09	.88		2028	4.611	.1617		
				1448	3.60	1.06		2140	3.442	.1703		
				1503	1.36	1.40		2320	2.541	.1793		
				1505	.60	1.42		2400	2.311	.1822		
				1521	.08	1.44		6-21				
				1615	.27	1.68		0440	1.483	.1980		
				1655	.15	1.78		1220	.879	.2142		
				1730	.07	1.82		1600	.649	.2192		
				2000	.00	1.82		1920	4/.548	.2227		
				2200	.02	1.85						
				RG R-1		1.48						
				2 RG AVG 3/		1.71						

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0017869. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/.53 INCH RAIN 2400, JUNE 19, TO 0025, JUNE 20; .02 INCH 0530 TO 0635; .01 INCH 0850. 2/PRIOR TO 1300. 3/THIESSEN WEIGHTED FOR RG R-1 AND R-2. 4/NORMAL BASE FLOW.



June 20, 1962

BLACKSBURG, VIRGINIA ROCKY RUN BRANCH WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH WATERSHED W-I 13.12 AREA — 192 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ¹ / Q	1.92 .73	3.34 1.13	4.44 3.06	2.73 .97	3.34 .12	3.22 .02	3.32 .06	1.20 .00	4.29 .03	1.36 T	5.01 .36	3.26 .12	37.43 6.60		
	STA AV ² / (58-62) Q	2.36 .80	3.43 1.98	3.38 1.95	3.43 1.58	3.51 .35	3.92 .60	3.52 .14	3.86 .19	3.24 .24	2.47 .08	2.37 .15	2.40 .35	37.89 8.41		
	MEAN P ³ / 56 YR	3.04	2.53	3.14	3.54	3.94	4.12	4.27	4.44	3.44	2.90	2.76	2.89	41.01		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962	3-12	.07	3-12	.07	3-12	.13	3-12	.36	3-12	.64	3-12	.97	3-12	1.46	3-10	2.20
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1962	6-24 1958	.48	6-12 1958	.28	6-24 1958	.37	9-19 1960	.69	2-18 1960	.93	2-18 1960	1.17	2-18 1960	1.31	2-18 1961	2.76
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Mixed cover. Permanent pasture with a fair cover of native grass mixture, 30%; hay, a mixture of orchardgrass, clover, or alfalfa, 14%; small grain, 3%; farm woods, predominantly hardwood, 52%; roads, 1%. (Total cultivated, 17%) ¹ / Precipitation Thiessen weighted from rain gages R-1 and R-2. ² / Determined from continuous records from May 1958 through Dec. 1962. ³ / Mean P based on 56-yr (1907-62) U. S. Weather Bureau record period at Culpeper, Va. Monthly records missing for Jan. through July 1907, Nov. 1949, Dec. 1950, and Jan. through Apr., and July 1951.																
Revision to 1960-61 Normal P: The monthly and annual Normals shown previously were actually the U. S. Weather Bureau 25-yr (1931-55) Normals and not averages for 55-yr (1907-61) record period at Culpeper, Va., as stated in footnote ² /, of USDA Misc. Pub. 994, p. 92.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH WATERSHED W-I 13.12										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.03S	.17S	.00	.36	1.06	.00	.00	.00	.01	.00	.00	.00				
2	.00	.01S	.00	.00	.06	.04	.00	.00	1.70	.00	.00	.00				
3	.00	.02	.00	.00	.00	.00	1.30	.40	.32	.05	.50S	.00				
4	.00	.00	.00	.00	.00	.00	.00	.08	.04	.24	.52	.05				
5	.00	.05	.49S	.00	.00	.08	.00	.00	.04	.23	.82S	.12				
6	1.16	.00	1.38S	.00	.00	.00	.00	.00	.00	.00	.00	.65				
7	.05	.00	.12S	.71	.00	.00	.00	.10	.00	.00	.00	.00				
8	.01S	.00	.00	.36	.13	.00	.00	.47	.00	.05	.00	.00				
9	.00	.52S	.06S	.00	.00	.00	.00	.01	.00	.03	1.99	.00				
10	.12S	.00	.00	.00	.00	.00	.00	.01	.00	.00	.13	.00				
11	.00	.06S	.28	.32	.00	.41	.00	.01	.00	.00	.00	.00				
12	.00	.07S	.61	.53	.12	1.17	.00	.01	.00	.00	.00	.00				
13	.00	.05S	.00	.05	.00	.24	.00	.00	.00	.00	.00	.00				
14	.00	.04S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
15	.41	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
16	.00	.23S	.00	.00	.00	.00	.68	.00	.01	.00	.00	.00				
17	.00	.00	.00	.00	.00	.00	.00	.02	.96	.00	.00	.00				
18	.00	.03	.00	.00	.00	.00	.64	.00	.00	.00	.65	.00				
19	.04S	.46	.04	.00	.00	.18	.00	.00	.01	.00	.00	.60				
20	.00	.00	.00	.14	.00	.84	.00	.00	.01	.00	.05	.03S				
21	.00	.03S	.89	.00	.00	.00	.53	.13	.01	.25	.75	.68S				
22	.10	.00	.03	.00	.00	.00	.00	.00	.00	.00	.07	.17S				
23	.00	.10	.00	.00	.00	.26	.00	.00	.42	.00	.00	.00				
24	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
25	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.65S				
26	.00	.74	.00	.00	1.57	.00	.00	.00	.14	.00	.00	.01S				
27	.00	.57	.00	.00	.01	.00	.00	.00	.42	.00	.00	.00				
28	.00	.17	.00	.00	.21	.00	.00	.00	.00	.00	.00	.00				
29	.00	-----	.00	.25	.01	.00	.00	.00	.00	.00	.00	.95S				
30	.00	-----	.00	.01	.00	.00	.00	.00	.00	.06	.00	.00				
31	.00	-----	.54	-----	.17	-----	.00	.00	-----	.17	-----	.00				
TOTAL	1.92	3.34	4.44	2.73	3.34	3.22	3.32	1.20	4.29	1.36	5.01	3.26				
STA AV	2.36	3.43	3.38	3.43	3.51	3.92	3.52	3.86	3.24	2.47	2.37	2.40				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1 AND R-2. STA AV IS FOR PERIOD MAY 1958 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.12-7.																

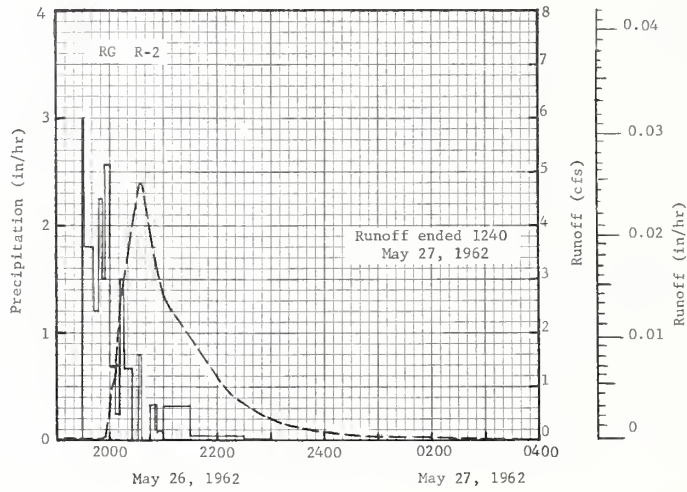
1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH WATERSHED W-I 13.12						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.03	.03	.48	.83	.19	.00	.00	.00	.00	.00	.00	T
2	.03	.02	.25	.23	.30	.00	.00	.00	.15	.00	.00	T
3	.03	.02	.17	.14	.07	.00	.05	.00	.04	.00	.00	T
4	.10	.02	.14	.10	.03	.00	.01	.00	T	.02	.00	T
5	.05	.01	.08	.08	.01	.00	.00	.00	.00	T	.08	T
6	2.21	.01	.15	.06	.01	.00	.00	.00	.00	T	.01	.33
7	.95	.01	.21	.48	T	.00	.00	.00	.00	.00	T	.05
8	.35	.01	.25	1.62	.01	.00	.00	.00	.00	.00	.00	.03
9	.17	.01	.27	.37	T	.00	.00	.00	.00	.00	.55	.02
10	.11	.01	.37	.25	T	.00	.00	.00	.00	.00	.61	.01
11	.12	.01	.91	.41	T	.00	.00	.00	.00	.00	.03	.01
12	.05	.01	7.84	1.13	T	.10	.00	.00	.00	.00	.02	T
13	.05	.01	3.92	.90	T	.03	.00	.00	.00	.00	.01	T
14	.12	.15	2.10	.38	.00	T	.00	.00	.00	.00	T	T
15	.58	.10	1.25	.23	.00	.00	.00	.00	.00	.00	T	T
16	.25	.23	.81	.15	.00	.00	.01	.00	.00	.00	T	.00
17	.13	.17	.50	.11	.00	.00	.00	.00	.01	.00	T	.00
18	.08	.12	.33	.08	.00	.00	.20	.00	.00	.00	.20	T
19	.06	1.10	.26	.06	.00	.00	.00	.00	.00	.00	.05	T
20	.06	.50	.20	.07	.00	.06	.00	.00	.00	.00	.04	T
21	.05	.33	1.99	.05	.00	T	.18	.00	.00	.00	.52	T
22	.09	.30	.85	.03	.00	.00	.00	.00	.00	.00	.51	T
23	.06	.31	.43	.02	.00	.00	.00	.00	.00	.00	.11	T
24	.04	.29	.27	.02	.00	.00	.00	.00	.00	.00	.05	T
25	.03	.15	.18	.01	.00	.00	.00	.00	.00	.00	.03	T
26	.03	1.67	.13	.01	.30	.00	.00	.00	.00	.00	.02	T
27	.02	2.43	.09	T	.01	.00	.00	.00	.01	.00	.01	T
28	.02	1.10	.06	T	.01	.00	.00	.00	.00	.00	.01	T
29	.02	-----	.04	.01	.00	.00	.00	.00	.00	.00	.01	.02
30	.02	-----	.03	T	.00	.00	.00	.00	.00	.00	T	.27
31	.02	-----	.13	-----	.00	-----	.00	.00	-----	.00	-----	.19
MEAN	.19	.32	.80	.26	.03	.01	.01	.00	.01	T	.10	.03
INCHES	.73	1.13	3.06	.97	.12	.02	.06	.00	.03	T	.36	.12

NOTES:

TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.123967.

1962 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH WATERSHED W-I 13.12											
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF								
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)					
<u>Event of May 26-27, 1962</u>															
5-26	RG R-2 .00	1/.0040	5-26	RG	R-2		5-26	1956	.076	.0000					
				1930	.00	.00		2000	.428	.0001					
				1932	3.00	.10		2002	1.011	.0002					
				1942	1.80	.40		2004	1.115	.0004					
				1947	1.20	.50									
				1951	2.25	.65		2012	2.712	.0017					
				1953	1.50	.70		2032	4.778	.0082					
				2000	2.57	1.00		2036	4.710	.0098					
				2007	.69	1.08		2100	2.660	.0174					
				2012	.24	1.10		2120	2.188	.0216					
				2016	1.50	1.20		2212	.927	.0286					
				2025	.67	1.30		2300	.403	.0313					
				2032	.00	1.30		2340	.207	.0324					
				2035	.80	1.34		2400	.161	.0327					
				2045	.00	1.34									
				Watershed conditions: 52% farm woods, predominantly hardwoods, good cover; 30% permanent pasture, good cover of grass mixture; 14% hay mixture of orchard grass and clover or alfalfa, good cover; 3% small grain 3 to 6 in. tall; 1% roads.					RG	R-1	1.56		0040	.085	.0331
									2100	.08	1.39		0220	.023	.0336
2130	.32	1.55	0332				.017		.0337						
2230	.04	1.59	0620				.006		.0339						
2300	.02	1.60	1220				2/.002		.0340						
2 RG	AVG 3/	1.57													

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00516531. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ PRIOR TO 1956. 2/ RUNOFF ENDED AT 1240, MAY 27, 1962. 3/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.



BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA AREA — 2,023 ACRES (3.16 SQ. MILES)								CHUB RUN WATERSHED W-I 13.13			
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P1/	1.90	2.61	5.61	3.38	3.88	6.91	2.39	1.43	1.75	2.61	6.03	3.13	41.63			
	Q	.90	.50	2.83	1.39	.85	1.69	.50	.15	.12	.15	1.29	.69	11.06			
STA AVG (59-62)	P	1.85	4.49	3.69	3.62	4.56	4.89	2.93	3.08	2.60	2.59	2.47	2.47	39.24			
	Q	.66	1.35	1.96	2.01	1.16	.95	.33	.16	.14	.35	.53	.50	10.10			
MEAN P 22 YR	3/	2.43	2.24	3.24	2.91	3.89	3.62	4.13	4.74	3.33	3.56	2.67	2.68	39.44			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962		6-19	.09	6-19	.09	6-19	.16	11-9	.26	6-20	.39	6-20	.52	6-19	.90	6-19	1.29
MAXIMUMS FOR PERIOD OF RECORD																	
1959 TO 1962		9-30 1959	.24	9-30 1959	.17	9-30 1959	.24	9-30 1959	.34	9-30 1959	.40	6-20 1962	.52	6-19 1962	.90	3-29 1960	1.58
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Mixed cover: Permanent pasture, a fair cover of native grass, 30%; hay mixtures such as alfalfa, orchardgrass, lespedeza and clover, 5%; corn, 2%; small grain, 1%; farm woods, predominately hardwood mixed with conifer, 57%; idle, 4%; road surface, 1%. (Total cultivated, 8%) 1/ Precipitation Thiessen weighted from R-1, R-2, and R-3. 2/ Determined from continuous records from September 1959 through 1962. 3/ Mean P based on 22-yr (1941-62) U.S. Weather Bureau record period at Luray, Va. (5E). Missing monthly totals for Jan. and Feb. 1941 were estimated from nearby Weather Bureau records at Riverton, Va.																	
Revision to 1960-61 Normal P: The monthly and annual Normals previously published in USDA Misc. Pub. 994, p. 99, were based on Weather Bureau 1942-59 records at Luray, Va. combined with 1960 and 61 data from the Chub Run Watershed W-I.																	
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA								CHUB RUN WATERSHED W-I 13.13			
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC					
1	.00	.09S	.00	.50	1.07	.00	.00	.00	.00	.00	.00	.00					
2	.00	.01	.00	.00	.04	T	.00	.00	1.01	.00	.00	.00					
3	.00	.00	.00	.00	.00	.12	.77	.17	.00	.00	.25N	.00					
4	.00	.00	.00	.00	.00	.00	.17	.00	.08	1.42	.27	.00					
5	.00	.15	1.25S	.00	.00	.44	T	.00	.00	.01	.17	.41					
6	1.16S	.00	1.29S	.06	.00	.00	.00	.00	.00	.00	.00	.66					
7	.06	.00	.45S	.48	.00	.00	.00	.00	.00	.00	.00	.00					
8	.05S	.00	.00	.38	.11	.00	.51	.66	.00	.26	.00	.00					
9	.00	.23S	.08S	.04	.00	.00	.00	.10	.00	.00	3.47	.00					
10	.09S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.00					
11	.00	.12S	.34	.31	.00	.36	.00	.00	.00	.00	.00	.00					
12	.00	.08S	.52	.38	.23	.87	.01	.00	.00	.00	.00	.00					
13	.00	.05S	.00	.07	.20	.17	.00	.13	.00	.00	.00	.00					
14	.00	.01	.00	.00	.00	.67	.01	.00	.00	.00	.00	.00					
15	.35	.00	.00	.00	.06	T	.09	.00	.00	.00	.00	.00					
16	.00	.21M	.00	.00	.00	.00	.40	.06	.00	.00	.02	.00					
17	.00	.00	.00	.00	.00	.00	.00	.00	.16	.00	.01	.00					
18	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.90	.00					
19	.05S	.30	.04S	T	.40	2.28	.00	.00	.05	.00	.00	.00					
20	.00	.00	.00	.34	.29	1.86	.00	.00	.00	.00	.00	.07S					
21	.00	TS	.88	.00	.00	.00	.16	.31	.00	.02	.69	.68S					
22	.08	.00	.17	.00	.00	.00	.01	.00	.01	.00	.05	.03S					
23	.03	.16	.00	.00	.00	.14	.06	.00	.18	.00	.00	.00					
24	.00	.02	.00	.00	T	.00	.00	.00	.00	.00	.00	.03S					
25	.00	.00	.00	.00	.00	.00	.07	.00	T	.00	.00	.55S					
26	.03	.61	.00	.00	1.07	.00	.00	.00	.10	.00	.00	.00					
27	.00	.45	.00	.00	.02	.00	.00	.00	.16	.00	.00	.00					
28	.00	.14	.00	.00	.39	.00	.00	.00	.00	.00	.00	.00					
29	.00	-----	.00	.82	.00	.00	.12	.00	.00	.00	.00	.70M					
30	.00	-----	.00	T	.00	.00	.00	T	.00	.62	.00	.00					
31	.00	-----	.59	-----	.00	-----	.00	.00	-----	.28	-----	.00					
TOTAL	1.90	2.61	5.61	3.38	3.88	6.91	2.39	1.43	1.75	2.61	6.03	3.13					
STA AV	1.85	4.49	3.69	3.62	4.56	4.89	2.93	3.08	2.60	2.59	2.47	2.47					
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1, R-2 AND R-3. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994 P. 13.13-5																	

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA CHUB RUN WATERSHED W-I						13.13
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.49	1.18	3.96	7.73	3.28	1.45	2.06	.55	.20	.31	.49	1.45
2	1.45	1.12	3.35	5.63	5.26	1.31	1.94	.55	.82	.29	.45	1.39
3	1.63	1.08	2.98	5.06	3.86	1.24	2.86	.53	.59	.29	.75	1.35
4	1.80	1.08	2.63	4.59	3.61	1.20	2.69	.49	.47	1.69	.75	1.29
5	1.69	1.04	2.47	4.24	3.24	1.33	2.18	.47	.43	.69	.73	1.31
6	6.51	1.00	2.47	3.98	2.98	1.29	1.92	.41	.37	.47	.59	3.79
7	7.51	.98	2.47	4.81	2.77	1.06	1.73	.41	.35	.43	.51	2.37
8	4.83	.98	2.47	4.90	2.63	.94	1.94	.71	.35	.55	.49	2.12
9	3.73	.98	2.47	4.51	2.47	.94	1.88	.71	.35	.43	14.63	2.02
10	3.04	1.16	2.47	4.02	2.39	.86	1.51	.55	.35	.37	22.36	1.90
11	2.39	.98	2.65	4.65	2.20	.94	1.41	.51	.29	.33	6.53	1.90
12	2.86	1.14	15.34	5.12	2.14	1.92	1.37	.47	.24	.33	4.94	1.90
13	2.59	.98	16.28	5.75	2.39	1.63	1.29	.53	.24	.33	3.69	2.12
14	2.55	1.12	11.77	4.83	2.04	2.10	1.22	.51	.24	.33	2.57	2.79
15	3.67	1.08	9.32	4.45	1.86	2.26	1.26	.45	.24	.33	2.10	2.33
16	2.82	1.16	9.59	4.06	1.69	1.59	1.65	.43	.29	.33	1.86	1.73
17	2.33	1.08	9.97	3.77	1.59	1.35	1.41	.37	.35	.31	1.69	1.29
18	2.16	.98	11.18	3.49	1.53	1.18	1.26	.33	.29	.31	4.77	1.29
19	2.10	1.73	8.77	3.20	1.71	25.93	1.14	.33	.24	.31	4.16	1.29
20	1.96	1.51	9.93	3.57	2.06	40.72	1.02	.29	.29	.29	3.63	1.29
21	1.90	1.35	24.07	3.16	1.65	15.75	.98	.33	.27	.29	4.81	2.10
22	2.02	1.24	18.79	2.90	1.45	7.89	.96	.45	.24	.31	5.94	2.12
23	1.90	1.26	13.52	2.71	1.35	6.02	.90	.29	.35	.31	4.37	1.39
24	1.75	1.53	10.20	2.55	1.31	4.77	.86	.27	.33	.31	3.81	1.31
25	1.69	1.35	8.34	2.47	1.20	3.88	.86	.27	.31	.29	3.41	1.26
26	1.63	2.90	7.10	2.39	3.08	3.43	.75	.27	.35	.27	2.41	2.06
27	1.57	5.02	6.18	2.18	2.53	3.04	.67	.27	.47	.27	2.04	1.43
28	1.41	5.14	5.53	2.04	2.47	2.63	1.24	.27	.39	.27	1.82	1.18
29	1.29	-----	4.96	2.63	1.94	2.49	.69	.27	.31	.31	1.65	1.75
30	1.24	-----	4.85	2.86	1.73	2.28	.65	.22	.31	.43	1.51	2.45
31	1.18	-----	4.83	-----	1.57	-----	.59	.22	-----	1.04	-----	4.32
MEAN	2.47	1.51	7.76	3.94	2.32	4.78	1.38	.41	.34	.41	3.65	1.88
INCHES	.90	.50	2.83	1.39	.85	1.69	.50	.15	.12	.15	1.29	.69

NOTES:

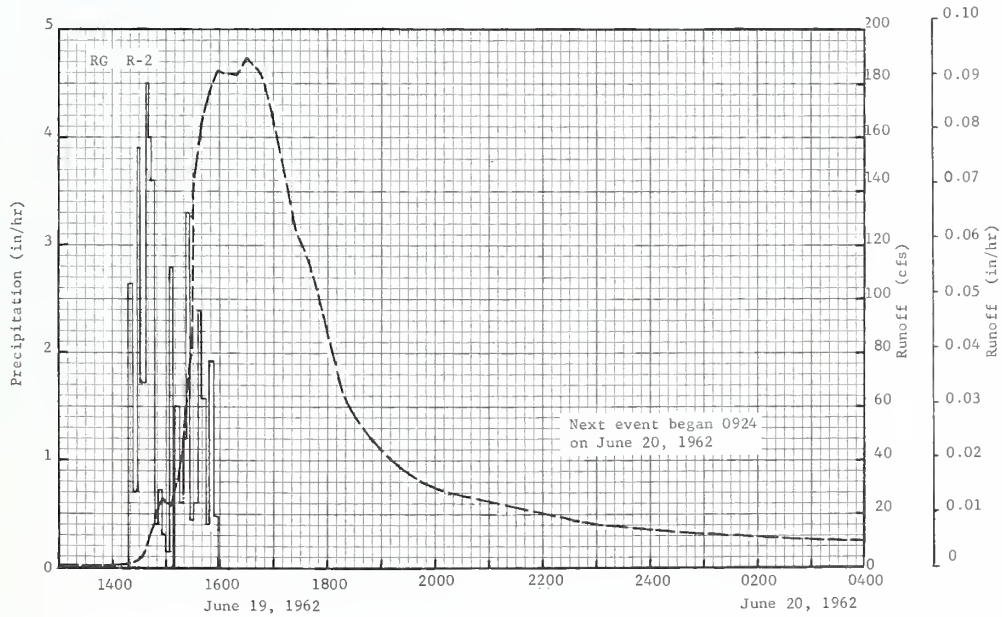
TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.011766.

1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA CHUB RUN WATERSHED W-I						13.13
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
6-19	RG R-2 .00	1/0.0081	6-19	RG 1418	R-2 .00	.00	6-19	1412	1.000	.0000		
				1423	2.64	.22		1420	1.265	.0001		
				1429	.70	.29		1423	1.775	.0001		
				1431	3.90	.42		1424	2.407	.0001		
				1438	1.71	.62		1426	2.733	.0002		
				1440	4.50	.77		1432	3.733	.0003		
				1443	4.00	.97		1436	4.834	.0005		
				1448	3.60	1.27		1443	13.524	.0010		
				1451	.40	1.29		1448	16.013	.0016		
				1456	.72	1.35		1456	25.437	.0030		
				1500	.30	1.37		1504	23.520	.0046		
				1504	.15	1.38		1512	33.148	.0064		
				1507	2.80	1.52		1519	44.102	.0086		
				1509	.00	1.52		1524	70.436	.0110		
				1515	1.50	1.67		1528	83.022	.0135		
				1519	.60	1.71		1530	139.669	.0153		
				1522	1.20	1.77		1540	165.718	.0278		
				1526	3.30	1.99		1550	176.448	.0417		
				1530	.45	2.02		1600	185.627	.0565		
				1537	.60	2.09		1620	183.934	.0867		
				1539	2.40	2.17		1632	189.952	.1050		
				1544	1.56	2.30		1644	184.791	.1234		
				1547	.40	2.32		1700	166.922	.1464		
				1552	1.92	2.48		1724	127.532	.1753		
				1557	.48	2.52		1740	112.233	.1909		

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004902. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ PRIOR TO 1412.

1962 SELECTED RUNOFF EVENTS			BLACKSBURG, VIRGINIA				CHUB RUN WATERSHED W-I				13.13
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of June 19-20, 1962—Continued											
6-19	RG R-3 .00	.0000	6-19	RG 1405	R-3 .00	.00	6-19	1800	88.530	.2073	
				1410	.60	.05		1813	68.641	.2157	
				1414	6.30	.47		1836	54.301	.2272	
				1421	4.11	.95		1918	38.043	.2431	
				1429	.30	.99		1958	30.700	.2543	
				1432	1.20	1.05		2240	17.584	.2863	
				1436	7.05	1.52	6-20	2400	14.973	.2969	
				1438	.90	1.55		0240	11.403	.3142	
				1440	2.10	1.62		0640	8.996	.3342	
				1443	1.00	1.67		0820	8.629	.3414	
				1446	2.80	1.81		0900	<u>1/</u> 8.649	.3442	
				1450	.45	1.84					
				1453	2.60	1.97					
				1500	.34	2.01					
				1535	.05	2.04					
				1542	.51	2.10					
				1600	.17	2.15					
				RG	R-1	2.17					
				3 RG	AVG <u>2/</u>	2.27					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004902. 1/ NEXT RUNOFF EVENT BEGAN AT 0924 ON JUNE 20, 1962. 2/ THIESSEN WEIGHTED FOR RG R-1, R-2, AND R-3.



BLACKSBURG, VIRGINIA CHUB RUN WATERSHED W-I

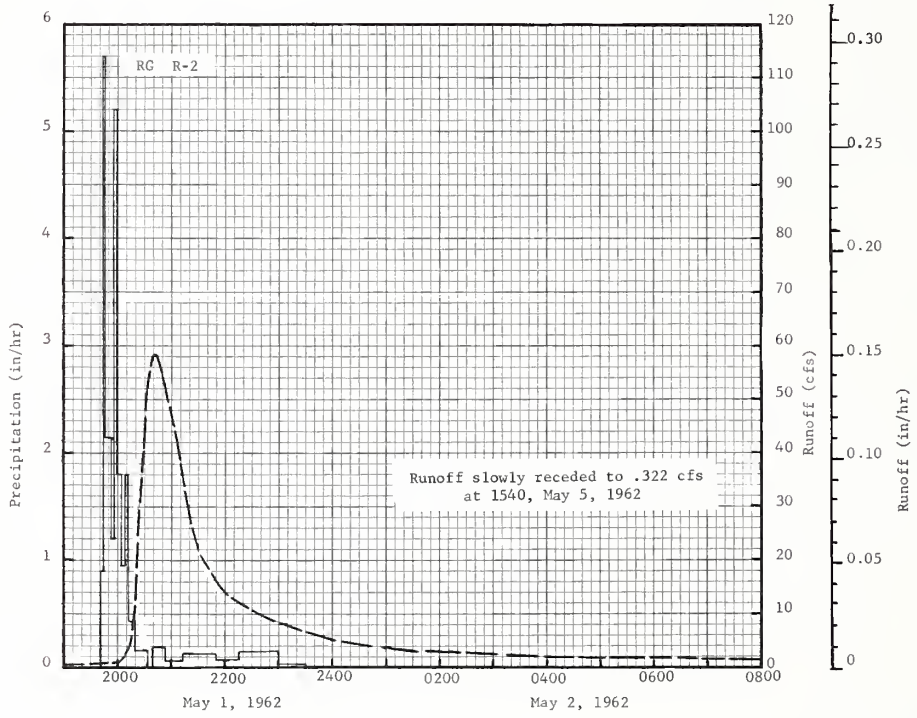
MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA		FOSTERS CREEK WATERSHED W-I				13.14				
						AREA — 389 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ¹ / _Q	2.34	3.61	3.92	2.78	3.60	3.41	4.46	1.72	3.47	1.27	4.49	3.29	38.36			
Q	1.34	1.45	3.98	1.35	.85	.55	.61	.22	.20	.19	.64	.45	11.83			
STA AV ² / _P	2.19	4.44	4.35	3.02	4.39	3.52	3.17	3.42	3.38	4.71	2.44	3.40	42.43			
(60-62) Q	1.18	3.01	2.93	1.76	1.23	.52	.42	.26	.19	2.45	.46	.76	15.17			
MEAN P ³ / _{47 YR}	3.32	2.81	3.59	3.47	3.51	3.57	4.66	4.32	3.23	2.89	2.69	3.00	41.06			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	5-1	.15	3-12	.14	3-12	.28	3-12	.75	3-12	1.38	3-11	2.20	3-11	2.39	3-7	2.81
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1962	10-20 1961	1.71	10-20 1961	.76	10-20 1961	1.02	10-20 1961	2.06	10-20 1961	3.02	10-20 1961	4.96	10-20 1961	5.89	10-20 1961	5.96
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Permanent pasture, usually a good cover of native grass and clover mixture, 26%; hay mixture, such as alfalfa, orchardgrass, lespedeza, and other clover, 12%; small grain and corn, 3%; farm woods, predominantly hardwood, 46%; idle land, usually in tall weeds, brush, and native grass, 11%; road surface, 2%. (Total cultivated, 15%) ¹ / Precipitation Thiessen weighted from rain gages R-1 and R-2. ² / Determined from continuous records from Sept. 1960 through Dec. 1962; precipitation Thiessen weighted. ³ / Mean P based on 47-yr (1916-62) U. S. Weather Bureau record period at Louisa, Va. Records at Mineral, Va. utilized to 1940. During change-over, months of Jan. and Feb. 1940 and Mar., Oct., Nov., and Dec. 1940, had missing records.																
Revision to 1960-61 Normal P: The monthly and annual Normals previously published were actually the U.S. Weather Bureau Normals shown by them for Mineral, Va. (1936-40) and for Louisa, Va. (1941-55) and not the averages for the 40-yr (1926-61) record period for Louisa, Va. as stated in footnote ² / of USDA Misc. Pub. 994, p. 104.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA		FOSTERS CREEK WATERSHED W-I				13.14				
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.17S	.20S	.05S	.29	1.44	.00	.02	.05	.00	.00	.00	.00	.00			
2	.00	.00	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00	.00			
3	.00	.00	.00	.00	.00	.00	2.45	.47	.58	.01	.52S	.00	.00			
4	.00	.00	.00	.00	.00	.00	.35	.32	.09	.51	.04	.00	.00			
5	.02	.05	.74S	.00	.00	.31	.00	.00	.20	.46	.69	.16	.00			
6	1.09	.00	.65S	.06	.00	.00	.00	.08	.00	.00	.00	.55	.00			
7	.00	.00	.04S	.50	.00	.00	.00	.00	.00	.00	.00	.00	.00			
8	.00	.05S	.00	.68	.36	.00	.00	.27	.00	.00	.00	.00	.00			
9	.00	.70S	.14S	.00	.00	.00	.00	.06	.00	.00	2.12	.00	.00			
10	.19S	.00	.00	.00	.00	.00	.00	.00	.23	.00	.05	.00	.00			
11	.00	.01S	.42	.54	.00	1.80	.00	.00	.00	.00	.00	.05	.00			
12	.00	.12S	.27	.28	.11	.22	.00	.00	.00	.00	.00	.00	.00			
13	.00	.05S	.00	.01	.34	.47	.00	.00	.00	.00	.00	.00	.00			
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
15	.40	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00	.00	.00			
16	.00	.34S	.00	.00	.00	.00	.64	.00	.07	.00	.80	.00	.00			
17	.00	.00	.00	.00	.00	.00	.00	.00	1.03	.00	.00	.00	.00			
18	.00	.05	.00	.00	.00	.00	.03	.00	.00	.00	.69	.00	.00			
19	.06S	.47	.06S	.00	.08	.35	.00	.00	.02	.00	.00	.00	.00			
20	.00	.00	.00	.05	.00	.25	.00	.00	.12	.00	.06	.05S	.00			
21	.00	.08S	1.03	.00	.00	.01	.22	.47	.00	.04	.25	.84S	.00			
22	.13	.01	.01	.00	.00	.00	.00	.00	.00	.00	.07	.20S	.00			
23	.00	.14	.00	.00	.26	.00	.05	.00	.20	.00	.00	.00	.00			
24	.00	.02	.00	.00	.12	.00	.00	.00	.00	.00	.00	.03S	.00			
25	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.60S	.00			
26	.01	.80	.00	.00	.40	.00	.00	.00	.11	.00	.00	.05	.00			
27	.07S	.17	.00	.00	.00	.00	.00	.00	.39	.00	.00	.00	.00			
28	.20S	.35	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00			
29	.00	-----	.00	.34	.04	.00	.09	.00	.00	.00	.00	.76S	.00			
30	.00	-----	.00	.03	.00	.00	.00	.00	.00	.01	.00	.00	.00			
31	.00	-----	.51	-----	.36	-----	.00	.00	-----	.24	-----	.00	.00			
TOTAL	2.34	3.61	3.92	2.78	3.60	3.41	4.46	1.72	3.47	1.27	4.49	3.29	38.36			
STA AV	2.19	4.44	4.35	3.02	4.39	3.52	3.17	3.42	3.38	4.71	2.44	3.40	42.43			
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1 AND R-2. STA AV IS FOR PERIOD SEPTEMBER 1960 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, MISC. PUB. 994, P. 13.14-4.																

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA FOSTERS CREEK WATERSHED W-I						13.14
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.40	.53	1.66	1.57	3.52	.26	.16	.13	.05	.09	.11	.17
2	.41	.47	.73	.69	1.59	.22	.14	.11	.10	.09	.11	.17
3	.39	.42	.63	.53	.57	.22	2.67	.22	.21	.09	.20	.17
4	.66	.42	.58	.48	.39	.21	1.66	.25	.12	.19	.13	.17
5	.63	.42	.54	.46	.34	.27	.36	.18	.13	.33	.40	.18
6	5.27	.42	.75	.46	.31	.22	.24	.17	.11	.11	.17	.70
7	1.66	.36	.92	1.19	.28	.18	.21	.15	.09	.11	.13	.23
8	.72	.32	1.08	3.21	.41	.17	.19	.15	.09	.11	.13	.19
9	.53	1.27	1.10	1.03	.36	.16	.18	.16	.08	.10	2.69	.19
10	.44	.97	1.56	.62	.32	.16	.16	.14	.12	.09	1.92	.16
11	.42	.55	4.00	1.79	.31	.86	.15	.14	.09	.09	.25	.17
12	.42	.50	34.84	1.49	.31	1.33	.15	.13	.07	.09	.18	.17
13	.42	.50	1.61	1.12	.59	1.14	.15	.15	.07	.09	.17	.17
14	.42	.61	.84	.66	.35	.37	.14	.09	.07	.09	.15	.17
15	1.68	.48	.73	.56	.31	.27	.24	.09	.06	.10	.15	.16
16	.76	.44	.65	.51	.27	.22	.61	.09	.07	.09	.15	.15
17	.50	.75	.58	.48	.27	.20	.24	.09	.36	.09	.15	.16
18	.44	.62	.55	.47	.25	.19	.20	.09	.10	.08	.64	.17
19	.42	2.59	.54	.46	.22	.23	.18	.09	.09	.08	.29	.17
20	.42	.84	.53	.43	.22	.29	.16	.07	.10	.08	.22	.17
21	.42	.61	3.79	.42	.22	.23	.17	.15	.08	.08	.24	.19
22	.55	.60	1.53	.42	.20	.20	.17	.09	.08	.08	.42	.29
23	.49	.62	.86	.40	.22	.18	.16	.08	.11	.08	.20	.29
24	.42	.63	.65	.38	.33	.18	.15	.07	.09	.08	.18	.23
25	.38	.51	.58	.36	.21	.18	.13	.07	.09	.08	.17	.22
26	.34	4.01	.53	.35	.22	.16	.13	.06	.10	.08	.17	.22
27	.42	1.71	.48	.33	.26	.16	.14	.07	.19	.08	.17	.22
28	.38	1.58	.46	.33	.25	.16	.15	.06	.11	.08	.17	.22
29	.34	-----	.46	.48	.25	.16	.18	.05	.09	.11	.17	.60
30	.57	-----	.46	.41	.23	.16	.18	.05	.09	.11	.17	.61
31	.53	-----	.83	-----	.35	-----	.15	.05	-----	.14	-----	.27
MEAN	.70	.85	2.10	.74	.45	.30	.32	.11	.11	.10	.35	.24
INCHES	1.34	1.45	3.98	1.35	.85	.55	.61	.22	.20	.19	.64	.45

NOTES:

TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.061187

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA FOSTERS CREEK WATERSHED W-I			13.14																																																																																																																																																																																																																													
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF																																																																																																																																																																																																																													
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)																																																																																																																																																																																																																									
5 -1	RC R-2 .00	1/.0172	5 -1	RC R-2			5 -1																																																																																																																																																																																																																												
<p>Event of May 1-2, 1962</p> <table border="1"> <tr><td>1940</td><td>.00</td><td>.00</td><td>1940</td><td></td><td>.322</td><td>.0000</td></tr> <tr><td>1944</td><td>.90</td><td>.06</td><td>1948</td><td></td><td>.412</td><td>.0001</td></tr> <tr><td>1946</td><td>5.70</td><td>.25</td><td>2000</td><td></td><td>.847</td><td>.0005</td></tr> <tr><td>1953</td><td>2.14</td><td>.50</td><td>2005</td><td></td><td>1.487</td><td>.0007</td></tr> <tr><td>1956</td><td>1.20</td><td>.56</td><td>2015</td><td></td><td>4.275</td><td>.0019</td></tr> <tr><td>1959</td><td>5.20</td><td>.82</td><td>2018</td><td></td><td>8.645</td><td>.0028</td></tr> <tr><td>2003</td><td>1.80</td><td>.94</td><td>2020</td><td></td><td>13.579</td><td>.0037</td></tr> <tr><td>2008</td><td>.96</td><td>1.02</td><td>2024</td><td></td><td>30.112</td><td>.0074</td></tr> <tr><td>2012</td><td>1.80</td><td>1.14</td><td>2028</td><td></td><td>38.675</td><td>.0133</td></tr> <tr><td>2019</td><td>.43</td><td>1.19</td><td>2030</td><td></td><td>45.747</td><td>.0168</td></tr> <tr><td>2034</td><td>.16</td><td>1.23</td><td>2032</td><td></td><td>51.497</td><td>.0210</td></tr> <tr><td>2038</td><td>.00</td><td>1.23</td><td>2036</td><td></td><td>54.526</td><td>.0300</td></tr> <tr><td>2054</td><td>.19</td><td>1.28</td><td>2040</td><td></td><td>58.291</td><td>.0396</td></tr> <tr><td>2113</td><td>.06</td><td>1.30</td><td>2042</td><td></td><td>58.267</td><td>.0445</td></tr> <tr><td>2150</td><td>.13</td><td>1.38</td><td>2052</td><td></td><td>53.290</td><td>.0682</td></tr> <tr><td>2215</td><td>.07</td><td>1.41</td><td>2108</td><td></td><td>40.475</td><td>.1001</td></tr> <tr><td>2300</td><td>.15</td><td>1.52</td><td>2112</td><td></td><td>36.369</td><td>.1066</td></tr> <tr><td>2330</td><td>.02</td><td>1.53</td><td>2120</td><td></td><td>28.461</td><td>.1177</td></tr> <tr><td></td><td></td><td></td><td>2130</td><td></td><td>22.017</td><td>.1284</td></tr> <tr><td></td><td></td><td></td><td>2158</td><td></td><td>14.572</td><td>.1502</td></tr> <tr><td></td><td></td><td></td><td>2212</td><td></td><td>12.689</td><td>.1583</td></tr> <tr><td></td><td></td><td></td><td>2308</td><td></td><td>8.088</td><td>.1830</td></tr> <tr><td></td><td></td><td></td><td>2400</td><td></td><td>5.582</td><td>.1981</td></tr> <tr><td></td><td></td><td></td><td>5 -2</td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td>0148</td><td></td><td>3.260</td><td>.2184</td></tr> <tr><td></td><td></td><td></td><td>0320</td><td></td><td>2.538</td><td>.2297</td></tr> <tr><td></td><td></td><td></td><td>0520</td><td></td><td>1.965</td><td>.2412</td></tr> <tr><td></td><td></td><td></td><td>0932</td><td></td><td>1.396</td><td>.2592</td></tr> <tr><td></td><td></td><td></td><td>1340</td><td></td><td>1.079</td><td>.2723</td></tr> <tr><td></td><td></td><td></td><td>1920</td><td></td><td>.816</td><td>.2860</td></tr> <tr><td></td><td></td><td></td><td>2400</td><td></td><td>2/.753</td><td>.2953</td></tr> </table>											1940	.00	.00	1940		.322	.0000	1944	.90	.06	1948		.412	.0001	1946	5.70	.25	2000		.847	.0005	1953	2.14	.50	2005		1.487	.0007	1956	1.20	.56	2015		4.275	.0019	1959	5.20	.82	2018		8.645	.0028	2003	1.80	.94	2020		13.579	.0037	2008	.96	1.02	2024		30.112	.0074	2012	1.80	1.14	2028		38.675	.0133	2019	.43	1.19	2030		45.747	.0168	2034	.16	1.23	2032		51.497	.0210	2038	.00	1.23	2036		54.526	.0300	2054	.19	1.28	2040		58.291	.0396	2113	.06	1.30	2042		58.267	.0445	2150	.13	1.38	2052		53.290	.0682	2215	.07	1.41	2108		40.475	.1001	2300	.15	1.52	2112		36.369	.1066	2330	.02	1.53	2120		28.461	.1177				2130		22.017	.1284				2158		14.572	.1502				2212		12.689	.1583				2308		8.088	.1830				2400		5.582	.1981				5 -2							0148		3.260	.2184				0320		2.538	.2297				0520		1.965	.2412				0932		1.396	.2592				1340		1.079	.2723				1920		.816	.2860				2400		2/.753	.2953
1940	.00	.00	1940		.322	.0000																																																																																																																																																																																																																													
1944	.90	.06	1948		.412	.0001																																																																																																																																																																																																																													
1946	5.70	.25	2000		.847	.0005																																																																																																																																																																																																																													
1953	2.14	.50	2005		1.487	.0007																																																																																																																																																																																																																													
1956	1.20	.56	2015		4.275	.0019																																																																																																																																																																																																																													
1959	5.20	.82	2018		8.645	.0028																																																																																																																																																																																																																													
2003	1.80	.94	2020		13.579	.0037																																																																																																																																																																																																																													
2008	.96	1.02	2024		30.112	.0074																																																																																																																																																																																																																													
2012	1.80	1.14	2028		38.675	.0133																																																																																																																																																																																																																													
2019	.43	1.19	2030		45.747	.0168																																																																																																																																																																																																																													
2034	.16	1.23	2032		51.497	.0210																																																																																																																																																																																																																													
2038	.00	1.23	2036		54.526	.0300																																																																																																																																																																																																																													
2054	.19	1.28	2040		58.291	.0396																																																																																																																																																																																																																													
2113	.06	1.30	2042		58.267	.0445																																																																																																																																																																																																																													
2150	.13	1.38	2052		53.290	.0682																																																																																																																																																																																																																													
2215	.07	1.41	2108		40.475	.1001																																																																																																																																																																																																																													
2300	.15	1.52	2112		36.369	.1066																																																																																																																																																																																																																													
2330	.02	1.53	2120		28.461	.1177																																																																																																																																																																																																																													
			2130		22.017	.1284																																																																																																																																																																																																																													
			2158		14.572	.1502																																																																																																																																																																																																																													
			2212		12.689	.1583																																																																																																																																																																																																																													
			2308		8.088	.1830																																																																																																																																																																																																																													
			2400		5.582	.1981																																																																																																																																																																																																																													
			5 -2																																																																																																																																																																																																																																
			0148		3.260	.2184																																																																																																																																																																																																																													
			0320		2.538	.2297																																																																																																																																																																																																																													
			0520		1.965	.2412																																																																																																																																																																																																																													
			0932		1.396	.2592																																																																																																																																																																																																																													
			1340		1.079	.2723																																																																																																																																																																																																																													
			1920		.816	.2860																																																																																																																																																																																																																													
			2400		2/.753	.2953																																																																																																																																																																																																																													
<p>Watershed conditions: 46% farm woods, predominantly hardwood mixed with conifers, good cover; 26% pasture, good cover of native grass mixture; 12% hay mixture, such as alfalfa, orchard-grass, lespedeza and other clovers, excellent cover; 14% idle with good cover of annual grasses and weeds; 2% roads.</p>																																																																																																																																																																																																																																			
<p>NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0025495. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/PRIOR TO 1940. 2/THIESSEN WEIGHTED FOR RC R-1 AND R-2. 3/RUNOFF SLOWLY RECEDED TO .322 CFS AT 1540, MAY 5, 1962.</p>																																																																																																																																																																																																																																			



BLACKSBURG, VIRGINIA FOSTERS CREEK WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA CHESTNUT BRANCH WATERSHED W-I 13.15 AREA— 1,058 ACRES (1.65 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{1/}	3.34	3.89	4.81	2.79	3.41	6.82	3.82	1.59	2.82	1.63	5.70	3.04	43.66			
Q	1.41	1.50	2.73	1.49	.75	1.41	.64	.33	.26	.33	1.04	.69	12.58			
STA AV ^{2/} P	2.21	4.92	4.47	3.07	2.78	5.78	3.47	3.10	3.75	2.78	3.53	3.50	43.36			
(60-62) Q	.99	1.82	2.07	1.44	.70	.97	.52	.41	.41	.54	.89	1.07	11.83			
MEAN P ^{3/} 32 YR	3.38	3.03	4.13	3.47	4.00	4.62	4.55	5.11	3.37	2.99	3.00	3.43	45.08			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-13	.23	6-13	.15	11-9	.18	11-9	.31	3-11	.43	3-11	.60	3-11	.75	3-7	1.25
MAXIMUMS FOR PERIOD OF RECORD																
1962 TO 1962	11-6 1961	.26	11-6 1961	.19	11-6 1961	.27	11-6 1961	.35	3-11 1962	.43	3-11 1962	.60	3-11 1962	.75	2-18 1961	1.42
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Mixed cover: Pasture, usually good cover of native grass mixture, 24.7%; hay mixtures, such as alfalfa, red clover, lespedeza, and native grass, 25.8%; corn, 5.6%; small grain followed by lespedeza, 0.6%; tobacco, 0.4%; farm woods, a mixture of hardwood and pine, 35.6%; idle land with good cover of weeds and annual grasses, 6.4%; roads, 0.9%. (Total cultivated, 32.4%) 1/ Precipitation Thiessen weighted from rain gages R-1, R-2, and R-3. 2/ Determined from continuous records from Sept. 1960 through Dec. 1962; precipitation Thiessen weighted. 3/ Mean P based on 32-yr (1931-62) U.S. Weather Bureau record period at Bedford, Va. Missing totals for 16 months were estimated from nearby Weather Bureau records at Lynchburg, Va. (Airport).																
Revision to 1960-61 Normal P: The monthly and annual Normals previously published were actually the U.S. Weather Bureau 25-yr (1931-55) Normals, and not averages for the 47-yr (1915-61) record period at Bedford, Va., as stated in footnote 2/ of USDA Misc. Pub. 994, p. 108.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA CHESTNUT BRANCH WATERSHED W-I 13.15										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.21S	.09S	.02	.26	.67	.00	.26	.00	.00	.00	.00	.00				
2	.00	.00	.00	.00	.26	.00	.01	.00	T	.00	.00	.00				
3	.00	.00	.00	.00	.00	.00	.77	.77	.00	.05	.68S	.01				
4	.00	.00	T	.00	.00	.00	.45	.00	.26	1.32	.03	.00				
5	.04	.00	.65S	.00	.00	1.34	.00	.11	.00	.01	.62	.32				
6	1.23	.00	.17S	.29	.00	T	.00	.00	.00	.00	.00	T				
7	.00	.00	T	.91	.00	.00	.00	.00	.00	.00	.00	.00				
8	.04S	.00	.00	.58	.04	.00	.33	.27	.00	.00	.00	.00				
9	.02S	.97S	.61S	.00	.00	.00	.00	.00	T	.00	2.93	.00				
10	.08S	.00	T	.00	.00	.00	.00	.00	.37	.00	.06	.00				
11	.00	.00	.74	.28	.24	1.27	.00	.00	.00	.00	.00	.00				
12	.00	T	.30	.26	.29	.72	.00	.00	.00	.00	.00	.00				
13	.00	.03	.00	T	.04	1.36	.00	.14	.00	.00	.00	.00				
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
15	.39	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00				
16	.00	.45S	.00	.00	.38	.00	.32	.00	.69	.00	.03	.00				
17	.00	.00	.00	.00	.00	.00	.00	T	.76	.00	.00	.00				
18	.00	.06	.00	.00	.05	.00	.00	.00	.00	.00	.64	.00				
19	.13	.25	.13	.00	.08	1.46	.00	.00	.00	.00	.00	.00				
20	.00	.02	.04	.00	.00	.00	.00	.00	.04	.00	.04	.12S				
21	.00	.10S	1.42	.00	.00	.00	.00	.30	.00	.01	.47	.63S				
22	.36	.04	.06	.00	T	T	.31	.00	.00	.00	.01	.30S				
23	T	.43	.00	.00	.00	.14	.06	.00	.02	.00	.00	.00				
24	.00	.50	.00	.00	.00	.01	.00	.00	.02	.00	.00	.10S				
25	.00	.00	.00	.00	.07	.00	.37	.00	T	.00	.14	.64S				
26	.05	.30	.00	.00	.94	.52	.00	.00	.36	.00	.00	.05				
27	.17	.00	.00	.00	T	.00	.00	.00	.30	.00	.00	.00				
28	.62	.65	.00	.00	.19	.00	.00	.00	.00	.00	.05	.00				
29	.00	-----	.00	.21	.00	.00	.81	.00	.00	.00	.00	.87S				
30	.00	-----	.00	.00	.16	.00	.02	.00	.00	.04	.00	.00				
31	.00	-----	.67	-----	.00	-----	.02	.00	-----	.20	-----	.00				
TOTAL	3.34	3.89	4.81	2.79	3.41	6.82	3.82	1.59	2.82	1.63	5.70	3.04				
STA AV	2.21	4.92	4.47	3.07	2.78	5.78	3.47	3.10	3.75	2.78	3.53	3.50				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1, R-2, AND R-3. STA AV IS FOR PERIOD SEPTEMBER 1960 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.15-5.																

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA CHESTNUT BRANCH WATERSHED W-I 13.15						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.50	2.55	3.84	3.37	1.70	.82	.91	.61	.31	.39	.47	.75
2	1.29	1.98	2.62	1.73	2.06	.77	.95	.63	.31	.39	.46	.73
3	1.16	1.73	2.17	1.59	1.30	.76	1.08	.73	.33	.41	.78	.73
4	1.16	1.64	1.96	1.59	1.17	.76	2.24	.96	.43	1.28	.54	.73
5	1.16	1.50	1.96	1.59	1.12	3.14	1.67	.90	.37	1.03	1.07	.77
6	9.21	1.33	1.94	1.62	1.07	1.33	1.31	.75	.31	.51	.61	.84
7	5.01	1.25	2.69	6.23	1.02	.91	1.14	.54	.30	.47	.52	.69
8	2.58	1.25	3.39	8.35	1.02	.81	1.47	.55	.30	.44	.49	.66
9	2.03	3.33	3.22	3.82	1.03	.84	.95	.57	.33	.42	14.59	.61
10	1.86	2.76	3.55	2.61	1.03	.84	.82	.46	.46	.42	5.98	.55
11	2.02	2.13	12.93	2.69	1.16	3.58	.78	.43	.34	.42	1.65	.55
12	1.94	1.92	20.47	2.69	1.15	2.20	.80	.42	.30	.42	1.19	.61
13	1.64	1.74	6.05	2.42	1.24	13.63	.74	.53	.30	.42	.99	.66
14	1.55	1.64	3.42	2.06	1.08	5.20	.75	.48	.29	.42	.90	.66
15	2.31	1.46	2.56	1.90	1.01	2.10	.77	.45	.27	.42	.84	.66
16	1.77	1.79	2.25	1.80	1.16	1.55	.84	.46	.42	.42	.80	.66
17	1.50	1.81	1.96	1.77	.98	1.23	.83	.44	1.07	.42	.80	.66
18	1.42	1.73	1.81	1.73	.95	1.08	.75	.42	.39	.42	1.44	.66
19	1.38	2.39	1.83	1.64	.93	6.60	.69	.42	.36	.41	1.09	.66
20	1.29	1.92	1.77	1.55	.90	2.50	.69	.38	.36	.39	.99	.66
21	1.25	1.79	13.11	1.50	.85	1.65	.66	.42	.36	.43	1.15	.78
22	1.61	1.73	4.73	1.46	.84	1.35	.60	.43	.35	.42	1.69	1.60
23	1.73	2.60	3.22	1.42	.85	1.24	.77	.38	.35	.38	1.16	1.35
24	1.59	8.20	2.81	1.38	.81	1.16	.64	.34	.35	.38	1.03	1.12
25	1.55	3.02	2.62	1.33	.76	1.05	.83	.34	.38	.38	.98	1.21
26	1.46	3.26	2.53	1.33	1.44	1.74	.71	.32	.51	.42	.93	1.24
27	1.39	2.50	2.20	1.29	1.02	1.07	.64	.30	.62	.44	.85	1.72
28	1.62	5.86	1.96	1.25	.97	.95	.58	.29	.45	.46	.82	1.60
29	1.71	-----	1.81	1.32	.90	.92	1.12	.28	.42	.46	.80	2.49
30	1.81	-----	1.77	1.27	.93	.87	.77	.28	.38	.46	.76	2.51
31	3.14	-----	2.13	-----	.91	-----	.74	.31	-----	.50	-----	1.50
MEAN	2.02	2.39	3.91	2.21	1.08	2.09	.91	.48	.39	.47	1.55	.99
INCHES	1.41	1.50	2.73	1.49	.75	1.41	.64	.33	.26	.33	1.04	.69

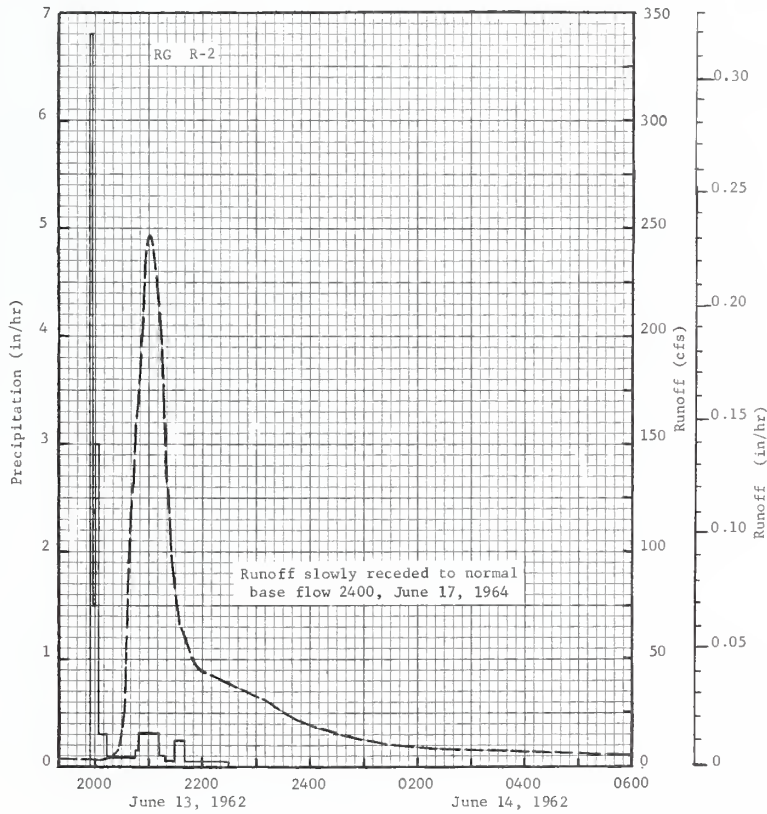
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.022497.

1962 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA CHESTNUT BRANCH WATERSHED W-I 13.15						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of June 13-14, 1962										
6-13	RG R-2 1/.76	2/.0684	6-13	RG	R-2		6-13	2000	3/ 3.499	.0000
				1955	.00	.00		2012	3.649	.0007
				1958	6.80	.34		2024	6.241	.0016
6-13	RG R-3 4/.17			2000	1.50	.39		2028	10.209	.0021
				2003	3.00	.54				
				2013	.30	.59		2032	24.014	.0032
				2045	.09	.64		2034	45.606	.0043
				2049	.15	.65		2036	56.531	.0059
				2112	.31	.77		2038	81.217	.0080
				2118	.10	.78		2040	117.894	.0111
				2128	.06	.79		2043	134.792	.0171
				2140	.25	.84		2046	158.070	.0239
				2228	.05	.88		2052	197.201	.0406
								2054	211.720	.0469
								2056	234.860	.0539
			6-13	RG	R-3			2100	247.171	.0690
				2008	.00	.00		2102	246.691	.0767
				2012	.75	.05		2108	222.271	.0987
				2018	3.00	.35		2112	200.903	.1119
				2030	.50	.45		2116	181.786	.1239
				2044	.26	.51		2118	163.916	.1293
				2058	.09	.53		2120	134.995	.1339
				2113	.28	.60		2122	123.644	.1380
				2123	.00	.60		2124	112.997	.1417
				2132	.20	.63		2126	101.380	.1450
				2138	.20	.65		2128	87.991	.1480
				2200	.11	.69		2134	67.209	.1553
								2142	59.102	.1631
								2156	46.129	.1747
								2253	34.842	.2107

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009374. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/.03 IN. RAIN, 0450 TO 0555; .70 IN., 1438 TO 1600; .03 IN., 1730 TO 1912. 2/PRIOR TO 2000. 3/LOWEST DISCHARGE VALUE OF PRECEDING SMALL STORM RECESSION. 4/.02 IN. RAIN, 0537 TO 0650; .15 IN., 1507 TO 1830.

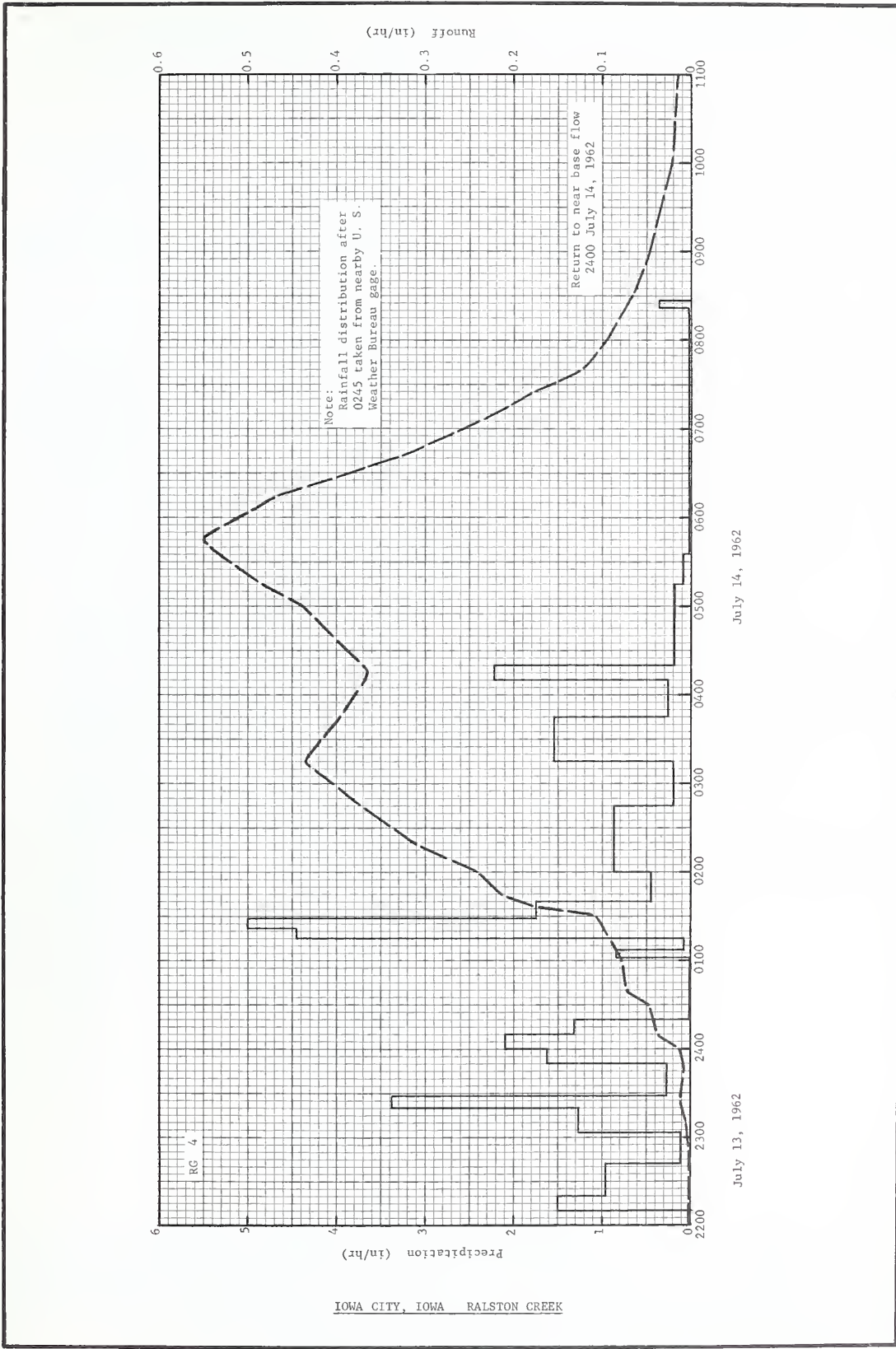
1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				CHESTNUT BRANCH WATERSHED W-I				13.15
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of June 13-14, 1962—Continued											
							6-13	2308	30.980	.2184	
								2317	28.377	.2226	
								2324	27.300	.2256	
								2335	23.577	.2300	
								2400	19.640	.2384	
							6-14	0020	17.154	.2442	
								0022	16.749	.2447	
								0048	14.061	.2510	
								0124	11.298	.2581	
								0156	10.081	.2635	
								0212	9.463	.2659	
								0349	7.404	.2787	
								0545	6.060	.2909	
								0704	5.430	.2980	
								0740	5.227	.3010	
								0840	4.801	.3057	
								1132	4.150	.3177	
								1320	3.819	.3245	
								1400	3.659	.3268	
								1640	3.179	.3354	
								1908	2.934	.3424	
								2400	2.678	.3552	
					TOTAL RG	RAINFALL R-1 AVG 1/					
					3 RG	.93				1.12	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009374.
 1/THIESSEN WEIGHTED FOR RG R-1, R-2, R-3. 2/RUNOFF SLOWLY RE-
 CEDED TO NORMAL BASE FLOW AT 2400, JUNE 17, 1964.



BLACKSBURG, VIRGINIA CHESTNUT BRANCH WATERSHED W-I

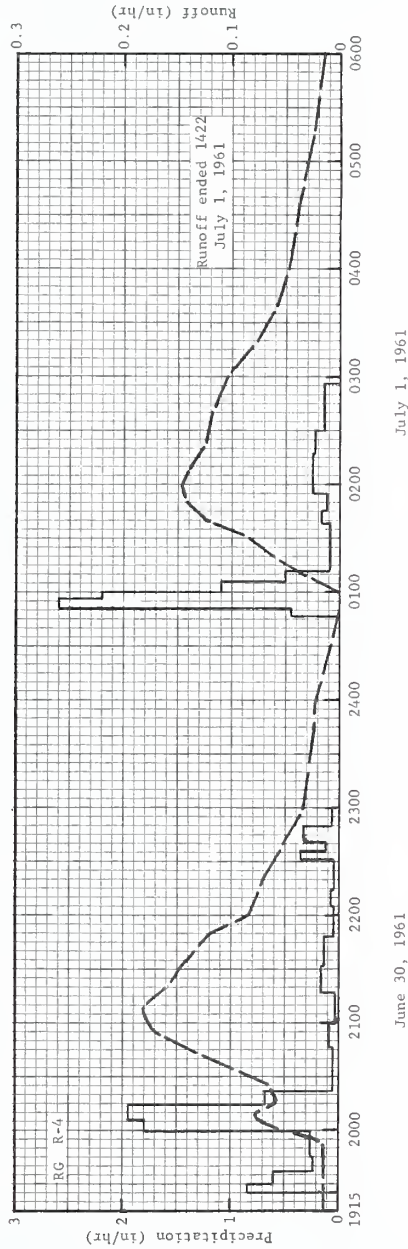
MONTHLY PRECIPITATION AND RUNOFF (inches)							IOWA CITY, IOWA AREA—1,926 ACRES (3.01 SQ. MILES)							RALSTON CREEK		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ₁ / Q ₂	1.14 .51	1.52 .74	2.01 5.46	1.50 1.30	6.49 1.48	2.19 .67	10.20 3.01	2.21 .32	1.78 .12	2.75 .25	1.02 .15	.69 .10	33.50 14.11			
STA AV ² / (25-62) Q	1.12 .44	1.09 .96	1.98 1.29	2.77 .71	3.57 .66	4.61 .77	3.86 .53	3.41 .32	3.48 .31	2.63 .30	2.09 .40	1.23 .27	31.84 6.96			
MEAN P ³ / 112 YR	1.50	1.41	2.27	2.81	3.99	4.50	3.88	3.51	3.84	2.58	2.02	1.53	33.84			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962	7-14	.55	7-14	.51	7-14	.93	7-14	2.23	7-14	2.52	7-13	2.62	7-13	2.72	3-18	4.15
MAXIMUMS FOR PERIOD OF RECORD																
1924 TO 1962	7-18 1956	.86	7-18 1956	.65	7-14 1962	.93	7-14 1962	2.23	7-14 1962	2.52	7-13 1962	2.62	7-13 1962	2.72	3-18 1962	4.15
NOTES: Quality of records: P, excellent; Q, good, except fair to poor during periods of ice effect. Watershed conditions: Approximately 40% of area is cultivated; 35% in pasture; 20% in brush, timber, and orchards; and 5% in urban development, roads and farmsteads. 1/ Precipitation—Thiessen weighted average of 5 recording rain gages. 2/ Precipitation and runoff records began Sept. 1924; runoff records furnished by U. S. Geological Survey. 3/ Mean P based on 112-yr (1851-1962) U. S. Weather Bureau record period at Dubuque, Iowa.																
1962 SELECTED RUNOFF EVENT				IOWA CITY, IOWA				RALSTON CREEK								
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-OAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF DAY	RATE (cfs)	ACC. (inches)						
	5 RG 4/		Event of July 13-14, 1962													
6-13	.00	.0149			RG	4	7-13	2254	.0017	.0000						
6-14	.00	.0136	7-13		2210	.00		2309	.0041	.0007						
6-15	.00	.0124			2220	1.50		2324	.0103	.0025						
6-16	.00	.0124			2242	.96		2349	.0073	.0062						
6-17	.00	.0124			2303	.11		2400	.0117	.0078						
6-18	.00	.0112			2320	1.27	7-14	0009	.0376	.0119						
6-19	.00	.0099			2328	3.38		0030	.0470	.0260						
6-20	.00	.0099			2350	.27		0039	.0721	.0359						
6-21	.13	.0099			2400	1.62		0100	.0781	.0609						
6-22	.11	.0099	7-14		0010	2.10		0130	.107	.1072						
6-23	.52	.0186			0020	1.32		0137	.180	.1264						
6-24	.00	.0074			0102	.01		0145	.214	.1494						
6-25	.00	.0062			0107	.84		0200	.241	.2064						
6-26	.00	.0062			0115	.08		0219	.311	.2985						
6-27	.00	.0062			0122	4.45		0249	.381	.4715						
6-28	.00	.0062			0128	5.00		0315	.435	.6417						
6-29	.00	.0037			0140	1.75		0345	.396	.8497						
6-30	.00	.0037			0200	.45		0415	.365	1.0403						
7-1	.05	.0037			5/0245	.87		0500	.439	1.3421						
7-2	.00	.0062			0315	.20		0515	.484	1.4575						
7-3	.00	.0037			0345	1.04		0545	.550	1.7161						
7-4	.00	.0037			0410	.26		0615	.466	1.9702						
7-5	.00	.0037			0420	2.22		0630	.381	2.0761						
7-6	.00	.0037			0515	.19		0645	.311	2.1626						
7-7	.18	.0037			0535	.09		0700	.256	2.2336						
7-8	.35	.0050			0822	.02		0715	.206	2.2915						
7-9	.00	.0025			0827	.36		0724	.180	2.3237						
7-10	.00	.0025						0739	.126	2.3621						
7-11	.00	.0025						0800	.0958	2.3992						
7-12	.03	.0037						0830	.0661	2.4396						
7-13	6/1.15	7/.0375						0900	.0484	2.4683						
								1000	.0208	2.5029						
								1200	.0126	2.5364						
								1500	.0085	2.5680						
								1930	.0066	2.6022						
								2400	8/.0054	2.6294						
Watershed conditions: Corn, 3 to 5 ft high Oats, harvested Alfalfa and clover, actively growing. Soil conditions, dry																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1942.04. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 21.1-6. 4/THIESSEN WEIGHTED AVERAGE OF 5 RG. 5/BEYOND THIS POINT, RG R-4 FAILED TO RECORD ALTHOUGH A TOTAL MEASUREMENT WAS OBTAINED. A U. S. WEATHER BUREAU GAGE ABOUT 3 MI N.W. WAS USED TO COMPLETE THE DISTRIBUTION. TOTALS NOT OBTAINED AT OTHER 4 RG ON WATERSHED. 6/1.08 INCHES, 0955 TO 1420; .07 INCH, 1815 TO 2115. 7/RUNOFF TO 2254. 8/RETURN TO NEAR BASE FLOW.																



MONTHLY PRECIPITATION AND RUNOFF (inches)						McGREDIE, MISSOURI STATION RESERVOIR WATERSHED W-1 AREA - 154 ACRES <u>1/</u>											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P <u>2/</u>	1.26	2.21	2.65	1.39	2.50	1.42	3.29	1.73	4.18	2.67	.67	1.20	25.17			
	Q	.78	1.78	2.34	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.90			
STA AV	<u>3/</u> P	1.43	1.74	2.79	3.48	4.10	4.50	3.59	2.95	3.60	3.68	1.92	1.59	35.37			
	(41-62) Q	.49	.79	1.36	1.16	.91	.88	.51	.08	.45	.95	.43	.38	8.39			
MEAN P	<u>4/</u>	1.86	1.82	2.90	3.68	4.71	4.67	3.49	3.74	4.33	2.92	2.18	1.82	38.12			
73 YR																	
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1961	<u>5/</u>	5-5	.41	5-5	.28	5-5	.47	5-5	.91	5-5	1.14	5-5	1.25	5-5	1.33	5-4	2.51
1962		3-20	.28	3-20	.24	3-20	.45	3-20	1.05	3-20	1.63	3-20	1.87	3-20	1.95	3-17	2.06
MAXIMUMS FOR PERIOD OF RECORD <u>6/</u>																	
1941 TO	10-4	<u>2.02</u>	10-4	1.20	10-4	<u>1.96</u>	10-4	<u>3.94</u>	10-4	<u>6.97</u>	10-4	<u>7.74</u>	10-3	<u>8.06</u>	10-2	<u>8.80</u>	
1962	1941		1941		1941		1941		1941		1941		1941		1941		
Notes: Quality of records: P, excellent; Q, excellent, except good during periods of ice. Watershed conditions; 22% in row crops of corn and soybeans; 16% in plots of row crops of soybeans and corn; 32% in alfalfa; 24% in grassland; 6% in roads and farmstead. <u>1/</u> Revised from 153 acres, based on more precise measurements. <u>2/</u> Precipitation-Thiessen weighted average of gages R-4 and S-6. (Map location and name of S-6 in error, see note <u>8/</u>). <u>3/</u> Precipitation and runoff records began Jan. 1941. <u>4/</u> Mean P based on the 73-yr (1890-1962) U.S. Weather Bureau record period at Columbia, Mo. <u>5/</u> Revision of previous date for 6 hour volume (<u>underlined</u>). <u>6/</u> Underlined values have been revised since earlier publication.																	
1961 SELECTED RUNOFF EVENT				McGREDIE, MISSOURI STATION RESERVOIR WATERSHED W-1													
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF <u>7/</u>										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)							
Event of June 30—July 1, 1961																	
2 RG <u>8/</u>			RG								R-4						
6-2	.15	.0000	6-30	1925	.00	.00	6-30	1944	.0123	.0000							
6-6	.20	.0000		1930	.84	.07		1952	.0136	.0018							
6-7	.26	.0000		1937	.60	.14		2000	.0517	.0061							
6-8	.72	.0000		1945	.23	.17		2008	.0778	.0148							
6-13	.33	.0000		1952	.26	.20		2016	.0578	.0238							
6-14	.02	.0000		1959	.26	.23		2026	.0648	.0340							
6-15	.49	.0000		2006	1.80	.44		2042	.126	.0595							
6-30	<u>9/</u> 2.26	<u>10/</u> 1564		2014	1.95	.70		2056	.172	.0944							
				2022	.68	.79		2108	.181	.1297							
				2046	.05	.81		2120	.159	.1637							
				2059	.09	.83		2130	.148	.1894							
				2117	.03	.84		2150	.120	.2341							
				2131	.17	.88		2200	.0836	.2510							
				2148	.14	.92		2220	.0707	.2767							
				2205	.04	.93		2240	.0510	.2970							
				2214	.07	.94		2300	.0329	.3111							
				2231	.04	.95		2330	.0271	.3261							
				2236	.36	.98		2400	.0222	.3385							
				2241	.12	.99		0030	.0072	.3458							
				2250	.33	1.04		0050	.0000	.3471							
				2300	.06	1.05		0100	.0000	.3471							
			7-1	0047	.00	1.05		0110	.0337	.3499							
				0051	.45	1.08		0120	.0610	.3578							
				0057	2.60	1.34		0130	.0841	.3699							
				0100	2.20	1.45		0140	.124	.3872							
				0106	1.10	1.56		0150	.142	.4094							
				0112	.50	1.61		0200	.146	.4334							
				0138	.09	1.65		0210	.139	.4571							
				0145	.17	1.67		0220	.126	.4792							
				0155	.12	1.69		0240	.118	.5198							
				0217	.25	1.78		0300	.104	.5568							
				0230	.23	1.83		0320	.0774	.5871							
				0256	.14	1.89		0340	.0585	.6098							
				RG	S-6	1.60		0400	.0485	.6276							
				2 RG	AVG.	1.79 <u>8/</u>		0437	.0387	.6545							
Watershed conditions: Corn and soybeans 1 to 2 ft. tall; alfalfa and grass greater than 6 inches tall.																	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 155.28. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 25.1-8. <u>7/</u> ALL FLOWS CORRECTED FOR PONDAGE IN 16 AC. POND ABOVE 2.5 FT. SQUARE DROP INLET CONTROL AND FOR RAINFALL FALLING DIRECTLY ON POND SURFACE. <u>8/</u> THIESSEN WEIGHTED AVERAGE OF RAIN GAGES R-4 AND S-6. (S-6 HAS ALWAYS BEEN A STANDARD GAGE, BUT WAS ERRONEOUSLY SHOWN ON MAP CITED ABOVE AS R-6. ITS LOCATION IS ALSO IN ERROR, AND IS ACTUALLY 70 FT. SOUTH AND 230 FT. WEST OF PLOTTED R-6 POSITION.) <u>9/</u> 1.88 INCHES FROM 1155 TO 1420, 0.38 INGH FROM 1555 TO 1925. <u>10/</u> RUNOFF FROM 1200 TO 1944.																	

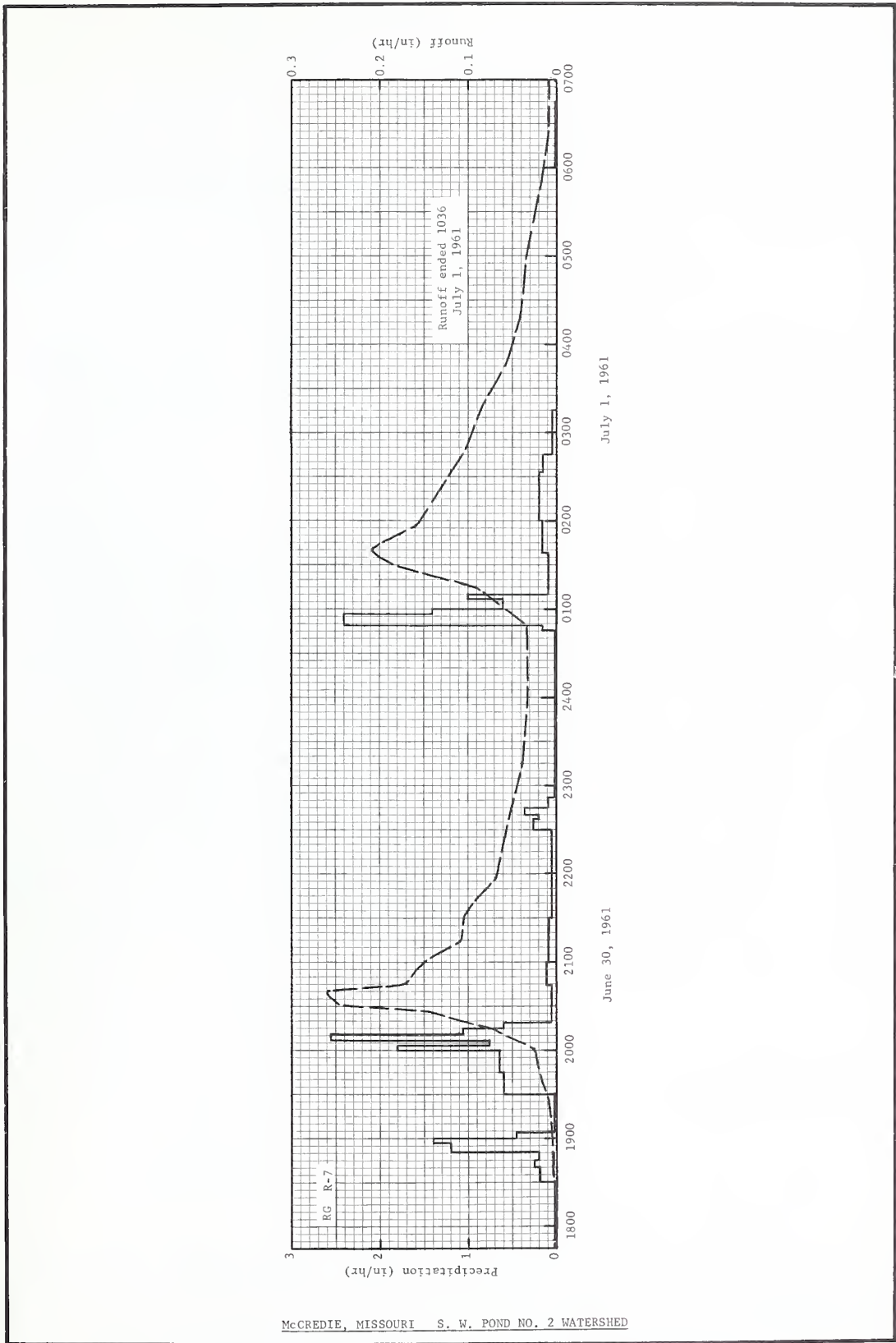
1961 SELECTED RUNOFF EVENT			McCREDIE, MISSOURI				STATION RESERVOIR WATERSHED W-1			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF $\frac{1}{}$			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of June 30—July 1, 1961—Continued							
							7-1	0514	.0244	.6744
								0601	.0144	.6900
								0702	.0116	.7032
								0843	.0026	.7153
								1002	.0037	.7196
								1235	.0021	.7272
								1422	.0000	.7291

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 155.28. $\frac{1}{}$ CORRECTED FOR PONDAGE.



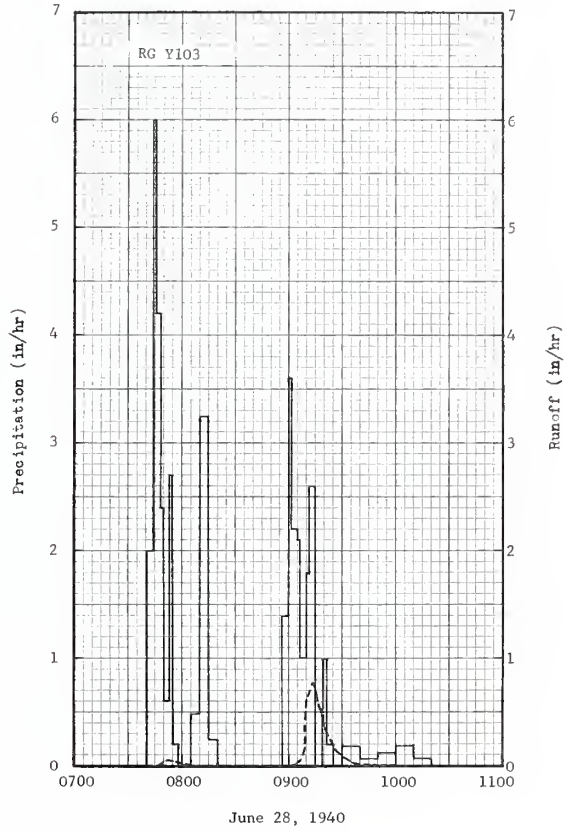
McCREDIE, MISSOURI WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						McCREDIE, MISSOURI S. W. POND NO. 2 WATERSHED AREA — 44.3 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{1/}	1.27	2.19	2.72	1.37	2.33	1.41	3.16	1.81	4.14	2.52	.62	1.14	24.68			
Q	.87	1.52	2.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.54			
STA AV ^{2/} P	1.14	1.88	2.53	3.11	3.58	3.69	3.85	2.68	2.99	3.02	1.66	1.51	31.64			
(51-62) Q	.28	.66	1.12	.66	.45	.26	.41	.04	.11	.31	.17	.12	4.59			
MEAN P ^{3/} 73 YR	1.86	1.82	2.90	3.68	4.71	4.67	3.49	3.74	4.33	2.92	2.18	1.82	38.12			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	3-20	.26	3-20	.24	3-20	.46	3-20	1.08	3-20	1.68	3-20	1.94	3-20	1.98	3-20	1.98
MAXIMUMS FOR PERIOD OF RECORD																
1951 TO 1962	3-27 1960	1.02	3-27 1960	.55	3-27 1960	.95	3-27 1960	1.73	3-27 1960	1.91	3-27 1960	2.14	3-26 1960	2.42	3-26 1960	2.84
Notes: Quality of records; P, excellent; Q, excellent, except good during periods of ice. Watershed conditions: 57% in alfalfa; 25% in corn; 16% in grassland; 2% in roads and misc. ^{1/} Precipitation from RG R-7. ^{2/} Precipitation and runoff records began Jan.1951. ^{3/} Mean P based on 73-yr (1890-1962) U.S. Weather Bureau record period at Columbia, Mo.																
1961 SELECTED RUNOFF EVENT						McCREDIE, MISSOURI S. W. POND NO. 2 WATERSHED										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF ^{4/}									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 30—July 1, 1961																
	RG R-7		6-30	RG	R-7		6-30	1821	.0018	.000						
6-2	.14	.0000		1750	.00	.00		1830	.0018	.000						
6-6	.20	.0000		1830	.02	.01		1851	.0031	.001						
6-7	.25	.0000		1840	.18	.04		1903	.0049	.002						
				1845	.24	.06		1927	.0090	.005						
6-8	.64	.0000		1851	.20	.08		1936	.0139	.006						
6-13	.32	.0000		1857	1.20	.20		1952	.0208	.012						
6-14	.04	.0000		1900	1.40	.27		2001	.0240	.015						
6-15	.45	.0000		1904	.45	.30		2013	.0669	.024						
6-30	5/2.13	6/.0487		1930	.02	.31		2027	.145	.047						
				1945	.60	.46		2031	.246	.063						
				2000	.64	.62		2039	.260	.093						
				2003	1.80	.71		2045	.169	.118						
				2007	.75	.76		2055	.159	.146						
				2011	2.55	.93		2103	.142	.163						
				2015	1.05	1.00		2115	.108	.188						
				2019	.60	1.04		2131	.103	.218						
				2044	.05	1.06		2142	.0911	.234						
				2100	.11	1.09		2157	.0683	.255						
				2130	.08	1.13		2233	.0548	.292						
				2142	.05	1.14		2251	.0484	.308						
				2204	.05	1.16		2315	.0378	.325						
				2230	.05	1.18		2400	.0307	.351						
				2237	.26	1.21	7-1	0049	.0322	.377						
				2240	.20	1.22		0115	.0904	.404						
				2245	.36	1.25		0130	.186	.436						
				2252	.09	1.26		0139	.208	.469						
			7-1	0045	.01	1.28		0157	.158	.524						
				0049	.15	1.29		0246	.105	.632						
				0054	2.40	1.49		0318	.0831	.683						
				0057	2.40	1.61		0348	.0564	.718						
				0100	1.40	1.68		0418	.0401	.742						
				0107	.60	1.75		0458	.0345	.768						
				0110	1.00	1.80		0542	.0199	.788						
				0138	.09	1.84		0625	.0092	.798						
				0200	.16	1.90		0706	.0087	.804						
				0233	.20	2.01		0806	.0056	.812						
				0245	.15	2.04		0848	.0038	.815						
				0315	.04	2.06		0939	.0040	.818						
				0600	.00	2.07		1000	.0009	.819						
				0645	.01	2.08		1036	.0000	.820						
Notes: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 44.669. FOR MAP OF WATERSHED, SEE 1956-59 USDA MISC. PUB. 945, P. 25.2-4. (THIS MAP IS INCOMPLETE, SINCE IT SHOWS ONLY 9 TERRACES. A 10TH TERRACE, 450 FT LONG, DRAINS SOUTHWARD FROM THE UPPER END OF THE LOWEST TERRACE IN THE NORTH TO THE EAST-WEST TERRACE OUTLET AT THE 840 CONTOUR. THE 4 TERRACES THAT FLOW NORTHWARD INTO THIS SAME OUTLET ARE LONGER THAN SHOWN ON THE MAP AND THE 3 LOWER ONES ACTUALLY BEGIN AT THE SOUTHEAST WATERSHED BOUNDARY). ^{4/} FLOWS CORRECTED FOR PONDAGE IN 1 AC. POND ABOVE 12 IN. DIA. DROP INLET CONTROL. ^{5/} 2.07 INCHES FROM 1155 TO 1420, 0.06 INCH FROM 1555 TO 1750. ^{6/} RUNOFF FROM 1212 TO 1821.																



McCREDIE, MISSOURI S. W. POND NO. 2 WATERSHED

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 102 AREA—1.26 ACRES 26.01										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P 1/ Q	2.97 .35	3.40 .43	2.93 .00	1.54 .00	2.70 .00	1.80 .00	2.56 .00	2.05 .00	5.15 .00	2.24 .00	2.95 .00	2.10 .00	32.39 .78		
	STA AV ² / (37-62) P Q	1.42 .03	2.50 .04	3.99 .05	3.22 .07	4.19 .01	5.61 .25	4.08 .04	3.28 .05	2.29 .02	2.67 .01	2.26 T	2.10 .00	37.61 .57		
	MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	2-23	.27	2-23	.18	2-23	.25	2-23	.28	2-23	.28	2-23	.28	2-23	.29	2-19	.37
MAXIMUMS FOR PERIOD OF RECORD																
1937 to 1962 4/	6-12 1957	3.64	6-12 1957	1.31	6-12 1957	1.32	6-12 1957	1.32	6-12 1957	1.32	6-12 1957	1.33	6-12 1957	1.33	6-12 1957	1.33
NOTES: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, excellent. Watershed conditions: Cover of birdsfoot trefoil. 1/ Precipitation obtained from rain gage Y101. 2/ Precipitation and runoff records began April 1937. Watershed discontinued Jan. 1, 1947, to Apr. 30, 1957, and Sept. 1, 1957, to Mar. 26, 1960. Part-year amounts are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No maximums taken for 1947 through 1956 or 1958 and 1959.																
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvania system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The Lower Freeport sandstone occurs beneath the upper 95% of the watershed. The Washingtonville shale member occurs beneath 80 in. of soil at the watershed outlet. The rock strata form a portion of a small subsurface basin which is inclined to the southeast at about 1°. Source of data: James B. Urban, Geologist. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCOTON, OHIO WATERSHED 102 26.01										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RG Y101		6-28	RG	Y103 5/		6-28									
5-29	.41	.00		0741	.00	.00		0747	.0000	.00						
5-30	.93	.00		0744	2.00	.10		0749	.0150	T						
6-7	.10	.00		0746	6.00	.30		0750	.0331	T						
6-8	.32	.00		0748	4.20	.44		0756	.0331	T						
6-9	.36	.00		0750	2.40	.52		0800	.0150	.01						
6-10	.85	.00		0753	.60	.55		0805	.0000	.01						
6-11	.40	.00		0755	2.70	.64		0900	.0000	.01						
6-12	.57	.00		0758	.20	.65		0903	.0032	.01						
6-15	.05	.00		0805	.00	.65		0905	.0331	.01						
6-18	1.48	T		0810	.48	.69		0907	.0433	.01						
6-19	T	.00		0815	3.24	.96		0908	.141	.01						
6-23	.83	.00		0820	.24	.98		0909	.386	.01						
6-24	.11	.00		0857	.00	.98		0910	.607	.02						
6-25	.24	.00		0900	1.40	1.05		0913	.780	.06						
6-26	.10	.00		0902	3.60	1.17		0915	.662	.08						
				0905	2.20	1.28		0917	.559	.10						
				0907	2.10	1.35		0918	.481	.11						
				0910	1.00	1.40		0920	.386	.12						
				0912	1.80	1.46		0922	.291	.14						
				0915	2.60	1.59		0924	.213	.14						
				0919	.00	1.59		0926	.141	.15						
				0922	1.00	1.64		0930	.0803	.16						
				0925	.20	1.65		0934	.0331	.16						
				0930	.00	1.65		0937	.0150	.16						
				0940	.18	1.68		0950	.0032	.16						
				0950	.06	1.69		1000	.0000	.16						
				1000	.12	1.71										
				1010	.18	1.74										
				1020	.06	1.75										
Watershed conditions: In pastured poverty grass cover (prevailing practice). Grass and weeds 8 in. high, density 90%.																
Notes: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.2705. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.1-4. 5/ NO RECORD FROM RAIN GAGE Y101.																



COSHOCTON, OHIO WATERSHED 102

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO WATERSHED 129 26.03						
AREA—2.71 ACRES													
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P 1/	2.96	3.58	3.20	1.37	2.64	1.82	2.52	1.93	5.31	2.21	3.19	2.07	32.80
Q	.06	.08	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.15
STA AV2/ P	2.76	2.54	3.30	3.38	3.93	4.48	4.28	2.97	2.57	2.22	2.40	2.14	36.97
(38-62) Q	.05	.13	.03	.06	.06	.17	.07	.05	.05	.01	.01	.01	.70
MEAN P 3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80
54 YR													

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.07	2-23	.04	2-23	.07	2-23	.08	2-23	.08	2-23	.08	2-23	.08	2-23	.08

MAXIMUMS FOR PERIOD OF RECORD																
1938 to	6-12	2.36E	6-12	.98	9-1	1.01	9-1	1.01	2-23	1.02	2-13	1.02	2-13	1.02	2-13	1.02
1962	1957		1957		1950		1950		1948		1948		1948		1948	

Notes: Quality of records: Monthly P, excellent; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: Improved practice pasture. 1/ Precipitation obtained from rain gage 100. 2/ Precipitation and runoff records began Apr. 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

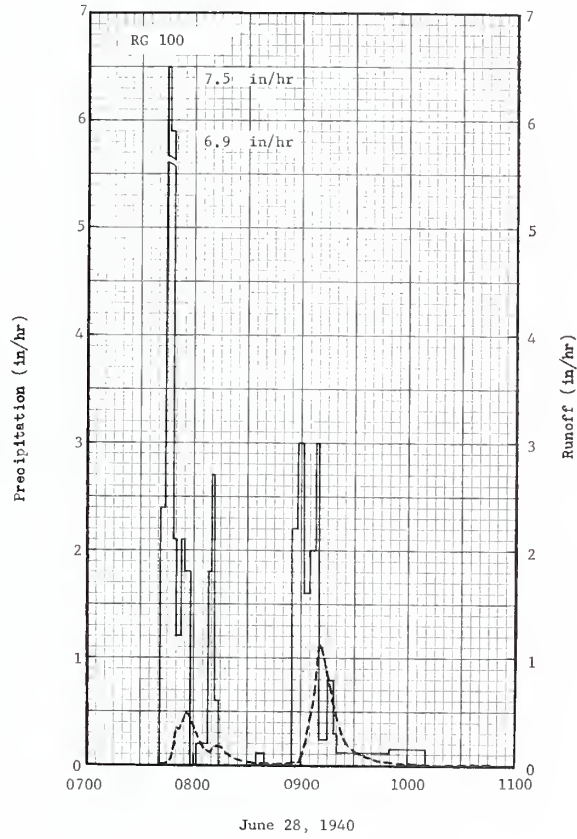
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. Arenaceous shales and siltstones overlie the massive Lower Freeport sandstone. Arenaceous shale underlies the sandstone. Coal-clay aquifer occurs 9 ft beneath the watershed outlet. Rock strata are inclined approximately 1° to the east. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1940 SELECTED RUNOFF EVENT				COSHOCTON, OHIO				WATERSHED 129 26.03			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
	RG 100			Event of June 28, 1940							
5-29	.43	.09E .00 T	6-28	RC	1.00		6-28	0742	.0000	.00	
5-30	.83			0744	2.40	.08		0746	.0154	T	
5-31	T			0746	7.50	.33		0748	.157	T	
6-7	.10			0748	6.90	.56		0750	.348	.01	
6-8	.34	T		0750	2.10	.63	0752	.337	.02		
6-9	.36	T		0753	1.20	.69	0755	.465	.04		
6-10	1.00	.01		0755	2.10	.76	0756	.494	.05		
6-11	.40	.01		0758	1.80	.85	0758	.450	.06		
6-12	.60	.01		0802	.00	.85	0800	.362	.08		
6-14	.07	.00		0808	.20	.87	0804	.198	.10		
6-15	.02	.00		0810	1.80	.93	0809	.117	.11		
6-18	1.53	.15		0812	2.70	1.02	0812	.157	.12		
6-23	.89	.01		0814	.60	1.04	0814	.179	.12		
6-24	.05	.00		0835	.00	1.04	0817	.157	.13		
6-25	.23	T		0840	.12	1.05	0822	.0816	.14		
6-26	.14	.00		0855	.00	1.05	0832	.0201	.15		
				0858	2.20	1.16	0849	.0015	.15		
				0902	3.00	1.36	0859	.0256	.15		
				0905	1.60	1.44	0901	.117	.15		
				0908	2.00	1.54	0903	.293	.16		
				0910	3.00	1.64	0905	.450	.17		
				0915	.24	1.66	0908	.688	.20		
				0918	.80	1.70	0910	1.06	.23		
				0920	.30	1.71	0911	1.12	.24		
				0950	.12	1.77	0912	1.06	.26		
				1010	.15	1.82	0914	.835	.29		
							0918	.575	.34		
							0922	.348	.37		
							0927	.179	.39		
							0933	.0988	.41		
							0947	.0256	.42		
							1007	.0037	.42		
							1047	.0000	.42		

Watershed conditions: In pasture (improved practice). Grass and weeds 6in. high, density of cover 80%.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.7326. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.3-5.



COSHOCKTON, OHIO WATERSHED 129

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 135		26.04			
						AREA—2 69 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P1/	2.96	3.58	3.20	1.37	2.64	1.82	2.52	1.93	5.31	2.21	3.19	2.07	32.80
Q	.26	.87	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	1.14
STA AV2/ P	2.76	2.54	3.30	3.38	3.93	4.48	4.28	2.97	2.57	2.22	2.40	2.14	36.97
(38-62) Q	.05	.10	.01	.03	.02	.13	.05	.04	.05	T	.01	.01	.50
MEAN P 3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80
54 YR													

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	2-23	.34	2-23	.25	2-23	.36	2-23	.49	2-23	.49	2-23	.49	2-23	.58	2-23	.72

MAXIMUMS FOR PERIOD OF RECORD																
1938 to	6-12	2.38	6-12	.92	9-1	.94	9-1	.95	9-1	.95	9-1	.95	9-1	.95	9-1	.95
1962	1957		1957		1950		1950		1950		1950		1950		1950	

Notes: Quality of records: Monthly P, excellent; monthly Q, good; annual discharges and volumes, good. Watershed conditions: Unimproved pasture. 1/ Precipitation obtained from rain gage 100. 2/ Precipitation and runoff records began Apr. 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

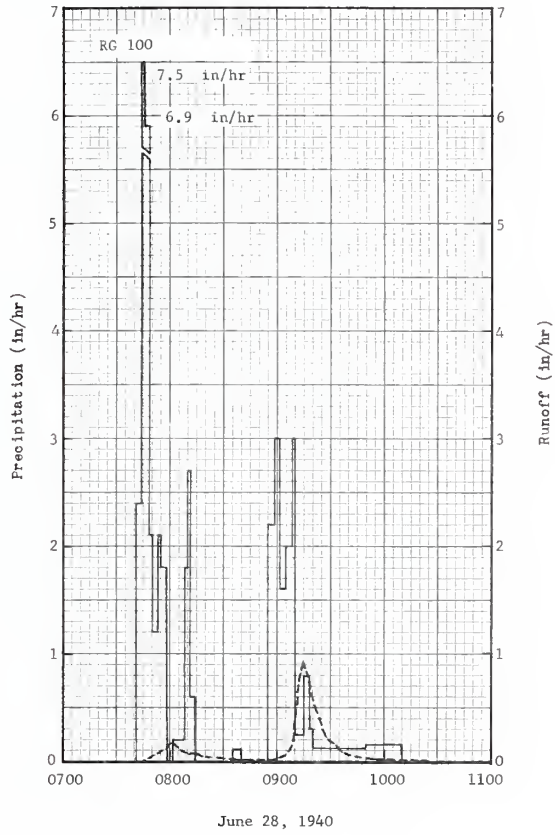
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. Arenaceous shales and siltstones overlie the massive Lower Freeport sandstone in the upper 60% of the watershed. Arenaceous shale underlies the sandstone. Rock strata are inclined approximately 1° to the east. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 135		26.04	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 28, 1940											
	RG 100			RG	100						
5-29	.43	T	6-28	0742	.00	.00	6-28	0745	.0000	.00	
5-30	.83	.00		0744	2.40	.08		0748	.0317	T	
5-31	T	.00		0746	7.50	.33		0752	.0660	T	
6-7	.10	.00		0748	6.90	.56		0754	.0907	.01	
6-8	.34	.00		0750	2.10	.63		0758	.108	.01	
6-9	.36	.00		0753	1.20	.69		0800	.159	.02	
6-10	1.00	T		0755	2.10	.76		0801	.170	.02	
6-11	.40	T		0758	1.80	.85		0802	.147	.02	
6-12	.60	T		0802	.00	.85		0807	.0907	.03	
6-14	.07	.00		0808	.20	.87		0811	.0586	.04	
6-15	.02	.00		0810	1.80	.93		0814	.0741	.04	
6-18	1.53	.01		0812	2.70	1.02		0816	.0586	.04	
6-23	.89	T		0814	.60	1.04		0822	.0317	.05	
6-24	.05	.00		0835	.00	1.04		0827	.0317	.05	
6-25	.23	.00		0840	.12	1.05		0836	.0111	.05	
6-26	.14	.00		0855	.00	1.05		0847	.0015	.05	
				0858	2.20	1.16		0859	.0070	.05	
				0902	3.00	1.36		0902	.0317	.06	
				0905	1.60	1.44		0905	.0660	.06	
				0908	2.00	1.54		0908	.147	.06	
				0910	3.00	1.64		0911	.645	.08	
				0915	.24	1.66		0913	.859	.11	
				0918	.80	1.70		0914	.933	.12	
				0920	.30	1.71		0915	.896	.14	
				0950	.12	1.77		0918	.730	.18	
				1010	.15	1.82		0921	.512	.21	
								0924	.365	.23	
								0927	.273	.25	
								0930	.188	.26	
								0933	.136	.27	
								0936	.0907	.27	
								0945	.0376	.28	
								1000	.0111	.29	
								1025	.0000	.29	

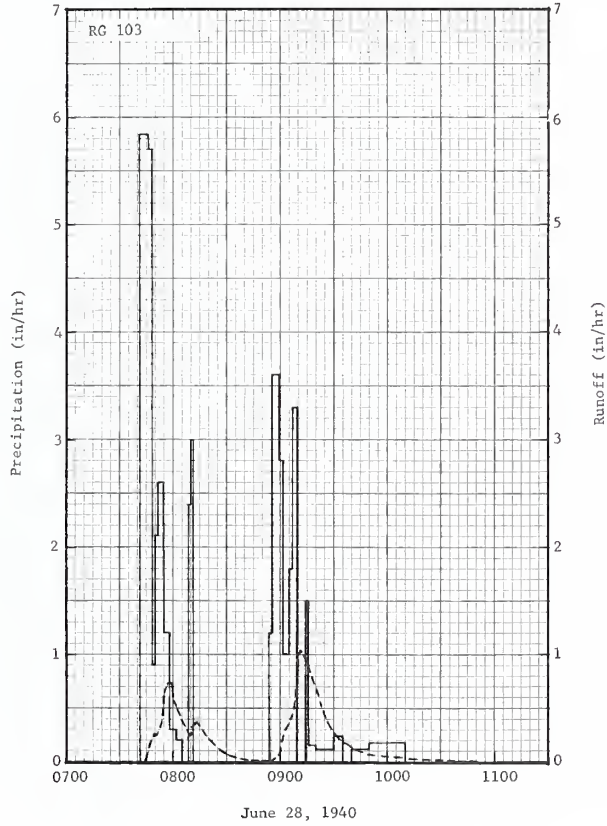
Watershed conditions: In pasture (prevailing practice). Grass 5 in. high, weeds and briars 4 in. high, density of cover 85%.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.7124. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.4-5.



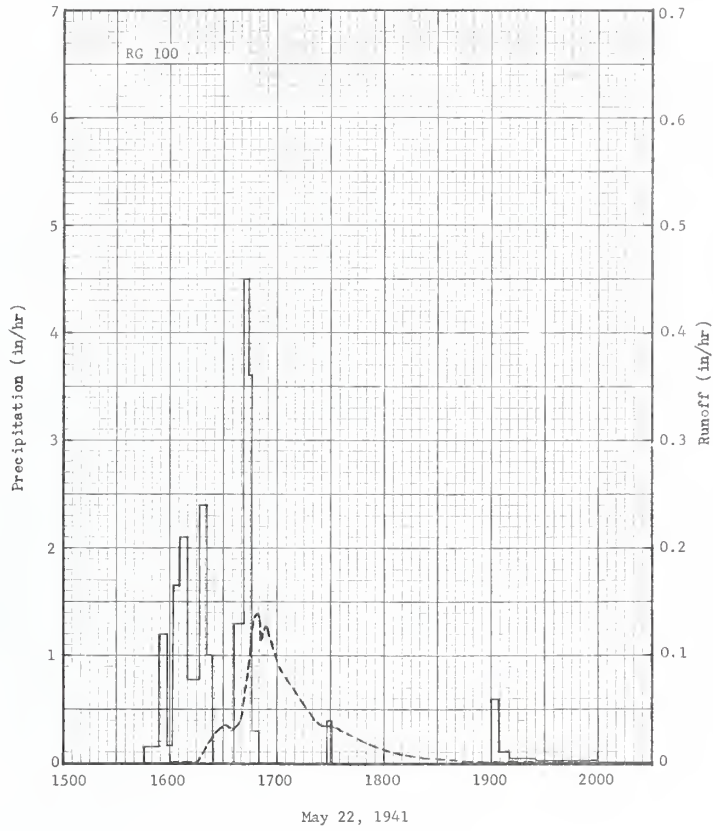
COSHOCTON, OHIO WATERSHED 135

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO						WATERSHED 130		26.05		
						AREA—1.63 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	2.88	3.37	3.08	1.18	2.66	1.79	2.54	1.97	5.31	2.28	3.01	2.11	32.18		
	Q	.05	.34	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.49		
	STA AV2/ P	2.71	2.45	3.16	3.27	3.87	4.41	4.36	2.87	2.61	2.22	2.40	2.11	36.44		
	(38-62) Q	.12	.16	.07	.10	.03	.21	.07	.03	.06	T	T	.01	.86		
	MEAN P 3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
	54 YR															
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.16	2-23	.12	2-23	.18	2-23	.23	2-23	.24	2-23	.24	2-23	.24	2-23	.33
MAXIMUMS FOR PERIOD OF RECORD																
1938 to	6-12	4.06	6-12	1.42	6-12	1.44	6-12	1.44	6-12	1.44	6-12	1.44	6-12	1.44	6-12	1.44
19 62	1957		1957		1957		1957		1957		1957		1957		1957	
Notes: Quality of records: Monthly P, excellent; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: Improved practice meadow. 1/ Rain gage 103. 2/ Precipitation and runoff records began May 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to <u>Western Allegheny Plateau land resource area (N-124)</u> .																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny and Gonemaugh series, occur beneath 30 in. to 80 in. of soil. The Mahoning sandstone caps the northwest corner and is underlain by an arenaceous shale, the Lower Freeport sandstone. The Washingtonville shale member occurs just below the flume. The Middle Kittanning coal-clay aquifer occurs 8 ft below the flume. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO						WATERSHED 130		26.05		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RG 103			RG	103											
5-29	.45	.00	6-28	0742	.00	.00	6-28	0744	.0000	.00						
5-30	.78	.00		0746	5.85	.39		0745	.0249	T						
6-7	.12	.00		0748	5.70	.58		0746	.0913	T						
6-8	.26	.00		0750	.90	.61		0747	.134	T						
6-9	.32	.00		0752	2.10	.68		0749	.268	.01						
6-10	1.01	T		0755	2.60	.81		0751	.237	.02						
6-11	.47	T		0758	1.20	.87		0753	.359	.03						
6-12	.62	T		0802	.30	.89		0755	.608	.04						
6-14	.06	.00		0805	.20	.90		0757	.730	.07						
6-15	T	.00		0808	.00	.90		0759	.730	.09						
6-18	1.45	.17		0810	2.40	.98		0800	.572	.10						
6-23	.88	T		0812	3.00	1.08		0803	.462	.13						
6-24	.03	.00		0854	.00	1.08		0809	.237	.16						
6-25	.24	.00		0856	1.20	1.12		0811	.329	.17						
6-26	.14	.00		0859	3.60	1.30		0813	.377	.18						
				0902	2.80	1.44		0819	.237	.21						
				0905	1.00	1.49		0831	.0730	.24						
				0907	1.80	1.55		0839	.0249	.25						
				0909	3.30	1.66		0855	.0018	.25						
				0914	.00	1.66		0859	.0548	.25						
				0916	1.50	1.71		0902	.237	.26						
				0920	.15	1.72		0905	.359	.28						
				0930	.12	1.74		0908	.572	.30						
				0935	.24	1.76		0910	.852	.32						
				0940	.00	1.76		0912	1.03	.35						
				0950	.12	1.78		0917	.852	.43						
				1010	.18	1.84		0924	.462	.51						
								0931	.237	.55						
								0940	.116	.57						
								0948	.0548	.58						
								1015	.0146	.60						
								1050	.0000	.60						
Watershed conditions: In permanent meadow (improved practice). Hay removed June 25. Grass, clover and weeds 2 in. high, density of cover 85%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6436. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.5-5.																



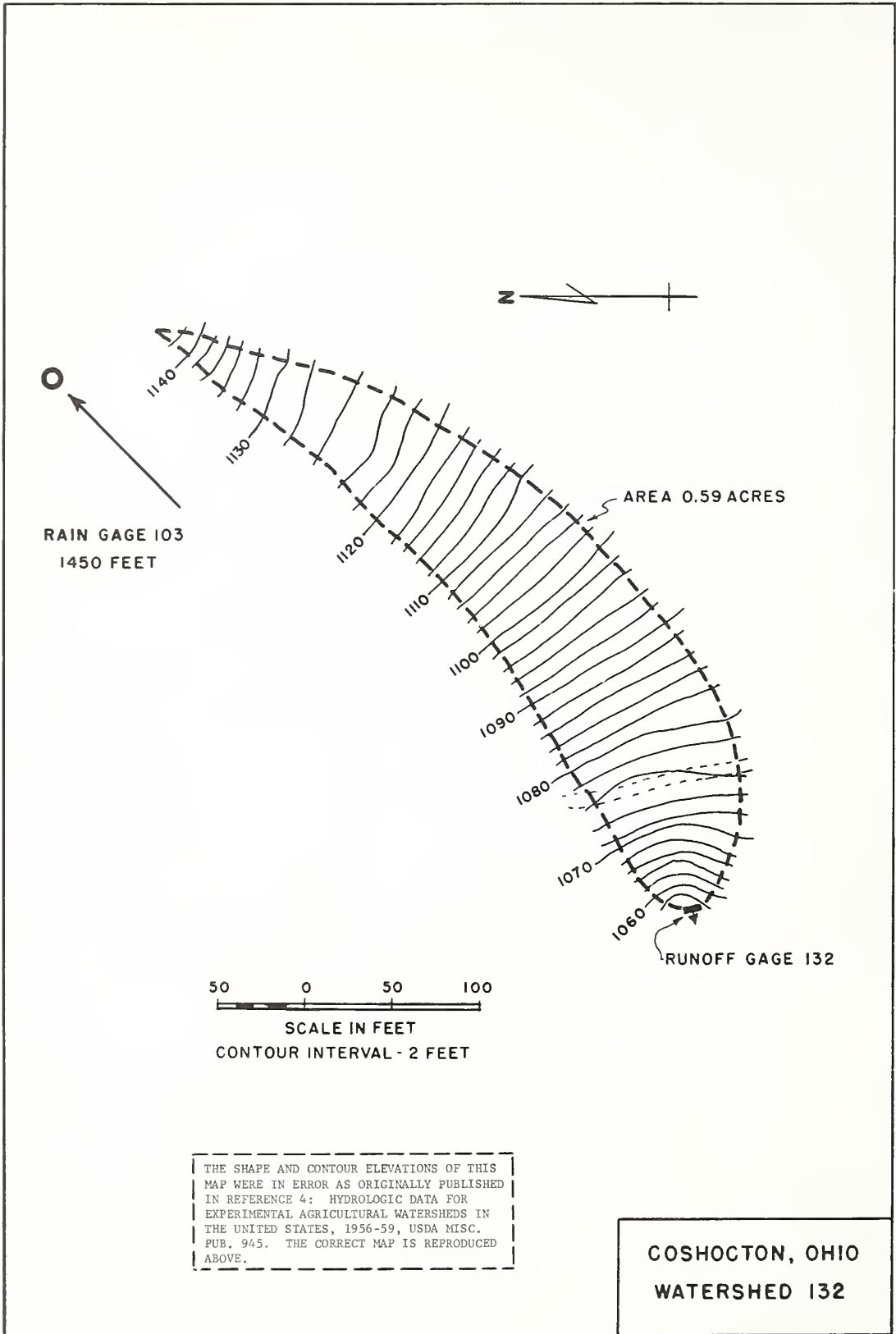
COSHOCTON, OHIO WATERSHED 130

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO							WATERSHED 131		26.07
							AREA—2.21 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ¹ / _Q	2.88	3.37	3.08	1.18	2.66	1.79	2.54	1.97	5.31	2.28	3.01	2.11	32.18		
		.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02		
STA AV2/	P	2.71	2.45	3.16	3.27	3.87	4.41	4.36	2.87	2.61	2.22	2.40	2.11	36.44		
(38-62)	Q	.03	.02	.03	.02	.01	.04	.01	T	.01	T	T	T	.17		
MEAN P	3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	3-12 T	3-12 T		3-12	.01	3-12	.01	3-12	.02	3-12	.02	3-12	.02	3-12	.02	
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO	6-12	1.18	6-12	.41	6-12	.45	6-12	.45	6-12	.45	6-12	.45	6-12	.45	6-12	.45
1962	1957		1957		1957		1957		1957		1957		1957		1957	
NOTES: Quality of records: Monthly P, excellent; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: Uneven age hardwoods. 1/ Precipitation obtained from rain gage 103. 2/ Precipitation and runoff records began May 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny and Conemaugh series, occur beneath 20 in. to 80 in. of soil. The upper 30% of the watershed is underlain by the massive Lower Freeport sandstone. The remainder is underlain by a thin arenaceous shale and the massive Lower Freeport sandstone which occurs in the lower 30% of the watershed. The rock strata are inclined at approximately 1° to the southwest. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1941 SELECTED RUNOFF EVENT					COSHOCTON, OHIO					WATERSHED 131		26.07				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of May 22, 1941 ^{4/}																
4-23	RG 103 T	.00	5-22	RG 1546	1.00 ^{5/}	.00	5-22	1600	.000	.00						
4-28	.03	.00		1554	.15	.02		1615	T	T						
5-7	.43	.00		1558	1.20	.10		1617	.005	T						
5-8	.60	T		1602	.15	.11		1621	.018	T						
5-9	.18	.00		1606	1.65	.22		1624	.026	T						
5-15	.03	.00		1610	2.10	.36		1627	.030	T						
5-16	1.02	T		1617	.77	.45		1631	.035	.01						
5-17	1.73	.08		1621	2.40	.61		1634	.030	.01						
5-22	6/1.24	7/ T		1624	1.00	.66		1639	.039	.01						
				1636	.00	.66		1641	.059	.01						
				1642	1.30	.79		1643	.068	.01						
				1644	4.50	.94		1645	.114	.02						
				1646	3.60	1.06		1646	.128	.02						
				1650	.30	1.08		1647	.135	.02						
				1728	.00	1.08		1649	.139	.03						
				1731	.40	1.10		1650	.135	.03						
				1900	.00	1.10		1651	.114	.03						
				1904	.60	1.14		1653	.128	.04						
				1910	.10	1.15		1657	.114	.04						
				1925	.04	1.16		1702	.088	.05						
				2000	.02	1.17		1708	.070	.06						
								1715	.054	.07						
								1725	.035	.07						
								1730	.035	.08						
								1740	.026	.08						
								1750	.018	.09						
								1800	.011	.09						
								1810	.008	.09						
								1820	.005	.09						
								1845	T	.09						
								1955	.000	.09						
Watershed conditions: Uneven age stand of hardwood, good woodland management, no grazing. Trees up to 70 ft high; shrubs 18 in. high; herbs 6 in. high.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.2284. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.7-5. ^{4/} SUBSTITUTED FOR JUNE 28, 1940, EVENT, WHOSE RUNOFF PEAK WAS SLIGHT, 0.0853 IN/HR. ^{5/} NO INTENSITY RECORD FOR RAIN GAGE 103. ^{6/} RAIN ENDING 1500. ^{7/} RUNOFF PRIOR TO 1600.																



COSHOCTON, OHIO WATERSHED 131

REVISION OF PREVIOUSLY PUBLISHED MAP



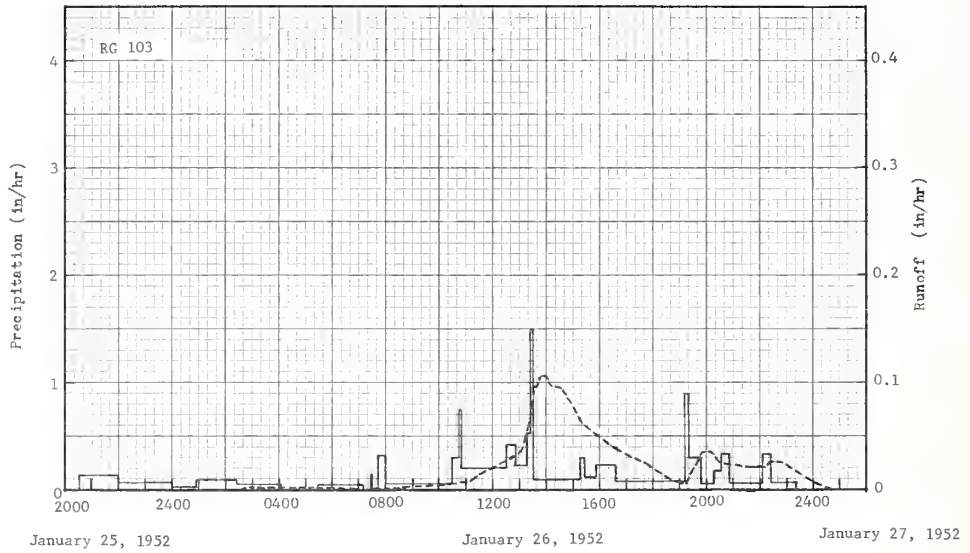
THE SHAPE AND CONTOUR ELEVATIONS OF THIS MAP WERE IN ERROR AS ORIGINALLY PUBLISHED IN REFERENCE 4: HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945. THE CORRECT MAP IS REPRODUCED ABOVE.

**COSHOCTON, OHIO
WATERSHED 132**

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 132 26.08										
						AREA—0.59 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ₁	2.88	3.37	3.08	1.18	2.66	1.79	2.54	1.97	5.31	2.28	3.01	2.11	32.18		
	C	.25	.63	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.30		
STA AV ₂	P	3.44	2.73	2.90	3.40	3.27	3.93	4.72	2.42	2.68	2.01	2.55	2.26	36.31		
(48-62)	Q	.24	.17	.13	.25	.06	.16	.01	T	.02	T	.00	.01	1.05		
MEAN P	3/54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-26	.05	2-23	.05	2-26	.09	2-23	.16	2-23	.24	2-23	.27	2-25	.35	2-23	.63
MAXIMUMS FOR PERIOD OF RECORD																
1948 to 1962	6-12 1957	2.00E	4-25 1961	.73	4-25 1961	.99	4-25 1961	1.37	4-25 1961	1.52	1-21 1959	2.00E	1-21 1959	2.00E	4-21 1961	2.08
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: Uneven-age hardwoods. 1/ Rain gage 103. 2/ Precipitation and runoff records began May 1948. Part-year amounts for 1948 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 36 in. to 80 in. of soil. A series of unnamed silty to clayey shales underlie the entire watershed. The rock strata are inclined to the west at approximately 1°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																

1952 SELECTED RUNOFF EVENT				COSHOCTON, OHIO WATERSHED 132 26.08							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of January 25-27, 1952 4/											
	RC 103			RG	103						
12-29	TS	.00	1-25	2031	.00	.00	1-26	0238	.0000	.00	
12-30	.28	.00		2159	.14	.21		0240	.0012	T	
12-31	.03	.00		2400	.07	.35		0540	.0012	T	
1-1	.09	.00						0700	.0000	T	
1-2	.37	.00	1-26	0055	.03	.38		0730	.0000	T	
1-3	.06	.00		0223	.09	.51		0840	.0028	.01	
1-4	.11N	.00		0404	.05	.58		1110	.0094	.02	
1-6	TS	.00		0528	.00	.58		1140	.0163	.02	
1-8	TS	.00		0712	.05	.67		1304	.0354	.05	
1-10	.04S	.00		0728	.00	.67		1330	.0778	.07	
1-13	T	.00		0732	.15	.68		1334	.0960	.08	
1-15	.35	.00		0743	.00	.68		1340	.0960	.09	
1-16	.04	.00		0800	.32	.77		1350	.106	.10	
1-17	.61	.00		1028	.05	.90		1400	.106	.12	
1-19	.36	.00		1044	.30	.98		1410	.0960	.14	
1-20	.34	.07		1048	.75	1.03		1430	.0960	.17	
1-22	.35	.00		1232	.20	1.38		1520	.0616	.24	
1-23	TS	.00		1252	.42	1.52		1626	.0413	.30	
1-24	TS	.00		1318	.23	1.62		1740	.0252	.34	
				1326	.52	1.69		1840	.0094	.36	
				1332	1.50	1.84		1914	.0067	.36	
				1516	.09	2.00		1940	.0252	.37	
				1524	.30	2.04		1950	.0354	.38	
				1552	.11	2.09		2010	.0354	.39	
				1636	.23	2.26		2030	.0252	.40	
				1912	.07	2.43		2150	.0205	.43	
				1920	.90	2.55		2210	.0205	.44	
				1948	.30	2.69		2220	.0252	.44	
				2014	.05	2.71		2250	.0252	.46	
				2032	.17	2.76		2400	.0067	.47	
				2052	.33	2.87					
				2205	.06	2.94	1-27	0040	.0000	.48	
				2225	.33	3.05					
				2231	.06	3.11					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.5949. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.8-2. 4/ SUBSTITUTED FOR EVENT OF JUNE 28, 1940; WATERSHED NOT IN OPERATION IN 1940.



COSHOCTON, OHIO WATERSHED 132

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 123		26.10				
						AREA—1.37 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/	2.91	3.65	3.11	1.45	2.76	2.01	2.64	2.08	5.40	2.29	3.15	2.16	33.61
	Q	.03	.99	.46	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.48
STA AV2/ (39-62)	P	2.79	2.57	3.22	3.47	3.92	4.69	4.40	2.93	2.63	2.37	2.50	2.26	37.75
	Q	.42	.36	.33	.28	.15	.37	.15	.09	.06	.02	.01	.15	2.39
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
			DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	3-12	.21	3-12	.16	3-12	.24	3-12	.31	2-23	.39	2-23	.39	2-23	.54	2-23	.92

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-12 1957	5.97	6-12 1957	1.37	6-12 1957	1.48	6-28 1957	1.51	1-21 1959	1.84	1-21 1959	2.33	1-21 1959	2.33	1-21 1959	2.33

Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Wheat to meadow, improved practice. 1/ Precipitation obtained from rain gage Y103. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 50 in. to 80 in. of soil. Silty shale underlie the upper 60% of the watershed. Arenaceous sandstone and silty to clayey shales underlie the lower 35% of the watershed with 5% of the watershed at the watershed outlet underlain by a single bed of massive sandstone. The Lower Kittanning coal and clay occur 10 ft below the watershed outlet at the base of the sandstone. The rock strata are inclined approximately 3/4° to the east. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

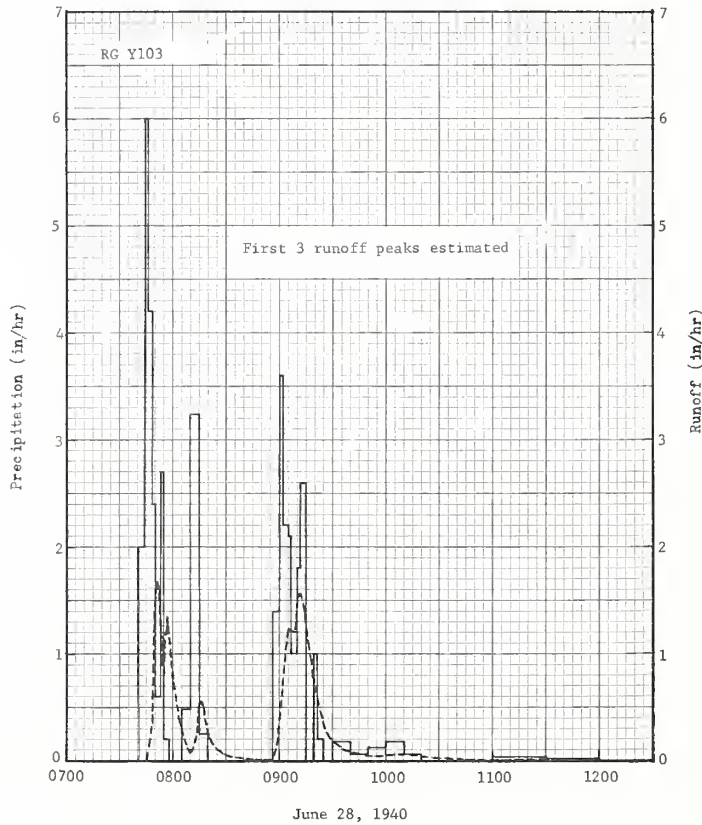
1940 SELECTED RUNOFF EVENT				COSHOCTON, OHIO		WATERSHED 123		26.10		
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)

			Event of June 28, 1940							
			RG Y103							
5-29	.42	T	6-28	0741	.00	.00	6-28	0745	.0000	.00
5-30	1.03	.02		0744	2.00	.10		0748	.347	.01
6-7	.09	.00		0746	6.00	.30		0750	1.60 E	.04
6-8,9	.72	T		0748	4.20	.44		0751	1.68 E	.07
6-10	.80	.07		0750	2.40	.52		0752	1.50 E	.10
6-11	.32	.01		0753	.60	.55		0755	.818 E	.16
6-12	.59	.05E		0755	2.70	.64		0757	1.36 E	.20
6-14	.11	.00		0758	.20	.65		0800	.840 E	.26
6-18	1.50	.32		0805	.00	.65		0804	.317 E	.30
6-19	T	.00		0810	.48	.69		0809	.0717	.31
6-23	.77	.04		0815	3.24	.96		0813	.290	.32
6-24	.15	.00		0820	.24	.98		0815	.534	.33
6-25	.21	T		0857	.00	.98		0816	.553	.34
6-26	.13	.00		0900	1.40	1.05		0817	.497	.35
				0902	3.60	1.17		0822	.161	.38
				0905	2.20	1.28		0828	.0594	.39
				0907	2.10	1.35		0840	.0145	.39
				0910	1.00	1.40		0853	.0013	.40
				0912	1.80	1.46		0900	.263	.40
				0915	2.60	1.59		0905	1.23	.47
				0919	.00	1.59		0908	1.20	.53
				0922	1.00	1.64		0911	1.54	.60
				0925	.20	1.65		0912	1.56	.63
				0930	.00	1.65		0913	1.43	.65
				0940	.18	1.68		0918	.793	.74
				0950	.06	1.69		0923	.426	.80
				1000	.12	1.71		0928	.203	.82
				1010	.18	1.74		0936	.100	.84
				1020	.06	1.75		0948	.0483	.86

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.3814. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.10-6.

1940 SELECTED RUNOFF EVENT			COSHOCTON, OHIO				WATERSHED 123		26.10	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of June 28, 1940 — Continued							
			6-28	1100	.00	1.75	6-28	0953	.0383	.86
				1130	.04	1.77		0957	.0383	.86
				1200	.02	1.78		1005	.0537	.87
								1009	.0537	.87
								1026	.0179	.88
								1050	.0028	.88
								1145	.0000	.88

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.3814.



COSHOCTON, OHIO WATERSHED 123

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 115		26.11				
						AREA--1.61 ACRES								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	P1 Q	2.91 .07	3.65 1.85	3.11 .06	1.45 .00	2.76 .00	2.01 .00	2.64 .00	2.08 .00	5.40 .00	2.29 .00	3.15 .00	2.16 .00	33.61 1.98
STA AV2/ (39-62)	P Q	2.84 .24	2.50 .26	3.20 .12	3.47 .15	3.92 .18	4.69 .47	4.40 .36	2.93 .19	2.63 .15	2.37 .04	2.50 .02	2.26 .06	37.71 2.24
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
			DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.31	2-23	.23	2-23	.35	2-23	.54	2-23	.83	2-23	.84	2-25	1.50	2-19	1.77

MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	6-12 1957	4.12	9-1 1950	1.33	9-1 1950	1.56	9-1 1950	1.58	9-1 1950	1.59	9-1 1950	1.59	9-1 1950	1.59	6-29 1941	2.85

Notes: Quality of records: Monthly P, good; Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Wheat to meadow, prevailing practice. 1/ Rain gage Y103. 2/ Precipitation and runoff records began Apr. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. Silty shales underlie the upper 60% of the watershed. Arenaceous sandstone and silty to clayey shales underlie the lower 35% of the watershed with 5% of the watershed at the watershed outlet underlain by a single bed of massive sandstone. The Lower Kittanning coal and clay occur 10 ft below the watershed outlet at the base of the sandstone. The rock strata are inclined 3/4° to the east. Source of data: James B. Urban, Geologist, ARS. See map on p. 26.30-3.

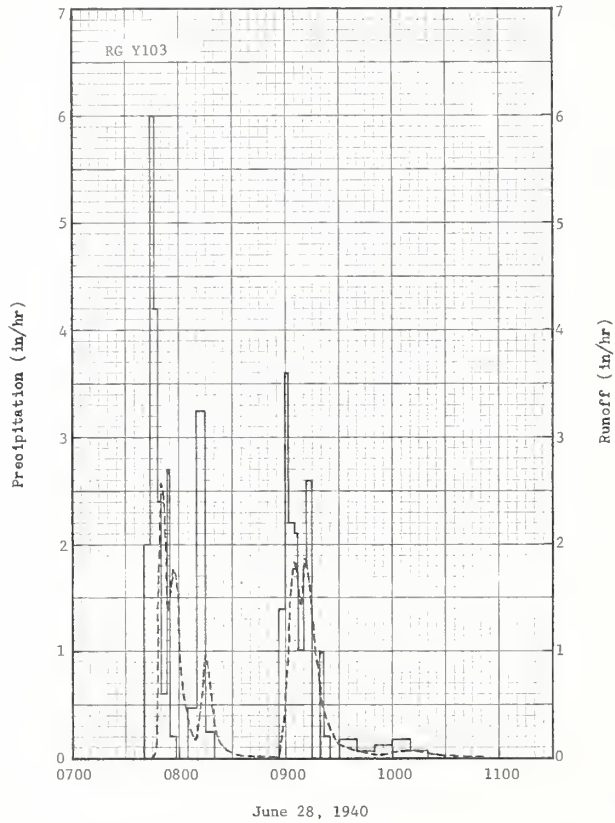
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 115		26.11	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF					
DATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-OAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
	RG Y103			Event of June 28, 1940							
				RG	Y103						
5-29	.42	.06	6-28	0741	.00	.00	6-28	0744	.00	.00	
5-30	1.03	.31		0744	2.00	.10		0746	.0123	.00	
6-7	.09	.00		0746	6.00	.30		0749	1.98	.03	
6-8, 9	.72	.06		0748	4.20	.44		0750	2.57	.07	
6-10	.80	.26		0750	2.40	.52		0751	2.39	.11	
6-11	.32	.10		0753	.60	.55		0754	1.39	.22	
6-12	.59	.28		0755	2.70	.64		0756	1.63	.27	
6-14	.11	.00		0758	.20	.65		0757	1.76	.30	
6-18	1.50	.72		0805	.00	.65		0759	1.56	.36	
6-19	T	.00		0810	.48	.69		0802	.696	.42	
6-23	.77	.23		0815	3.24	.96		0809	.172	.45	
6-24	.15	.00		0820	.24	.98		0812	.439	.47	
6-25	.21	.01		0857	.00	.98		0814	.825	.49	
6-26	.13	.01		0900	1.40	1.05		0815	.973	.51	
				0902	3.60	1.17		0817	.782	.54	
				0905	2.20	1.28		0822	.270	.57	
				0907	2.10	1.35		0827	.0850	.59	
				0910	1.00	1.40		0833	.0252	.59	
				0912	1.80	1.46		0844	.0036	.59	
				0915	2.60	1.59		0856	.0003	.59	
				0919	.00	1.59		0900	.540	.60	
				0922	1.00	1.64		0903	1.69	.66	
				0925	.20	1.65		0904	1.84	.69	
				0930	.00	1.65		0905	1.84	.72	
				0940	.18	1.68		0908	1.43	.81	
				0950	.06	1.69		0910	1.69	.86	
				1000	.12	1.71		0911	1.87	.89	
				1010	.18	1.74		0913	1.63	.95	
				1020	.06	1.75		0920	.505	1.05	
								0928	.145	1.09	
								0943	.0610	1.11	
								0954	.0326	1.12	
								1005	.0610	1.13	
								1008	.0665	1.13	

Watershed conditions: In wheat of a corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 30 in. high, clover and grass 3 in. high, density of cover 60%.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6234. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.11-6.

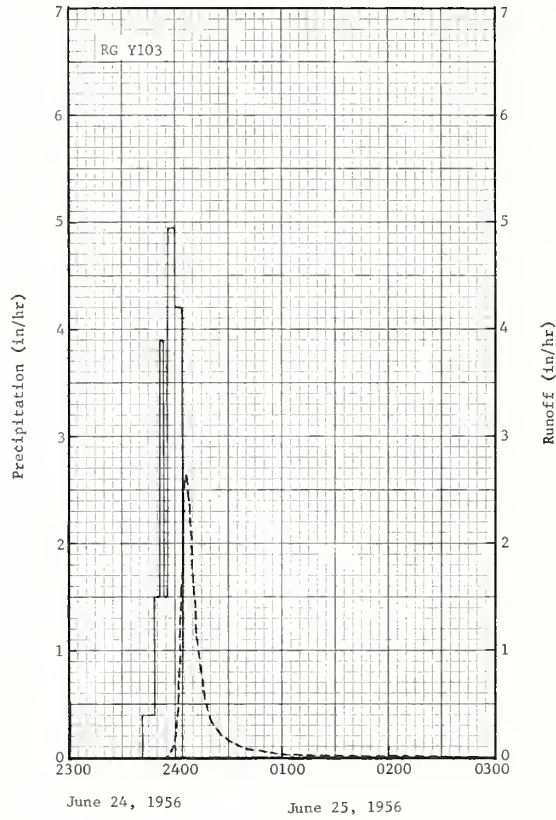
1940			SELECTED RUNOFF EVENT				COSHOCOTON, OHIO		WATERSHED 115		26.11	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
Event of June 28, 1940 — Continued												
							6-28	1012	.0610	1.13		
								1021	.0252	1.14		
								1029	.0074	1.14		
								1052	.0000	1.14		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6234.



COSHOCOTON, OHIO WATERSHED 115

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO								WATERSHED 127		26.12
						AREA—1.65 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ^{1/}	2.91	3.65	3.11	1.45	2.76	2.01	2.64	2.08	5.40	2.29	3.15	2.16	33.61		
	Q	.36	1.28	.80	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.44		
STA AV ^{2/}	P	3.42	2.86	2.92	3.68	3.37	4.09	4.75	2.70	2.68	2.08	2.62	2.37	37.54		
(49-62)	Q	1.01	.71	.44	.43	.10	.36	.14	.09	.11	T	.06	.35	3.80		
MEAN P ^{3/}		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1952	2-23	.21E	3-12	.16E	3-12	.24E	3-12	.31E	2-23	.39E	2-23	.39E	2-23	.54E	2-23	.92E
MAXIMUMS FOR PERIOD OF RECORD																
1949 TO	6-12	3.12	9-1	1.33	9-1	1.48	6-12	1.49	1-26	1.97	1-26	2.65	1-25	2.82	1-25	2.85
1962	1957		1950		1950		1957		1952		1952		1952		1952	
Notes: Quality of records: Monthly P, excellent; Q, good; annual maximum discharges and volumes, good. Watershed conditions: Wheat to meadow, improved practice plus mulch tillage. 1/ Rain gage Y103. 2/ Precipitation and runoff records began May 1949. Part-year amounts for 1949 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 50 in. to 80 in. of soil. Silty shales underlie the upper 60% of the watershed. Arenaceous sandstone and silty to clayey shale underlie the lower 35% of the watershed with 5% of the watershed at the watershed outlet underlain by a single bed of massive sandstone. The Lower Kittanning coal and clay occur 5 ft below the watershed outlet at the base of the sandstone. The rock strata are inclined approximately 3/4° to the east. Source of data: James B. Urban, Geologist, ARS. See geologic map on p.26.30-31.																
1956 SELECTED RUNOFF EVENT						COSHOCKTON, OHIO								WATERSHED 127		26.12
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 24-25, 1956 4/																
	RG Y103			RG	Y103											
5-26	.13	.00	6-24	2342	.00	.00	6-24	2356	.0000	.00						
5-27	1.53	.01		2348	.40	.04		2358	.0680	T						
5-29	.20	.00		2352	1.50	.14		2400	.178	.01						
5-31	1.09	.12		2354	3.90	.27										
6-1	.00	T		2356	1.50	.32	6-25	0002	.435	.02						
6-2	.09	.00		2400	4.95	.65		0003	.921	.03						
6-3	.71	.05						0004	1.76	.05						
6-13	.10	.00	6-25	0004	4.20	.93		0005	2.30	.08						
6-16	.05	.00		5/		.97		0006	2.64	.12						
6-17	.05	.00						0008	2.22	.20						
6-18	.70	.00						0009	1.90	.24						
6-20	.14	.00						0010	1.69	.27						
6-21	.26	.00						0012	1.13	.32						
6-23	.30	.00						0014	.825	.35						
6-24	6/.91	7/.04						0016	.614	.37						
								0018	.435	.39						
								0020	.345	.40						
								0024	.243	.42						
								0030	.150	.44						
								0040	.0807	.46						
								0050	.0462	.47						
								0104	.0210	.48						
								0130	.0063	.49						
								0210	.0013	.49						
								0250	.0000	.49						
Watershed conditions: In second-year meadow of corn, wheat, meadow, meadow rotation (improved practice). Three tons per acre hay removed June 3, density of cover 100%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6637. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.12-5. 4/ SUBSTITUTED FOR EVENT OF JUNE 28, 1940; WATERSHED NOT IN OPERATION IN 1940. 5/ NO RECORD AFTER 0004. 6/ RAIN ENDING 1928. 7/ RUN-OFF PRIOR TO 2356.																



COSHOCTON, OHIO WATERSHED 127

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO							WATERSHED 109		26.13
						AREA--1.69 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	P1/ Q	2.79 .31	3.38 2.08	2.85 .47	1.35 .00	2.61 .00	1.66 .00	2.47 .00	1.89 .00	5.47 .00	2.23 .00	2.90 .00	2.16 .00	31.76 2.86	
	STA AV2/ P (38-62) Q	2.69 .08	2.46 .18	3.18 .05	3.44 .05	3.92 .13	4.67 .34	4.50 .26	2.89 .19	2.66 .06	2.32 .02	2.42 T	2.14 .02	37.29 1.38	
	MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962		2-23	.44	2-23	.34	2-23	.53	2-23	.78	2-23	1.13	2-23	1.14	2-23	1.14	2-19	2.00

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	5-17	4.34E	6-29	.82E	6-28	1.09	5-22	1.30E	8-27	1.31	8-27	1.52	8-25	1.65	5-16	2.14E
1962	1941		1941		1940		1941		1940		1940		1940		1941	

Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: wheat to meadow, improved practice. 1/ Rain gage Y102. 2/ Precipitation and runoff records began Nov. 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The Lower Freeport sandstone horizon, an interbedded sequence of silty to arenaceous shales and thinbedded sandstone underlie the watershed. The Middle Kittanning coal and clay aquifer occurs approximately 18 ft beneath the watershed outlet. Rock strata dip to at less than 1° to the southwest. This watershed lies on the crest of the Cambridge Arch. Dip of the rock strata is due to the general plunge of the major rock structure. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

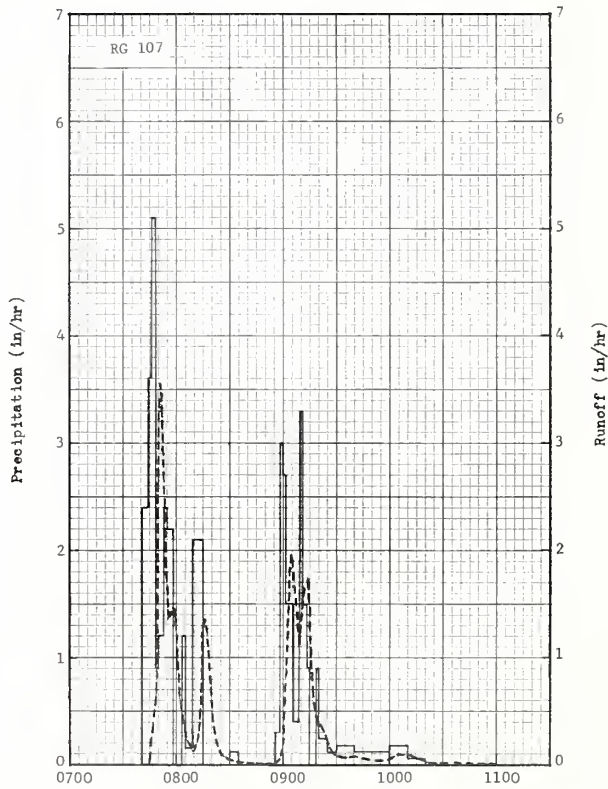
1940 SELECTED RUNOFF EVENT				COSHOCTON, OHIO				WATERSHED 109				26.13
----------------------------	--	--	--	-----------------	--	--	--	---------------	--	--	--	-------

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
	RG Y102			Event of June 28, 1940						
				RG	107 4/					
5-29, 30	1.23	.17	6-28	0741	.00	.00	6-28	0745	.0000	.00
6-7	.07	.00		0744	2.40	.12		0748	.657	.01
6-8	.29	T		0746	3.60	.24		0750	2.67	.06
6-9	.31	.02		0748	5.10	.41		0751	3.55	.11
6-10	.90	.38		0750	.90	.44		0752	3.34	.17
6-11	.42	.10		0753	1.20	.50		0754	1.89	.26
6-12	.64	.25		0755	2.40	.58		0756	1.38	.31
6-14	.07	.00		0758	2.20	.69		0758	1.48	.36
6-18	1.54	.60		0803	.00	.69		0759	1.41	.38
6-19	T	.00		0805	1.20	.73		0802	.634	.43
6-22	.09	.00		0809	.15	.74		0805	.259	.45
6-23	.82	.30		0815	2.10	.95		0809	.129	.47
6-24	.04	.00		0830	.00	.95		0813	.456	.48
6-25	.24	.04		0835	.12	.96		0815	1.27	.51
6-26	14	.02		0856	.00	.96		0816	1.36	.53
				0858	.30	.97		0817	1.24	.55
				0900	3.00	1.07		0820	.541	.60
				0902	2.70	1.16		0824	.113	.62
				0906	1.50	1.26		0828	.0450	.62
				0909	.40	1.28		0836	.0137	.62
				0911	3.30	1.39		0856	.0026	.63
				0913	1.50	1.44		0900	.155	.63
				0915	.90	1.47		0903	1.78	.68
				0918	.00	1.47		0904	1.97	.71
				0920	.90	1.50		0905	1.93	.74
				0925	.24	1.52		0909	1.10	.84
				0930	.12	1.53		0912	1.61	.90
				0940	.18	1.56		0913	1.75	.93
				1000	.12	1.60		0914	1.58	.96

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.7041. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.13-4. 4/ NO INTENSITY RECORD FOR Y102.

1940 SELECTED RUNOFF EVENT			COSHOCKTON, OHIO				WATERSHED 109		26.13	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 28, 1940—Continued										
			6-28	1010	.18	1.63	6-28	0917	.634	1.01
				1020	.06	1.64		0920	.350	1.04
								0921	.379	1.04
								0925	.204	1.06
								0929	.0915	1.07
								0935	.0663	1.08
								0939	.0786	1.08
								0940	.0786	1.09
								0945	.0552	1.09
								0954	.0239	1.10
								1002	.0606	1.10
								1005	.0915	1.10
								1007	.0915	1.11
								1015	.0499	1.12
								1021	.0204	1.12
								1030	.0062	1.12
								1100	.0000	1.12

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.7041.



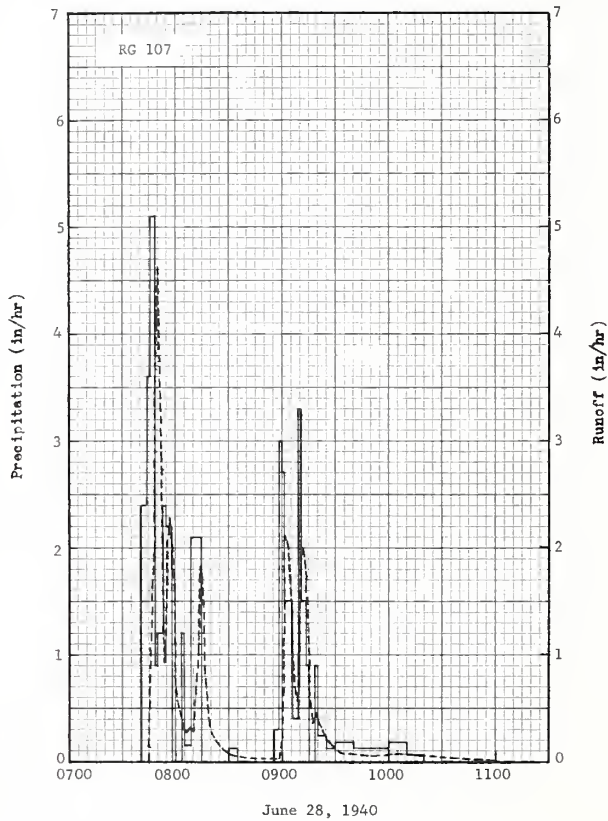
June 28, 1940

COSHOCKTON, OHIO WATERSHED 109

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 103 26.14											
						AREA—0.65 ACRE											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P1/ Q	2.83 .39	3.37 2.38	3.10 .41	1.15 .01	2.46 .00	1.69 .00	2.28 .00	1.82 .00	5.61 .00	2.21 T	2.96 .21	2.09 .00	31.57 3.40			
	STA AV2/ (39-62) Q	2.68 .38	2.32 .35	3.10 .39	3.30 .29	3.70 .17	4.44 .46	4.29 .32	2.85 .16	2.63 .16	2.23 .03	2.35 .03	2.12 .11	36.01 2.85			
	MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962		2-23	.52	2-23	.40	2-23	.60	2-23	1.03	2-23	1.40	2-23	1.42	2-23	1.86	2-19	2.29
MAXIMUMS FOR PERIOD OF RECORD																	
1939 TO 19 62	7-23 1940	4.72	9-1 1950	1.95	9-1 1950	2.60	9-1 1950	2.62	9-1 1950	2.62	9-1 1950	2.62	8-31 1950	2.63	8-26 1940	2.76	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Meadow to corn to wheat, improved practice. 1/ Rain gage 107. 2/ Precipitation and runoff records begin April 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																	
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to <u>Western Allegheny Plateau land resource area (N-124)</u> .																	
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. Silty and arenaceous shales underlie the upper 60% of the watershed. The Middle Kittanning coal and clay outcrop beneath the soil in the lower third of the watershed where the clay is underlain by claystone and arenaceous shale. The Middle Kittanning coal-clay aquifer is inclined to the southeast at approximately 1°. A perched water table is present in the coal. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																	
1940 SELECTED RUNOFF EVENT				COSHOCTON, OHIO				WATERSHED 103				26.14					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)							
	RG 107			Event of June 28, 1940													
				RG	107												
5-29	.43	.10	6-28	0741	.00	.00	6-28	0745	.0000	.00							
5-30	.86	.21		0744	2.40	.12		0748	2.23	.03							
6-7	.12	.00		0746	3.60	.24		0749	4.10	.08							
6-8, 9	.52	.00		0748	5.10	.41		0750	4.62	.16							
6-10	.75	.30E		0750	.90	.44		0751	3.77	.23							
6-11	.35	.17		0753	1.20	.50		0754	.949	.34							
6-12	.57	.30		0755	2.40	.58		0756	1.79	.38							
6-14	.06	.00		0758	2.20	.69		0757	2.29	.41							
6-15	.01	.00		0803	.00	.69		0758	2.00	.45							
6-18	1.46	.95		0805	1.20	.73		0801	.627	.51							
6-23	.83	.35		0809	.15	.74		0806	.279	.54							
6-24	.06	.00		0815	2.10	.95		0808	.317	.55							
6-25	.19	.02		0830	.00	.95		0810	.298	.56							
6-29	.15	.02		0835	.12	.96		0812	.627	.57							
				0856	.00	.96		0813	1.10	.59							
				0858	.30	.97		0814	1.83	.61							
				0900	3.00	1.07		0815	1.74	.64							
				0902	2.70	1.16		0817	.879	.68							
				0906	1.50	1.26		0819	.337	.70							
				0909	.40	1.28		0830	.0598	.73							
				0911	3.30	1.39		0858	.0253	.75							
				0913	1.50	1.44		0900	.212	.75							
				0915	.90	1.47		0901	.812	.76							
				0918	.00	1.47		0902	2.11	.78							
				0920	.90	1.50		0903	2.00	.82							
				0925	.24	1.52		0905	1.31	.87							
				0930	.12	1.53		0908	.572	.92							
				0940	.18	1.56		0911	1.68	.96							
				1000	.12	1.60		0912	2.00	.99							
				1010	.18	1.63		0913	1.68	1.02							
				1020	.06	1.64		0915	.746	1.06							
								0917	.357	1.08							
								0919	.446	1.09							
								0927	.168	1.13							
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.65542. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.14-5.																	

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 103		26.14	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of June 28, 1940 - Continued							
							6-28	0933	.0865	1.14
								0938	.0865	1.15
								0950	.0447	1.16
								0958	.0447	1.17
								1003	.0771	1.18
								1010	.0771	1.18
								1100	.0000	1.20

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.65542.

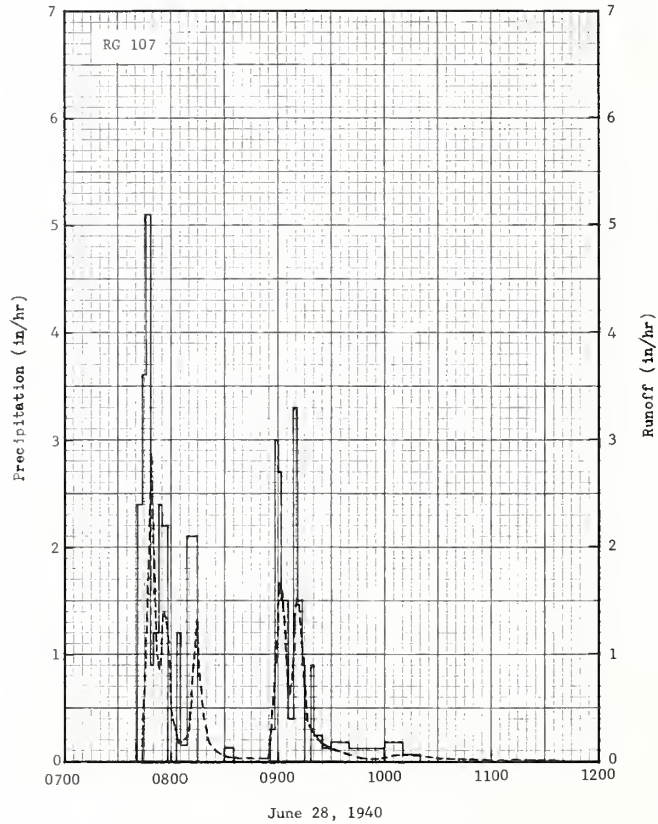


COSHOCOTON, OHIO WATERSHED 103

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO							WATERSHED 110		26.15	
						AREA—1.27 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P/	2.83	3.37	3.10	1.15	2.46	1.69	2.28	1.82	5.61	2.21	2.96	2.09	31.57			
Q	.00	.76	.35	.00	.00	.00	.00	.02	.16	.03	.19	.00	1.51			
STA AV2/ P	2.68	2.32	3.10	3.30	3.70	4.44	4.29	2.85	2.63	2.23	2.35	2.12	36.01			
(39-62) Q	.27	.25	.18	.18	.15	.41	.31	.13	.17	.04	.02	.11	2.22			
MEAN P 3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962	2-23	.30	2-23	.22	2-23	.28	2-23	.42	2-23	.46	2-24	.46	2-24	.61	2-23	.76
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	7-28	4.44	9-1	2.24	9-1	3.16	9-1	3.19	9-1	3.19	9-1	3.20	8-30	3.20	8-30	3.44
1962	1950		1950		1950		1950		1950		1950		1950		1950	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Meadow to corn to wheat, prevailing practice. 1/ Rain gage 107. 2/ Precipitation and runoff records began April 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. Silty and arenaceous shales underlie the upper 60% of the watershed. The Middle Kittanning coal and clay outcrop beneath the soil in the lower third of the watershed where the clay is underlain by claystone and arenaceous shale. The Middle Kittanning coal-clay aquifer is inclined to the southeast at approximately 1°. A perched water table is present in the coal. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCKTON, OHIO							WATERSHED 110		26.15	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	RG 107			Event of June 28, 1940												
				RG												
5-29	.42	.09	6-28	0741	.00	.00	6-28	0744	.0000	.00						
5-30	.86	.24		0744	2.40	.12		0747	1.51	.02						
6-7	.12	.00		0746	3.60	.24		0748	2.87	.06						
6-8, 9	.52	.00		0748	5.10	.41		0749	2.28	.10						
6-10	.75	.26		0750	.90	.44		0751	1.51	.16						
6-11	.35	.11		0753	1.20	.50		0753	.858	.20						
6-12	.57	.26		0755	2.40	.58		0755	1.20	.23						
6-14	.06	.00		0758	2.20	.69		0756	1.40	.25						
6-15	.01	.00		0803	.00	.69		0758	1.11	.29						
6-18	1.46	.65		0805	1.20	.73		0800	.459	.32						
6-23	.83	.26		0809	.15	.74		0804	.163	.34						
6-24	.06	.00		0815	2.10	.95		0809	.219	.35						
6-25	.19	.01		0830	.00	.95		0811	.459	.36						
6-26	.15	.01		0835	.12	.96		0813	1.08	.39						
				0856	.00	.96		0814	1.33	.41						
				0858	.30	.97		0816	.755	.44						
				0900	3.00	1.07		0822	.163	.48						
				0902	2.70	1.16		0830	.0317	.49						
				0906	1.50	1.26		0854	.0123	.50						
				0909	.40	1.28		0900	1.27	.52						
				0911	3.30	1.39		0901	1.66	.54						
				0913	1.50	1.44		0902	1.58	.57						
				0915	.90	1.47		0905	.804	.63						
				0918	.00	1.47		0907	.619	.65						
				0920	.90	1.50		0910	1.47	.70						
				0925	.24	1.52		0911	1.51	.72						
				0930	.12	1.53		0912	1.27	.74						
				0940	.18	1.56		0917	.374	.80						
				1000	.12	1.60		0924	.173	.83						
Watershed conditions: In wheat of a corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 30 in. high.																
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.2806. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.14-5.																

1940			SELECTED RUNOFF EVENT				COSHOCOTON, OHIO		WATERSHED 110		26.15	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
Event of June 28, 1940 — Continued												
			6-28	1010	.18	1.63	6-28	0950	.0273	.86		
				1020	.06	1.64		0957	.0273	.87		
								1005	.0465	.87		
								1013	.0465	.88		
								1030	.0156	.89		
								1145	.0000	.89		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.2806.



COSHOCOTON, OHIO WATERSHED 110

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 113		26.16			
						AREA—1.45 ACRES							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P1	2.99	3.46	3.12	1.29	2.74	2.31	2.61	1.63	5.49	2.26	3.06	2.09	33.05
Q	.32	2.17	.23	.00	.00	.00	.00	.00	.00	.00	.01	.00	2.73
STA AV2/ P (39-62)	2.74	2.42	3.14	3.30	3.96	4.57	4.15	2.91	2.72	2.30	2.42	2.20	36.83
Q	.27	.40	.15	.18	.14	.41	.17	.21	.09	.05	.02	.07	2.16
MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.44	2-23	.34	2-23	.52	2-23	.71	2-23	1.20	2-23	1.21	2-23	1.75	2-19	2.07

MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	6-12	3.77	9-1	1.03	4-25	1.20	6-28	1.35	6-28	1.35	1-20	1.49	2-23	1.75	8-26	2.18
	1957		1950		1961		1957		1957		1959		1962		1940	

Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Second-year meadow, improved practice. 1/ Rain gage 109. 2/ Precipitation and runoff records began Sept. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, underlie 30 in. to 80 in. of soil. Unnamed sandstone and arenaceous shale occur in the upper 70% of the watershed. This sequence is underlain by the Lower Kittanning coal and clay and a sequence of clayey shale. A perched water table is present in the coal and overlying sandstone. The rock strata are inclined approximately 1° to the west. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1940 SELECTED RUNOFF EVENT			COSHOCTON, OHIO		WATERSHED 113		26.16	
----------------------------	--	--	-----------------	--	---------------	--	-------	--

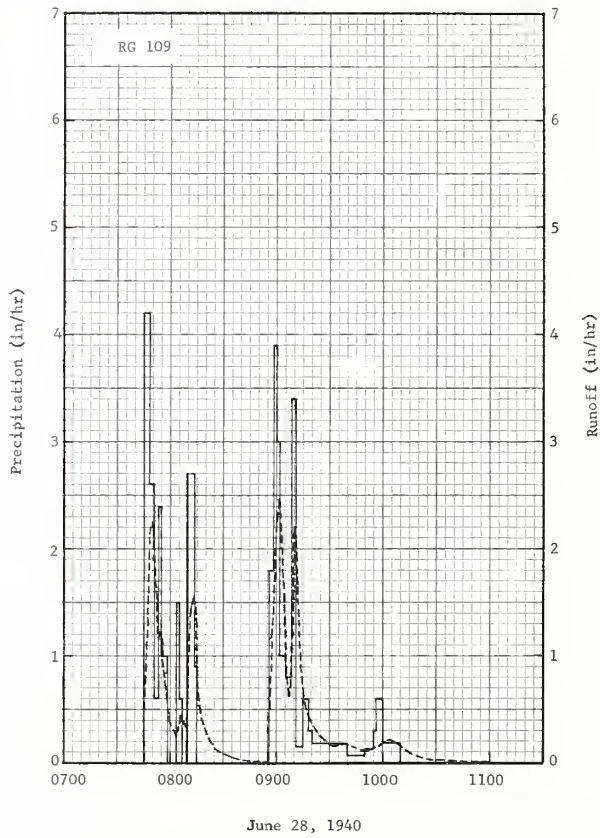
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of June 28, 1940							
			RC 109							
5-29	.28	.40	6-28	RC	109	.00	6-28	0745	.0000	.00
5-30	.93			0748	4.20	.21		0747	1.32	.02
6-7	.08			0751	2.60	.34		0748	2.20	.05
6-8	.29			0753	.60	.36		0749	2.25	.08
6-9	.22	.01	0755	2.40	.44	0750	1.92	.12		
6-10	.64	.27	0758	1.00	.49	0753	1.16	.19		
6-11	.44	.22	0803	.00	.49	0754	1.22	.22		
6-12	.76	.45	0805	1.50	.54	0755	1.14	.24		
6-14	.08	.00	0807	.60	.56	0757	.749	.27		
6-15	.08	.00	0809	.00	.56	0759	.419	.29		
6-18	1.48	.92	0813	2.70	.74	0803	.237	.31		
6-23	.84	.35	0815	.90	.77	0806	.452	.33		
6-24	.05	.00	0856	.00	.77	0808	.328	.33		
6-25	.20	.04	0858	1.80	.83	0812	1.45	.38		
6-26	.16	.03	0900	3.90	.96	0813	1.55	.40		
			0902	3.00	1.06	0814	1.35	.43		
			0905	1.00	1.11	0817	.487	.47		
			0908	.80	1.15	0825	.126	.50		
			0911	3.40	1.32	0834	.0408	.52		
			0915	.15	1.33	0842	.0137	.52		
			0918	.60	1.36	0855	.0012	.52		
			0920	.30	1.37	0900	2.29	.55		
			0940	.18	1.43	0901	2.47	.59		
			0950	.06	1.44	0902	2.12	.63		
Watershed conditions: In wheat of a corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 30 in. high; clover and weeds 3 in. high; density of cover 60%.			0955	.12	1.45	0904	1.32	.69		
			0957	.30	1.46	0907	.620	.73		
			1000	.60	1.49	0909	1.32	.76		
			1010	.18	1.52	0910	2.20	.79		
						0912	1.59	.86		

Continued on next page

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.4621. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.16-5.

1940 SELECTED RUNOFF EVENT			COSHOCKTON, OHIO				WATERSHED 113		26.16	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME DF DAY	RATE (in/hr)	ACC. (inches)
Event of June 28, 1940—continued										
							6-28	0915	.600	.91
								0924	.248	.97
								0933	.152	1.00
								0937	.171	1.01
								0952	.102	1.04
								1004	.213	1.07
								1016	.0805	1.10
								1027	.0278	1.11
								1100	.0000	1.11

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.4621.



COSHOCKTON, OHIO WATERSHED 113

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 118		2617			
						AREA—1.96 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1961 P1/	.67	4.15	3.56	6.83	2.10	3.12	5.41	1.69	1.23	2.21	3.14	2.64	36.75
Q	.00	.38	1.04	1.89	.01	.01	.07	.00	.00	.00	.00	.00	3.40
1962 P2/	2.94	3.59	3.11	1.19	2.54	1.87	2.54	1.64	5.62	2.20	3.07	2.16	32.47
STA AVG Q	.11	1.94E	.03	.00	.00	.00	.00	.01	.01	T	.06	.00	2.16
1962 P3/	2.86	2.49	3.25	3.39	3.92	4.52	4.23	2.94	2.86	2.23	2.56	2.26	37.51
(40-62) Q	.31	.35	.28	.24	.13	.44	.17	.28	.16	.01	.04	.09	2.50
MEAN P 4/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80
54 YR													

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
			DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.39E	2-23	.34E	2-23	.52E	2-23	.71E	2-23	1.20E	2-23	1.21E	2-23	1.75E	2-22	1.94E

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO	6-12	3.11	9-1	1.30	9-1	1.59	9-1	1.60	9-1	1.60	1-26	1.77	1-26	2.07	8-26	2.25
1962	1957		1950		1950		1950		1950		1952		1952		1940	

Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, poor, Watershed conditions: Second-year meadow, prevailing practice. 1/ Previously published June 1961 Total 1.69 instead of 1.09 in., correction underlined. 2/ Rain gage 108. 3/ Precipitation and runoff records began Jan. 1940. 4/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The upper 50% of the watershed is underlain by a sequence of arenaceous shales, the lower 50% of the watershed is underlain by a sequence of silty to clayey shales. The Putnam Hill limestone aquifer occurs 15 ft beneath the watershed outlet. The rock strata are inclined to the south at approximately 2° Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1940 SELECTED RUNOFF EVENT				COSHOCTON, OHIO		WATERSHED 118		26.17		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
	RC 108		Event of June 28, 1940							
				RG	108					
5-29	.32	.09	6-28	0743	.00	.00	6-28	0745	.0000	.00
5-30	.88	.26		0745	2.40	.08		0748	.482	.01
6-7	.09	.00		0747	5.10	.25		0750	1.60	.04
6-8	.23	.06		0751	2.55	.42		0751	1.93	.07
6-9	.20	T		0753	.30	.43		0752	1.76	.10
6-10	.73	.44		0755	2.40	.51		0755	.901	.16
6-11	.46	.28		0800	.84	.58		0756	.946	.18
6-12	.76	.50		0803	.00	.58		0758	.815	.21
6-14	.07	.00		0806	.80	.62		0803	.290	.25
6-15	.04	.00		0809	.20	.63		0806	.393	.27
6-18	1.50	.93		0815	1.80	.81		0808	.340	.28
6-23	.82	.41		0855	.00	.81		0811	.693	.31
6-24	T	.00		0858	.60	.83		0813	1.04	.33
6-25	.18	.03		0901	3.80	1.02		0814	1.19	.35
6-26	.13	.02		0905	1.20	1.10		0816	1.04	.39
				0908	.40	1.12		0819	.451	.42
				0911	3.80	1.31		0825	.150	.45
				0913	.30	1.32		0838	.0238	.47
				0915	.00	1.32		0859	.0004	.47
				0917	.60	1.34		0901	.393	.47
				0920	.80	1.38		0903	1.31	.51
				0940	.12	1.42		0904	1.60	.53
				0950	.06	1.43		0905	1.51	.56
				0955	.24	1.45		0908	.901	.61
				0958	.20	1.46		0910	1.31	.65
				1000	.60	1.48		0911	1.70	.68
				1010	.12	1.50		0912	1.54	.70
				1030	.00	1.50		0918	.582	.80
				1100	.02	1.51		0924	.224	.84

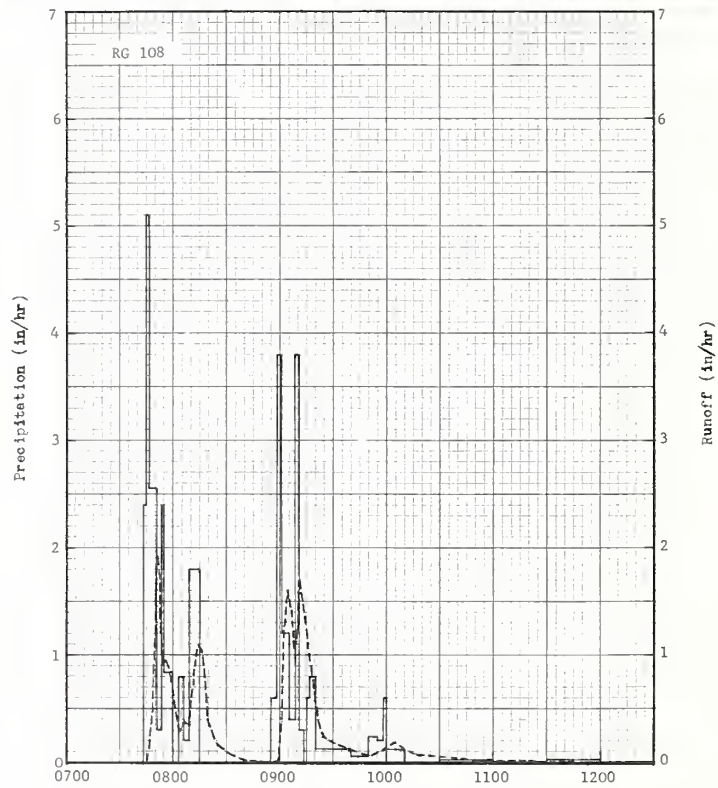
Watershed conditions: In wheat of a corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 30 in. high; clover and grass 3 in. high; density of cover 50%.

Continued on next page

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.9763. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.17-5.

SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 118			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of June 28, 1940 - Continued							
			6-28	1130	.00	1.51	6-28	0939	.119	.87
				1200	.02	1.52		0952	.0521	.89
								1005	.185	.91
								1017	.0572	.93
								1052	.0037	.95
								1145	.0000	.95

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.9763.



June 28, 1940

COSHOCOTON, OHIO WATERSHED 118

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 111		26.18				
						AREA—1.18 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/ Q	2.99 .24	3.46 1.69	3.12 .37	1.29 .00	2.74 .00	2.31 .00	2.61 .00	1.63 .00	5.49 .00	2.26 .00	3.06 .00	2.09 .00	33.05 2.30
	STA AV2/ (39-62) P Q	2.74 .56	2.42 .61	3.14 .45	3.30 .32	3.96 .17	4.57 .39	4.15 .11	2.91 .06	2.72 .10	2.30 .03	2.42 .03	2.20 .22	36.83 3.05
	MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
			DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.48	2-23	.37	2-23	.55	2-23	.77	2-23	.99	2-23	.99	2-23	1.33	2-23	1.66

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-12 1957	3.82	6-12 1957	1.33	6-12 1957	1.42	6-28 1957	1.71	1-21 1959	2.03	1-26 1952	2.60	1-25 1952	2.61	1-19 1952	3.08

Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Second-year meadow, improved practice plus mulch tillage. 1/ Rain gage 109. 2/ Precipitation and runoff records began Sept. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U.S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 36 in. to 60 in. of soil. The underlying rock strata are a series of unnamed sandstones and arenaceous shales. The Lower Kittanning coal and clay occur approximately 7 ft beneath the watershed outlet. The rock strata are inclined to the southwest at less than 1/2°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

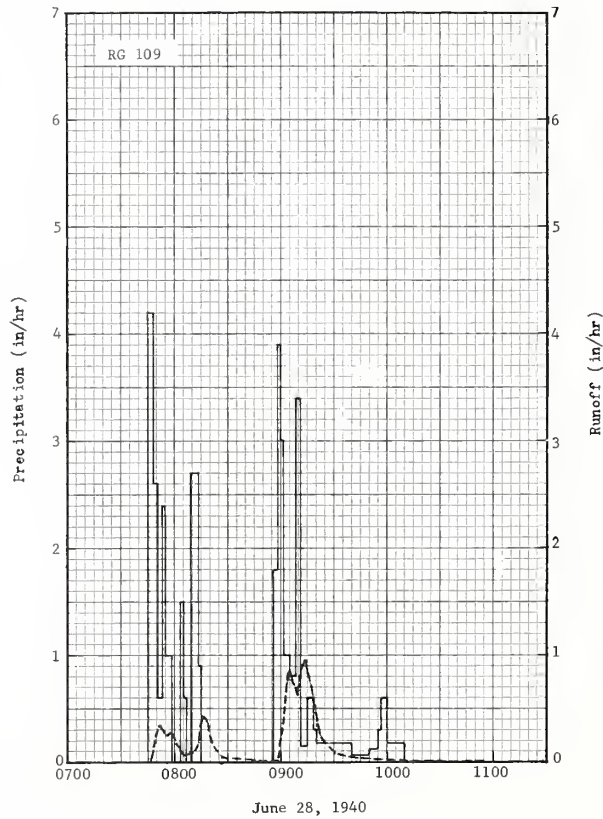
1940 SELECTED RUNOFF EVENT				COSHOCTON, OHIO		WATERSHED 111		26.18	
----------------------------	--	--	--	-----------------	--	---------------	--	-------	--

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 28, 1940											
	RG 109		6-28	RG	109		6-28				
5-29	.28	T		0745	.00	.00		0747	.0000	.00	
5-31	.93	.04		0748	4.20	.21		0750	.276	.01	
6-7	.08	.00		0751	2.60	.34		0751	.336	.01	
6-8	.28	T		0753	.60	.36		0752	.336	.02	
6-9	.22	.00		0755	2.40	.44		0753	.291	.02	
6-10	.64	.08		0758	1.00	.49		0755	.249	.03	
6-11	.44	.05		0803	.00	.49		0758	.262	.04	
6-12	.76	.18		0805	1.50	.54		0800	.210	.05	
6-14	.08	.00		0807	.60	.56		0803	.0989	.06	
6-15	.08	.00		0809	.00	.56		0805	.0690	.06	
6-18	1.48	.38		0813	2.70	.74		0808	.0833	.07	
6-23	.84	.05		0815	.90	.77		0810	.0760	.07	
6-24	.05	.00		0856	.00	.77		0813	.198	.07	
6-25	.20	T		0858	1.80	.83		0815	.385	.08	
6-26	.16	T		0900	3.90	.96		0816	.420	.09	
				0902	3.00	1.06		0818	.368	.10	
				0905	1.00	1.11		0821	.187	.12	
				0908	.80	1.15		0827	.0250	.13	
				0911	3.40	1.32		0845	.0003	.13	
				0915	.15	1.33		0858	.0003	.13	
				0918	.60	1.36		0901	.291	.13	
				0920	.30	1.37		0903	.737	.15	
				0940	.18	1.43		0904	.839	.16	
				0950	.06	1.44		0905	.839	.18	
				0955	.12	1.45		0906	.761	.19	
				0957	.30	1.46		0909	.620	.22	
				1000	.60	1.49		0912	.866	.26	
				1010	.18	1.52		0913	.950	.27	
								0914	.950	.29	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.1898. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.18-5.

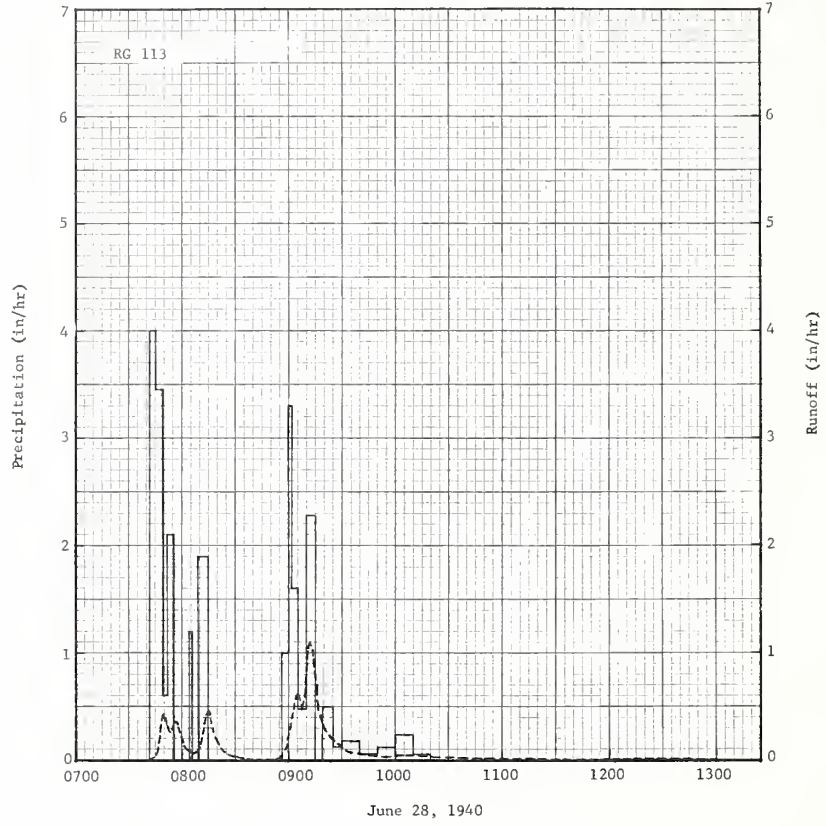
1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 111		26.18	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of June 28, 1940—Continued							
							6-28	0915	.839	.30
								0923	.262	.37
								0930	.0760	.39
								0945	.0250	.40
								0956	.0102	.41
								1008	.0501	.41
								1018	.0208	.42
								1055	.0000	.42

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.1898.



COSHOCOTON, OHIO WATERSHED 111

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 121 26.19											
						AREA—1.42 ACRES											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	PL/	2.75	3.17	2.78	1.03	2.28	1.62	2.48	1.52	5.45	2.06	2.92	2.10	30.16			
	Q/	.18	.61E	.33	.01	.00	.00	.00	.00	.00	.00	.00	.00	1.13			
STA AV2/	P	2.72	2.29	3.02	3.20	3.77	4.53	4.48	2.88	2.70	2.23	2.33	2.09	36.24			
(39-62)	Q	.22	.21	.22	.16	.05	.28	.22	.15	.09	.03	.01	.03	1.67			
MEAN P	3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
54 YR																	
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962		2-23	.21E	2-23	.22E	2-23	.30E	2-23	.34E	2-23	.34E	2-23	.34E	2-23	.39E	2-19	.48E
MAXIMUMS FOR PERIOD OF RECORD																	
1939 to	8-23	7.82	9-1	1.32	9-1	1.39	9-1	1.39	9-1	1.39	9-1	1.39	9-1	1.39	7-4	1.44E	
1962	1944		1950		1950		1950		1950		1950		1950		1939		
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, poor. Watershed conditions: First-year meadow, improved practice. 1/ Rain gage 113. 2/ Precipitation and runoff records began Mar. 20, 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																	
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																	
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 24 in. to 60 in. of soil. The Lower Freeport sandstone caps the upper 25% of the watershed. Silty to clayey shales underlie the lower 65% with the Middle Kittanning coal and clay outcropping in the lower 10% of the watershed. The watershed lies very close to the axis of the Cambridge Arch which trends northeast-southwest at this point. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																	
1940 SELECTED RUNOFF EVENT						COSHOCOTON, OHIO WATERSHED 121 26.19											
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)							
	RG 113			Event of June 28, 1940													
5-29	.46	.00	6-28	RG	113		6-28	0743	.0000	.00							
5-30	.84	.80E		0742	.00	.00		0746	.0416								
6-7	.12	.00		0745	4.00	.20		0749	.0395	.01 ^T							
6-8	.26	T		0749	3.45	.43		0750	.427	.02							
				0752	.60	.46											
6-9	.20	T		0756	2.10	.60		0751	.335	.03							
6-10	.95	.06		0804	.00	.60		0753	.266	.04							
6-11	.33	.02		0806	1.20	.64		0756	.349	.05							
6-12	.59	.05		0809	.00	.64		0757	.335	.06							
6-14	.08	.00		0815	1.90	.83		0801	.112	.07							
6-15	.03	.00		0857	.00	.83		0807	.0518	.08							
6-18	1.44	.29		0900	1.00	.88		0810	.104	.08							
6-23	.84	.04		0902	3.30	.99		0814	.427	.10							
6-24	.02	.00		0905	1.60	1.07		0815	.462	.11							
6-25	.14	.00		0910	.48	1.11		0816	.427	.11							
6-26	.17	.00		0915	2.28	1.30		0820	.165	.13							
				0919	.00	1.30		0827	.0416	.14							
				0925	.50	1.35		0855	.0085	.15							
				0930	.12	1.36		0859	.120	.15							
				0940	.18	1.39		0901	.335	.16							
				0950	.06	1.40		0903	.573	.18							
				1000	.12	1.42		0904	.613	.19							
				1010	.24	1.46		0905	.592	.20							
				1020	.06	1.47		0907	.479	.21							
								0909	.675	.23							
								0911	1.02	.26							
								0912	1.10	.28							
								0913	1.02	.29							
								0917	.497	.34							
								0925	.175	.38							
								0935	.0631	.40							
								0955	.0244	.41							
								1006	.0369	.42							
								1045	.0085	.43							
								1300	.0000	.44							
NOTES: TO CONVERT RUNOFF IN IN/HR TO GFS, MULTIPLY BY 1.4318. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISG. PUB. 945, P. 26.20-5.																	



COSHOCTON, OHIO WATERSHED 121

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 106		26.20				
						AREA—1.56 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/	2.75	3.17	2.78	1.03	2.28	1.62	2.48	1.52	5.45	2.06	2.92	2.10	30.16
	Q	.52	2.60	.17	.00	.00	.00	.00	.00	.00	.01	.04	.00	3.34
STA AV2/	P	2.72	2.29	3.02	3.20	3.77	4.53	4.48	2.88	2.70	2.23	2.33	2.09	36.24
	Q	.27	.28	.19	.14	.11	.37	.35	.23	.20	.02	.03	.09	2.28
MEAN P	3/54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
			DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.45	2-23	.38	2-23	.58	2-23	.79	2-23	1.41	2-23	1.41	2-23	2.00	2-19	2.44

MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	8-23 1944	7.63	9-1 1950	1.26	9-1 1950	1.38	9-1 1950	1.39	2-23 1962	1.41	2-23 1962	1.41	2-23 1962	2.00	2-19 1962	2.44

Notes: Quality of records: Monthly P and Q, excellent, annual maximum discharges and volumes, excellent. Watershed conditions: First-year meadow, prevailing practice. 1/ Rain gage 113. 2/ Precipitation and runoff records began Apr. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

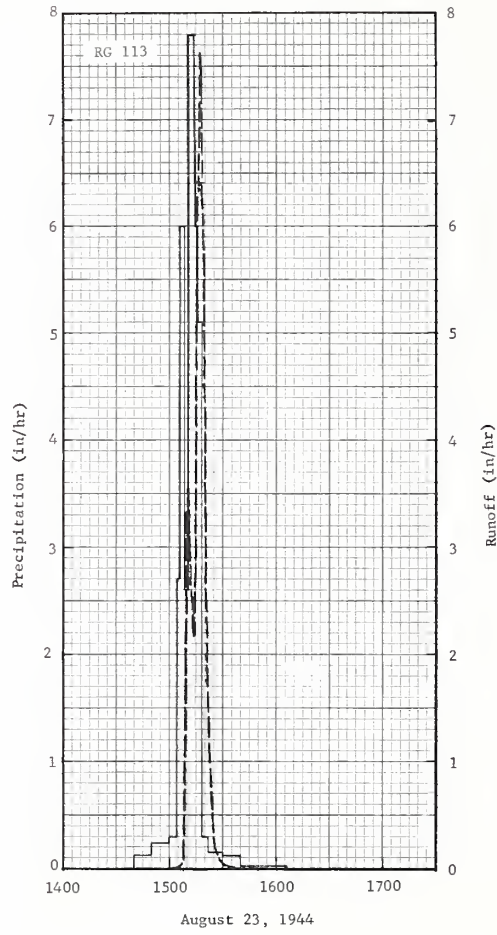
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 24 in. to 60 in. of soil. The Lower Freeport sandstone outcrops beneath the upper 25% of the watershed. Silty to clayey shales underlie the lower 75% of the watershed. The Middle Kittanning coal outcrops approximately 10 ft beneath the watershed outlet. The rock strata are inclined at less than 1° to the southeast. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1944			SELECTED RUNOFF EVENT				COSHOCTON, OHIO		WATERSHED 106		26.20	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
	RG 113			Event of August 23, 1944 4/								
				RG 113								
7-26	.11	.00	8-23	1440	.00	.00	8-23	1500	.0000	.00		
7-28	.36	T		1450	.12	.02		1505	.0003	T		
7-29	.18	.01		1500	.24	.06		1506	.0011	T		
8-5	1.10	.35		1504	.30	.08		1507	.0336	T		
8-14	.08	.00		1506	2.70	.17		1508	1.54	.01		
8-16	.91	.21		1508	6.00	.37		1509	3.24	.05		
8-17	.30	.05		1511	2.60	.50		1510	3.56	.11		
8-21	.18	.00		1514	7.80	.89		1511	3.24	.17		
8-22	.14	.00		1516	6.00	1.09		1512	2.65	.21		
				1518	5.10	1.26		1513	2.17	.25		
			1522	.30	1.28	1514	2.74	.30				
			1530	.15	1.30	1515	4.38	.35				
			1540	.12	1.32	1516	6.55	.45				
			1606	.02	1.33	1517	7.63	.56				
						1518	6.06	.68				
						1519	4.50	.76				
						1520	3.24	.83				
						1521	1.90	.87				
						1522	1.23	.90				
						1523	.763	.91				
						1524	.452	.92				
						1525	.231	.93				
						1527	.133	.94				
						1528	.0877	.94				
						1529	.0522	.94				
						1530	.0258	.94				
						1535	.0077	.94				
						1540	.0039	.94				
						1555	.0000	.94				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.5730. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.20-5. 4/ SUBSTITUTED FOR JUNE 28, 1940, EVENT, WHOSE RUNOFF PEAK WAS SLIGHT, 0.0630 IN/HR.

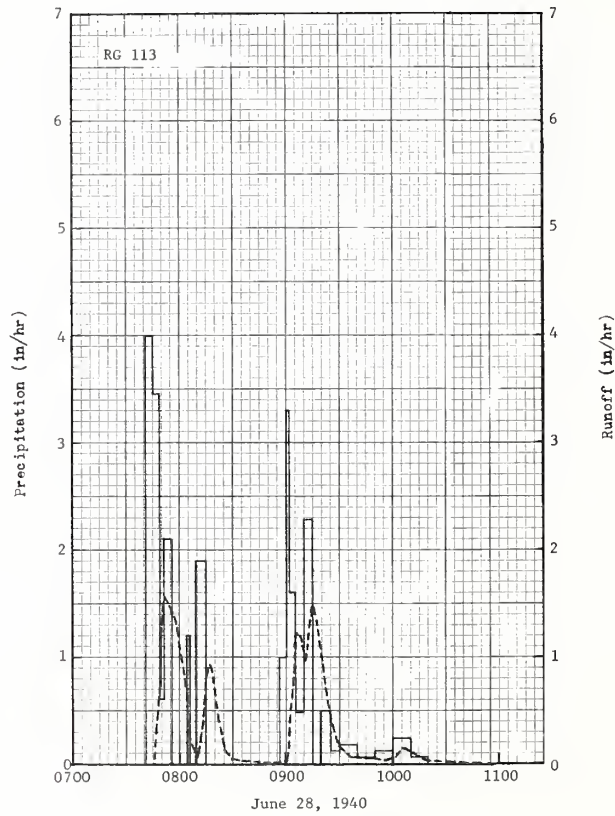


COSHOCTON, OHIO WATERSHED 106

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO						WATERSHED 188		26.21		
AREA—2.05 ACRES																
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	2.88	3.35	3.02	1.05	2.61	1.51	2.57	1.49	5.30	2.07	2.82	2.12	30.79		
	Q	.09	.48	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.59		
	STA AV2/ P	2.61	2.31	2.97	3.17	3.94	4.41	4.23	2.99	2.70	2.22	2.32	2.08	35.95		
	(39-62) Q	.21	.20	.17	.12	.11	.34	.11	.20	.17	.07	.02	.03	1.75		
	MEAN P 3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
	54 YR															
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962	2-23	.29	2-23	.22	2-23	.30	2-23	.34	2-23	.34	2-23	.34	2-23	.39	2-19	.48
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	8-23 1944	3.06	9-1 1950	1.84	9-1 1950	2.07	9-1 1950	2.08	9-1 1940	2.08	9-1 1940	2.08	9-1 1950	2.08	8-25 1940	2.17
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: First-year meadow, improved practice plus mulch tillage. 1/ Rain gage 115. 2/ Precipitation and runoff records began Sept. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to <u>Western Allegheny Plateau land resource area (N-124)</u> .																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 24 in. to 60 in. of soil. The Lower Freeport sandstone occurs beneath the upper 80% of the watershed and is underlain by arenaceous shale and clayey shale. The Middle Kittanning coal occurs 25 ft beneath the watershed outlet. The rock strata have no measurable dip. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO						WATERSHED 188		26.21		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RG 115			RG	113 4/											
5-29	.38	.13	6-28	0742	.00	.00	6-28	0746	.0000	.00						
5-30	.79	.21		0745	4.00	.20		0749	.749	.01						
6-7	.15	.00		0749	3.45	.43		0751	1.44	.05						
6-8	.31	.22		0752	.60	.46		0752	1.56	.07						
6-9	.17	T		0756	2.10	.60		0754	1.49	.13						
6-10	.77	.47		0804	.00	.60		0758	1.33	.22						
6-11	.47	.25		0806	1.20	.64		0800	1.10	.26						
6-12	.63	.45		0809	.00	.64		0803	.730	.31						
6-14	.08	.00		0815	1.90	.83		0806	.245	.33						
6-15	.02	.00		0857	.00	.83		0808	.102	.34						
6-18	1.46	.97		0900	1.00	.88		0810	.0674	.34						
6-23	.82	.46		0902	3.30	.99		0813	.387	.35						
6-24	T	.00		0905	1.60	1.07		0816	.870	.38						
6-25	.18	.01		0910	.48	1.11		0817	.912	.39						
6-26	.15	.03		0915	2.28	1.30		0819	.851	.42						
				0919	.00	1.30		0822	.474	.46						
				0925	.50	1.35		0825	.154	.47						
				0930	.12	1.36		0829	.0319	.48						
				0940	.18	1.39		0854	.0021	.48						
				0950	.06	1.40		0901	.0284	.48						
				1000	.12	1.42		0903	.749	.49						
				1010	.24	1.46		0905	1.20	.53						
				1020	.06	1.47		0906	1.22	.55						
								0908	1.15	.59						
								0911	.958	.64						
								0914	1.39	.69						
								0915	1.49	.72						
								0916	1.41	.74						
								0919	1.10	.80						
								0922	.749	.85						
								0926	.387	.89						
								0929	.170	.90						
								0936	.0572	.91						
								0941	.0674	.92						
Notes: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.0671. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, MISC. PUB. 945, P. 26.21-4. 4/ SUBSTITUTED FOR RAIN GAGE 115, WHOSE RECORD WAS ERRONEOUS.																

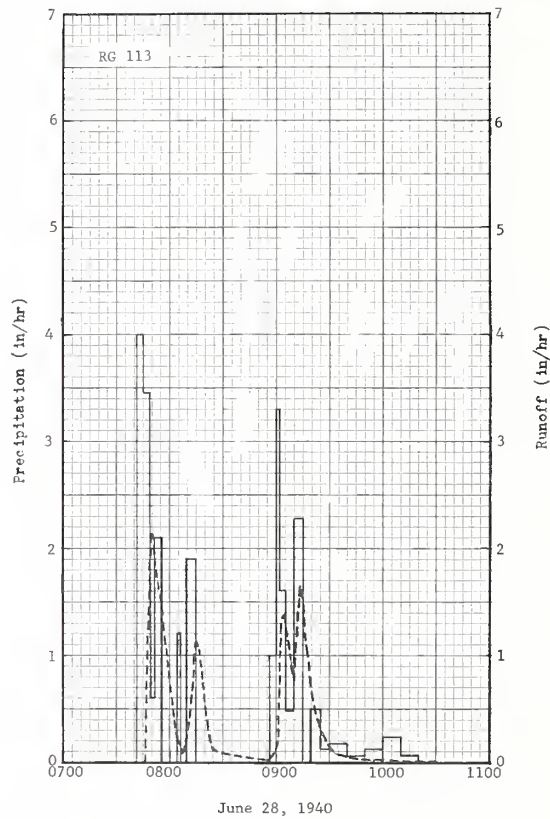
1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO			WATERSHED 188			26.21	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
<u>Event of June 28, 1940 - Continued</u>										
							6-28	0957	.0219	.93
								1002	.0623	.93
								1005	.146	.94
								1009	.123	.94
								1019	.0357	.96
								1049	.0000	.96

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.0671.



COSHOCOTON, OHIO WATERSHED 188

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 185		26.23						
						AREA—7.40 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P ₁	2.88	3.39	2.98	1.00	2.61	1.59	2.64	1.39	5.40	1.95	2.90	2.09	30.82		
	Q	.11	.45	.12	.01	.00	.00	.01	.01	.02	.00	.02	.00	.75		
STA AV2/	P	2.75	2.30	3.05	3.22	3.85	4.27	4.18	2.94	2.68	2.19	2.34	2.13	35.90		
(39-62)	Q	.15	.22	.16	.16	.13	.35	.21	.14	.17	.06	.02	.05	1.82		
MEAN P	3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.19	2-23	.14	2-23	.20	2-23	.24	2-23	.24	2-23	.24	2-23	.29	2-23	.42
MAXIMUMS FOR PERIOD OF RECORD																
19 39 TO	6-16	3.35	9-1	1.91	9-1	2.31	9-1	2.32	9-1	2.32	9-1	2.32	9-1	2.32	9-1	2.32
1962	1946		1950		1950		1950		1950		1950		1950		1950	
Notes: Quality of records: Monthly P, excellent; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: Meadow and corn strips, improved practice with strip cropping. 1/ Rain gage 128. 2/ Precipitation and runoff records began Sept. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The Lower Freeport sandstone underlies the upper 50% of the watershed. Arenaceous to clayey shale occur in the middle 25% and overlies the Middle Kittanning aquifer and clay. Seep areas are associated with the outcrop of this horizon in the watershed. The lower 25% is underlain by claystone and clayey siltstone. The rock strata are inclined to the east by less than 1°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 185		26.23						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-OAY	TIME OF OAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF OAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
RG 115 4/																
5-29	.38	.11	6-28	RG	113 5/		6-28	0746	.0000	.00						
5-30	.79	.10E		0742	.00	.00		0748	1.82	.02						
6-7	.15	.00		0745	4.00	.20		0749	2.06	.05						
6-8	.31	.11		0749	3.45	.43		0750	2.13	.09						
6-9	.17	T		0752	.60	.46										
6-10	.77	.40		0756	2.10	.60		0751	1.94	.12						
6-11	.47	.21		0804	.00	.60		0756	1.38	.25						
6-12	.63	.41		0806	1.20	.64		0800	.749	.32						
6-14	.08	.00		0809	.00	.64		0803	.260	.34						
6-15	.02	.00		0815	1.90	.83		0807	.0867	.35						
6-18	1.46	.81		0857	.00	.83		0812	.442	.36						
6-23	.82	.25		0900	1.00	.88		0814	1.08	.39						
6-24	T	.00		0902	3.30	.99		0815	1.14	.41						
6-25	.18	T		0905	1.60	1.07		0816	1.09	.43						
			0910	.48	1.11	0820	.515	.48								
6-26	.15	.01	0915	2.28	1.30	0824	.105	.50								
			0919	.00	1.30	0831	.0823	.51								
			0925	.50	1.35	0855	.0045	.51								
			0930	.12	1.36	0901	.200	.51								
			0940	.18	1.39	0903	1.35	.54								
			0950	.06	1.40	0904	1.39	.56								
			1000	.12	1.42	0905	1.34	.58								
			1010	.24	1.46	0908	.923	.64								
			1020	.06	1.47	0910	.749	.67								
						0912	1.41	.70								
						0913	1.65	.73								
						0914	1.54	.75								
						0918	.749	.83								
						0924	.328	.88								
						0933	.0867	.91								
						0955	.0129	.92								
						1030	.0000	.93								
Watershed conditions: In wheat of a corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 36 in. high; clover and weeds 4 in. high; density of cover 65%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.4616. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.23-5. 4/ RAIN GAGE 128 NOT IN OPERATION. 5/ RAIN GAGE 115 RECORD ERRONEOUS.																



COSHOCTON, OHIO WATERSHED 185

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 187		26.24			
						AREA—7.20 ACRES							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1951 P ^{1/3} / Q	3.89 2.26	2.55 2.57	4.38 1.19	2.96 .44	2.45 .00	5.62 .05	2.81 .03	.64 .00	3.13 .00	1.46 .00	4.24 .00	4.03 .66	38.16 7.20
1952 P ^{1/3} / Q	5.97 3.97	2.27 1.20	3.14 .62	3.86 .60	3.57 T	3.07 .00	3.75 .00	2.01 .00	2.27 .00	.78 .00	<u>1.54</u> .00	<u>2.35</u> .00	34.58 6.39
1961 P ^{2/3} / Q	.67 .00	3.75 1.00	3.33 2.87	6.45 4.06	2.11 .08	<u>3.04</u> .01	5.31 .09	1.67 .00	1.22 .00	2.26 .00	2.95 .00	2.53 .00	35.29 8.11
1962 P ³ / Q	2.85 .34	3.46 1.01	3.07 .76	1.30 T	2.49 .00	1.51 .00	2.62 .00	1.72 T	5.66 .01	2.04 .00	3.25 .02	2.11 .00	32.08 2.14
STA AV ⁴ / (41-62) Q	2.77 1.01	2.36 .74	3.10 .97	3.24 .59	3.94 .26	4.48 .41	4.38 .15	2.88 .07	2.91 .14	2.27 .02	2.38 .03	2.13 .31	36.84 4.70
MEAN P ⁵ / 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.20	2-23	.16	2-23	.24	2-23	.30	2-23	.32	2-23	.33	2-26	.46	2-21	1.00

MAXIMUMS FOR PERIOD OF RECORD																	
19	41 TO	6-12	2.75	9-1	1.37	9-1	1.54	9-1	1.57	9-1	1.57	1-21	1.90	1-21	2.39	1-20	3.36
1962	1957	1950	1950	1950	1950	1950	1950	1950	1950	1959	1959	1959	1959	1959	1959	1959	1959

Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Wheat to meadow strips, improved practice with strip cropping. 1/ Nov. and Dec. P's were transposed between 1951 and 1952 in previous publication, relocated and revised values are underlined. 2/ Previously published P and Q for June 1961 should be reduced in magnitude, revisions underlined. 3/ Rain gage 116. 4/ Precipitation and runoff records began Jan. 1941. 5/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

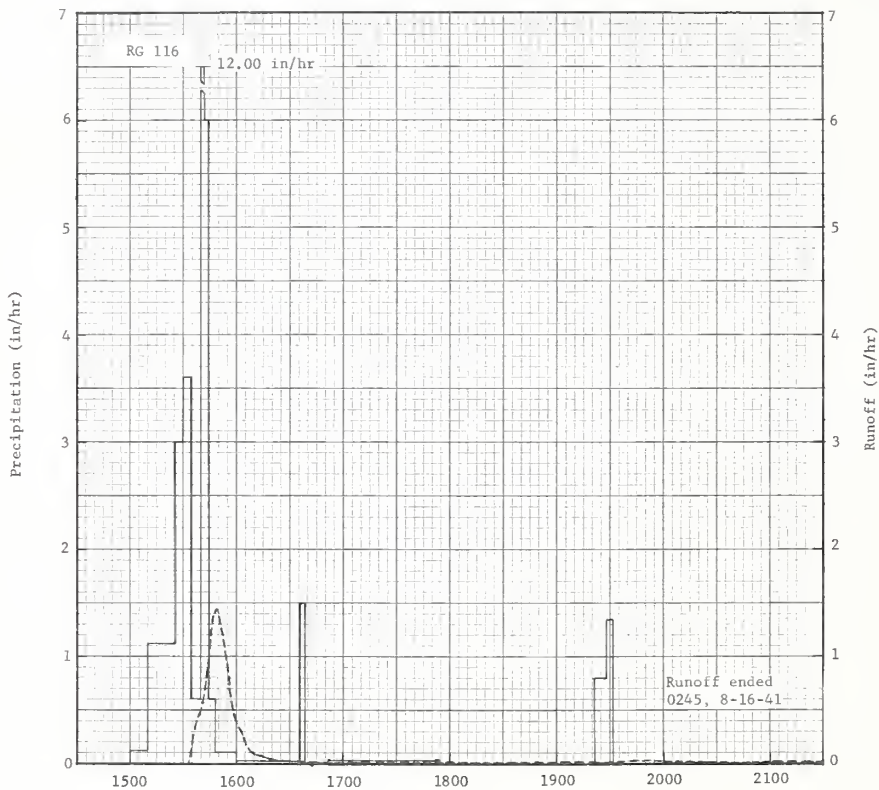
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The Lower Freeport sandstone overlies the upper 25% of the watershed. The middle 50% is underlain by silty to clayey shale. The Middle Kittanning coal aquifer occurs in the middle of this section and is underlain by clayey and silty shale to the lower third where the Lower Kittanning coal is underlain by 2 ft of sandstone and underlain by a thin layer of arenaceous shale. The Putnam Hill Limestone aquifer occurs 17 ft beneath the watershed outlet. Seep areas occurring in the watershed are associated with the rock aquifers. The rock strata are inclined to the northeast at less than 1°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1941 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 187		26.24	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of August 15-16, 1941 ⁶ / ₇											
	RG 116			RG	116						
7-16	.75	.14	8-15	1500	.00	.00	8-15	1533	.0000	.00	
7-17	.00	.02		1510	.12	.02		1534 ₁	.0718	T	
7-18	.35	.01		1526	1.12	.32		1536	.267	.01	
7-19	.00	T		1530	3.00	.52		1538	.437	.02	
7-20	.00	T		1534	3.60	.76		1540	.500	.03	
7-26	.17	.00		1540	.60	.82		1542	.569	.05	
7-28	.33	.00		1542	12.00	1.22		1545	.977	.09	
7-29	.18	.00		1544	6.00	1.42		1547	1.35	.13	
7-30	.40	T		1548	.60	1.46		1548	1.43	.15	
8-11	.08	.00		1600	.10	1.48		1549	1.43	.17	
8-12	.09	.00		1636	.02	1.49		1553	1.02	.26	
8-15	<u>7</u> .90	.00		1638	1.50	1.54		1555	.782	.29	
				1652	.00	1.54		1557	.590	.31	
				1754	.03	1.57		1601	.331	.34	
				1922	.00	1.57		1603	.267	.35	
				1928	.80	1.65		1605	.183	.36	
				1932	1.35	1.74		1611	.0855	.37	
								1617	.0455	.37	
								1627	.0213	.38	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.2601. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.24-5. ⁶/₇ SUBSTITUTED FOR EVENT OF JUNE 28, 1940, WHOSE RECORD IS LOST. ⁷/₇ RAIN ENDING 1233.

SELECTED RUNOFF EVENT			COSHOCTON, OHIO				WATERSHED 187			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 15-16, 1941 - Continued										
							8-15	1637	.0118	.38
								1709	.0037	.39
								1747	.0015	.39
								1926	.0001	.39
								1934	.0009	.39
								1943	.0132	.39
								1947	.0179	.39
								1950	.0196	.39
								1953	.0179	.39
								2026	.0046	.40
								2101	.0015	.40
								2400	.0001	.40
							8-16	0245	.0000	.40

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.2601.



August 15, 1941

COSHOCTON, OHIO WATERSHED 187

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 192		26.25			
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1940 P	1.27	2.28	3.30	4.20	4.37	7.26	3.58	6.88	2.09	1.08	3.95	3.27	43.53
Q1/	.55	1.48	1.25	<u>1.34</u>	.54	2.38	.44	1.00	.09	.00	.39	.42	<u>9.88</u>
1962 P2/	2.88	3.39	2.98	1.00	2.61	1.59	2.64	1.39	5.40	1.95	2.90	2.09	30.82
Q	.18	1.13	.33	T	.00	.00	T	T	T	.00	.07	.00	1.71
STA AVG 3/P	2.75	2.30	3.05	3.22	3.85	4.27	4.18	2.94	2.68	2.19	2.34	2.13	35.90
(39-62) Q	.51	.58	.39	.26	.17	.38	.19	.08	.14	.02	.05	.19	2.96
MEAN P 4/	3.30	2.62	3.45	3.72	3.84	4.30	4.22	3.78	3.15	2.61	2.87	2.85	40.80
54 YR													

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.19	2-23	.15	2-23	.24	2-23	.35	2-23	.66	2-23	.68	2-23	.81	2-21	1.04

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO	6-16	4.60	6-16	1.85	9-1	2.02	9-1	2.04	6-16	2.04	1-20	2.17	1-20	2.30	1-20	2.36
1962	1946	1946	1950	1950	1950	1946	5/	1959	1959	1959	1959	1959	1959	1959	1959	1959

Notes: Quality of records: Monthly P, excellent; monthly Q, good; annual maximum discharges and volumes, excellent. Watershed conditions: Meadow to corn to wheat, prevailing practice. 1/ Revisions to runoff for April 1940 and annual total underlined. April increased from .95 in.; annual from 9.49 in. 2/ Rain gage 128. 3/ Precipitation and runoff records began Sept. 1939. Part-year amounts for 1939 are included in averages. 4/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 5/ Equal volume occurred Sept. 1, 1950.

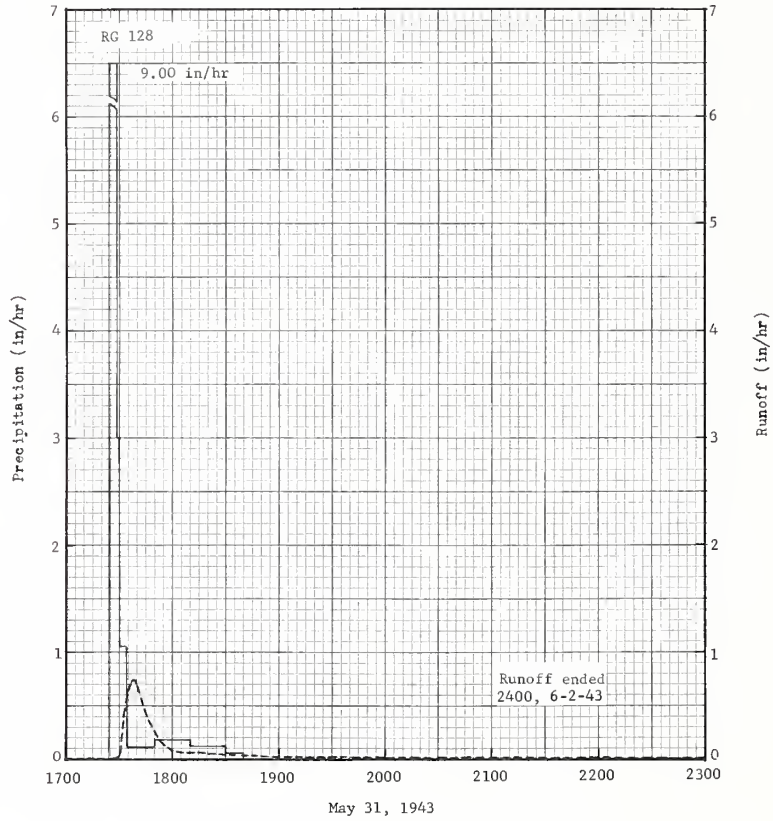
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 60 in. of soil. The Lower Freeport sandstone underlies the upper 25% of the watershed. It is underlain by silty shale in the Middle Kittanning coal and clay where seeps occur at the outcrop line. The Lower Kittanning coal and clay is overlain by silty shale and underlain by shale over sandstone. The sandstone occurs in the lower 10% of the watershed. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1943 SELECTED RUNOFF EVENT				COSHOCTON, OHIO				WATERSHED 192				26.25	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)			
	RG 128		Event of May 31—June 2, 1943 6/										
5-2	.34	.00	5-31	RG 128	.00	.00	5-31	1727	.0009	.00			
5-7	.51	.00		1724	.60	.60		1729	.0065	T			
5-8	.35	.00		1730	3.00	.70		1731	.0361	T			
5-9	.18	.00		1734	1.05	.77		1733	.465	.01			
5-10	.08	.00		1750	.11	.80		1735	.640	.03			
5-11	.37	.00		1810	.18	.86		1737	.707	.05			
5-12	.21	T		1830	.12	.90		1738	.730	.06			
5-13	.02	.00		1840	.06	.91		1739	.730	.07			
5-15	.11	.00						1740	.696	.08			
5-16	.13	.00						1742	.619	.11			
5-17	.60	.01						1744	.483	.12			
5-18	.01	.00						1746	.399	.14			
5-19	.29	.00						1750	.253	.16			
5-21	.08	.00						1754	.154	.17			
5-24	.09	.00						1759	.0811	.18			
5-25	.84	.02						1810	.0649	.20			
5-26	.09	.00						1833	.0406	.22			
5-37	.02	.00						1900	.0238	.23			
5-30	1.88	.33						1940	.0112	.24			
5-31	7/.17	8/.05						2400	.0044	.27			
Watershed conditions: In wheat of corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 20 in. high; clover, grass, and weeds 6 in. high; density of cover 60%.							6-1	1200	.0014	.30			
								2400	.0009	.32			
							6-2	2400	.0000	.33			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.6535. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.23-5. 6/ SUBSTITUTED FOR EVENT OF JUNE 28, 1940, FOR WHICH THERE IS NO RECORD. 7/ RAIN ENDING 1230. 8/ RUNOFF PRIOR TO 1727.



COSHOCTON, OHIO WATERSHED 192

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 172 AREA—43.6 ACRES							26.26
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P 1/	2.88	3.37	3.08	1.18	2.66	1.79	2.54	1.97	5.31	2.28	3.01	2.11	32.18
Q	1.07E	2.48E	2.51	1.34	.14	.03	.01	T	.05	.01	.05	.04	7.73
STA AV ^{2/} P	2.76	2.45	3.16	3.27	3.82	4.43	4.39	2.85	2.60	2.29	2.38	2.16	36.56
(39-62) Q	1.35	1.60	2.42	2.35	1.49	.89	.33	.11	.14	.13	.26	.61	11.68
MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																		
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962	2-23	.10E		4/		4/		4/		4/		4/		4/		4/	2-21	1.70E

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-12	2.64E	6-12	1.07E	6-12	1.23E	6-12	1.38E	1-26	1.48	1-26	1.95	1-26	2.34	4-3	3.22
1962	1957		1957	1957	1957	1957	1957	1952	1952	1952	1952	1952	1952	1952	1957	1957

NOTES: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, poor. Watershed conditions: 33% of area in uneven age hardwoods; 67% in pines, planted in 1938. 1/ Precipitation obtained from rain gage 103. 2/ Precipitation and runoff records began Feb. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No record because of ice in flume during high runoff.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

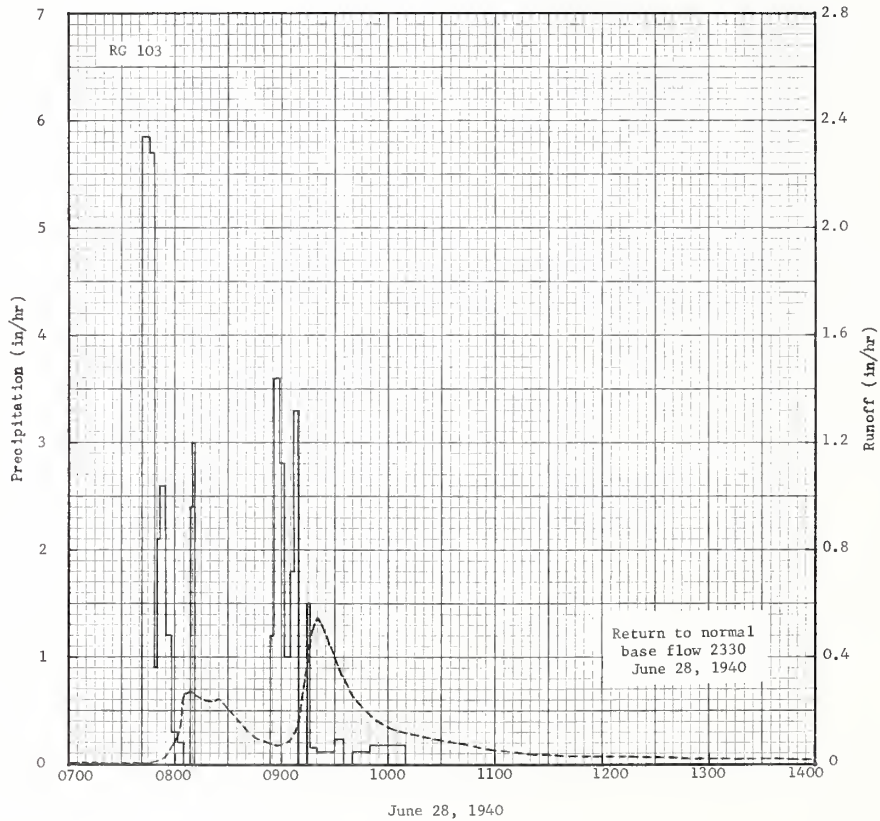
CEOLOGY: Sedimentary rocks in the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. The Lower Mahoning sandstone occurs at the highest point in the watershed and is underlain by shale and Lower Freeport sandstone. The underlying aquifers are the Middle Kittanning coal, the Lower Kittanning coal, the Van Port Limestone, Putnam Hill Limestone and the Tionesta coal. The lower 70% of the watershed is predominantly silty to arenaceous shale. The upper portion of the watershed is predominantly arenaceous shale and sandstone. Seep horizons and areas of springs occur along outcrops of the aquifers. Flume 172 is bottomed in the clayey shale just below the Tionesta coal and clay. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1940 SELECTED RUNOFF EVENT				COSHOCOTON, OHIO WATERSHED 172							26.26
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
	RC 103			Event of June 28, 1940							
				RC	103						
5-29	.45	.047	6-28	0742	.00	.00	6-28	0745	.0011	.000	
5-30	.78	.227		0746	5.85	.39		0752	.0127	.001	
5-31	.00	.176		0748	5.70	.58		0756	.0355	.002	
6-1	.00	.108		0750	.90	.61		0800	.0858	.006	
6-2	.00	.073		0752	2.10	.68		0803	.163	.012	
6-3	.00	.052		0755	2.60	.81		0806	.266	.023	
6-4	.00	.039		0758	1.20	.87		0808	.278	.032	
6-5	.00	.027		0802	.30	.89		0812	.255	.050	
6-6	.00	.021		0805	.20	.90		0820	.237	.083	
6-7	.12	.020		0808	.00	.90		0825	.241	.102	
6-8	.26	.016		0810	2.40	.98		0832	.194	.128	
6-9	.32	.021		0812	3.00	1.08		0838	.146	.145	
6-10	1.01	.126		0854	.00	1.08		0844	.103	.157	
6-11	.47	.124		0856	1.20	1.12		0858	.0696	.177	
6-12	.62	.152		0859	3.60	1.30		0905	.0926	.186	
6-13	.00	.120		0902	2.80	1.44		0909	.146	.193	
6-14	.06	.072		0905	1.00	1.49		0912	.226	.202	
6-15	T	.051		0907	1.80	1.55		0915	.394	.219	
6-16	.00	.036		0909	3.30	1.66		0918	.523	.242	
6-17	.00	.030		0914	.00	1.66		0920	.544	.260	
6-18	1.45	.337		0916	1.50	1.71		0922	.530	.276	
6-19	.00	.112		0920	.15	1.72		0927	.448	.319	
6-20	.00	.061		0930	.12	1.74		0934	.330	.364	
6-21	.00	.042		0935	.24	1.76		0940	.255	.392	
6-22	.00	.036		0940	.00	1.76		0950	.184	.429	
6-23	.88	.086		0950	.12	1.78		1004	.126	.465	
6-24	.03	.065		1010	.18	1.84		1030	.0858	.510	
6-25	.24	.039						1100	.0516	.544	
6-26	.14	.042						1120	.0396	.559	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 43.963. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.26-5.

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 172		26.26			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
			Event of June 28, 1940—Continued									
6-27	.00	.029					6-28	1150	.0305	.576		
6-28	.00	<u>1</u> /.008						1220	.0243	.589		
Watershed conditions: One-third of area in hardwoods; two-thirds reforested to pines. Hardwoods up to 60 ft. high, shrubs 18 in. high, herbs 12 in. high. Pines on reforested area 18 in. high.								1255	.0209	.603		
									1350	.0177	.620	
										1600	.0139	.654
										1640	.0139	.663
										2000	.0118	.705
										2330	<u>2</u> /.0102	.744

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 43.963. 1/ RUNOFF PRIOR TO 0745. 2/ NORMAL BASE FLOW.

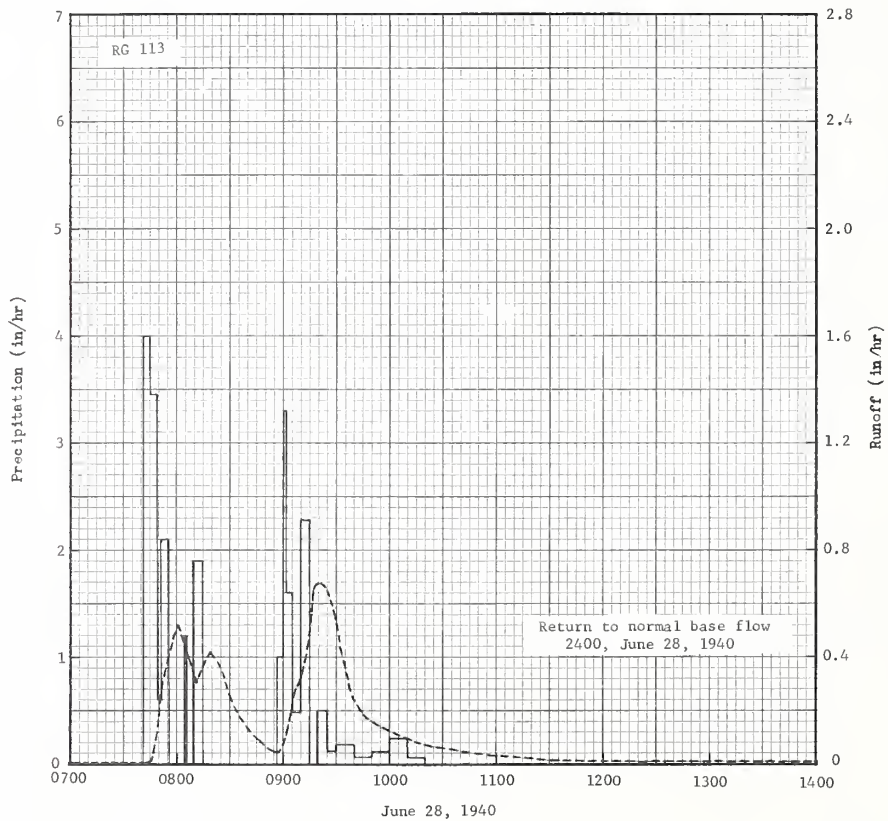


COSHOCOTON, OHIO WATERSHED 172

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO		AREA—29.0 ACRES		WATERSHED 169		26.27			
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P1/ Q	2.75 .42E	3.17 1.50E	2.78 1.29	1.03 .42	2.28 .01	1.62 T	2.48 .01	1.52 .00	5.45 .03	2.06 .01	2.92 .13	2.10 .03	30.16 3.85			
STA AV2/ (40-62) Q	P 2.72 Q .97	P 2.29 Q 1.03	P 3.02 Q 1.32	P 3.18 Q 1.00	P 3.87 Q .52	P 4.43 Q .58	P 4.38 Q .29	P 2.95 Q .19	P 2.78 Q .18	P 2.13 Q .04	P 2.41 Q .11	P 2.13 Q .39	36.29 6.62			
MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.26E		4/		4/		4/		4/		4/		4/	2-21	1.06E
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962	6-12 1957	2.59	9-1 1950	1.70	9-1 1950	2.00	9-1 1950	2.03	9-1 1950	2.04	1-21 1959	2.12E	1-21 1959	2.37E	1-20 1959	2.68E
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, poor. Watershed conditions: 6% hardwoods, 6% reforested, 48% grassland, 34% cultivated, 6% miscellaneous, contour strip cropped. 1/ Rain gage 113. 2/ Precipitation and runoff records began Jan. 1940. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Goshocton, Ohio. 4/ No record due to ice in flume during high runoff period.																
GENERALLY REPRESENTS: (Revision) Allegheny-Gumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The Lower Freeport sandstone caps the north watershed divide. The Middle Kittanning coal and clay and Lower Kittanning coal and clay occur in the upper 30% of the watershed. The lower 70% of the watershed is predominantly silty and arenaceous shale with a thick sandstone lens in the northern portion of the watershed. The watershed lies along the crest of the Gambridge Arch. The strata dip toward the gage or southwest at less than 1/2°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT							COSHOCTON, OHIO		WATERSHED 169		26.27					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RG 113			RG	113											
5-29	.46	.012	6-28	0742	.00	.00	6-28	0742	.0005	.00						
5-30	.84	.094		0745	4.00	.20		0743	.0007	T						
5-31	.00	.043		0749	3.45	.43		0745	.0075	T						
6-1	.00	.027		0752	.60	.46		0746	.0103	T						
6-2	.00	.020		0756	2.10	.60		0747	.0489	.001						
6-3	.00	.017		0804	.00	.60		0748	.0951	.002						
6-4	.00	.015		0806	1.20	.64		0750	.245	.008						
6-5	.00	.010		0809	.00	.64		0755	.383	.036						
6-6	.00	.007		0815	1.90	.83		0801	.520	.082						
6-7	.12	.005		0857	.00	.83		0807	.400	.130						
6-8	.26	.011		0900	1.00	.88		0812	.298	.158						
6-9	.20	.008		0902	3.30	.99		0816	.383	.181						
6-10	.95	.105		0905	1.60	1.07		0818	.417	.194						
6-11	.33	.089		0910	.48	1.11		0819	.417	.201						
6-12	.59	.158		0915	2.28	1.30		0824	.369	.234						
6-13	.00	.038		0919	.00	1.30		0832	.232	.274						
6-14	.08	.021		0925	.50	1.35		0840	.129	.297						
6-15	.03	.018 E		0930	.12	1.36		0857	.0448	.320						
6-16	.00	.011 E		0940	.18	1.39		0902	.109	.326						
6-17	.00	.008 E		0950	.06	1.40		0906	.264	.338						
6-18	1.44	.450 E		1000	.12	1.42		0910	.326	.358						
6-19	.00	.007		1010	.24	1.46		0917	.653	.413						
6-20	.00	.012 E		1020	.06	1.47		0918	.674	.424						
6-21	.00	.014						0919	.674	.435						
6-22	.00	.015						0923	.663	.480						
6-23	.84	.158						0929	.547	.541						
6-24	.02	.030						0937	.298	.596						
6-25	.14	.015						0947	.172	.634						
6-26	.17	.028						1023	.0653	.693						
6-27	.00	.011						Continued on next page								
6-28	.00	5/.0033														
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 29.241. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISG. PUB. 945, P. 26.27-6. 5/ RUNOFF PRIOR TO 0742.																

1940 SELECTED RUNOFF EVENT			COSHOCKTON, OHIO				WATERSHED 169		26.27		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
<p>Watershed conditions: Mixed cover under prevailing practice. 35% of area in corn 30 in. high, 6% in wheat 36 in. high, 32% in meadow 13 in. high, 8% in pasture 9 in. high, 3% in protected woodland, 4% reforested, 4% idle, 8% farmstead.</p>			Event of June 28, 1940—Continued								
			6-28	1044	.0378	.711					
			1100	.0256	.719						
			1132	.0149	.729						
			1230	.0084	.740						
			1615	.0028	.759						
			2400	<u>1/</u> .0014	.774						

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 29.241. 1/ NORMAL BASE FLOW.



COSHOCKTON, OHIO WATERSHED 169

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO						WATERSHED 177			26.28
						AREA—75.6 ACRES									
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	2.88	3.37	3.08	1.18	2.66	1.79	2.54	1.97	5.31	2.28	3.01	2.11	32.18	
	Q	.96E	1.91E	1.77	.67	.05	.01	T	T	.02	.01	.23	.07	5.70	
STA AV2/	P	2.76	2.39	3.15	3.24	3.94	4.35	4.31	2.91	2.66	2.47	2.19	36.53		
(40-62)	Q	1.21	1.19	1.58	1.21	.62	.66	.30	.14	.15	.06	.17	7.86		
MEAN P 3/		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	40.80		
54 YR															

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.14E		4/		4/		4/		4/		4/		4/	2-21	1.41E

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO	6-12	3.14	6-12	1.33	9-1	1.55	9-1	1.63	9-1	1.64	1-21	1.94E	1-26	2.00	1-20	2.72
1962	1957		1957		1950		1950		1950		1959		1952		1952	

Notes: Quality of records: Monthly P, good; monthly Q, excellent; annual maximum discharges and volumes, poor. Watershed conditions: 4% hardwoods, 6% reforested, 67% grassland, 17% cultivated, 6% miscellaneous, contour strip cropped. 1/ Rain gage 103. 2/ Precipitation and runoff records began Jan. 1940. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No record due to ice in flume during high runoff period.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

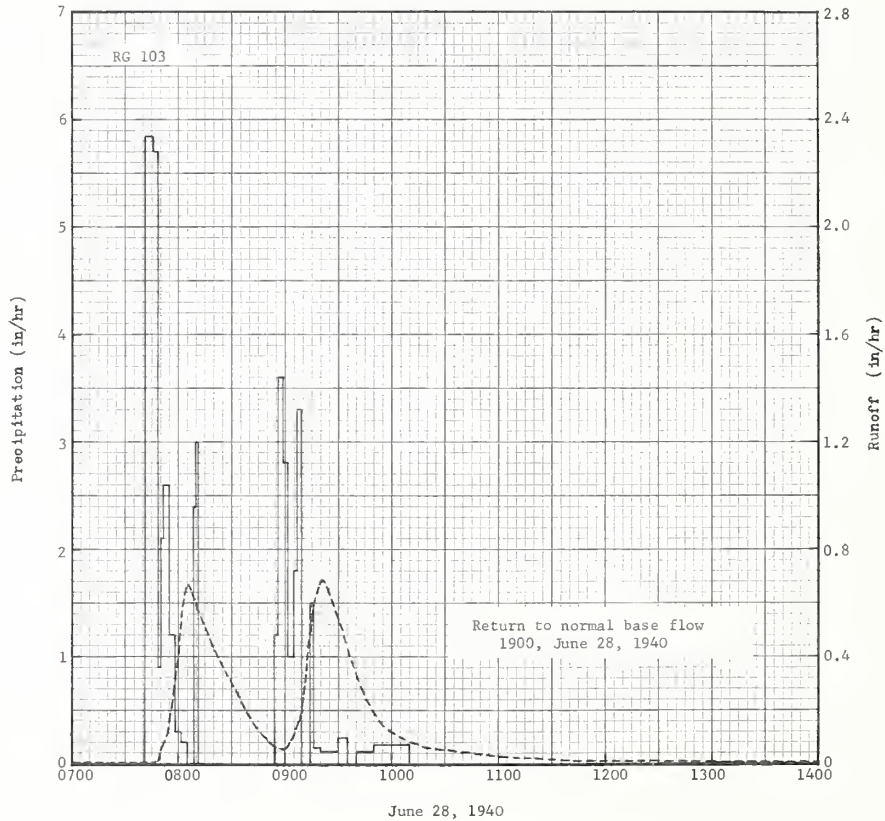
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series and Allegheny series, occur beneath 24 in. to 80 in. of soil. The upper 5% of the watershed is underlain by the horizon of the Lower Mahoning sandstone or the Conemaugh series. The upper 15% of the watershed is underlain by the Lower Freeport sandstone. The Middle Kittanning coal and Lower Kittanning coal occur in the upper 50% and are two aquifers which produce seeps. These aquifers are underlain by silty to arenaceous shale sequence with thin sandstone lenses and one thin discontinuous limestone. The rock strata are inclined irregularly through the northwest at approximately 1°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO						WATERSHED 177			26.28
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)					
	RG 103			Event of June 28, 1940											
				RG	103										
5-29	.45	.011	6-28	0742	.00	.00	6-28	0745	.0005	.000					
5-30	.78	.097		0746	5.85	.39		0748	.0140	.001					
5-31	.00	.051		0748	5.70	.58		0750	.0512	.001					
6-1	.00	.036		0750	.90	.61		0752	.0792	.004					
6-2	.00	.028		0752	2.10	.68		0754	.118	.007					
6-3	.00	.022		0755	2.60	.81		0757	.208	.015					
6-4	.00	.016		0758	1.20	.87		0800	.434	.030					
6-5	.00	.010		0802	.30	.89		0803	.636	.058					
6-6	.00	.007		0805	.20	.90		0805	.668	.080					
6-7	.12	.008		0808	.00	.90		0810	.596	.132					
6-8	.26	.009		0810	2.40	.98		0822	.401	.230					
6-9	.32	.012		0812	3.00	1.08		0833	.268	.293					
6-10	1.01	.139		0854	.00	1.08		0843	.144	.327					
6-11	.47	.081		0856	1.20	1.12		0850	.0903	.340					
6-12	.62	.145		0859	3.60	1.30		0857	.0617	.349					
6-13	.00	.051		0902	2.80	1.44		0859	.0585	.351					
6-14	.06	.043		0905	1.00	1.49		0900	.0617	.352					
6-15	T	.037		0907	1.80	1.55		0904	.0981	.357					
6-16	.00	.027		0909	3.30	1.66		0908	.163	.366					
6-17	.00	.021		0914	.00	1.66		0912	.329	.381					
6-18	1.45	.432		0916	1.50	1.71		0915	.536	.402					
6-19	.00	.054		0920	.15	1.72		0919	.668	.443					
6-20	.00	.039		0930	.12	1.74		0921	.684	.465					
6-21	.00	.030		0935	.24	1.76		0925	.636	.509					
6-22	.00	.026		0940	.00	1.76		0936	.408	.606					
6-23	.88	.142		0950	.12	1.78		0944	.258	.650					
6-24	.03	.035		1010	.18	1.84		0954	.154	.684					
6-25	.24	.026						1005	.0981	.706					
6-26	.14	.028						1020	.0617	.725					
6-27	.00	.014						Continued on next page							
6-28	.00	5/ T													

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 76.231. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.28-7. 5/ RUNOFF PRIOR TO 0745.

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 177 26.28					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
Watershed conditions: Mixed cover under prevailing practice, 19% of area in corn 30 in. high, 2% in wheat 36 in. high, 20% in oats 16 in. high, 9% in meadow 13 in. high, 28% in pasture 9 in. high, 3% in protected woodland, 8% reforested, 9% farmstead, 2% roads.			Event of June 28, 1940—Continued									
									6-28	1100	.0252	.754
										1145	.0113	.767
										1300	.0065	.777
										1500	.0048	.788
										1900	<u>1/.0041</u>	.805

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 76.231. 1/ NORMAL BASE FLOW.



COSHOCOTON, OHIO WATERSHED 177

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 183		26.29			
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P1/ Q	2.84 1.16E	3.43 1.83E	3.21 2.15	1.08 .75	2.64 .01	2.01 .01	2.72 .01	1.58 T	5.84 .04	1.80 .02	3.15 .41	2.09 .10	32.39 6.49
STA AV2/ 38-62) P Q	2.81 1.53	2.58 1.56	3.28 2.01	3.39 1.63	3.80 .98	4.32 .81	4.11 .40	2.82 .22	2.71 .20	2.14 .09	2.45 .26	2.19 .71	36.60 10.40
MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																		
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962	2-23	.26E		4/		4/		4/		4/		4/		4/		4/	2-21	1.38E

MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1962	6-16 1946	2.58	6-16 1946	1.37	9-1 1950	1.58	6-16 1946	1.72	6-16 1946	1.93	6-16 1946	2.04	1-21 1959	2.19E	4-21 1961	3.10

Notes: Quality of records: Monthly P, good; monthly Q, excellent; annual maximum discharges and volumes, poor. Watershed conditions: 14% woodlot, 57% grassland, 29% cultivated, prevailing practices except for 9% of area stripped crop. 1/ Rain gage 119. 2/ Precipitation and runoff records began Mar. 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No record due to ice in flume during high runoff period.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

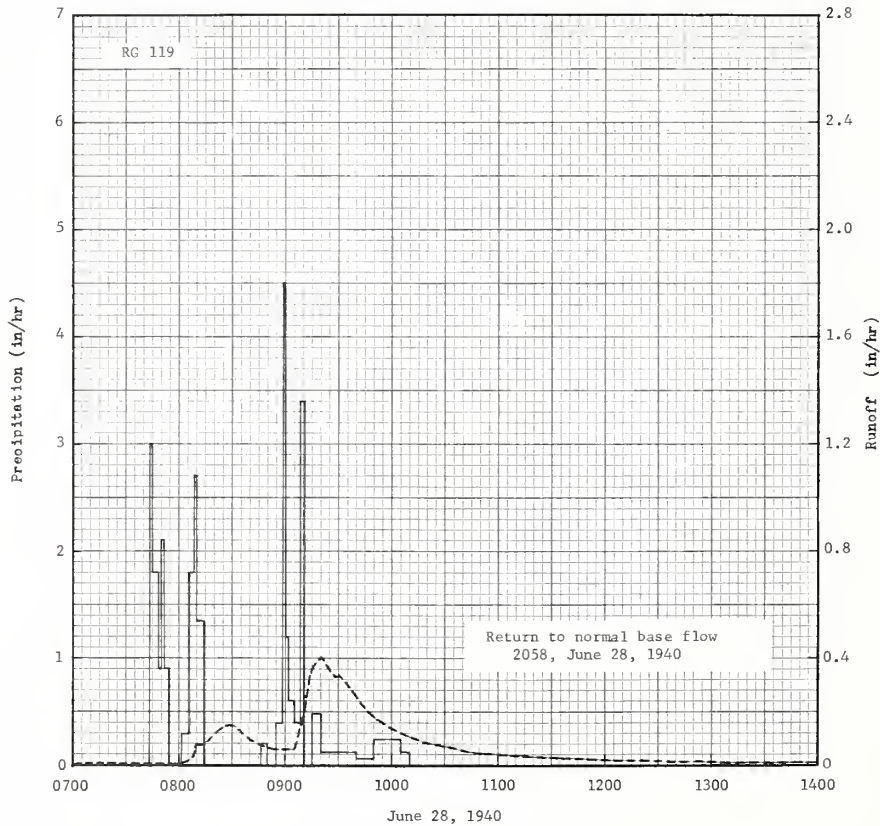
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series and Pottsville series, occur beneath 24 in. to 72 in. of soil. The Allegheny series of rock strata underlie the upper 60% of the watershed. This consists primarily of units of sandstone interbedded with shale. The lower 40% of the watershed is underlain by clayey shale, coal, thin limestones and massive sandstone. Nine water-bearing aquifers outcrop along the stream channel in the watershed area. The flume is based upon the well-fractured coarse Massillon sandstone. Rock strata are irregularly inclined in a general west-northwest pattern with an average dip of approximately 1°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 183		26.29	
----------------------------	--	--	--	--	--	-----------------	--	---------------	--	-------	--

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
				Event of June 28, 1940						
	RC 119			RC	119					
5-29	.30	.012	6-28	0743	.00	.00	6-28	0747	.0007	.000
5-30	.87	.139		0745	3.00	.10		0748	.0029	T
5-31	.00	.076		0748	1.80	.19		0752	.0010	T
6-1	.00	.041		0750	.90	.22		0758	.0040	.001
6-2	.00	.030		0752	2.10	.29		0804	.0138	.001
6-3	.00	.022		0754	.90	.32		0808	.0349	.003
6-4	.00	.015		0802	.00	.32		0809	.0535	.003
6-5	.00	.012		0806	.30	.34		0810	.0793	.005
6-6	.00	.010		0808	1.80	.40		0814	.0720	.010
6-7	.15	.012		0810	2.70	.49		0824	.144	.026
6-8	.36	.019		0814	1.35	.58		0828	.154	.036
6-9	.21	.021		0847	.00	.58		0832	.144	.046
6-10	.67	.064		0850	.20	.59		0840	.0942	.062
6-11	.43	.067		0855	.00	.59		0856	.0618	.083
6-12	.73	.147		0858	.40	.61		0904	.0618	.091
6-13	.00	.072		0900	4.50	.76		0910	.188	.102
6-14	.11	.034		0902	1.20	.80		0914	.354	.120
6-15	.02	.029		0905	.60	.83		0916	.374	.132
6-16	.00	.019		0908	.40	.85		0920	.401	.158
6-17	.00	.015		0911	3.40	1.02		0924	.361	.183
6-18	1.40	.455		0915	.00	1.02		0928	.329	.206
6-19	.00	.073		0920	.48	1.06		0930	.335	.217
6-20	.00	.035		0940	.12	1.10		0940	.263	.268
6-21	.00	.025		0950	.06	1.11		0952	.168	.310
6-22	.00	.021		1005	.24	1.17		1008	.106	.345
6-23	.74	.111		1010	.12	1.18		1020	.0866	.364
6-24	T	.045						1047	.0535	.395
6-25	.20	.022						1114	.0349	.415
6-26	.17	.022						1158	.0202	.434
Continued on next page										
6-27	.00	.019	NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 74.817. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.29-4. 5/ RUNOFF PRIOR TO 0747.							
6-28	.00	5/.006								

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 183		26.29		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
<p>Watershed conditions: Mixed cover under prevailing practice. 15% of area in corn 30 in. high, 7% in wheat 36 in. high, 14% in oats 16 in. high, 20% in meadow cut for hay, 30% in pasture 10 in. high, 10% in pastured woodland, 3% in protected woodland, 1% in roads.</p>			Event of June 28, 1940 — Continued								
								6-28	1314	.0116	.453
									1458	.0068	.469
									2058	<u>1/</u> .0034	.497
<p>NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 74.817. <u>1/</u> NORMAL BASE FLOW.</p>											



COSHOCOTON, OHIO WATERSHED 183

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO							WATERSHED 196		26.30
						AREA—303 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	P ¹	2.94	3.59	3.11	1.19	2.54	1.87	2.54	1.64	5.62	2.20	3.07	2.16	32.47	
	Q	1.63	2.86	2.76	1.40	.27	.10	.07	.05	.15	.13	.64	.46	10.52	
STA AV ² /P		2.78	2.55	3.38	3.41	3.87	4.73	4.37	2.88	2.71	2.32	2.45	2.22	37.67	
(37-62) Q		1.92	2.06	2.68	2.42	1.49	1.24	.65	.32	.27	.22	.43	1.01	14.71	
MEAN P ³ /54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962		2-23	.22	2-23	.18	2-23	.29	2-23	.44	2-23	.51	2-23	.58	2-26	.94	2-21	2.18

MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1962	6-12 1957	3.72	6-12 1957	1.31E	6-12 1957	1.44	6-16 1946	1.63	1-21 1959	2.06	1-21 1959	2.92	1-20 1959	3.21	4-21 1961	4.38

Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good; Watershed conditions: 27% woodlot, 50% grassland, 19% cultivated, 4% miscellaneous; prevailing practice. 1/ Arithmetic average of rain gages 108 and 116. 2/ Precipitation and runoff records began May 1937. Part-year amounts for 1937 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.
 GENERALLY REPRESENTS: (Revision) Allegheny-Gumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series and Pottsville series, occur beneath 24 in. to 80 in. of soil. The ridges and knobs are underlain by the Lower Freeport sandstone. Rocks of the Allegheny series underlie approximately 85% of the watershed area. The upper portion of this sequence is comprised of sandstone and sandy shales with thin coals and clay horizon. The lower portion of the Allegheny series is predominantly silty to arenaceous shale. Rocks of the Pottsville series occur on the lower slopes and in the valleys of watershed 196. Two limestones, coals, and clays occur in this section separated by silty shale and an occasional sandstone lens. Numerous springs occur at the outcrop of the limestone horizons. The weir is bottomed in shale and clay overlying the Massillon sandstone. The geologic structure of this watershed is a localized basin. The rock strata are inclined from all points of the compass toward the lower third of the watershed. The ground water divide closely approximates the surface water divide. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1940	SELECTED RUNOFF EVENT	COSHOCTON, OHIO					WATERSHED 196		26.30
------	-----------------------	-----------------	--	--	--	--	---------------	--	-------

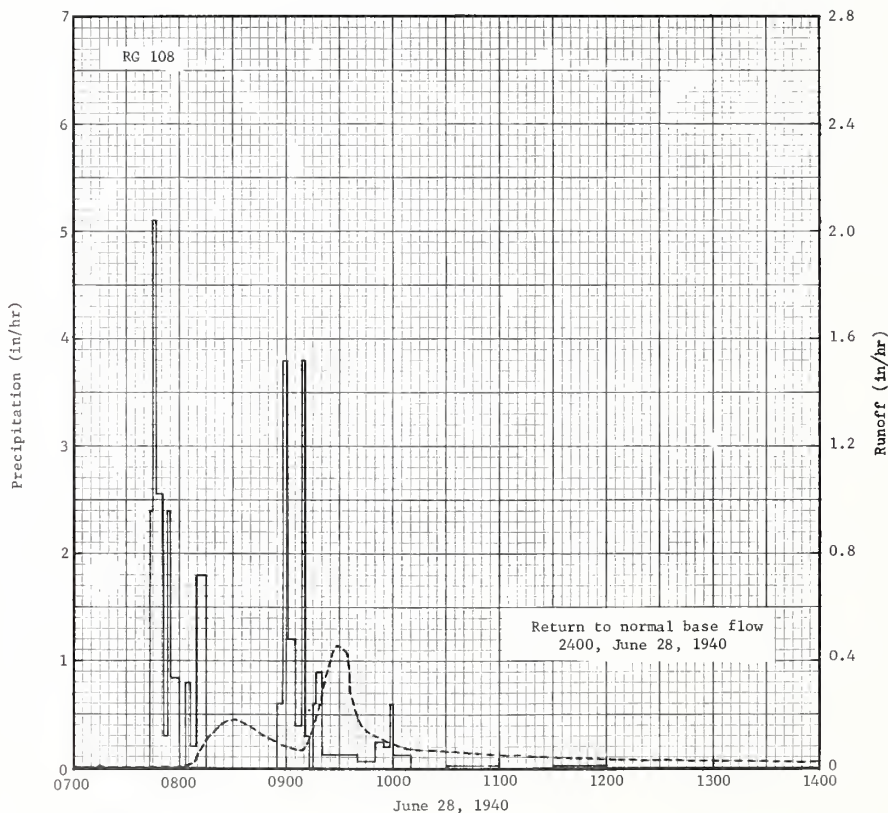
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
	2 RG 4/		Event of June 28, 1940							
				RG	108					
5-29	.35	.0445	6-28	0743	.00	.00	6-28	0744	.0013	.0000
5-30	.82	.1430		0745	2.40	.08		0756	.0027	.0003
5-31	.00	.1920		0747	5.10	.25		0805	.0081	.0010
6-1	.00	.1025		0751	2.55	.42		0808	.0245	.0017
6-2	.00	.0607		0753	.30	.43		0810	.0553	.0031
6-3	.00	.0406		0755	2.40	.51		0814	.101	.0082
6-4	.00	.0270		0800	.84	.58		0818	.133	.0161
6-5	.00	.0205		0803	.00	.58		0824	.170	.0312
6-6	.00	.0177		0806	.80	.62		0830	.160	.0487
6-7	.12	.0183		0809	.20	.63		0840	.157	.0768
6-8	.30	.0248	0815	1.80	.81	0850	.113	.0990		
6-9	.19	.0230	0855	.00	.81	0906	.0684	.1219		
6-10	.75	.0771	0858	.40	.83	0910	.0733	.1266		
6-11	.49	.0870	0901	3.80	1.02	0914	.133	.1332		
6-12	.69	.1689	0905	1.20	1.10	0918	.231	.1454		
6-13	.00	.1251	0908	.40	1.12	0922	.340	.1643		
6-14	.08	.0642	0911	3.80	1.31	0926	.426	.1901		
6-15	.03	.0546	0913	.30	1.32	0928	.458	.2049		
6-16	.00	.0466	0915	.00	1.32	0934	.432	.2494		
6-17	.00	.0418	0917	.60	1.34	0936	.275	.2611		
6-18	1.58	.2517	0920	.80	1.38	0940	.183	.2760		
6-19	.00	.1005	0940	.12	1.42	0944	.145	.2870		
6-20	.00	.0504	0950	.06	1.43	0952	.116	.3042		
6-21	.00	.0377	0955	.24	1.45	1012	.0733	.3348		
6-22	.00	.0334	0958	.20	1.46	1028	.0671	.3501		
6-23	.86	.1142	1000	.60	1.48	1100	.0537	.3848		
6-24	.02	.0685	1010	.12	1.50	1140	.0363	.4146		
6-25	.18	.0420	1030	.00	1.50	1220	.0254	.4554		
6-26	.14	.0428	1100	.02	1.51	1400	.0189	.4717		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 305.52. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 26.30-4. 4/ ARITHMETIC AVERAGE OF RAIN GAGES 108 AND 116.

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 196				26.30
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
			<u>Event of June 28, 1940 — Continued</u>								
6-27	.00	.0318	6-28	1130	.00	1.51	6-28	1504	.0171	.4904	
6-28	.00	<u>1</u> /.0097		1200	.02	1.52		1600	.0118	.5037	
								1800	.0089	.5243	
								2400	<u>2</u> /.0070	.5711	

Watershed conditions: Mixed cover under prevailing practice. 6% of area in corn 30 in. high, 12% in wheat 36 in. high, 4% in oats 16 in. high, 0.5% in soybeans, 21% in meadow 13 in. high, 22% in pasture 10 in. high, 9% in pastured woodland, 17% in protected woodland, 1% idle, 4.5% farmsteads, 3% roads.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 305.52. 1/ RUNOFF PRIOR TO 0744. 2/ NORMAL BASE FLOW.



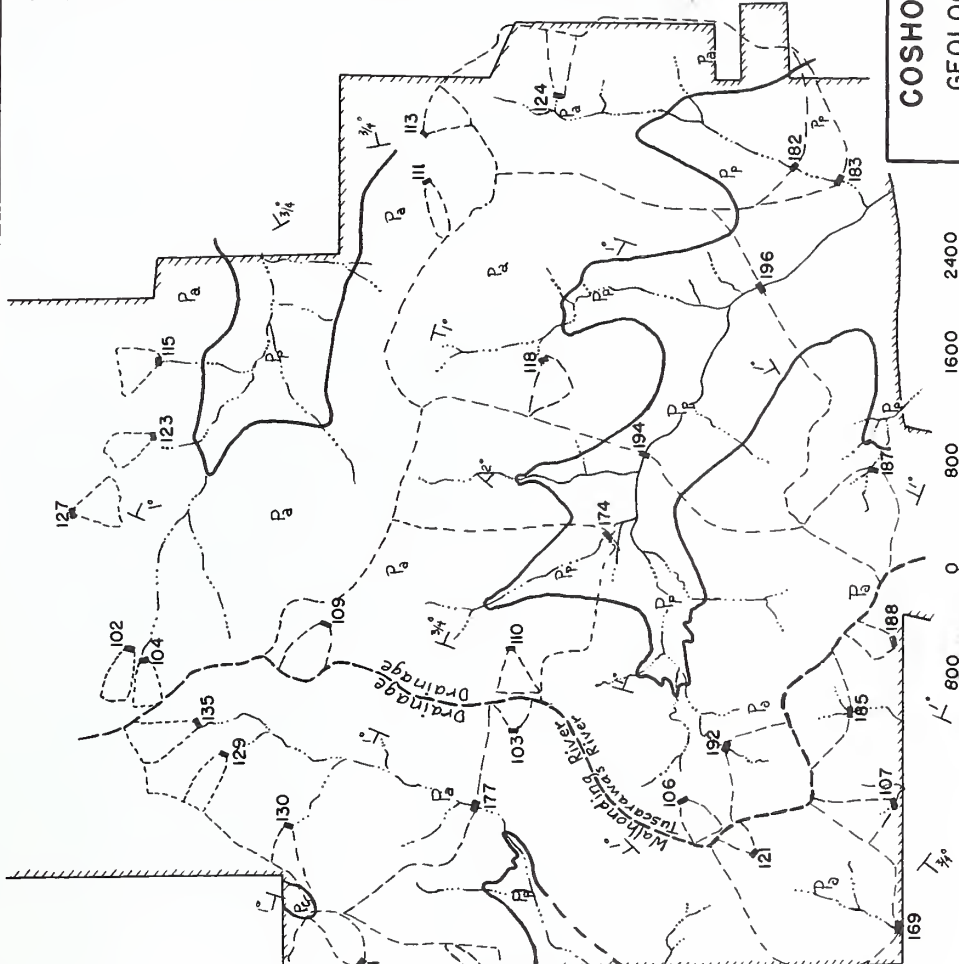
COSHOCOTON, OHIO WATERSHED 196

WATERSHED DRAINAGE AREAS:

NUMBER	ACRES	PAGE/L
102	1.26	26.1
103	.65	26.14
104	1.33	2/26.2
106	1.56	26.20
107	2.59	2/26.6
109	1.69	26.13
110	1.27	26.15
111	1.18	26.18
113	1.45	26.16
115	1.61	26.11
118	1.96	26.17
121	1.42	26.19
123	1.37	26.10
124	2.07	2/26.22
127	1.65	26.12
129	2.71	26.3
130	1.63	26.5
131	2.21	26.7
132	.59	26.8
134	.92	2/26.9
135	2.69	26.4
169	29.0	26.27
172	43.6	26.26
174	52.8	26.38
177	75.6	26.28
183	74.2	26.29
185	7.40	26.23
187	7.20	26.24
188	2.05	26.21
192	7.59	26.25
194	187	26.39
196	303	26.30

1/ DECIMAL INDEX NUMBER.
 2/ DISCONTINUED IN 1946.
 3/ DISCONTINUED IN 1947.

COSHOCTON, OHIO
GEOLOGIC MAP OF
WATERSHEDS ON
GOVERNMENT LAND



LEGEND

- WATERSHED BOUNDARY
- GOVERNMENT LAND
- 130 RUNOFF GAGE & NUMBER
- STREAMS
 --- INTERMITTENT
 --- CONTINUOUS
- GEOLOGIC STRATA
- STRIKE - DIP
- CONTACT BOUNDARY
- PENNSYLVANIAN SYSTEM
- CONEMAUGH SERIES
- ALLEGHENY SERIES
- POTTSVILLE SERIES

P
P _a
P _p

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO LITTLE MILL CREEK WATERSHED 10 AREA—122 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/ Q	3.18 1.24E	3.50 1.59E	3.32 2.06	1.06 1.03	2.47 .18	1.98 .06	2.48 .04	1.61 .02	5.65 .17	1.92 .14	3.03 .59	2.06 .21	32.26 7.33
	STA AV2/ (39-62) Q	2.86	2.61	3.28	3.43	3.75	4.50	4.30	2.85	2.57	2.36	2.50	2.33	37.34
	MEAN P 3/ 54 YR	1.28	1.45	1.73	1.57	.90	.78	.41	.18	.13	.16	.26	.67	9.52
		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	.08E	2-23		4/		4/		4/		4/		4/		4/	2-21	1.14E

MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	6-28 1957	1.76E	6-28 1957	.98E	6-28 1957	1.39E	6-28 1957	1.80E	6-28 1957	1.99E	6-28 1957	2.14E	6-28 1957	2.25E	4-11 1948	2.82E

Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, poor. Watershed conditions: 21% cropland, 48% grassland, 25% woodland, 6% miscellaneous; conservation practice. 1/ Rain gage 27. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No record due to ice in flume during high runoff period.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

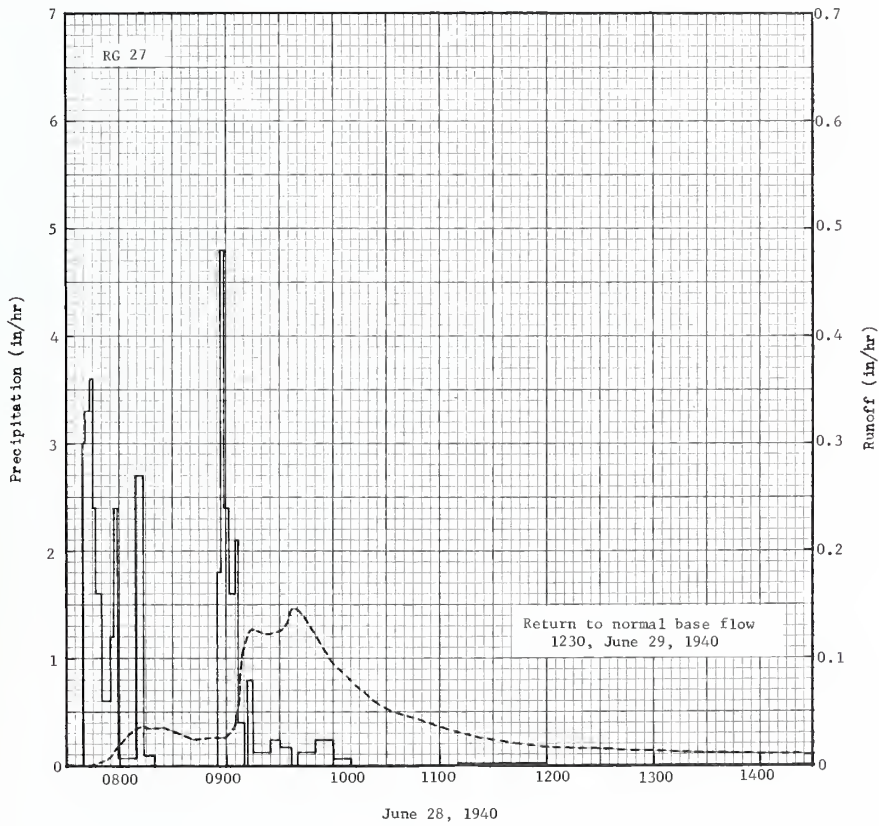
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.37-2.

1940 SELECTED RUNOFF EVENT			COSHOCTON, OHIO				WATERSHED 10			26.31	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
	RG 27		Event of June 28-29, 1940								
	27			RG	27						
5-29	.44	.0075	6-28	0739	.00	.00	6-28	0743	.0004	.0000	
5-30	.96	.0953		0741	3.00	.10		0745	.0013	.0001	
5-31	.02	.0481		0743	3.30	.21		0748	.0028	.0003	
6-1	.00	.0140		0745	3.60	.33		0753	.0047	.0006	
6-2	.00	.0089		0747	2.40	.41		0755	.0080	.0008	
6-3	.00	.0048		0750	1.60	.49		0758	.0146	.0014	
6-4	.00	.0048		0755	.60	.54		0804	.0267	.0035	
6-5	.00	.0048		0757	1.20	.58		0810	.0350	.0066	
6-6	.00	.0048		0759	2.40	.66		0813	.0360	.0084	
6-7	.05	.0024		0809	.06	.67		0816	.0345	.0102	
6-8	.54	.0162		0813	2.70	.85		0824	.0355	.0155	
6-9	.66	.0387		0820	.09	.86		0842	.0241	.0243	
6-10	.77	.1990		0855	.00	.86		0856	.0263	.0302	
6-11	.55	.3058		0857	1.80	.92		0858	.0258	.0311	
6-12	.26	.0846		0859	4.80	1.08		0905	.0376	.0347	
6-13	.00	.0411		0902	2.40	1.20		0909	.109	.0396	
6-14	.06	.0198		0905	1.60	1.28		0914	.127	.0494	
6-15	.03	.0144		0907	2.10	1.35		0923	.122	.0682	
6-16	.00	.0108		0910	.40	1.37		0932	.127	.0868	
6-17	.00	.0096		0912	.00	1.37		0937	.146	.0981	
6-18	1.54	.3425		0915	.80	1.41		0940	.146	.1054	
6-19	.00	.0703		0925	.12	1.43		0950	.122	.1445	
6-20	.00	.0241		0930	.24	1.45		1000	.0959	.1625	
6-21	.00	.0144		0937	.17	1.47		1030	.0525	.2004	
6-22	.00	.0105		0940	.00	1.47		1100	.0366	.2226	
6-23	.81	.0682		0950	.12	1.49		1200	.0173	.2475	
6-24	T	.0413		1000	.24	1.53		1330	.0103	.2677	
6-25	.22	.0360		1010	.06	1.54		1600	.0062	.2876	
6-26	.26	.0259		1110	.00	1.54		2030	.0041	.3100	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 123.02. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.31-4.

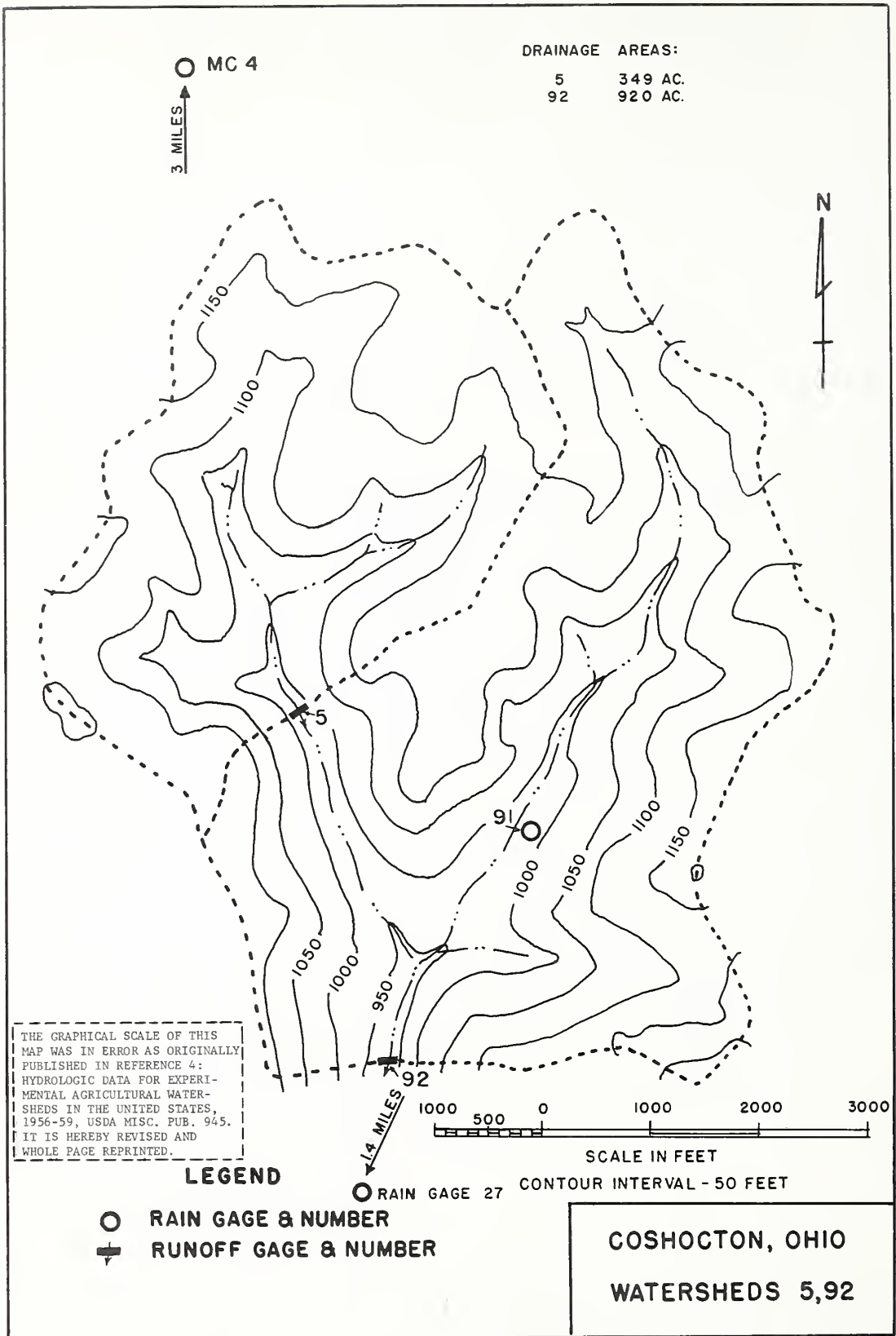
1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 10 26.31			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
6-27	.00	.0132	Event of June 28-29, 1940—Continued				6-28	2400	.0037	.3238
6-28	.00	<u>1/</u> .0031	6-28	1200	.01	1.55	6-29	0630	.0028	.3443
Watershed conditions: Mixed cover under prevailing practice. 7% of area in corn 30 in. high, 14% in wheat 36 in. high, 34% in meadow 13 in. high, 11% in pasture 10 in. high, 15% in pastured woodland, 10% in protected woodland, 3% idle, 4% farmsteads, 2% roads.							6-29	1230	<u>2/</u> .0022	.3593

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 123.02. 1/ RUNOFF PRIOR TO 0743, JUNE 28, 1940. 2/ NORMAL BASE FLOW.



COSHOCOTON, OHIO WATERSHED 10

REVISION OF PREVIOUSLY PUBLISHED MAP



MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		LITTLE MILL CREEK		WATERSHED 5		26.32		
						AREA—349 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/ Q	3.20 1.49	3.62 1.90	3.18 2.26	1.16 1.17	2.15 .21	2.44 .08	2.76 .04	1.40 T	5.78 .12	2.01 .08	3.00 .40	2.11 .20	32.81 7.95
	STA AV2/ (40-62) P	2.86 0	2.54 1.61	3.25 2.11	3.39 1.84	3.84 1.16	4.39 .89	4.31 .50	2.90 .22	2.67 .13	2.28 .19	2.58 .34	2.36 .77	37.37 11.31
	MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.08	2-23	.08	2-23	.12	2-23	.20	2-23	.24	2-25	.36	2-26	.54	2-21	1.37

MAXIMUMS FOR PERIOD OF RECORD

1940 to 1962	6-28 1957	1.09	6-28 1957	.77	6-28 1957	1.04	6-28 1957	1.38	6-28 1957	1.58	1-21 1959	2.31	1-20 1959	2.64	1-20 1959	3.04
-----------------	--------------	------	--------------	-----	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------

Notes: Quality of records: Monthly P and Q, fair; annual maximum discharges and volumes, fair. Watershed conditions: 20% cropland, 54% grassland, 23% woodland, 3% miscellaneous; improved practice. 1/ Rain gage 91. 2/ Precipitation and runoff records began Jan. 1940. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

GENERAL REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvania system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 60% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed slopes. The lower 35% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.37-2.

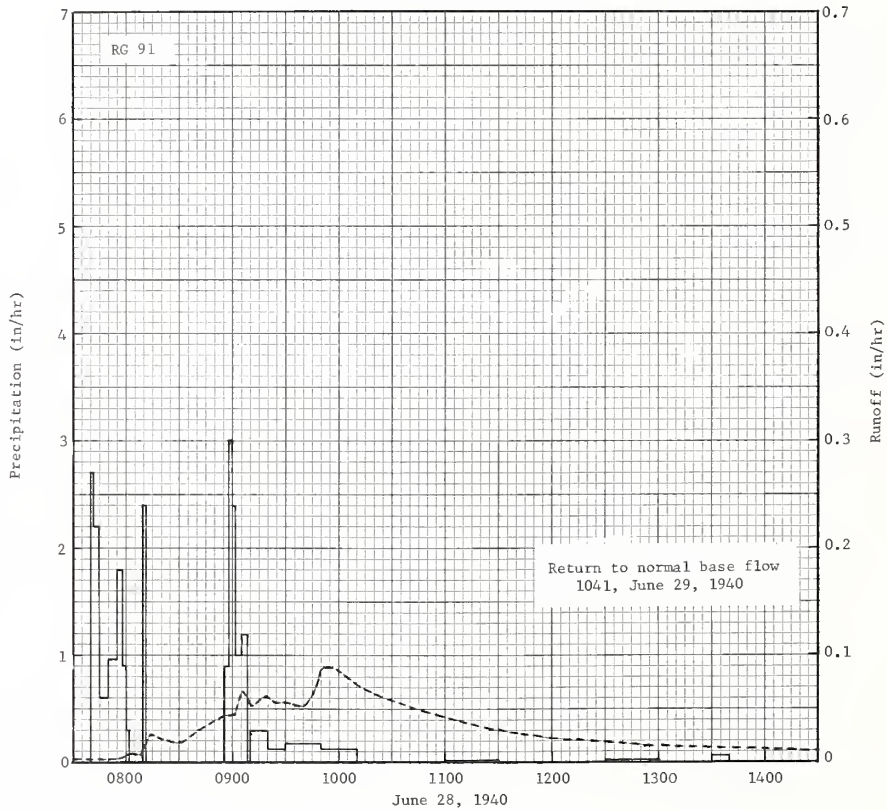
1940 SELECTED RUNOFF EVENT COSHOCTON, OHIO WATERSHED 5 26.32

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
OATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	OATE MO-OAY	TIME OF OAY	INTENSITY (in/hr)	ACC. (inches)	OATE MO-OAY	TIME OF OAY	RATE (in/hr)	ACC. (inches)
Event of June 28-29, 1940										
	RG 91			RG 91						
5-29	.42	.0222	6-28	0740	.00	.00	6-28	0748	.0032	.0000
5-30	1.00	.0991		0742	2.70	.09		0802	.0078	.0009
5-31	.02	.0873		0745	2.20	.20		0804	.0092	.0012
6-1	.00	.0604		0750	.60	.25		0806	.0078	.0015
6-2	.00	.0488		0755	.96	.33		0808	.0056	.0017
6-3	.00	.0413		0758	1.80	.42		0812	.0163	.0024
6-4	.00	.0354		0800	.90	.45		0814	.0257	.0031
6-5	.00	.0277		0802	.30	.46		0820	.0214	.0054
6-6	.00	.0235		0809	.00	.46		0828	.0188	.0081
6-7	.09	.0240		0812	2.40	.58		0832	.0188	.0094
6-8	.82	.0290		0856	.00	.58		0844	.0324	.0144
6-9	.70	.0541		0858	.90	.61		0856	.0438	.0221
6-10	.80	.1408		0900	3.00	.71		0902	.0438	.0265
6-11	.60	.2113		0902	2.40	.79		0906	.0673	.0302
6-12	.34	.1385		0905	1.00	.84		0912	.0523	.0362
6-13	.00	.1006		0908	1.20	.90		0918	.0625	.0419
6-14	.06	.0682		0910	.00	.90		0924	.0563	.0478
6-15	.07	.0572		0920	.30	.95		0932	.0563	.0553
6-16	.00	.0446		0930	.12	.97		0940	.0523	.0625
6-17	.00	.0373		0950	.18	1.03		0944	.0608	.0663
6-18	1.29	.1850		1010	.12	1.07		0948	.0787	.0709
6-19	.00	.0865		1100	.00	1.07		0952	.0887	.0765
6-20	.00	.0653		1130	.02	1.08		0956	.0887	.0824
6-21	.00	.0493		1230	.00	1.08		1008	.0747	.0988
6-22	.00	.0413		1300	.02	1.09		1020	.0639	.1126
6-23	.93	.0785		1330	.00	1.09		1057	.0438	.1458
6-24	.08	.0674		1340	.06	1.10		1125	.0307	.1628
6-25	.84	.2355						1157	.0221	.1766
6-26	.12	.1268						1257	.0148	.1949

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 351.91. FOR CONTOUR MAP OF WATERSHED, SEE REVISED MAP ON PREVIOUS PAGE.

1940 SELECTED RUNOFF EVENT			COSHOCION, OHIO				WATERSHED 5		26.32	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 28-29, 1940—Continued										
6-27	.00	.0828					6-28	1505	.0095	.2204
6-28	.00	1/.0248						1757	.0072	.2435
								2400	.0056	.2813
Watershed conditions: Mixed cover under prevailing practice. 7% of area in corn 30 in. high, 0.2% in potatoes, 12% in wheat 36 in. high, 3% in oats 16 in. high, 0.8% in soybeans, 24% in meadow 13 in. high, 24.5% in pasture 10 in. high, 7% in pastured woodland, 14.5% in protected woodland, 1% reforested, 1.5% idle, 3% farmstead, 1.5% roads.							6-29	1041	2/.0046	.3349

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 351.91. 1/ RUNOFF PRIOR TO 0748, JUNE 28, 1940. 2/ NORMAL BASE FLOW.



COSHOCION, OHIO WATERSHED 5

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO LITTLE MILL CREEK WATERSHED 92 AREA—920 ACRES (1.44 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P1/	3.20	3.62	3.18	1.16	2.15	2.44	2.76	1.40	5.78	2.01	3.00	2.11	32.81
Q	1.70	2.25	2.48	1.19	.23	.09	.05	T	.14	.09	.50	.27	8.99
STA AV2/ P	2.85	2.62	3.27	3.41	3.74	4.45	4.35	2.86	2.59	2.36	2.50	2.32	37.32
(39-62) Q	1.67	1.84	2.24	2.00	1.19	.95	.49	.20	.14	.20	.39	.88	12.19
MEAN P 3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80
54 YR													

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.10	2-23	.09	2-23	.14	2-23	.23	2-23	.28	2-26	.39	2-26	.63	2-21	1.60

MAXIMUMS FOR PERIOD OF RECORD

1939 to	6-28	.62	6-28	.52	6-28	.82	6-28	1.24	1-21	1.60	1-21	2.41	1-20	2.71	4-11	3.41
1962	1957		1957		1957		1957		1959		1959		1959		1948	

Notes: Quality of records: Monthly P and Q, fair; annual maximum discharges and volumes, fair. Watershed conditions: 16% cropland, 59% grassland, 21% woodland, 4% miscellaneous; improved practice. 1/ Rain gage 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Connemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Connemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and springs development on the upper watershed slopes. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.37-2.

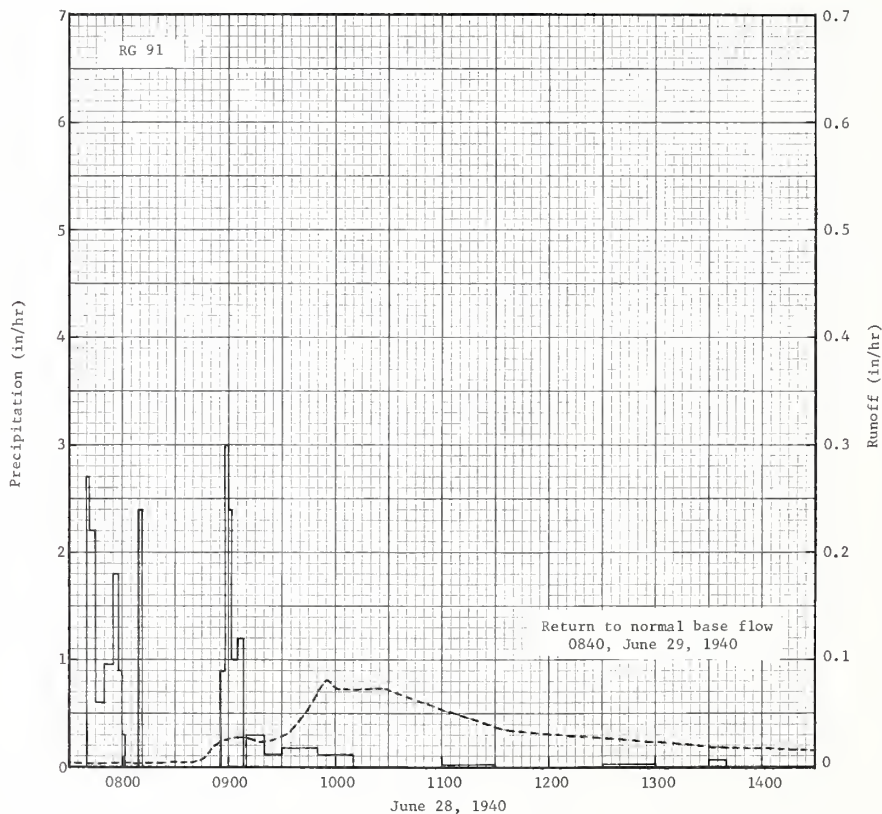
1940 SELECTED RUNOFF EVENT				COSHOCTON, OHIO				WATERSHED 92			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (in/hr)	ACC. (inches)	
	RG 91			Event of June 28-29, 1940							
				RG	91						
5-29	.42	.0187	6-28	0740	.00	.00	6-28	0810	.0029	.0000	
5-30	1.00	.0490		0742	2.70	.09		0840	.0030	.0015	
5-31	.02	.1062		0745	2.20	.20		0844	.0056	.0018	
6-1	.00	.0682		0750	.60	.25		0848	.0113	.0023	
6-2	.00	.0482		0755	.96	.33		0852	.0199	.0033	
6-3	.00	.0384		0758	1.80	.42		0900	.0258	.0065	
6-4	.00	.0272		0800	.90	.45		0906	.0283	.0092	
6-5	.00	.0231		0802	.30	.46		0910	.0270	.0110	
6-6	.00	.0176		0809	.00	.46		0920	.0230	.0152	
6-7	.09	.0194		0812	2.40	.58		0935	.0330	.0218	
6-8	.82	.0289		0856	.00	.58		0945	.0537	.0288	
6-9	.70	.0683		0858	.90	.61		0950	.0704	.0340	
6-10	.80	.1388		0900	3.00	.71		0956	.0804	.0415	
6-11	.60	.2230		0902	2.40	.79		1000	.0728	.0466	
6-12	.34	.1577		0905	1.00	.84		1012	.0716	.0611	
6-13	.00	.1348		0908	1.20	.90		1020	.0728	.0707	
6-14	.06	.0755		0910	.00	.90		1028	.0728	.0804	
6-15	.07	.0602		0920	.30	.95		1100	.0526	.1143	
6-16	.00	.0480		0930	.12	.97		1140	.0337	.1426	
6-17	.00	.0363		0950	.18	1.03		1240	.0258	.1707	
6-18	1.29	.2032		1010	.12	1.07		1335	.0189	.1902	
6-19	.00	.1462		1100	.00	1.07		1420	.0161	.2032	
6-20	.00	.0689		1130	.02	1.08		1520	.0134	.2180	
6-21	.00	.0485		1230	.00	1.08		1620	.0117	.2304	
6-22	.00	.0386		1300	.02	1.09		1720	.0104	.2413	
6-23	.93	.0692		1330	.00	1.09		1820	.0095	.2512	
6-24	.08	.1089		1340	.06	1.10		1930	.0087	.2617	
6-25	.84	.2036						2120	.0079	.2769	
6-26	.12	.1740						2400	.0072	.2968	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 927.64. FOR CONTOUR MAP OF WATERSHED, SEE REVISED PAGE 26.32-5 OF THIS VOLUME.

1940 SELECTED RUNOFF EVENT			COSHOCTON, OHIO				WATERSHED 92			26.33	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
6-27	.00	.0975	<u>Event of June 28-29, 1940—Continued</u>								
6-29	.00	<u>1</u> /.0245					6-29	0400	.0062	.3234	
								0840	<u>2</u> /.0056	.3510	

Watershed conditions: Mixed cover under prevailing practice. 6% of area in corn 30 in. high, 0.1% in potatoes, 6% in wheat 36 in. high, 3.4% in oats 16 in. high, 1% in soybeans, 26% in meadow 13 in. high, 27% in pasture 10 in. high, 8% in pastured woodland, 12% in protected woodland, 0.5% reforested, 5% idle, 3% farmstead, 2% roads.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 927.64. 1/ RUNOFF PRIOR TO 0810, JUNE 29, 1940. 2/ NORMAL BASE FLOW.



COSHOCTON, OHIO WATERSHED 92

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO LITTLE MILL CREEK WATERSHED 94 AREA—1,520 ACRES (2.37 SQ. MILES)								26.34
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P ₁	3.20	3.62	3.18	1.16	2.15	2.44	2.76	1.40	5.78	2.01	3.00	2.11	32.81
	Q	1.80	2.43	2.73	1.30	.30	.12	.07	.01	.19	.13	.58	.28	9.94
STA AV2/ (39-62)	P	2.85	2.62	3.27	3.41	3.74	4.45	4.35	2.86	2.59	2.36	2.50	2.32	37.32
	Q	1.67	1.81	2.23	1.97	1.19	1.01	.52	.24	.15	.20	.38	.84	12.21
MEAN P 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.11	2-23	.09	2-23	.16	2-23	.26	2-23	.32	2-26	.41	2-26	.70	2-21	1.72

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-28 1957	.92	6-28 1957	.77	6-28 1957	1.22	6-28 1957	1.79	1-21 1959	2.04	1-21 1959	2.95	1-20 1959	3.27	1-20 1959	3.67

Notes: Quality of records: Monthly P and Q, fair; annual maximum discharges and volumes, fair. Watershed conditions: 15% cropland, 57% grassland, 24% woodland, 4% miscellaneous; improved practice. 1/ Rain gage 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

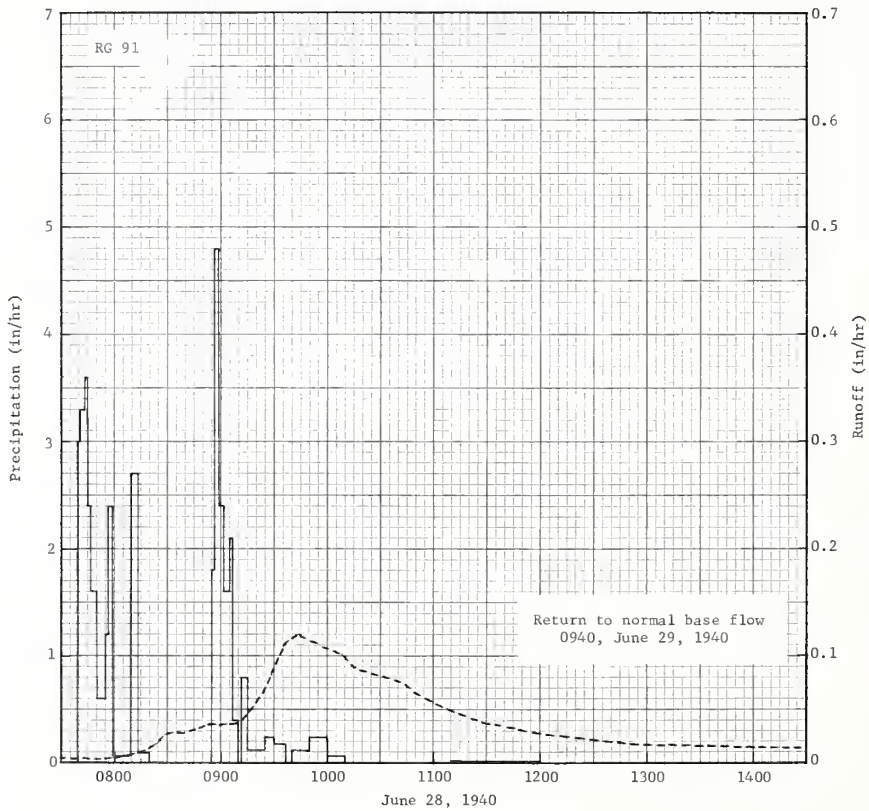
GEOLGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed slopes. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p.26.37-2.

1940 SELECTED RUNOFF EVENT			COSHOCTON, OHIO				WATERSHED 94				26.34
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
2 RG 4/			Event of June 28-29, 1940								
			RG	91							
5-29	.43	.0181	6-28	0739	.00	.00	6-28	0748	.0022	.0000	
5-30	.96	.0976		0741	3.00	.10		0800	.0037	.0005	
5-31	.02	.0996		0743	3.30	.21		0812	.0083	.0017	
6-1	.00	.0530		0745	3.60	.33		0820	.0135	.0031	
6-2	.00	.0416		0747	2.40	.41		0824	.0184	.0042	
6-3	.00	.0310		0750	1.60	.49		0828	.0261	.0057	
6-4	.00	.0248		0755	.60	.54		0836	.0293	.0094	
6-5	.00	.0201		0757	1.20	.58		0840	.0293	.0113	
6-6	.00	.0174		0759	2.40	.66		0856	.0361	.0201	
6-7	.07	.0174		0809	.06	.67		0900	.0350	.0224	
6-8	.68	.0327		0813	2.70	.85		0908	.0372	.0272	
6-9	.68	.0709		0820	.09	.86		0916	.0486	.0330	
6-10	.78	.1547		0855	.00	.86		0920	.0558	.0364	
6-11	.58	.2428		0857	1.80	.92		0924	.0667	.0405	
6-12	.30	.1449		0859	4.80	1.08		0928	.0811	.0454	
6-13	.00	.1057		0902	2.40	1.20		0932	.0974	.0514	
6-14	.06	.0664		0905	1.60	1.28		0936	.111	.0583	
6-15	.05	.0511		0907	2.10	1.35		0944	.120	.0737	
6-16	.00	.0390		0910	.40	1.37		0952	.113	.0893	
6-17	.00	.0329		0912	.00	1.37		1000	.107	.1039	
6-18	1.42	.2803		0915	.80	1.41		1008	.101	.1178	
6-19	.00	.1083		0925	.12	1.43		1016	.0889	.1305	
6-20	.00	.0567		0930	.24	1.45		1028	.0811	.1475	
6-21	.00	.0433		0937	.17	1.47		1044	.0719	.1679	
6-22	.00	.0372		0940	.00	1.47		1052	.0637	.1769	
6-23	.87	.0742		0950	.12	1.49		1100	.0573	.1850	
6-24	.04	.0741		1000	.24	1.53		1112	.0486	.1956	
6-25	.53	.1468		1010	.06	1.54		1132	.0372	.2099	
6-26	.19	.1066		1110	.00	1.54		1148	.0308	.2190	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1,532.7. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.34-5. 4/ ARITHMETIC AVERAGE OF RAIN GAGES 91 AND 27.

1940 SELECTED RUNOFF EVENT			COSHOCKTON, OHIO				WATERSHED 94		26.34		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 28-29, 1940—Continued											
6-27	.00	.0634	6-28	1200	.01	1.55	6-28	1204	.0261	.2266	
6-28	.00	<u>1/</u> .0176						1252	.0184	.2440	
Watershed conditions: Mixed cover under prevailing practice. 5.9% of area in corn 30 in. high, 0.2% in potatoes, 5.5% in wheat 36 in. high, 2% in oats 16 in. high, 1% in soybeans, 25% in meadow 13 in. high, 27% in pasture 10 in. high, 9.8% in pastured woodland, 14% in protected woodland, 0.6% reforested, 5% idle, 2.5% farmstead, 1.5% roads.								1400	.0137	.2620	
								1556	.0100	.2847	
								1920	.0074	.3138	
								2400	.0060	.3447	
								6-29	0940	<u>2/</u> .0046	.3954

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1532.7. 1/ RUNOFF PRIOR TO 0748, JUNE 28, 1940. 2/ NORMAL BASE FLOW.

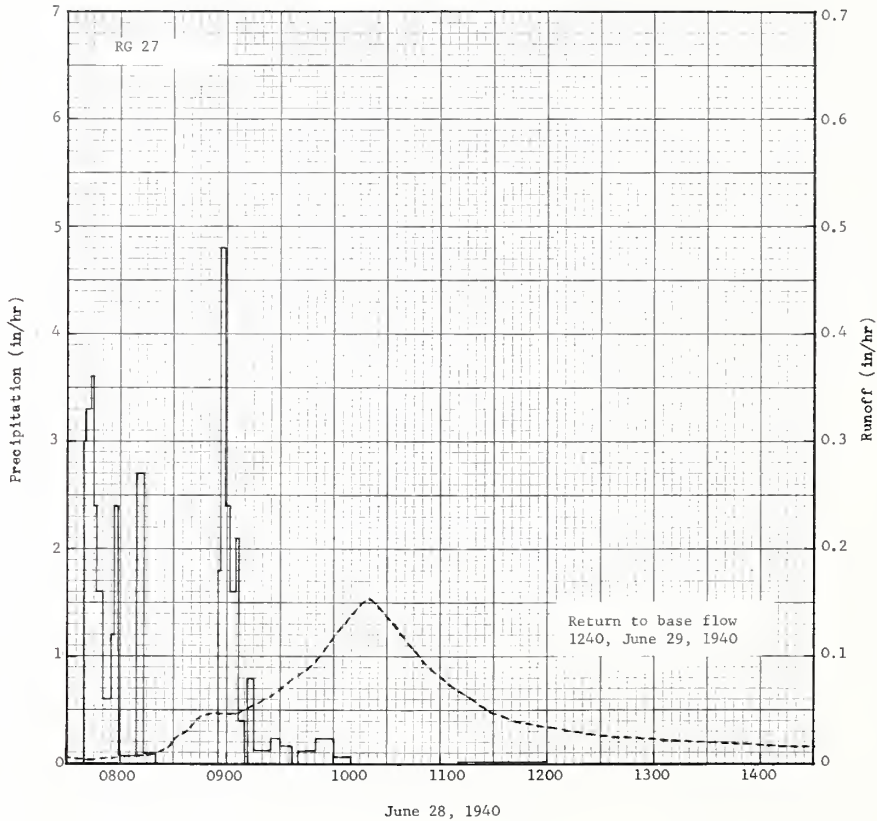


COSHOCKTON, OHIO WATERSHED 94

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO LITTLE MILL CREEK WATERSHED 95							26.35		
							AREA—2,570 ACRES (4.02 SQ. MILES)									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ¹ / Q	3.18 1.63	3.50 2.14	3.32 2.62	1.06 1.34	2.47 .30	1.96 .10	2.48 .04	1.61 .01	5.65 .16	1.92 .11	3.03 .55	2.06 .31	32.26 9.31		
	STA AV ² / (39-62) Q	2.86 1.63	2.61 1.79	3.28 2.25	3.43 2.02	3.75 1.19	4.50 .95	4.30 .49	2.85 .21	2.57 .14	2.36 .19	2.50 .37	2.33 .83	37.34 12.06		
	MEAN P ³ / 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
			DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.08	2-23	.08	2-23	.14	2-23	.23	2-23	.28	2-23	.34	2-20	.64	2-21	1.51
MAXIMUMS FOR PERIOD OF RECORD																
19 39 to 19 62	6-28 1957	.61	6-28 1957	.56	6-28 1957	.95	6-28 1957	1.43	1-21 1959	1.92E	1-21 1959	2.78E	1-21 1959	3.07E	1-20 1959	3.46E
Notes: Quality of records: Monthly P, fair; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: 15% cropland, 55% grassland, 26% woodland, 4% miscellaneous; improved practice. 1/ Arithmetic average of rain gages 27 and 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed slopes. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.37-2.																
1940 SELECTED RUNOFF EVENT							COSHOCTON, OHIO WATERSHED 95							26.35		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
2 RG 4/			Event of June 28-29, 1940													
			6-28	RC	27		6-28									
5-29	.43	.0193		0739	.00	.00		0740	.0019	.0000						
5-30	.98	.1134		0741	3.00	.10		0755	.0027	.0006						
5-31	.02	.1144		0743	3.30	.21		0808	.0047	.0014						
6-1	.00	.0595		0745	3.60	.33		0816	.0069	.0020						
6-2	.00	.0438		0747	2.40	.41		0824	.0103	.0031						
6-3	.00	.0325		0750	1.60	.49		0828	.0175	.0040						
6-4	.00	.0238		0755	.60	.54		0832	.0242	.0054						
6-5	.00	.0116		0757	1.20	.58		0840	.0328	.0091						
6-6	.00	.0147		0759	2.40	.66		0844	.0421	.0115						
6-7	.07	.0167		0809	.06	.67		0854	.0475	.0190						
6-8	.68	.0317		0813	2.70	.85		0856	.0467	.0206						
6-9	.68	.0659		0820	.09	.86		0905	.0467	.0276						
6-10	.78	.1937		0855	.00	.86		0925	.0618	.0450						
6-11	.58	.2869		0857	1.80	.92		0935	.0772	.0567						
6-12	.30	.1429		0859	4.80	1.08		0950	.0953	.0780						
6-13	.00	.1036		0902	2.40	1.20		1000	.1189	.0855						
6-14	.06	.0656		0905	1.60	1.28		1015	.1494	.1294						
6-15	.05	.0498		0907	2.10	1.35		1020	.1529	.1420						
6-16	.00	.0386		0910	.40	1.37		1025	.1475	.1545						
6-17	.00	.0298		0912	.00	1.37		1035	.1282	.1772						
6-18	1.42	.3014		0915	.80	1.41		1045	.1058	.1967						
6-19	.00	.1169		0925	.12	1.43		1055	.0888	.2132						
6-20	.00	.0604		0930	.24	1.45		1110	.0687	.2327						
6-21	.00	.0421		0937	.17	1.47		1116	.0602	.2390						
6-22	.00	.0376		0940	.00	1.47		1130	.0479	.2512						
6-23	.87	.0741		0950	.12	1.49		1145	.0390	.2620						
6-24	.04	.0796		1000	.24	1.53		1200	.0332	.2710						
6-25	.53	.1021		1010	.06	1.54		1230	.0258	.2872						
6-26	.19	.0866		1110	.00	1.54		1310	.0202	.3025						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2,591.4. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.34-5. 4/ ARITHMETIC AVERAGE OF RAIN GAGES 27 AND 91.																

1940 SELECTED RUNOFF EVENT			COSHOCTON, OHIO				WATERSHED 95		26.35			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
			Event of June 28-29, 1940—Continued									
6-27	.00	.0536	6-28	1200	.01	1.55	6-28	1420	.0152	.3199		
6-28	.00	1/.0142						1540	.0121	.3382		
Watershed conditions: Mixed cover under prevailing practice. 6% of area in corn 30 in. high, 0.2% in potatoes, 6% in wheat 36 in. high, 1.8% in oats 16 in. high, 0.6% in soybeans, 24% in meadow 13 in. high, 23% in pasture 10 in. high, 9% in pasture woodland, 17% in protected woodland, 0.4% reforested, 8% idle, 2% farmstead, 2% roads.							1740	.0096	.3596			
									2000	.0060	.3801	
									2400	.0068	.4093	
									6-29	0340	.0061	.4343
										0700	.0055	.4536
										1240	2/.0047	.4825

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2,591.4. 1/ RUNOFF PRIOR TO 0740, JUNE 28, 1940. 2/ NORMAL BASE FLOW.



COSHOCTON, OHIO WATERSHED 95

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO LITTLE MILL CREEK WATERSHED 97							26.36
						AREA—4,580 ACRES (7.16 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	3.18	3.50	3.32	1.06	2.47	1.98	2.48	1.61	5.65	1.92	3.03	2.06	32.26
Q/	1.53	2.22	2.47	1.12	.24	.07	.03	.01	.10	.08	.54	.28	6.69
STA AV2/ P	3.08	2.55	3.31	3.47	3.82	4.60	4.31	2.82	2.54	2.35	2.46	2.33	37.64
(37-62) Q	1.94	1.77	2.27	2.09	1.22	1.05	.55	.24	.14	.17	.37	.87	12.68
MEAN P 3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80
54 YR													

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.09	2-23	.08	2-23	.16	2-23	.29	2-23	.36	2-25	.40	2-26	.72	2-21	1.68

MAXIMUMS FOR PERIOD OF RECORD

1937 TO	6-28	.72	6-28	.66	6-28	1.15	1-24	1.89	1-21	3.24	1-21	3.24	1-20	3.54	1-18	6.77
1962	1957		1957		1957		1937		1959		1959		1959		1937	

Notes: Quality of records: Monthly P, fair; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: 18% cropland, 50% grassland, 28% woodland, 4% miscellaneous; improved practice. 1/ Arithmetic average of rain gages 27 and 91. 2/ Precipitation and runoff records began Jan. 1937. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed slopes. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.37-2.

1940 SELECTED RUNOFF EVENT COSHOCTON, OHIO WATERSHED 97 26.36

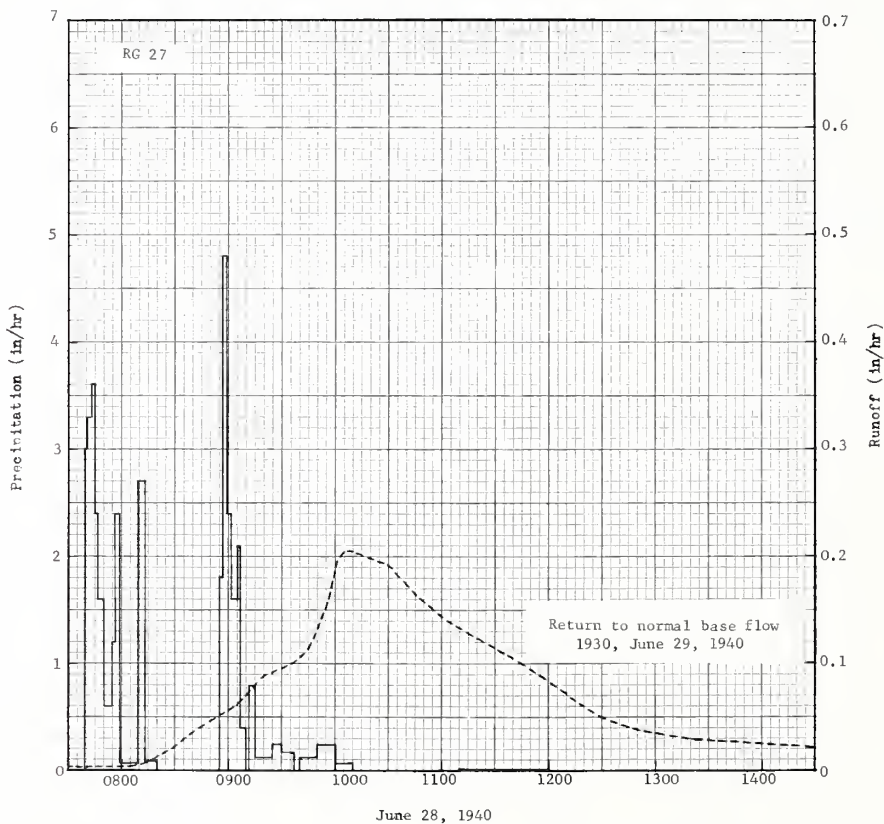
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 28-29, 1940										
	4 RG 4/				RG	27				
5-29	.45	.0197	6-28	0739	.00	.00	6-28	0740	.0015	.0000
5-30	.88	.1165		0741	3.00	.10		0803	.0031	.0009
5-31	.02	.1265		0743	3.30	.21		0815	.0090	.0021
6 -1	.00	.0575		0745	3.60	.33		0830	.0216	.0058
6 -2	.00	.0418		0747	2.40	.41		0845	.0409	.0137
6 -3	.00	.0317		0750	1.60	.49		0905	.0606	.0310
6 -4	.00	.0264		0755	.60	.54		0920	.0896	.0500
6 -5	.00	.0214		0757	1.20	.58		0935	.100	.0734
6 -6	.00	.0180		0759	2.40	.66		0945	.114	.0912
6 -7	.07	.0169		0809	.06	.67		0955	.152	.1128
6 -8	.48	.0289		0813	2.70	.85		1000	.191	.1271
6 -9	.50	.0489		0820	.09	.86		1005	.204	.1435
6-10	1.03	.2546		0855	.00	.86		1010	.204	.1605
6-11	.62	.3927		0857	1.80	.92		1020	.199	.1941
6-12	.22	.1634		0859	4.80	1.08		1030	.192	.2267
6-13	.00	.1038		0902	2.40	1.20		1045	.163	.2717
6-14	.06	.0568		0905	1.60	1.28		1100	.144	.3098
6-15	.04	.0434		0907	2.10	1.35		1120	.123	.3542
6-16	.00	.0336		0910	.40	1.37		1140	.105	.3922
6-17	.00	.0281		0912	.00	1.37		1210	.0721	.4365
6-18	1.48	.3507		0915	.80	1.41		1230	.0496	.4565
6-19	.00	.1325		0925	.12	1.43		1320	.0296	.4879
6-20	.00	.0566		0930	.24	1.45		1430	.0208	.5165
6-21	.00	.0393		0937	.17	1.47		1630	.0141	.5502
6-22	.00	.0336		0940	.00	1.47		1830	.0114	.5752
6-23	.86	.0795		0950	.12	1.49		2120	.0093	.6042
6-24	.02	.0872		1000	.24	1.53		2400	.0079	.6272
6-25	.36	.0746		1010	.06	1.54				
6-26	.18	.0664		1110	.00	1.54	6-29	0420	.0068	.6591

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4,618.1. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.34-5. 4/ ARITHMETIC AVERAGE OF RAIN GAGES 27, 54, 56, AND 91.

1940 SELECTED RUNOFF EVENT			COSHOCKTON, OHIO				WATERSHED 97 26.36			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 28-29, 1940—Continued										
6-27	.00	.0418	6-28	1200	.01	1.55	6-29	1220	.0051	.7060
6-28	.00	<u>1</u> /.0110								

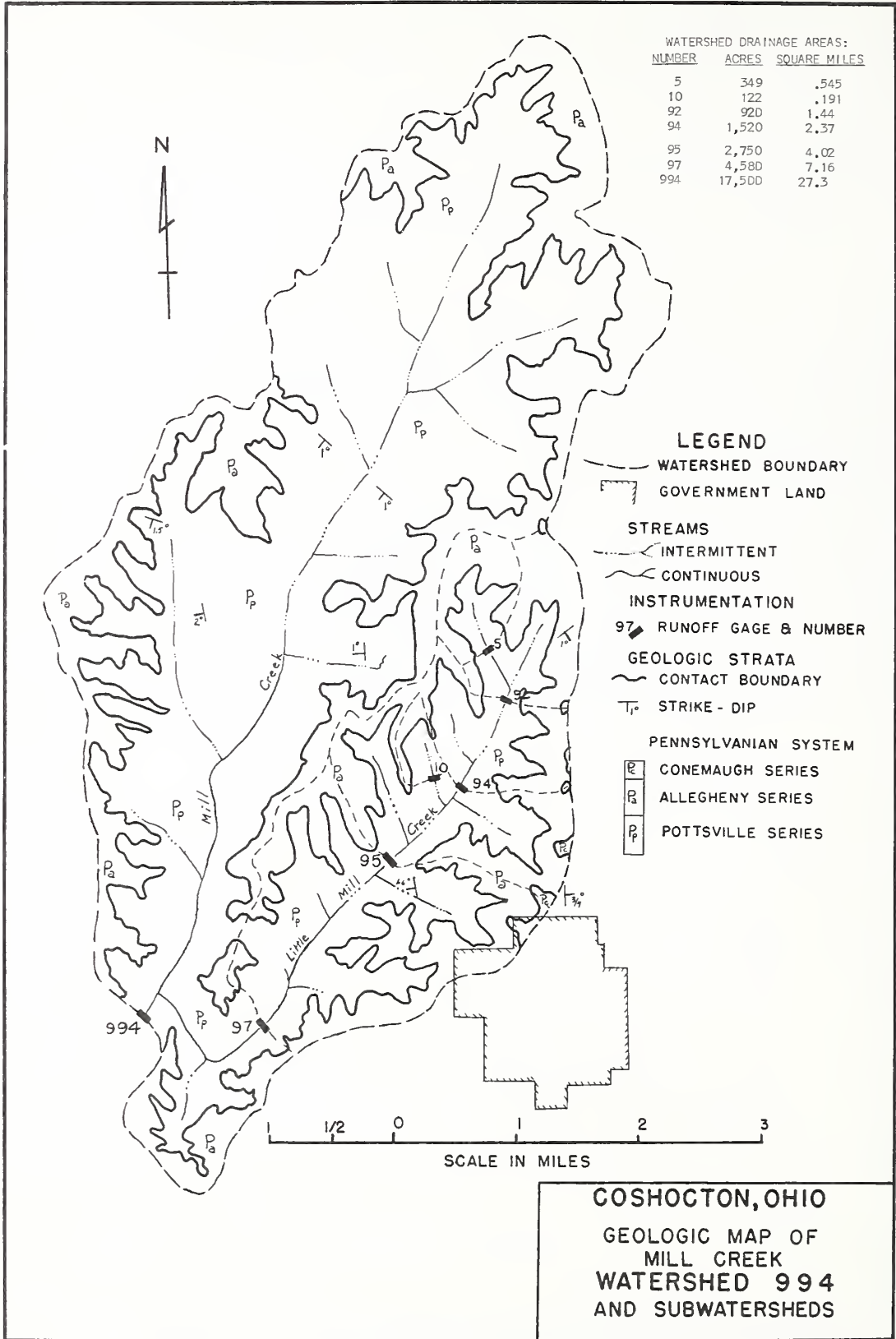
Watershed conditions: Mixed cover under prevailing practice. 6% of area in corn 30 in. high, 0.2% in potatoes, 6% in wheat 36 in. high, 2% in oats 16 in. high, 0.7% in soybeans, 24% in meadow 13 in. high, 24% in pasture 10 in. high, 7% in pastured woodland, 17% in protected woodland, 1.6% reforested, 8% idle, 2% farmstead, 1.5% roads.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4,618.1. 1/ RUNOFF PRIOR TO 0740, JUNE 28, 1940. 2/ NORMAL BASE FLOW.

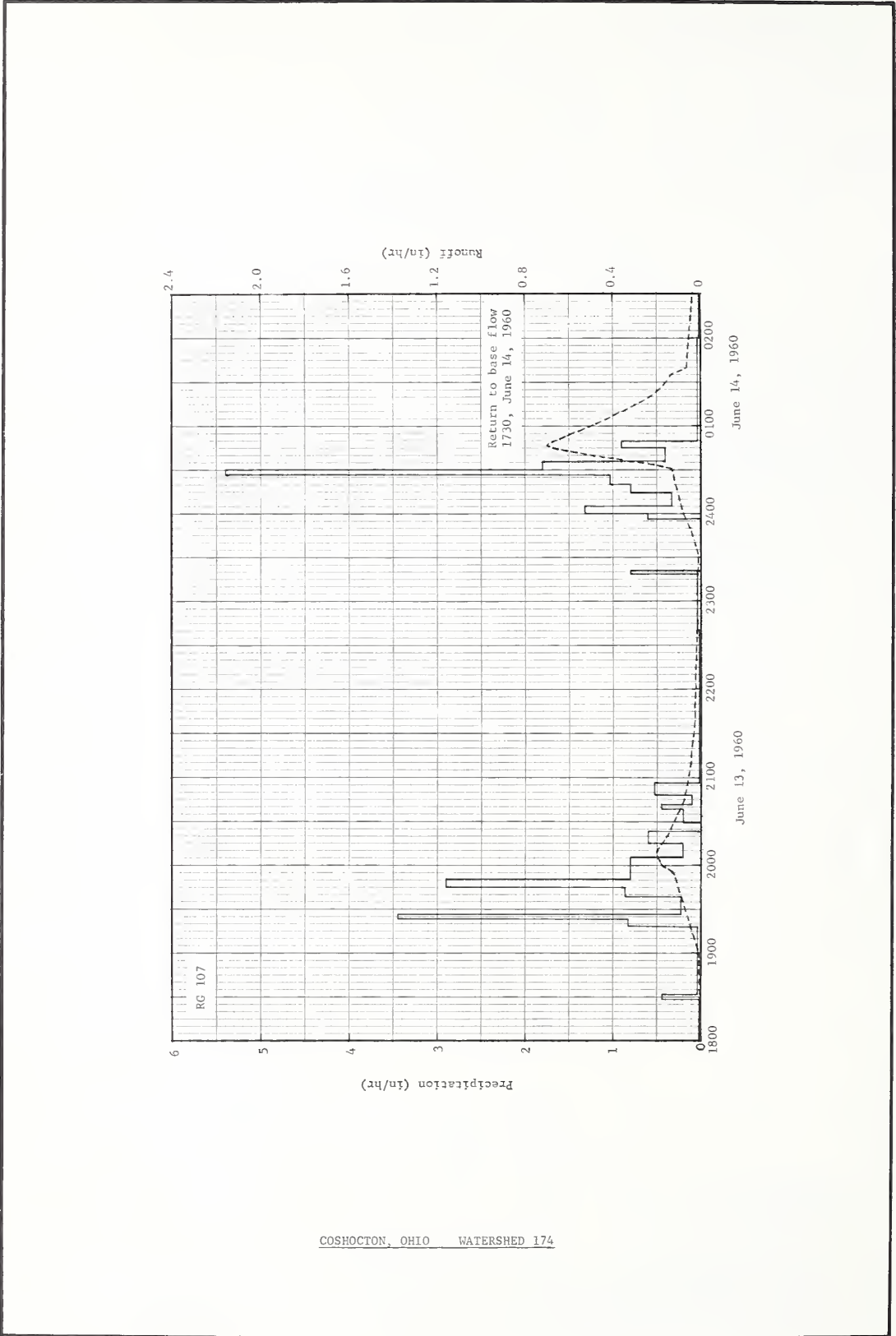


COSHOCKTON, OHIO WATERSHED 97

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO MILL CREEK WATERSHED 994 26.37 AREA—17,500 ACRES (27.3 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ^{1/}	3.18	3.50	3.32	1.06	2.47	1.98	2.48	1.61	5.65	1.92	3.03	2.06	32.26		
	Q ^{2/}	2.04	2.47	2.69	1.40	.27	.15	.06	.01	.09	.10	.62	.35	10.25		
STA AV ^{3/}	P	3.08	2.55	3.31	3.47	3.82	4.60	4.31	2.82	2.54	2.39	2.48	2.35	37.72		
(36-62)	Q ^{2/}	2.08	1.98	2.31	2.15	1.33	1.11	.63	.27	.17	.23	.45	.93	13.64		
MEAN P ^{4/}		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	1-26	.04	1-26	.04	1-26	.08	1-26	.22	1-26	.39	1-26	.54	2-25	.76	2-23	1.90
MAXIMUMS FOR PERIOD OF RECORD																
1936 to	6-28	.44	6-28	.43	6-28	.81	6-28	1.71	6-28	2.16	1-21	3.06	1-21	3.45	1-18	4.76
1962	1957		1957		1957		1957		1957		1959		1959		1937	
<p>NOTES: Quality of records: Monthly P, fair; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: 15% cropland, 55% grassland, 26% woodland, 4% miscellaneous; generally under improved practice. 1/ Arithmetic average of rain gages 27 and 91. 2/ All runoff data furnished by U. S. Geological Survey, Columbus, Ohio. 3/ P and Q records began Oct. 1936; part-year amounts for 1936 are included in averages. 4/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.</p>																
<p>GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to <u>Western Allegheny Plateau land resource area (N-124)</u>.</p>																
<p>GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed slopes. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on next page.</p>																
<p>NOTES: NO SELECTED RUNOFF EVENT REPORTED. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.37-5.</p>																



MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		AREA—52.8 ACRES		WATERSHED 174		26.38				
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ₁	2.83	3.37	3.10	1.15	2.46	1.69	2.28	1.82	5.61	2.21	2.96	2.09	31.57		
	Q	1.22	2.19	1.87	.69	.05	T	.01	.02	.07	.03	.49	.22	6.86		
STA	AV2/ P	1.72	3.60	3.25	3.74	2.08	3.84	3.50	2.96	2.40	2.06	2.60	2.04	33.99		
(60-62)	Q	.66	1.82	2.09	2.51	.18	.63	.13	.14	.03	.01	.21	.14	8.55		
MEAN P	3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
			DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.20	2-23	.17	2-23	.27	2-23	.40	2-23	.46	2-23	.49	2-26	.76	2-21	1.75
MAXIMUMS FOR PERIOD OF RECORD																
1961 TO	4-25	1.03	4-25	.82	4-25	1.11	4-25	1.33	4-25	1.51	4-25	1.63	4-25	1.74	4-25	2.78
1962	1961		1961		1961		1961		1961		1961		1961		1961	
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: 15% hardwoods, 2% reforested, 67% grassland, 16% miscellaneous; prevailing practice on 86% of area. 1/ Rain gage 107. 2/ P and Q records began May 1960. Part-year amounts for 1960 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GEOLOGY: Lies on eastern flank of Cambridge Arch with average dip of strata not exceeding 2°; no faults present. Strata comprised of thin beds of sandstone, shale, clay, coal, and limestone of the Allegheny and Pottsville series of the Pennsylvanian system. 5 clay formations which support perched water tables outcrop. The weir is bottomed in the Bedford clay formation (Pottsville series). The Allegheny series outcrops beneath the upper 88% of the watershed; the Pottsville series the lower 12% of the watershed. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1960 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 174		26.38						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	RG 107		Event of June 13-14, 1960 4/													
5-15	.00	NR	6-13	1522	.00	.00	6-13	1700	.0001	.000						
5-16	.08	NR		1532	.18	.08		1800	.0005	.000 T						
5-17	.12	NR		1600	.02	.09		1845	.0004	.001						
5-18	.00	NR		1828	.01	.10		1900	.0047	.001						
5-19	.00	5/ .001		1832	.45	.13		1920	.0466	.007						
5-20	T	.002		1918	.03	.15		1956	.129	.062						
5-21	.00	.001		1923	.84	.22		2000	.177	.072						
5-22	.80	.024		1927	3.45	.45		2006	.199	.091						
5-23	.00	.006		1938	.22	.49		2010	.199	.104						
5-24	.00	.002		1945	.86	.59		2012	.184	.111						
5-25	.00	.001		1951	2.90	.88		2020	.149	.133						
5-26	.00	.001		2006	.80	1.08		2028	.129	.152						
5-27	.08	.001		2015	.20	1.11		2045	.0770	.181						
5-28	.07	.001		2023	.60	1.19		2115	.0466	.210						
5-29	.00	.001		2029	.00	1.19		2145	.0270	.228						
5-30	.15	.001		2038	.20	1.22		2330	.0116	.257						
5-31	.00	T		2042	.45	1.25		2350	.0466	.264						
6-1	.00	T		2048	.10	1.26		2400	.0770	.275						
6-2	.00	T		2057	.53	1.34										
6-3	.00	T		2240	.01	1.36	6-14	0031	.129	.328						
6-4	.00	T		2318	.03	1.38		0034	.242	.337						
6-5	.57	.001		2321	.80	1.42		0038	.438	.360						
6-6	.00	T		2357	.00	1.42		0043	.605	.404						
6-7	.00	T		2400	.60	1.45		0047	.702	.448						
6-8	.00	T						0054	.605	.524						
6-9	.00	T	6-14	0005	1.32	1.56		0102	.477	.597						
6-10	.00	T		0014	.33	1.61		0112	.334	.663						
6-11	1.10	.041		0020	.80	1.69		0120	.225	.700						
6-12	.15	.009		0027	1.03	1.81		0130	.155	.731						
6-13	6/.13	7/.002		0030	5.40	2.08		0135	.129	.743						
				0036	1.80	2.26		0140	.0605	.751						
				0045	.40	2.32		0230	.0319	.788						
				0049	.90	2.38		0500	.0130	.840						
				0200	.03	2.41		0900	.0074	.880						
				0530	.01	2.45		1730	8/.0024	.920						
Watershed conditions: Mixed cover under prevailing practice. 15% hardwoods, 2% reforested, 67% grassland, 16% miscellaneous.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 53.240. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 26.30-4. 4/ SUBSTITUTED FOR EVENT OF JUNE 28, 1940; WATERSHED NOT IN OPERATION IN 1940. 5/ BEGINNING OF RUNOFF RECORDS. 6/ RAIN ENDED 0730. 7/ RUNOFF PRIOR TO 1700. 8/ NORMAL BASE FLOW.																



COSHOCTON, OHIO WATERSHED 174

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO							WATERSHED 194		26.39
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962 P ₁ /	2.83	3.37	3.10	1.15	2.46	1.69	2.28	1.82	5.61	2.21	2.96	2.09	31.57		
Q	1.63	2.86	2.93	1.71	.58	.10	.08	.05	.18	.15	.70	.59	11.56		
STA AV ₂ / P	2.11	3.46	2.50	3.01	2.51	3.84	3.50	2.96	2.40	2.06	2.60	2.04	32.99		
(60-62) Q	1.46	2.09	2.74	2.69	.72	.84	.26	.17	.11	.11	.34	.37	11.90		
MEAN P ₃ /	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR															

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.21	2-23	.17	2-23	.27	2-23	.47	2-23	.47	2-25	.58	2-25	.87	2-21	2.07

MAXIMUMS FOR PERIOD OF RECORD																
1960 TO	4-24	.87	4-25	.68	4-25	.93	4-25	1.29	4-25	1.29	4-25	1.49	4-25	1.68	4-21	3.00
1962	1961		1961		1961		1961		1961		1961		1961		1961	

NOTES: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: 21% hardwoods; 2% reforested, 58% grassland, 11% cultivated, 8% miscellaneous; prevailing practice. 1/ Rain gage 107. 2/ P and Q records began Jan. 1960. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

GEOLOGY: Lies on eastern flank of Cambridge Arch with average dip of strata not exceeding 2°; no faults present. Strata comprised of sandstone, shale, clay, coal, and limestone of the Allegheny and Pottsville series of the Pennsylvanian system. Six clay formations which support perched water tables outcrop. The weir is bottomed in the Middle Mercer clay of the Pottsville series. The Allegheny series outcrops beneath the middle and upper slopes of the watershed, comprising 83% of the area; the Pottsville series outcrops exclusively in the lower slopes and creek beds (17% of the area). Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

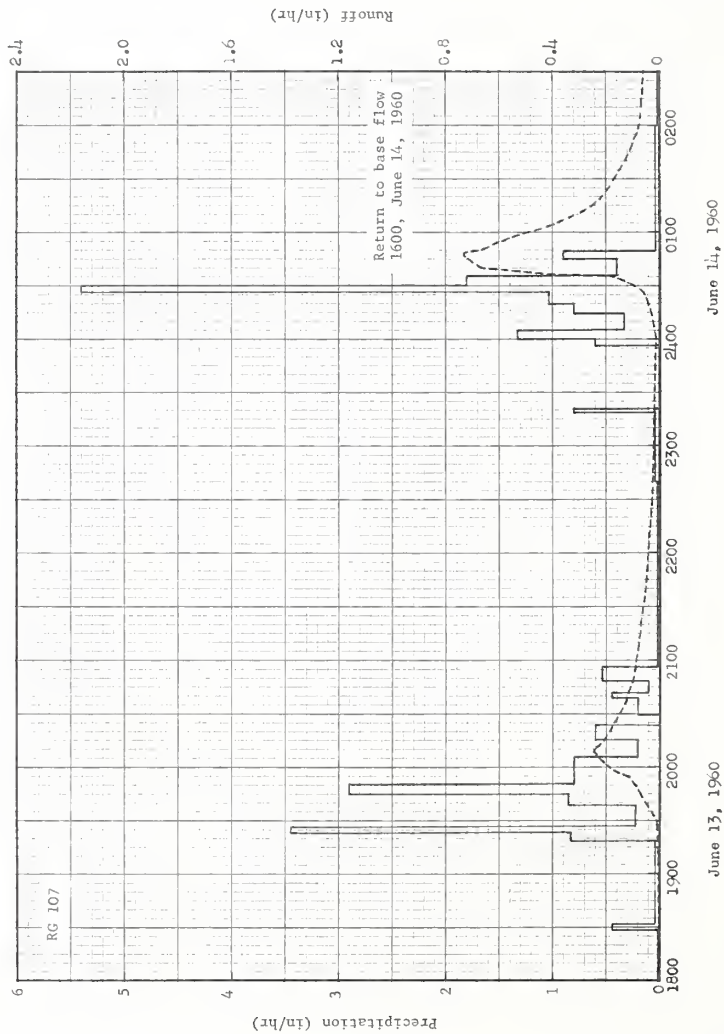
1960 **SELECTED RUNOFF EVENT** COSHOCKTON, OHIO WATERSHED 194 26.39

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
	RG 107			Event of June 13-14, 1960 4/						
5-15	.00	.020	6-13	1522	.00	.00	6-13	1530	.0004	.000
5-16	.08	.017		1532	.18	.08		1600	.0008	.000 T
5-17	.12	.018		1600	.02	.09		1700	.0008	.001
5-18	.00	.015		1828	.01	.10		1900	.0006	.002
5-19	.00	.012		1832	.45	.13		1930	.0114	.005
5-20	.00	.011		1918	.03	.15		1945	.0721	.014
5-21	.00 T	.010		1923	.84	.22		1955	.117	.028
5-22	.80	.037		1927	3.45	.45		1958	.163	.035
5-23	.00	.020		1938	.22	.49		2004	.220	.054
5-24	.00	.012		1945	.86	.59		2008	.244	.070
5-25	.00	.010		1951	2.90	.88		2014	.211	.092
5-26	.00	.009		2006	.80	1.08		2026	.169	.130
5-27	.08	.009		2015	.20	1.11		2036	.127	.155
5-28	.07	.008		2023	.60	1.19		2050	.0970	.181
5-29	.00	.008		2029	.00	1.19		2115	.0721	.215
5-30	.15	.011		2038	.20	1.22		2145	.0455	.244
5-31	.00	.007		2042	.45	1.25		2230	.0234	.268
6-1	.00	.006		2048	.10	1.26		2400	.0144	.294
6-2	.00	.005		2057	.53	1.34				
6-3	.00	.005		2240	.01	1.36	6-14	0025	.0546	.306
6-4	.00	.005		2318	.03	1.38		0035	.176	.319
6-5	.57	.013		2321	.80	1.42		0037	.460	.330
6-6	.00	.006		2357	.00	1.42		0040	.668	.360
6-7	.00	.005		2400	.60	1.45		0048	.732	.453
6-8	.00	.004						0050	.668	.477
6-9	.00	.004	6-14	0005	1.32	1.56		0058	.523	.557
6-10	.00	.004		0014	.33	1.61		0104	.397	.604
6-11	1.10	.037		0020	.80	1.69		0110	.307	.640
6-12	.15	.014		0027	1.03	1.81		0118	.220	.674

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 188.56. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 26.30-4. 4/ SUBSTITUTED FOR EVENT OF JUNE 28, 1940; WATERSHED NOT IN OPERATION IN 1940.

1960 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 194		26.39	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of June 13-14, 1960—Continued							
6-13	1/.13	2/.006	6-14	0030	5.40	2.08	6-14	0140	.125	.734
Watershed conditions: Mixed cover under prevailing practice. 21% in hardwoods, 2% reforested, 58% in grassland, 11% cultivated 8% miscellaneous.				0036	1.80	2.26		0200	.0721	.767
				0045	.40	2.32		0400	.0225	.845
				0049	.90	2.38		1000	.0082	.923
				0200	.03	2.41		1600	3/.0050	.959
				0530	.01	2.45				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 188.56. 1/ PRIOR TO 1522. 2/ RUNOFF PRIOR TO 1530. 3/ NORMAL BASE FLOW.



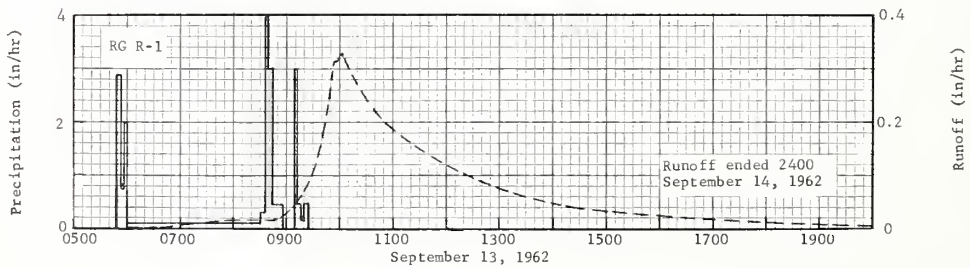
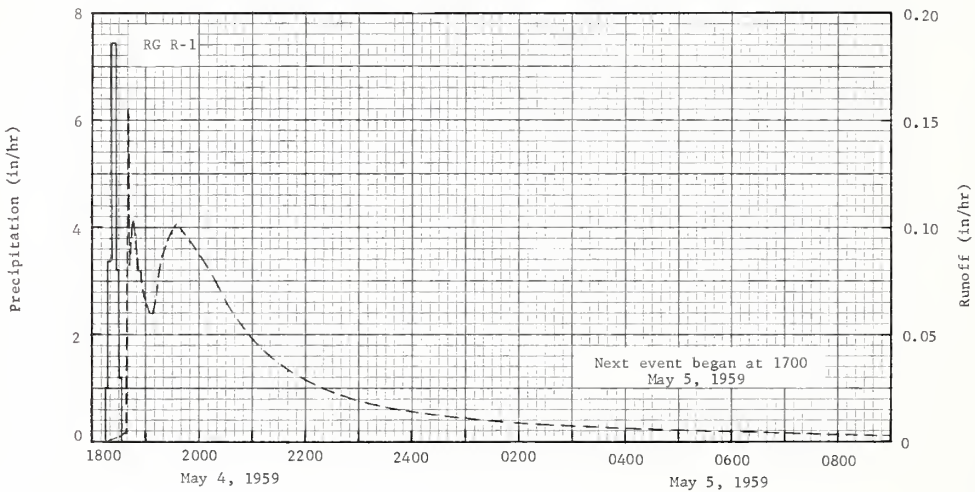
COSHOCOTON, OHIO WATERSHED 194

MONTHLY PRECIPITATION AND RUNOFF (inches)							COLBY, WISCONSIN WATERSHED W-1 AREA — 345 ACRES							29.01		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/ Q2/	.60 NR	1.80 NR	2.67 NR	1.31 NR	2.46 .28	2.22 .07	2.32 .02	8.17 .63	3.65 1.49	1.28 .01	.58 NR	.09 NR	27.15 4/ 2.50		
STA AV	2/ P	.91	.90	1.50	2.24	3.36	4.00	3.93	4.06	2.55	1.87	1.44	.78	27.54		
(50-62)	Q	NR	NR	NR	NR	.68	.30	.22	.12	.20	.18	NR	NR	4/ 1.70		
MEAN P	3/	1.06	1.14	1.75	2.58	4.00	4.92	3.43	3.73	3.79	2.55	1.72	1.22	31.89		
73 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-13	.35	9-13	.29	9-13	.48	9-13	.82	9-13	.94	9-13	.99	9-13	1.01	9-10	1.46
MAXIMUMS FOR PERIOD OF RECORD																
1949 to	6-4	.57	6-4	.45	6-4	.59	6-4	1.10	6-4	1.21	6-4	1.25	5-9	1.51	5-4	3.63
1962	1958		1958		1958		1958		1958		1958		1960		1960	
Notes: Quality of records: P and Q, good. Watershed conditions: 21.7% permanent pasture, 11.0% ungrazed woods, 2.8% roads and farmsteads, 64.5% 4-yr rotation of corn, small grain, hay, hay. 1/ Precipitation Apr. through Oct. is arithmetic average of 3 recording rain gages. Rest of year, only 1 standard rain gage. 2/ Precipitation and runoff records began May 1949. Runoff station not in operation during months showing NR. 3/ Mean P based on 73-yr (1890-1962) U. S. Weather Bureau record period at Neillsville, Wis. 4/ Totals for summer months of May through Oct. only.																
1959, 1962 SELECTED RUNOFF EVENTS							COLBY, WISCONSIN WATERSHED W-1							29.01		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
<u>Event of May 4-5, 1959</u>																
	3 RG 5/				RG	R-1										
4-7	.10	.0067	5-4	1814	.00	.00	5-4	1814	.0000	.0000						
4-8	.00	.0146		1817	1.00	.05		1838	.0049	.0008						
4-9	.00	.0062		1822	3.36	.33		1841	.1550	.0041						
4-10	.28	.0042		1827	7.44	.95		1843	.0817	.0077						
4-11	.00	.0346		1830	3.20	1.11		1846	.1036	.0122						
4-12	.00	.0214		1832	1.20	1.15		1852	.0796	.0212						
4-13	.00	.0071						1854	.0792	.0238						
4-14	.00	.0036						1900	.0660	.0310						
4-15	.00	.0034						1905	.0594	.0361						
4-16	.28	.0041		OTHER	GAGE	TOTALS		1908	.0594	.0391						
4-17	1.00	.4409		RG	R-2	1.02		1912	.0698	.0434						
4-18	.00	.1095		RG	R-3	1.00		1918	.0872	.0512						
4-19	.00	.0153						1935	.1021	.0778						
4-20	.00	.0053	3	RG	AVG 5/	1.06		2000	.0872	.1176						
4-21	.00	.0026						2030	.0650	.1558						
4-22	.00	.0014						2100	.0482	.1838						
4-23	.00	.0009						2130	.0365	.2049						
4-24	.00	.0007						2200	.0287	.2209						
4-25	.00	.0006						2300	.0190	.2442						
4-26	.00	.0003						2400	.0140	.2604						
4-27	.00	.0001					5-5	0200	.0085	.2826						
								0400	.0058	.2969						
								1000	.0027	.3217						
								1700	6/.0014	.3351						
Watershed conditions: 21.7% permanent pasture, 11% ungrazed woods, 2.8% roads and farmsteads 64.5% 4-year rotation of corn, small grain, hay, hay.																
<u>Event of September 13-14, 1962</u>																
					RG	R-1										
8-15	.89	.0000	9-13	0548	.00	.00	9-13	0602	.0000	.0000						
8-22	.54	.0000		0553	2.88	.24		0728	.0114	.0040						
8-23	1.12	.0110		0557	.75	.29		0806	.0171	.0133						
8-24	1.39	.0727		0600	2.00	.39		0850	.0179	.0253						
8-25	.00	.0047		0800	.10	.44		0908	.0409	.0336						
8-26	.00	.0003		0830	.10	.49		0922	.0802	.0479						
8-29	.93	.0037		0835	.30	.64		0946	.2068	.1002						
8-30	1.91	.1287		0838	4.00	.84		0954	.3121	.1349						
8-31	.43	.4111		0843	3.00	1.09		0958	.3151	.1558						
9-1	.00	.0197		0856	.46	1.19		1002	.3231	.1771						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 347.864. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 29.1-5. 5/ ARITHMETIC AVERAGE OF RAIN GAGES R-1, R-2, and R-3. 6/ BEGINNING OF NEXT RUNOFF EVENT.																

1962 SELECTED RUNOFF EVENT			COLBY, WISCONSIN				WATERSHED W-1				29.01
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
	3 RG $\frac{1}{2}$		<u>Event of September 13-14, 1962 - continued</u>								
9-2	.00	.0013	9-13	0909	.00	1.19		1032	.2396	.3180	
9-3	.10	.0001		0911	3.00	1.29		1106	.1778	.4348	
9-4	.04	.0001		0916	.48	1.33		1204	.1173	.5760	
9-8	.38	.0000		0920	.15	1.34		1304	.0730	.6700	
9-9	.22	.0055		0925	.48	1.38		1352	.0500	.7185	
9-10	.79	.1930		OTHER	GAGE	TOTALS		1500	.0306	.7630	
9-11	.00	.0363						1630	.0185	.7990	
9-12	.00	.0033		RG	R-2	1.60		1910	.0081	.8319	
				RG	R-3	1.45		2400	.0027	.8551	
				3 RG	AVG $\frac{1}{2}$	1.48		9-14	0430	.0011	.8629
								2400	.0000	.8691	

Watershed conditions: 21.7% permanent pasture, 11% ungrazed woods, 2.8% roads and farmsteads, 64.5% 4-year rotation of corn, small grain, hay, hay.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 347.864. $\frac{1}{2}$ ARITHMETIC AVERAGE OF RAIN GAGES R-1, R-2, AND R-3.



COLBY, WISCONSIN WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						FENNIMORE, WISCONSIN WATERSHED W-1								31.01
						AREA—330 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P ^{1/}	.44	1.61	2/3.48	2.35	5.44	2.62	7.22	3.74	3.84	3.01	.15	.56	34.46
	Q	.85	.70	1.65	1.41	.99	.82	.95	.72	.73	.67	.50	.50	10.49
	STA AV ^{2/}	.90	.97	1.86	3.06	3.83	5.04	4.13	3.93	3.65	2.39	2.07	1.09	32.92
	(38-62) Q	.34	.45	.90	.29	.30	.49	.45	.39	.28	.25	.23	.22	4.59
	MEAN P ^{4/}	1.13	1.14	2.02	2.98	4.03	4.45	3.79	3.48	3.83	2.41	1.99	1.30	32.55
	72 YR													

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962		9-16	.07	9-16	.05	9-16	.07	3-27	.12	3-27	.16	3-27	.25	3-26	.45	3-24	1.15E

MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1962	8-6 1951	1.69	8-16 1951	1.13	8-6 1951	1.53	7-15 1950	2.61	7-15 1950	2.69	7-15 1950	2.69	7-15 1950	2.69	7-15 1950	2.86

NOTES: Quality of records: P and Q, excellent. Watershed conditions: 26% corn, 14% small grain, 18% hay, 26% pasture, 9% soil bank (idle), 7% roads and buildings. ^{1/} Precipitation is arithmetic average of 9 recording gages Apr. 13 to Dec. 1; average of R-1, R-6, R-8 rest of year. ^{2/} Snow water equivalent on Mar. 16 was 6.39 in., down to 0.56 in. on Mar. 30. ^{3/} Precipitation records began June 1938. Runoff records began July 1938. ^{4/} Mean P based on 72-yr (1891-1962) U. S. Weather Bureau record period at Lancaster, Wis.

1962 DAILY AIR TEMPERATURE (degrees F)											FENNIMORE, WISCONSIN WATERSHED W-1								31.01					
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	26	0	18	2	9	-26	34	20	65	49	56	47	82	59	80	58	79	49	66	53	44	24	59	35
2	28	15	30	10	23	-4	35	16	69	41	58	47	76	62	61	52	61	49	61	52	40	28	58	44
3	40	26	44	28	26	5	41	13	77	47	60	43	73	64	62	58	62	51	64	53	42	31	56	41
4	34	30	44	19	28	15	41	34	80	53	76	53	78	61	83	60	62	43	58	54	34	30	48	32
5	32	20	19	-7	24	11	46	33	78	55	82	53	82	63	68	59	63	41	63	48	40	26	32	17
6	20	16	1	-12	28	9	61	32	60	41	66	57	91	63	86	60	65	37	62	46	45	29	24	15
7	16	13	20	-3	41	26	55	32	47	39	80	52	91	65	86	65	73	43	63	56	40	33	30	13
8	15	-5	19	-1	33	28	48	30	56	41	77	50	74	57	80	61	66	55	60	50	36	22	22	11
9	-5	-13	19	2	37	30	40	28	54	38	78	64	79	52	78	52	65	60	70	51	41	19	15	4
10	-1	-12	22	0	38	32	52	23	46	41	81	58	82	58	61	46	60	47	84	53	46	24	10	4
11	12	-10	36	20	35	31	52	30	61	44	76	55	85	64	77	54	76	-42	76	66	45	28	6	-10
12	26	12	37	27	35	28	36	28	66	52	71	44	83	57	72	60	86	63	70	45	36	28	15	0
13	29	23	32	26	33	23	35	24	82	64	77	43	68	54	74	53	84	58	77	45	55	26	24	3
14	29	14	33	23	27	20	35	21	82	64	79	46	69	58	78	47	79	50	79	64	56	30	25	5
15	14	2	32	21	28	20	43	22	83	66	79	48	65	55	78	51	80	57	80	58	42	34	30	24
16	9	-3	32	21	37	20	49	22	86	64	83	61	71	58	77	54	72	51	58	40	42	32	35	26
17	-1	-11	29	17	36	18	60	34	83	62	87	62	80	54	74	49	64	47	64	38	32	27	52	30
18	2	-14	24	18	39	13	56	35	86	65	76	55	82	57	82	48	71	42	66	42	31	26	46	30
19	2	-6	22	10	37	25	53	29	84	63	74	55	74	56	84	56	55	35	67	47	34	28	42	23
20	6	-14	24	3	38	25	57	24	72	50	77	58	82	63	79	63	59	30	56	36	49	34	29	21
21	16	3	24	16	38	26	74	42	70	48	78	56	79	60	90	62	57	36	60	35	47	29	26	16
22	6	-4	19	4	44	23	63	41	87	54	77	60	80	56	86	57	54	43	54	36	34	20	34	12
23	20	-1	23	4	45	24	61	35	61	56	85	61	74	58	91	68	68	38	42	26	46	26	12	-2
24	27	10	24	6	45	24	82	40	68	51	82	58	83	58	69	62	66	52	43	24	38	20	14	-5
25	38	23	34	24	46	30	80	54	68	46	82	58	67	47	73	54	62	42	31	18	46	21	18	-6
26	37	16	26	4	48	25	83	58	62	47	82	56	71	47	78	50	66	42	42	19	49	28	5	-18
27	17	1	17	-1	56	22	78	56	63	45	86	50	71	50	85	59	56	40	63	30	46	25	22	5
28	22	6	2	-16	66	35	59	40	75	52	86	61	62	53	86	62	60	36	54	40	51	23	34	8
29	36	13	---	---	35	30	61	38	78	63	86	62	77	51	89	64	66	36	50	29	61	36	32	4
30	32	-7	---	---	33	24	64	52	77	61	84	62	73	50	80	64	57	46	54	41	60	30	12	3
31	13	-6	---	---	38	19	---	---	68	51	---	---	77	49	76	54	---	---	41	25	---	---	17	1
AV.	19	4	25	9	36	20	55	33	71	52	77	54	76	56	80	56	67	45	60	42	43	27	29	12
MEAN	11.9		16.7		28.4		43.8		61.3		66.1		66.8		67.8		56.6		51.6		35.5		20.9	
STA AV	9	28	12	37	21	55	34	66	46	76	56	80	59	79	58	71	49	61	40	41	25	28	14	

NOTES: TEMPERATURE DATA FROM HYGROTHERMOGRAPH CHARTS CHECKED WEEKLY WITH MAXIMUM-MINIMUM THERMOMETERS. STA AV IS A 23-YR AVERAGE (1940-62).

1962 DAILY PRECIPITATION (inches)					FENNIMORE, WISCONSIN WATERSHED W-1								31.01
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.01	.00	.13 S	.25	.00	.07	.00	.00	.00	.00	.00	
2	.00	.01	.00	.00	.00	.00	3.60	.00	.00	.05	.00	.00	
3	.00	.00	.74	.00	.00	.26	.00	.58	.00	1.18	.00	.00	
4	.30	.00	1.07	.23	.00	.15	.00	.00	.18	.91	.12	.30	
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
6	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	
7	.03	.00	.00	.00	.41	.00	.00	.00	.00	.46	.00	.00	
8	.00	.00	.26	.17	.00	.00	.29	.00	.67	.00	.00	.00	
9	.00	.00	.00	.00	.00	.00	.00	.00	.31	.28	.00	.00	
10	.00	.00	.04	.00	.20	1.63	.00	.00	.11	.00	.00	.00	
11	.00	.00	.00	.00	.39	.15	.13	.00	.00	.00	.00	.00	
12	.03	.00	.00	.31	1.17	.00	.03	.00	.00	.00	.00	.00	
13	.00	.01	.00	.03 S	.00	.00	.05	.00	.14	.00	.00	.00	
14	.00	.00	.00	.00	.00	.00	.63	.00	.00	.00	.00	.00	
15	.00	.04	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	
16	.00	.00	.00	.05	.00	.00	.00	.00	1.76	.00	.00	.00	
17	.00	.13	.00	.00	.00	.29	.00	.00	.00	.00	.00	.00	
18	.00	.38	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	
19	.00	.02	.00	.00	.00	.00	1.02	.00	.00	.00	.00	.00	
20	.00	.00	.00	.00	.00	.00	.47	.47	.00	.03	.03	.00	
21	.00	.24	.00	.18	.00	.00	.00	.00	.26	.00	.00	.00	
22	.00	.02	.00	.00	.06	.10	.17	.00	.00	.00	.00	.07S	
23	.00	.04	.00	.00	.16	.00	.00	1.58	.00	.00	.00	.00	
24	.00	.00	.00	.00	.00	.00	.31	.91	.04	.00	.00	.02S	
25	.00	.33	.00	.00	.26	.00	.00	.00	.00	.00	.00	.17S	
26	.00	.15	.00	.00	.07	.00	.00	.00	.06	.00	.00	.00	
27	.00	.17	.00	1.19	.00	.00	.14	.00	.00	.00	.00	.00	
28	.00	.06	.00	.00	.43	.00	.31	.00	.00	.00	.00	.00	
29	.00	-----	.38	.02	1.85	.00	.00	.13	.00	.00	.00	.00	
30	.00	-----	.00	.00	.19	.00	.00	.07	.31	.00	.00	.00	
31	.00	-----	.11	-----	.00	-----	.00	.00	-----	.00	-----	.00	
TOTAL	.44	1.61	3.46	2.35	5.44	2.62	7.22	3.74	3.34	3.01	.15	.56	
STAAV	.90	.97	1.86	3.06	3.83	5.04	4.17	3.69	3.36	2.44	2.04	1.10	

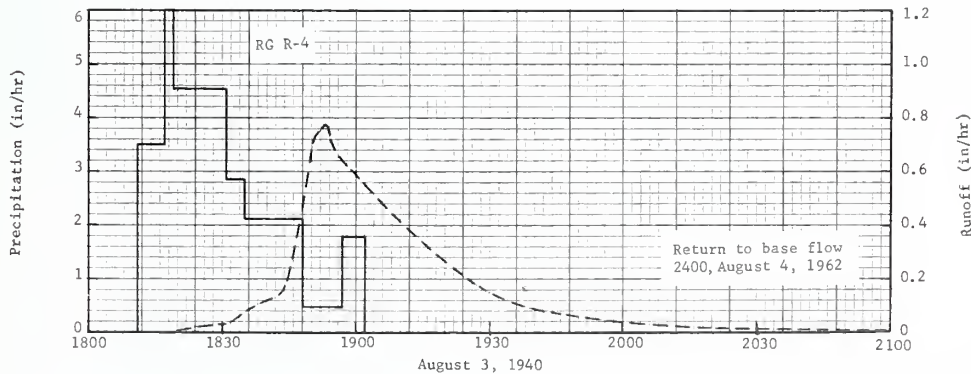
NOTES: PRECIPITATION VALUES ARE THE ARITHMETIC AVERAGE OF 9 RECORDING GAGES FROM APR. 13 TO DEC. 1. REST OF YEAR FROM 3 GAGES, R-1, R-6, AND R-8. ALL PRECIPITATION IN JAN., FEB., AND MAR. IS SNOW.

1962 MEAN DAILY DISCHARGE (cfs)					FENNIMORE, WISCONSIN WATERSHED W-1								31.01
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.466	.310	.310	.891	.404	.383	.310	.310	.279	.263	.247	.210	
2	.466	.310	.294	.829	.445	.383	1.755	.310	.279	.247	.247	.218	
3	.466	.310	.279	.798	.424	.395	.445	.430	.279	.566	.247	.218	
4	.466	.367	.279	.905	.424	.399	.403	.384	.292	.547	.266	.218	
5	.466	.424	.279	.842	.424	.385	.362	.365	.279	.351	.247	.233	
6	.466	.424	.279	.798	.424	.424	.365	.328	.279	.326	.247	.263	
7	.445	.403	.279	.768	.480	.403	.347	.310	.279	.395	.247	.279	
8	.424	.383	.279	.737	.400	.383	.414	.310	.353	.328	.247	.263	
9	.424	.364	.279	.707	.365	.383	.353	.310	.301	.362	.247	.233	
10	.424	.347	.279	.644	.427	.891	.363	.310	.338	.310	.247	.218	
11	.403	.347	.373	.586	.453	.536	.383	.310	.279	.294	.247	.218	
12	.383	.347	.466	1.523	.845	.383	.383	.294	.279	.279	.233	.218	
13	.383	.347	.386	.614	.445	.365	.383	.279	.253	.279	.218	.218	
14	.365	.347	.310	.614	.424	.347	.482	.279	.279	.279	.218	.218	
15	.347	.347	.310	.614	.424	.347	.383	.279	.263	.260	.218	.218	
16	.347	.347	.328	.586	.403	.347	.365	.279	1.536	.283	.218	.218	
17	.347	.347	.385	.559	.383	.376	.347	.279	.337	.279	.218	.218	
18	.347	.347	.468	.535	.383	.265	.347	.279	.310	.279	.218	.218	
19	.347	.347	.563	.511	.383	.347	.442	.279	.310	.279	.233	.218	
20	.347	.347	.614	.511	.383	.347	.595	.337	.310	.279	.233	.218	
21	.347	.347	.614	.545	.365	.347	.403	.279	.316	.279	.218	.218	
22	.347	.347	.614	.489	.347	.347	.383	.279	.310	.263	.218	.218	
23	.347	.328	.614	.466	.365	.347	.365	.568	.310	.247	.218	.218	
24	.347	.310	.922	.466	.382	.328	.352	.567	.294	.247	.218	.218	
25	.347	.310	1.385	.466	.376	.310	.373	.324	.279	.247	.218	.218	
26	.328	.310	2.922	.466	.380	.310	.310	.310	.279	.247	.233	.218	
27	.310	.310	3.015	.676	.347	.310	.313	.293	.279	.247	.233	.218	
28	.310	.310	2.457	.528	.380	.310	.406	.279	.279	.247	.218	.218	
29	.310	-----	1.204	.466	1.105	.310	.347	.279	.279	.247	.218	.218	
30	.310	-----	1.078	.445	.396	.310	.347	.279	.279	.247	.218	.218	
31	.310	-----	.967	-----	.403	-----	.328	.279	-----	.247	-----	.218	
MEAN	.379	.346	.737	.653	.441	.377	.427	.322	.335	.299	.232	.224	
INCHES	.847	.699	1.648	1.413	.966	.816	.955	.720	.725	.669	.502	.501	

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .07213. RECORDS ARE EXCELLENT. SOME PERIODS IN WINTER PARTIALLY ESTIMATED BECAUSE OF ICE IN STILLING WELL.

1940 SELECTED RUNOFF EVENT			FENNIMORE, WISCONSIN				WATERSHED W-1		31.01	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of August 3-4, 1940							
7-10	2.05	.0175	8-3	RG	R-4		8-3	1815	.0001	.0000
7-11	.84	.0290		1811	.00	.00		1820	.0055	.0033
7-12	.00	.0024		1817	3.50	.35		1832	.0406	.0045
7-13-15	.00	.0060		1819	6.00	.55		1839	.1168	.0141
7-16-24	.00	.0041		1831	4.55	1.46		1842	.1268	.0202
				1835	2.85	1.65				
7-25	.38	.0016		1848	2.12	2.11		1844	.1642	.0251
7-26	4.76	.8272		1857	.47	2.18		1848	.4770	.0450
7-27	.00	.0033		1902	1.80	2.33		1850	.6900	.0642
7-28	.00	.0027				1851	.7350	.0761		
7-29	.03	.0027	OTHER	GAGE	TOTALS	1853	.7740	.1013		
7-30	.13	.0027	RG	R-1	2.30	1855	.6870	.1258		
7-31	.00	.0027	RG	R-2	2.29	1900	.5880	.1736		
8- 1	.34	.0036	RG	R-3	2.35	1906	.4760	.2320		
8- 2	.04	.0024	RG	R-5	2.21	1915	.3360	.2927		
8- 3	2/ .09	3/ .0018	RG	R-6	2.39	1924	.2110	.3332		
			RG	R-7	2.25	1927	.1780	.3429		
			RG	R-8	2.30	1933	.1240	.3573		
			RG	R-9	2.08	1939	.0911	.3689		
			9 RG	AVG 1/	2.28	1945	.0690	.3769		
						2000	.0372	.3899		
						2020	.0187	.3990		
						2100	.0056	.4058		
						2400	.0004	.4102		
						8-4	1200	.0002	.4129	
							2400	4/.0001	.4147	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 332.750. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 31.1-5. 1/ ARITHMETIC AVERAGE OF RAIN GAGES 1 THROUGH 9. 2/ RAINFALL FROM 0600 TO 1710. 3/ RUNOFF TO 1815. 4/ NORMAL BASE FLOW.



FENNIMORE, WISCONSIN WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						FENNIMORE, WISCONSIN WATERSHED W-2							31.02	
						AREA — 22.8 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P/Q	.49	1.66	2/3.42	2.23	5.51	2.54	7.22	3.65	3.59	2.88	.13	.54	33.86
		.00	.00	.22	.00	.00	.00	.02	T	.07	.00	.00	.00	.31
STA AV ³ /P		.89	.96	1.82	3.08	3.89	5.13	4.20	3.92	3.65	2.40	2.08	1.07	33.09
(38-62) Q		.17	.29	.66	.03	.01	.15	.13	.09	.02	.01	T	.01	1.57
MEAN P ⁴ /72 YR		1.13	1.14	2.02	2.98	4.03	4.45	3.79	3.48	3.83	2.41	1.99	1.30	32.55

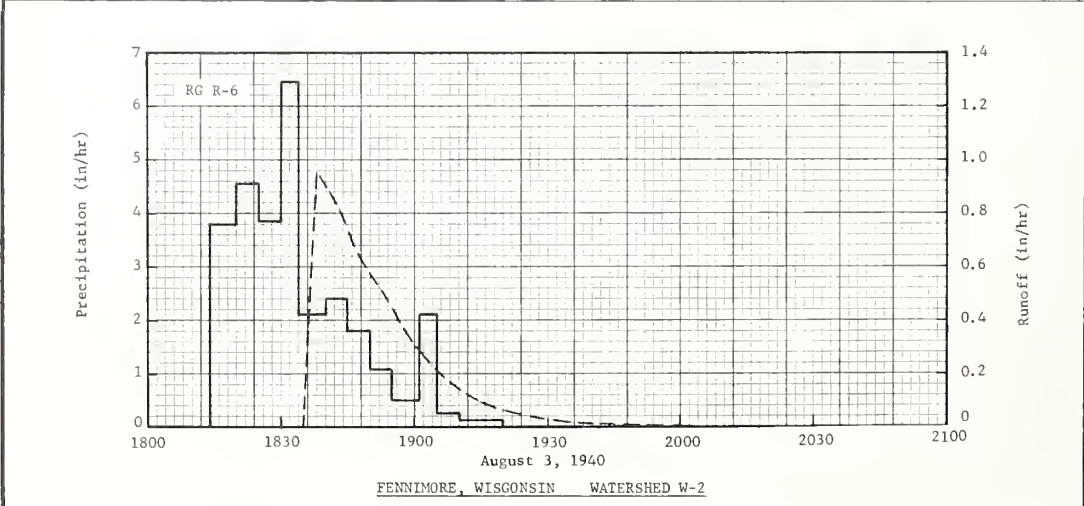
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	9-16	.20	9-16	.07	9-16	.07	3-26	.09	3-25	.11E	3-25	.16E	3-25	.26E	3-24	.44E

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-28 1945	2.68	8-6 1951	1.39	8-6 1951	1.72	7-15 1950	2.25	7-15 1950	2.26	7-15 1950	2.26	7-15 1950	2.26	3-24 1959	3.77

NOTES: Quality of records: P and Q, excellent. Watershed conditions: Hay, pasture, and soil bank lands. 1/ Precipitation, R-6. 2/ Snow water equivalent on March 16 was 6.39 inches, down to 0.56 inch on March 30. 3/ Precipitation records began June 1938. Runoff records began July 1938. 4/ Mean P based on 72-year (1891-1962) U. S. Weather Bureau record period at Lancaster, Wis.

1940 SELECTED RUNOFF EVENT				FENNIMORE, WISCONSIN WATERSHED W-2							31.02
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of August 3, 1940											
7-10	RG R-6	.0000	8-3	RG	R-6	.00	8-3	1835	.0000	.0000	
7-11	.82	.0000		1814	.00	.00		1838	.9540	.0405	
7-25	.38	.0000		1820	3.80	.38		1839	.9400	.0563	
7-26	4.80	.4354		1825	4.56	.76		1842	.8570	.1012	
7-29	.03	.0000		1830	3.84	1.08		1844	.7960	.1287	
				1834	6.45	1.51					
7-30	.14	.0000		1840	2.10	1.72		1846	.6870	.1535	
8-1	.37	.0000		1845	2.40	1.92		1850	.5750	.1956	
8-2	.09	.0000		1850	1.80	2.07		1855	.4440	.2381	
8-3	5/.08	.0000		1855	1.08	2.16		1900	.3010	.2692	
				1901	.50	2.21		1905	.2165	.2908	
				1905	2.10	2.35		1910	.1420	.3057	
				1910	.24	2.37		1915	.0914	.3154	
				1920	.12	2.39		1920	.0626	.3218	
								1930	.0278	.3294	
								1940	.0095	.3325	
								1950	.0019	.3335	
								2003	.0000	.3336	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 22.988. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 31.1-5. 5/ FROM 0600 TO 1705.



FENNIMORE, WISCONSIN WATERSHED W-2
Cooperative Research Project of USDA and Wisconsin Agricultural Experiment Station

MONTHLY PRECIPITATION AND RUNOFF (inches)						FENNIMORE, WISCONSIN WATERSHED W-3							31.03
						AREA — 52.5 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P ^{1/}	.42	1.60	2/3.41	2.48	5.35	2.69	7.28	3.69	3.87	2.96	.16	.59	34.50
Q	.00	.00	.32E	T	.00	T	T	.00	T	.00	.00	.00	.32E
STA AV ^{2/} P	.90	.98	1.89	3.08	3.86	5.08	4.15	3.93	3.71	2.42	2.09	1.09	33.18
(38-62) Q	.16	.24	.53	.01	.01	.14	.13	.09	.02	.01	.00	.01	1.35
MEAN P ^{4/}	1.13	1.14	2.02	2.98	4.03	4.45	3.79	3.48	3.83	2.41	1.99	1.30	32.55
72 YR													

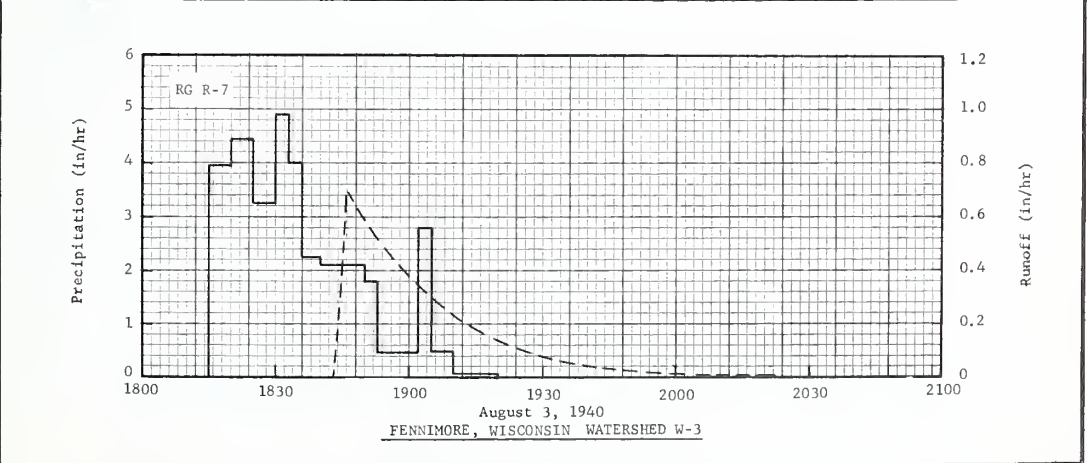
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	3-24	.09	3-24	.05	3-25	.08	3-25	.13E	3-25	.13E	3-25	.13E	3-25	.19E	3-24	.32E

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-28 1945	1.63	8-6 1951	1.01	8-6 1951	1.32	7-15 1950	2.38	7-15 1950	2.38	7-15 1950	2.38	7-15 1950	2.38	7-15 1950	2.54

NOTES: Quality of records: P and Q, excellent. Watershed conditions: 25% corn, 2% grain, 34% hay, 32% pasture, 7% roads and buildings. 1/ Precipitation is arithmetic average of two recording gages from Apr. 13 to Dec. 4 and R-8 rest of year. 2/ Snow water equivalent on Mar. 16 was 6.39 in., down to 0.56 in. on Mar. 30. 3/ Precipitation records began June 1938. Runoff records began July 1938. 4/ Mean P based on 72-yr (1891-1962) U. S. Weather Bureau record period at Lancaster, Wis.

1940 SELECTED RUNOFF EVENT			FENNIMORE, WISCONSIN WATERSHED W-3							31.03
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 3, 1940										
	2 RG 5/			RG	R-7					
7-10	2.24	.0000	8-3	1815	.00	.00	8-3	1843	.0000	.0000
7-11	.85	.0038		1820	3.96	.33		1844	.1400	.0006
7-25	.38	.0000		1825	4.44	.70		1845	.5050	.0060
7-26	4.77	.5285		1830	3.24	.97		1846	.6930	.0160
7-29	.03	.0000		1833	4.90	1.20		1848	.6360	.0382
7-30	.13	.0000		1836	4.00	1.40		1850	.6000	.0589
8- 1	.36	.0000		1840	2.25	1.55		1853	.5100	.0867
8- 2	.05	.0000		1850	2.10	1.90		1856	.4580	.1109
8- 3	6/ .09	.0000		1853	1.80	1.99		1900	.3680	.1391
				1902	.47	2.06		1905	.2930	.1668
				1905	2.80	2.20		1910	.2270	.1885
				1910	.48	2.24		1915	.1716	.2051
				1920	.06	2.25		1920	.1330	.2178
								1930	.0760	.2350
								1940	.0404	.2446
								1950	.0183	.2493
								2000	.0060	.2512
								2020	.0000	.2519

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 52.937. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 31.1-5. 5/ ARITHMETIC AVERAGE OF RAIN GAGES 7 AND 8. 6/ RAINFALL FROM 0600 TO 1730.



MONTHLY PRECIPITATION AND RUNOFF (inches)				FENNIMORE, WISCONSIN WATERSHED W-4 AREA— 171 ACRES										31.04
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P ₁ /Q	.49 .00	1.60 .00	2/3.65 .43	2.42 .39	5.52 .12	2.57 .05	7.21 .08	3.71 T	3.83 .03	3.09 T	.14 .00	.53 .00	34.76 1.10
	STA AV ³ /P (38-62) Q	.91 .19	.97 .32	1.86 .70	3.02 .04	3.80 .03	5.06 .21	4.14 .19	3.94 .12	3.64 .03	2.39 .01	2.07 T	1.10 .01	32.90 1.85
	MEAN P <u>4</u> / 72 YR	1.13	1.14	2.02	2.98	4.03	4.45	3.79	3.48	3.83	2.41	1.99	1.30	32.55

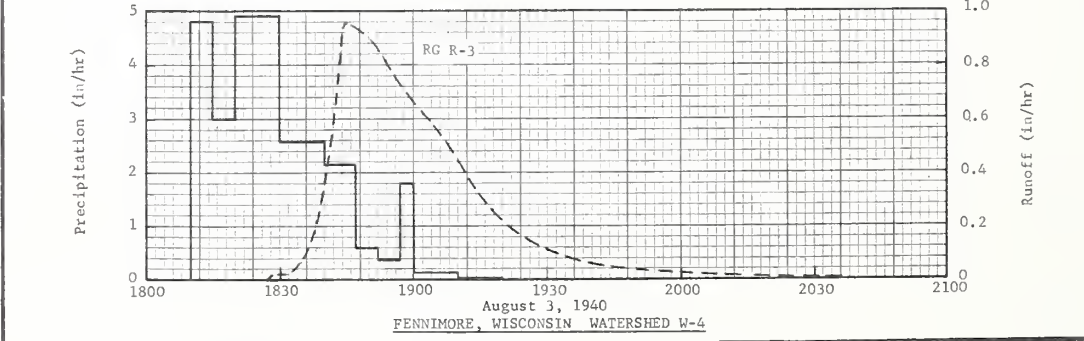
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-16	.04	3-27	.03	3-27	.06	3-27	.13	3-27	.16	3-27	.23	3-27	.32	3-24	.78

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	8-6	1.76	8-6	1.11	8-6	1.48	7-15	2.82	7-15	2.86	7-15	2.86	7-15	2.86	7-15	2.99
1962	1951		1951		1951		1950		1950		1950		1950		1950	

NOTES: Quality of records: P and Q, excellent. Watershed conditions: 32% corn, 17% grain, 12% hay, 21% pasture, 11" soil bank (idle), 7% roads and buildings. 1/ Precipitation is arithmetic average of 4 recording gages from Apr. 13 to Dec. 4 and R-1 rest of year. 2/ Snow water equivalent on Mar. 16 was 6.39 in., down to 0.56 in. on Mar. 30. 3/ Precipitation and runoff records began June 1938. 4/ Mean P based on 72-yr (1891-1962) U. S. Weather Bureau record period at Lancaster, Wis.

1940 SELECTED RUNOFF EVENT				FENNIMORE, WISCONSIN WATERSHED W-4										31.04
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE	RAINFALL	RUNOFF	DATE	TIME	INTENSITY	ACC.	DATE	TIME	RATE	ACC.				
MO-DAY	(inches)	(inches)	MO-DAY	OF DAY	(in/hr)	(inches)	MO-DAY	OF DAY	(in/hr)	(inches)				
Event of August 3, 1940														
	4 RG <u>5</u> /			RG	R-3									
7-10	1.98	.0039	8-3	1810	.00	.00	8-3	1828	.0000	.0000				
7-11	.84	.0232		1815	4.80	.40		1829	.0157	.0001				
7-25	.40	.0000		1820	3.00	.65		1831	.0136	.0006				
7-26	5.03	.9597		1830	4.92	1.47		1833	.0189	.0011				
7-29	.02	.0000		1840	2.58	1.90		1835	.0570	.0025				
7-30	.13	.0000		1847	2.14	2.15		1837	.1242	.0054				
8-1	.32	.0000		1852	.60	2.20		1840	.3100	.0159				
8-2	.03	.0000		1857	.36	2.23		1842	.5400	.0299				
8-3	<u>6</u> /0.09	.0000		1900	1.80	2.32		1844	.8770	.0533				
				1910	.12	2.34		1845	.9490	.0686				
				1920	.03	2.35		1846	.9500	.0844				
								1850	.8910	.1461				
								1900	.6710	.2768				
								1906	.5520	.3381				
								1912	.3850	.3853				
								1918	.2530	.4168				
								1924	.1680	.4377				
								1930	.1020	.4511				
								1939	.0615	.4632				
								1950	.0338	.4717				
								2000	.0197	.4762				
								2010	.0107	.4787				
								2030	.0039	.4810				
								2100	.0008	.4820				
								2123	.0000	.4822				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 172.425. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 31.1-5. 5/ ARITHMETIC AVERAGE OF RAIN GAGES 1, 2, 3, 4. 6/ RAINFALL FROM 0600 TO 1710.



Cooperative Research Project of USDA and Wisconsin Agricultural Experiment Station

MONTHLY PRECIPITATION AND RUNOFF (inches)						LaCROSSE, WISCONSIN WATERSHED CW AREA—2.71 ACRES							32.03			
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 1/	.15	1.43	1.12	1.38	4.57	3.39	3.09	7.48	2.72	2.05	.11	.34	27.83			
Q	.00	.00	.98	.00	.00	.00	.00	.07	.00	.00	.00	.00	1.05			
STA AV2/ P	.93	1.01	1.94	2.85	3.89	4.36	3.95	3.95	3.40	2.14	1.76	.90	31.00			
(37-62) Q	.10	.21	.74	.14	.00	.20	.29	.15	.13	.03	.01	.01	2.12			
MEAN P 3/ 72 YR	1.16	1.17	1.85	2.91	3.95	4.37	3.62	3.47	3.58	2.32	1.96	1.26	31.92			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-30	.09	3-24	.08	3-24	.14	3-24	.36	3-24	.53	3-24	.60	3-24	.85	3-24	.90
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1962	7-21 1938	4.50	7-19 1952	1.77	7-19 1952	2.01	7-19 1952	2.08	7-19 1952	2.11	7-19 1952	2.12	7-19 1952	2.12	3-23 1961	2.25
NOTES: Quality of records: P and Q, good. Watershed conditions: 100% hay. 1/ Precipitation obtained from control plot rain gage. All precipitation in Jan., Feb., Mar., Nov., and Dec. is snow. 2/ Precipitation and runoff records began Jan. 1937. 3/ Mean P based on 72-yr (1891-1962) U. S. Weather Bureau record period at Hillsboro, Wis.																
NO SELECTED RUNOFF EVENT REPORTED. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 32.3-6.																

Cooperative Research Project of USDA and Wisconsin Agricultural Experiment Station

32.3-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						LaCROSSE, WISCONSIN WATERSHED CWA AREA—2.95 ACRES 1/							32.04			
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 2/	.15	1.43	1.12	1.38	4.57	3.39	3.09	7.48	2.72	2.05	.11	.34	27.83			
Q	.00	.00	.33	.00	.00	.00	.00	.07	.05	.00	.00	.00	.45			
STA AV3/P	.60	.89	1.60	2.59	3.85	4.13	4.70	4.13	3.13	1.99	1.76	.74	30.11			
(52-62) Q	.01	.00	.50	.33	.00	.20	.46	.16	.03	.01	.00	.00	1.70			
MEAN P 4/ 72 YR	1.16	1.17	1.85	2.91	3.95	4.37	3.62	3.47	3.88	2.32	1.96	1.26	31.92			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-30	.11	3-27	.05	3-27	.08	3-27	.14	3-27	.14	3-27	.24	3-26	.32	3-25	.33
MAXIMUMS FOR PERIOD OF RECORD																
1952 TO 1962	7-19 1952	3.40	7-19 1952	1.73	7-19 1952	1.98	7-19 1952	2.06	7-19 1952	2.14	7-19 1952	2.16	7-19 1952	2.16	7-19 1952	2.16
NOTES: Quality of records: P and Q, good. Watershed conditions: 100% hay. 1/ This area was erroneously reported as 3.06 ac. on p. 225 of Misc. Pub. 994 for 1960-61. 2/ Precipitation obtained from control plot rain gage. All precipitation in Jan., Feb., Mar., Nov., and Dec. is snow. 3/ Precipitation and runoff records began Jan. 1952. 4/ Mean P based on 72-yr (1891-1962) U. S. Weather Bureau record period at Hillsboro, Wis.																
NO SELECTED RUNOFF EVENT REPORTED. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 32.3-6.																

Cooperative Research Project of USDA and Wisconsin Agricultural Experiment Station

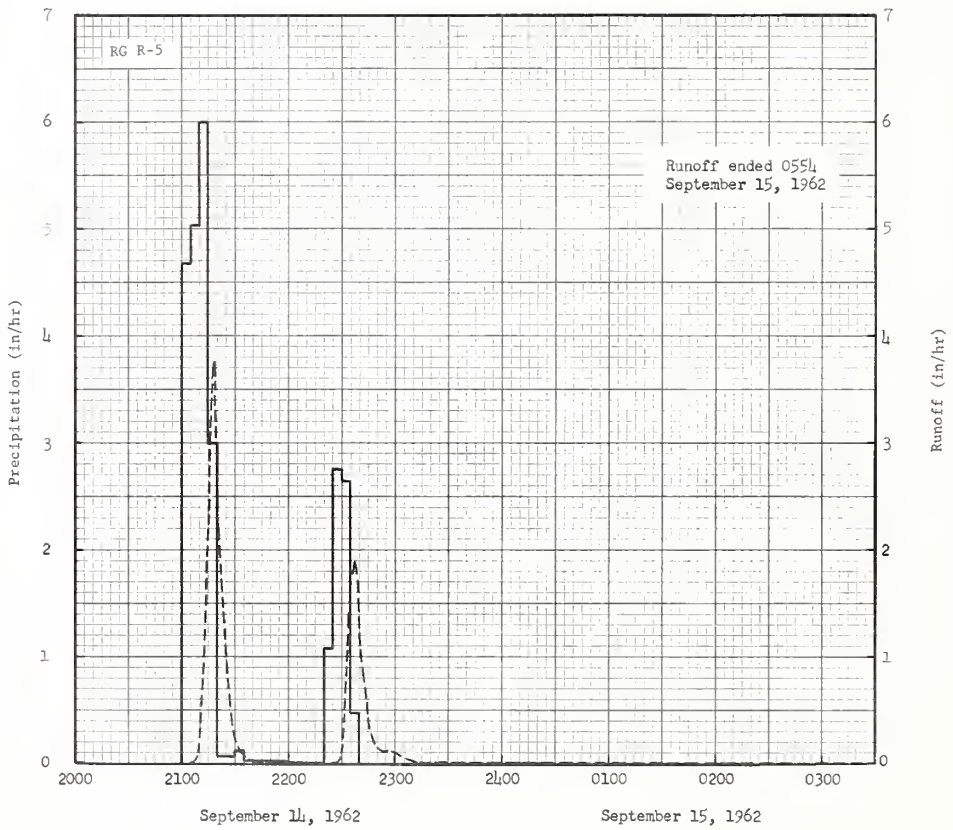
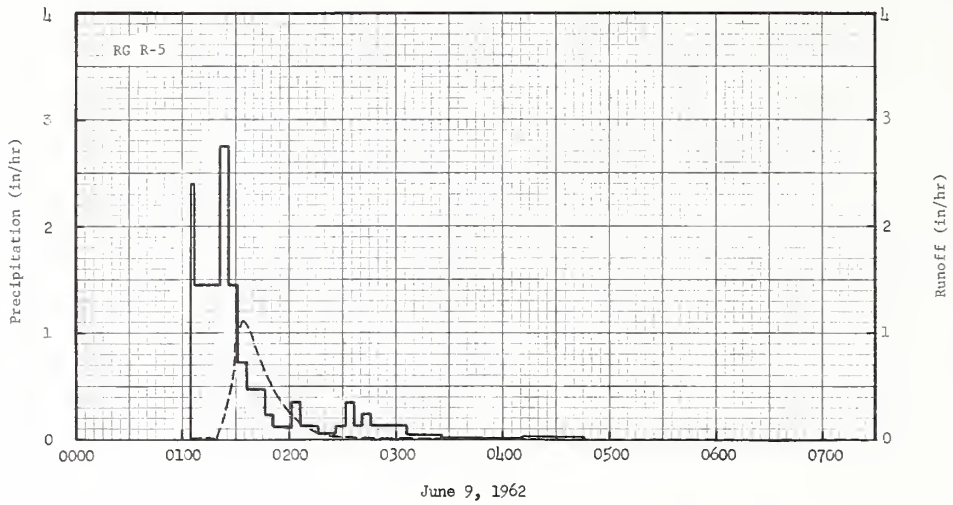
(See 32.3-1 above)
32.4-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								CHEROKEE, OKLAHOMA WATERSHED W-10 AREA — 1.66 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.33 .00	.10 .00	.25 .00	2.32 .06	1.82 .20	5.47 .54	4.58 .23	.34 .00	3.24 .94	.98 .00	.99 .00	.73 .00	21.15 1.97			
STA AV 2/ (60-62) Q	.20 .00	.17 .00	2.21 .25	1.83 .06	3.52 .98	5.27 .95	3.10 .12	1.88 T	2.90 .32	2.14 .09	1.15 .03	.99 .02	25.36 2.82			
MEAN P 3/ 46 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								CHEROKEE, OKLAHOMA WATERSHED W-10								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	3.77	9-14	.57	9-14	.92	9-14	.94	9-14	.94	9-14	.94	9-14	.94	9-14	.94
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	9-14 1962	3.77	6-2 1961	1.01	6-2 1961	1.02	6-2 1961	1.02	6-2 1961	1.02	6-2 1961	1.02	6-2 1961	1.02	5-4 1961	1.14
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-5. 2/ Precipitation and runoff records began Aug. 1960. 3/ Mean P based on 48-yr. (1915-62) U. S. Weather Bureau record period at Cherokee, Okla., with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS								CHEROKEE, OKLAHOMA WATERSHED W-10								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
<u>Event of June 9, 1962</u>																
5-20-62	RG R-5 1.62	.20	6-9-62	RG R-5		6-9-62										
5-28	.20	.00	0105	.00	.00	0105	.0000	.00								
6-1	1.04	.06	0106	2.40	.04	0116	.0084	T								
6-2	.92	T	0111	1.44	.16	0119	.0043	T								
6-3	.06	.00	0116	1.44	.28	0121	.0990	T								
6-5	.32	.00	0121	1.44	.40	0124	.226	.01								
6-7	.22	.00	0126	2.76	.63	0125	.285	.02								
6-8	.52	.00	0131	1.44	.75	0127	.425	.03								
			0136	.72	.81	0128	.524	.03								
			0141	.48	.85	0129	.655	.04								
Watershed conditions: 100% of area in wheat 26 to 30 inches high; soil moist throughout the profile.			0146	.48	.89	0130	.804	.06								
			0151	.24	.91	0133	1.07	.10								
			0201	.12	.93	0134	1.13	.12								
			0206	.36	.96	0137	1.07	.18								
			0216	.12	.98	0142	.873	.26								
			0226	.06	.99	0145	.717	.30								
			0231	.12	1.00	0148	.578	.33								
			0236	.36	1.03	0151	.473	.36								
			0241	.12	1.04	0155	.380	.38								
			0246	.24	1.06	0158	.310	.40								
			0306	.12	1.10	0201	.249	.42								
			0326	.03	1.11	0203	.204	.42								
			0411	.01	1.12	0207	.138	.44								
			0446	.02	1.13	0210	.114	.44								
						0216	.0725	.45								
						0220	.0501	.46								
						0230	.0169	.46								
						0251	.0062	.46								
						0311	.0043	.47								
						0721	.0000	.47								

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.10-4.

1962 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA WATERSHED W-10					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of September 14-15, 1962								
8-24-62	RG R-5 .05	.00	9-14-62	RG R-5		9-14-62		
9-2	.10	.00	2100	.00	.00	2100	.0000	.00
9-7	.08	.00	2105	4.68	.39	2106	.0138	T
9-9	.05	.00	2110	5.04	.81	2108	.0665	T
			2115	6.00	1.31	2109	.122	T
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2120	3.00	1.56	2110	.260	.01
			2130	.06	1.57	2111	.524	.01
			2135	.12	1.58	2112	.850	.02
			2200	.02	1.59	2113	1.27	.04
			2220	.00	1.59	2114	1.89	.07
			2225	1.08	1.68	2115	2.16	.10
			2230	2.76	1.91	2116	2.49	.14
			2235	2.64	2.13	2117	3.24	.19
			2240	.48	2.17	2118	3.77	.25
						2119	3.24	.31
						2120	2.67	.35
						2121	2.28	.40
						2122	2.00	.43
						2124	1.33	.49
						2125	1.05	.51
						2126	.850	.52
						2127	.636	.54
						2128	.473	.54
						2129	.310	.55
						2130	.249	.56
						2132	.156	.56
						2134	.106	.57
						2136	.0725	.57
						2140	.0278	.57
			2144	.0062	.57			
			2203	.0000	.57			
			2224	.0000	.57			
			2228	.0138	.57			
			2229	.0725	.58			
			2230	.194	.58			
			2231	.524	.58			
			2232	.827	.59			
			2233	1.07	.61			
			2234	1.51	.63			
			2236	1.78	.69			
			2237	1.89	.72			
			2239	1.71	.78			
			2240	1.33	.80			
			2241	1.07	.82			
			2242	.897	.84			
			2243	.738	.85			
			2244	.560	.86			
			2245	.425	.87			
			2246	.351	.88			
			2248	.272	.89			
			2250	.165	.90			
			2252	.122	.90			
			2257	.106	.91			
			2300	.0919	.91			
			2306	.0360	.92			
			2310	.0169	.92			
			2314	.0138	.92			
			2344	.0062	.93			
			2400	.0043	.93			
			9-15-62					
			0554			0554	.0000	.94

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940.

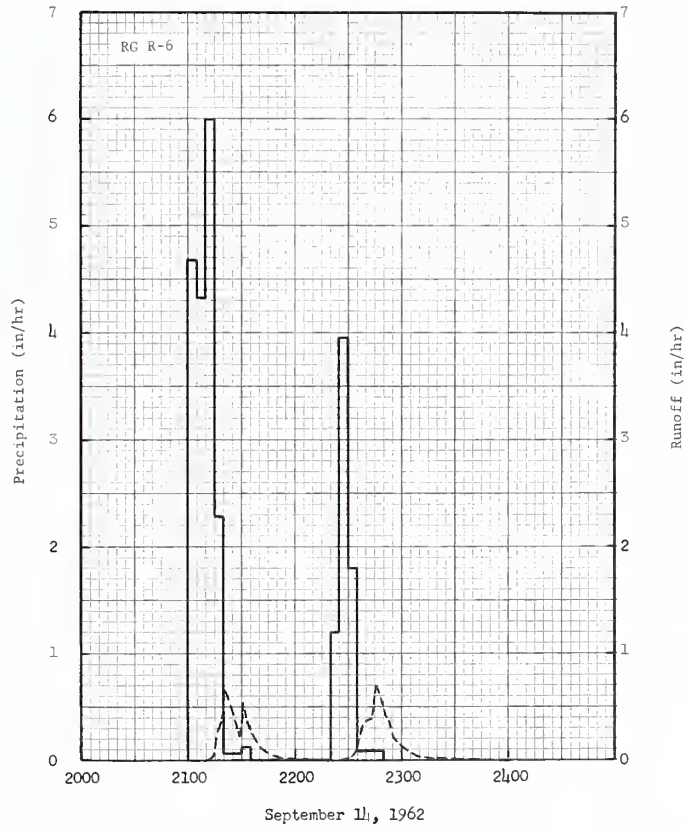
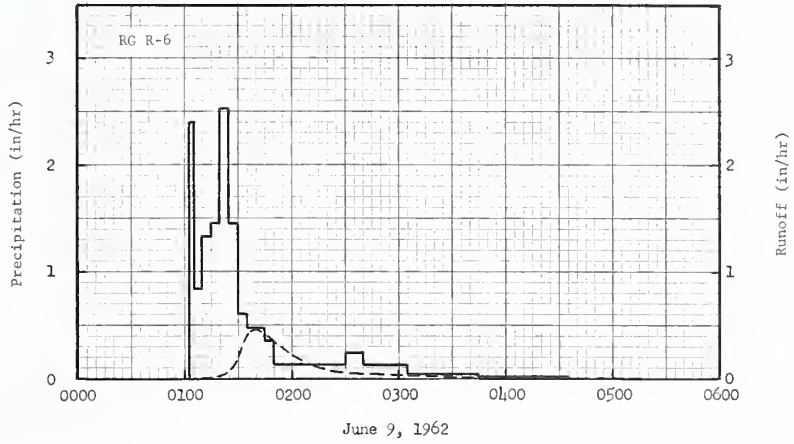


CHEROKEE, OKLAHOMA WATERSHED W-10

MONTHLY PRECIPITATION AND RUNOFF (Inches)								CHEROKEE, OKLAHOMA WATERSHED W-11 AREA — 2.12 ACRES								
Year \ Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.35 .00	.10 .00	.26 .00	2.38 .04	1.80 .01	5.33 .30	4.37 .01	.34 .00	3.17 .36	.96 .00	.98 .00	.74 .00	20.78 .72			
STA AV 2/ (60-62) P Q	.21 .00	.22 .00	2.23 .23	1.89 .07	3.50 .60	5.20 .75	3.01 T	1.60 .03	2.89 .12	2.08 .02	1.15 T	1.00 .01	24.98 1.83			
MEAN P 3/ 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								CHEROKEE, OKLAHOMA WATERSHED W-11								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	.70	6-9	.24	9-14	.35	9-14	.36	9-14	.36	9-14	.36	9-14	.36	9-14	.36
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	6-2 1961	2.03	6-2 1961	.92	6-2 1961	.94	6-2 1961	.95	6-2 1961	.95	6-2 1961	.95	6-2 1961	.95	6-2 1961	.95
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-6. 2/ Precipitation and runoff records began Aug. 1960. 3/ Mean P based on 48-yr. (1915-62) U. S. Weather Bureau record period at Cherokee, Okla., with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS								CHEROKEE, OKLAHOMA WATERSHED W-11								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
	RG R-6		6-9-62	RG R-6		6-9-62										
5-20-62	1.60	.01	0103	.00	.00	0110	.0000	.00								
5-28	.20	.00	0105	2.40	.08	0113	.0097	T								
6-1	1.01	T	0110	.84	.15	0121	.0311	T								
6-2	.96	.00	0115	1.32	.26	0123	.0551	T								
6-3	.04	.00														
6-5	.30	.00	0120	1.44	.38	0127	.113	.01								
6-7	.21	.00	0125	2.52	.59	0130	.2009	.02								
6-8	.52	.00	0130	1.44	.71	0132	.302	.02								
			0135	.60	.76	0137	.439	.05								
			0145	.48	.84	0139	.470	.07								
			0150	.36	.87	0143	.439	.10								
			0230	.12	.95	0150	.367	.15								
			0240	.24	.99	0154	.302	.17								
			0305	.12	1.04	0158	.243	.19								
			0345	.02	1.05	0202	.2009	.20								
			0435	.01	1.06	0207	.163	.22								
						0210	.137	.22								
						0214	.113	.23								
						0218	.0918	.24								
						0223	.0725	.25								
						0228	.0606	.25								
						0235	.0498	.26								
						0245	.0399	.27								
						0253	.0311	.27								
						0310	.0231	.28								
						0326	.0158	.28								
						0343	.0097	.29								
						0357	.0050	.29								
						0516	.0000	.29								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1377. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.11-4.																

1962 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA WATERSHED W-11								
Antecedent conditions			Rainfall			Runoff					
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)			
<u>Event of September 14, 1962</u>											
8-24-62	RG R-6 .05	.00	9-14-62	RG R-6		9-14-62					
9-2	.10	.00	2100	.00	.00	2102	.0000	.00			
9-7	.10	.00	2105	4.68	.39	2113	.0231	T			
9-9	.05	.00	2110	4.32	.75	2114	.0498	T			
			2115	6.00	1.25	2115	.129	T			
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2120	2.28	1.44	2116	.243	.01			
			2130	.06	1.45	2118	.367	.02			
			2135	.12	1.46	2119	.486	.02			
			ceased			2120		.586	.03		
			2220	.00	1.46	2121	.659	.04			
			2225	1.20	1.56	2123	.552	.05			
			2230	3.96	1.89	2125	.454	.08			
			2235	1.80	2.04	2127	.340	.09			
			2250	.08	2.06	2129	.221	.10			
						2130	.367	.11			
									2131	.518	.11
									2132	.340	.12
									2135	.289	.14
									2137	.221	.15
									2139	.154	.15
						2141	.113	.16			
						2143	.0851	.16			
						2147	.0551	.16			
						2154	.0231	.17			
						2204	.0097	.17			
						2218	.0014	.17			
						2226	.0014	.17			
						2228	.0097	.17			
						2231	.0231	.17			
						2233	.0725	.18			
						2234	.113	.18			
						2236	.181	.18			
						2237	.243	.18			
						2238	.340	.19			
						2241	.381	.21			
						2243	.395	.22			
						2244	.518	.23			
						2245	.622	.24			
						2246	.698	.25			
						2249	.552	.28			
						2251	.409	.30			
						2253	.353	.31			
						2257	.201	.33			
						2259	.163	.33			
						2303	.0987	.34			
						2307	.0606	.35			
						2313	.0311	.35			
						2322	.0158	.36			
						2328	.0097	.36			
						2400	.0000	.36			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1377.



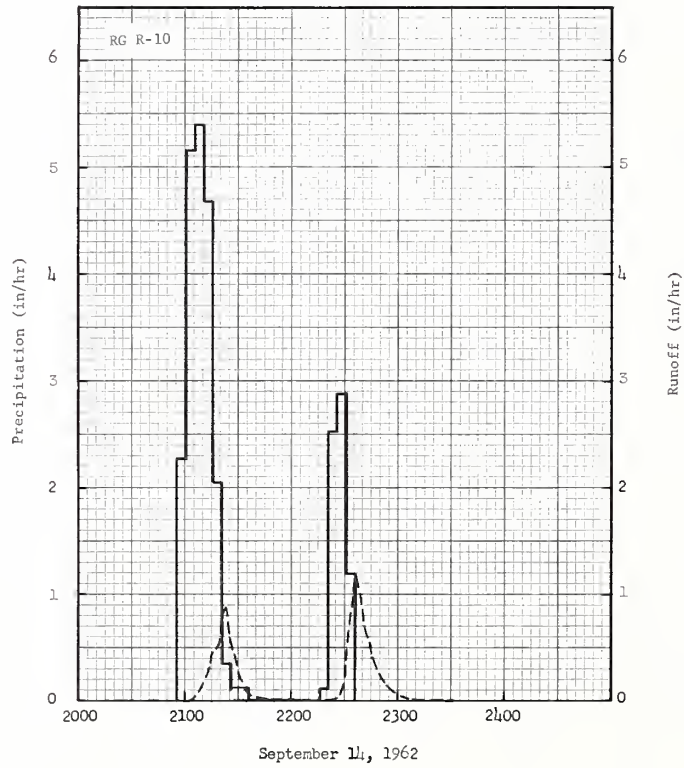
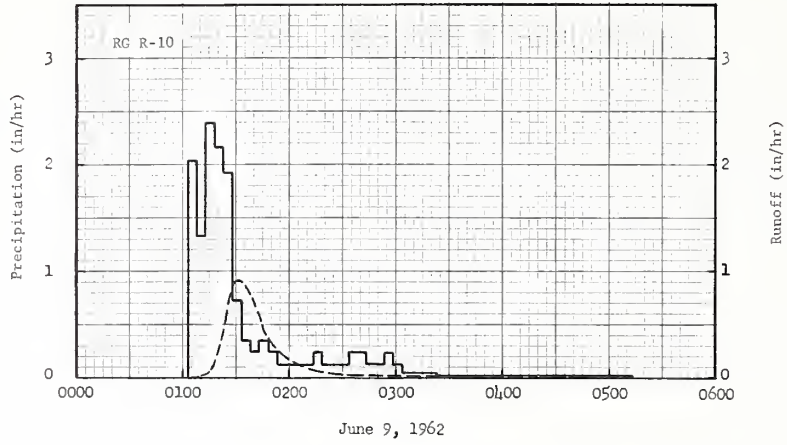
CHEROKEE, OKLAHOMA WATERSHED W-11

MONTHLY PRECIPITATION AND RUNOFF (Inches)								CHEROKEE, OKLAHOMA WATERSHED W-12 AREA -- 1.68 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.38 .00	.10 .00	.26 .00	2.15 .06	1.70 .15	5.24 .19	4.53 .31	.34 .00	3.29 .45	.88 .00	.97 .00	.62 .00	20.46 1.46			
STA AV 2/ (60-62) Q	.28 .00	.21 .00	2.13 .17	1.77 .04	3.49 .88	5.24 1.02	3.96 .44	1.84 .00	2.86 .15	2.17 .02	1.13 .01	.96 T	26.04 2.73			
MEAN P 3/ 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								CHEROKEE, OKLAHOMA WATERSHED W-12								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	1.19	6-9	.41	9-14	.44	9-14	.45	9-14	.45	9-14	.45	6-8	.45	6-1	.49
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	6-2 1961	2.96	6-2 1961	1.28	6-2 1961	1.29	6-2 1961	1.29	6-2 1961	1.29	6-2 1961	1.29	6-2 1961	1.29	6-2 1961	1.29
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-10. 2/ Precipitation and runoff records began July 1960. 3/ Mean P based on 48-yr (1915-62) U. S. Weather Bureau record period at Cherokee, Okla with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS								CHEROKEE, OKLAHOMA WATERSHED W-12								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
RG R-10			<u>Event of June 9, 1962</u>													
5-20-62	1.50	.15	6-9-62	RG R-10		6-9-62										
5-28	.20	.00	0103	.00	.00	0103	.0000	.00								
6-1	.99	.04	0108	2.04	.17	0109	.0085	T								
6-2	.86	T	0113	1.32	.28	0112	.0279	T								
6-3	.03	.00	0118	2.40	.48	0115	.0454	T								
6-5	.26	.00	0123	2.16	.66	0117	.122	.01								
6-7	.20	.00	0128	1.92	.82	0119	.195	.01								
6-8	.45	T	0133	.72	.88	0121	.299	.02								
			0138	.36	.91	0123	.459	.03								
			0143	.24	.93	0126	.699	.06								
Watershed conditions: 100% of area in wheat 26 to 30 inches high; soil moist throughout the profile.			0148	.36	.96	0128	.853	.09								
			0153	.24	.98	0129	.9007	.10								
			0213	.12	1.02	0131	.925	.13								
			0218	.24	1.04	0134	.9007	.18								
			0233	.12	1.07	0140	.7201	.26								
			0243	.24	1.11	0143	.5803	.29								
			0253	.12	1.13	0145	.475	.31								
			0258	.24	1.15	0149	.381	.34								
			0303	.12	1.16	0152	.312	.36								
			0323	.03	1.17	0155	.250	.37								
			0418	.01	1.18	0157	.205	.38								
			0513	.01	1.19	0200	.166	.39								
			0206	.114	.40											
			0214	.0728	.41											
			0220	.0503	.42											
			0227	.0319	.42											
			0237	.0241	.43											
			0313	.0170	.44											
			0337	.0062	.44											
			0449	.0000	.45											

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.12-5.

1962 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA WATERSHED W-12					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
	RG R-10		<u>Event of September 11, 1962</u>					
8-24-62	.05	.00	9-11-62	RG R-10		9-14-62		
9-2	.11	.00	2056	.00	.00	2058	.0000	.00
9-7	.09	.00	2101	2.28	.19	2105	.0043	T
9-9	.05	.00	2106	5.16	.62	2106	.0362	T
			2111	5.40	1.07	2107	.0790	T
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2116	4.68	1.46	2109	.107	T
			2121	2.04	1.63	2110	.139	.01
			2126	.36	1.66	2111	.195	.01
			2136	.12	1.68	2112	.238	.01
			ceased			2114	.325	.02
			2216	.00	1.68	2115	.427	.03
			2221	.12	1.69	2118	.475	.05
			2226	2.52	1.90	2119	.526	.06
			2231	2.88	2.14	2120	.638	.07
			2236	1.20	2.24	2121	.720	.08
						2123	.877	.11
						2125	.678	.13
						2126	.562	.14
						2128	.427	.16
						2129	.339	.17
						2130	.262	.17
						2131	.216	.18
						2133	.139	.18
						2134	.0923	.18
						2136	.0668	.19
						2138	.0454	.19
						2140	.0319	.19
						2146	.0139	.19
						2148	.0085	.19
						2212	.0000	.19
						2218	.0000	.19
						2225	.0085	.19
						2227	.0362	.19
						2228	.0790	.19
						2229	.139	.20
						2230	.238	.20
						2231	.396	.20
						2232	.562	.21
						2233	.720	.22
						2234	.830	.24
						2235	.950	.25
						2236	1.19	.27
						2238	1.05	.31
						2240	.877	.34
						2242	.678	.36
						2244	.526	.38
						2246	.396	.40
						2250	.238	.42
						2254	.130	.43
						2258	.0728	.44
						2304	.0279	.44
						2308	.0139	.44
						2312	.0085	.45
						2332	.0000	.45

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940.

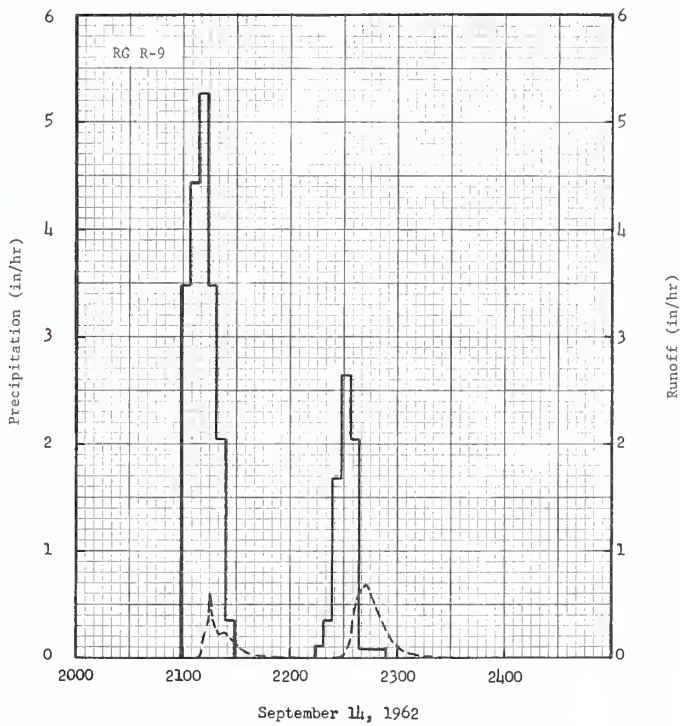
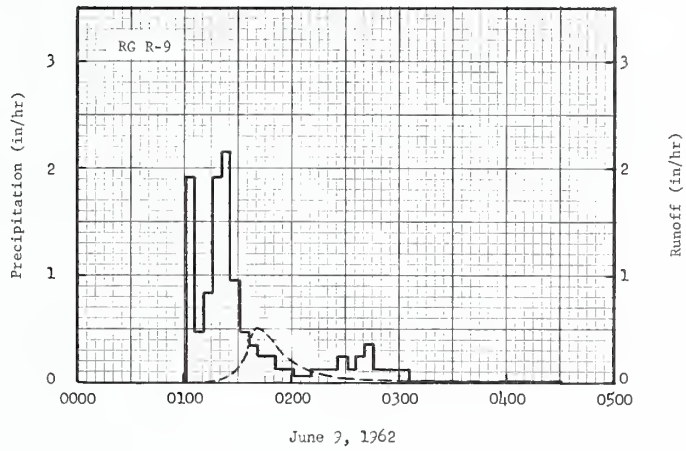


CHEROKEE, OKLAHOMA WATERSHED W-12

MONTHLY PRECIPITATION AND RUNOFF (Inches)								CHEROKEE, OKLAHOMA WATERSHED W-13 AREA - 1.99 ACRES									
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962	P 1/ Q	.31 .00	.11 .00	.27 .00	2.37 .02	1.73 .02	5.25 .25	4.49 .13	.35 .00	3.34 .30	1.00 .00	1.04 .00	.75 .00	21.01 0.72			
	STA AV (60-62) Q	.20 .00	.18 .00	2.21 .21	1.94 .04	3.57 .81	5.55 .86	3.91 .22	1.87 .00	2.96 .10	2.19 T	1.18 .00	1.01 T	26.57 2.24			
	MEAN P 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								CHEROKEE, OKLAHOMA WATERSHED W-13									
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	
1962		9-14	.68	6-9	.23	9-14	.30	9-14	.30	9-14	.30	9-14	.30	9-14	.30	9-14	.30
MAXIMUMS FOR PERIOD OF RECORD																	
1960 to 1962	6-2 1961	2.83	6-2 1961	1.16	6-2 1961	1.20	6-2 1961	1.20	6-2 1961	1.20	6-2 1961	1.20	6-2 1961	1.20	6-2 1961	1.20	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-9. 2/ Precipitation and runoff records began July 1960. 3/ Mean P based on 48-yr. (1915-62) U. S. Weather Bureau record period at Cherokee, Okla., with 20 missing months between 1943-59 estimated.																	
1962 SELECTED RUNOFF EVENTS								CHEROKEE, OKLAHOMA WATERSHED W-13									
Antecedent conditions			Rainfall			Runoff											
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
	RG R-9		Event of June 9, 1962														
5-20	1.51	0.02	6-9-62	RG R-9		6-9-62											
5-28	.22	.00	0101	.00	.00	0112	.0000	.00									
6-1	.98	T	0106	1.92	.16	0119	.0071	T									
6-2	.95	.00	0111	.48	.20	0121	.0173	T									
6-3	.03	.00	0116	.84	.27	0125	.0382	T									
6-5	.24	.00	0121	1.92	.43	0127	.0721	T									
6-7	.23	.00	0126	2.16	.61	0128	.0899	.01									
6-8	.50	.00	0131	.96	.69	0130	.156	.01									
			0136	.48	.73	0132	.191	.02									
			0141	.36	.76	0135	.286	.03									
			0151	.24	.80	0137	.429	.04									
			0201	.12	.82	0139	.489	.05									
			0211	.06	.83	0141	.522	.07									
			0226	.12	.86	0144	.489	.10									
			0231	.24	.88	0149	.4006	.13									
			0236	.12	.89	0153	.322	.16									
			0241	.24	.91	0159	.2105	.18									
			0246	.36	.94	0205	.140	.20									
			0306	.12	.98	0212	.0963	.21									
			0356	.01	.99	0217	.0778	.22									
			0431	.02	1.00	0221	.0613	.23									
						0227	.0424	.23									
						0231	.0343	.23									
						0248	.0203	.24									
						0308	.0093	.25									
						0323	.0053	.25									
						0426	.0000	.25									
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.0066. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.13-5:																	

1962 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA WATERSHED W-13								
Antecedent conditions			Rainfall			Runoff					
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)			
			<u>Event of September 11, 1962</u>								
	RG R-9			RG R-9							
8-24	.05	.00	9-11-62	.00	.00	9-11-62					
9-2	.11	.00	2059		.00	2102	.0000	.00			
9-7	.09	.00	2104	3.48	.29	2109	.0036	T			
9-9	.05	.00	2109	4.44	.66	2110	.0305	T			
			2114	5.28	1.10	2111	.0666	T			
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2119	3.48	1.39	2112	.182	T			
			2124	2.04	1.56	2113	.252	.01			
			2129	.36	1.59	2114	.360	.01			
			ceased			2115	.607	.02			
			2214	.00	1.59	2116	.360	.03			
			2219	.12	1.60	2118	.286	.04			
			2224	.36	1.63	2120	.220	.05			
			2229	1.68	1.77	2124	.241	.06			
			2234	2.64	1.99	2127	.182	.07			
			2239	2.04	2.16	2132	.0899	.08			
						2254	.08	2.18	2134	.0563	.09
									2138	.0343	.09
									2146	.0305	.09
									2151	.0117	.10
									2210	.0000	.10
						2224	.0000	.10			
						2227	.0010	.10			
						2229	.0071	.10			
						2231	.0563	.10			
						2232	.103	.10			
						2233	.148	.10			
						2234	.241	.10			
						2235	.334	.11			
						2236	.415	.12			
						2237	.505	.12			
						2239	.607	.14			
						2243	.681	.18			
						2246	.572	.22			
						2248	.474	.23			
						2250	.387	.25			
						2253	.297	.27			
						2255	.220	.27			
						2257	.164	.28			
						2300	.110	.29			
						2303	.0666	.29			
						2306	.0424	.29			
						2308	.0305	.30			
						2312	.0173	.30			
						2319	.0071	.30			
						2336	.0000	.30			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.0066.

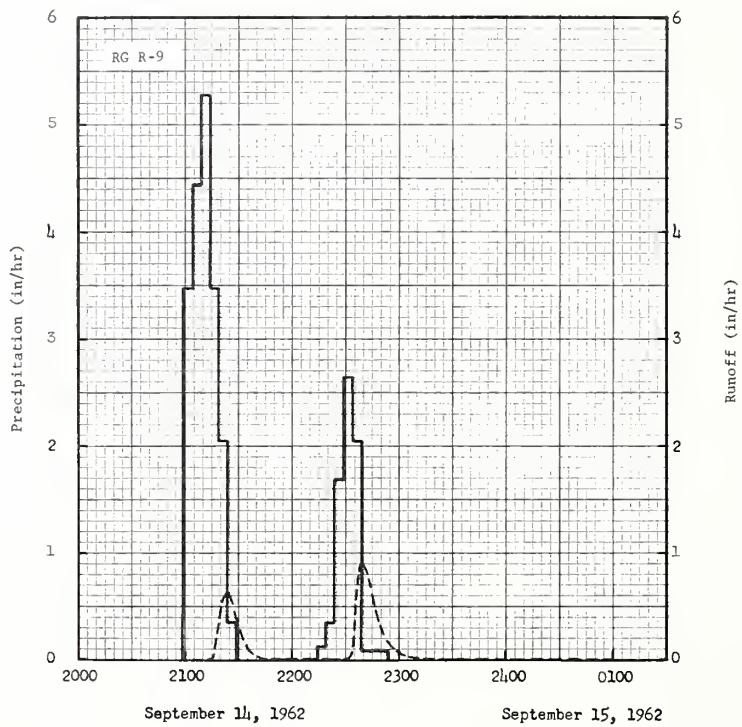
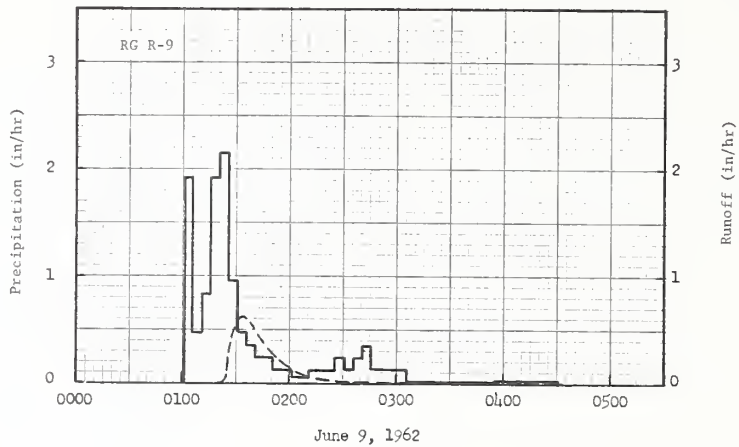


CHEROKEE, OKLAHOMA WATERSHED W-13

MONTHLY PRECIPITATION AND RUNOFF (Inches)							CHEROKEE, OKLAHOMA WATERSHED W-14 AREA — 2.16 ACRES									
Year \ Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.31 .00	.11 .00	.27 .00	2.37 .09	1.73 .16	5.25 .28	4.49 .10	.35 .00	3.34 .34	1.00 .00	1.04 .00	.75 .00	21.01 0.97			
STA AV 2/ (60-62) Q	.20 .00	.18 .00	2.21 .09	1.84 .05	5.57 .75	5.35 .76	3.08 .05	1.45 .00	2.96 .12	2.19 .01	1.18 .00	1.01 .01	25.32 1.84			
MEAN P 3/ 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							CHEROKEE, OKLAHOMA WATERSHED W-14									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	.92	6-7	.25	9-14	.34	9-14	.34	9-14	.34	9-14	.34	9-14	.34	9-14	.34
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	6-2 1961	2.29	6-2 1961	1.07	6-2 1961	1.08	6-2 1961	1.08	6-2 1961	1.08	6-2 1961	1.08	6-2 1961	1.08	6-2 1961	1.08
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gauge R-9. 2/ Precipitation and runoff records began Sept. 1960. 3/ Mean P based on 48-yr. (1915-62) U. S. Weather Bureau record period at Cherokee, Okla., with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS							CHEROKEE, OKLAHOMA WATERSHED W-14									
Antecedent conditions			Rainfall				Runoff									
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-20	RG R-9 1.51	.16	6-9-62	RG R-9		6-9-62										
5-28	.22	.00	0101	.00	.00	0119	.0000	.00								
6-1	.98	.02	0106	1.92	.16	0121	.0010	T								
6-2	.95	.00	0111	.48	.20	0123	.0159	T								
6-3	.03	.00	0116	.84	.27	0124	.9473	T								
6-5	.24	.00	0121	1.92	.43	0125	.0826	T								
6-7	.23	.00	0126	2.16	.61	0126	.184	T								
6-8	.50	.00	0131	.96	.69	0127	.319	.01								
			0136	.48	.73	0128	.421	.01								
			0141	.36	.76	0129	.510	.02								
			0151	.24	.80	0131	.591	.04								
			0201	.12	.82	0134	.625	.07								
			0211	.06	.83	0137	.591	.10								
			0226	.12	.86	0141	.479	.14								
			0231	.24	.88	0145	.394	.17								
			0236	.12	.89	0148	.319	.18								
			0241	.24	.91	0151	.262	.20								
			0246	.36	.94	0154	.212	.21								
			0306	.12	.98	0156	.176	.22								
			0356	.01	.99	0159	.143	.22								
			0431	.02	1.00	0204	.0946	.23								
						0209	.0612	.24								
						0215	.0430	.25								
						0219	.0280	.25								
						0224	.0159	.25								
						0232	.0066	.25								
						0433	.0000	.26								
Watershed conditions: 100% of area in wheat 26 to 30 inches high; soil moist throughout the profile.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1780. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.14-4.																

1962 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA WATERSHED W-14					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
RC R-9			Event of September 14-15, 1962					
8-24	.05	.00	9-14-62	RG R-9		9-14-62		
9-2	.11	.00	2059	.00	.00	2104	.0000	.00
9-7	.09	.00	2104	3.48	.29	2105	.0066	T
9-9	.05	.00	2109	4.44	.66	2110	.0033	T
			2114	5.28	1.10	2115	.0066	T
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2119	3.48	1.39	2116	.0612	T
			2124	2.04	1.56	2117	.151	T
			2129	.36	1.59	2118	.262	.01
			ceased			2119	.355	.01
			2214	.00	1.59	2120	.435	.02
			2219	.12	1.60	2121	.494	.03
			2224	.36	1.63	2122	.591	.04
			2229	1.68	1.77	2124	.625	.06
			2234	2.64	1.99	2126	.591	.08
			2239	2.04	2.16	2127	.494	.08
			2254	.03	2.18	2128	.421	.09
						2130	.319	.10
						2131	.273	.11
						2132	.202	.11
						2134	.136	.12
						2136	.0946	.12
						2138	.0517	.12
						2140	.0351	.13
						2142	.0247	.13
						2146	.0085	.13
						2200	.0010	.13
						2224	.0010	.13
						2231	.0107	.13
						2233	.0715	.13
						2234	.134	.13
						2235	.435	.14
						2236	.625	.15
						2237	.774	.16
						2238	.876	.17
						2239	.919	.19
						2242	.855	.23
						2244	.698	.26
						2246	.558	.28
						2247	.464	.29
						2248	.408	.30
						2250	.319	.31
						2252	.222	.32
						2254	.167	.32
						2256	.121	.33
						2258	.0826	.33
						2300	.0563	.33
						2302	.0430	.34
						2306	.0187	.34
						2310	.0066	.34
						2318	.0010	.34
						2324	.0021	.34
						2400	.0010	.34
						9-15-62		
						0100	.0000	.34

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1780.



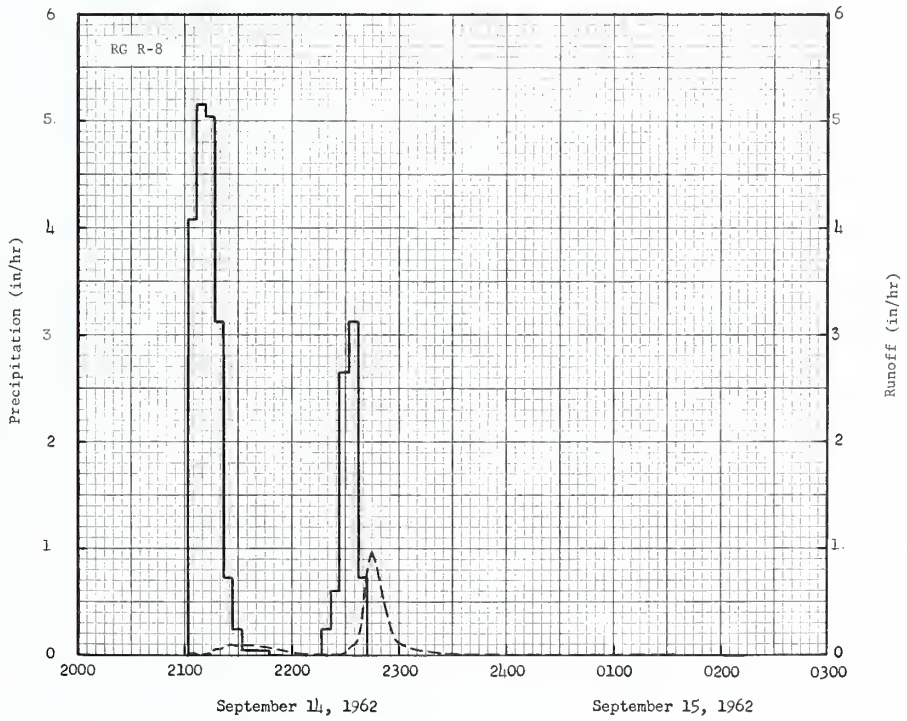
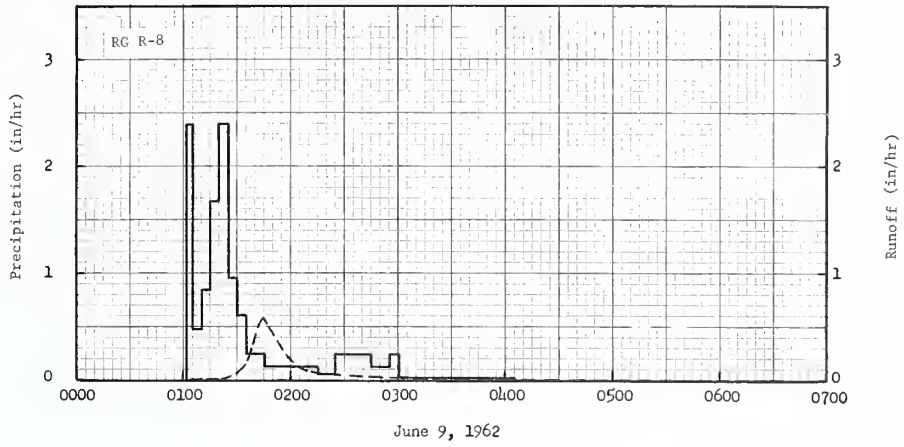
CHEROKEE, OKLAHOMA WATERSHED W-11

MONTHLY PRECIPITATION AND RUNOFF (Inches)							CHEROKEE, OKLAHOMA WATERSHED W-15 AREA — 2.15 ACRES									
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.35 .00	.10 .00	.27 .00	2.38 .07	1.80 .05	5.12 .25	4.23 .01	.35 .00	3.23 .30	.97 .00	1.00 .00	.67 .00	20.47 0.68			
STA AV 2/ (60-62) Q	.23 .00	.18 .00	2.17 .27	1.90 .07	3.51 1.27	5.25 .78	2.98 T	1.36 .00	2.87 .10	2.13 T	1.16 .02	1.01 .01	24.75 2.52			
MEAN P 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							CHEROKEE, OKLAHOMA WATERSHED W-15									
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	.98	9-14	.23	9-14	.28	9-14	.30	9-14	.30	9-14	.30	9-14	.30	9-14	.30
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	6-2 1961	2.64	6-2 1961	1.11	5-7 1961	1.16	5-7 1961	1.19	5-7 1961	1.19	5-7 1961	1.19	5-7 1961	1.19	5-4 1961	1.50
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-8. 2/ Precipitation and runoff records began Sept. 1960. 3/ Mean P based on 48-yr. (1915-62) U. S. Weather Bureau record period at Cherokee, Okla. with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS							CHEROKEE, OKLAHOMA WATERSHED W-15									
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
			<u>Event of June 9, 1962</u>													
5-20-62	RG R-8 1.57	.05	6-9-62	RG R-8 0102	.00	6-9-62										
5-28	.21	.00		0102	.00	0104	.0000	.00								
6-1	.98	.01		0105	2.40	0124	.0071	T								
6-2	.91	.00		0110	.48	0127	.0306	T								
6-3	.03	.00		0115	.84	0130	.0490	T								
6-5	.22	.00		0120	1.68	0133	.0972	.01								
6-7	.23	.00		0125	2.40	0136	.198	.01								
6-8	.49	.00		0130	.96	0138	.348	.02								
				0135	.60	0140	.418	.04								
				0145	.24	0142	.510	.05								
Watershed conditions: 100% of area in wheat 26 to 30 inches high; soil moist throughout the profile.				0215	.12	0145	.578	.08								
				0225	.06	0147	.510	.10								
				0245	.24	0151	.418	.13								
				0255	.12	0153	.348	.14								
				0300	.24	0156	.285	.16								
				0335	.02	0157	.239	.16								
				0405	.02	0158	.198	.16								
						0201	.1603	.17								
						0205	.112	.18								
						0209	.0904	.19								
						0218	.0714	.20								
						0224	.0490	.21								
						0243	.0306	.22								
						0312	.0155	.23								
						0324	.0096	.23								
						0636	.0000	.24								

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1679. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.15-4.

1962 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA WATERSHED W-15					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
<u>Event of September 14-15, 1962</u>								
8-24-62	RG R-8 .05	.00	9-14-62	RG R-8		9-14-62		
9-2	.12	.00	2102	.00	.00	2102	.0000	.00
9-7	.09	.00	2107	4.08	.34	2103	.0049	T
9-9	.05	.00	2112	5.16	.77	2104	.0096	T
			2117	5.04	1.19	2108	.0049	T
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2122	3.12	1.45	2111	.0096	T
			2127	.72	1.51	2113	.0155	T
			2132	.24	1.53	2115	.0228	T
			2147	.04	1.54	2116	.0490	T
			ceased			2118	.0744	T
			2217	.00	1.54	2120	.0597	.01
			2222	.24	1.56	2122	.0838	.01
			2227	.60	1.61	2124	.0972	.01
			2232	2.64	1.83	2130	.0775	.02
			2237	3.12	2.09	2132	.0597	.02
			2242	.72	2.15	2134	.0972	.03
						2140	.0904	.04
						2148	.0744	.05
						2152	.0490	.05
						2156	.0393	.05
						2200	.0266	.06
						2202	.0190	.06
						2204	.0071	.06
						2210	.0049	.06
						2228	.0049	.06
						2229	.0155	.06
						2230	.0306	.06
						2233	.0838	.06
						2236	.112	.07
						2237	.179	.07
						2239	.361	.08
						2241	.543	.09
						2242	.687	.10
						2243	.807	.11
						2244	.937	.13
						2245	.983	.15
						2247	.893	.18
						2249	.726	.20
						2251	.578	.22
						2252	.478	.23
						2254	.361	.25
						2255	.297	.25
						2258	.143	.26
						2304	.0838	.28
						2310	.0597	.28
						2316	.0441	.29
						2320	.0306	.29
						2330	.0096	.29
						2400	.0044	.30
						9-15-62		
						0135	.0000	.30

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1679.



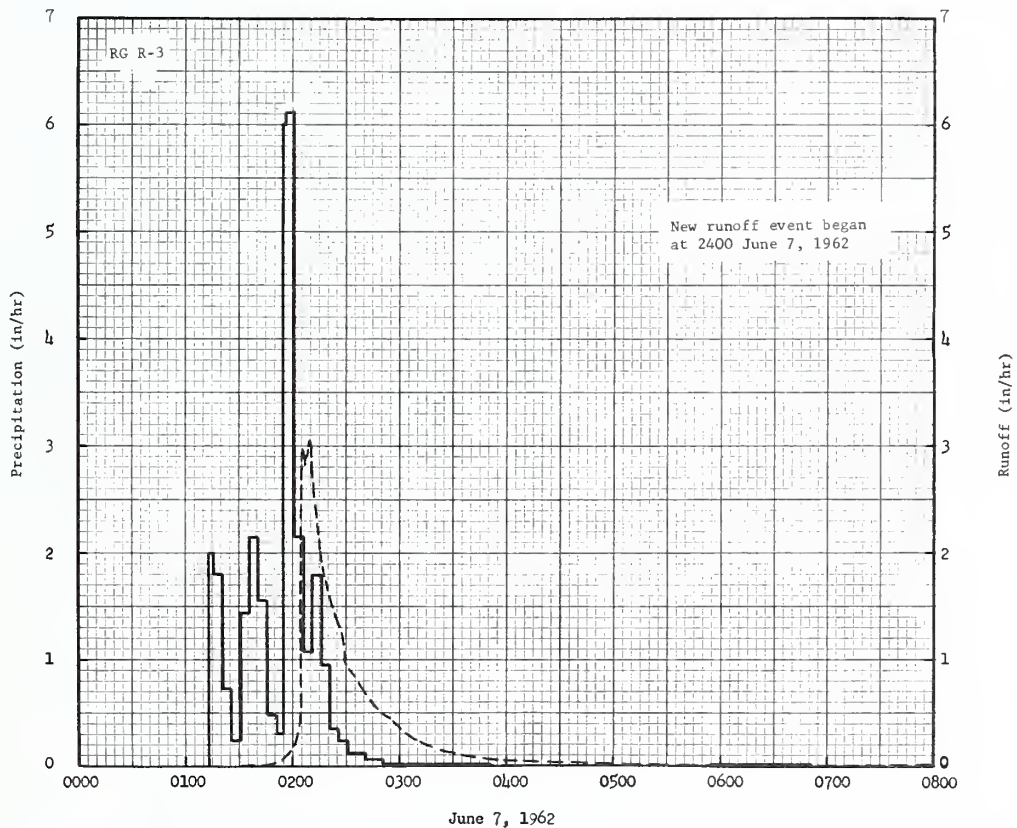
CHEROKEE, OKLAHOMA WATERSHED W-15

MONTHLY PRECIPITATION AND RUNOFF (Inches)							STILLWATER, OKLAHOMA WATERSHED W-1 AREA—16.7 ACRES									
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.71 .53	.62 .47	1.33 .66	1.12 .08	1.44 .00	8.10 3.80	4.50 1.03	.94 .04	3.55 .00	2.34 .04	1.36 .09	1.46 .22	27.47 5.96			
STA AV 2/ P (51-62) Q	.53 .07	1.16 .18	2.13 .76	2.26 .63	5.65 2.15	4.34 1.23	4.63 .91	2.37 .06	3.34 .35	2.86 .83	1.41 .27	1.10 .22	31.78 7.66			
MEAN P 3/ 70 YR	1.11	1.28	2.12	3.44	4.79	4.17	3.09	3.03	3.72	2.91	2.05	1.36	33.07			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							STILLWATER, OKLAHOMA WATERSHED W-1									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-7	3.06	6-7	1.20	6-7	1.35	6-7	1.40	6-7	1.41	6-7	1.42	6-7	1.45	6-1	3.43
MAXIMUMS FOR PERIOD OF RECORD																
1951 to 1962	4-18 1957	6.99	7-15 1951	3.31	7-15 1951	3.74	7-15 1951	3.96	10-2 1959	4.52	7-14 1951	5.18	10-1 1959	5.68	9-29 1959	7.62
Notes: Quality of records: Monthly P, excellent; monthly Q, excellent except Jan., which is fair due to the water in the well being frozen up during Jan. 9-26; annual maximum discharges and volumes, excellent. Watershed conditions: All native grass pasture, overgrazed from early spring to July 2, but the grass made a fair recovery after the cattle herd was removed for the balance of the year. 1/ Precipitation obtained from rain gage R-3. 2/ Precipitation and runoff records began July 1951. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Stillwater, Okla.																
1962 SELECTED RUNOFF EVENT							STILLWATER, OKLAHOMA WATERSHED W-1									
Antecedent conditions			Rainfall				Runoff									
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
<u>Event of June 7, 1962</u>																
	RG R-3															
5-20-62	.02	.000	6-7-62	RG R-3		6-7-62										
5-25	.01	.000	0113	.00	.00	0131	.0000	.000								
5-26	.02E	.000	0116	2.00	.10	0118	.0122	.001								
5-28	1.39	.000	0121	1.80	.25	0152	.0274	.002								
6-1	2.16	.542	0126	.72	.31	0154	.0399	.003								
6-2	.37	.167	0131	.24	.33	0156	.0774	.005								
6-3	.00	.017	0136	1.44	.45	0158	.107	.008								
6-4	.00	.007	0141	2.16	.63	0200	.148	.012								
			0146	1.56	.76	0201	.191	.015								
			0151	.48	.80	0203	.323	.024								
			0155	.30	.82	0204	.470	.030								
			0156	6.00	.92	0205	2.82	.057								
			0201	6.12	1.43	0206	2.97	.106								
			0206	2.16	1.61	0207	2.81	.154								
			0211	1.08	1.70	0208	2.92	.202								
			0216	1.30	1.85	0209	3.06	.252								
			0221	.96	1.93	0210	2.90	.301								
			0226	.36	1.96	0211	2.81	.349								
			0231	.24	1.98	0212	2.59	.394								
			0241	.12	2.00	0214	2.17	.473								
			0251	.06	2.01	0217	1.84	.574								
			0351	.01	2.02	0220	1.68	.662								
			ceased			0223	1.50	.741								
			0556	.00	2.02	0225	1.37	.789								
			0651	.02	2.04	0227	1.31	.834								
						0229	1.08	.873								
						0230	.959	.890								
						0232	.929	.922								
						0234	.886	.952								
						0235	.832	.967								
						0236	.796	.980								
						0238	.761	1.006								
						0242	.674	1.055								
						0246	.557	1.096								
						0250	.490	1.131								

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.839. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 37.1-7.

1962 SELECTED RUNOFF EVENT			STILLWATER, OKLAHOMA WATERSHED W-1					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 7, 1962—continued								
						6-7-62		
						0255	.448	1.171
						0258	.393	1.192
						0301	.347	1.211
						0306	.283	1.237
						0312	.225	1.262
						0320	.168	1.288
						0329	.129	1.311
						0341	.0917	1.333
						0354	.0637	1.350
						0406	.0452	1.361
						0421	.0330	1.370
						0445	.0202	1.381
						0531	.0097	1.391
						0553	.0073	1.395
						0917	.0017	1.406
						1440	.0008	1.412
						2400	<u>1</u> /.0004	1.418

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.839. 1/ BEGINNING OF NEW RUNOFF EVENT.

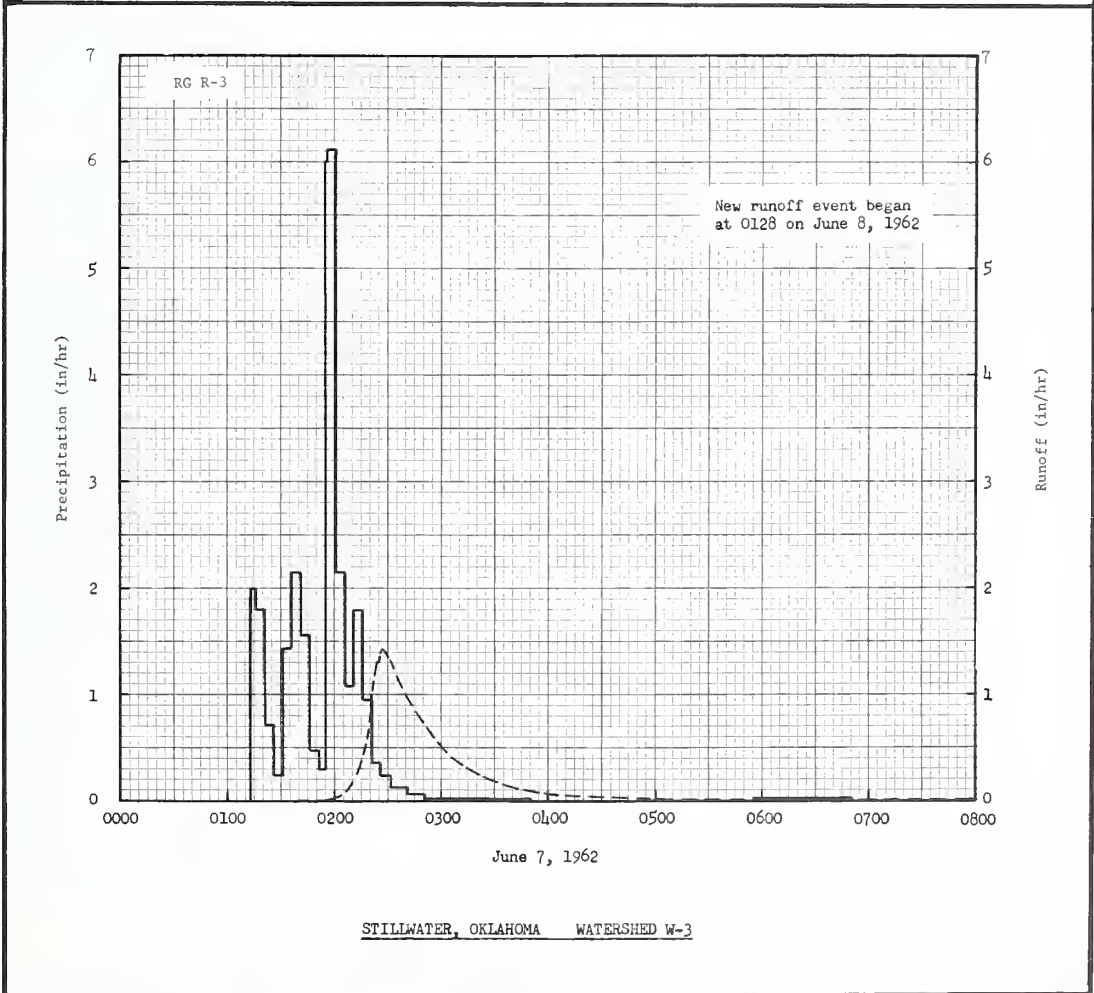


STILLWATER, OKLAHOMA WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								STILLWATER, OKLAHOMA WATERSHED W-3 AREA—92.0 ACRES								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1962	P 1/ Q	.71 .19	0.62 .14	1.33 .35	1.12 .03	1.44 .00	8.10 2.30	4.50 .01	.94 .01	3.55 .00	2.34 .00	1.36 .01	1.46 .03	27.47 3.07		
	STA AV 2/ (51-62) Q	.53 .05	1.16 .12	2.13 .64	2.26 .55	5.65 2.00	4.34 1.07	4.63 .92	2.37 .07	3.34 .36	2.86 .80	1.41 .16	1.10 .11	31.78 6.85		
	MEAN P 3/ 70 YR	1.11	1.28	2.12	3.44	4.79	4.17	3.09	3.03	3.72	2.91	2.05	1.36	33.07		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								STILLWATER, OKLAHOMA WATERSHED W-3								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-7	1.43	6-7	.80	6-7	.96	6-7	1.03	6-7	1.04	6-7	1.04	6-7	1.05	6-1	2.20
MAXIMUMS FOR PERIOD OF RECORD																
1951 to	7-15	4.74	7-15	2.87	7-15	3.49	7-15	3.80	10-2	4.96	10-1	5.18	10-1	6.08	9-30	8.08
1962	1951		1951		1951		1951		1959		1959		1959		1959	
Notes: Quality of records: Monthly P, excellent; monthly Q, excellent except Jan., which is fair due to water in the well being frozen up during Jan. 9-26; annual maximum discharges and volumes, excellent. Watershed conditions: All native grass pasture. The westerly and northerly portions (68.4% of area) were overgrazed and in poor condition; the balance of area was in excellent condition. 1/ Precipitation obtained from rain gage R-3. 2/ Precipitation and runoff records began July 1951. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Stillwater, Okla.																
1962 SELECTED RUNOFF EVENT								STILLWATER, OKLAHOMA WATERSHED W-3								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 7 - 8, 1962																
	RG R-3			RG R-3		6-7-62										
5-20-62	.02	.000	6-7-62			0139	.0000	.000								
5-25	.01	.000	0113	.00	.00	0139	.0058	.001								
5-26	.02E	.000	0116	2.00	.10	0155	.0140	.001								
5-28	1.39	.000	0121	1.80	.25	0156	.0185	.002								
6-1	2.16	.095	0126	.72	.31	0159										
6-2	.37	.058	0131	.24	.33	0201	.0442	.003								
6-3	.00	.010	0136	1.44	.45	0203	.0407	.004								
6-4	.00	.005	0141	2.15	.63	0205	.0552	.006								
			0146	1.56	.76	0206	.0735	.007								
			0151	.48	.80	0208		.010								
			0155	.30	.82	0210	.183	.016								
			0156	6.00	.92	0213	.276	.027								
			0201	6.12	1.43	0215	.363	.038								
			0206	2.16	1.61	0217	.478	.052								
			0211	1.08	1.70	0219	.643	.070								
			0216	1.80	1.85	0221	.923	.097								
			0221	.96	1.93	0223	1.24	.132								
			0226	.36	1.96	0224	1.32	.154								
			0231	.24	1.98	0225	1.31	.176								
			0241	.12	2.00	0226	1.39	.198								
			0251	.06	2.01	0227	1.43	.221								
			0351	.01	2.02	0229	1.40	.269								
			ceased		2.02	0232	1.31	.336								
			0556	.00	2.02	0235	1.17	.398								
			0651	.02	2.04	0237	1.10	.436								
						0241	.981	.507								
						0243	.910	.538								
						0247	.823	.596								
						0250	.742	.635								
						0254	.635	.681								
						0258	.550	.720								
						0300	.512	.738								
						0307	.403	.791								
						0314	.321	.833								
						0322	.249	.870								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 92.766. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 37.2-6.																

1962 SELECTED RUNOFF EVENT			STILLWATER, OKLAHOMA WATERSHED W-3					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 7-8, 1962—continued								
						6-7-62		
						0332	.184	.906
						0344	.125	.937
						0404	.0712	.969
						0418	.0485	.983
						0457	.0213	1.004
						0543	.0102	1.016
						0645	.0055	1.023
						0807	.0028	1.029
						0940	.0016	1.032
						1059	.0009	1.034
						2400	.0004	1.040
						6-8-62		
						0128	.0004	1.040

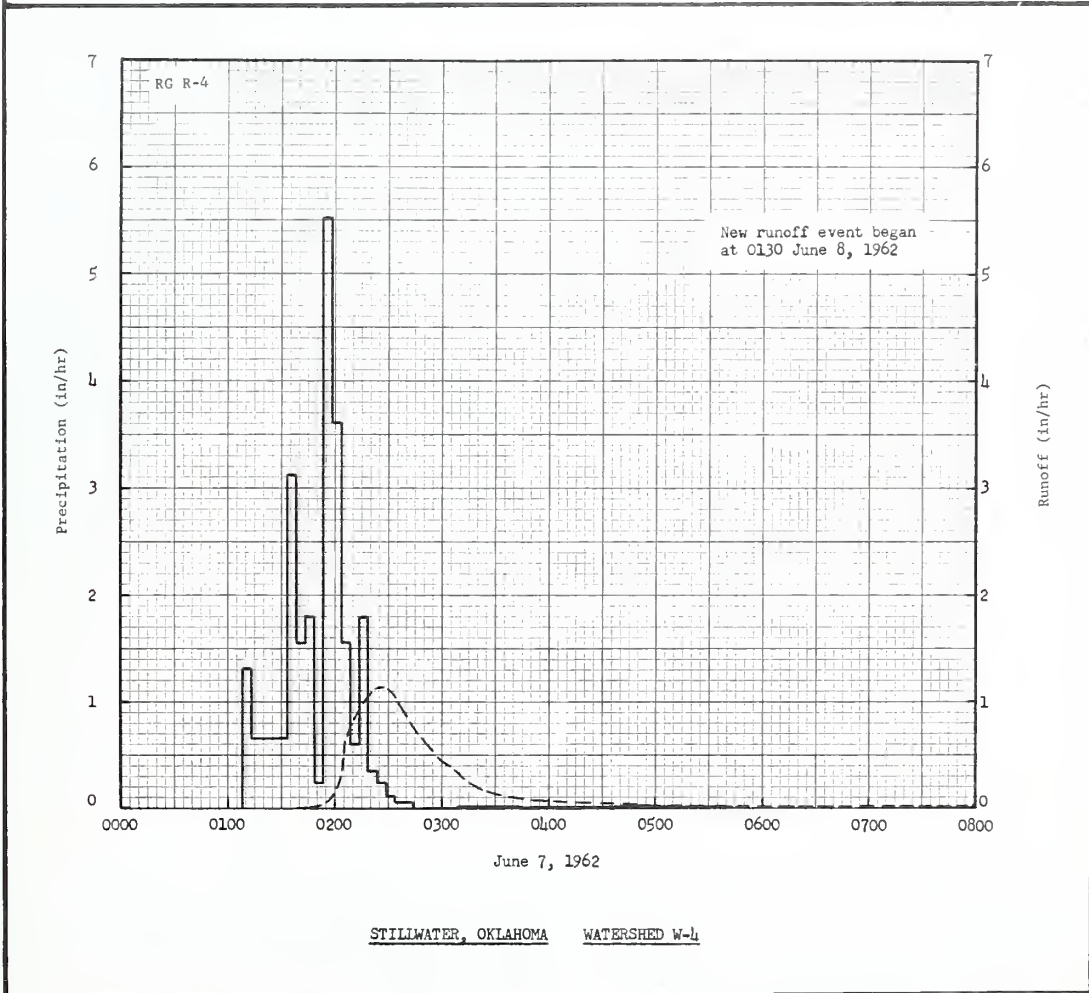
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 92.766. 1/ BEGINNING OF NEW RUNOFF EVENT.



MONTHLY PRECIPITATION AND RUNOFF (Inches)							STILLWATER, OKLAHOMA WATERSHED W-4 AREA—206 ACRES									
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.51 .25	.53 .16	1.37 .27	1.22 .08	1.56 T	7.73 2.02	3.51 T	.89 T	3.43 T	2.52 T	1.30 T	1.70 .12	26.27 2.90			
STA AV 2/ P (51-62) Q	.47 .09	1.12 .10	2.10 .46	2.17 .40	5.39 1.61	4.13 1.05	4.31 .71	2.42 .07	3.32 .38	2.85 .72	1.52 .15	1.05 .10	30.65 5.82			
MEAN P 3/ 70 YR	1.11	1.28	2.12	3.44	4.79	4.17	3.09	3.03	3.72	2.91	2.05	1.36	33.07			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							STILLWATER, OKLAHOMA WATERSHED W-4									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-7	1.15	6-7	.82	6-7	1.00	6-7	1.07	6-7	1.09	6-7	1.11	6-7	1.11	6-1	1.88
MAXIMUMS FOR PERIOD OF RECORD																
1951 to 1962	4-18 1957	2.39	4-18 1957	1.48	4-18 1957	1.75	10-2 1959	2.63	10-2 1959	4.49	10-2 1959	4.71	10-1 1959	5.23	9-30 1959	6.77
Notes: Quality of records: Monthly P, excellent; monthly Q, excellent except Jan., which is fair due to the water in the well being frozen during Jan. 9-26; annual maximum discharges and volumes, excellent. Watershed conditions: All native grass, 17.3 percent of area in meadow and 82.7 percent in pasture. The portion in pasture was overgrazed this year and was in poor condition the latter part of the year. 1/ Precipitation obtained from rain gage R-4. 2/ Precipitation and runoff records began July 1951. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Stillwater, Okla.																
1962 SELECTED RUNOFF EVENT							STILLWATER, OKLAHOMA WATERSHED W-4									
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 7 - 8, 1962																
5-20-62	RG R-4 .01	.0000	6-7-62	RG R-4		6-7-62										
5-25	.02	.0000	0108	.00	.00	0138	.0000	.0000								
5-26	.01	.0000	0113	1.32	.11	0149	.0218	.0017								
5-28	1.52	.0026	0123	.66	.22	0154	.0413	.0044								
5-29	.00	.0010	0133	.66	.33	0156	.0697	.0062								
6-1	1.94	.1790	0138	3.12	.59	0158	.117	.0092								
6-2	.41	.0468	0143	1.56	.72	0201	.197	.0172								
6-3	.00	.0125	0148	1.80	.87	0203	.317	.0255								
6-4	.00	.0008	0153	.24	.89	0204	.445	.0318								
			0158	5.52	1.35	0205	.536	.0400								
			0203	3.60	1.65	0207	.660	.0596								
			0208	1.56	1.78	0209	.736	.0830								
			0213	.60	1.83	0211	.837	.1090								
			0218	1.80	1.98	0213	.892	.1377								
			0223	.36	2.01	0215	.957	.1687								
			0228	.24	2.03	0218	1.06	.2186								
			0233	.12	2.04	0221	1.11	.2731								
			0243	.06	2.05	0224	1.14	.3295								
			ceased			0228	1.15	.4062								
			0308	.00	2.05	0233	1.06	.4983								
			0343	.02	2.06	0236	.992	.5496								
			0443	.01	2.07	0240	.887	.6124								
			0543	.01	2.08	0243	.776	.6542								
						0246	.726	.6918								
						0250	.642	.7372								
						0254	.552	.7772								
						0259	.474	.8198								
						0305	.404	.8637								
						0310	.319	.8942								
						0317	.226	.9255								
						0321	.190	.9394								
						0326	.161	.9540								
						0332	.134	.9687								
						0339	.110	.9830								
						0353	.0728	1.0042								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 207.72. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 37.3-6.																

1962 SELECTED RUNOFF EVENT			STILLWATER, OKLAHOMA WATERSHED W-4					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 7-8, 1962—Continued								
						6-7-62 0420	.0399	1.0286
						0457	.0201	1.0461
						0541	.0116	1.0573
						0648	.0070	1.0673
						0734	.0055	1.0721
						0930	.0037	1.0807
						1315	.0023	1.0915
						2400	.0014	1.1101
						6-8-62 0130	1/ .0014	1.1122

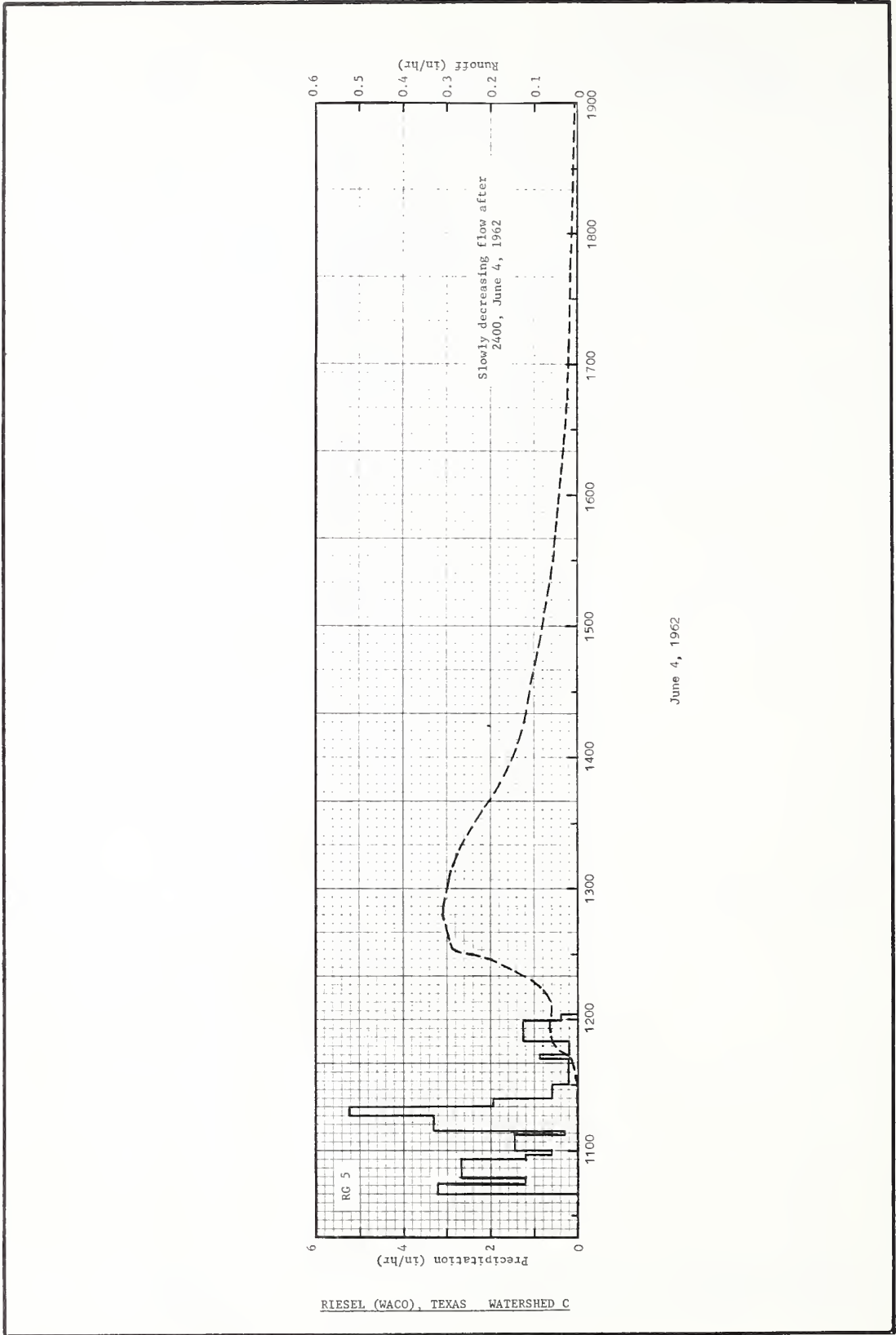
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 207.72. 1/ BEGINNING OF NEW RUNOFF EVENT.



MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED C AREA—579 ACRES									
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962	P 1/ Q	1.19 .03	1.67 .04	1.26 .07	3.42 .13	2.83 .19	6.56 1.19	.40 T	.06 .00	2.80 .00	1.60 T	3.17 .00	1.17 .00	26.13 1.65			
	STA AV 2/ (38-62) P Q	1.87 .40	2.84 .53	1.86 .28	3.78 .94	3.87 .81	4.05 .71	1.51 .19	1.91 .02	2.76 .46	3.00 .34	2.94 .40	2.33 .56	32.72 5.64			
	MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED C									
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962		6-4	.31	6-4	.29	6-4	.46	6-4	.68	6-4	.73	6-4	.75	6-4	.76	6-4	1.03
MAXIMUMS FOR PERIOD OF RECORD																	
1938 to 1962 4/	4-19 1957	1.33E	4-19 1957	1.33E	4-19 1957	2.02E	4-23 1957	2.80	9-7 1942	3.06	9-7 1942	3.19	9-7 1942	4.78	4-19 1957	8.76E	
<p>Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began Feb. 1938. Watershed discontinued from June 30, 1943, to Mar. 1, 1949; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July, and those for 1949 after Mar. 1; no maximums taken for 1938, 1944 through 1948.</p>																	
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED C									
Antecedent conditions			Rainfall			Runoff											
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
Event of June 4-5, 1962																	
5-4-62	3 RG 5/ .00	T	6-4-62	RG 5		6-4-62											
5-16	.05	.0000	1040	.00	.00	1042	T	.0000									
5-28	1.38	T	1045	3.24	.27	1044	.0001	T									
5-29	1.40	.1784	1047	1.20	.31	1048	.0001	T									
5-30, 31	.00	.0064	1056	2.67	.35	1104	.0003	.0001									
6-1	.75	.0006	1058	1.20	.39	1112	.0007	.0001									
6-2, 3	.00	.0011	1100	.60	.41	1118	.0018	.0003									
6-4	.00	6/ T	1107	1.46	.58	1128	.0042	.0007									
			1109	.30	.59	1138	.0080	.0018									
			1116	3.32	.97	1142	.0181	.0025									
Watershed conditions: 21% of the area in pasture, 8% in corn in tassel stage, 4% in broadcast grain sorghum in booting stage, 7% in oats stubble, oats harvested, 55% in idle cropland (grass and weeds), 2% in broadcast sudan, and 3% in farmsteads and roads.																	
			1120	5.25	1.32	1146	.0416	.0045									
			1124	1.95	1.45	1156	.0651	.0141									
			1130	.60	1.51	1206	.0627	.0248									
			1142	.22	1.54	1212	.0721	.0315									
			1144	.90	1.57	1216	.0924	.0369									
			1150	.20	1.59	1220	.123	.0441									
			1159	1.27	1.76	1224	.163	.0536									
			1202	.40	1.78	1228	.204	.0658									
						1232	.285	.0821									
			6-4-62	RG 14		1242	.301	.1309									
			1033	.00	.00	1248	.314	.1617									
			1035	1.50	.05	1308	.292	.2628									
			1041	4.30	.48	1320	.266	.3187									
			1043	.90	.51	1340	.203	.3963									
			1049	.30	.54	1400	.152	.4543									
			1103	.60	.68	1420	.123	.4998									
			1107	.30	.70	1440	.100	.5372									
			1110	2.40	.82	1500	.0820	.5676									
			1112	.90	.85	1530	.0603	.6030									
			1117	3.00	1.10	1602	.0434	.6304									
Continued on next page																	
<p>NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 583.82. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.4-6. 5/THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT. 6/RUNOFF PRIOR TO 1042.</p>																	

SELECTED RUNOFF EVENT			RIESEL (WACO), TEXAS WATERSHED C					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
			<u>Event of June 4-5, 1962—continued</u>					
			6-4-62			6-4-62		
			1119	1.80	1.16	1712	.0235	.6678
			1123	.60	1.20	1902	.0114	.6975
			1129	.50	1.25	2102	.0069	.7153
			1139	.06	1.26	2400	.0040	.7308
			1141	1.80	1.32	6-5-62		
			1147	.50	1.37	0300	.0025	.7404
			1245	.03	1.40	1030	.0010	.7528
						1720	.0004	.7587
			RG	20	1.32	2400	<u>1/</u> .0003	.7604
			3 RG	AVG <u>2/</u>	1.65			

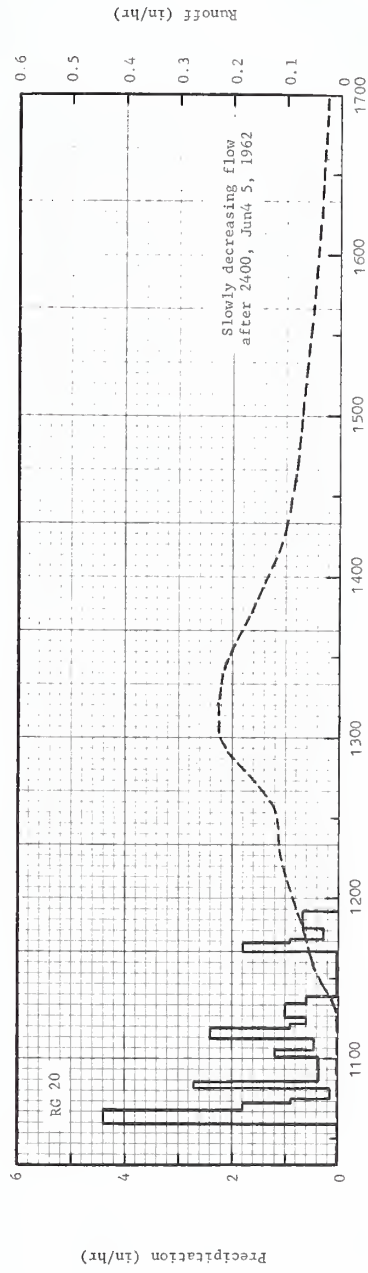
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 583.82. 1/ SLOWLY DECREASING FLOW AFTER 2400. 2/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT.



MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED D AREA—1,110 ACRES (1.734 SQ. MILES)								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.19 .01	1.66 .06	1.29 .10	3.46 .19	2.79 .18	6.63 1.24	.48 .01	.06 .00	2.87 .00	1.62 .00	3.27 T	1.19 .00	26.51 1.79			
STA AV 2/ (37-62) P	1.98	2.83	1.96	3.77	3.79	4.10	1.60	1.80	2.67	2.80	2.84	2.34	32.48			
Q	.46	.53	.29	1.02	.93	.71	.21	.04	.42	.33	.37	.53	5.84			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED D								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-4	.22	6-4	.21	6-4	.33	6-4	.56	6-4	.61	6-4	.63	6-4	.64	6-4	1.11
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	4-19 1957	1.03E	4-19 1957	.90E	4-19 1957	1.77E	4-23 1957	3.43	4-23 1957	3.54	4-23 1957	3.72	4-23 1957	5.42	4-19 1957	9.66E
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began Dec. 1937. Watershed discontinued from June 30, 1943, to Mar. 1, 1949; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July 1, and those for 1949 after Mar. 1; no maximums taken for 1944 through 1948.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED D								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 4-5, 1962																
5-4,5-62	4 RG 5/ .00	T	6-4-62	RG 5		6-4-62										
5-16	.05	.0000	1040	.00	.00	1030	T	.0000								
5-28	1.35	T	1045	3.24	.27	1041	.0001	T								
5-29	1.39	.1653	1047	1.20	.31	1050	.0002	T								
5-30,31	.00	.0045	1056	2.67	.35	1054	.0004	T								
6-1	.76	.0007	1058	1.20	.39	1100	.0010	.0001								
6-2,3	.00	.0035	1100	.60	.41	1104	.0020	.0002								
6-4	.00	5/ T	1107	1.46	.58	1110	.0050	.0005								
			1109	.30	.59	1122	.0117	.0021								
			1116	3.32	.97	1128	.0278	.0041								
			1120	5.25	1.32	1136	.0486	.0093								
			1124	1.95	1.45	1158	.0812	.0331								
			1130	.60	1.51	1212	.106	.0555								
			1142	.22	1.54	1222	.111	.0736								
			1144	.90	1.57	1232	.119	.0928								
Watershed conditions: 22% of area in pasture, 11% in corn in tassel stage, 11% in oats stubble, oats harvested, 2% in cotton in square stage, 3% in broadcast grain sorghum in boot stage, 2% in broadcast sudan, 46% in idle cropland (weeds and grass), and 3% in farmsteads and roads.																
			1150	.20	1.59	1240	.145	.1105								
			1159	1.27	1.76	1248	.178	.1319								
			1202	.40	1.78	1254	.203	.1510								
						1304	.222	.1863								
			6-4-62	RG 20		1314	.223	.2234								
			1035	.00	.00	1324	.219	.2603								
			1041	4.40	.44	1334	.197	.2949								
			1043	1.80	.50	1344	.171	.3257								
			1045	.90	.53	1354	.144	.3519								
			1049	.15	.54	1404	.122	.3741								
			1051	2.70	.63	1414	.104	.3929								
			1101	.36	.69	1434	.0852	.4243								
			1103	1.20	.73	1504	.0693	.4623								
			1107	.45	.76	1544	.0502	.5021								
			1111	2.40	.92	1702	.0259	.5501								
			1113	.90	.95	1822	.0146	.5762								
			1115	.60	.97	2032	.0071	.5984								
			1121	1.00	1.07	2400	.0034	.6155								
			1123	.60	1.09	6-5-62										
			1140	.04	1.10	0600	.0015	.6287								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1,119.25. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.4-6. 5/THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE USED FOR EVENT. 6/RUNOFF PRIOR TO 1030.																

SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS WATERSHED D		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
<u>Event of June 4-5, 1962—continued</u>								
			6-4-62			6-5-62		
			1143	1.80	1.19	1400	.0007	.6366
			1145	.90	1.22	2100	.0003	.6402
			1149	.30	1.24	2400	<u>1/</u> .0002	.6410
			1155	.70	1.31			
			RG	14	1.40			
			RG	26A	1.11			
			4 RG	AVG <u>2/</u>	1.50			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1,119.25. 1/ SLOWLY DECREASING FLOW AFTER 2400. 2/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS SHOWN FOR EVENT.



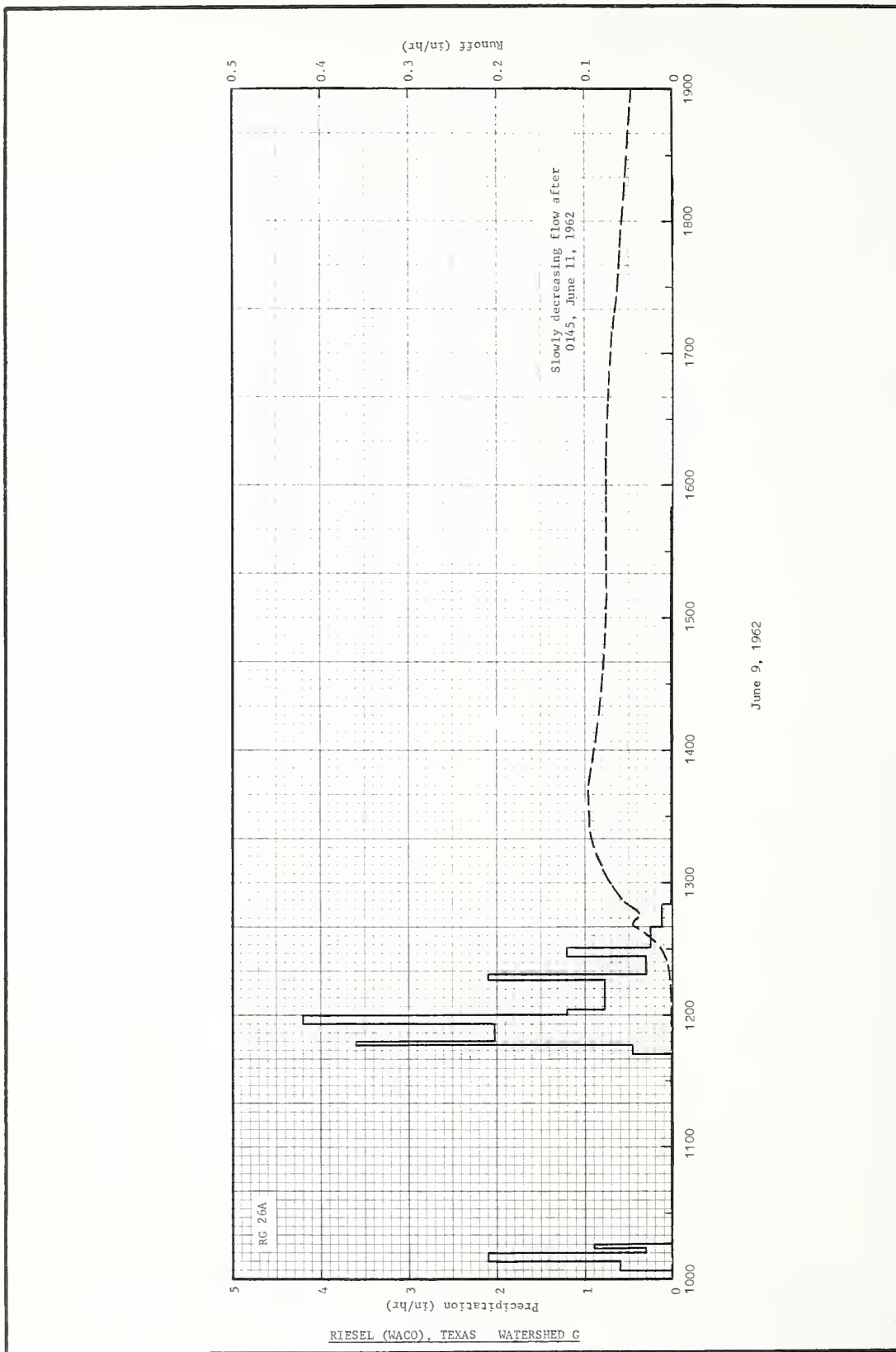
June 4, 1962

RIESEL (WACO), TEXAS WATERSHED D

MONTHLY PRECIPITATION AND RUNOFF (Inches)										RIESEL (WACO), TEXAS WATERSHED G AREA—4,380 ACRES (6.84 SQ. MILES)							
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
		1962	P 1/ Q	1.25 .02	1.57 .05	1.20 .08	3.74 .39	2.56 .14	6.29 1.05	.35 .02	.10 .00	2.71 .00	2.23 .00	3.66 .01	1.25 .00	26.91 1.76	
	STA AV 2/ (38-62) Q	2.31 .83	3.10 .79	1.67 .23	3.30 .44	3.06 .40	5.81 1.30	1.97 .20	2.29 .06	2.83 .49	3.11 .23	2.91 .60	2.86 .69	35.22 6.26			
	MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS										RIESEL (WACO), TEXAS WATERSHED G							
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962		6-9	.10	6-9	.09	6-9	.17	6-9	.44	6-9	.57	6-9	.60	6-8	.62	6-4	.92
MAXIMUMS FOR PERIOD OF RECORD																	
1938 to 1962 4/	11-22 1940	.42	11-22 1940	.40	11-22 1940	.72	11-22 1940	1.54	11-22 1940	1.94	11-22 1940	2.74	11-22 1940	4.18	11-22 1940	4.82	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use since 1957. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began Jan. 1938. Watershed discontinued from June 30, 1943 to July 1, 1957; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July 1; no maximums taken for 1944 through 1957.																	
1962 SELECTED RUNOFF EVENT										RIESEL (WACO), TEXAS WATERSHED G							
Antecedent conditions				Rainfall				Runoff									
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
Event of June 9-11, 1962																	
5-16-62	13 RG 5/ .04	.0000	6-9-62	RG 5 .00	.00	6-9-62											
5-28	1.13	.0000	1011	.00	.00	1036	.0003	.0000									
5-29	1.39	.1298	1014	3.20	.16	1156	.0003	.0004									
5-30, 31	.00	.0038	1019	.60	.21	1206	.0007	.0004									
6-1	.90	.0045	1148	.01	.23	1216	.0023	.0007									
6-2	.00	.0190	1150	.90	.26	1226	.0080	.0015									
6-3	T .0008	.0008	1154	.45	.29	1231	.0129	.0024									
6-4	.94	.2322	1156	.60	.31	1236	.0260	.0040									
6-5, 6	.00	.0399	1200	.45	.34	1241	.0464	.0071									
6-7	.26	.0015	1210	.60	.44	1246	.0384	.0106									
6-8	.47	.0290	1212	1.50	.49	1251	.0562	.0145									
6-9	.00	6/.0056	1222	.18	.52	1301	.0736	.0253									
			1226	.60	.56	1311	.0854	.0385									
			1230	.15	.57	1316	.0896	.0458									
			1240	.00	.57	1321	.0939	.0534									
Watershed conditions: 19% of area in pasture, 14% in corn in tassel stage, 5% in sorghum hay, 7% in oats stubble, oats harvested, 8% in cotton in early bloom stage, 2% in row grain sorghum in boot stage, 2% in native grass meadow, 40% in idle cropland (grass and weeds), and 3% in farmsteads and roads.																	
			1250	.12	.59	1341	.0964	.0851									
			1358	.01	.60	1351	.0933	.1010									
			6-9-62	RG 26A		1406	.0872	.1235									
			1004	.00	.00	1436	.0792	.1650									
			1008	.60	.04	1506	.0759	.2036									
			1012	2.10	.16	1516	.0755	.2152									
			1014	.30	.17	1541	.0761	.2478									
			1016	.90	.20	1551	.0760	.2605									
			1142	.01	.24	1621	.0741	.2981									
			1142	.01	.24	1651	.0702	.3342									
			1146	.45	.25	1726	.0639	.3735									
			1148	3.60	.37	1756	.0582	.4039									
			1156	2.02	.64	1836	.0502	.4401									
			1200	4.20	.92	1916	.0411	.4704									
			1202	1.20	.96	2006	.0299	.5000									
			1216	.77	1.14	2146	.0150	.5349									
			1218	2.10	1.21	2400	.0085	.5610									
			1226	.30	1.25	6-10-62											
			1230	1.20	1.33	0245	.0042	.5769									
			1240	.24	1.37	0715	.0021	.5902									
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4, 416.48. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.4-2. 5/THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT. 6/RUNOFF PRIOR TO 1036.																	

SELECTED RUNOFF EVENT			RIESEL (WACO), TEXAS WATERSHED G					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
<u>Event of June 9-11, 1962—continued</u>								
			6-9-62			6-10-62		
			1250	.12	1.39	1515	.0010	.6017
			1550	.02	1.44	1945	.0005	.6051
						2400	.0004	.6068
			6-9-62	RG 65A		6-11-62		
			1148	.00	.00	0145	<u>1/</u> .0003	.6074
			1152	2.10	.14			
			1156	4.50	.44			
			1202	.80	.56			
			1208	3.40	.90			
			1214	1.90	1.09			
			1222	.45	1.15			
			1230	2.40	1.47			
			1234	.45	1.50			
			1410	.03	1.55			
			RG	14	.84			
			RG	20	1.42			
			RG	30A	1.31			
			RG	43A	1.29			
			RG	48A	1.66			
			RG	56A	1.28			
			RG	70	1.73			
			RG	74A	2.19			
			RG	84A	1.73			
			RG	89	2.11			
			13 RG	AVG <u>2/</u>	1.41			

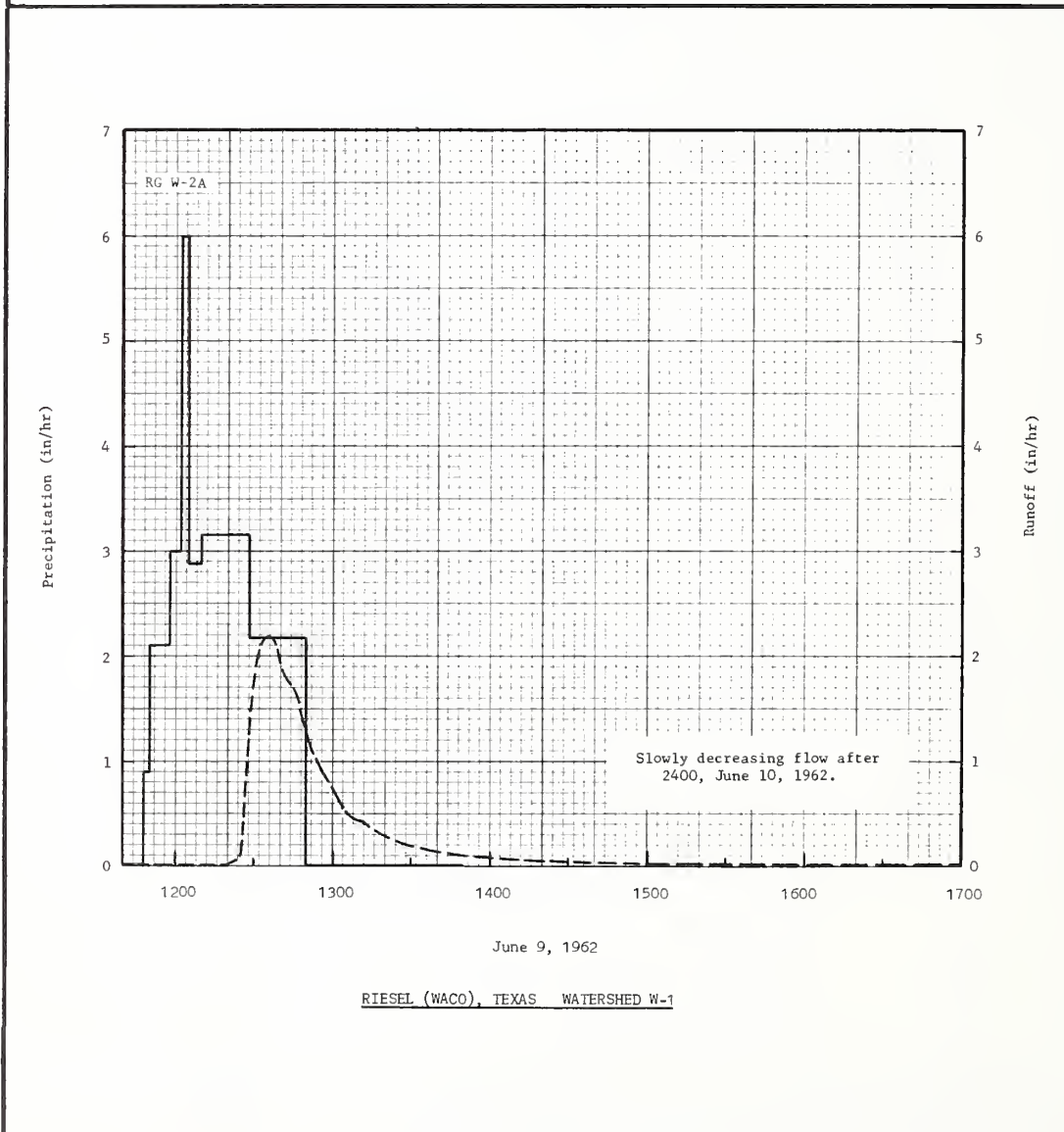
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4,416.48. 1/ SLOWLY DECREASING FLOW AFTER 0145. 2/ THIESSEN WEIGHTED, USING 13 RAIN GAGES.



MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED W-1 AREA—176 ACRES								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
		1962	P 1/ Q	1.31 .06	1.54 .06	1.05 .04	3.87 .47	2.26 .10	5.65 1.44	.16 T	.02 .00	2.68 .00	3.79 T	4.13 .17	1.45 .01	27.91 2.35
STA AV 2/ (37-62)	P Q	2.31 .52	2.77 .64	2.45 .55	3.97 1.03	4.44 1.24	3.62 .65	1.66 .11	1.71 .02	2.27 .16	2.65 .22	2.91 .43	2.70 .53	33.46 6.10		
MEAN P 3/ 74 YR		2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED W-1								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	2.18	6-9	1.00	6-9	1.12	6-9	1.17	6-9	1.19	6-9	1.19	6-9	1.20	6-1	1.33
MAXIMUMS FOR PERIOD OF RECORD																
1937 to 1962 4/	5-1 1944	4.51	5-1 1944	2.99	5-1 1944	5.57	5-1 1944	6.91	5-1 1944	6.92	5-1 1944	7.05	4-30 1944	9.20	4-29 1944	11.06
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent, Watershed conditions: No appreciable change in land use since 1957. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began July 1937. Part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ No maximums taken for 1937.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED W-1								
Antecedent conditions			Rainfall				Runoff									
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
5 RG 5/			Event of June 9-10, 1962													
5-9,12-62	.00	.0005	6-9-62	RG 89		6-9-62										
5-13,14,15	.00	T	1148	.00	.00	1153	T	.0000								
5-16	.03	T	1150	2.40	.08	1156	.0001	T								
5-17	.00	.0001	1155	.36	.11	1200	.0002	T								
5-18,27	.00	T	1159	1.35	.20	1204	.0004	T								
5-28	.94	.0004	1209	5.04	1.04	1206	.0008	T								
5-29	1.29	.0934	1219	2.76	1.50	1209	.0025	.0001								
5-30,31	.00	.0009	1229	2.34	1.89	1214	.0043	.0004								
6-1	1.14	.0886	1239	.30	1.94	1218	.0079	.0008								
6-2	.00	.0505	1319	.96	2.10	1220	.0195	.0012								
6-3	.04	.0017	1329	.03	2.11	1223	.0459	.0029								
6-4	.20	.0020				1225	.0684	.0048								
6-5,6	.00	.0013	6-9-62	RG W-2A		1227	.733	.0192								
6-7	.37	.0025	1148	.00	.00	1229	1.36	.0535								
6-8	.36	.0044	1150	.90	.03	1231	1.95	.1088								
6-9	.00	6/.0008	1158	2.10	.10	1232	2.06	.1422								
			1202	3.00	.50	1233	2.14	.1772								
			1205	6.00	.80	1235	2.18	.2493								
			1210	2.88	1.04	1238	2.12	.3569								
			1228	3.16	1.99	1240	1.95	.4247								
Watershed conditions: Straight row cultivation, no terraces. 36% of area in cotton in early fruiting stage. 22% in corn in tassel stage. 20% in oats stubble. 14% in bermudagrass pasture, moderately to heavily grazed. 3% in native grass meadow. 5% in farmsteads and roads.			1250	2.18	2.07	1245	1.70	.5741								
			1350	.01	2.08	1248	1.47	.6535								
			RG	75A	2.01	1256	.915	.8075								
			RG	W-2	2.07	1300	.733	.8613								
			RG	W-5A	1.96	1304	.566	.8857								
			5 RG	AVG 5/	2.06	1311	.416	.9420								
						1319	.283	.9877								
						1328	.206	1.0240								
						1340	.144	1.0586								
						1354	.0953	1.0859								
						1413	.0600	1.1101								
						1444	.0356	1.1340								
						1536	.0195	1.1570								
						1653	.0096	1.1751								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 177.47. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 42.6-6. 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR THE EVENT. 6/ RUNOFF PRIOR TO 1153.																

SELECTED RUNOFF EVENT			RIESEL (WACO), TEXAS			WATERSHED W-1		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
<u>Event of June 9-10, 1962—continued</u>								
						6-9-62		
						1819	0.0046	1.1852
						2102	.0020	1.1936
						2400	.0010	1.1979
						6-10-62		
						0442	.0005	1.2012
						1155	.0002	1.2038
						1716	.0001	1.2047
						2400	<u>1</u> /.0001	1.2054

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 177.47. 1/ SLOWLY DECREASING FLOW AFTER 2400.

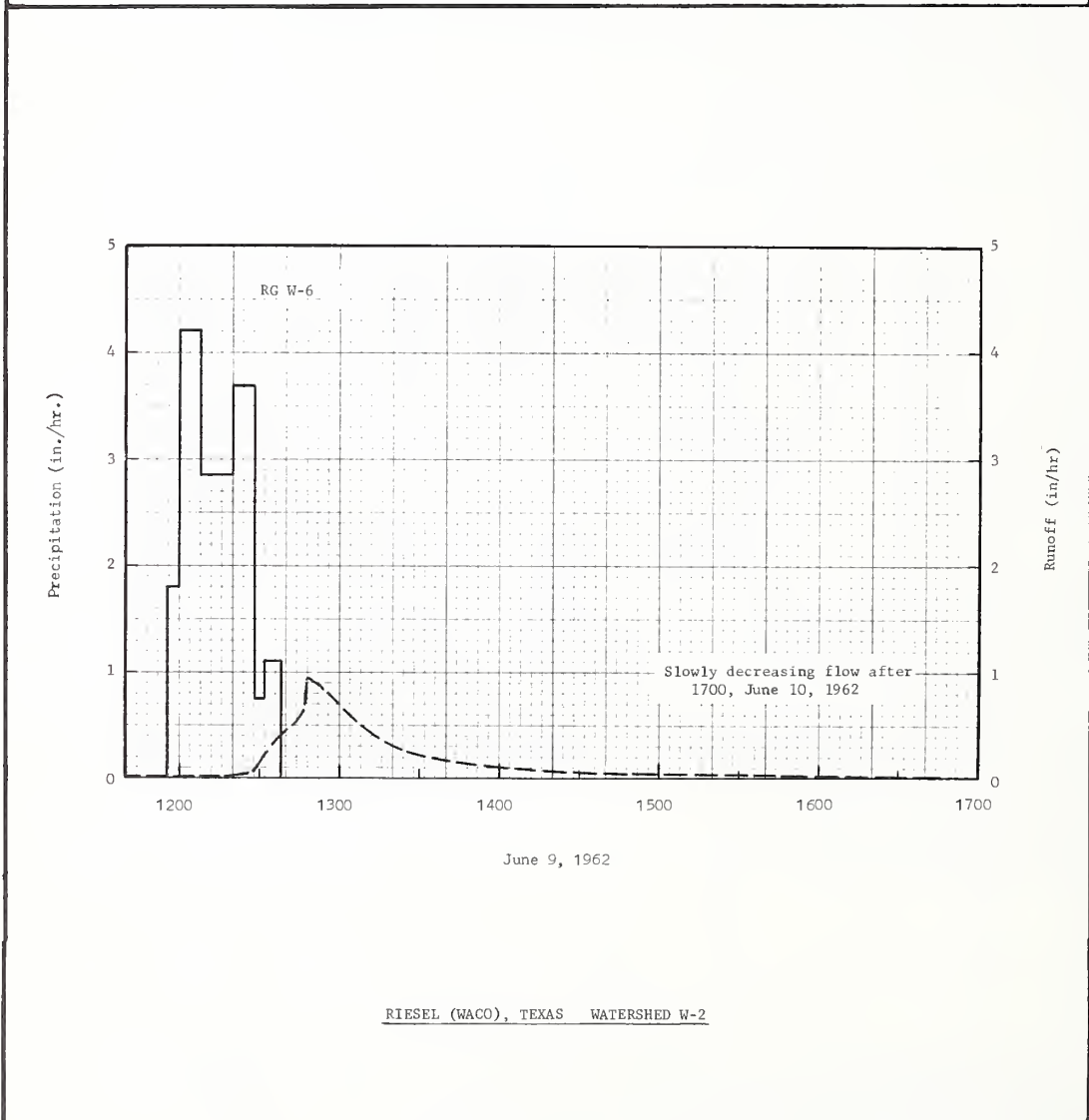


MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED W-2 AREA—130 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
	1962 P 1/ Q	1.25 .21	1.66 .24	.97 .29	3.74 .42	2.17 .17	5.64 .99	.16 .03	.03 .00	2.92 .00	3.68 .02	4.08 .08	1.40 .08	27.70 2.53		
STA AV 2/ P (37-62) Q	2.26 .59	2.76 .74	2.39 .62	3.95 1.01	4.37 1.24	3.57 .59	1.66 .11	1.73 .01	2.30 .12	2.63 .20	2.86 .42	2.68 .62	33.16 6.27			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED W-2								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.94	6-9	.50	6-9	.65	6-9	.75	6-9	.75	6-9	.76	6-8	.77	6-7	.88
MAXIMUMS FOR PERIOD OF RECORD																
1937 to 1962 4/	5-1 1944	4.83	5-1 1944	2.86	5-1 1944	5.40	5-1 1944	6.91	5-1 1944	6.97	5-1 1944	7.12	4-30 1944	9.26	4-29 1944	10.96
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since September 1957. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began July 1937. Part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ No maximums taken for 1937.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED W-2								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9-10, 1962																
5-9,15-62	4 RG 5/ .00	.0330	6-9-62	RG W-4		6-9-62										
5-16	.03	.0044	1150	.00	.00	1158	.0003	.0000								
5-17,27	.00	.0311	1156	.20	.02	1203	.0006	.0000 T								
5-28	.91	.0019	1158	1.80	.08	1207	.0011	.0001								
5-29	1.23	.0309	1202	4.65	.39	1210	.0031	.0002								
5-30,31	.00	.0062	1210	4.15	.93	1214	.0060	.0005								
6-1	1.18	.0166	1228	3.63	2.02	1218	.0097	.0010								
6-2	.00	.0133	1230	.60	2.04	1221	.0171	.0016								
6-3	.04	.0062	1250	.30	2.14	1224	.0302	.0028								
6-4	.18	.0081	1350	.01	2.15	1228	.0748	.0059								
6-5,6	.00	.0112				1231	.191	.0125								
6-7	.36	.0101	6-9-62	RG W-6		1234	.286	.0245								
6-8	.33	.0104	1155	.00	.00	1237	.374	.0409								
6-9	.00	6/.0036	1200	1.80	.15	1241	.488	.0696								
			1208	4.20	.71	1244	.546	.0957								
Watershed conditions: 3% of area in cotton 6 in. high, cultivated May 5, terraced, contour rows. 6% in oats-clover, windrowed May 23, terraced. 18% in oats-clover, windrowed May 24, unterraced, on contour. 12% in grain sorghum 12 in. high in boot stage, cultivated May 5, terraced, contour rows. 21% in grain sorghum 12 in. high in boot stage, unterraced, contour rows. 25% in bermudagrass pasture, moderately grazed. 7% in native grass meadow, dense growth, 12 in. high. 3% in Johnsongrass, dense growth, 18 in. high. 5% in farmsteads and gravel roads.			1220	2.85	1.28	1246	.619	.1151								
			1228	3.68	1.77	1247	.683	.1260								
			1232	.75	1.82	1248	.943	.1395								
			1238	1.10	1.93	1252	.889	.2006								
						1255	.819	.2432								
			RG	W-2	2.07	1258	.741	.2822								
			RG	W-5A	1.96	1301	.663	.3173								
			4 RG	AVG 5/	2.03	1304	.587	.3486								
						1310	.472	.4010								
						1317	.354	.4487								
						1323	.280	.4805								
						1329	.228	.5058								
						1334	.193	.5231								
						1342	.159	.5469								
						1352	.130	.5710								
						1402	.107	.5908								
						1412	.0872	.6070								
						1422	.0688	.6200								
						1442	.0480	.6396								
						1522	.0262	.6638								

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 131.04. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.7-5. 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT. 6/ RUNOFF PRIOR TO 1158.

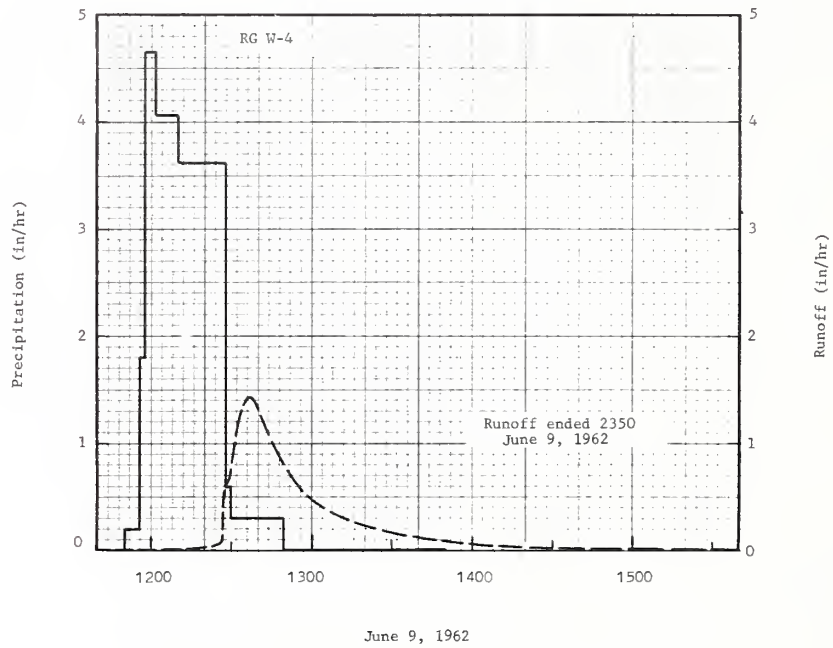
SELECTED RUNOFF EVENT			RIESEL (WACO), TEXAS			WATERSHED W-2		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 9-10, 1962—continued								
						6-9-62		
						1602	.0160	.6775
						1642	.0100	.6859
						1742	.0056	.6913
						1902	.0031	.6969
						2102	.0017	.7015
						2400	.0009	.7045
						6-10-62		
						0900	.0005	.7106
						1700	$\frac{1}{2}$.0003	.7140

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 131.04. $\frac{1}{2}$ SLOWLY DECREASING FLOW AFTER 1700.



MONTHLY PRECIPITATION AND RUNOFF (Inches)							RIESEL (WACO), TEXAS WATERSHED W-6 AREA—42.3 ACRES									
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.27 .01	1.51 .02	.94 .03	3.68 .12	2.26 .01	5.98 .82	.19 T	.04 .00	2.61 .00	3.70 .00	4.03 .01	1.37 .00	27.58 1.02			
STA AV 2/ (39-62) P Q	2.06 .34	2.69 .41	2.20 .31	4.02 .71	4.03 .79	3.84 .52	1.57 .08	1.74 .00	2.42 .12	2.87 .14	2.89 .35	2.50 .42	32.83 4.19			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							RIESEL (WACO), TEXAS WATERSHED W-6									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	Date	Rate	1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
1962	6-9	1.42	6-9	.65	6-9	.73	6-9	.75	6-9	.75	6-9	.75	6-9	.75	6-5	.80
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	6-10 1941	3.99	4-19 1957	2.33	4-19 1957	2.78	5-11 1957	3.13	5-11 1957	3.21	5-11 1957	3.23	11-22 1940	5.09	4-19 1957	9.06
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1956. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began May 1939. Watershed discontinued from June 30, 1943, to Jan. 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1939 occurred after May 1, and those for 1943 before July 1; no maximums taken for 1944 and 1945.																
1962 SELECTED RUNOFF EVENT							RIESEL (WACO), TEXAS WATERSHED W-6									
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-9,14-62	3 RG 5/ .00	.002	6-9-62	RG W-4		6-9-62										
5-16	.04	.000	1150	.00	.00	1158	T	.000								
5-28	.93	T	1156	.20	.02	1201	.0001	T								
5-29	1.29	.002	1158	1.80	.08	1205	.0006	T								
6-1	1.18	T	1202	4.65	.39	1210	.0016	T								
6-2	.00	T	1210	4.05	.93	1214	.0051	T								
6-3	.04	T	1228	3.63	2.02	1216	.0104	.001								
6-4	.21	T	1230	.60	2.04	1219	.0201	.001								
6-5,6	.00	T	1250	.30	2.14	1223	.0492	.004								
6-7	.36	T	1350	.01	2.15	1227	.0966	.008								
6-8	.34	T				1228	.570	.014								
6-9	.00	6/ T	RG	W-2	2.07	1230	.768	.037								
			RG	W-5A	1.96	1232	1.06	.067								
			3 RG	AVG 5/	2.06	1234	1.29	.106								
						1235	1.38	.129								
Watershed conditions: 25% of area in oats-clover, oats windrowed May 24, clover growing, dense growth, 8 in. high. 41% in grain sorghum in boot stage, 12 in. high. 16% in bermuda-grass pasture, moderately grazed. 2% in native grass meadow, dense growth, 12 in. high. 9% in Johnsongrass, dense growth, 18 in. high. 7% in gravel roads. Cropland unterraced, contour-tilled.																
						1236	1.41	.152								
						1237	1.41	.175								
						1239	1.38	.222								
						1241	1.30	.267								
						1244	1.09	.327								
						1247	.934	.377								
						1251	.768	.433								
						1255	.612	.479								
						1301	.456	.533								
						1307	.357	.574								
						1315	.266	.615								
						1325	.190	.653								
						1335	.130	.679								
						1345	.0900	.697								
						1405	.0500	.720								
						1423	.0249	.731								
						1458	.0107	.741								
						1526	.0057	.745								
						1613	.0026	.748								
						1713	.0012	.750								
						1813	.0005	.751								
						1958	.0002	.751								
						2350	.0000	.751								

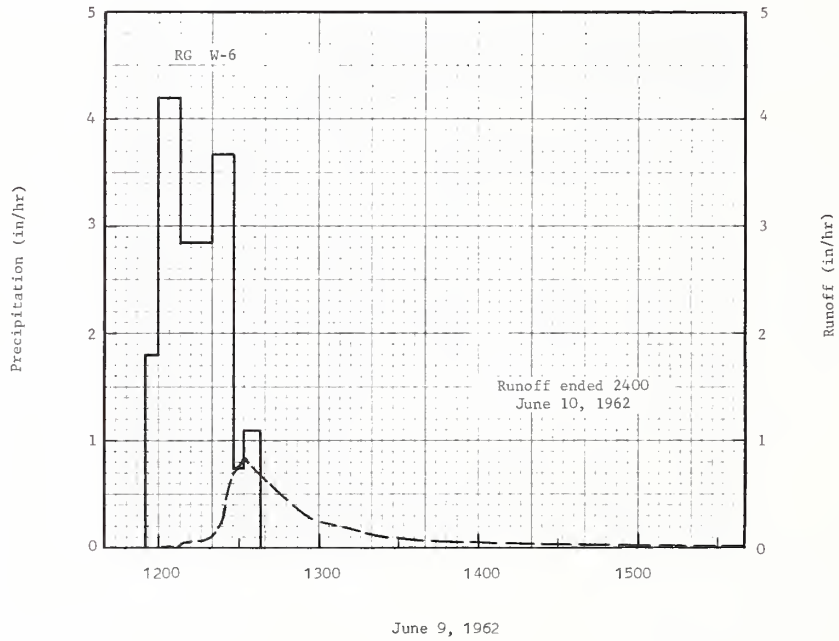
Cooperative Research Project of USDA and Texas Agricultural Experiment Station



RIESEL (WACO), TEXAS WATERSHED W-6

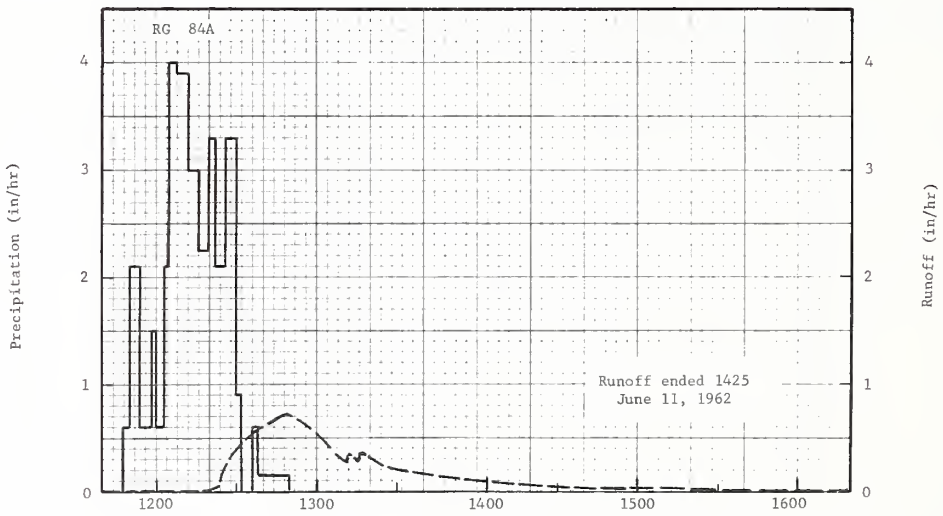
MONTHLY PRECIPITATION AND RUNOFF (Inches)							RIESEL (WACO), TEXAS WATERSHED W-10 AREA—19.7 ACRES									
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.25 .01	1.84 .03	1.04 .02	3.80 .25	2.10 T	5.33 .55	.12 .00	.03 .00	3.31 .00	3.64 T	4.16 T	1.44 .00	28.06 .86			
STA AV. 2/ (38-62) Q	2.08 .48	2.74 .47	2.05 .29	3.92 .83	3.88 .82	3.75 .64	1.55 .08	1.79 .02	2.32 .22	2.90 .30	2.81 .47	2.49 .48	32.28 5.10			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							RIESEL (WACO), TEXAS WATERSHED W-10									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.82	6-9	.40	6-9	.46	6-9	.51	6-9	.52	6-9	.52	6-9	.52	6-7	.55
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	6-10 1941	5.01	4-19 1957	2.31	4-19 1957	2.55	5-11 1957	3.00	11-22 1940	3.33E	11-22 1940	3.53E	11-22 1940	4.94E	5-19 1957	8.29
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since Sept. 1957. 1/ Precipitation obtained from rain gage W-6. 2/ Precipitation and runoff records began Aug. 1938. Watershed discontinued from June 30, 1943, to May 3, 1946; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July 1, and those for 1946 after May 3; no maximums taken for 1938, 1944, and 1945.																
1962 SELECTED RUNOFF EVENT							RIESEL (WACO), TEXAS WATERSHED W-10									
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9-10, 1962																
5-16-62	RG W-6 .03	.000	6-9-62	RG W-6 1155	.00	6-9-62	1200	.0000								
5-28	.89	T	1200	1.80	.15	1203	.0005	T								
5-29	1.18	.002	1208	4.20	.71	1205	.0041	T								
6-1	1.19	.006	1220	2.85	1.28	1208	.0245	.001								
6-2	.00	.001	1228	3.68	1.77	1210	.0433	.002								
6-3	.03	.001	1232	.75	1.82	1211	.0433	.002								
6-4	.17	T	1238	1.10	1.93	1215	.0648	.006								
6-5	.00	T				1219	.0904	.011								
6-7	.36	T				1222	.164	.017								
6-8	.31	T				1224	.288	.024								
						1226	.522	.038								
						1228	.689	.058								
						1230	.752	.082								
						1231	.790	.095								
						1232	.824	.108								
						1233	.821	.122								
						1235	.767	.149								
						1239	.672	.197								
						1243	.581	.238								
						1247	.483	.274								
						1252	.378	.310								
						1258	.279	.342								
						1305	.208	.371								
						1315	.140	.400								
						1323	.105	.416								
						1340	.0685	.440								
						1353	.0525	.453								
						1414	.0415	.470								
						1449	.0219	.487								
						1529	.0107	.498								
						1629	.0058	.506								
						1759	.0025	.512								
						1859	.0018	.514								
						1935	.0018	.515								
						2400	.0005	.520								
						6-10-62										
						0945	.0002	.523								
						1845	T	.524								
						2400	.0000	.524								

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.86. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.7-5.



RIESEL (WACO), TEXAS WATERSHED W-10

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y AREA—309 ACRES								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
	1962	P 1/ Q	1.30 .03	1.47 .04	1.04 .03	3.87 .18	2.34 .02	5.36 .77	.18 T	.06 .00	2.25 .00	3.50 .00	3.95 .03	1.27 T	26.59 1.10	
	STA AV 2/ (37-62) Q	2.21 .52	2.65 .50	2.10 .30	3.89 .76	3.89 .67	3.85 .55	1.56 .09	1.63 .00	2.19 .12	2.70 .12	2.67 .37	2.43 .42	31.77 4.42		
	MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y								
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.71	6-9	.44	6-9	.58	6-9	.69	6-9	.70	6-9	.71	6-9	.71	6-8	.74
MAXIMUMS FOR PERIOD OF RECORD																
1937 to 1962 4/	4-19 1957	2.54E	4-19 1957	2.15E	4-19 1957	2.74E	4-19 1957	3.48E	4-19 1957	3.66E	4-19 1957	3.70E	11-22 1940	4.77	4-19 1957	9.36E
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservative practices since 1955. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began May 1937. Watershed discontinued from June 30, 1943, to May 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July and those for 1946 occurred after May 1; no maximums taken for 1937, 1944, and 1945.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y								
Antecedent conditions			Rainfall				Runoff									
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
<p>7 RG 5/</p> <p>Event of June 9-11, 1962</p> <p>5-9,10-62 .00 T</p> <p>5-16 .03 .0000 T</p> <p>5-28 .97 T</p> <p>5-29 1.32 .0201 T</p> <p>5-30,31 .00 T</p> <p>6-1 1.07 .0083</p> <p>6-2 .00 .0132</p> <p>6-3 T .0006</p> <p>6-4 .22 .0012</p> <p>6-5,6 .00 .0004</p> <p>6-7 .37 .0003</p> <p>6-8 .39 .0027</p> <p>6-9 .00 6/ .0002</p> <p>6-9-62 RG 69B</p> <p>1147 .00</p> <p>1150 .60</p> <p>1154 2.10</p> <p>1158 .60</p> <p>1200 1.50</p> <p>1203 .60</p> <p>1205 2.10</p> <p>1208 4.00</p> <p>1212 3.90</p> <p>1216 3.00</p> <p>1220 2.25</p> <p>1222 3.30</p> <p>1226 2.10</p> <p>1230 3.30</p> <p>1232 .90</p> <p>1236 .00</p> <p>1238 .60</p> <p>1250 .15</p> <p>RG 69 1.64</p> <p>RG 70 1.68</p> <p>RG 75A 2.00</p> <p>RG 89 2.10</p> <p>RG W-2A 2.07</p> <p>7 RG AVG 5/ 1.84</p> <p>6-9-62 1155 T .0000</p> <p>1205 .0003 T .0002</p> <p>1210 .0041 .0012</p> <p>1215 .0367 .0033</p> <p>1220 .0667 .0057</p> <p>1225 .239 .0106</p> <p>1230 .379 .0318</p> <p>1234 .477 .0603</p> <p>1237 .562 .0868</p> <p>1241 .604 .1260</p> <p>1245 .587 .1687</p> <p>1249 .711 .2152</p> <p>1254 .674 .2730</p> <p>1256 .636 .2948</p> <p>1300 .543 .3333</p> <p>1303 .469 .3586</p> <p>1307 .353 .3858</p> <p>1311 .270 .4062</p> <p>1312 .370 .4116</p> <p>1316 .285 .4326</p> <p>1317 .341 .4379</p> <p>1323 .271 .4675</p> <p>1333 .204 .5066</p> <p>1345 .154 .5420</p> <p>1409 .0729 .6027</p> <p>1509 .0343 .6443</p> <p>1619 .0161 .6722</p> <p>1719 .0088 .6844</p> <p>1849 .0041 .6936</p> <p>2029 .0021 .6984</p> <p>2400 .0011 .7037</p> <p>6-10-62 .0005 .7091</p> <p>1700 .0002 .7125</p> <p>2400 .0001 .7137</p> <p>6-11-62 1425 .0000 .7149</p>																
<p>Watershed conditions: 16% of area in cotton in early fruiting stage, cultivated third week of May. 6% in corn in tassel stage. 28% in oats-clover, oats windrowed by mid-May, clover growing, dense growth, 8 in. high. 13% in grain sorghum in boot stage, 12 in. high. 36% in bermudagrass and native grass pasture, good growth, moderately grazed. 1% in farmsteads and gravel roads. All cropland terraced and contour-filled.</p>																
<p>NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 311.57. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED).</p> <p>5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT. 6/ RUNOFF PRIOR TO 1155.</p>																

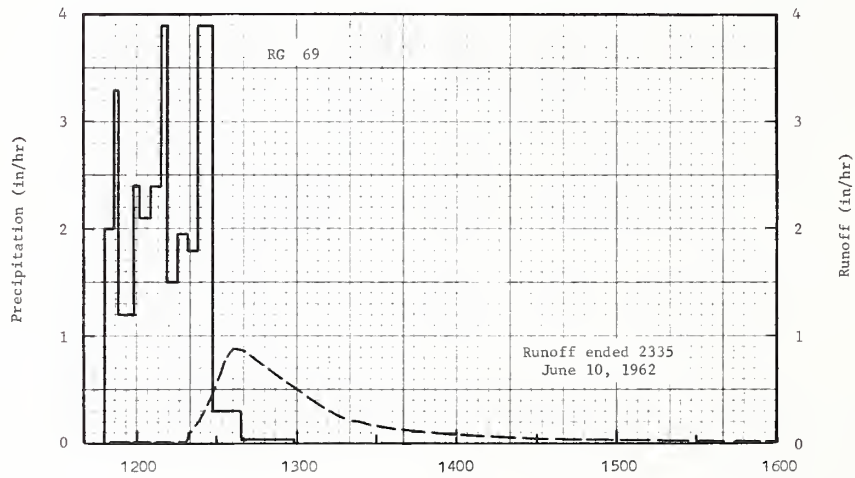


June 9, 1962

RIESEL (WACO), TEXAS WATERSHED Y

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-2 AREA—132 ACRES									
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962	P 1/ Q	1.29 .01	1.48 .02	1.06 .02	3.73 .19	2.38 .02	5.31 .76	.17 .00	.06 .00	2.15 .00	3.38 .00	3.91 .00	1.24 .00	26.16 1.02			
	STA AV 2/ (39-62) P Q	2.21 .46	2.62 .59	2.45 .56	3.96 .93	4.55 1.15	3.68 .55	1.63 .08	1.72 .00	2.36 .13	2.66 .15	2.90 .38	2.62 .52	33.36 5.50			
	MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-2									
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962		6-9	.90	6-9	.53	6-9	.65	6-9	.72	6-9	.73	6-9	.73	6-9	.73	6-8	.75
MAXIMUMS FOR PERIOD OF RECORD																	
1939 to 1962	5-1 1944	4.07	5-1 1944	3.11	5-1 1944	5.47	5-1 1944	7.08	5-1 1944	7.28	5-1 1944	7.46	4-30 1944	9.64	4-29 1944	10.60	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Thiessen weighted, using same rain gages as shown for event. 2/ Precipitation and runoff records began Jan. 1, 1939. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex.																	
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-2									
Antecedent conditions				Rainfall				Runoff									
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
Event of June 9-10, 1962																	
5-16-62	5 RG 4/ .04	.0000	5-9-62	RG 69		6-2-62											
5-28	1.01	.0000	1148	.00	.00	1148	.0000	.0000									
5-29	1.32	.0247	1151	2.00	.10	1159	.0001	T									
5-30	.00	T	1153	3.30	.21	1205	.0007	T									
6-1	1.06	.0078	1159	1.20	.33	1217	.0046	.0005									
6-2,3	.00	.0093	1201	2.40	.41	1219	.0166	.0007									
6-4	.21	.0000	1205	2.10	.55	1220	.107	.0018									
6-7	.36	.0000	1209	2.40	.71	1223	.200	.0080									
6-8	.40	.0001	1211	3.90	.84	1225	.299	.0163									
			1215	1.50	.94	1227	.377	.0273									
			1219	1.95	1.07	1229	.499	.0420									
			1223	1.80	1.19	1231	.518	.0606									
			1229	3.90	1.58	1233	.745	.0833									
			1239	.30	1.63	1234	.807	.0963									
			1259	.03	1.64	1237	.899	.1389									
						1243	.825	.2251									
						1246	.753	.2646									
			6-9-62	RG 75A		1251	.684	.3245									
			1145	.00	.00	1251	.684	.3245									
			1148	.80	.04	1255	.618	.3679									
			1150	2.60	.17	1301	.492	.4233									
			1158	.98	.30	1307	.377	.4666									
			1210	4.40	1.18	1316	.262	.5144									
			1228	2.56	1.95	1325	.200	.5485									
			1248	.15	2.00	1343	.107	.6053									
						1414	.0734	.6426									
			RG	69B	1.66	1502	.0335	.6845									
			RG	70	1.68	1548	.0166	.7029									
			RG	84A	1.72	1635	.0089	.7124									
			5 RG	AVG 4/	1.78	1743	.0046	.7196									
						1924	.0021	.7250									
						2129	.0010	.7280									
						2400	.0004	.7297									
						6-10-62											
						0134	.0002	.7307									
						0659	.0001	.7311									
						2335	.0000	.7315									

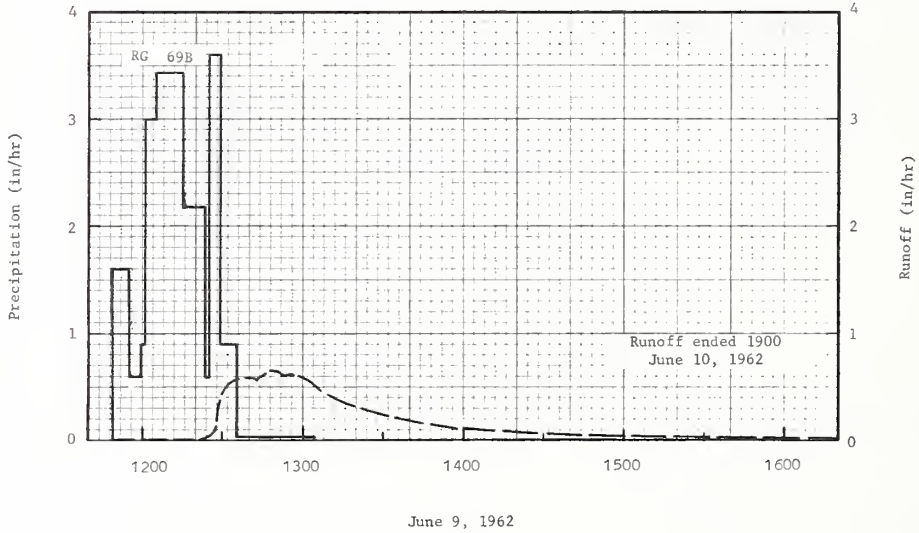
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 133.06. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED).
4/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS SHOWN FOR EVENT.



June 9, 1962

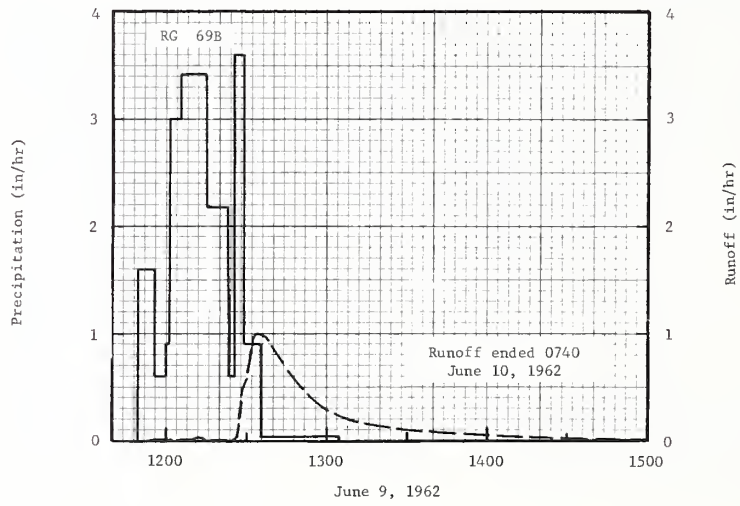
RIESEL (WACO), TEXAS WATERSHED Y-2

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-4 AREA—79.9 ACRES								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
	1962	P 1/ Q	1.29 .01	1.49 .02	1.08 .01	3.63 .24	2.42 T	5.25 .76	.16 .00	.07 .00	2.11 .00	3.28 .00	3.93 .00	1.24 .00	25.95 1.04	
	STA AV 2/ (39-62) P Q	2.15 .39	2.66 .44	2.16 .31	3.86 .73	4.20 .87	3.84 .60	1.53 .09	1.69 .00	2.39 .13	2.75 .16	2.86 .39	2.40 .36	32.49 4.47		
	MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-4								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.66	6-9	.48	6-9	.63	6-9	.71	6-9	.72	6-9	.73	6-9	.73	6-9	.75
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	6-10 1941	3.12	4-19 1957	2.16	4-19 1957	2.85	4-19 1957	3.25	4-23 1957	3.40	4-23 1957	3.43	4-23 1957	5.12	4-19 1957	9.46
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began Jan. 1, 1939. Watershed discontinued from June 30, 1943, to Jan. 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Max. for 1943 occurred before July; no max. taken for 1944 and 1945.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-4								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
			<u>Event of June 9-10, 1962</u>													
5-16-62	4 RG 5/ .03	.000	6-9-62	RG 69B		6-9-62										
5-28	1.05	.000	1149	.00	.00	1149	.0000	.000								
5-29	1.34	.005	1155	1.60	.16	1158	T	T								
6-1	1.04	.002	1159	.60	.20	1204	.0006	T								
6-2,3		.006	1201	.90	.23	1210	.0029									
6-4	.21	.000	1205	3.00	.43	1217	.0090	.001								
6-7	.36	.000	1215	3.42	1.00	1223	.0236	.002								
6-8	.41	.000	1223	2.18	1.29	1227	.104	.005								
			1225	.60	1.31	1229	.376	.014								
			1229	3.60	1.55	1233	.520	.044								
Watershed conditions: 8% of area in cotton in early fruiting stage, cultivated third week in May. 29% in oats-clover, oats windrowed in mid-May, clover growing, dense growth, 8 in. high. 31% in grain sorghum in boot stage, 12 in. high. 31% in bermudagrass pasture, good growth, moderately grazed. 1% in gravel roads. All cropland terraced and contour-tilled.			1235	.90	1.64	1237	.587	.082								
			1305	.04	1.66	1240	.596	.112								
						1243	.587	.141								
			RG	69	1.64	1246	.631	.172								
			RG	75A	2.00	1249	.663	.204								
			RG	84A	1.72	1254	.604	.257								
			4 RG	AVG 5/	1.71	1259	.604	.307								
						1303	.535	.345								
						1310	.423	.400								
						1320	.322	.462								
						1330	.245	.508								
						1340	.191	.545								
						1350	.143	.572								
			1400	.116	.593											
			1410	.0956	.611											
			1430	.0686	.638											
			1500	.0377	.664											
			1600	.0189	.692											
			1710	.0087	.707											
			1810	.0047	.714											
			1930	.0023	.718											
			2140	.0010	.722											
			2400	.0006	.723											
			6-10-62													
			0200	.0003	.724											
			1100	.0001	.726											
			1500		.726											
			1900	.0000	.726											
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 80.54. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED). 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT.																



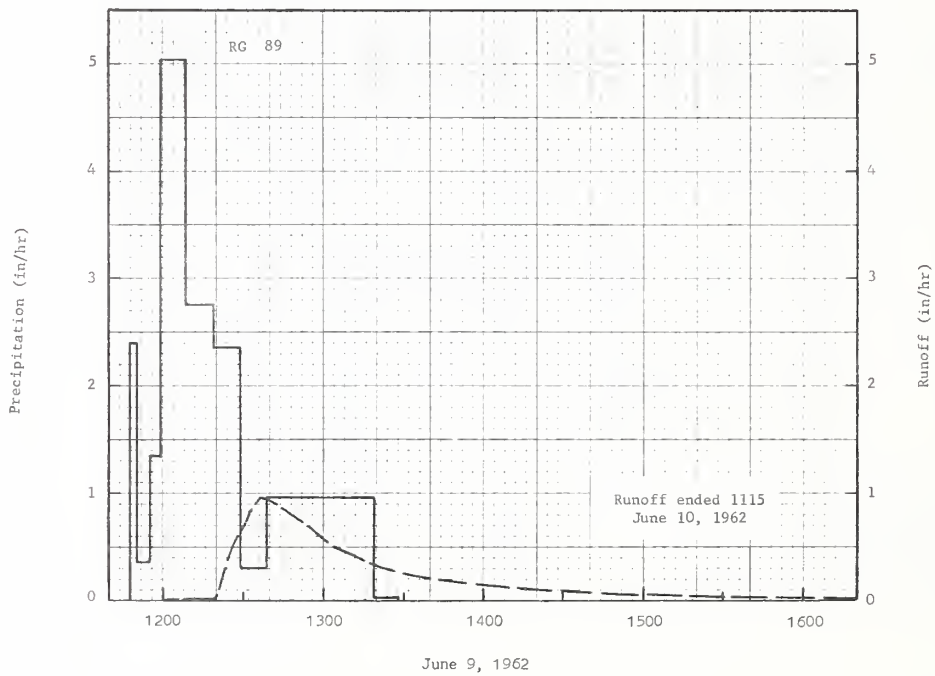
RIESEL (WACO), TEXAS WATERSHED Y-4

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-6 AREA—16.3 ACRES								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1962	P 1/ Q	1.28 .00	1.51 T	1.09 .00	3.61 .31	2.40 .00	5.24 .49	.16 .00	.06 .00	2.14 .00	3.38 .00	3.90 .00	1.25 .00	26.02 .80		
	STA AV 2/ (39-62) Q	2.03 .31	2.77 .37	1.96 .16	3.94 .72	3.91 .67	4.09 .63	1.60 .10	1.69 .00	2.31 .13	2.95 .29	2.83 .42	2.36 .36	32.44 4.16		
	MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-6								
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962	6-9	1.00	6-9	.42	6-9	.47	6-9	.48	6-9	.48	6-9	.49	6-9	.49	6-9	.49
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	6-10 1941	3.79	6-10 1941	1.51	4-19 1957	1.99	4-23 1957	2.65	5-11 1957	2.87	5-11 1957	2.90	11-22 1940	4.87	4-19 1957	8.49
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 93% of area in grain sorghum, 5% in Bermudagrass pasture, and 2% in gravel roads. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began Jan. 1, 1939. Watershed discontinued from June 30, 1943, to May 1, 1947; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; no maximums taken for 1944 through 1947.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-6								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
2 RG 5/				Event of June 9-10, 1962												
5-16-62	.02	.00	6-9-62	RG 69B		6-9-62										
5-28	1.05	.00	1149	.00	.00	1153	.00	.000								
5-29	1.32	.00	1155	1.60	.16	1206	T	T								
6-1	1.03	.00	1159	.60	.20	1210	.004	T								
6-4	.21	.00	1201	.90	.23	1213	.010	.001								
6-7	.36	.00	1205	3.00	.43	1216	.008	.001								
6-8	.41	.00	1215	3.42	1.00	1222	.009	.002								
			1223	2.18	1.29	1224	.008	.002								
			1225	.60	1.31	1226	.034	.003								
			1229	3.60	1.55	1227	.202	.005								
Watershed conditions: 93% of area in grain sorghum in boot stage, 12 in. high, cultivated May 7. 5% in bermudagrass pasture, good growth, lightly grazed. 2% in gravel roads. Cropland terraced and contour-tilled. 11.33 in. available soil moisture in 0-60 in. profile on June 6.				1235	.90	1.64	1229	.506	.016							
			1305	.04	1.66	1231	.704	.036								
			RG	75A	2.00	1232	.973	.050								
			RG	AVG 5/	1.75	1233	.993	.067								
						1234	1.00	.083								
						1236	.971	.116								
						1239	.862	.162								
						1243	.710	.214								
						1247	.578	.257								
						1249	.519	.275								
						1253	.410	.306								
						1256	.350	.325								
						1259	.304	.342								
						1304	.244	.364								
						1310	.180	.385								
						1320	.123	.410								
						1329	.098	.427								
						1345	.058	.447								
						1407	.030	.459								
						1417	.022	.463								
						1432	.015	.468								
						1502	.008	.474								
						1602	.004	.479								
						1732	.001	.483								
						2400	T	.485								
						6-10-62 0740	.000	.485								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.43. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED). 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT.																



RIESEL (WACO), TEXAS WATERSHED Y-6

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-7 AREA—40 ACRES									
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
		1962	P <u>1/</u> Q	1.32 T	1.44 T	1.05 T	3.95 .38	2.33 .00	5.59 .89	.17 .00	.04 .00	2.33 .00	3.70 .17	3.98 .12	1.38 .00	27.28 1.56	
	STA AV <u>2/</u> (39-62) Q	2.06 .29	2.81 .43	1.99 .26	4.01 .82	3.96 .88	4.05 .69	1.59 .09	1.71 .02	2.27 .19	3.00 .26	2.89 .49	2.42 .45	32.76 4.87			
	MEAN P <u>3/</u> 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-7									
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962		6-9	.95	6-9	.62	6-9	.79	6-9	.87	6-9	.87	6-9	.87	6-9	.87	6-1	.89
MAXIMUMS FOR PERIOD OF RECORD																	
1939 to	6-10	3.59	4-19	2.34	4-19	2.76	4-23	3.28	4-23	3.31	4-23	3.31	11-22	5.37	4-19	8.89	
1962 <u>4/</u>	1941		1957		1957		1957		1957		1957		1940		1957		
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. <u>1/</u> Thiessen weighted, using same rain gages as shown for event. <u>2/</u> Precipitation and runoff records began Jan. 1, 1939. Watershed discontinued from June 30, 1943, to May 1, 1947; part-year amounts not included in averages. <u>3/</u> Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. <u>4/</u> Max. for 1943 occurred before July; no max. taken for 1944 through 1947.																	
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-7									
Antecedent conditions			Rainfall			Runoff											
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
Event of June 9-10, 1962																	
5-16-62	2 RG <u>5/</u> .04	.000	6-9-62	RG 89		6-9-62											
5-28	.96	.000	1148	.00	.00	1200	.0000	.000									
5-29	1.33	.000	1150	2.40	.08	1208	.0025	T									
6-1	1.09	.010	1155	.36	.11	1211	.0105	T									
6-2	.00	.007	1159	1.35	.20	1220	.0236	.003									
6-3	T	.000	1209	5.04	1.04	1223	.274	.006									
6-4	.21	.000	1219	2.76	1.50	1226	.456	.025									
6-7	.39	.000	1229	2.34	1.89	1229	.645	.053									
6-8	.37	.000	1239	.30	1.94	1231	.720	.076									
			1319	.96	2.10	1233	.811	.101									
			1329	.03	2.11	1235	.925	.130									
			RG	W-2A	2.08	1237	.953	.161									
			RG	AVG <u>5/</u>	2.11	1241	.934	.224									
						1246	.863	.299									
						1250	.782	.354									
						1254	.690	.403									
						1302	.532	.484									
						1311	.416	.555									
						1317	.351	.593									
						1328	.273	.650									
						1340	.207	.698									
						1346	.180	.717									
						1358	.140	.749									
						1411	.106	.776									
						1432	.0756	.807									
						1454	.0426	.828									
						1518	.0259	.841									
						1558	.0134	.854									
						1638	.0068	.860									
						1745	.0030	.865									
						1855	.0014	.868									
						2100	.0005	.870									
						2400	.0002	.871									
						6-10-62											
						0150	.0001	.871									
						1115	.0000	.871									
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 40.32. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED). <u>5/</u> THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT.																	

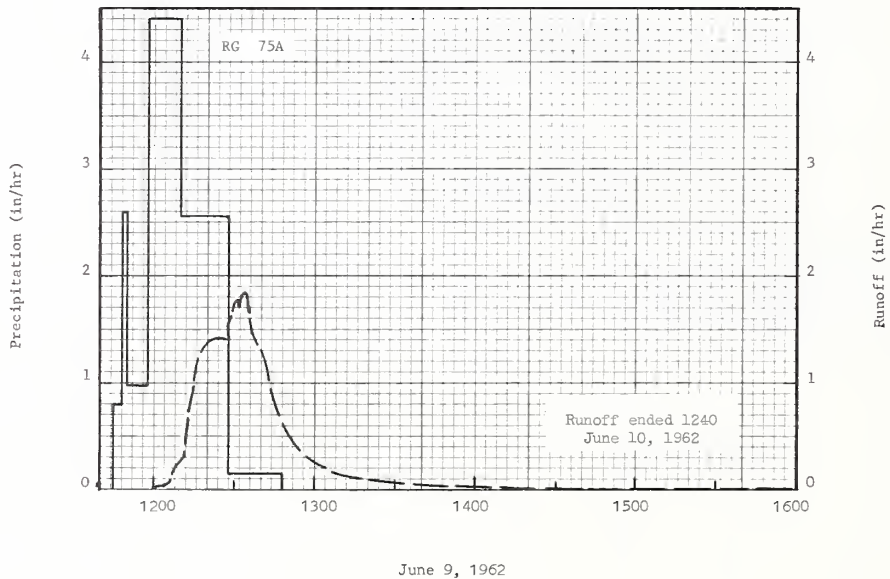


RIESEL (WACO), TEXAS WATERSHED Y-7

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-8 AREA — 20.8 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.29 T	1.47 T	1.02 T	3.83 .38	2.29 .13	5.45 1.08	.19 .00	.03 .00	2.18 .00	3.57 .00	3.80 .01	1.22 .00	26.34 1.65			
STA AV 2/ Q	1.90 .34	2.79 .43	2.05 .21	4.03 .81	3.79 .72	4.30 .64	1.69 .09	1.67 .00	2.41 .16	3.14 .18	2.94 .49	2.47 .41	33.18 4.48			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-8								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	1.86	6-9	.90	6-9	.96	6-9	.99	6-9	.99	6-9	.99	6-8	.99	6-1	1.06
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	6-10 1941	3.29	4-19 1957	2.41	4-19 1957	2.80	4-23 1957	3.32	4-23 1957	3.37	4-23 1957	3.37	11-22 1940	5.64	4-19 1957	9.10
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 95% of area in cotton; 4% in Bermudagrass pasture; and 1% in gravel roads. 1/ Precipitation obtained from rain gage 75A. 2/ Precipitation and runoff records began Mar. 1, 1939. Watershed discontinued from June 30, 1943, to Jan. 1, 1949; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1939 occurred after Mar. 1, and those for 1943 occurred before July; no maximums taken for 1944 through 1948.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-8								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9-10, 1962.																
5-16	RG 75A .04	.000	6-9-62	RG 75A .00	.00	6-9-62	1200	.0000								
5-28	.95	.000	1145	.00	.00	1200	.0000	.000								
5-29	1.30	.177	1148	.80	.04	1203	.0304	.001								
6-1	1.08	.068	1150	2.60	.17	1206	.0687	.003								
6-2	.00	.003	1158	.98	.30	1207	.144	.005								
6-4	.21	.000	1210	4.40	1.18	1209	.232	.011								
6-7	.36	.000	1228	2.56	1.95	1211	.292	.020								
6-8	.37	.002	1248	.15	2.00	1213	.699	.034								
						1215	1.01	.064								
						1217	1.20	.100								
						1219	1.34	.143								
						1223	1.40	.235								
						1225	1.43	.282								
						1227	1.41	.329								
						1229	1.59	.379								
						1230	1.72	.407								
						1231	1.77	.436								
						1232	1.69	.465								
						1234	1.86	.524								
						1235	1.74	.554								
						1237	1.44	.607								
						1240	1.28	.674								
						1242	1.17	.715								
						1243	.952	.733								
						1246	.762	.776								
						1250	.545	.819								
						1254	.397	.850								
						1258	.293	.873								
						1302	.226	.890								
						1309	.145	.912								
						1317	.0949	.927								
						1332	.0554	.946								
						1347	.0354	.957								
						1411	.0193	.968								
						1451	.0097	.978								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 20.97. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED).																

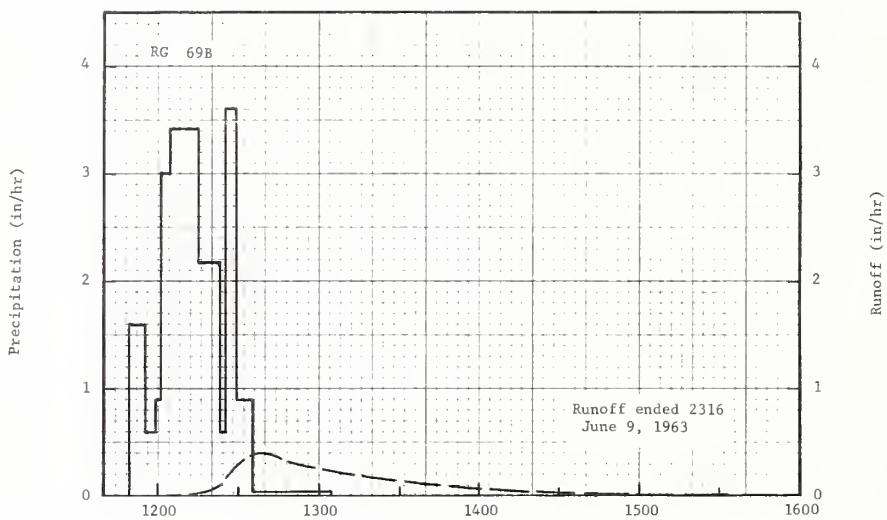
1962 SELECTED RUNOFF EVENT					RIESEL (WACO), TEXAS WATERSHED Y-8			
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
<u>Event of June 9-10, 1962—continued</u>								
						6-9-62 1541	.0043	.983
						1631	.0018	.985
						1801	.0005	.987
						1901	.0003	.987
						2400	.0001	.988
						6-10-62 1240	.0000	.989

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 20.97.



RIESEL (WACO), TEXAS WATERSHED Y-8

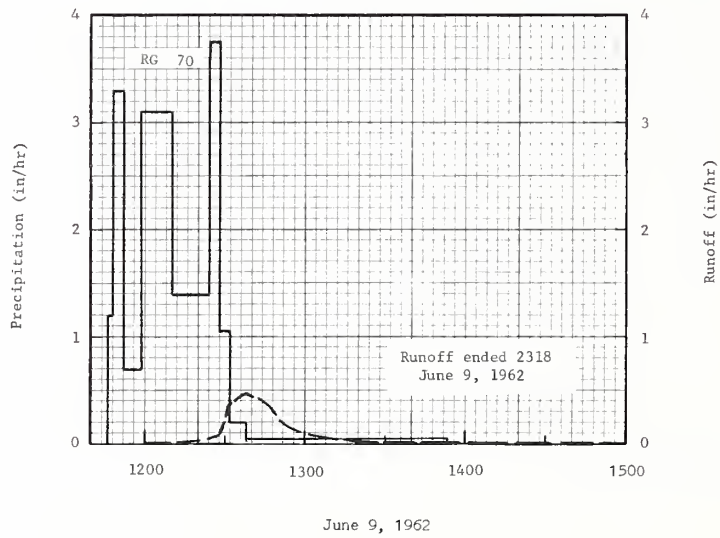
MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-10 AREA—18.6 ACRES									
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual				
1962 P 1/ Q	1.29 .01	1.50 .01	1.09 .01	3.57 .02	2.45 .00	5.21 .41	.15 .00	.08 .00	2.09 .00	3.23 .00	3.95 .00	1.25 .00	25.86 .46				
STA AV 2/ (38-62) P Q	2.11 .39	2.64 .38	2.04 .26	3.93 .85	3.95 .79	3.93 .65	1.53 .10	1.69 .01	2.31 .22	2.81 .23	2.77 .38	2.39 .38	32.10 4.64				
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13				
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-10									
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962		6-9	.39	6-9	.28	6-9	.37	6-9	.40	6-9	.40	6-9	.40	6-9	.40	6-9	.41
MAXIMUMS FOR PERIOD OF RECORD																	
1938 to 1962 4/	4-19 1957	3.73	4-19 1957	2.90	4-19 1957	3.48	4-19 1957	3.62	4-19 1957	3.86	4-19 1957	3.91	4-23 1957	5.34	4-19 1957	10.57	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 93% in oats-clover; 4% in Bermudagrass pasture; and 3% in gravel roads. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began July 1, 1938. Watershed discontinued from June 30, 1943, to May 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; maximums for 1946 occurred after May 1; no maximums taken for 1938, 1944, and 1945.																	
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-10									
Antecedent conditions			Rainfall			Runoff											
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
Event of June 9, 1962																	
5-16-62	2 RG 5/ .03	.00	6-9-62	RG 69B		6-9-62											
5-28	1.08	.00	1149	.00	.00	1158	.000	.000									
5-29	1.34	.00	1155	1.60	.16	1206	.002	.000									
6-1	1.03	.00	1159	.60	.20	1209	.012	.000									
6-4	.21	.00	1201	.90	.23	1213	.023	.002									
6-7	.36	.00	1205	3.00	.43	1217	.036	.004									
6-8	.42	.00	1215	3.42	1.00	1220	.064	.006									
			1223	2.18	1.29	1223	.104	.010									
			1225	.60	1.31	1225	.148	.014									
			1229	3.60	1.55	1227	.212	.020									
			1235	.90	1.64	1229	.262	.028									
			1305	.04	1.66	1231	.321	.038									
			RG	69	1.64	1234	.376	.055									
			2 RG	AVG 5/	1.66	1236	.394	.068									
						1243	.393	.114									
						1246	.357	.133									
						1251	.310	.160									
						1301	.265	.208									
						1311	.217	.248									
						1321	.172	.281									
						1331	.136	.306									
						1341	.109	.327									
						1351	.087	.343									
						1411	.050	.366									
						1431	.030	.379									
						1451	.018	.387									
						1521	.008	.393									
						1551	.004	.396									
						1641	.002	.399									
						2316	.000	.401									
Watershed conditions: 93% of area in oats-clover, oats windrowed May 22, clover growing, dense cover, 8 in. high. 4% in bermudagrass pasture, good growth, lightly grazed. 3% in gravel roads. Cropland terraced. 8.24 in. available soil moisture in 0-60 in. profile on May 31.																	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 18.75. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED). 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT.																	



June 9, 1962

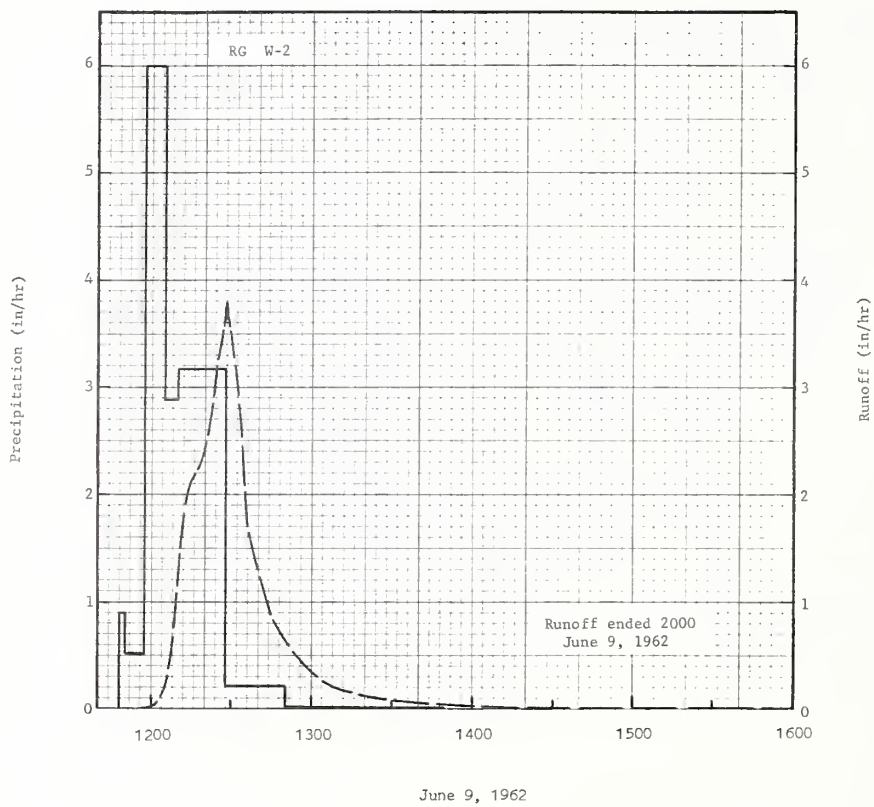
RIESEL (WACO), TEXAS WATERSHED Y-10

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED SW-12 AREA—2.97 ACRES									
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
		1962	P 1/ Q	1.31 .00	1.45 .00	1.06 .00	3.89 .16	2.40 .00	5.34 .21	.19 .00	.07 .00	2.20 .00	3.21 .00	3.28 .01	1.21 .00	26.31 .38	
STA AV (38-62)	2/ P Q	2.10 .42	2.71 .50	1.99 .15	3.94 .53	3.88 .43	4.04 .31	1.58 .00	1.62 .00	2.29 .05	2.79 .01	2.72 .20	2.33 .32	31.99 2.92			
MEAN P 74 YR	3/ P	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED SW-12									
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962		6-9	.47	6-9	.18	6-9	.19	6-9	.20	6-9	.20	6-9	.20	6-8	.20	6-8	.21
MAXIMUMS FOR PERIOD OF RECORD																	
1938 to 1962 4/	6-10 1941	3.48	4-19 1957	2.42	4-19 1957	2.76E	4-23 1957	3.29E	4-23 1957	3.34E	4-23 1957	3.34E	4-23 1957	4.61E	4-19 1957	8.53E	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Precipitation obtained from rain gage 70. 2/ Precipitation and runoff records began Jan. 1, 1938. Watershed discontinued from June 30, 1943, to June 1, 1947; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; no maximums taken for 1944 through 1947.																	
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED SW-12									
Antecedent conditions				Rainfall				Runoff									
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
Event of June 9, 1962																	
	RG 70																
5-16-62	.05	.00	6-9-62	RG 70		6-9-62											
5-28	1.00	.00		.00	.00	1201	.0000	.00									
5-29	1.35	.00		1.146	.04	1203	.0030	T									
6-1	1.06	T		1152	.26	1205	.0065	T									
6-2	.00	T		1158	.70	1209	.0147	T									
6-4	.26	.00		1210	.95	1215	.0187	T									
6-7	.36	.00		1224	1.39	1221	.0252	T									
6-8	.42	T		1228	3.75	1223	.0434	.01									
				1232	1.05	1225	.0565	.01									
				1238	.20	1228	.0856	.01									
Watershed conditions: 100% native grass meadow, good cover, grass 15 in. high. 6.59 in. available soil moisture in the 0-60 in. profile on May 31.			1354	.04	1.73	1230	.199	.02									
						1232	.336	.02									
						1235	.432	.04									
						1238	.468	.07									
						1241	.456	.09									
						1245	.382	.12									
						1249	.273	.14									
						1253	.190	.15									
						1257	.129	.16									
						1301	.0877	.17									
						1309	.0470	.18									
						1316	.0275	.18									
						1328	.0130	.19									
						1335	.0085	.19									
						1403	.0035	.19									
						1448	.0009	.19									
						1800	.0004	.20									
						2318	.0000	.20									
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.994. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.24-4.																	



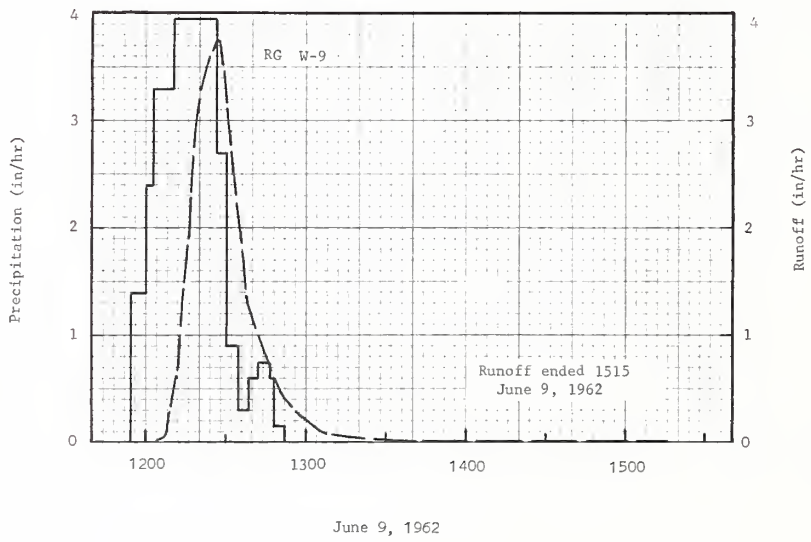
RIESEL (WACO), TEXAS WATERSHED SW-12

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED SW-17 AREA — 2.99 ACRES									
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962	P 1/ Q	1.36 .04	1.52 .01	.99 .01	3.72 .12	2.33 T	5.94 1.90	.16 .00	.02 .00	2.59 .00	3.90 .01	3.92 .02	1.42 .00	27.87 2.11			
STA AV (39-62)	2/ P Q	1.95 .40	2.82 .60	2.00 .34	4.13 .98	3.86 .74	4.06 .82	1.70 .14	1.70 .00	2.46 .25	3.15 .23	2.94 .57	2.49 .58	33.26 5.65			
MEAN P 3/ 74 YR		2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED SW-17									
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	
1962		6-9	3.79	6-9	1.55	6-9	1.65	6-9	1.67	6-9	1.67	6-9	1.67	6-9	1.67	6-7	1.86
MAXIMUMS FOR PERIOD OF RECORD																	
1939 to 1962 4/	10-31 1940	7.06	4-19 1957	2.54	4-19 1957	2.96	4-23 1957	3.31	4-23 1957	3.35	11-22 1940	3.91	11-22 1940	5.37	4-19 1957	9.42	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Precipitation obtained from rain gage W-2. 2/ Precipitation and runoff records began Feb. 1, 1939. Watershed discontinued June 30, 1943, to Jan. 1, 1948; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1939 occurred after Feb.; maximums for 1943 occurred before July; no maximums taken for 1944 through 1947.																	
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED SW-17									
Antecedent conditions			Rainfall				Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
RC W-2			Event of June 9, 1962														
5-16-62	.03	.00	6-9-62	RC W-2		6-9-62											
5-28	.93	.00		1148	.00	1155	.0000	.00									
5-29	1.29	T		1150	.90	1158	.0007	T									
6-1	1.11	.03		1158	.52	1200	.0022	T									
6-2	.00	T		1202	6.00	1202	.0285	T									
6-3	.06	.00		1205	6.00	1203	.0769	T									
6-4	.22	.00		1210	2.88	1204	.144	T									
6-7	.37	T		1228	3.17	1206	.334	.01									
6-8	.36	.00		1250	.22	1208	.737	.03									
				1350	.01	1210	1.19	.06									
						1212	1.75	.11									
						1215	2.13	.21									
						1220	2.41	.40									
						1222	2.62	.48									
						1224	3.14	.58									
						1227	3.59	.75									
						1228	3.79	.81									
						1230	3.39	.93									
						1232	2.97	1.03									
						1234	2.27	1.12									
						1236	1.78	1.18									
						1238	1.50	1.24									
						1242	1.19	1.33									
						1245	.880	1.38									
						1250	.673	1.45									
						1256	.464	1.50									
						1303	.298	1.54									
						1315	.166	1.59									
						1330	.0860	1.62									
						1345	.0518	1.64									
						1400	.0339	1.65									
						1430	.0181	1.66									
						1500	.0077	1.67									
						1545	.0024	1.67									
						1630	.0007	1.67									
						1700	.0004	1.67									
						2000	.0000	1.67									
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.014. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.28-5.																	



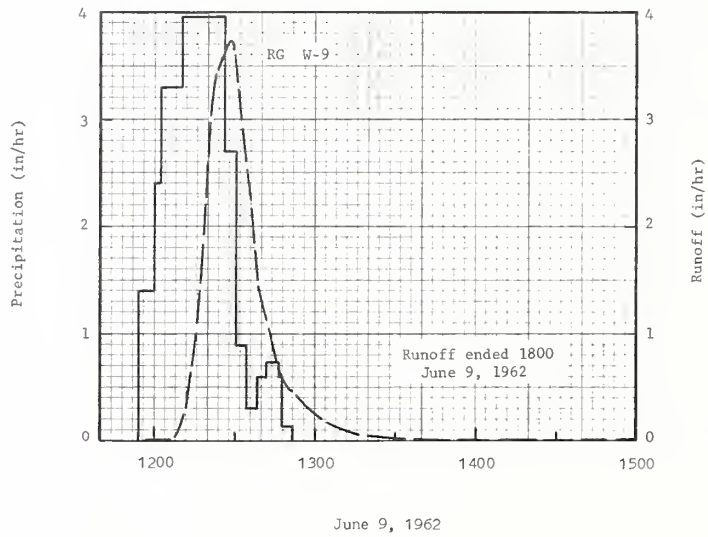
RIESEL (WACO), TEXAS WATERSHED SW-17

MONTHLY PRECIPITATION AND RUNOFF (Inches)							RIESEL (WACO), TEXAS WATERSHED P-1 AREA—0.243 ACRE									
Year \ Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.20 .00	1.91 .13	1.11 .08	3.65 .58	2.02 .00	5.39 1.46	.24 .00	.04 .00	2.98 .00	2.65 .00	4.20 .02	1.56 .00	26.95 2.27			
STA AV 2/ (38-62) P Q	2.65 .61	3.11 .65	1.79 .15	3.32 .20	3.10 .30	5.61 1.08	1.64 .05	1.41 .00	2.45 .17	3.05 .01	3.50 .57	3.22 .47	34.85 4.26			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							RIESEL (WACO), TEXAS WATERSHED P-1									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	3.76	6-9	1.43	6-9	1.46	6-9	1.46	6-9	1.46	6-9	1.46	6-9	1.46	6-9	1.46
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	6-10 1941	7.18	11-22 1940	2.04	11-22 1940	2.20	11-22 1940	2.30	11-22 1940	2.33	11-22 1940	2.66	11-22 1940	4.23	11-22 1940	4.39
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 100% Bermudagrass pasture. 1/ Precipitation obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938. Watershed discontinued from June 30, 1943, to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1963 occurred before July; no maximums taken for 1944 through 1959.																
1962 SELECTED RUNOFF EVENT							RIESEL (WACO), TEXAS WATERSHED P-1									
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-16-62	RC W-9 .03	.00	6-9-62	RC W-9 .00	.00	6-9-62	1203	.0000								
5-28	.78	.00	1154	.00	.00	1205	.0174	.00								
5-29	1.21	.00	1200	1.40	.14	1205	.0174	T								
6-1	1.21	.00	1202	2.40	.22	1207	.0671	T								
6-3	.04	.00	1210	3.30	.66	1208	.147	T								
6-4	.21	.00	1226	3.94	1.71	1210	.473	.01								
6-7	.36	.00	1230	2.70	1.89	1212	.741	.03								
6-8	.35	.00	1234	.90	1.95	1214	1.34	.07								
			1238	.30	1.97	1216	1.95	.12								
			1242	.60	2.01	1218	2.76	.20								
Watershed conditions: 100% bermuda-grass pasture, good cover, conventional grazing, grazed from May 7 to date. 3.583 in. available soil moisture in 0-60 in. profile on May 31.																
			1246	.75	2.06	1221	3.26	.35								
			1248	.60	2.08	1226	3.76	.64								
			1252	.15	2.09	1227	3.76	.71								
						1230	3.26	.88								
						1232	2.77	.98								
						1234	2.22	1.07								
						1236	1.72	1.13								
						1238	1.36	1.18								
						1241	1.10	1.24								
						1247	.660	1.33								
						1251	.452	1.37								
						1257	.271	1.40								
						1303	.153	1.42								
						1309	.0881	1.44								
						1319	.0419	1.45								
						1326	.0289	1.45								
						1335	.0101	1.45								
						1350	.0039	1.46								
						1411	.0009	1.46								
						1515	.0000	1.46								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-4.																



RIESEL (WACO), TEXAS WATERSHED P-1

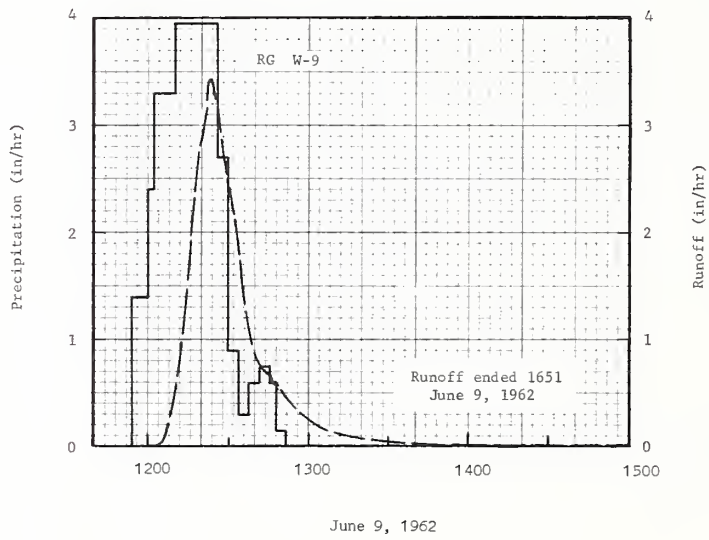
MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED P-2 AREA—0.243 ACRE								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
	1962	P 1/ Q	1.20 .00	1.91 .09	1.11 .04	3.65 .54	2.02 .00	5.39 1.43	.24 .00	.04 .00	2.98 .00	2.65 .00	4.20 .00	1.56 .00	26.95 2.10	
STA AV	2/ P Q	2.46 .75	3.11 .82	1.87 .25	3.60 .28	2.84 .26	6.08 1.57	1.81 .12	1.23 .00	2.75 .32	3.19 .07	3.64 .98	3.51 .81	36.09 6.23		
MEAN P	3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED P-2								
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	3.73	6-9	1.40	6-9	1.43	6-9	1.43	6-9	1.43	6-9	1.43	6-9	1.43	6-9	1.43
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	6-10 1941	6.65	6-10 1941	2.09	6-10 1941	2.14	11-22 1940	2.34	11-22 1940	2.45	11-22 1940	3.04	11-22 1940	5.36	11-22 1940	5.83
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed condition: 100% Bermudagrass pasture. 1/ Precipitation obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938. Record lost for May 16-20, 1939, when the only runoff of the year occurred. Watershed discontinued from June 30, 1943, to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; no maximums taken for 1939 and 1944 through 1959.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED P-2								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-16-62	RC W-9 .03	.00	6-9-62	RG W-9 .00	.00	6-9-62	.0000	.00								
5-28	.78	.00	1154	.00	.00	1157	.0030	T								
5-29	1.21	.00	1200	1.40	.14	1202	.0214	T								
6-1	1.21	.00	1202	2.40	.22	1207	.0683	T								
6-3	.04	.00	1210	3.30	.66	1209										
6-4	.21	.00	1226	3.94	1.71	1211	.269	.01								
6-7	.36	.00	1230	2.70	1.89	1213	.490	.02								
6-8	.35	.00	1234	.90	1.95	1215	.909	.04								
			1238	.30	1.97	1217	1.54	.08								
			1242	.60	2.01	1219	2.24	.15								
Watershed conditions: 100% bermudagrass pasture, good cover, conventional grazing, grazed from May 7 to date. 4.707 in. available soil moisture in 0-60 in. profile on May 31.																
			1246	.75	2.06	1221	3.05	.23								
			1248	.60	2.08	1223	3.42	.34								
			1252	.15	2.09	1228	3.73	.64								
						1229	3.73	.70								
						1232	3.14	.87								
						1234	2.62	.97								
						1236	2.12	1.05								
						1239	1.44	1.14								
						1243	1.01	1.22								
						1247	.694	1.28								
						1252	.494	1.33								
						1256	.356	1.36								
						1301	.243	1.38								
						1308	.112	1.40								
						1317	.0592	1.41								
						1330	.0236	1.42								
						1347	.0111	1.42								
						1410	.0025	1.43								
						1437	.0025	1.43								
						1800	.0000	1.43								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-4.																



RIESEL (WACO), TEXAS WATERSHED P-2

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED P-3 AREA—0.243 ACRE								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
	1962	P 1/ Q	1.20 .00	1.91 .34	1.11 .08	3.65 .57	2.02 .00	5.39 1.34	.24 .00	.04 .00	2.98 .00	2.65 .00	4.20 .01	1.56 .00	26.95 2.34	
	STA AV 2/ Q	2.65 .70	3.11 .74	1.79 .23	3.32 .28	3.10 .44	5.61 1.37	1.64 .10	1.41 .00	2.45 .26	3.05 .13	3.50 .76	3.22 .63	34.85 5.64		
	MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED P-3								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	3.43	6-9	1.25	6-9	1.33	6-9	1.34	6-9	1.34	6-9	1.34	6-9	1.34	6-9	1.34
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	6-10 1941	7.63	6-10 1941	2.13	6-10 1941	2.23	11-22 1940	2.32	11-22 1940	2.46	11-22 1940	3.02	11-22 1940	5.34	11-22 1940	5.93
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 100% Bermudagrass pasture. 1/ Precipitation obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938. Watershed discontinued from June 30, 1943, to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; no maximums taken for 1944 through 1959.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED P-3								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
<u>Event of June 9, 1962</u>																
5-16-62	RG W-9 .03	.00	6-9-62	RG W-9		6-9-62										
5-28	.78	.00	1154	.00	.00	1202	.0000	.00								
5-29	1.21	.00	1200	1.40	.14	1204	.0096	T								
6-1	1.21	.00	1202	2.40	.22	1206	.0467	T								
6-3	.04	.00	1210	3.30	.56	1208	.298	.01								
6-4	.21	.00	1226	3.94	1.71	1210	.527	.02								
6-7	.36	.00	1230	2.70	1.89	1212	.885	.04								
6-8	.35	.00	1234	.90	1.95	1214	1.39	.08								
			1238	.30	1.97	1216	1.97	.14								
			1242	.60	2.01	1218	2.46	.21								
Watershed conditions: 100% bermuda-grass pasture, good cover, controlled grazing, grazed from May 7 to May 10. 8.840 in. available soil moisture in 0-60 in. profile on May 31.			1246	.75	2.06	1220	2.88	.30								
			1248	.60	2.08	1222	3.26	.40								
			1252	.15	2.09	1223	3.43	.46								
						1224	3.43	.51								
						1226	3.13	.62								
						1229	2.65	.77								
						1232	2.18	.89								
						1236	1.38	1.01								
						1240	.894	1.08								
						1246	.660	1.16								
						1247	.580	1.17								
						1248	.580	1.18								
						1251	.473	1.21								
						1256	.332	1.24								
						1304	.188	1.27								
						1312	.112	1.29								
						1323	.0614	1.31								
						1341	.0258	1.32								
						1400	.0116	1.33								
						1456	.0027	1.33								
						1651	.0000	1.34								

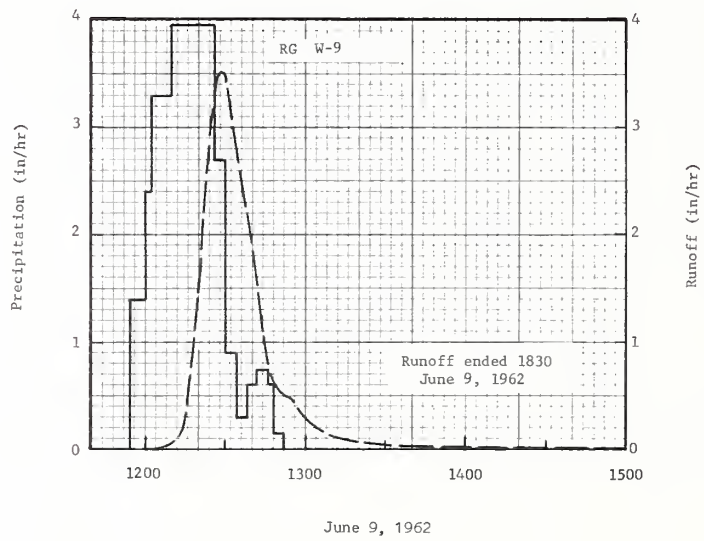
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-4



RIESEL (WACO), TEXAS WATERSHED P-3

MONTHLY PRECIPITATION AND RUNOFF (Inches)														RIESEL (WACO), TEXAS WATERSHED P-4 AREA—0.243 ACRE			
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
		1962	P 1/ Q	1.20 .00	1.91 .20	1.11 .06	3.65 .55	2.02 .00	5.39 1.34	.24 .00	.04 .00	2.98 .00	2.65 .00	4.20 .02	1.56 .00	26.95 2.17	
	STA AV 2/ (38-62) Q	2.65 .80	3.11 .81	1.79 .22	3.32 .23	3.10 .28	5.61 1.37	1.64 .10	1.41 .00	2.45 .23	3.05 .06	3.50 .91	3.22 .91	34.85 5.92			
	MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS														RIESEL (WACO), TEXAS WATERSHED P-4			
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	
1962	6-9	3.51	6-9	1.29	6-9	1.32	6-9	1.34	6-9	1.34	6-9	1.34	6-8	1.34	6-8	1.34	
MAXIMUMS FOR PERIOD OF RECORD																	
1938 to 1962 4/	6-10 1941	7.79	11-22 1940	2.15	11-22 1940	2.25	11-22 1940	2.51	11-22 1940	2.65	11-22 1940	3.01	11-22 1940	5.69	11-22 1940	6.26	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 100% bermudagrass pasture. 1/ Precipitation obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938. Watershed discontinued from June 30, 1943, to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; no maximums taken for 1944 through 1959.																	
1962 SELECTED RUNOFF EVENT														RIESEL (WACO), TEXAS WATERSHED P-4			
Antecedent conditions				Rainfall				Runoff									
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
Event of June 9, 1962																	
5-16-62	RG W-9 .03	.00	6-9-62	RG W-9 .00	.00	6-9-62	.0000	.00									
5-28	.78	.00	1154	.00	.00	1202	.0000	.00									
5-29	1.21	.00	1200	1.40	.14	1204	.0053	T									
6-1	1.21	.00	1202	2.40	.22	1206	.0156	T									
6-3	.04	.00	1210	3.30	.66	1208	.0313	T									
6-4	.21	.00	1226	3.94	1.71	1212	.0881	T									
6-7	.36	.00	1230	2.70	1.89	1214	.229	.01									
6-8	.35	.01	1234	.90	1.95	1216	.505	.02									
			1238	.30	1.97	1218	.944	.05									
			1242	.60	2.01	1220	1.55	.09									
Watershed conditions: 100% bermuda-grass pasture, good cover, controlled grazing, grazed from May 7 to May 10. 11.757 in. available soil moisture in 0-60 in. profile on May 31.																	
			1246	.75	2.06	1222	2.19	.15									
			1248	.60	2.08	1224	2.77	.23									
			1252	.15	2.09	1226	3.31	.33									
						1228	3.51	.45									
						1230	3.51	.56									
						1232	3.20	.68									
						1234	2.84	.78									
						1236	2.50	.87									
						1238	2.18	.94									
						1240	1.85	1.01									
						1242	1.36	1.06									
						1246	.773	1.14									
						1254	.494	1.22									
						1300	.301	1.26									
						1306	.177	1.28									
						1312	.110	1.30									
						1316	.0742	1.30									
						1325	.0438	1.31									
						1335	.0258	1.32									
						1345	.0150	1.32									
						1415	.0078	1.33									
						1505	.0030	1.33									
						1830	.0000	1.34									

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-5.



RIESEL (WACO), TEXAS WATERSHED P-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED W-3 44.1 AREA — 481 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 1/P	.39	.67	1.88	.47	2.87	4.75	5.56	4.52	2.67	1.89	2/.17	2/.40	26.24			
	.12E	.01	.71	.00	.02	.49	.98	.76	.18	.21	.00	.00	3.48			
STA AVG P (39-62) D	.30	.50	1.11	2.04	3.59	4.84	2.78	2.65	2.37	1.16	.65	.40	22.39			
MEAN 3/P	.01	.04	.19	.11	.55	1.17	.51	.22	.34	.11	.03	T	3.28			
70-YR 3/P	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	.27	8-23	.23	8-23	.35	8-23	.45	8-23	.52	8-23	.52	8-23	.52	7-11	.91
MAXIMUMS FOR PERIOD OF RECORD																
1940 to 1962	7-3 1959	2.00	7-10 1951	4/1.32	6-1 1951	1.73	6-1 1951	2.35	6-15 1957	3.12	6-15 1957	3.52	6-15 1957	4.69	6-10 1957	4.80
Notes: Quality of records: Monthly P excellent; monthly Q good to excellent, except Jan. 1 to Apr. 1, which were good. Watershed conditions: Crops, including corn, sorghum, alfalfa, and meadow were in good condition. Fallow fields had a good cover of plant residues. 1/ Average of rain gages A-31-R, B-10-R, B-32-R, B-33-R, and B-36-R. Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 4/ One hour maximum volume of 1.32 in. also recorded on 7-3-59.																
SLOPES: (Revision)	Slope—Percent		0-1	1-3	3-7	3-10	7-10	Over 10	Soil group							
	Percent of area		13	0	0	0	0	0	Holdrege, Hastings, Hobbs, Geary							
			0	22	0	0	0	0	Holdrege, Hobbs, Geary							
			0	0	33	10	4	0	Holdrege, Geary, Holdrege and Geary							
			0	0	0	0	0	18	silty clay loams, Peorian							
									Peorian, Geary-Hobbs, Colby-Hobbs							
SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.																
Soil	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability								
Holdrege silt loam 1/	33	12	Moderate fine to medium granular	Moderate	Medium fine to medium subangular blocky	Moderate to moder- ately slow	34	Moderate	Medium							
Hastings silt loam	21	12	Moderate fine to medium granular	Moderate	Medium fine to medium subangular blocky	Moderately slow	33	Moderate	Medium							
Peorian soil material	20	5	Weak fine crumb	Moderate	None	None	5	Moderate	Medium							
Hobbs silt loam (occasionally flooded)	7	30	Weak fine granu- lar or platy	Moderate	Weak fine granu- lar or platy	Moderate	36	Moderate	Medium							
Holdrege silty clay loam (severely eroded)	6	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	21	Moderate	Medium							
Geary silt loam	6	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	26	Moderate to moder- ately slow	Medium							
Geary-Hobbs complex	5	9	See characteristics for Geary silt loam and Hobbs silt loam occasionally flooded (70% Geary, 30% Hobbs)													
Geary silty clay loam (severely eroded)	2	5	Weak fine crumb	Moderate to moder- ately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	20	Moderate to moder- ately slow	Medium							
1/ Eroded phase constitutes 25 percent of the watershed area.																
EROSION: (Revision)	Erosion class		1	2	3											
	Percent of area		46	25	29											
LAND CAPABILITY: (Revision)	Class		I	II	III	IV	V	VI								
	Percent of area		0	34	33	15	0	18								
GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: <u>Central Nebraska Loess Hills (H-71)</u> , <u>Rolling Plains and Breaks (H-73)</u> , and <u>Central Loess Plains (H-75)</u> .																
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebraska, Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).																

1962 DAILY AIR TEMPERATURE (degrees F)												HASTINGS, NEBRASKA WATERSHED W-3 44.1												
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	33	17	57	29	11	-4	43	26	64	40	80	50	87	64	78	61	75	54	77	49	59	34	57	45
2	39	22	46	32	22	11	39	19	72	39	55	48	88	59	77	58	78	59	65	49	48	37	58	45
3	41	27	65	36	36	15	46	32	77	45	55	51	84	65	81	61	82	64	54	47	44	32	54	45
4	43	25	68	36	30	9	60	34	82	46	58	52	89	67	87	63	76	66	68	44	48	30	57	33
5	39	10	60	14	23	4	57	31	88	59	79	56	85	67	89	63	62	39	72	52	48	18	45	21
6	19	3	26	8	22	6	61	39	89	49	76	61	85	64	82	69	65	49	67	57	44	25	40	18
7	38	26	24	10	32	16	59	30	84	55	79	59	86	73	88	60	71	56	64	50	62	33	44	20
8	34	14	33	19	42	21	59	32	93	60	73	58	92	63	88	63	77	61	68	43	52	20	46	20
9	22	-3	37	21	31	25	47	29	74	50	70	57	80	60	90	70	75	41	78	49	52	26	39	20
10	1	-8	40	28	32	25	47	34	83	55	76	61	81	66	89	69	57	39	80	57	58	31	37	19
11	8	-7	50	32	33	29	61	37	90	61	86	62	88	63	88	65	73	51	84	62	62	41	42	-2
12	29	-1	77	35	32	22	60	31	92	64	78	58	84	64	84	56	81	54	88	51	60	25	16	-9
13	40	23	44	32	29	15	48	26	94	68	79	55	82	65	82	57	87	60	70	54	64	35	29	-3
14	36	16	56	31	22	7	60	37	92	71	75	58	89	67	84	59	79	54	83	60	65	35	56	14
15	21	3	48	35	28	5	63	27	83	68	80	66	81	64	87	62	82	61	82	63	65	39	47	17
16	32	0	54	25	31	10	52	35	84	68	86	68	89	57	89	54	81	60	73	43	43	30	60	25
17	30	1	39	20	40	21	67	38	82	57	90	68	80	56	78	57	79	54	62	45	34	28	67	27
18	7	-3	37	20	45	31	66	40	82	59	86	58	78	62	85	58	73	51	54	48	31	24	60	29
19	2	-5	25	14	54	32	78	43	77	52	85	61	82	69	93	67	82	50	71	49	30	20	55	34
20	2	-10	39	17	61	39	77	52	82	58	88	59	88	61	94	68	65	40	74	41	40	26	45	25
21	4	-5	32	10	44	25	84	63	81	58	82	59	84	62	93	61	60	48	58	39	63	30	28	23
22	4	-6	15	1	51	30	85	43	86	57	83	63	90	64	87	68	55	50	71	47	53	25	38	24
23	18	-1	36	14	49	30	70	44	72	55	87	61	89	62	96	67	59	54	61	36	51	36	38	2
24	31	2	21	2	55	40	76	42	74	50	86	64	81	63	81	58	63	53	49	37	47	23	18	3
25	42	19	16	3	45	32	79	46	78	55	84	63	87	62	75	55	76	50	59	21	49	26	19	11
26	45	22	14	-1	44	27	83	50	78	56	80	64	77	53	84	59	70	50	46	26	53	29	17	-11
27	43	22	10	-7	67	33	81	53	74	58	82	63	65	57	86	58	78	43	67	32	47	38	27	-2
28	38	25	2	-11	72	43	60	35	75	61	82	67	82	62	90	61	69	44	77	42	49	47	35	10
29	51	27	---	---	75	32	62	43	67	57	85	66	77	59	84	63	69	53	59	29	50	44	38	10
30	56	32	---	---	46	31	55	43	70	55	82	66	82	62	90	69	70	48	63	43	51	36	21	10
31	47	21	---	---	51	31	---	---	81	56	---	---	77	60	77	56	---	---	60	29	---	---	45	13
AV.	29	9	38	18	40	21	63	38	81	56	79	60	84	63	86	62	72	51	68	45	51	30	41	17
MEAN	19.3		28.7		31.4		50.5		68.4		69.5		73.1		73.7		61.8		56.4		40.7		29.3	

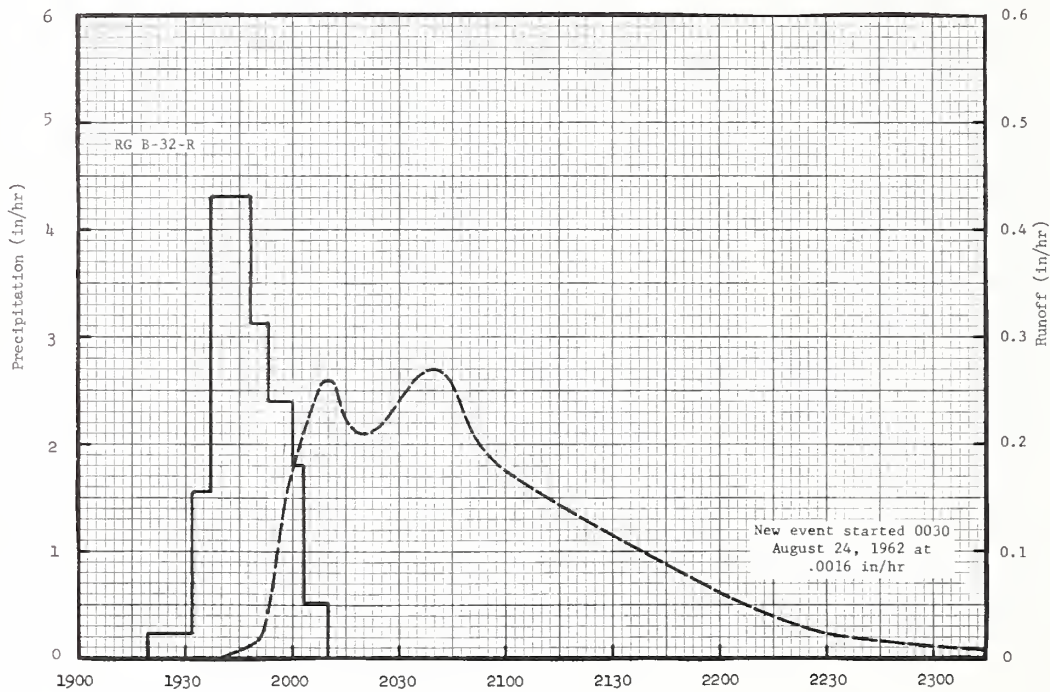
NOTES: TEMPERATURE DATA FROM METEOROLOGICAL STATION FOR 24 HOURS ENDING 0800.

1962 DAILY PRECIPITATION (inches)												HASTINGS, NEBRASKA WATERSHED W-3 44.1											
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC											
1	.00	.00	.00	.00	.00	.23	.00	.00	.00	.00	.09	.00											
2	.00	.00	.00	.00	.00	.88	.33	.19	.00	.02	.00	.00											
3	.00	.00	.00	.00	.00	.91	.00	.00	.00	.04	.00	.00											
4	.00	.00	.00	.00	.00	.00	.31	.57	.00	.00	.00	.13											
5	.00	.00	.00	.00	.00	.11	.03	.00	.00	.00	.00	.00											
6	.00	.00	.00	.00	.10	.00	.00	.00	.00	.56	.00	.00											
7	.02	.00	.00	.00	.00	.62	.00	.00	.00	.00	.00	.00											
8	.02	.00	.00	.00	.00	.34	.49	.00	.48	.00	.00	.00											
9	.00	.00	.00	.12	.00	.00	.00	.00	.76	.00	.00	.00											
10	.00	.00	.19	.00	.00	.00	.00	.08	.27	.00	.00	.00											
11	.00	.00	.16	.00	.00	.00	1.24	.07	.00	.00	.00	.00											
12	.00	.00	T	.21	.00	.00	.20	.00	.00	.00	.00	.00											
13	.00	.00	.00	.00	.00	.00	.38	.00	.00	T	.00	.00											
14	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	.00											
15	.00	.28	.00	.00	.00	.00	.00	.06	.32	.00	.00	.00											
16	.00	.00	.00	.00	.29	.00	.00	.00	.00	.00	.06	.00											
17	.00	.25	.00	.00	.00	.00	1.47	.00	.45	.00	T	.00											
18	.00	.00	.00	.00	.88	.00	.42	.00	.00	.00	T	.00											
19	T	.00	.00	.00	.00	.00	.00	.00	.29	.00	.02	.00											
20	.00	.00	.37	.00	.85	.00	.29	.00	.00	1.47	.00	.12											
21	.00	.16	.44	.00	.00	.79	.00	T	.03	.00	.00	.00											
22	.00	.00	.33	.00	.30	.80	.00	.05	.10	.00	.00	.06											
23	.00	.00	T	.00	.00	.55	.00	2.45	.00	.00	.00	.00											
24	.00	.00	.08	.00	.00	.00	.00	.40	T	.00	.00	.00											
25	.10	T	.52	.00	.00	.00	.00	.00	.00	.00	.00	.09											
26	.33	.00	T	T	T	.00	.09	.00	.00	.00	.00	.00											
27	.00	.00	.00	.11	.15	.00	.70	.00	.00	.00	T	.00											
28	.00	.00	.00	.00	.28	.00	.00	.00	.00	.00	T	.00											
29	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	T	.00											
30	.00	---	.00	.09	.41	.00	.00	.00	.31	.00	T	.00											
31	.00	---	.00	---	.00	---	.00	1.15	---	---	---	.00											
TOTAL	.47	.69	2.09	.51	3.26	5.23	6.40	5.02	3.01	2.09	.17	.40											
STA AV.	.36	.57	1.25	1.97	3.97	4.89	3.18	2.78	2.36	1.21	.66	.40											

NOTES: DAILY PRECIPITATION BASED ON METEOROLOGICAL STATION RECORDS FOR 24 HOURS ENDING MIDNIGHT. STATION AVERAGE BASED ON RECORDS FROM 1943 THROUGH 1962.

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED W-3		44.1	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches) 1/	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23, 1962										
7-26	.07	.00	8-23	RG	B-32-R		8-23	1940	.0000	.0000
7-27	.65	.06		1919	.00	.00		1950	.0168	.0021
7-29	.06	.00		1932	.23	.05		2000	.1760	.0180
8-2	.17	.00		1937	1.56	.18		2010	.2600	.0543
8-4	.47	.03		1948	4.31	.97		2020	.2100	.0934
8-10	.12	.00		1953	3.12	1.23		2040	.2700	.1734
8-11	.04	.00		2000	2.40	1.51		2100	.1760	.2479
8-15	.05	.00	2003	1.80	1.60	2130	.1150	.3207		
8-22	.09	.00	2010	.51	1.66	2200	.0612	.3647		
8-23	2/ .58	.00				2230	.0241	.3860		
Watershed Conditions:			8-23	RG	A-31-R		8-23	2330	.0047	.4004
Corn - 8' high, ears well filled				1920	.00	.00		2400	.0022	.4022
Wheat - harvested				1924	1.10	.11	8-24	0030	3/.0016	.4032
Oats - harvested				1936	.25	.16				
Sorghum - 5' tall, good condition				1946	3.24	.70				
Alfalfa - 12" high, good condition			1950	1.20	.78					
Meadow - 18" high, good condition			2001	2.29	1.20					
The land use in percentage of the watershed was as follows:			8-23	RG	B-10-R					
Percent				1920	.00	.00				
Corn 9				1932	.10	.02				
Sorghum 22				1934	1.50	.07				
Oats 1				1943	3.46	.59				
Wheat 26				1952	2.06	.90				
Fallow 17				1959	1.62	1.09				
Pasture 18				2007	.83	1.20				
Meadow 2				2020	.14	1.23				
Sudan 2										
Farm Yard 1										
Roads 2										
Total 100			8-23	RG	B-33-R					
Note: Watershed was predominantly farmed in straight rows.				1919	.00	.00				
				1929	.18	.03				
				1937	.53	.10				
				1943	1.50	.25				
				1947	4.05	.52				
				1953	3.40	.86				
				1956	2.80	1.00				
				2001	2.16	1.18				
				2005	3.15	1.37				
				2009	1.65	1.46				
				2015	.50	1.51				
				2020	.24	1.53				
				2030	.06	1.54				
				8-23	RG	B-36-R				
			1920		.00	.00				
			1926		.70	.07				
			1934		.00	.07				
			1937		1.80	.16				
			1942		3.60	.46				
			1945		6.00	.76				
			1953		4.65	1.38				
			1958		2.28	1.57				
			2002		3.00	1.77				
			2010	.60	1.85					
			2015	.12	1.86					
			5 RG	AVG 1/	1.53					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 485. FOR MAP OF W-3, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 44.1-4. 1/ ARITHMETIC AVERAGE OF B-32R, A-31-R, B-10-R, B-33-R, AND B-36-R. 2/ RAINFALL FROM 0100 TO 0400. 3/ BEGINNING OF A NEW EVENT.



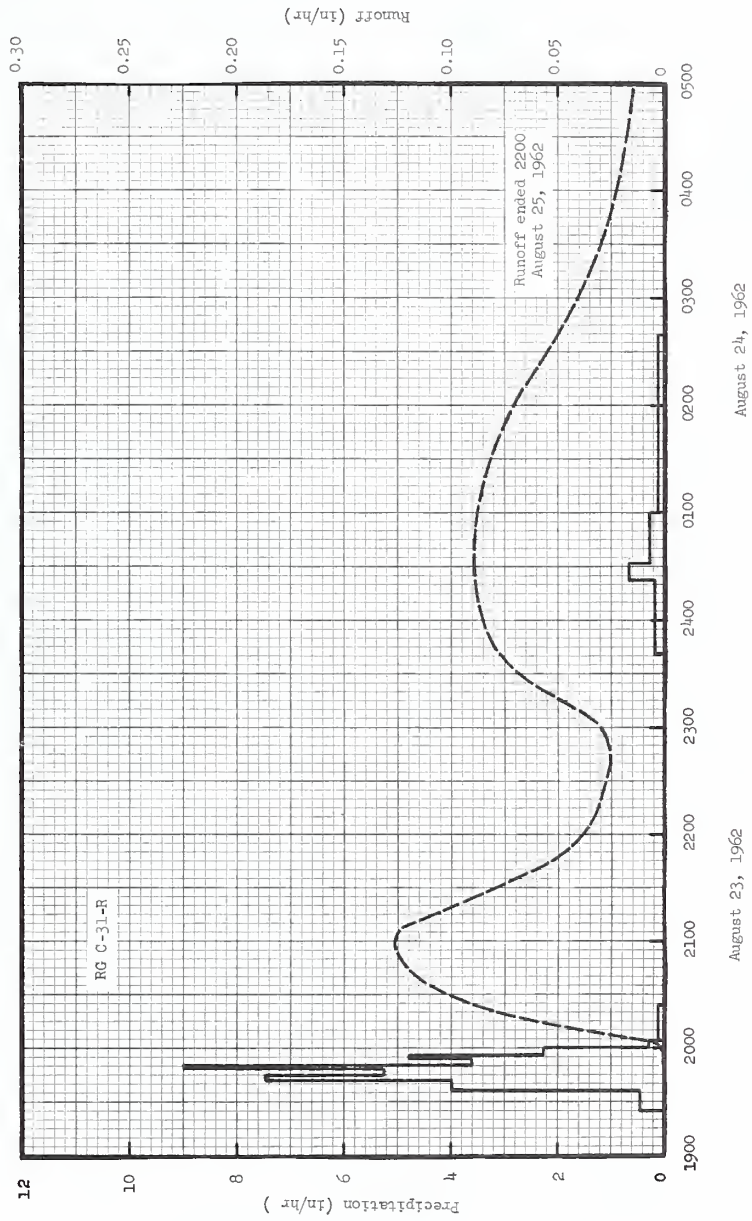
August 23, 1962

HASTINGS, NEBRASKA WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED W-8							44.3			
						AREA — 2,086 ACRES (3.26 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	1/P	.37	.68	2.03	.42	2.85	4.74	5.40	4.85	2.82	2.05	2/.13	2/.40	26.74		
	0	.29E	.01E	.28	.00	T	.23	.57	.79	.14	.21	.00	.00	2.52		
	STA AVG P	.31	.53	1.17	2.02	3.57	4.86	2.82	2.70	2.35	1.17	.67	.41	22.58		
	(39-62)0	.02	.02	.13	.09	.44	1.07	.42	.24	.08	.02	.02	T	2.77		
	MEAN 3/P															
70-YR	3/P	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	8-23	.13	8-23	.11	8-23	.17	8-23	.43	8-23	.57	8-23	.61	8-23	.61	8-23	.78
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	7-3 1959	.51	7-3 1959	.42	7-3 1959	.71	6-15 1957	1.67	6-15 1957	2.58	6-15 1957	3.43	6-15 1957	4.86	6-13 1957	4.99
NOTES: Quality of records: Monthly P excellent; monthly Q good to excellent, except Jan. 1 to Apr. 1, which were good. Watershed conditions: Crops, including corn, sorghum, alfalfa, and meadow were in good condition. Fallow fields had a good cover of plant residues. For daily air temperature range and daily precipitation at meteorological station, see p. 44.1-2. 1/ Arithmetic average of rain gages A-31-R, B-32-R, C-31-R, and D-31-R. Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on records of D-31-R. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr.																
SLOPES: (Revision)																
		Slope - Percent						Soil group								
		0-1	1-3	3-7	3-10	7-10	Over 10									
Percent of area		10	0	0	0	0	0	Holdrege, Hastings, Hobbs, Geary								
		0	22	0	0	0	0	Holdrege, Hobbs, Geary								
		0	0	35	3	16	0	Holdrege, Geary, Holdrege and Geary silty clay loams, Peorian								
		0	0	0	0	0	14	Peorian, Geary-Hobbs, Colby-Hobbs								
SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.																
Soil	Percent of area	Topsoil			Subsoil			Substratum			Internal drainage					
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to(in.)	Permeability								
Holdrege silty clay loam (severely eroded)	30	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	21	Moderate	Medium							
Holdrege silt loam 1/	25	12	Moderate fine to medium granular	Moderate	Medium fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium							
Hobbs silt loam (occasionally flooded)	14	30	Weak fine granular or platy	Moderate	Weak fine granular or platy	Moderate	36	Moderate	Medium							
Peorian soil material	12	5	Weak fine crumb	Moderate	None	None	5	Moderate	Medium							
Hastings silt loam	6	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	33	Moderate	Medium							
Geary silty clay loam (severely eroded)	5	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	20	Moderate to moderately slow	Medium							
Geary silt loam	4	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	26	Moderate to moderately slow	Medium							
Geary-Hobbs Complex	2	9	See characteristics for Geary silt loam and Hobbs silt loam (occasionally flooded) (70% Geary 30% Hobbs)													
Colby-Hobbs 2/ Complex	2	6	Moderate fine granular	Moderate	Weak fine to medium subangular blocky	Moderate to moderately slow	12	Moderate	Medium							
1/ Eroded phase constitutes 10 percent of the watershed area. 2/ Characteristics are for Colby soil.																
EROSION: (Revision)																
		Erosion class			1	2	3									
		Percent of area			37	16	47									
LAND CAPABILITY: (Revision)																
		Class						I	II	III	IV	V	VI			
		Percent of area						0	26	22	37	0	15			
GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).																
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebraska, Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).																

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED W-8		44.3	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches) <u>1/</u>	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23-25, 1962										
7-26	.09	.00	8-23	RG	C-31-R	.00	8-23	1940	.0000	.0000
7-27	.64	.03		1925	.00	.00		2000	.0013	.0003
7-29	.07	.00		1936	.22	.04		2020	.0784	.0136
8-2	.30	T		1942	4.00	.40		2040	.1170	.0461
8-4	.35	T		1944	7.50	.69		2100	.1270	.0868
8-10	.17	.00		1948	5.25	1.04		2120	.0960	.1240
8-11	.05	.00		1950	9.00	1.34		2200	.0377	.1685
8-15	.04	.00		1954	3.60	1.57		2240	.0260	.1898
8-22	.05	.00		1956	4.80	1.73		2300	.0292	.1990
8-23	<u>2/</u> .56	.00		2000	2.25	1.88		2330	.0684	.2234
Watershed Conditions:				2004	.30	1.90		2400	.0864	.2621
Corn - 8' high, ears well filled				2024	.09	1.93	8-24	0030	.0398	.3061
Wheat - harvested			8-24	2340	.00	1.93		0100	.0879	.3505
Oats - harvested				0022	.18	2.06		0200	.0717	.4303
Sorghum - 5' tall, good condition				0032	.66	2.17		0300	.0422	.4873
Alfalfa - 12" high, good condition				0100	.25	2.29		0400	.0243	.5205
Meadow - 18" high, good condition			8-23	0240	.07	2.41		0500	.0150	.5402
The land use in percentage of the watershed was as follows:				RG	A-31-R	.00		0600	.0110	.5532
Corn 6				1920	1.00	.11		0800	.0106	.5748
Sorghum 22				1924	1.65	.16		0900	.0087	.5844
Oats 4				1936	.25	.16		1100	.0038	.5969
Wheat 17				1946	3.24	.70		1300	.0017	.6024
Fallow 16				1950	1.20	.78		1600	.0007	.6066
Alfalfa 8				2001	2.29	1.20		2400	.0001	.6084
Pasture 21				2006	1.20	1.30	8-25	2200	.0000	.6095
Meadow 2				2010	.60	1.34				
Sudan 1				2400	.04	1.36				
Farm Yard 1			8-24	0018	.07	1.38				
Roads 2				0029	.93	1.55				
Total 100				0039	.30	1.60				
Note: Watershed was predominantly farmed in straight rows				0050	.33	1.66				
				0110	.09	1.69				
				0150	.09	1.75				
				0230	.03	1.77				
			8-23	RG	B-32-R	.00				
				1919	.00	.00				
				1932	.23	.05				
				1937	1.56	.18				
				1948	4.31	.97				
				1953	3.12	1.23				
				2000	2.40	1.51				
				2002	1.80	1.60				
				2010	.51	1.66				
				2330	.00	1.66				
			8-24	0020	.10	1.74				
				0030	.90	1.89				
				0055	.26	2.00				
				0240	.07	2.12				
			8-23	RG	D-31-R	.00				
			8-24	1925E	.00	.00				
				0230E		2.61				
				4 RG	AVG <u>1/</u>	2.23				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2103. FOR MAP OF W-8, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 44.1-4. 1/ ARITHMETIC AVERAGE OF RAIN GAGES A-31-R, B-32-R, C-31-R, AND D-31-R. 2/ RAINFALL FROM 0100 TO 0400.



HASTINGS, NEBRASKA WATERSHED w-8

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA AREA — 3490 ACRES (5.45 SQ. MILES)						WATERSHED W-11 44.4		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	1/ P	.37	.68	2.10	.42	2.95	4.79	5.47	5.10	3.40	2.19	2/.16	2/.39	28.02
	Q	.21	.00	.52	.00	T	.21	.48	.81	.41	.25	.00	.00	2.89
STA AV (39-62)	P	.32	.55	1.20	2.02	3.54	4.88	2.85	2.72	2.36	1.18	.69	.43	22.74
	Q	.01	.01	.13	.08	.41	.96	.39	.23	.24	.08	.01	T	2.55
MEAN 70 YR	P 3/	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-15	.07	8-23	.06	8-23	.12	8-23	.35	8-23	.58	8-23	.70	8-23	.70	8-23	.78

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-15 1957	.41	6-15 1957	.40	6-15 1957	.78	6-15 1957	1.83	6-15 1957	2.72	6-15 1957	3.27	6-15 1957	4.87	6-13 1957	4.93

Notes: Quality of Records: Monthly P excellent; monthly Q good to excellent, except Jan. 1 to Apr. 1, which were good. Watershed conditions: Crops, including corn, sorghum, alfalfa, and meadow were in good condition. Fallow fields had a good cover of plant residues. For daily air temperature range and daily precipitation at meteorological station, see p. 44.1-2. 1/ Arithmetic average of rain gages A-31-R, B-32-R, C-31-R, D-31-R, E-30-R, and G-42-R. Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on records of D-31-R and G-42-R. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr.

SLOPES: (Revision)	Slope - Percent		0-1	1-3	3-7	3-10	7-10	Over 10	Soil group	
	Percent of area		10	0	0	0	0	0		Holdrege, Hastings, Hobbs, Geary, Hord
			0	21	0	0	0	0		Holdrege, Hobbs, Geary, Hord
			0	0	44	3	12	0		Holdrege, Geary, Holdrege and Geary silty clay loams, Peorian
			0	0	0	0	0	10		Peorian, Geary-Hobbs, Colby-Hobbs

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Holdrege silt loam 1/	36	12	Moderate fine to medium granular	Moderate	Medium fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium
Holdrege silty clay loam (severely eroded)	27	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	21	Moderate	Medium
Hobbs silt loam (occasionally flooded)	14	30	Weak fine granular or platy	Moderate	Weak fine granular or platy	Moderate	36	Moderate	Medium
Peorian soil material	10	5	Weak fine crumb	Moderate	None	None	5	Moderate	Medium
Hastings silt loam	4	12	Moderate fine to medium granular	Moderate	Medium fine to medium subangular blocky	Moderate to moderately slow	33	Moderate	Medium
Geary silty clay loam (severely eroded)	3	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	20	Moderate to moderately slow	Medium
Geary-Hobbs complex	2	9	See characteristics for Geary silt loam and Hobbs silt loam			silt loam			
Colby-Hobbs complex 2/	2	6	Moderate fine granular	Moderate	Weak fine to medium subangular blocky	Moderate to moderately slow	12	Moderate to moderately slow	Medium
Geary silt loam	1	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	26	Moderate to moderately slow	Medium
Hord silt loam	1	18	Weak fine granular	Moderate	Weak fine to medium subangular blocky	Moderate to moderately slow	36	Moderate to moderately slow	Medium

1/ Eroded phase constitutes 10 percent of the watershed area. 2/ Characteristics are for Colby soil.

EROSION: (Revision)	Erosion class		
	1	2	3
	40	20	40

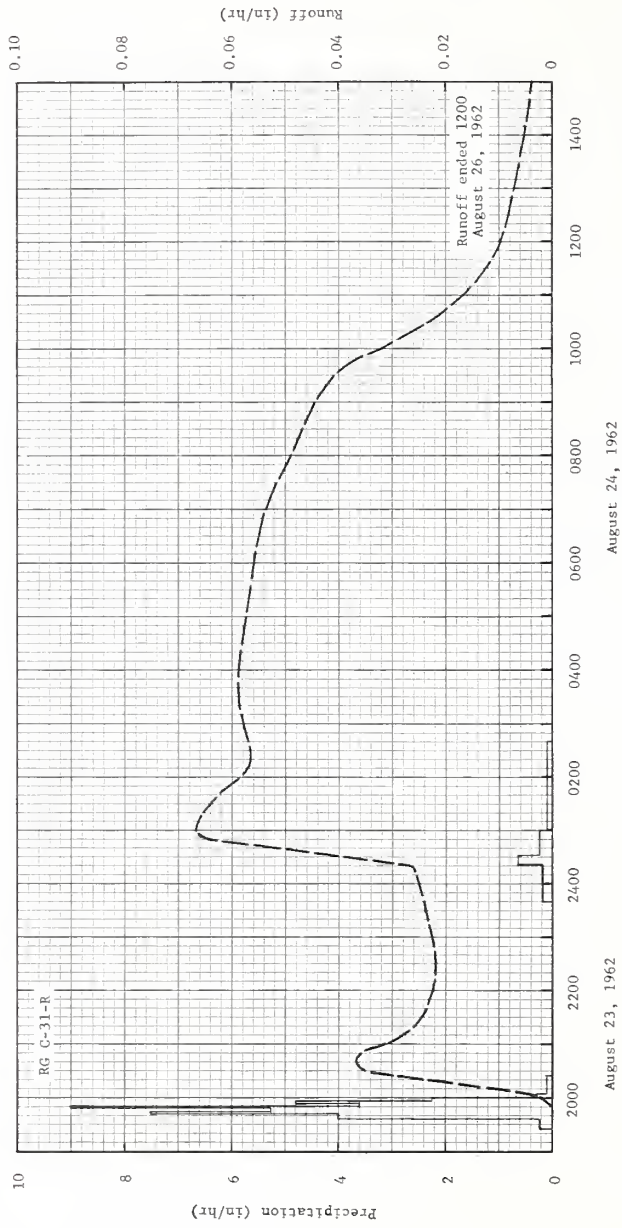
LAND CAPABILITY: (Revision)	Class					
	I	II	III	IV	V	VI
	0	28	27	34	0	11

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. 3/ Source of Data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebraska, Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED W-11 44.4			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches) 1/	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23-26, 1962										
7-26	.09	.00	8-23	RG	C-31-R		8-23	1950	.0000	.0000
7-27	.65	.00		1925	.00	.00		2010	.0109	.0019
7-29	.09	.02		1936	.22	.04		2030	.0343	.0094
8-2	.44	T		1942	4.00	.44		2040	.0367	.0153
8-4	.31	.01		1944	7.50	.69		2110	.0276	.0314
8-10	.30	T		1948	5.25	1.04		2210	.0221	.0562
8-11	.04	.00		1950	9.00	1.34		2240	.0221	.0673
8-15	.04	.00		1954	3.60	1.57		2400	.0251	.0989
8-20	.01	.00		1956	4.80	1.73	8-24	0020	.0264	.1073
8-22	.02	.00		2000	2.25	1.88		0040	.0512	.1203
8-23	2/ .48	.00		2004	.30	1.90		0100	.0667	.1399
Watershed Conditions: Corn - 8' high, ears well filled Wheat - harvested Oats - harvested Sorghum - 5' tall, good condition Meadow - 18" high, good condition The land use in percentage of the watershed was as follows: Percent Corn 4 Sorghum 22 Oats 2 Wheat 18 Fallow 17 Alfalfa 8 Pasture 22 Meadow 3 Sudan 1 Farm Yard 1 Roads 2 Total 100 Note: Watershed was predominantly farmed in straight rows.				2024	.09	1.93		0130	.0640	.1726
				2340	.00	1.93		0210	.0572	.2130
			8-24	0022	.18	2.06		0230	.0572	.2321
				0032	.66	2.17		0330	.0587	.2900
				0100	.25	2.29		0500	.0572	.3770
				0240	.07	2.41		0630	.0548	.4610
			8-23	RG	A-31-R 3/		0800	.0494	.5391	
				1920	.00	.00		0900	.0440	.5858
			8-24	0230		1.77		0930	.0407	.6070
			8-23	RG	B-32-R		1030	.0239	.6393	
	1919	.00	.00		1100	.0172	.6496			
	1932	.23	.05		1200	.0102	.6633			
	1937	1.56	.18		1400	.0057	.6792			
	1948	4.31	.97		1600	.0031	.6880			
	1953	3.12	1.23		1800	.0018	.6929			
	2000	2.40	1.51		2100	.0010	.6971			
	2002	1.80	1.60		2400	.0006	.6995			
	2010	.51	1.66	8-25	1200	.0001	.7028			
	2330	.00	1.66	8-26	1200	.0000	.7040			
8-24	0020	.10	1.74							
	0030	.90	1.89							
	0055	.26	2.00							
	0240	.07	2.12							
8-23	RG	D-31-R								
	1925E	.00	.00							
8-24	0230E		2.61							
8-23	RG	E-30-R								
	1938	.00	.00							
	1941	2.00	.10							
	1947	5.80	.68							
	1952	7.92	1.34							
	1956	4.65	1.65							
	2000	3.15	1.86							
	2010	.06	1.87							
	2350	.00	1.87							
	2400	.24	1.91							
8-24	0010	.96	2.07							
	0022	2.70	2.61							
	0032	1.44	2.85							
	0100	.33	3.00							
	0200	.10	3.10							
8-23	RG	G-42-R								
	1940	.00	.00							
	1948	4.42	.59							
	1953	3.72	.90							
	1958	2.76	1.13							
	2004	.20	1.15							
	2104	.01	1.16							
	2355	.00	1.16							
8-24	0014	.38	1.28							
	0032	2.10	1.91							
	0102	.58	2.20							
	0240	.09	2.34							
	6 RG	AVG 1/	2.39							

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3519. FOR MAP OF W-11, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISG. PUB. 994, P. 44.1-4. 1/ ARITHMETIC AVERAGE OF 6 RAIN GAGES C-31-R, A-31-R, B-32-R, D-31-R, E-30-R, AND G-42-R. 2/ RAINFALL FROM 0100 TO 0400. 3/ FOR COMPLETE INTENSITY RECORD SEE P. 44.3-2.

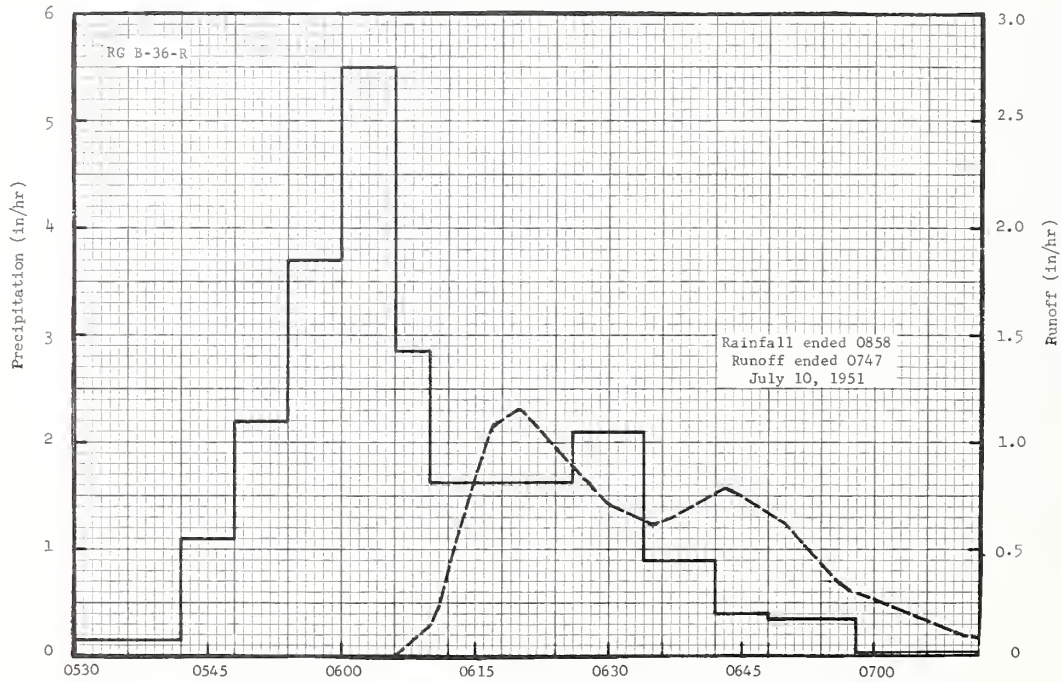


HASTINGS, NEBRASKA WATERSHED W-11

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 1-H AREA—3.62 ACRES								44.5															
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL																
1962 1/2 P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/ .17	2/ .40	26.57																
Q	.10E	.00	.14	.00	.00	.00	T	.02	.00	T	.00	.00	.26																
STA AV P	.30	.50	1.12	1.99	3.66	4.90	2.83	2.73	2.43	1.20	.67	.39	22.72																
(40-62)Q	.01	T	.03	T	.02	.11	.06	.01	.01	.01	.01	.00	.26																
MEAN P 3/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																													
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																										
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS														
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME													
1962	3-20	.04	3-20	.04	3-20	.06	3-20	.09	3-20	.10	3-20	.11	3-20	.12	3-20	.14													
MAXIMUMS FOR PERIOD OF RECORD																													
1939 TO 1962	6-16 1957	1.35	6-1 1951	.69	6-1 1951	.89	6-1 1951	.92	6-1 1951	.92	6-1 1951	.92	6-15 1957	.96	6-10 1957	1.13													
Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: Watershed in native meadow, excellent condition, mowed for hay first of September. 1/ Months of Jan. to April and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr.																													
SLOPES: (Revision) <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>Slope - Percent</td> <td>0-3</td> <td>3-7</td> <td>3-10</td> <td>Over 10</td> </tr> <tr> <td>Percent of area</td> <td>8</td> <td>0</td> <td>70</td> <td>22</td> </tr> </table>																Slope - Percent	0-3	3-7	3-10	Over 10	Percent of area	8	0	70	22				
Slope - Percent	0-3	3-7	3-10	Over 10																									
Percent of area	8	0	70	22																									
SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.																													
Soil	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage																			
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability																					
Holdrege silt loam	100	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium																				
EROSION: (Revision) <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>Erosion class</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>Percent of area</td> <td>100</td> <td>0</td> <td>0</td> </tr> </table>																Erosion class	1	2	3	Percent of area	100	0	0						
Erosion class	1	2	3																										
Percent of area	100	0	0																										
LAND CAPABILITY: (Revision) <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>Class</td> <td>I</td> <td>II</td> <td>III</td> <td>IV</td> <td>V</td> <td>VI</td> </tr> <tr> <td>Percent of area</td> <td>0</td> <td>8</td> <td>0</td> <td>70</td> <td>0</td> <td>22</td> </tr> </table>																Class	I	II	III	IV	V	VI	Percent of area	0	8	0	70	0	22
Class	I	II	III	IV	V	VI																							
Percent of area	0	8	0	70	0	22																							
GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: <u>Central Nebraska Loess Hills (H-71)</u> , <u>Rolling Plains and Breaks (H-73)</u> , and <u>Central Loess Plains (H-75)</u> .																													
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).																													
ANTECEDENT CONDITIONS						HASTINGS, NEBRASKA			WATERSHED 1-H			44.5																	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF																							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (c/s)	ACC. (inches)																			
Event of July 10, 1951																													
	RG B-36-R		7-10	RG	B-36-R		7-10	0606	.00	.00																			
6-13	.79	T		0530	.00	.00		0607	.03	T																			
6-14	.13	T		0542	.15	.03		0608	.08	T																			
6-21	.48	.00		0548	1.10	.14		0610	.15	.01																			
6-22	.83	.00		0554	2.20	.36		0611	.24	.01																			
6-25	.74	.00		0600	3.70	.73		0613	.56	.02																			
6-26	1.09	.12		0606	5.50	1.28		0615	.83	.05																			
6-27	.10	.00		0610	2.85	1.47		0617	1.09	.08																			
7-10	4/.16	.00		0626	1.61	1.90		0620	1.16	.13																			
				0634	2.10	2.18		0622	1.07	.17																			
Continued on next page						Continued on next page																							
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.650. FOR MAP OF AREA, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.5-4. 4/ RAINFALL FROM 0452 TO 0530 PRIOR TO SELECTED EVENT.																													

SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 1-H			44.5		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
Event of July 10, 1951 continued												
Watershed conditions: 100% native grass meadow, 12" to 16" high and in good condition.												
					0642		.90	2.30		0625	.93	.22
					0648		.40	2.34		0630	.71	.29
					0658		.36	2.40		0635	.62	.34
					0858		.02	2.44		0637	.65	.37
										0640	.72	.40
										0643	.78	.44
										0645	.75	.46
										0650	.62	.52
										0653	.48	.55
										0656	.34	.57
										0700	.27	.59
										0710	.10	.62
										0720	.03	.63
										0730	.01	.63
							0747	.00	.64			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.650.



July 10, 1951

HASTINGS, NEBRASKA WATERSHED 1-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 2-H AREA—3.40 ACRES							44.6
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 1/P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57
Q	.15E	.00	.36	.00	.00	T	.03	.43	.00	T	.00	.00	.97
STA AV ³ /P (40-62)Q	.31	.55	1.16	2.01	3.70	4.71	3.10	2.79	2.46	1.27	.75	.44	23.25
Q	.02	.01	.07	.01	.09	.15	.16	.07	.03	T	T	.00	.61
MEAN P ⁴ / 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962	8-23	1.23	8-23	.43	8-23	.43	8-23	.43	8-23	.43	8-23	.43	8-23	.43	8-23	.43

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962 ²	7-3 1959	2.52	7-3 1959	1.38	7-3 1959	1.41	7-3 1959	1.41	7-3 1959	1.41	7-3 1959	1.41	7-3 1959	1.41	6-27 1959	1.49

Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1, to April 1, which are good. Watershed conditions: Watershed in native meadow; excellent condition—mowed once for hay on first of September. 1/ Months of Jan., Feb., Mar., Apr., and Dec., may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1955-57.

SLOPES: (Revision)		Slope - Percent				Soil group		
		0-3	3-7	3-10	Over 10			
Percent of area		21	60	0	0	Holdrege silt loam		
		0	0	0	19	Colby-Hobbs complex		

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Holdrege silt loam	80	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium
Colby-Hobbs Complex Colby silt loam 70%	20	6	Moderate fine granular	Moderate	Weak fine to medium subangular blocky	Moderate to moderately slow	12	Moderate to moderately slow	Medium
Hobbs silt loam 30%		30	Weak fine granular or platy	Moderate	Weak fine granular or platy	Moderate	36	Moderate	Medium

EROSION: (Revision)		Erosion class		
Percent of area		1	2	3
		100	0	0

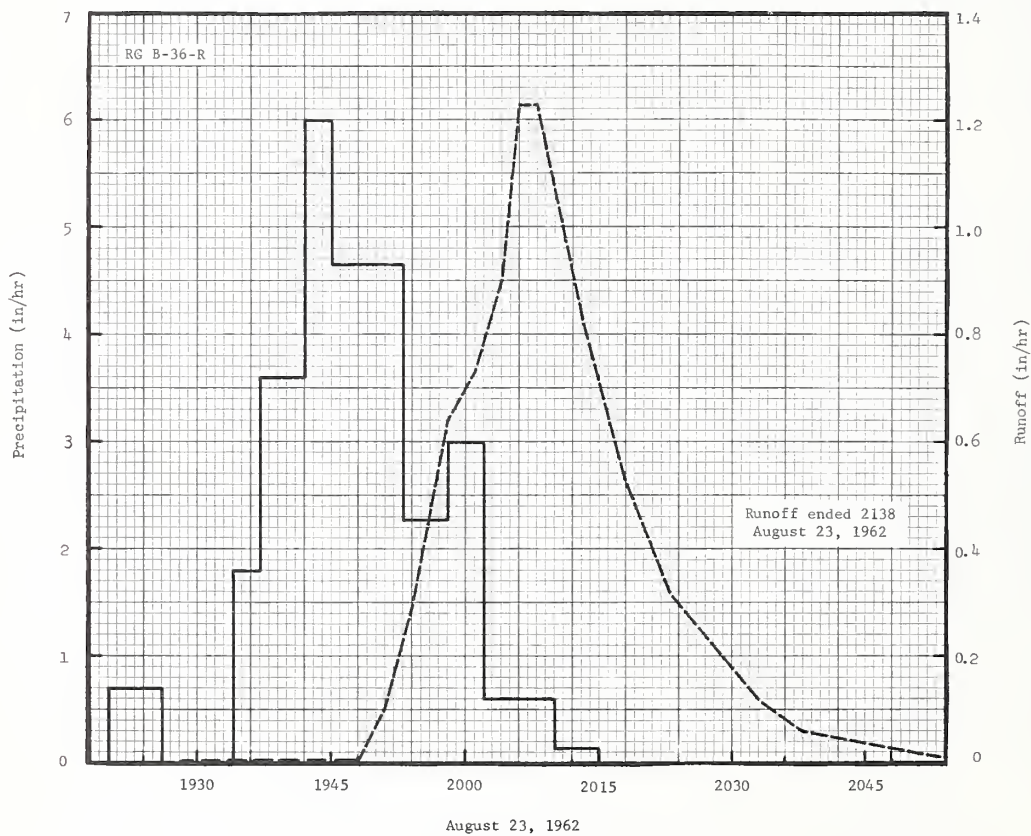
LAND CAPABILITY: (Revision)		Class					
Percent of area		0	21	0	60	0	19

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18, changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 2-H			44.6
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23, 1962 (continued)										
Watershed conditions: Native grass meadow; 18" high and excellent cover.							8-23	2023	.32	.37
								2033	.12	.41
								2038	.06	.42
								2053	.01	.43
								2108	T	.43
			2138	.00	.43					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.428.



HASTINGS, NEBRASKA WATERSHED 2-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA				WATERSHED 3-H				44.7
						AREA—3.77 ACRES								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962 1/ P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57	
Q	.15E	.00	.53	.00	.01	.20	.92	1.21	.24	.24	.00	.00	3.50	
STA AV ² P	.31	.55	1.16	2.01	3.70	4.71	3.10	2.79	2.46	1.27	.75	.44	23.25	
(40-62) Q	.03	.03	.27	.24	.87	1.56	.86	.41	.40	.24	.05	.00	4.96	
MEAN P 4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	1.99	8-23	.83	8-23	.84	8-23	.91	8-23	.93	8-23	.93	8-23	.93	8-23	1.18

MAXIMUMS FOR PERIOD OF RECORD																
1940 to 1962	7-3 1959	6.45	7-3 1959	2.34	7-3 1959	2.35	6-1 1951	3.36	6-1 1951	3.74	6-1 1951	3.74	6-1 1951	3.74	6-1 1951	4.31

Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: Watershed in sorghum, thin stand, with yield of 36 bu./acre; general crop rotation has been corn (or sorghum), fallow, and wheat, using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began March 27, 1939; part year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1955-57.

SLOPES: (Revision)	Slope - Percent				Soil group	
	0-3	3-7	3-10	Over 10		
	13	72	0	0	Holdrege silt loam	
	0	0	0	15	Holdrege silty clay loam	

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth (in.)	Permeability	
Holdrege silt loam	75	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular, blocky	Moderate to moderately slow	34	Moderate	Medium
Holdrege silty clay loam (severely eroded)	25	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular, blocky	Moderate to moderately slow	21	Moderate	Medium

EROSION: (Revision)	Erosion class		
	1	2	3
	0	75	25

LAND CAPABILITY: (Revision)	Class					
	I	II	III	IV	V	VI
	0	13	0	72	0	15

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18, changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

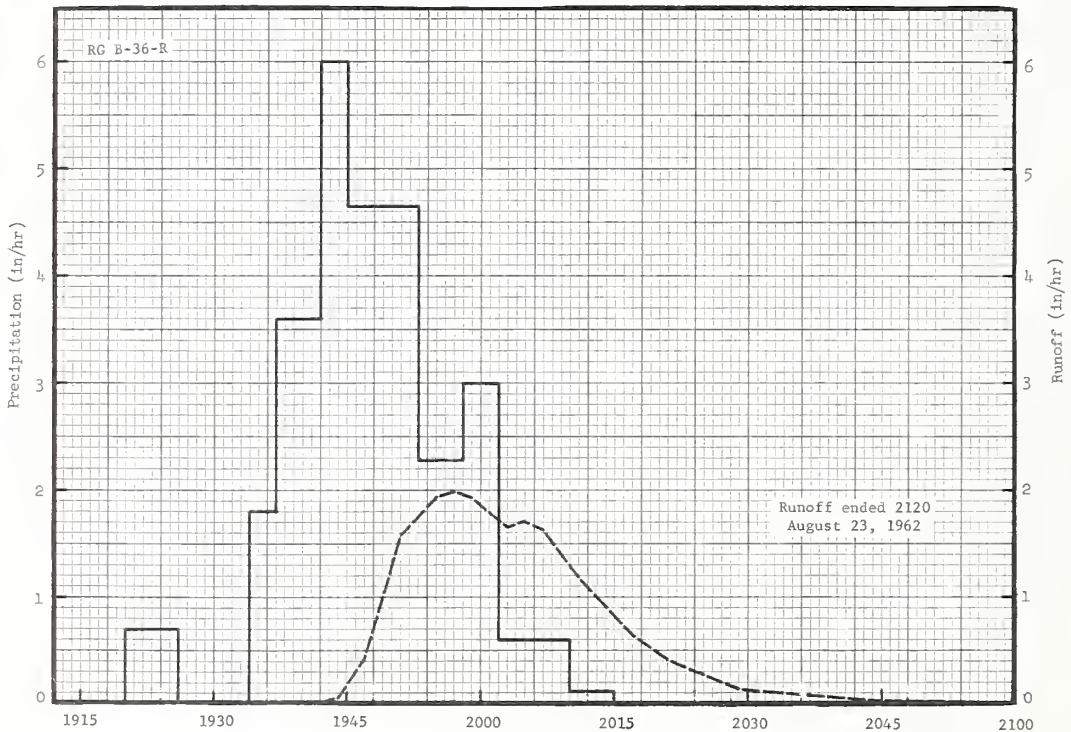
SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 3-H				44.7
-----------------------	--	--	--------------------	--	--	--	---------------	--	--	--	------

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of August 23, 1962											
	RG B-36-R		8-23	RG	B-36-R		8-23	1942	.00	.00	
7-26	.07	.00		1920	.00	.00		1944	.06	T	
7-27	.65	.08		1926	.70	.07		1947	.42	.01	
7-29	.06	.00		1934	.00	.07		1949	1.00	.04	
8-2	.17	.00		1937	1.80	.16		1951	1.58	.08	
8-4	.51	.02		1942	3.60	.46		1955	1.94	.20	
8-10	.13	.00		1945	6.00	.76		1957	1.99	.26	
8-11	.03	.00		1953	4.65	1.38		1959	1.94	.33	
8-15	.05	.00		1958	2.28	1.57		2003	1.66	.45	
8-22	.06	.00		2002	3.00	1.77		2005	1.71	.50	
8-23	6/.58	.00	Continued on next page				Continued on next page				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.802. FOR MAP OF AREA, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.7-4. 6/ RAINFALL FROM 0100 TO 0420 - 0.53 AND FROM 0625 TO 0655 - 0.05 PRIOR TO SELECTED EVENT.

SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 3-H			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Watershed conditions: 100% sorghum--about 5 foot high, heads well filled; cultivated on June 29. Crop rotation of sorghum, fallow and wheat.			(Event of August 23, 1962 continued)							
			8-23	2010	.60	1.85	8-23	2007	1.63	.56
				2015	.12	1.86		2011	1.19	.65
								2017	.65	.75
								2021	.42	.78
								2029	.14	.82
								2044	.03	.84
								2055	.01	.84
								2120	.00	.85

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.802.



August 23, 1962

HASTINGS, NEBRASKA WATERSHED 3-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 4-H 44.8 AREA—3.64 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 1/ P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57
Q	.20E	.00	.65E	.00	.04	.37	2.04	1.67	.18	.21	.00	.00	5.36
STA AV ² /P (40-62)	.31	.56	1.17	2.06	3.69	4.66	3.08	2.77	2.48	1.26	.74	.43	23.21
Q	.03	.02	.22	.22	.90	1.24	.72	.31	.44	.22	.02	T	4.34
MEAN P h/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	5.48	8-23	1.30	8-23	1.30	8-23	1.50	8-23	1.51	8-23	1.51	8-23	1.51	7-11	2.00

MAXIMUMS FOR PERIOD OF RECORD 5/

1940 TO 1962	6-26 1959	7.67	7-3 1959	6/2.13E	7-3 1959	2.15E	6-1 1951	3.19	6-1 1951	3.19	6-1 1951	3.19	6-1 1951	3.19	3-26 1960	3.75E
--------------	-----------	------	----------	---------	----------	-------	----------	------	----------	------	----------	------	----------	------	-----------	-------

Notes: Quality of records: Monthly P and Q, excellent, except Dec. 1 to Apr. 1, which are fair. Watershed conditions: Watershed in fallow in 1962; general crop rotation has been wheat, corn (or sorghum), and fallow, using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part-year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1955-57. 6/ Previously reported as 2.15 in.

SLOPES: (Revision)	Slope - Percent				Soil group	
	0-3	3-7	3-10	Over 10		
Percent of area	15	74	0	0	Holdrege silt loam	
	0	0	0	11	Holdrege silty clay loam	

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Percent of area	Avg depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permeability	Structure	Permeability	Avg. depth (in.)	Permeability	
Holdrege silty clay loam (severely eroded)	80	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	21	Moderate	Medium
Holdrege silt loam	20	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium

EROSION: (Revision)	Erosion class		
	1	2	3
Percent of area	0	20	80

LAND CAPABILITY: (Revision)	Class					
	I	II	III	IV	V	VI
Percent of area	0	15	0	74	0	11

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U.S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

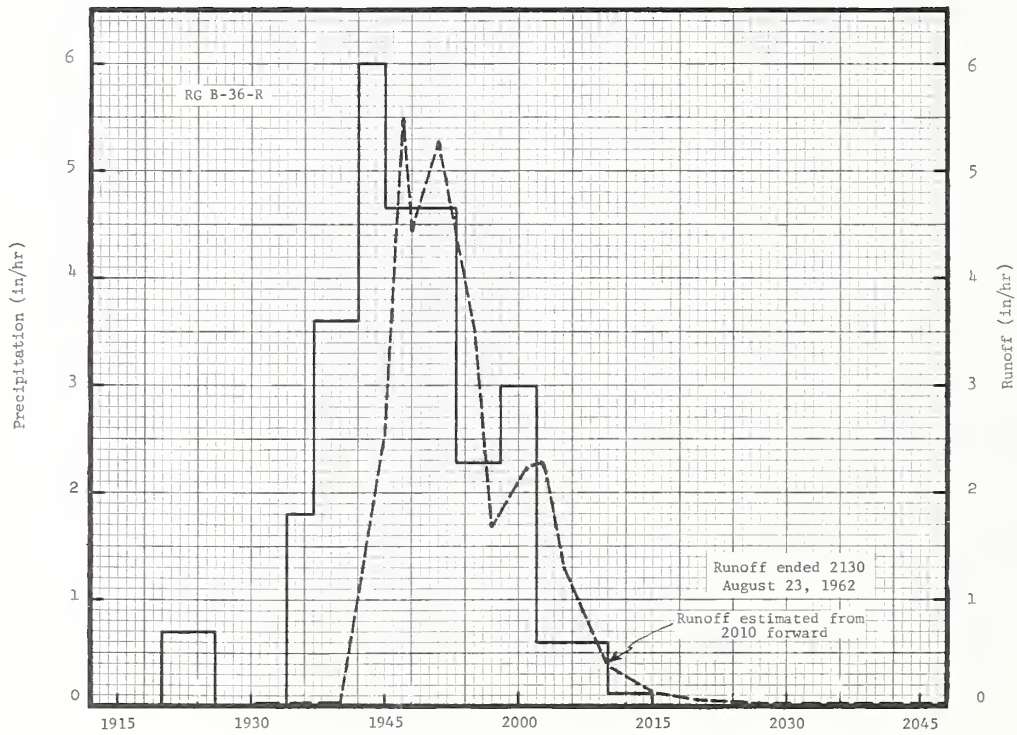
1962 SELECTED RUNOFF EVENT HASTINGS, NEBRASKA WATERSHED 4-H 44.8

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
	RG B-36-R		Event of August 23, 1962							
			8-23	RG	B-36-R		8-23	1930	.00	.00
7-26	.07	.00		1920	.00	.00		1940	T	T
7-27	.65	.04		1926	.70	.07		1945	2.54	.11
7-29	.06	.00		1934	.00	.07		1947	5.48	.24
8-2	.17	.00		1937	1.80	.16		1948	4.41	.32
8-4	.51	.07		1942	3.60	.46		1951	5.29	.56
8-10	.13	.00		1945	6.00	.76		1955	3.49	.86
8-11	.03	.00		1953	4.65	1.38		1957	1.67	.94
8-15	.05	.00		1958	2.28	1.57		2001	2.24	1.07
8-22	.06	.00		2002	3.00	1.77		2003	2.29	1.15
8-23	7/.58	.00		2010	.60	1.85		2005	1.34	1.21
				2015	.12	1.86		2010	.39	1.28E

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.670. FOR MAP OF AREA, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.8-3. 7/ RAINFALL FROM 0100 TO 0420 - 0.53 AND 0625 TO 0655 - 0.05, PRIOR TO SELECTED EVENT.

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 4-H		44.8		
ANTECEDENT CONOITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME DF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (in./hr)	ACC. (inches)	
Event of August 23, 1962 (Continued)											
Watershed conditions: Watershed in fallow; ground worked with subtiller and treader 30 days before event.							8-23	2015	.13	1.30E	
								2020	.05	1.31E	
									2030	.02	1.32E
									2045	.01	1.32E
									2115	.00	1.32E

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.670.



August 23, 1962

HASTINGS, NEBRASKA WATERSHED 4-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 5-H AREA—4.02 ACRES							44.9
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 1/ P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57
Q	.30E	.00	.27E	.00	.02	.29	.20	.41	.07	.06	.00	.00	1.62
STA AV3/ P	.31	.52	1.09	1.94	3.50	4.60	2.95	2.61	2.52	1.19	.67	.40	22.30
(40-62) Q	.03	.01	.17	.11	.59	1.05	.50	.24	.21	.11	.02	.00	3.04
MEAN P 4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	.69	8-23	.29	8-23	.30	8-23	.33	8-23	.34	8-23	.34	8-23	.34	8-23	.41

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO	6-14	4.24	7-3	1.75	7-14	1.78	6-1	2.58	6-1	2.76	6-1	2.76	6-1	2.76	6-1	3.14
1962 3/	1960	1959	1952	1952	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951

NOTES: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: Watershed in wheat in 1962, with yield of 23 bu./acre, general crop rotation has been corn (or sorghum) fallow, or wheat, using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began April 1, 1939; part-year records for 1939 and period of no record, 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebraska. 5/ No maximum discharges or flow volumes for 1957.

SLOPES: (Revision)	Slope - Percent				Soil group		
	0-3	3-7	3-10	Over 10			
	19	0	73	0	Holdrege silt loam		
	0	0	0	8	Holdrege silty clay loam		

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Percent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permeability	Structure	Permeability	Avg. depth (in.)	Permeability	
Holdrege silt loam	50	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium
Holdrege silty clay loam (severely eroded)	50	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	21	Moderate	Medium

EROSION: (Revision)	Erosion class		
	1	2	3
	0	50	50

LAND CAPABILITY: (Revision)	Class					
	I	II	III	IV	V	VI
	0	19	0	73	0	8

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

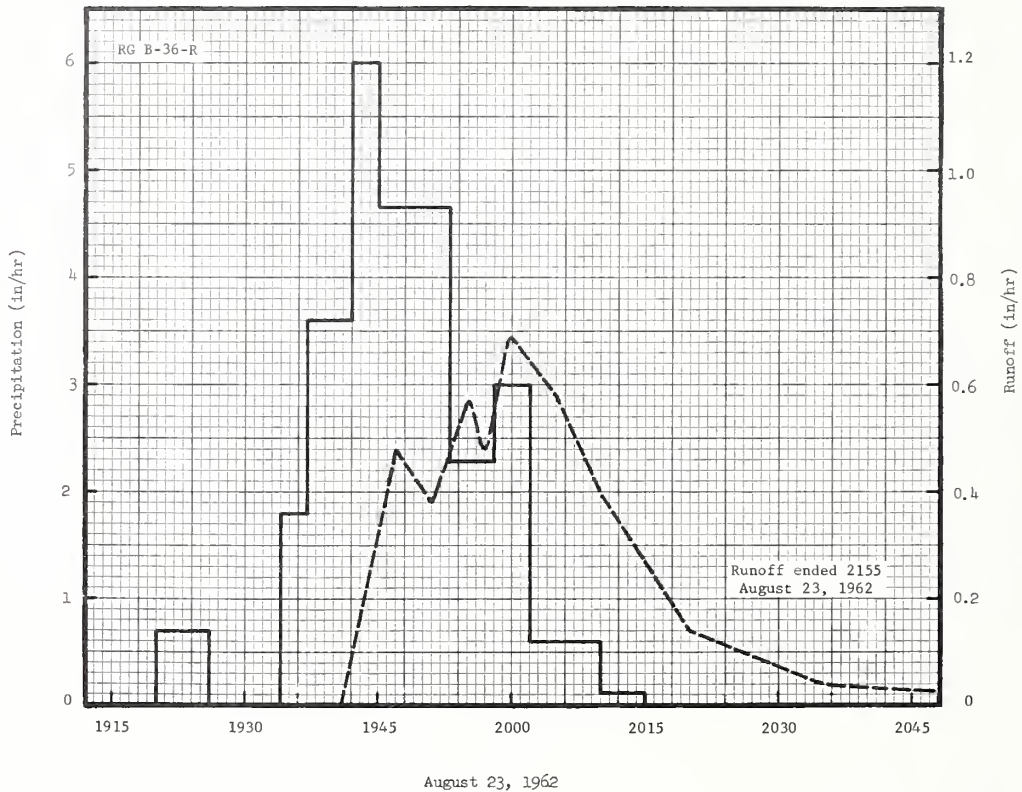
SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA WATERSHED 5-H							44.9
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)			
	RG B-36-R		Event of August 23, 1962										
7-26	.07	.00	8-23	RG	B-36-R	.00	8-23	1935	.00	.00			
7-27	.65	.00		1920	.00	.00		1941	.00	.00			
7-29	.06	.00		1926	.70	.07		1947	.48	.02			
8-2	.17	.00		1934	.00	.07		1951	.38	.04			
				1937	1.80	.16		1955	.57	.08			
8-4	.51	T		1942	3.60	.46		1957	.48	.10			
8-10	.13	.00		1945	6.00	.76		2000	.69	.13			
8-11	.03	.00		1953	4.65	1.38		2005	.58	.18			
8-15	.05	.00		1958	2.28	1.57		2010	.40	.22			
8-22	.06	.00		2002	3.00	1.77		2020	.14	.27			

Continued on next page

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.054. FOR MAP OF AREA SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.9-4.

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 5-H		44.9	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23, 1962 (Continued)										
8-23	1/ .58	.00	8-23	2010	.60	1.85	8-23	2035	.04	.29
Watershed conditions: 100% wheat; combined on July 3 with a yield of 23 bu. per acre and a good residue left on the ground. Crop rotation of winter wheat, sorghum and fallow.				2015	.12	1.86		2115	T	.30
								2155	.00	.30

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.054. 1/ RAINFALL FROM 0100 TO 0420 - 0.53 AND FROM 0625 TO 0655 - 0.05 PRIOR TO SELECTED EVENT.



HASTINGS, NEBRASKA WATERSHED 5-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA							WATERSHED 6-H		44.10
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	1/ P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/ .17	2/ .40	26.57	
	3/ Q	.30E	.00	.19	.00	T	.26	.18	.32	.06	.06	.00	.00	1.37	
	STA AV 3/ P	.31	.52	1.09	1.94	3.50	4.60	2.95	2.61	2.52	1.19	.67	.40	22.30	
	(40-62) Q	.02	.02	.17	.10	.66	1.16	.56	.22	.38	.10	.04	.00	3.43	
	MEAN P 4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-22	.60	8-23	.20	8-23	.21	8-23	.25	8-23	.28	8-23	.28	8-23	.28	8-23	.32

MAXIMUMS FOR PERIOD OF RECORD																	
19	40 to 1962	5-22	5.70	7-10	1.66	6-1	2.09	6-1	2.64	6-1	2.80	7-10	2.85	7-10	2.85	7-10	3.53
		1954		1951		1951		1951		1951		1951		1951		1951	

Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed in wheat with a yield of 23 bu./acre, general crop rotation has been wheat, corn (or sorghum), and fallow, using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began April 1, 1939; part-year records for 1939 and period of no record for 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1957.

SLOPES: (Revision)	Slope - Percent				Soil group	
	0-3	3-7	3-10	Over 10		
	Percent of area					
	27	0	67	0	Holdrege silt loam	
	0	0	0	6	Peorian soil material	

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Holdrege silt loam	85	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium
Peorian soil material	15	5	Weak fine crumb	Moderate	None	None	5	Moderate	Medium

EROSION: (Revision)	Erosion class		
	1	2	3
	0	85	15

LAND CAPABILITY: (Revision)	Class					
	I	II	III	IV	V	VI
	0	0	85	0	0	15

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18, changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

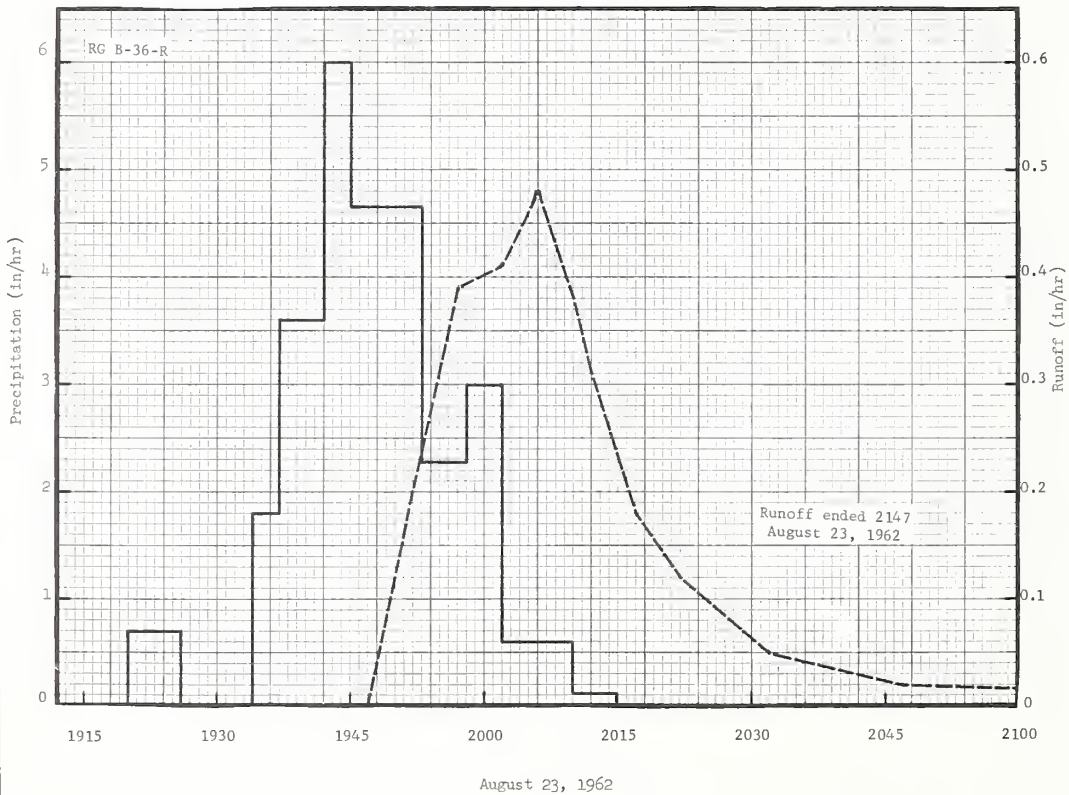
SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA				WATERSHED 6-H		44.10
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
			Event of August 23, 1962									
	RG B-36-R		8-23	RG	B-36-R		8-23	1947	.00	.00		
7-26	.07	.00		1920	.00	.00		1952	.21	.01		
7-27	.65	.00		1926	.70	.07		1957	.39	.03		
7-29	.06	.00		1934	.00	.07		2002	.41	.07		
8-2	.17	.00		1937	1.80	.16		2006	.48	.10		
8-4	.51	.00		1942	3.60	.46		2010	.38	.13		
8-10	.13	.00		1945	6.00	.76		2012	.31	.14		
8-11	.03	.00		1953	4.65	1.38		2017	.18	.16		
8-15	.05	.00		1958	2.28	1.57		2022	.12	.17		
8-22	.06	.00		2002	3.00	1.77		2032	.05	.19		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.044. FOR MAP OF AREA SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.10-1.

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 6-H			44.10
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23, 1962 (Continued)										
8-23	<u>1</u> .58	.00	8-23	2010	.60	1.85	8-23	2047	.02	.20
				2015	.12	1.86		2117	.01	.20
								2147	.00	.21

Watershed conditions: 100% wheat; combined on July 3 with a yield of 23 bu. per acre and a good residue left on the ground. Crop rotation of winter wheat, sorghum and fallow.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.044. 1/ RAINFALL FROM 0100 TO 0420 - 0.53 AND 0625 TO 0655 - 0.05, PRIOR TO SELECTED EVENT.



HASTINGS, NEBRASKA WATERSHED 6-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 7-H 44.11 AREA—4.26 ACRES							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 1/ P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57
Q	.18E	T	.41E	.00	.00	.07	1.09	1.31	.06E	.16	.00	.00	3.28
STA AV ² /P	.31	.52	1.09	1.94	3.50	4.60	2.95	2.61	2.52	1.19	.67	.40	22.30
(40-62) Q	.02	.03	.16	.11	.61	.86	.47	.16	.39	1.10	.03	.00	2.94
MEAN P ⁴ / 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	2.96	8-23	.85	8-23	.85	8-23	.96	8-23	.96	8-23	.96	8-23	.96	8-23	1.30

MAXIMUMS FOR PERIOD OF RECORD																
1940 to 1962 5/	5-22 1954	4.76	7-3 1959	2.04	7-3 1959	2.06	7-3 1959	2.06	7-3 1959	2.06	7-3 1959	2.06	7-10 1951	2.25	3-26 1960	3.42

Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: Watershed in fallow in 1962; general crop rotation has been fallow, wheat and corn (or sorghum), using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began April 1, 1939; part-year records for 1939 and period of no records for 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1957.

SLOPES: (Revision)	Slope - Percent				Soil group		
	0-3	3-7	3-10	Over 10			
	25	0	71	0	Holdrege silt loam		
	0	0	0	4	Peorian soil material		

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Holdrege silt loam	80	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium
Peorian soil material	20	5	Weak fine crumb	Moderate	None	None	5	Moderate	Medium

EROSION: (Revision)	Erosion class		
	1	2	3
	0	80	20

LAND CAPABILITY: (Revision)	Class					
	I	II	III	IV	V	VI
	0	0	80	0	0	20

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18, changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

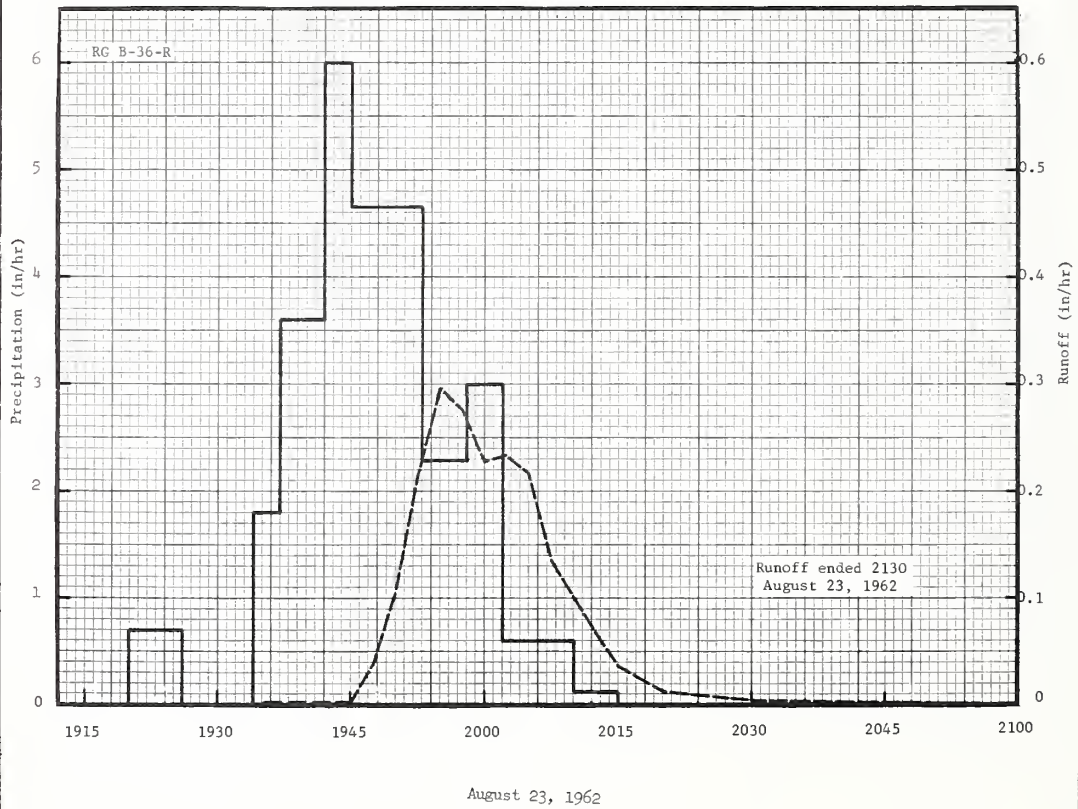
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA WATERSHED 7-H 44.11				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23, 1962										
	RG B-36-R		8-23	RG	B-36-R		8-23	1935	.00	.00
7-26	.07	.00		1920	.00	.00		1945	.01	T
7-27	.65	.01		1926	.70	.07		1947 ¹ / ₂	.37	.01
7-29	.06	.00		1934	.00	.07		1950	1.05	.04
8-2	.17	.00		1937	1.80	.16		1952 ¹ / ₂	2.17	.11
8-4	.51	.02		1942	3.60	.46		1955	2.96	.22
8-10	.13	.00		1945	6.00	.76		1957 ¹ / ₂	2.77	.34
8-11	.03	.00		1953	4.65	1.38		2000	2.28	.44
8-15	.05	.00		1958	2.28	1.57		2002 ¹ / ₂	2.34	.54
8-22	.06	.00		2002	3.00	1.77		2005	2.17	.63

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.296. FOR MAP OF AREA SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.11-4.

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 7-H		44.11				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)			
Watershed conditions: 100% fallow; Ground worked with subtiller and treader July 27. Crop rotation of fallow, winter wheat and sorghum.			Event of August 23, 1962 (Continued)										
			8-23	1/ .58	.00	8-23	2010	.60	1.85	8-23	2007½	1.36	.71
							2015	.12	1.86		2010	1.01	.76
											2012½	.68	.79
											2015	.37	.81
											2020	.12	.84
											2030	.03	.85
								2100	T	.85			
								2130	.00	.85			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.296. 1/ RAINFALL FROM 0100 TO 0420 - 0.53 AND FROM 0625 TO 0655 - 0.05, PRIOR TO SELECTED EVENT.



HASTINGS, NEBRASKA WATERSHED 7-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 8-H							44.12
						AREA—3.97 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 1/P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57
Q	.15E	.00	.10	.00	.00	.03	.34	.30	.10	.08	.00	.00	1.10
STA AV3/P	.31	.56	1.17	2.06	3.69	4.66	3.08	2.77	2.48	1.26	.74	.43	23.21
(40-62) Q	.01	.01	.11	.04	.40	.70	.37	.09	.18	.05	.00	.00	1.96
MEAN P 4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	.40	8-23	.19	8-23	.22	7-16	.27	7-16	.27	7-16	.27	7-16	.29	7-11	.34

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962 3/	6-10 1943	3.66	7-3 1959	1.67	7-3 1959	6-1 1951	2.35	6-1 1951	2.46	6-1 1951	2.46	6-1 1951	2.46	6-1 1951	2.78	

NOTES: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: Watershed in sorghum in 1962 with a yield of 55 bu./acre; general crop rotation has been corn (or sorghum), fallow and wheat, using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began April 1, 1939; part-year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 70-yr. (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebraska. 5/ No maximum discharges or flow volumes for 1955-57.

SLOPES: (Revision)	Slope - Percent	0-3	3-7	3-10	Over 10
	Percent of area	41	59	0	0

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Holdrege silt loam	100	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium

EROSION: (Revision)	Erosion class	1	2	3
	Percent of area	0	100	0

LAND CAPABILITY: (Revision)	Class	I	II	III	IV	V	VI
	Percent of area	0	0	100	0	0	0

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16 and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), Central Loess Plains (H-75).

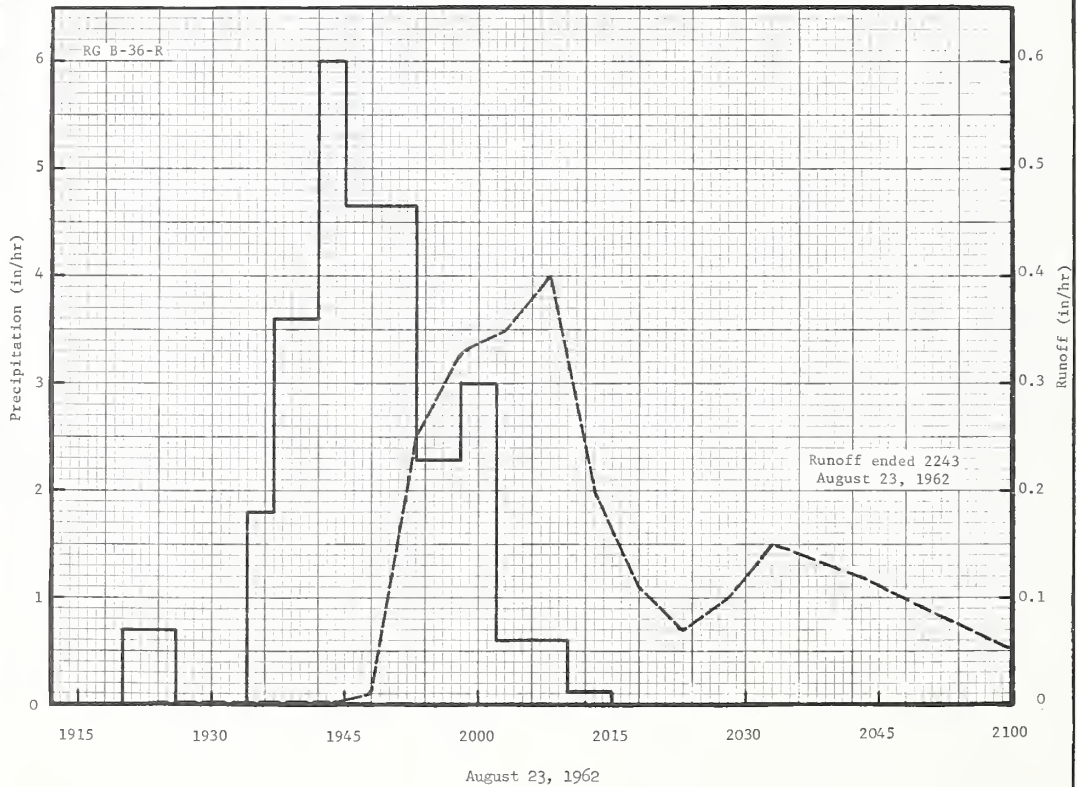
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 8-H			44.12
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of August 23, 1962							
	RC B-36-R		8-23	RG	B-36-R		8-23	1923	.00	.00
7-26	.07	.00		1920	.00	.00		1933	T	T
7-27	.65	.01		1926	.70	.07		1943	T	T
7-29	.06	.00		1934	.00	.07		1948	.01	.01
8-2	.17	.00		1937	1.80	.16		1953	.25	.04
8-4	.51	.01		1942	3.60	.46		1958	.33	.07
8-10	.13	.00		1945	6.00	.76		2003	.35	.10
8-11	.03	.00		1953	4.65	1.38		2008	.40	.12
8-15	.05	.00		1958	2.28	1.57		2013	.20	.14
8-22	.06	.00		2002	3.00	1.77		2018	.11	.14
8-23	6/ .58	.00	Continued on next page				Continued on next page			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.003. FOR MAP OF AREA SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.12-4. 6/ RAINFALL FROM 0100 TO 0420 - 0.53 AND FROM 0625 TO 0655 - 0.05 PRIOR TO SELECTED EVENT.

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 8-H			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Watershed conditions: 100% sorghum, about 5 feet high, heads well filled, cultivated on June 29; crop rotation of sorghum, fallow and winter wheat.			Event of August 23, 1962 (continued)							
			8-23	2010	.60	1.85	8-23	2023	.07	.15
				2015	.12	1.86		2028	.10	.16
								2033	.15	.18
								2043	.12	.20
								2053	.08	.21
								2103	.04	.21
								2113	.03	.22
								2123	.02	.22
								2133	.01	.22
								2153	T	.22
								2223	T	.23
								2243	.00	.23

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.003.



HASTINGS, NEBRASKA WATERSHED 8-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA						WATERSHED 18-H		44.22
						AREA—3.74 ACRES								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962 1/ P	.39	.59	1.85	.51	3.04	4.54	5.55	4.78	2.62	1.78	2/ .17	2/ .40	26.22	
Q	.20E	.00	.12E	.00	.01	.06	.48	.36	.01	.06	.00	.00	1.30	
STA AV ³ /P	.29	.54	1.19	2.17	4.02	5.12	3.01	3.00	2.49	1.28	.75	.44	24.30	
(40-62) Q	.02	.03	.05	.06	.41	.95	.35	.16	.15	.06	.02	.00	2.26	
MEAN P 4/	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79	
70-YR														

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	.71	8-23	.29	8-23	.30	8-23	.30	8-23	.30	8-23	.30	8-23	.30	7-11	.46

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962 ^{5/}	7-3 1959	2.42	7-3 1959	2.01E	7-3 1959	2.05E	6-1 1951	2.58	6-15 1957	2.71	6-15 1957	2.81	6-15 1957	3.57	6-10 1957	3.58

Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: 100% pasture consists of 49% buffalo grass; 17% blue grama; 5% bluegrass; 2% western wheatgrass and 27% weeds and annuals. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological records. 3/ Station records began Aug. 1, 1939; part year records for 1939, 1955, and no records for 1956, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1955 and 1956.

SLOPES: (Revision)		Slope - Percent		0-3		3-7		3-10		Over 10	
		Percent of area		16		80		0		4	

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Holdrege silt loam	100	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium

EROSION: (Revision)		Erosion class		
		1	2	3
		100	0	0

LAND CAPABILITY: (Revision)		Class					
		I	II	III	IV	V	VI
		0	16	0	80	0	4

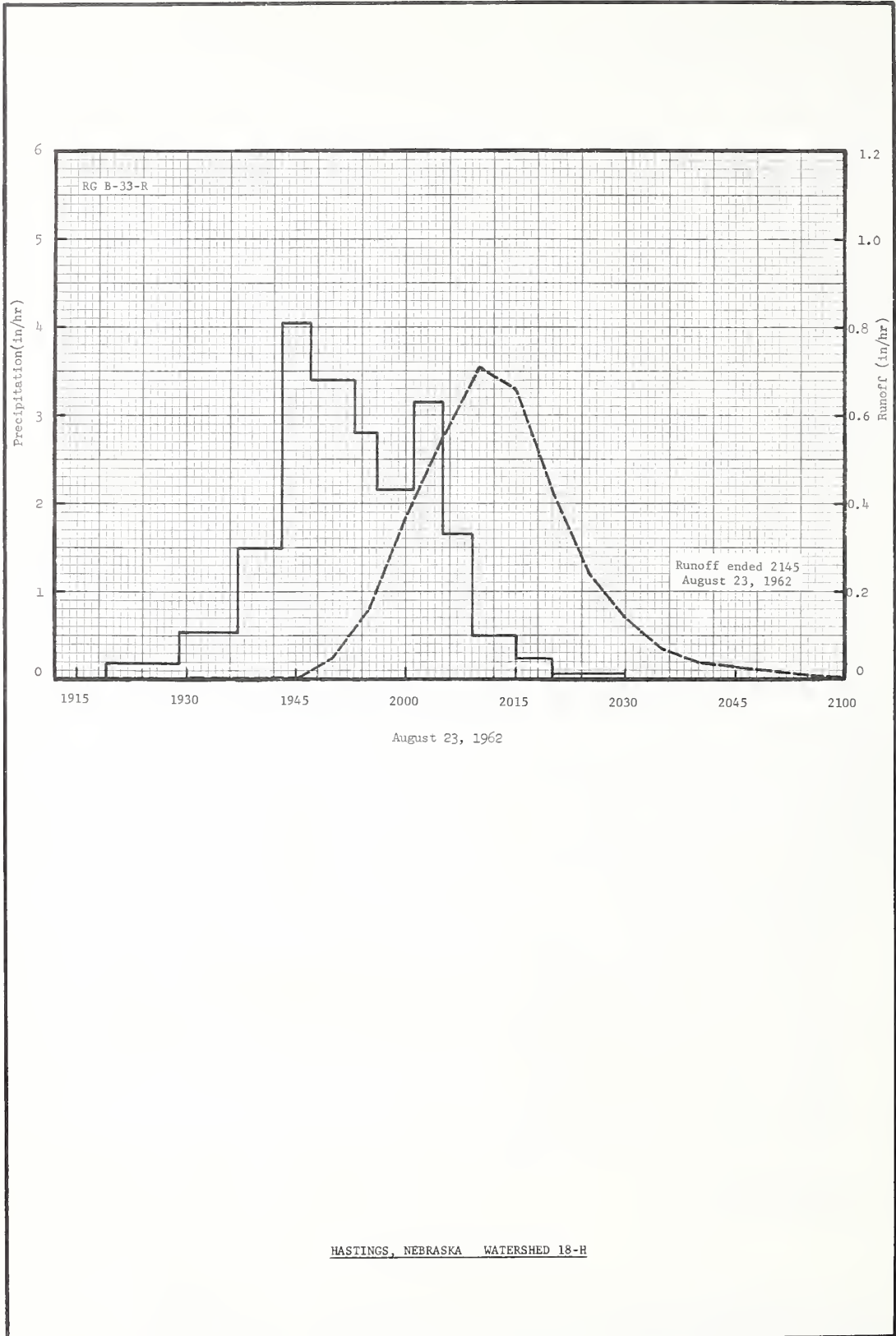
GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 18-H		44.22
----------------------------	--	--	--------------------	--	--	--	----------------	--	-------

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23, 1962										
	RG B-33-R		8-23	RG	B-33-R		8-23	1930	.00	.00
7-26	.06	.00		1919	.00	.00		1945	T	T
7-27	.68	.05		1929	.18	.03		1950	.05	T
7-29	.06	.00		1937	.53	.10		1955	.16	.01
8-2	.15	.00		1943	1.50	.25		2000	.37	.04
8-4	.59	T		1947	4.05	.52		2005	.55	.07
8-10	.11	.00		1953	3.40	.86		2010	.71	.13
8-11	.03	.00		1956	2.80	1.00		2015	.66	.18
8-15	.05	.00		2001	2.16	1.18		2020	.43	.23
8-22	.13	.00		2005	3.15	1.37		2025	.24	.26
8-23	6/ .68	.00		2009	1.65	1.46		2030	.14	.28
				2015	.50	1.51		2035	.07	.28
				2020	.24	1.53		2040	.04	.28
				2030	.06	1.54		2045	.03	.29
								2055	.01	.29
								2105	T	.29
								2125	T	.30
								2145	.00	.30

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.771. FOR MAP OF AREA SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.22-4. 6/ RAINFALL FROM 0110 TO 0730 - 0.68 PRIOR TO SELECTED EVENT.



MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 22-H AREA—3.83 ACRES							44.26
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P 1/ Q 2/						4.60	5.53	5.70	2.83	1.96	.17	.40	
STA AV3/P (41-54) Q	.27	.54	.89	2.33	3.47	5.01	3.11	2.64	2.32	1.34	.78	.49	23.19
NORMAL P4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962 ^{2/}	8-23	3.18	8-23	1.09	8-23	1.10	8-23	1.11	8-23	1.11	8-23	1.11	8-23	1.11	8-23	1.18

MAXIMUMS FOR PERIOD OF RECORD ^{5/}

1941 TO 1954	5-22 1954	3.31	7-10 1951	1.46	7-14 1952	1.84	6-1 1951	2.94	6-1 1951	3.22	6-1 1951	3.22	6-1 1951	3.22	6-1 1951	3.80
-----------------	--------------	------	--------------	------	--------------	------	-------------	------	-------------	------	-------------	------	-------------	------	-------------	------

NOTES: Quality of records: Monthly P and Q, excellent to good. Watershed conditions: Cultivated watershed from 1941 through 1954. Runoff measurements discontinued from 1955 through 1961; converted from cultivated to grass watershed by re-seeding on October 20, 1961. 1/ Rain gages: C-45-R used for June, C-40 (non-recording) used for July through October, and meteorological station for November and December. 2/ Runoff records resumed on May 23, 1962. 3/ Station average began May 1, 1941 and covers period through 1954 when watershed was cultivated. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ For period of cultivation only.

SLOPES: (Revision)	Slope - Percent				Soil group	
	0-3	3-7	3-10	Over 10		
Percent of area	31	0	0	0	Geary silty clay loam	
	0	0	69	0	Peorian soil material	

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Geary silty clay loam (se- verely eroded)	80	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	20	Moderate to moder- ately slow	Medium
Peorian soil material	20	5	Weak fine crumb	Moderate	Weak coarse prismatic	Moderate	5	Moderate	Medium

EROSION: (Revision)	Erosion class		
Percent of area	1	2	3
	0	20	80

LAND CAPABILITY: (Revision)	Class	I	II	III	IV	V	VI
Percent of area		0	0	20	80	0	0

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

1962 SELECTED RUNOFF EVENT HASTINGS, NEBRASKA WATERSHED 22-H 44.26

ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23, 1962										
	RG C-40 ^{6/}		8-23	RG	C-45-R		8-23	1935	.00	.00
	7-26	.08		1925	.00	.00		1945	.38	.02
	7-27	.72		1939	.64	.15		1947½	.84	.05
	7-29	.05		1951	4.40	1.03		1950	1.71	.10
	8-2	.19		1955	7.50	1.53		1952½	2.51	.19
	8-4	.35	T	1958	4.40	1.75		1955	3.05	.31
	8-10	.07	.00	2005	2.74	2.07		1957½	3.18	.44
	8-11	.12	.00	2010	2.04	2.24		2000	2.86	.56
	8-15	.04	.00	2020	.24	2.28		2002½	2.51	.68
	8-23	7/ .58	.00					2005	2.11	.77

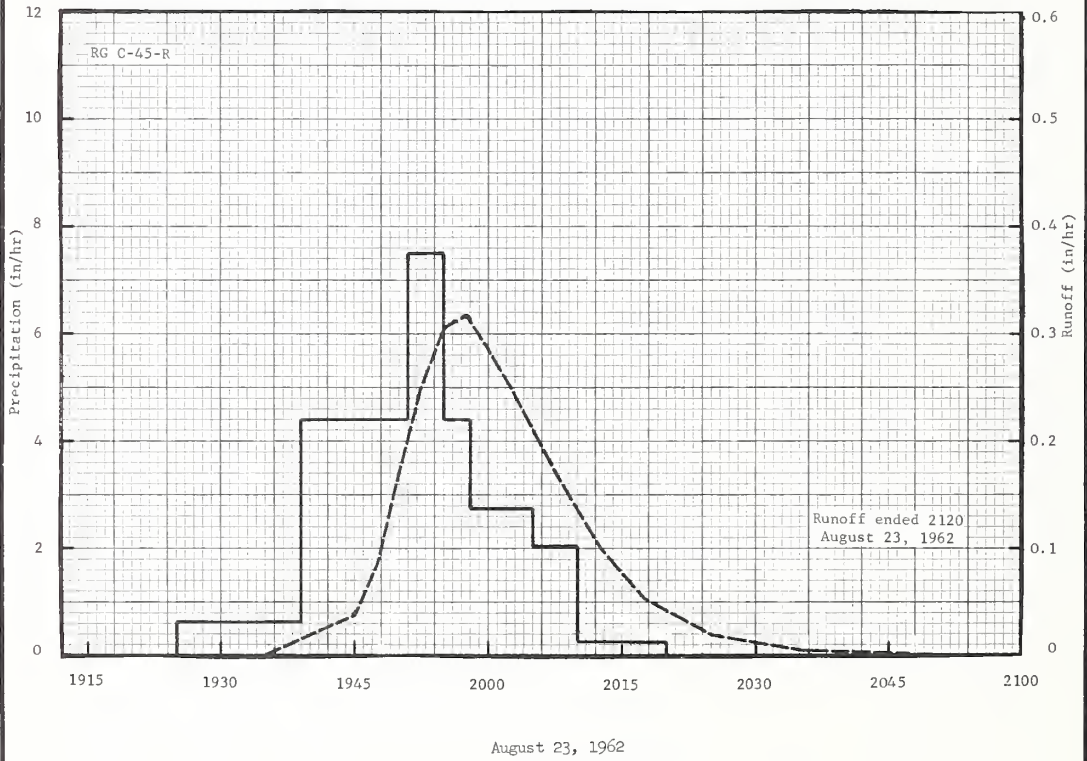
Continued on next page

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.862. 6/ STANDARD NON-RECORDING RAIN GAGE. 7/ RAINFALL FROM 0100 TO 0410 - 0.38 AND 0540 TO 0800 - 0.09, PRIOR TO SELECTED EVENT. (FROM RECORDING RAIN GAGE C-45-R).

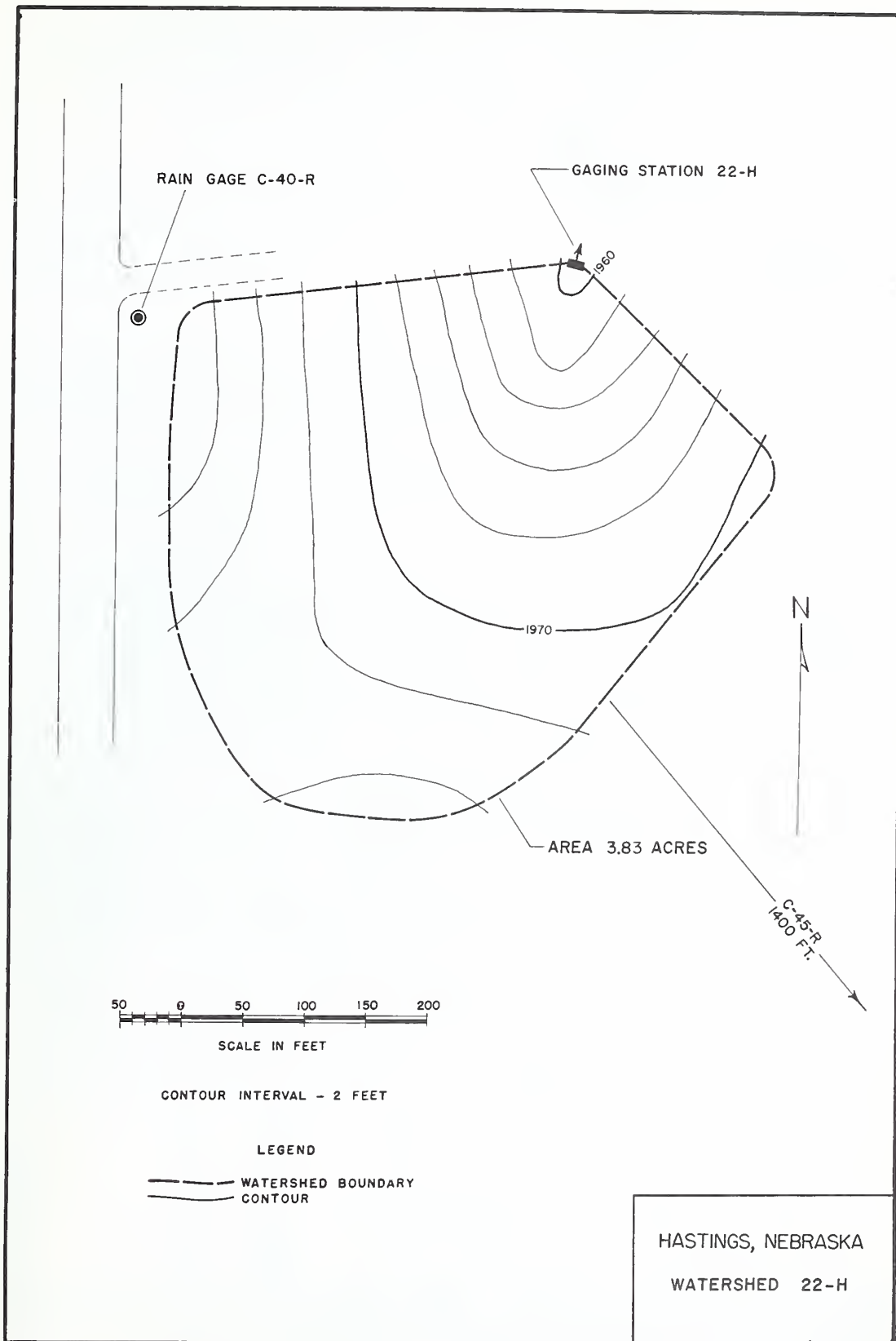
1962 SELECTED RUNOFF EVENTS			HASTINGS, NEBRASKA				WATERSHED 22-H			44.26
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of August 23, 1962—Continued							
			8-23	RG	C-40	1/ 2.52	8-23	2007½	1.71	.85
								2012½	1.01	.97
								2017½	.54	1.03
								2025	.20	1.07
								2035	.05	1.09
								2050	.01	1.10
								2120	.00	1.10

Watershed conditions: 100% meadow; converted from cultivated land to meadow by re-seeding in 1961. Grass clipped to 4" height on 8-10. Good ground cover.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.862. 1/ STANDARD NON-RECORDING RAIN GAGE TOTAL.



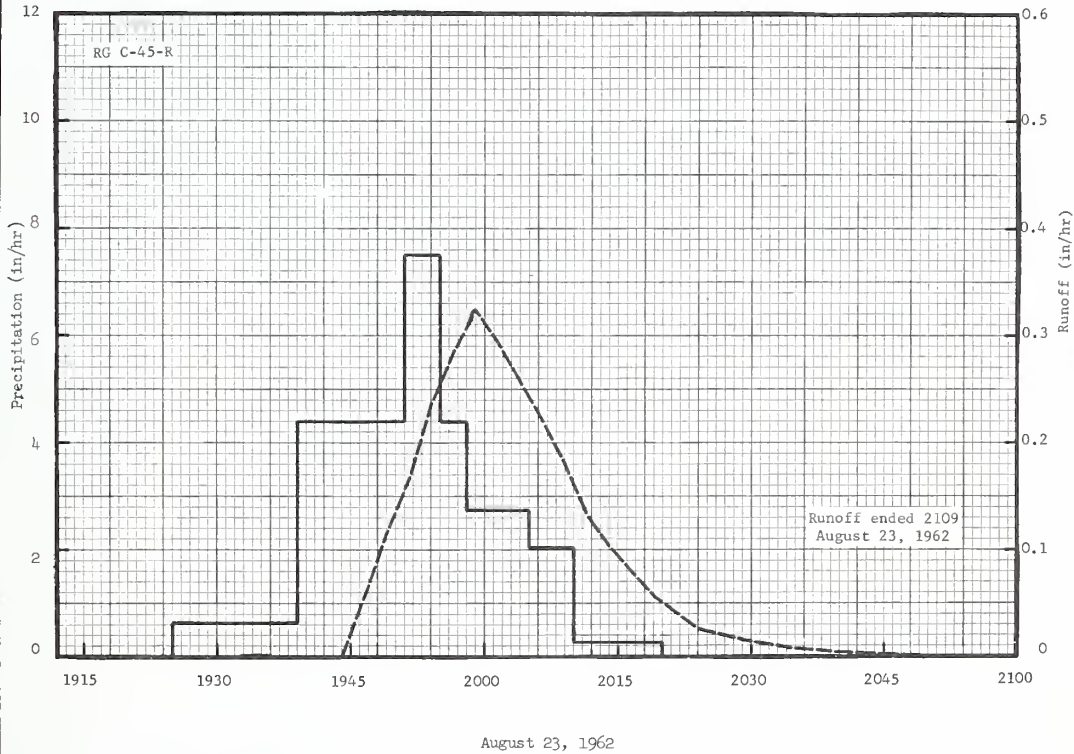
HASTINGS, NEBRASKA WATERSHED 22-H



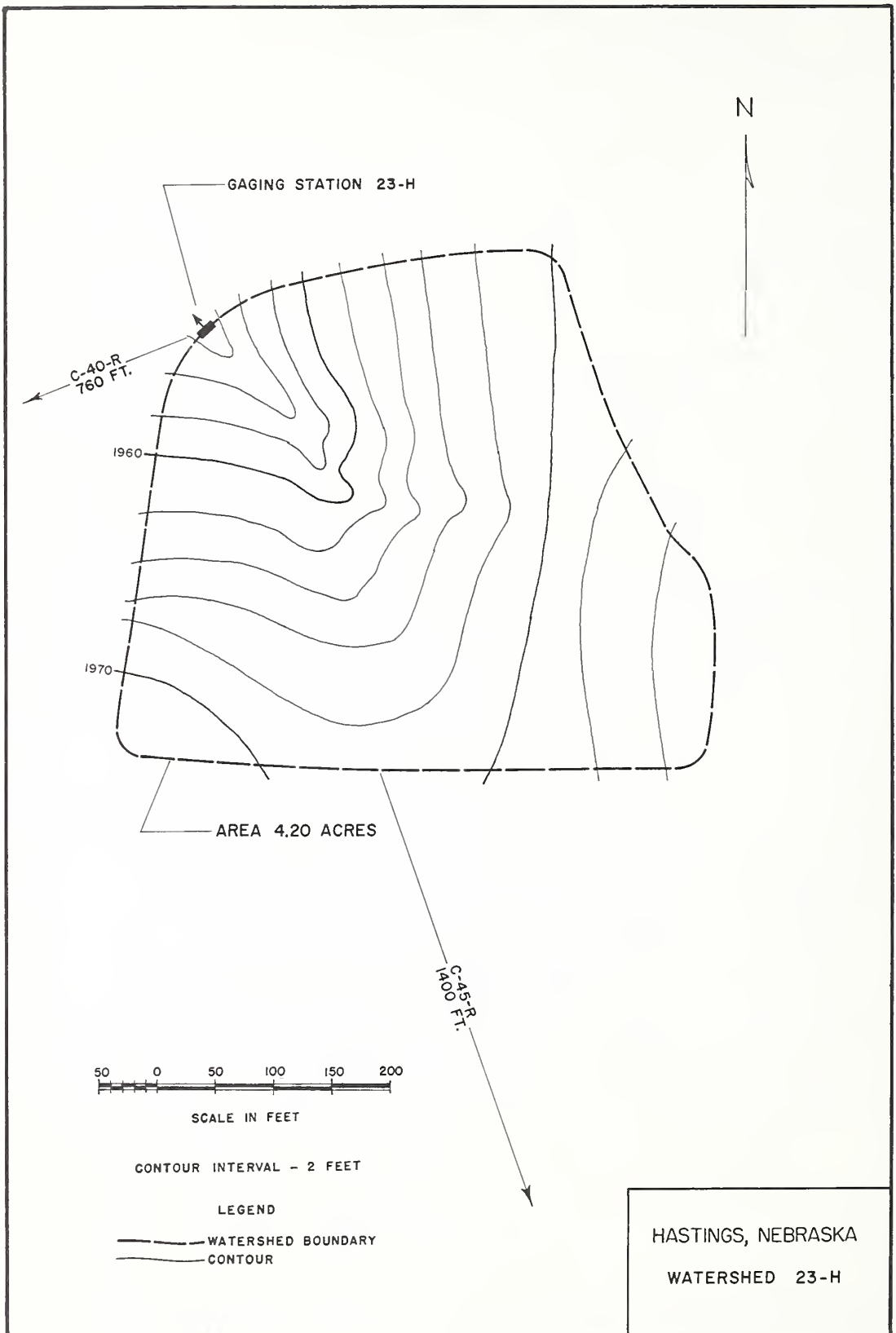
MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 23-H AREA—4.20 ACRES 44.27										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 1/ Q 2/						4.60	5.53	5.70	2.83	1.96	.17	.40				
STA AV3/P (41-54) Q	.27	.54	.89	2.33	3.47	5.01	3.11	2.64	2.32	1.34	.78	.49	23.19			
NORMAL P 4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962 2/	8-23	4.21	8-23	1.46	8-23	1.46	8-23	1.46	8-23	1.50	8-23	1.50	8-23	1.50	8-23	1.61
MAXIMUMS FOR PERIOD OF RECORD 5/																
1941 to 1954	6-5 1942	6.47	6-5 1942	1.75	6-1 1951	2.22	6-1 1951	2.46	6-1 1951	2.74	6-1 1951	2.74	6-1 1951	2.74	6-1 1951	3.44
NOTES: Quality of records: Monthly P and Q, excellent to good. Watershed conditions: Cultivated watershed from 1941 through 1954. Runoff measurements discontinued from 1955 through 1961; converted from cultivated to grass watershed by re-seeding on October 20, 1961. 1/ Rain gages: C-45-R used for June, C-40 (non-recording) used for July through October, and meteorological station for November and December. 2/ Runoff records resumed on May 23, 1962. 3/ Station averages began May 1, 1941 and covers period through 1954 when watershed was cultivated. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ For period of cultivation only.																
SLOPES: (Revision)																
Slope - Percent		0-3	3-7	3-10	Over 10	Soil group										
Percent of area		23	70	0	0	Holdrege silt loam										
		0	0	7	0	Geary silty clay loam										
SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.																
Soil	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability								
Geary silty clay loam (se- verely eroded)	55	5	Weak fine crumb	Moderate to moder- ately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	20	Moderate to moderately slow	Medium							
Holdrege silt loam	45	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium							
EROSION: (Revision)																
Erosion class		1	2	3												
Percent of area		45	0	55												
LAND CAPABILITY: (Revision)																
Class		I	II	III	IV	V	VI									
Percent of area		0	45	0	55	0	0									
GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).																
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).																
SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA WATERSHED 23-H 44.27										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of August 23, 1962																
7-26	RG C-40 6/ .08	.00	8-23	RG 1925	C-45-R .00	.00	8-23	1944	.00	.00						
7-27	.72	.05		1939	.64	.15		1946 1/2	.56	.01						
7-29	.05	.00		1951	4.40	1.03		1949	1.15	.05						
8-2	.19	.00		1955	7.50	1.53		1951 1/2	1.67	.11						
								1954	2.36	.19						
8-4	.35	.01		1958	4.40	1.75		1956 1/2	2.86	.30						
8-10	.07	.00		2005	2.74	2.07		1959	3.24	.43						
8-11	.12	.00		2010	2.04	2.24		2001 1/2	2.93	.56						
8-15	.04	.00		2020	.24	2.28		2004	2.58	.67						
8-23	7/ .58	.00		Continued on next page				2006 1/2	2.21	.78						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.235. 6/ STANDARD NON-RECORDING RAIN GAGE. 7/ RAINFALL FROM 0110 TO 0410 - 0.38 AND 0540 TO 0800 - 0.09, PRIOR TO SELECTED EVENT. (FROM RECORDING RAIN GAGE C-45-R).																

SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA WATERSHED 23-H 44.27								
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Watershed conditions: 100% meadow; converted from cultivated land to meadow by re-seeding in 1961. Grass clipped to 4" height on 8-10; good ground cover.			Event of August 23, 1962 continued								
			8-23	RG	C-40	1/ 2.52	8-23	2009	1.81	.86	
									2011 $\frac{1}{2}$	1.34	.92
									2014	1.03	.98
									2016 $\frac{1}{2}$.80	1.02
									2019	.58	1.05
									2024	.27	1.08
									2029	.16	1.10
									2034	.09	1.11
									2039	.04	1.12
									2049	.01	1.12
									2059	T	1.12
									2109	.00	1.12

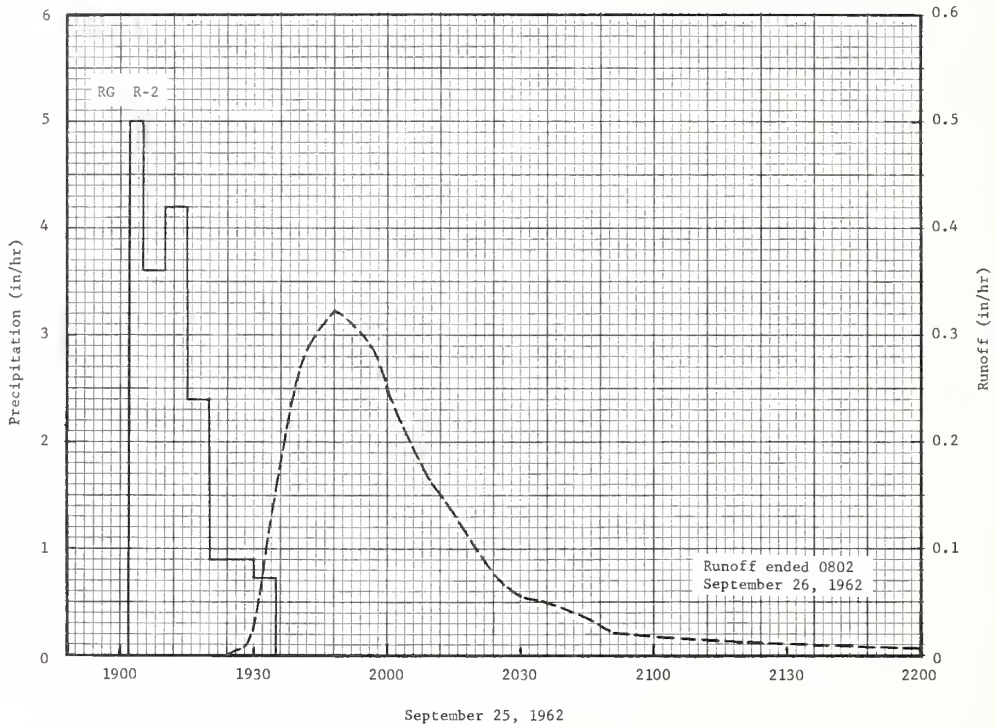
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.235. 1/ STANDARD NON-RECORDING RAIN GAGE TOTAL.



HASTINGS, NEBRASKA WATERSHED 23-H



MONTHLY PRECIPITATION AND RUNOFF (Inches)							SAFFORD, ARIZONA WATERSHED W-I AREA—519 ACRES										
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962	P 1/	.77	.00	.37	.00	.03	.04	.26	.00	4.25	.70	.66	.45	7.53			
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.71	.01	.00	.00	.72			
STA AV (41-62)	P 2/	.56	.36	.42	.24	.07	.22	1.37	1.62	1.01	.55	.27	.44	7.13			
	Q	.00	.00	.00	T	.00	T	.07	.16	.12	T	.00	.00	.35			
MEAN P 63 YR	3/	.66	.69	.64	.30	.14	.28	1.75	1.63	.98	.65	.58	.71	9.01			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							SAFFORD, ARIZONA WATERSHED W-I										
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	
1962		9-25	.3228	9-25	.19	9-25	.21	9-26	.40	9-26	.49	9-25	.71	9-25	.71	9-25	.71
MAXIMUMS FOR PERIOD OF RECORD																	
1941 to 1962	9-5 1944	.83	9-5 1944	.61	9-5 1944	.71	9-5 1944	.73	9-5 1944	.73	9-5 1944	.73	9-5 1944	.73	9-5 1944	.73	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Sparsely vegetated rangeland. 1/ Thiessen weighted, using 3 rain gages. 2/ Precipitation records began Jan. 1939; runoff records, June 1939. Incomplete P and Q records for 1939 and 1940 not included in averages. 3/ Mean P based on 63-yr (1899-1961) U. S. Weather Bureau record period at Safford, Ariz.																	
GENERALLY REPRESENTS: (Revision) Sonoran Highlands problem area changed to Southern Desertic Basins, Plains and Mountains land resource area (D-42).																	
1962 SELECTED RUNOFF EVENT							SAFFORD, ARIZONA WATERSHED W-I										
Antecedent conditions			Rainfall			Runoff											
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
Event of September 25-26, 1962																	
9-4-62	RG R-1 .40	.0000	9-25-62 1902	RG R-2 .00	.00	9-25-62 1924	.0000	.0000									
9-6	.15	.0000	1905	5.00	.25	1925	.0017	.0001									
9-8	.08	.0000	1910	3.60	.55	1926	.0059	.0001									
9-11	.03	.0000	1915	4.20	.90	1928	.0083	.0003									
9-13	.40	.0000	1920	2.40	1.10	1929	.0152	.0005									
9-24	.10	.0000	1930	.90	1.25	1930	.0283	.0009									
			1935	.72	1.31	1931	.0577	.0016									
			9-25-62	RG R-1 4/	1.19	1932	.0772	.0027									
						1933	.1094	.0043									
						1934	.1306	.0063									
9-4-62	RG R-2 .20	.0000				1935	.1560	.0087									
9-6	.10	.0000				1936	.1793	.0115									
9-8	.07	.0000				1937	.2082	.0147									
9-11	.03	.0000				1938	.2273	.0183									
9-13	.29	.0000				1939	.2502	.0223									
9-24	.21	.0000				1940	.2655	.0266									
						1942	.2884	.0358									
						1948	.3228	.0664									
						1957	.2884	.1122									
						2000	.2483	.1256									
9-4-62	RG R-3 .13	.0000				2005	.2025	.1451									
9-6	.15	.0000				2010	.1600	.1602									
9-8	.06	.0000				2015	.1346	.1725									
9-11	.02	.0000				2020	.1003	.1823									
9-13	.39	.0000				2025	.0718	.1895									
9-24	.25	.0000				2030	.0542	.1947									
						2035	.0514	.1991									
						2050	.0220	.2083									
						9-26-62											
						0802	.0000	.2273									
Watershed conditions: 85% of area is bare. Sparse vegetation is predominantly shrubs (creosotebush, snakeweed, and catclaw), with some short grasses (tobosa, three-awn, and curly mesquite).																	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 523.32. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 45.1-4 (REPRINTED). 4/ RAIN GAGE R-1 (WEEKLY CHART) HAD HIGH INTENSITY PRECIPITATION WHICH CONTRIBUTED GREATLY TO THE RUNOFF.																	



SAFFORD, ARIZONA WATERSHED W-1

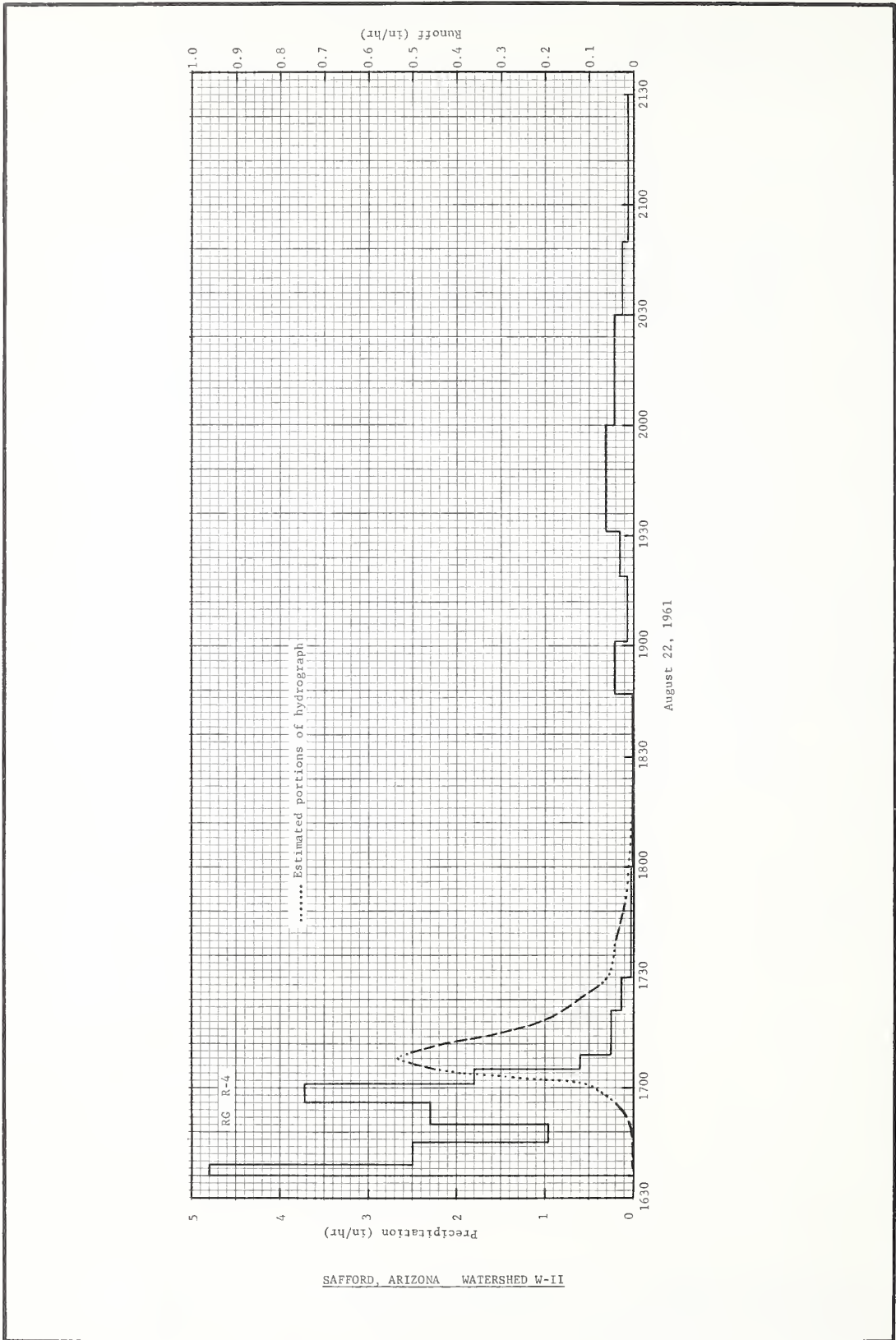
REVISION OF PREVIOUSLY PUBLISHED DATA SHEET

1961 SELECTED RUNOFF EVENT			SAFFORD, ARIZONA				WATERSHED W-II			
ANTECEDENT CONDITIONS			RAINFALL 1/				RUNOFF 2/			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 22, 1961 (Revision)										
8-15	RG R-4 .11	.00	8-22	RG	R-4	.00	8-22	1638	.0000	.0000
8-17	.55	.00		1636	.00	.24		1641	.0001	T
				1639	4.80	.49		1644	.0009	T
				1645	2.50	.57		1647	.0018	T
				1650	.96	.80		1650	.0067	.0002
				1656	2.30	1.11		1651	.0097	.0003
				1701	3.72	1.23		1652	.0134	.0005
				1705	1.80	1.27		1653	.0196	.0008
				1709	.60	1.32		1654	.0255	.0012
				1721	.25	1.34		1655	.0326	.0017
				1730	.13	1.35		1656	.0406E	.0023
				1800	.02	1.36		1657	.0570E	.0031
				1847	.01	1.41		1700	.0916E	.0068
				1901	.21	1.43		1701	.1086E	.0085
				1919	.07	1.46		1702	.1711E	.0108
				1931	.15	1.61		1703	.2900E	.0146
				2000	.31	1.72		1704	.3973E	.0203
				2030	.22	1.76		1705	.4481E	.0273
				2050	.12	1.78		1706	.4843	.0351
				2110	.06	1.80		1707	.5148	.0434
				2130	.06	1.80		1708	.5336E	.0521
			8-22	RG	R-5	.00	1709	.5191	.0609	
8-15	RG R-5 .10	.00		1636	.00	.20	1710	.4887	.0693	
8-17	.45	.00		1644	1.50	.38	1712	.4234	.0845	
				1651	1.54	.68	1714	.3292	.0970	
				1655	4.50	1.05	1716	.2639	.1069	
				1701	3.70	1.11	1718	.2117	.1145	
				1705	.90	1.24	1720	.1740	.1212	
				1712	1.11	1.29	1722	.1465	.1265	
				1731	.16	1.31	1724	.1253	.1310	
				1841	.02	1.38	1726	.0999	.1348	
				1851	.18	1.37	1728	.0742E	.1377	
				1905	.17	1.41	1730	.0570E	.1399	
				1921	.01	1.50	1732	.0521E	.1417	
				1951	.18	1.58	1734	.0486E	.1434	
				2007	.30	1.63	1736	.0460E	.1450	
				2031	.13	1.72	1739	.0406E	.1472	
				2051	.27	1.72	1742	.0348	.1491	
				2106	.12	1.75	1745	.0290	.1507	
							1750	.0188E	.1527	
							1755	.0130E	.1540	
							1800	.0094E	.1549	
							1805	.0051E	.1555	
							1810	.0022E	.1558	
							1815	.0007E	.1559	
							1818	.0000E	3/.1559	

Watershed Conditions: Sparsely vegetated rangeland; about 75% bare; vegetative cover about equally divided between short grasses (black, hairy, and side-oats grama), and shrubs (creosotebush, beargrass, and mesquite).

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 687.68. FOR WATERSHED MAP, SEE P. 45.2-5 OF SELECTED EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960. 1/ RAINFALL DISTRIBUTION REVISED. 2/ RUNOFF COMPLETELY REVISED, PORTIONS OF HYDROGRAPH ESTIMATED (E). 3/ REDUCED TO THIS ACCUMULATED TOTAL FROM THE .2580 INCHES SHOWN IN THE PREVIOUS VOLUME.

REVISION OF PREVIOUSLY PUBLISHED GRAPH



MONTHLY PRECIPITATION AND RUNOFF (Inches)								SAFFORD, ARIZONA WATERSHED W-II AREA—682 ACRES (1.07 SQ. MILES)							
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	
		1961	P	1.32	.00	.30	.00	.00	.48	1.04	2.46	.24	1.39	2.80	2.41
	Q 1/	.00	.00	.00	.00	.00	.00	.02	.16	.00	.05	T	.00	.23	
1962	P 2/	.58	.15	.58	.00	.00	.20	2.39	.02	3.31	.63	.25	.32	8.43	
	Q	.00	.00	.00	.00	.00	.00	T	.00	.03	.00	.00	.00	.03	
STA AV	3/P	.80	.53	.79	.35	.16	.30	2.18	2.20	1.04	.83	.48	.74	10.40	
(41-62)	Q	.00	.00	.00	.00	.00	.00	.09	.18	.06	.01	.00	.00	.34	
MEAN P	4/	.66	.69	.64	.30	.14	.28	1.75	1.63	.98	.65	.58	.71	9.01	
63 YR															
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								SAFFORD, ARIZONA WATERSHED W-II							
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1961	1/	8-22	.5336E	8-22	.15E	8-22	.16E	8-22	.16E	8-22	.16E	8-22	.16E	8-22	.16E
1962		9-24	.0442	9-24	.03	9-24	.03	9-24	.03	9-24	.03	9-24	.03	9-24	.03
MAXIMUMS FOR PERIOD OF RECORD															
1939 to		9-28	1.45	9-28	.65	9-28	.68	9-28	.78	9-28	.81	9-28	.91	9-28	.91
1962 5/		1941		1941		1941		1941		1941		1941		1941	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Sparsely vegetated rangeland. About 75% of area is bare. Vegetative cover is about equally divided between short grasses (black, hairy and side-oats grama) and shrubs (creosotebush, beargrass and mesquite). 1/ Revisions of previously published data, reduced values underlined. 2/ Thiessen weighted, using 3 rain gages. 3/ Precipitation and runoff records began Jan. 1939. Incomplete records for 1939 and 1940 not included in averages. 4/ Mean P based on 63-yr (1899-1961) U.S. Weather Bureau record period at Safford, Ariz. 5/ No maximums for 1950, 1958, and 1960.															
GENERALLY REPRESENTS: (Revision) Sonoran Highlands problem area changed to <u>Southeastern Arizona Basin and Range land resource area (D-41)</u> .															
NO SUITABLE 1962 SELECTED RUNOFF EVENT TO REPORT. FOR WATERSHED MAP, SEE P. 45.2-5 OF SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960.															

Cooperative Research Project of USDA and Arizona Agricultural Experiment Station

45.2-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								SAFFORD, ARIZONA WATERSHED W-IV AREA—764 ACRES (1.19 SQ. MILES)							
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	
		1962	P 1/	1.30	.01	.31	.00	.00	.21	.38	.00	2.48	.98	.51	.65
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.04	
STA AV	2/ P	.70	.38	.46	.17	.06	.43	1.67	1.84	.88	.59	.36	.54	8.08	
(42-62)	Q	.00	.00	.00	.00	.00	.01	.02	.07	.04	.00	.00	.00	.14	
MEAN P	3/	.66	.69	.64	.30	.14	.28	1.75	1.63	.98	.65	.58	.71	9.01	
63 YR															
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								SAFFORD, ARIZONA WATERSHED W-IV							
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962		9-26	.0439	9-26	.04	9-26	.04	9-26	.04	9-26	.04	9-26	.04	9-26	.04
MAXIMUMS FOR PERIOD OF RECORD															
1939 to		8-16	.66	8-16	.33	8-16	.37	8-16	.37	8-16	.37	8-16	.37	8-16	.37
1962 4/		1958		1958		1958		1958		1958		1958		1958	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 80% of area is bare. Sparse vegetation is composed entirely of shrubs (creosotebush, snakeweed, cactus, and mesquite) except for trace of short grasses. 1/ Thiessen weighted, using 3 rain gages. 2/ Precipitation records began Jan. 1939. Runoff records began July 1939. Part-year amounts for 1939, 1940, and 1941 not included in averages. 3/ Mean P based on 63-yr (1899-1961) U. S. Weather Bureau record period at Safford, Ariz. 4/ No maximums for 1961 (instrument malfunctioned).															
GENERALLY REPRESENTS: (Revision) Sonoran Highlands problem area changed to <u>Southeastern Arizona Basin and Range land resource area (D-41)</u> .															
NO SUITABLE 1962 SELECTED RUNOFF EVENT TO REPORT. FOR WATERSHED MAP, SEE P. 45.3-4 OF HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994 (REPRINTED).															

Cooperative Research Project of USDA and Arizona Agricultural Experiment Station
(See 45.2-1 above).

45.3-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)							SAFFORD, ARIZONA WATERSHED W-V AREA—723 ACRES (1.13 SQ. MILES)									
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1962	P <u>1</u> / Q	1.57 .00	.15 .00	.31 .00	.08 .00	.08 .00	.43 .00	2.08 T	.11 .00	1.59 .00	.70 .00	.75 .00	.56 .00	8.41 T		
STA. AV. <u>2</u> / (42-62)	P Q	.86 .00	.54 .00	.61 .00	.24 .00	.10 .00	.43 T	2.24 .08	2.09 .14	.86 .03	.77 .01	.41 .00	.68 .00	9.83 .26		
MEAN P <u>3</u> / 63 YR		.66	.69	.64	.30	.14	.28	1.75	1.63	.98	.65	.58	.71	9.01		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							SAFFORD, ARIZONA WATERSHED W-V									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	7-23	.0025	7-23	.002	7-23	.002	7-23	.002	7-23	.002	7-23	.002	7-23	.002	7-23	.002
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	7-22 1955	.92	7-22 1955	.36	7-22 1955	.38	7-22 1955	.38	7-22 1955	.38	7-22 1955	.38	7-22 1955	.40	7-22 1955	.71
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: About 80% of area is bare. Vegetation consists mostly of short grasses (black grama, side-oats grama, and tabosa), with some shrubs and forbs. <u>1</u> / Thiessen weighted, using 4 rain gages. <u>2</u> / Precipitation and runoff records began Jan. 1939. Part-year amounts for 1939, 1940, and 1941 not included in averages. <u>3</u> / Mean P based on 63-yr. (1899-1961) U. S. Weather Bureau record period at Safford, Ariz.																
<u>GENERALLY REPRESENTS:</u> (Revision) Sonoran Highlands problem area changed to <u>Southeastern Arizona Basin and Range land resource area (D-41).</u>																
NO 1962 SELECTED RUNOFF EVENT PRESENTED BECAUSE THERE WAS ONLY A TRACE OF RUNOFF. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE P. 45.4-4 OF HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945.																

MONTHLY PRECIPITATION AND RUNOFF (Inches)							ALBUQUERQUE, NEW MEXICO WATERSHED W-I AREA—97.2 ACRES									
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.68 .00	.00 .00	.00 .00	.00 .00	.00 .00	.09 .00	1.17 .09	.05 .00	1.56 .00	.66 .00	.30 .00	.39 .00	4.90 .09			
STA AV 2/ P (40-62) Q	.30 .00	.31 .00	.37 .00	.36 T	.50 T	.70 .04	1.02 .06	1.37 .12	.86 .10	.74 .04	.30 T	.40 .00	7.23 .36			
MEAN P 3/ 70 YR	.36	.33	.39	.58	.67	.58	1.41	1.27	.88	.80	.43	.45	8.15			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							ALBUQUERQUE, NEW MEXICO WATERSHED W-I									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	7-23	.5641	7-23	.0769	7-23	.0883	7-23	.0883	7-23	.0883	7-23	.0883	7-23	.0883	7-23	.0883
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	8-24 1957	2.33	8-24 1957	.57	8-24 1957	.62	8-24 1957	.62	8-24 1957	.62	8-24 1957	.62	8-24 1957	.62	9-8 1947	.77
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volume, good. Watershed conditions: Rough broken rangeland. About 85% of area is bare. Sparse vegetation consists of short grasses (blue and black grama), shrubs, and a few small juniper and pinon trees. 1/ Thiessen weighted, using 2 rain gages. 2/ Precipitation and runoff records began Aug. 1939. Part-year amounts for 1939 not included in averages. 3/ Mean P based on 70-yr. (1892-1961) U. S. Weather Bureau record period at Albuquerque, N. Mex. 4/ No maximums for 1945.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 47.1-4.																

Cooperative Research Project of USDA and New Mexico Agricultural Experiment Station

47.1-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)							ALBUQUERQUE, NEW MEXICO WATERSHED W-II AREA—40.5 ACRES									
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.71 .00	.00 .00	.00 .00	.00 .00	.05 .00	.04 .00	.79 .00	.04 .00	1.67 .00	.72 .00	.36 .00	.49 .00	4.87 .00			
STA AV 2/ P (41-62) Q	.27 .00	.24 .00	.37 .00	.37 T	.50 .01	.68 .04	1.02 .06	1.36 .18	.86 .10	.77 .03	.22 .00	.31 .00	6.97 .42			
MEAN P 3/ 70 YR	.36	.33	.39	.58	.67	.58	1.41	1.27	.88	.80	.43	.45	8.15			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							ALBUQUERQUE, NEW MEXICO WATERSHED W-II									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962		.00		.00		.00		.00		.00		.00		.00		.00
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	8-24 1957	2.79	8-24 1957	.73	8-24 1957	.77	8-24 1957	.79	8-24 1957	.79	8-24 1957	.79	8-24 1957	.79	9-4 1947	1.06
Notes: Quality of records: Monthly P and Q good; annual maximum discharges and volumes, good. Watershed conditions: Sparsely vegetated rangeland. 80% of area is bare. Vegetation consists of short grasses (blue and black grama, and galleta) and shrubs (sagebrush, saltbush, and rabbit brush). Vegetation is densest along lower two thirds of principal waterway. 1/ Thiessen weighted, using 2 rain gages. 2/ Precipitation and runoff records began Aug. 1939. Part-year amounts for 1939 and 1940 not included in averages. 3/ Mean P based on 70-yr. (1892-1961) U.S. Weather Bureau record period at Albuquerque, N. Mex. 4/ No maximums in 1945.																
NO RUNOFF, THEREFORE NO SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 47.2-4.																

Cooperative Research Project of USDA and New Mexico Agricultural Experiment Station

(See 47.1-1 above)

47.2-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								ALBUQUERQUE, NEW MEXICO WATERSHED W-III AREA—168 ACRES								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1962	P ^{1/}	.68	.00	.01	.00	.02	.02	.76	.04	1.66	.78	.35	.48	4.80		
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.08		
STA AV (41-62)	P ^{2/}	.29	.25	.36	.37	.51	.67	1.13	1.31	.84	.73	.22	.30	6.98		
	Q	.00	.00	.00	.00	.01	.04	.05	.10	.05	.01	.00	.00	.26		
MEAN P 70 YR	^{3/}	.36	.33	.39	.58	.67	.58	1.41	1.27	.88	.80	.43	.45	8.15		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								ALBUQUERQUE, NEW MEXICO WATERSHED W-III								
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	10-19	.2466	10-19	.0562	10-19	.0622	10-19	.0837	10-19	.0837	10-19	.0837	10-19	.0837	10-19	.0837
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 ^{4/}	9-4 1947	.96	9-4 1947	.50	9-4 1947	.61	9-4 1947	.62	9-4 1947	.62	9-4 1947	.62	9-4 1947	.62	9-4 1947	.87
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: Sparsely vegetated rangeland; about 75% of area is bare. Vegetation consists of short grasses (blue and black grama and galleta) and shrubs (sagebrush, saltbush, and snakeweed). Vegetation is comparatively heavy in a narrow strip along the principal waterway. ^{1/} Thiessen weighted, using 2 rain gages. ^{2/} Precipitation and runoff records began July 1939. Part-year amounts for 1939 and 1940 not included in averages. ^{3/} Mean P based on 70-yr. (1892-1961) U. S. Weather Bureau record period at Albuquerque, N. Mex. ^{4/} No maximums for 1940, 1945, and 1960.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 47.3-4.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI						WATERSHED W-41/		62.01
						AREA—2,000 ACRES (3.13 SQ. MILES)								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962 P ₂ /	5.81	7.96	3.03	3.88	2.18	5.43	4.11	2.62	5.83	2.02	1.53	1.64	46.04	
Q	1.58	3.14	.19	.62	.01	.32	.08	.07	.27	.01	.00	.00	6.29	
STA AV ₂ /P	4.29	5.28	4.44	4.39	3.68	4.19	4.10	2.75	5.29	2.64	4.88	4.56	50.49	
(57-62) Q	.93	1.19	.55	.52	.26	.17	.16	.07	.35	.10	.58	.52	5.40	
MEAN P 4/ 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.84	2-23	.72	2-23	1.13	2-23	1.46	2-23	1.60	2-23	1.75	2-23	1.82	2-23	3.15

MAXIMUMS FOR PERIOD OF RECORD

19 57 TO 19 62	2-23 1962	.84	2-23 1962	.72	2-23 1962	1.13	2-23 1962	1.46	2-23 1962	1.60	1-31 1957	2.38	1-30 1957	3.34	1-27 1957	3.90
-------------------	--------------	-----	--------------	-----	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------

NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 22% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 42% in idle pasture, good cover April to October with fair cover remainder of year; 34% in woods; 2% in bare gullies. 1/ About 28% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 7, 8, and 18. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

SOILS: (Revision) Loess soils underlain by Coastal Plains material; soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Ruston fine sandy loam to sandy clay loam	59	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderate- ly rapid	Rapid
Collins silt loam	15	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderate- ly rapid	Rapid
Providence silt loam and silty clay loam	13	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow
Grenada silt loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Loring silt loam to silty clay loam	5	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid

GEOLOGY: About 64% of the surface area is occupied by the Kosciusko formation, 29% by the Tallhatta, and 7% is valley alluvium. A fault along the southern boundary of the watershed has altered the stratigraphy and piezometric slope appreciably. A normal westerly dip of about 8 to 10 feet per mile has been increased slightly and changed to a south-southeasterly direction. The slope of the ground-water gradient which occurs at depths in excess of 50 feet below the stream channel has been similarly affected. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.

SELECTED EVENT OF SEPTEMBER 9, 1959: (Revision) Rainfall graph in lower graph on page 62.1-3 in Misc. Pub. 945 for 1956-59 should have been labeled "Rain gages 7, 8, and 18 Thiessen weighted", not Rain gage 7 as shown.

TOPOGRAPHIC MAP: (Revision) Elevation of stream bed at W-4 gaging station should read 454 ft. above MSL, rather than 397 ft. as shown on map, page 62.1-4 in USDA Misc. Pub. 945 for 1956-59.

1962 DAILY AIR TEMPERATURE (degrees F)														OXFORD, MISSISSIPPI				WATERSHED W-4				62-01		
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	40	26	69	40	37	25	48	35	85	61	84	64	88	64	90	64	90	72	80	54	61	29	73	37
2	48	22	67	29	44	29	53	31	72	44	85	64	90	66	86	69	88	71	76	51	61	30	70	37
3	62	34	74	45	48	33	47	24	74	44	84	65	90	72	79	69	90	69	74	47	64	44	72	42
4	60	40	67	48	59	42	57	28	80	47	80	66	90	75	88	72	92	71	77	48	49	36	67	38
5	58	51	58	40	50	25	68	37	82	48	77	62	92	69	93	70	92	68	80	50	53	30	66	38
6	57	24	41	20	40	24	62	50	84	54	86	63	95	70	93	73	80	60	84	60	53	27	49	26
7	45	24	43	20	48	22	57	44	85	56	89	66	94	70	94	75	74	59	85	64	62	31	38	25
8	44	23	47	36	46	34	68	41	88	62	87	65	92	72	97	72	83	60	83	66	68	40	50	34
9	41	9	65	45	54	42	70	39	87	60	84	68	92	71	92	62	83	72	81	54	57	35	49	28
10	11	-5	50	33	50	37	63	42	88	61	85	69	86	62	93	67	90	70	84	52	52	28	36	23
11	14	-6	64	30	60	45	77	53	88	60	87	67	89	69	90	60	84	65	86	55	63	28	44	21
12	27	-14	77	48	60	38	61	50	88	55	84	68	85	68	93	67	88	67	84	64	75	44	27	3
13	38	5	80	57	54	34	68	38	89	62	85	64	94	70	95	69	94	69	85	60	59	36	14	-1
14	48	26	74	49	61	26	56	35	91	68	81	56	94	73	90	62	93	70	86	63	63	30	31	3
15	50	29	63	46	63	28	75	42	89	65	79	55	93	74	88	62	88	68	88	67	70	30	52	19
16	43	18	60	40	52	27	51	28	88	60	82	56	93	70	89	58	84	71	86	67	70	51	51	40
17	44	20	63	34	52	26	62	33	91	65	88	65	92	67	92	62	76	65	84	60	72	46	58	24
18	37	29	64	43	55	28	67	41	92	64	91	69	90	62	92	61	84	56	73	45	55	43	65	23
19	36	31	56	34	68	34	72	40	90	65	92	72	88	63	94	62	83	58	76	45	44	40	69	31
20	34	25	50	27	70	54	77	44	91	61	84	67	89	61	99	67	84	56	83	47	45	40	66	49
21	56	30	61	43	64	51	75	52	90	63	85	66	93	66	97	67	71	44	82	53	58	42	70	48
22	65	37	71	46	56	40	82	56	90	61	87	66	91	60	96	69	77	48	69	45	58	41	49	36
23	40	23	70	46	55	34	82	57	88	71	90	68	96	65	94	68	78	55	72	44	57	28	41	31
24	44	36	53	39	68	36	70	48	88	67	91	70	96	71	92	71	79	57	61	30	65	30	45	26
25	58	41	55	41	74	48	75	53	91	69	93	67	90	70	86	69	82	64	56	31	64	46	34	26
26	68	51	79	53	67	45	81	53	89	70	80	64	85	70	82	69	73	63	55	33	54	33	41	33
27	56	39	69	40	63	33	83	58	91	72	81	68	82	57	85	64	73	44	62	36	58	35	33	25
28	51	29	42	26	68	35	84	63	90	66	85	67	82	62	89	59	76	43	71	48	59	38	45	22
29	52	26	---	---	77	46	61	62	94	71	89	69	85	66	90	63	71	41	74	51	56	46	51	23
30	62	40	---	---	76	55	87	64	86	65	85	64	88	73	93	67	74	43	70	54	68	39	47	23
31	55	25	---	---	55	39	---	---	73	63	---	---	92	71	89	67	---	---	71	36	---	---	47	20
AV.	47	25	62	39	57	36	68	45	87	61	85	65	90	68	91	66	82	61	77	51	60	37	50	28
MEAN	36.2		50.5		46.6		56.7		74.1		75.3		79.0		78.6		71.6		64.0		47.2		39.0	
STA AV	49	29	55	35	58	38	72	49	81	58	86	65	90	68	90	67	84	62	74	50	62	40	52	32

NOTES: TEMPERATURE DATA FROM U. S. WEATHER BUREAU STATION AT HOLLY SPRINGS 2N, MISS. STATION AVERAGE (STA AV) BASED ON RECORDS FROM JAN. 1957 THROUGH DEC. 1962.

1962 DAILY PRECIPITATION (inches)														OXFORD, MISSISSIPPI				WATERSHED W-4				62-01		
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	1		.00		.00		.00		.00		.16		1.12		.00		.00		.00		.15		.00	
2		.00		.00		.00		.00		.00		.36		.00		.17		.00		.00		.01		.00
3		.00		.00		.00		.00		.00		.48		.00		.00		.00		.00		.03		.00
4		.00		.00		.00		.00		.00		.91		.00		.00		2.37		.00		.00		.00
5		1.37		.28		.00		.11		.00		.00		.29		.00		.00		.00		.00		.04
6		.01		.00		.00		.16		.00		.00		.61		.00		.00		.00		.00		.00
7		.00		.00		.00		.00		.00		.25		.00		.00		.00		.56		.00		.00
8		.00		.06		.50		.22		.00		.08		.00		.00		.68		.00		.20		.00
9		.11		.00		.04		.00		.00		.02		.00		.00		.89		.00		.00		.00
10		.00		.00		.27		.55		.00		.21		.00		.00		.00		.00		.00		.00
11		.00		.00		.03		1.78		.00		.41		.48		.00		.00		.00		.32		.00
12		.00		.00		.00		.12		.00		.05		.00		.00		.00		.00		.00		.00
13		.00		.00		.00		.00		.00		.00		.00		.00		.02		.00		.00		.00
14		1.03		.00		.00		.00		.00		.00		.00		.00		.69		.01		.00		.00
15		.07		.53		.00		.00		.00		.00		.00		.00		.66		.03		.00		.00
16		.00		.00		.00		.00		.14		.00		.00		.00		.06		.82		.00		.00
17		.00		.00		.00		.00		.00		.00		.00		.00		.00		.00		.43		.06
18		.00		.52		.00		.00		.00		.00		.00		.00		.00		.00		.04		.00
19		.05		.00		.00		.00		.00		.06		.00		.00		.00		.00		.13		.00
20		.04		.04		.53		.00		.00		.00		.00		.00		.00		.37		.00		.00
21		.11		.34		.00		.00		.00		.04		.00		.00		.00		.08		.11		.59
22		1.60		.00		.00		.00		.00		.00		.00		.00		.00		.00		.00		.00
23		.20		3.38		.00		.00		.00		.00		.00		.84		.00		.00		.00		.00
24		.12		.00		.00		.00		.00		.36		1.20		.14		.00		.00		.00		.55
25		.43		1.16		.42		.00		.00		.66		1.25		1.11		.15		.00		.26		.00
26		.39		1.16		.00		.00		.00		.28		.00		.00		.31		.00		.00		.01
27		.28		.49		.00		.24		.00		.00		.00		.00		.00		.00		.00		.00
28		.00		.00		.00		.16		.00		.00		.04		.00		.00		.00		.00		.24
29		.00		---		.00		.00		.12		.14		.00		.00		.00		.00		.00		.15
30		.00		---		.00		.54		1.76		.00		.00		.36		.00		.00		.00		.00
31		.00		---		.19		.00		.00		.00		.24		.00		.00		.00		.00		.00
TOTAL		5.81		7.96		3.03		3.88		2.18		5.43		4.11		2.62		5.83		2.02		1.53		1.64
STA AV		4.29		5.28		4.44		4.39		3.68		4.19		4.10		2.75		5.29		2.64		4.88		4.56

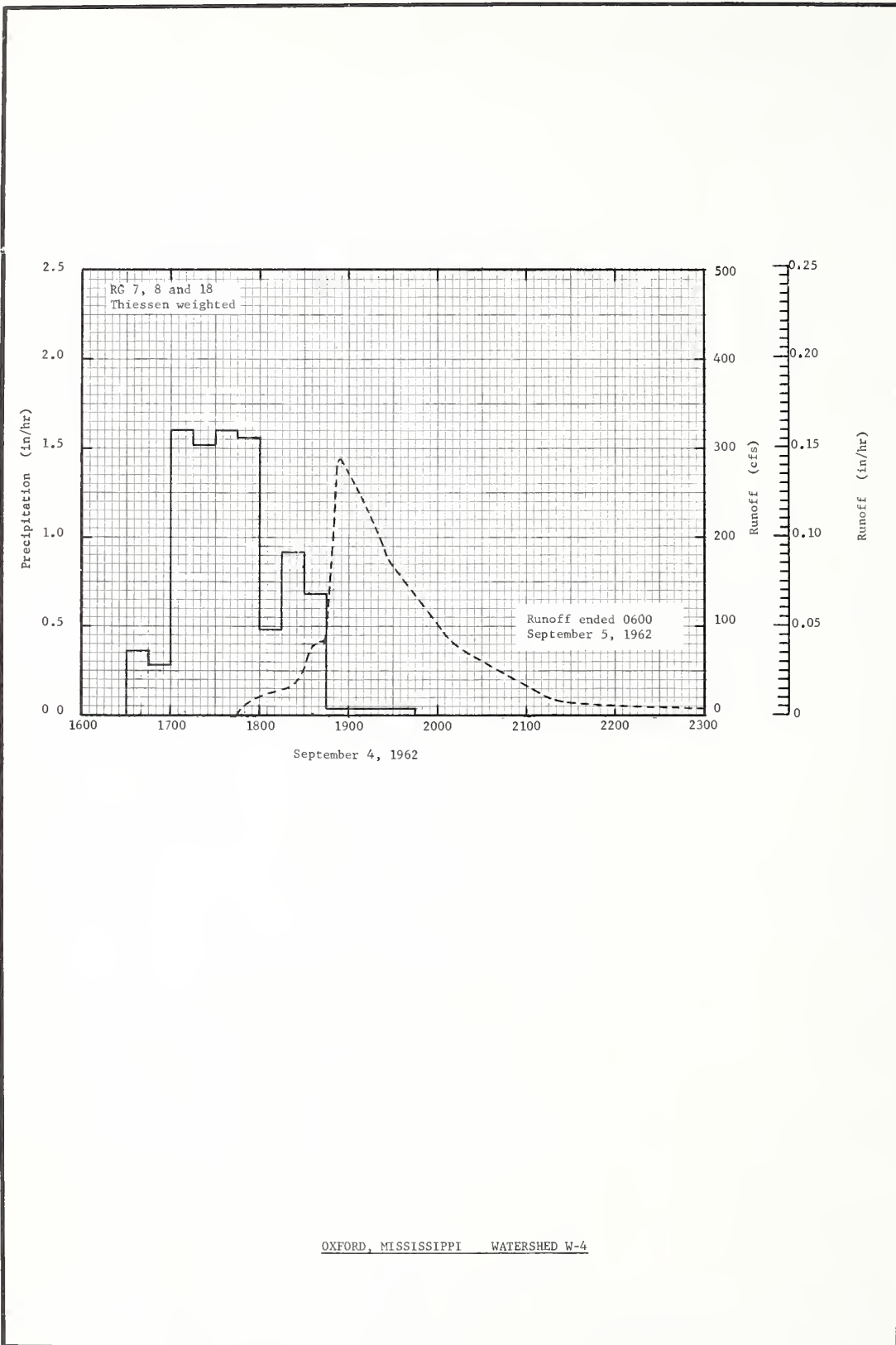
NOTES: DAILY PRECIPITATION VALUES ARE THIESSEN WEIGHTED FROM RAIN GAGES 7, 8, AND 18. STA AV FOR 6-YR 1957-62.

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI WATERSHED W-4 62-01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.49	.49	1.60	.03	.03	5.79	.00	.00	.00	.00	.00	.00
2	.33	.45	1.21	.00	.00	.79	.00	.00	.00	.00	.00	.00
3	.23	.29	.81	.00	.00	2.40	.00	.00	.00	.00	.00	.00
4	.05	.09	.57	.00	.00	16.05	.00	.00	15.60	.00	.00	.00
5	14.59	.50	.45	.00	.00	.01	.00	.00	.29	.00	.00	.00
6	4.58	.00	.36	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	1.23	.04	.15	.00	.00	.00	.05	.00	.00	.00	.00	.00
8	.85	.22	.55	.00	.00	.36	.00	.00	1.95	.00	.00	.00
9	.85	.10	.39	.00	.00	.00	.00	.00	2.82	.00	.00	.00
10	.85	.00	.32	.08	.00	.00	.00	.00	.00	.00	.00	.00
11	.85	.00	.17	44.31	.00	1.36	.00	.00	.00	.00	.00	.00
12	.85	.00	.00	6.11	.00	.07	.00	.00	.00	.00	.00	.00
13	.56	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00
14	22.12	.00	.00	.52	.00	.00	.00	.00	.00	.00	.00	.00
15	14.22	.05	.00	.32	.00	.00	.00	.00	.13	.00	.00	.00
16	.90	.01	.00	.04	.00	.00	.00	.00	1.97	.94	.00	.00
17	.85	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.85	.43	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.85	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.85	.00	.18	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.49	.24	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	37.81	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	12.01	146.43	.00	.00	.00	.00	.00	1.44	.00	.00	.00	.00
24	1.62	6.27	.00	.00	.00	.00	.63	.00	.00	.00	.00	.00
25	4.05	35.67	.11	.00	.00	.00	6.40	4.74	.00	.00	.00	.00
26	2.22	44.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	3.64	24.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	1.27	4.65	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.68	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.53	-----	.49	.00	.68	.00	.00	.00	.00	.00	.00	.00
31	.49	-----	8.63	-----	.00	-----	.00	.00	-----	.00	-----	.00
MEAN	4.28	9.43	.51	1.73	.02	.89	.23	.20	.76	.03	.00	.00
INCHES	1.58	3.14	.19	.62	.01	.32	.08	.07	.27	.01	.00	.00

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.01190. RECORDS ARE FAIR.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-4 62-01						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
Watershed conditions: 22% of area in mature cotton and corn, fair to good cover; 10% in pasture, fair to good cover; 32% idle, fair to good cover; 34% in woods, good cover; 2% in bare gullies.			Event of September 4-5, 1962 ^{3/}										
			9-4	1/2 / .09	.0000	9-4	1638	.00	.00	9-4	1744	.00	.0000
							1644	.50	.05		1756	19.50	.0009
							1703	.22	.12		1824	34.83	.0071
							1713	.78	.25		1836	81.65	.0129
							1723	1.68	.53		1844	86.68	.0184
							1743	1.83	1.14		1854	290.00	.0338
							1758	1.64	1.55		1914	230.00	.0764
							1803	.96	1.63		1926	177.68	.0964
							1813	.06	1.64		2012	80.00	.1450
							1833	.84	1.92		2118	18.02	.1715
							1843	.42	1.99		2244	7.66	.1805
							1951	.04	2.04		2400	3.31	.1840
							RG	18		9-5	0304	.60	.1869
						9-4	1643		.00		0600	.00	.1873
							1959		3.05				
						9-4	3 RG	AVG 1/4/					
							1630	.00	.00				
							1645	.36	.09				
							1700	.28	.16				
				1715	1.60	.56							
				1730	1.52	.94							
				1745	1.60	1.34							
				1800	1.56	1.73							
				1815	.48	1.85							
				1830	.92	2.08							
				1845	.68	2.25							
				1900	.04	2.26							
				1915	.04	2.27							
				1930	.04	2.28							
				1945	.04	2.29							

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.000496. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.1-4. 1/ RAIN GAGES 7, 8, AND 18 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1200 ON SEPT. 4, 1962. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 3/ ISOHYETAL MAP ON P. 62.11-5. 4/ RAINFALL FOR RAIN GAGE 8 LISTED ON P. 62.2-3.



OXFORD, MISSISSIPPI WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI							WATERSHED W-5 ^{1/} 62.02			
						AREA—1,130 ACRES (1.76 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{2/}	5.66	7.89	3.00	3.93	2.29	5.58	4.40	3.07	5.79	2.77	1.55	1.62	47.55			
Q	3.23	4.01	.42	1.36	.01	.58	.16	.14	.47	.20	.00	.00	10.58			
STA AV ^{3/} P	4.36	5.15	4.39	4.74	3.72	4.33	3.90	3.10	4.84	2.55	4.87	4.55	50.50			
(57-62) Q	1.81	1.91	1.30	1.17	.54	.54	.17	.12	.43	.20	1.02	1.15	10.36			
MEAN P ^{4/} / 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.90	2-23	.80	2-23	1.29	2-23	1.69	2-23	1.98	2-23	2.25	2-23	2.25	2-23	3.97
MAXIMUMS FOR PERIOD OF RECORD																
1957 to 1962	2-23 1962	.90	2-23 1962	.80	2-23 1962	1.29	11-13 1957	1.76	11-13 1957	2.26	1-31 1957	2.48	1-30 1957	3.72	1-27 1957	5.25
NOTES: Quality of records: P, good; Q, good. Watershed conditions: About 26% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 51% in pasture and idle land, good cover April to October with fair cover remainder of year; 21% in woods; 2% in bare gullies. 1/ About 10% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 8 and 19. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.																
Type	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage							
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Ruston fine sandy loam to sandy clay loam	58	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid							
Providence silt loam and silty clay loam	15	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Grenada silt loam	12	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
Loring silt loam to silty clay loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
Collins silt loam	7	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid							
GEOLOGY: Approximately 88% of the surface area is occupied by the Kosciusko formation, 10% by the Tallahatta formation and 2% is valley alluvium. A normal westerly dip of about 8 to 10 feet per mile has been increased slightly and changed to a south-southwesterly direction by a fault along the southern boundary of the watershed. The ground-water gradient which occurs at depths in excess of 50 feet below the stream channel has been similarly affected. Perched water bodies are known to exist above the permanent water table but the areal extent or probable effect of these on the watershed hydrology has not been determined. A more detailed description of the geologic formations and ground-water conditions is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.																

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-5		62.02
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.00	.00	.00	.00	.16	1.13	.00	.00	.00	.17	.00	.00			
2	.00	.00	.00	.00	.00	.55	.00	.16	.00	.00	.00	.00			
3	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.02	.00			
4	.00	.00	.00	.00	.00	1.39	.00	.00	2.08	.00	.00	.00			
5	1.24	.25	.00	.10	.00	.00	.86	.00	.00	.00	.00	.04			
6	.02	.00	.00	.15	.00	.00	.43	.00	.00	.00	.00	.00			
7	.00	.00	.00	.00	.00	.51	.00	.00	.00	.61	.00	.00			
8	.00	.05	.48	.20	.00	.00	.00	.00	.58	.00	.20	.00			
9	.09	.00	.03	.00	.00	.09	.00	.00	.98	.00	.00	.00			
10	.00	.00	.24	.54	.00	.03	.00	.00	.00	.00	.00	.00			
11	.00	.00	.03	1.79	.00	.03	.34	.00	.00	.00	.31	.00			
12	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00			
13	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00			
14	.99	.00	.00	.00	.00	.00	.00	.00	.87	.00	.00	.00			
15	.09	.54	.00	.00	.00	.00	.00	.00	.64	.08	.00	.00			
16	.00	.00	.00	.00	.19	.00	.00	.00	.10	1.41	.00	.00			
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45	.08			
18	.00	.50	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00			
19	.05	.00	.00	.00	.00	.06	.00	.00	.00	.00	.11	.00			
20	.04	.05	.52	.00	.00	.00	.00	.00	.00	.41	.00	.00			
21	.07	.30	.00	.00	.00	.05	.00	.00	.00	.09	.13	.59			
22	1.66	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
23	.24	3.31	.00	.00	.00	.00	.00	1.88	.00	.00	.00	.00			
24	.10	.00	.00	.00	.00	.17	1.31	.16	.00	.00	.00	.51			
25	.40	1.05	.42	.00	.00	.68	1.28	.62	.14	.00	.28	.00			
26	.41	1.35	.00	.00	.00	.11	.00	.00	.35	.00	.00	.03			
27	.26	.45	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00			
28	.00	.00	.00	.14	.00	.00	.05	.00	.00	.00	.00	.24			
29	.00	-----	.00	.00	.15	.28	.00	.00	.00	.00	.00	.13			
30	.00	-----	1.05	.65	1.79	.00	.00	.25	.00	.00	.00	.00			
31	.00	-----	.23	-----	.00	-----	.13	.00	-----	.00	-----	.00			
TOTAL	5.66	7.89	3.00	3.93	2.29	5.58	4.40	3.07	5.79	2.77	1.55	1.62			
STA AV	4.36	5.15	4.39	4.74	3.72	4.33	3.90	3.10	4.84	2.55	4.87	4.55			

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES ARE THIESSEN WEIGHTED FROM RAIN GAGES 8 AND 19. STA AV FOR 6-YR 1957-62.

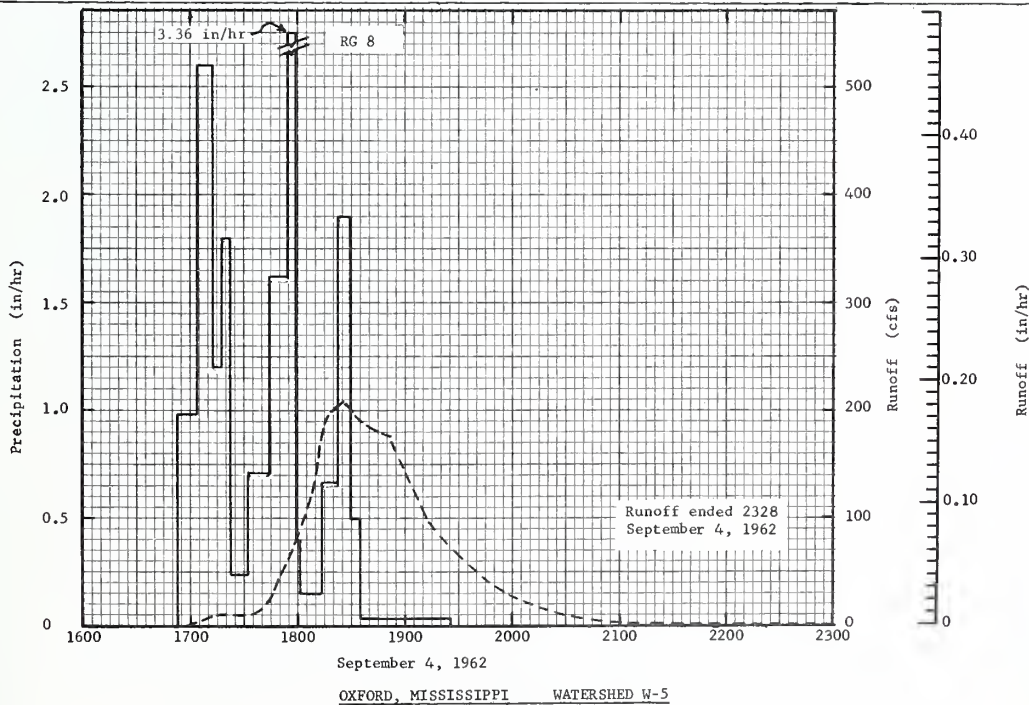
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-5		62.02
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	2.71	.30	.60	.74	.54	5.76	.00	.00	.00	.00	.00	.00			
2	.55	.23	.20	.97	.01	1.83	.00	.00	.00	.00	.00	.00			
3	.36	.20	.11	.68	.00	2.24	.00	.00	.00	.00	.00	.00			
4	.23	.27	.04	.14	.00	15.17	.00	.00	11.85	.00	.00	.00			
5	23.94	.21	.04	.14	.00	.21	2.28	.00	.00	.00	.00	.00			
6	7.84	.12	.05	.13	.00	.00	.18	.00	.02	.00	.00	.00			
7	1.04	.18	.02	.13	.00	.00	.21	.00	.02	.05	.00	.00			
8	.46	.22	.28	.16	.00	.29	.00	.00	.85	.00	.00	.00			
9	.49	.18	.31	.18	.00	.00	.00	.00	4.02	.00	.00	.00			
10	.49	.08	.33	.42	.00	.00	.00	.00	.01	.00	.00	.00			
11	.49	.00	.05	45.69	.00	.00	.00	.00	.00	.00	.00	.00			
12	.49	.00	.00	12.24	.00	.00	.00	.00	.00	.00	.00	.00			
13	.35	.00	.00	1.16	.00	.00	.00	.00	.00	.00	.00	.00			
14	11.74	.00	.01	.39	.00	.00	.00	.00	3.73	.00	.00	.00			
15	15.55	.09	.02	.10	.00	.00	.00	.00	.69	.00	.00	.00			
16	.81	.02	.02	.08	.00	.00	.00	.00	1.22	9.26	.00	.00			
17	.43	.00	.02	.11	.01	.00	.00	.00	.00	.01	.00	.00			
18	.43	.35	.02	.11	.00	.00	.00	.00	.00	.00	.00	.00			
19	.43	.08	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00			
20	.25	.00	.38	.09	.00	.00	.00	.00	.00	.00	.00	.00			
21	.07	.09	.24	.14	.00	.00	.00	.00	.00	.01	.00	.00			
22	31.21	.03	.00	.11	.00	.00	.00	.00	.00	.00	.00	.00			
23	6.57	106.05	.00	.06	.00	.00	.00	6.27	.00	.00	.00	.00			
24	3.13	.51	.01	.10	.00	.00	.95	.06	.00	.00	.00	.00			
25	12.86	27.49	.19	.14	.00	.00	3.86	.22	.00	.00	.00	.00			
26	8.07	27.90	.02	.12	.00	.00	.00	.02	.00	.00	.00	.00			
27	14.15	20.50	.02	.10	.00	.00	.00	.00	.00	.00	.00	.00			
28	5.81	4.68	.04	.08	.00	2.07	.00	.00	.00	.00	.00	.00			
29	1.10	-----	.06	.08	.00	.00	.00	.00	.00	.00	.00	.00			
30	.43	-----	1.17	.08	.09	.00	.00	.01	.00	.00	.00	.00			
31	.40	-----	15.90	-----	.00	-----	.00	.00	-----	.00	-----	.00			
MEAN	4.93	6.77	.65	2.15	.02	.92	.24	.21	.75	.30	.00	.00			
INCHES	3.23	4.01	.42	1.36	.01	.58	.16	.14	.47	.20	.00	.00			

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.02106. QUALITY OF RECORDS: GOOD.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI			WATERSHED W-5 62-02				
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of September 4, 1962 3/							
9-4	1/2/.14	.0000	9-4		RG 8		9-4			
					1652	.00	.00	1658	.00	.0000
					1703	.98	.18	1714	10.51	.0012
					1712	2.60	.57	1734	9.07	.0040
					1717	1.20	.67	1744	26.15	.0066
					1722	1.80	.82	1756	66.00	.0147
					1732	.24	.86	1804	105.60	.0247
					1743	.71	.99	1816	198.00	.0514
					1753	1.62	1.26	1826	208.50	.0812
					1758	3.36	1.54	1836	189.00	.1103
					1801	.40	1.56	1852	178.50	.1534
					1813	.15	1.59	1914	94.79	.1974
					1822	.67	1.69	1952	36.00	.2338
					1828	1.90	1.88	2018	14.76	.2435
					1834	.50	1.93	2058	2.63	.2486
					1926	.03	1.96	2144	.49	.2496
					RG 19			2246	.09	.2499
			9-4		1654		.00	2328	.00	.2499
					2011		1.86			
					2 RG	AVG 1/				
			9-4		1645	.00	.00			
					1700	.64	.16			
					1715	1.92	.64			
					1730	.88	.86			
					1745	.80	1.06			
					1800	1.96	1.55			
					1815	.24	1.61			
					1830	1.12	1.89			
					1845	.16	1.93			
					1900	.04	1.94			
					1915	.04	1.95			
					1930	.01	1.95			

Watershed conditions: 26% of area in mature cotton and corn, fair to good cover; 30% in pasture, fair to good cover; 21% idle, fair to good cover; 21% woods, good cover; 2% in bare gullies.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.000878. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, ARS, SWC, JANUARY 1960, P. 62.2-3. 1/ RAIN GAGES 8 AND 19 THIESEN WEIGHTED. 2/ RAINFALL PRIOR TO 1145 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ ISOHYETAL MAP ON P. 62.11-5.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI		WATERSHED W-10 ¹ / ₁		62.03						
						AREA—5,530 ACRES		(8.64 SQ. MILES)								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ² / _Q	5.85	7.14	2.77	3.99	2.10	5.22	4.51	2.23	4.85	3.65	1.83	1.62	45.76			
	2.51	3.55	.24	.87	.05	.27	.28	.03	.26	.66	.00	.00	8.72			
STA AV ³ / _P	4.41	5.36	4.46	4.78	4.15	4.27	4.17	2.91	4.86	2.58	4.89	4.76	51.60			
(57-62) Q	1.36	1.69	1.09	1.10	.72	.32	.27	.20	.52	.18	.81	.94	9.20			
MEAN P ⁴ / _{43 YR}	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	1.12	2-23	1.00	2-23	1.61	2-23	2.13	2-23	2.39	2-23	2.58	2-23	2.65	2-23	3.40
MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO	2-23	1.12	2-23	1.00	2-23	1.61	2-23	2.13	2-23	2.39	2-23	2.58	1-30	2.98	1-27	4.08
19 62	1962		1962		1962		1962		1962		1962		1957		1957	
NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 20% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 62% in pasture and idle land, good cover April to October with fair cover remainder of year; 15% in woods, 3% in bare gullies. 1/ About 12% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from gages 13, 14, 20, 24, and 26. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.																
Type	Per-cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage							
			Structure	Perme-ability	Structure	Perme-ability	Avg. depth to(in.)	Perme-ability								
Ruston fine sandy loam to sandy clay loam	50	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid							
Gollins silt loam	16	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid							
Providence silt loam and silty clay loam	14	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Loring silt loam to silty clay loam	12	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
Grenada silt loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
GEOLOGY: About 80% of the watershed is in the Kosciusko formation, 15% is in the Tallahatta formation, and 5% is valley alluvial material. In the western half of the watershed the stratigraphic section and the ground-water piezometric surface have a normal westerly dip of about 8 to 10 feet per mile. Both dip and piezometric gradient have been changed to a southerly direction in the southern one-half by a fault along the southern boundary of Watersheds W-4, W-5, and W-35. Ground water occurs within a few feet of the stream channel at the gaging station. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.																
TOPOGRAPHIC MAP: (Revision) Elevation of stream bed at W-10 gaging station should read 397 ft. above MSL, rather than 454 ft. as shown on map, page 62.3-3 in USDA Misc. Pub. 945 for 1956-59.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1962 DAILY PRECIPITATION (inches)					OXFORD, MISSISSIPPI WATERSHED W-10 62.03							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.18	.37	.00	.00	.02	.47	.00	.00
2	.00	.00	.00	.00	.00	.68	.13	.33	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.79	.00	.00	.00	.00	.03	.00
4	.00	.00	.00	.00	.00	.59	.00	.00	1.78	.00	.00	.00
5	.94	.24	.00	.12	.00	.00	.83	.00	.00	.00	.00	.05
6	.04	.00	.00	.12	.00	.00	.09	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.08	.00	.00	.00	.69	.00	.00
8	.00	.05	.52	.17	.00	.12	.00	.00	.38	.00	.21	.00
9	.17	.00	.02	.00	.00	.02	.00	.00	.91	.00	.00	.00
10	.00	.00	.29	.66	.00	.29	.00	.00	.00	.00	.00	.00
11	.00	.00	.01	1.47	.00	.78	.31	.00	.00	.00	.41	.00
12	.00	.00	.00	.14	.00	.01	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
14	1.14	.00	.00	.00	.00	.00	.00	.00	.96	.00	.00	.00
15	.07	.52	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00
16	.00	.00	.00	.00	.02	.00	.00	.00	.11	1.89	.00	.03
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.52	.02
18	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00
19	.05	.00	.00	.00	.00	.09	.00	.00	.00	.00	.14	.00
20	.05	.08	.51	.00	.00	.00	.00	.00	.00	.51	.00	.00
21	.14	.31	.00	.00	.00	.05	.00	.00	.00	.09	.14	.54
22	1.77	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.21	3.50	.00	.00	.00	.00	.00	.19	.00	.00	.00	.00
24	.11	.00	.00	.00	.00	.44	1.51	.62	.00	.00	.00	.53
25	.41	.87	.33	.00	.00	.58	1.43	.83	.14	.00	.33	.00
26	.49	.68	.00	.00	.00	.13	.00	.00	.40	.00	.00	.02
27	.26	.38	.00	.30	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.04	.00	.00	.11	.00	.00	.00	.00	.27
29	.00	-----	.00	.00	.39	.20	.00	.00	.00	.00	.00	.16
30	.00	-----	.91	.97	1.51	.00	.00	.21	.00	.00	.00	.00
31	.00	-----	.18	-----	.00	-----	.10	.05	-----	.00	-----	.00
TOTAL	5.85	7.14	2.77	3.99	2.10	5.22	4.51	2.23	4.85	3.65	1.83	1.62
STA AV	4.41	5.36	4.46	4.78	4.15	4.27	4.17	2.91	4.86	2.58	4.89	4.76

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES ARE THIESSEN WEIGHTED FROM RAIN GAGES 13, 14, 20, 24, AND 26. STA AV FOR 6-YR 1957-62.

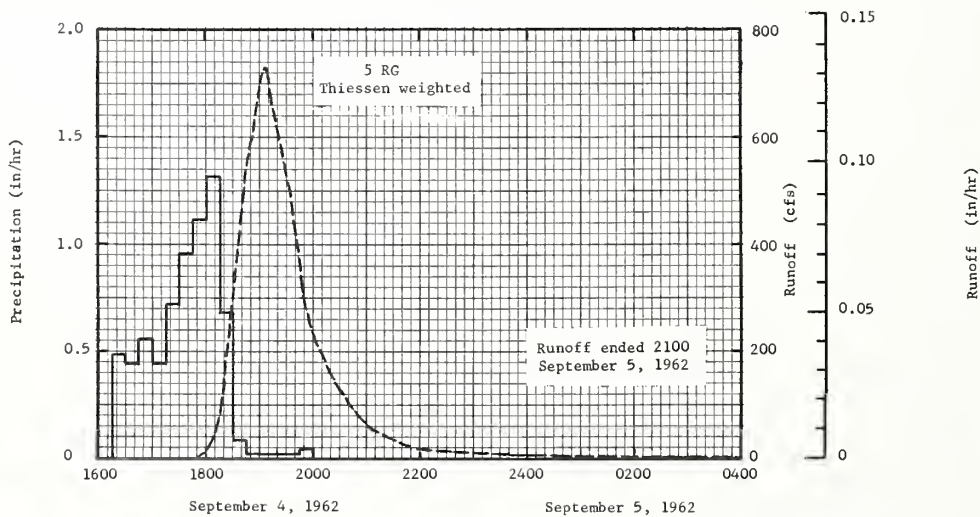
1962 MEAN DAILY DISCHARGE (cfs)					OXFORD, MISSISSIPPI WATERSHED W-10 62.03							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	18.77	1.62	2.65	1.41	10.63	.62	.00	.00	.00	.00	.00	.00
2	2.40	1.39	2.50	.42	.03	4.27	.00	.00	.00	.00	.00	.00
3	2.68	.97	2.26	.18	.01	5.68	.00	.00	.00	.00	.00	.00
4	2.02	.73	2.01	.10	.01	18.26	.00	.00	42.78	.00	.00	.00
5	36.02	1.37	1.59	.29	.00	.25	6.67	.00	.42	.00	.00	.00
6	13.21	1.15	1.10	.33	.00	.03	.00	.00	.00	.00	.00	.00
7	4.41	.68	.74	.16	.00	.02	.00	.00	.00	.97	.00	.00
8	1.26	.79	1.28	.22	.00	.05	.00	.00	.00	.00	.00	.00
9	.97	.84	.71	.19	.00	.04	.00	.00	5.12	.00	.00	.00
10	1.32	.68	1.04	3.85	.00	.02	.00	.00	.02	.00	.00	.00
11	1.46	.63	.90	140.39	.00	32.15	.00	.00	.00	.00	.00	.00
12	1.10	.68	.67	35.25	.00	1.04	.00	.00	.00	.00	.00	.00
13	.97	.73	.37	6.79	.00	.00	.00	.00	.00	.00	.00	.00
14	68.97	.68	.31	3.66	.00	.00	.00	.00	11.47	.00	.00	.00
15	62.26	2.34	.29	2.02	.00	.00	.00	.00	.00	.00	.00	.00
16	7.28	.98	.24	1.35	.00	.00	.00	.00	.00	151.87	.00	.00
17	2.82	.37	.24	.90	.00	.00	.00	.00	.00	.95	.01	.00
18	1.63	12.16	.22	.84	.00	.00	.00	.00	.00	.21	.01	.00
19	1.45	3.99	.29	.68	.00	.00	.00	.00	.00	.08	.00	.00
20	1.45	.97	1.84	.44	.00	.00	.00	.00	.00	.02	.00	.00
21	1.73	3.88	1.01	.29	.00	.00	.00	.00	.00	.00	.00	.00
22	145.48	1.92	.31	.17	.00	.00	.00	.00	.00	.00	.00	.00
23	64.98	596.39	.27	.08	.00	.00	.00	.80	.00	.00	.00	.00
24	16.60	18.53	.27	.18	.00	.00	.96	.02	.00	.00	.00	.00
25	38.46	76.30	.27	.20	.00	.00	48.02	7.16	.00	.00	.00	.00
26	24.78	43.72	.22	.14	.00	.00	.00	.00	.00	.00	.00	.00
27	33.07	46.15	.22	.14	.00	.00	.00	.00	.00	.00	.00	.00
28	13.89	4.68	.16	.09	.00	.00	.00	.00	.00	.00	.00	.00
29	5.81	-----	.18	.01	.00	.00	.00	.00	.00	.00	.00	.00
30	3.90	-----	1.89	1.01	1.73	.00	.00	.00	.00	.00	.00	.00
31	1.93	-----	28.76	-----	.02	-----	.00	.00	-----	.00	-----	.00
MEAN	18.80	29.47	1.76	6.72	.40	2.08	2.08	.26	1.99	4.97	.00	.00
INCHES	2.51	3.55	.24	.87	.05	.27	.28	.03	.26	.66	.00	.00

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0043041. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-10		62-03	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of September 4-5, 1962 ^{3/}							
9-4	1 1/2 / .04	.0000	RG 13				9-4	1738	.00	.0000
			9-4	1634	.00	.00				
				1652	1.67	.50		1758	9.22	.0001
				1703	.33	.56		1816	87.84	.0027
				1710	1.20	.70		1832	345.64	.0131
				1723	.05	.71				
				1733	.90	.86		1846	562.00	.0320
				1744	.98	1.04		1906	730.00	.0706
				1807	.76	1.33		1914	651.64	.0871
				1823	1.42	1.71		1932	503.13	.1182
				1829	.50	1.76		1946	337.68	.1357
				1843	.17	1.80		1954	260.00	.1429
				1951	.02	1.82		2028	135.51	.1629
				RG	14			2104	59.19	.1734
			9-4	1634		.00		2158	19.67	.1798
				1951		1.96		2334	6.06	.1834
				RG	20			2400	5.07	.1839
			9-4	1645		.00		0304	.50	.1854
				2000		1.52		0602	.07	.1856
				RG	24			0918	.02	.1856
			9-4	1647		.00		1328	.05	.1856
				2002		1.58		1758	.01	.1857
			9-4	5 RG	AVG 1/4/			2100	.00	.1857
				1615		.00				
				1630		.48				
				1645		.44				
				1700		.56				
				1715		.44				
				1730		.72				
				1745		.96				
				1800		1.12				
				1815		1.32				
				1830		.68				
				1845		.08				
				1900		.02				
				1915		.02				
				1930		.02				
				1945		.02				
				2000		.04				

Watershed conditions: 20% of area in mature cotton and corn, fair cover; 9% in pasture and 53% idle, fair to good cover; 15% in woods, good cover; 3% in bare gullies.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0001793. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.3-3. 1/ RAIN GAGES 13, 14, 20, 24, AND 26 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1156 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ ISOHYETAL MAP ON P. 62.11-5. 4/ RAINFALL FOR GAGE 26 LISTED ON P. 62.10-3.



OXFORD, MISSISSIPPI WATERSHED W-10

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI							WATERSHED W-12 ^{1/}		62.04	
						AREA—22,800 ACRES (35.6 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{2/}	5.92	7.31	2.81	3.52	2.16	5.68	4.77	2.43	4.81	2.88	1.72	1.49	45.50			
Q	1.80	2.98	.34	.73	.04	.35	.29	.03	.15	.11	.01	.02	6.85			
STA AV ^{3/} /P	4.35	5.19	4.36	4.40	3.78	4.42	4.10	2.98	4.78	2.60	4.82	4.53	50.31			
(57-62) Q	.97	1.22	.75	.64	.38	.30	.18	.07	.26	.09	.48	.68	6.02			
MEAN P ^{4/} 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.35	2-23	.35	2-23	.68	2-23	1.38	2-23	1.62	2-23	1.84	2-23	1.88	2-23	2.98
MAXIMUMS FOR PERIOD OF RECORD																
19 57 to	2-23	.35	2-23	.35	2-23	.68	2-23	1.38	2-23	1.62	2-23	1.84	1-30	2.28	1-27	3.07
19 62	1962		1962		1962		1962		1962		1962		1957		1957	
NOTES: Quality of records: P, good; Q, good. Watershed conditions: About 20% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 52% in pasture and idle land, good cover April to October with fair cover remainder of year; 23% in woods; 2% in bare gullies; 3% urban. 1/ About 15% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 15 rain gages. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material; soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.																
Type	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage							
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Ruston fine sandy loam to sandy clay loam	52	0-4	Weak fine crumb	Moderate- ly rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderate- ly rapid	Rapid							
Gollins silt loam	20	0-8	Weak fine granular	Moderate- ly rapid	-----	----	6	Moderate- ly rapid	Rapid							
Providence silt loam and silty clay loam	13	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Grenada silt loam	9	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
Loring silt loam to silty clay loam	6	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
GEOLOGY: About 56% of the surface area is occupied by the Kosciusko formation, 26% by the Tallahatta formation and 18% is valley alluvial material. The alluvial valleys are relatively wide and flat. The stratigraphic and piezometric gradient dip of about 8 to 10 feet per mile is westerly over most of the watershed. Structural and stratigraphic interferences affecting the southern portion are described under Sub-watersheds W-4, W-5, and W-28. Base flow from ground water is essentially continuous at the gaging station. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map, page 62.11-4.																

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI						WATERSHED W-12		62-04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.18	.74	.00	.00	.01	.36	.00	.00		
2	.00	.00	.00	.00	.00	.49	.01	.33	.01	.00	.01	.00		
3	.00	.00	.00	.00	.00	.42	.00	.00	.00	.00	.03	.00		
4	.00	.00	.00	.00	.00	1.26	.00	.00	1.87	.00	.00	.00		
5	1.15	.21	.00	.11	.00	.00	.54	.00	.00	.00	.00	.05		
6	.03	.00	.00	.15	.00	.00	.60	.00	.00	.00	.00	.00		
7	.00	.00	.00	.00	.00	.12	.00	.00	.00	.64	.00	.00		
8	.00	.05	.48	.20	.00	.11	.00	.00	.37	.00	.21	.00		
9	.16	.00	.04	.00	.00	.01	.00	.00	.79	.00	.00	.00		
10	.00	.00	.27	.81	.00	.31	.00	.00	.00	.00	.00	.00		
11	.00	.00	.02	1.18	.00	.37	.52	.00	.00	.00	.41	.00		
12	.00	.00	.00	.10	.00	.11	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00		
14	1.07	.00	.00	.00	.00	.00	.00	.00	.71	.19	.00	.00		
15	.08	.51	.00	.00	.00	.00	.00	.00	.41	.06	.00	.00		
16	.00	.00	.00	.00	.07	.00	.00	.00	.05	1.22	.00	.01		
17	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.47	.04		
18	.00	.55	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00		
19	.05	.00	.00	.00	.00	.12	.00	.00	.00	.00	.14	.00		
20	.05	.05	.51	.00	.00	.00	.00	.00	.00	.34	.00	.00		
21	.12	.34	.00	.00	.00	.02	.00	.00	.00	.07	.13	.51		
22	1.77	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	.15	3.27	.00	.00	.00	.00	.00	.52	.00	.00	.00	.00		
24	.12	.00	.00	.00	.00	.55	1.40	.23	.01	.00	.00	.48		
25	.46	.90	.36	.00	.00	.56	1.42	1.04	.16	.00	.27	.00		
26	.44	1.06	.00	.00	.00	.24	.00	.00	.35	.00	.00	.02		
27	.27	.37	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00		
28	.00	.00	.00	.07	.00	.00	.02	.00	.00	.00	.00	.22		
29	.00	-----	.00	.00	.13	.25	.00	.00	.00	.00	.00	.16		
30	.00	-----	.96	.66	1.78	.00	.00	.29	.00	.00	.00	.00		
31	.00	-----	.17	-----	.00	-----	.26	.02	-----	.00	-----	.00		
TOTAL	5.92	7.31	2.81	3.52	2.16	5.68	4.77	2.43	4.81	2.88	1.72	1.49		
STA AV	4.35	5.19	4.36	4.40	3.78	4.42	4.10	2.98	4.78	2.60	4.82	4.53		

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION THIESSEN WEIGHTED FROM RAIN GAGES 4-9, 13, 15, 18, 19, 20, 25, 29, 30, AND 31. STA AV FOR 6-YR 1957-62.

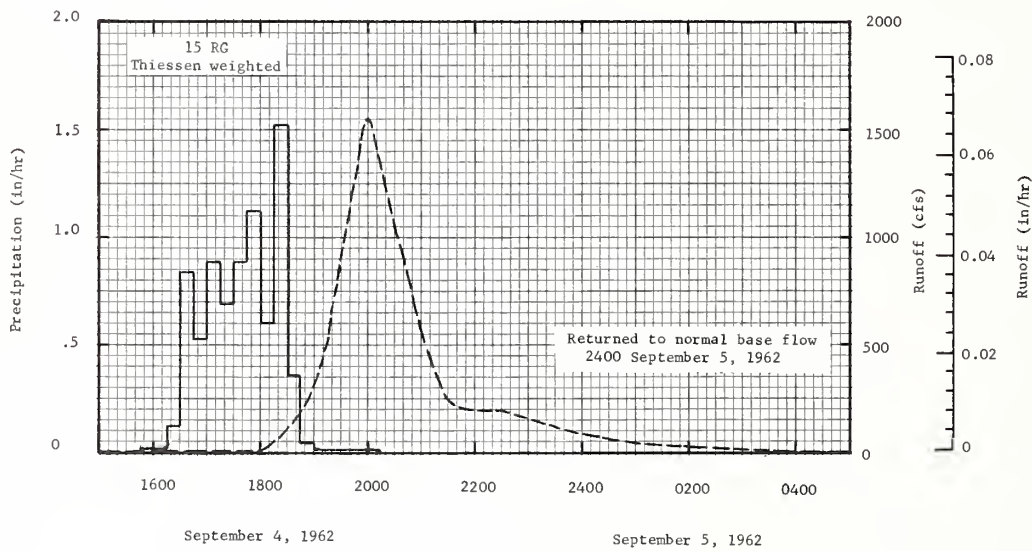
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI						WATERSHED W-12		62-04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	39.92	6.66	16.35	5.23	7.64	24.99	.79	.29	.60	1.28	.38	.33		
2	15.19	2.31	12.35	2.15	2.01	21.12	.72	.86	.54	.68	.33	.33		
3	9.45	2.46	10.68	2.00	1.73	19.05	.54	.25	.60	.43	.33	.38		
4	7.32	2.30	9.36	2.00	1.73	175.05	.38	.33	114.02	.43	.38	.43		
5	148.41	2.46	7.68	2.15	1.73	4.96	5.17	.33	6.08	.43	.38	.43		
6	58.64	2.62	7.08	2.46	1.73	.63	13.36	.33	.38	.43	.54	.43		
7	17.18	2.46	8.16	2.46	1.73	.33	11.16	.38	.29	.91	.54	.43		
8	9.45	2.30	7.88	2.46	1.61	.77	.74	.43	.21	.43	.49	.43		
9	5.66	2.30	7.59	2.98	1.39	.48	.54	.34	3.05	.43	.43	.43		
10	3.94	2.30	21.03	12.64	1.19	.43	.54	.21	.16	.43	.49	.49		
11	4.15	2.46	18.72	445.62	1.02	38.83	.91	.14	.03	.43	.74	.49		
12	4.15	2.31	2.97	147.68	.93	5.93	1.11	.10	.03	.43	.68	.49		
13	3.94	1.87	2.48	14.60	1.02	1.72	.80	.21	.02	.43	.43	.54		
14	95.61	1.73	2.00	8.52	1.10	1.02	.66	.38	5.00	.43	.43	.54		
15	245.58	1.50	2.00	6.52	1.10	.93	.66	.43	.09	.43	.43	.54		
16	11.51	1.50	2.15	5.75	1.19	.93	.60	.38	4.71	87.94	.43	.54		
17	6.10	1.50	1.79	4.62	.97	.93	.54	.38	.33	1.55	.61	.54		
18	3.53	11.43	1.64	3.73	.72	.93	.49	.43	.29	.21	.56	.54		
19	3.96	4.15	1.38	2.86	.72	.93	.43	.43	.24	.15	.38	.54		
20	4.36	1.09	2.38	2.00	.60	.93	.43	.54	.24	.23	.43	.54		
21	4.36	6.62	8.49	2.00	.54	.93	.38	.66	.24	.38	.43	.49		
22	401.22	4.40	1.38	2.00	.43	.93	.33	.72	.24	.33	.43	.43		
23	320.26	1731.42	1.61	2.00	.38	.93	.33	1.98	.24	.33	.49	.43		
24	39.13	68.81	1.61	2.00	.43	5.81	32.27	.20	.29	.33	.54	.49		
25	92.80	313.64	3.04	2.00	.43	4.48	195.56	11.69	.43	.38	.49	.49		
26	48.74	254.74	1.32	2.15	.43	7.10	2.15	2.86	.42	.43	.38	.49		
27	67.07	369.99	1.20	2.30	.43	3.47	.45	.60	.18	.43	.33	.54		
28	26.95	50.01	1.49	1.90	.43	7.73	.80	.79	.18	.43	.38	.54		
29	7.94	-----	1.49	1.39	.43	1.88	.74	.72	.18	.43	.38	.54		
30	6.97	-----	2.76	2.46	4.65	.79	.49	.66	.18	.43	.33	.54		
31	5.17	-----	155.82	-----	.23	-----	.42	.66	-----	.43	-----	.54		
MEAN	55.44	102.04	10.51	23.28	1.31	11.16	8.85	.92	4.64	3.30	.45	.48		
INCHES	1.80	2.98	.34	.73	.04	.35	.29	.03	1.15	.11	.01	.02		

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0010439. QUALITY OF RECORDS: GOOD.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-12				62.04
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4-5, 1962 ^{4/}											
9-4	<u>1/2/</u> .06	<u>3/</u> .0005	9-4	RG	29						
			1631		.00	.00	9- 4	1600	.43	.0000	
			1640		1.27	.19	1800	3.33	.0001		
			1648		.98	.32	1900	310.00	.0069		
			1700		.55	.43	1915	534.68	.0115		
			1733		.22	.55	2000	1554.00	.0456		
			1746		.37	.63	2100	560.00	.0916		
			1752		1.90	.82	2130	246.27	.1003		
			1805		.92	1.02	2200	199.76	.1052		
			1816		.60	1.13	2230	194.92	.1095		
			1820		3.30	1.35	2400	81.48	.1185		
			1826		5.00	1.85	9- 5	0100	44.31	.1212	
			1831		1.44	1.97	0200	21.99	.1227		
			1839		.45	2.03	0400	7.59	.1239		
			9-4	RG	4		0600	1.49	.1243		
			9-4	1607		.00	0800	.78	.1244		
			1857			.66	1400	.53	.1246		
			9-4	RG	5		2400	<u>6/</u> .43	.1248		
			9-4	1633		.00					
				1901		1.84					
				RG	9						
			9-4	1657		.00					
				2020		1.70					
			9-4	RG	25						
			9-4	1640		.00					
				2020		2.46					
				RG	31						
9-4	1550		.00								
	1858		.87								
	15 RG	AVG <u>1/5/</u>									
9-4	1545		.00								
	1600		.02								
	1615		.01								
	1630		.04								
	1645		.25								
	1700		.38								
	1715		.60								
	1730		.77								
	1745		.99								
	1800		1.27								
	1815		1.42								
	1830		1.70								
	1845		1.79								
	1900		1.80								
	1915		1.80								
	1930		1.80								
	1945		1.80								
	2000		1.81								
	2015		1.81								

Watershed conditions: 20% of area in mature cotton and corn, fair cover; 13% in pasture and 39% idle, fair to good cover; 23% in woods, good cover; 2% in bare gullies; 3% urban.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000435. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.4-6. ^{1/} RAIN GAGES 4-9, 13, 15, 18, 19, 20, 25, 29, 30, AND 31 THIESSEN WEIGHTED. ^{2/} RAINFALL PRIOR TO 1220 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. ^{3/} RUNOFF PRIOR TO 1600 ON 9-4-62. ^{4/} ISOHYETAL MAP ON P. 62.11-5. ^{5/} RAINFALL FOR GAGES 7 AND 18 LISTED ON P. 62.1-3; GAGES 8 AND 19 ON P. 62.2-3; GAGES 13 AND 20 ON P. 62.3-3; GAGE 15, P. 62.5-3; GAGE 30, P. 62.7-3; AND GAGE 6 ON P. 62.8-3. ^{6/} NORMAL BASE FLOW.



OXFORD, MISSISSIPPI WATERSHED W-12

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI						WATERSHED W-17 ^{1/}		62.05		
						AREA—32,100 ACRES (50.2 SQ. MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{2/}	6.08	7.16	2.74	3.43	2.15	5.49	4.87	2.56	4.45	3.22	1.74	1.49	45.38			
Q	2.45	3.07	.57	.82	.28	.54	.44	.26	.37	.39	.22	.23	9.64			
STA AV ^{3/} P	4.41	5.20	4.30	4.47	3.78	4.48	4.18	3.18	4.55	2.60	4.78	4.63	50.56			
(57-62) Q	1.28	1.50	1.12	.83	.66	.45	.36	.32	.44	.27	.75	.93	8.91			
MEAN P ^{4/} 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.21	2-23	.21	2-23	.41	2-23	1.12	2-23	1.50	2-23	1.69	2-23	1.74	2-23	2.80
MAXIMUMS FOR PERIOD OF RECORD																
1957 TO 19 62	2-23 1962	.21	2-23 1962	.21	2-23 1962	.41	2-23 1962	1.12	2-23 1962	1.50	2-23 1962	1.69	1-31 1957	1.96	1-28 1957	2.99
NOTES: Quality of records: P, good; Q, good. Watershed conditions: About 20% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 55% in pasture and idle land, good cover April to October with fair cover remainder of year; 21% in woods; 2% in bare gullies; 2% urban. ^{1/} About 18% of area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from 20 rain gages. ^{3/} Precipitation and runoff records began Jan. 1957. ^{4/} Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material; soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.																
Type	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil			Substratum		Internal drainage						
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Ruston fine sandy loam to sandy clay loam	49	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid							
Collins silt loam	21	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid							
Providence silt loam and silty clay loam	12	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Grenada silt loam	10	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
Loring silt loam to silty clay loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
GEOLOGY: About 54% of the surface area is occupied by the Kosciusko formation, 26% by the Tallahatta formation, and 20% by valley alluvial material. The alluvial valleys are relatively wide and flat. A major portion of the watershed has a westerly dip of the stratigraphic section and ground-water piezometric surface of about 8 to 10 feet per mile. Structural and stratigraphic interferences (see Sub-watersheds W-4, W-5, and W-28) have changed both the dip and ground-water gradient to a southerly direction in the southern and eastern parts of the watershed. Base flow from ground water is continuous at the gaging station. A more detailed description of the geological formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.																

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-17		62.05
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.00	.00	.00	.00	.19	.59	.00	.00	.01	.51	.00	.00			
2	.00	.00	.00	.00	.00	.52	.11	.32	.00	.00	.01	.00			
3	.00	.00	.00	.00	.00	.45	.00	.00	.00	.00	.03	.00			
4	.00	.00	.00	.00	.00	1.12	.00	.00	1.72	.00	.00	.00			
5	1.09	.19	.00	.12	.00	.00	.56	.00	.00	.00	.00	.05			
6	.03	.00	.00	.13	.00	.00	.62	.00	.00	.00	.00	.00			
7	.00	.00	.00	.00	.00	.14	.00	.00	.00	.67	.00	.00			
8	.00	.05	.46	.20	.00	.09	.00	.00	.30	.00	.21	.00			
9	.16	.00	.04	.00	.00	.01	.00	.00	.74	.00	.00	.00			
10	.00	.00	.28	.81	.00	.37	.00	.00	.00	.00	.00	.00			
11	.00	.00	.02	1.02	.00	.31	.51	.00	.00	.00	.40	.00			
12	.00	.00	.00	.10	.00	.10	.00	.00	.00	.00	.00	.00			
13	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00			
14	1.10	.00	.00	.00	.00	.00	.00	.00	.69	.14	.00	.00			
15	.08	.50	.00	.00	.00	.00	.00	.00	.32	.05	.00	.00			
16	.00	.00	.00	.00	.07	.00	.00	.00	.04	1.44	.00	.01			
17	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.48	.03			
18	.00	.54	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00			
19	.05	.00	.00	.00	.00	.14	.00	.00	.00	.00	.14	.00			
20	.05	.04	.50	.00	.00	.00	.00	.00	.00	.34	.00	.00			
21	.10	.36	.00	.00	.00	.02	.00	.00	.00	.07	.14	.51			
22	1.95	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
23	.16	3.36	.00	.00	.00	.00	.00	.39	.00	.00	.00	.00			
24	.13	.00	.00	.00	.00	.58	1.22	.48	.01	.00	.00	.47			
25	.47	.90	.33	.00	.00	.55	1.54	1.08	.17	.00	.28	.00			
26	.45	.86	.00	.00	.00	.30	.00	.00	.37	.00	.00	.03			
27	.26	.36	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00			
28	.00	.00	.00	.05	.00	.00	.02	.00	.00	.00	.00	.24			
29	.00	-----	.00	.00	.21	.20	.00	.00	.00	.00	.00	.15			
30	.00	-----	.94	.75	1.68	.00	.00	.23	.00	.00	.00	.00			
31	.00	-----	.17	-----	.00	-----	.29	.06	-----	.00	-----	.00			
TOTAL	6.08	7.16	2.74	3.43	2.15	5.49	4.87	2.56	4.45	3.22	1.74	1.49			
STA AV	4.41	5.20	4.30	4.47	3.78	4.48	4.18	3.18	4.55	2.60	4.78	4.63			

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 2, 4-9, 13-15, 17-20, 22, 25, AND 28-31. STA AV FOR 6-YR 1957-62.

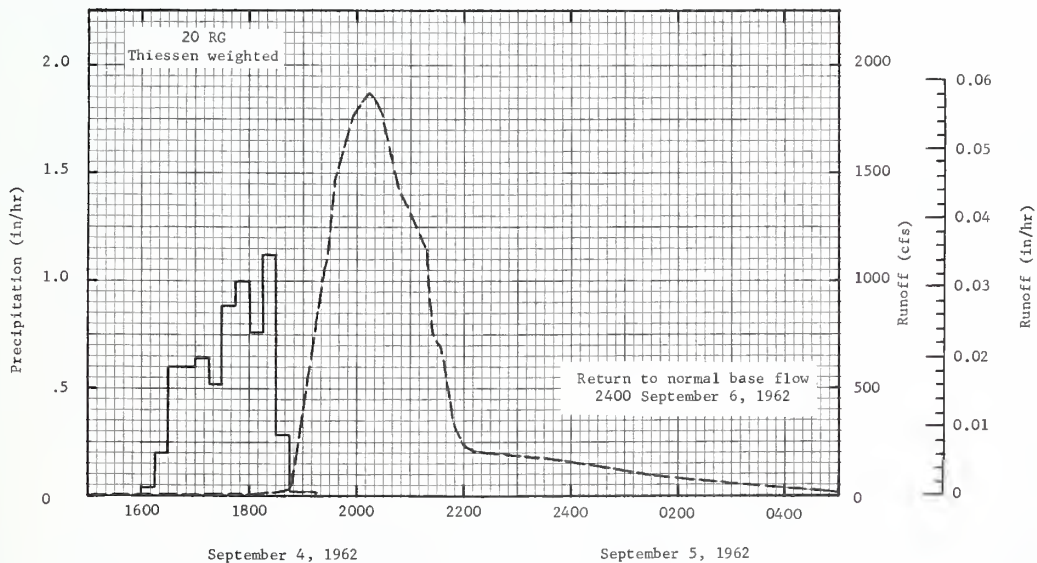
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-17		62.05
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	96.95	23.29	29.12	23.41	32.22	33.65	10.56	10.82	10.24	13.65	9.38	10.52			
2	32.82	22.00	28.20	17.04	16.26	19.15	10.56	12.36	9.95	10.42	9.38	10.81			
3	22.92	19.48	25.07	14.39	14.01	38.79	12.02	12.99	8.01	7.72	9.67	10.81			
4	20.31	17.81	21.58	14.01	13.66	228.98	11.71	12.66	175.59	7.44	9.39	10.24			
5	175.78	18.64	20.30	13.69	13.33	24.24	16.88	12.34	26.46	7.44	8.00	9.95			
6	103.05	18.24	19.47	12.99	12.66	14.83	16.66	11.71	10.26	6.89	7.45	9.95			
7	32.80	16.61	17.82	13.66	12.99	13.33	38.17	10.54	9.10	12.80	7.72	9.95			
8	22.87	16.61	25.73	15.91	12.99	15.91	9.96	9.38	10.26	9.38	8.83	9.95			
9	19.89	17.01	32.46	14.92	12.66	14.31	9.10	8.83	17.45	8.83	9.66	9.66			
10	18.63	15.50	30.87	14.76	12.99	11.87	8.83	8.28	12.70	7.72	9.66	10.24			
11	17.82	13.66	26.39	511.09	12.67	50.87	8.28	9.70	7.17	7.72	10.24	10.24			
12	17.01	13.66	19.91	154.44	12.02	23.93	7.44	10.26	8.00	8.83	10.52	10.24			
13	17.41	13.66	16.63	33.49	10.84	10.52	7.72	8.83	8.83	9.10	10.23	10.24			
14	167.14	13.66	15.46	21.18	9.66	10.82	8.55	9.39	15.94	9.38	10.52	10.26			
15	438.70	17.54	15.46	18.63	9.66	11.11	8.55	10.82	12.41	10.84	10.24	9.10			
16	38.69	17.22	15.46	17.43	9.66	10.52	9.39	11.11	15.58	229.22	9.66	9.10			
17	28.38	14.00	15.84	16.61	9.66	10.52	9.67	13.13	10.52	17.25	10.84	9.10			
18	24.17	34.43	15.84	16.23	9.95	10.24	9.67	12.28	10.52	8.83	10.84	9.38			
19	23.74	25.69	15.84	15.46	10.23	10.24	9.67	8.00	10.52	8.83	9.66	9.11			
20	21.58	17.82	20.28	15.46	9.95	11.11	9.38	8.00	10.81	9.38	9.95	9.39			
21	20.31	29.99	32.18	14.06	9.95	12.03	9.95	8.83	10.81	9.66	9.95	10.82			
22	707.05	24.96	17.84	14.06	10.52	11.73	10.23	9.68	12.06	8.83	9.38	10.52			
23	522.91	2261.96	18.24	14.39	10.24	10.81	10.23	10.81	12.06	9.12	9.10	10.23			
24	69.25	82.12	17.41	13.31	9.95	11.99	38.33	12.86	11.42	10.23	9.10	9.95			
25	206.53	422.05	18.22	13.31	9.95	19.23	220.06	36.25	11.13	9.95	9.38	9.11			
26	92.90	277.51	15.02	12.67	9.38	16.09	16.75	15.86	9.39	10.24	9.66	8.83			
27	184.88	564.96	12.36	12.34	9.38	15.25	12.36	9.38	9.39	11.11	10.54	8.83			
28	70.88	115.69	12.99	11.73	9.66	21.12	12.03	9.95	10.23	11.41	11.41	9.98			
29	34.42	-----	12.34	10.52	10.84	16.70	12.03	9.95	9.67	10.54	10.54	11.71			
30	29.17	-----	14.04	12.61	22.50	13.74	11.41	9.66	9.10	9.95	9.95	10.84			
31	25.05	-----	170.63	-----	10.93	-----	10.82	10.24	-----	9.67	-----	9.66			
MEAN	106.58	148.06	24.80	36.79	12.30	24.12	19.25	11.44	16.85	16.84	9.69	9.95			
INCHES	2.45	3.07	.57	.82	.28	.54	.44	.26	.37	.39	.22	.23			

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0007415. QUALITY OF RECORDS: GOOD.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-17		62.05	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of September 4-6, 1962 <u>4/</u>										
9-4	<u>1/2/</u> .04	<u>3/</u> .0043	9-4	15			9- 4	1758	9.66	.0000
			1630	.00	.00	1846		31.95	.0005	
			1641	1.36	.25	1906		579.92	.0036	
			1646	2.52	.46	1918		889.00	.0082	
			1650	.45	.49	1926		1130.00	.0123	
			1739	.02	.51					
			1754	1.28	.83	1934		1467.28	.0177	
			1813	.63	1.03	1944		1622.31	.0256	
			1824	4.15	1.79	1956		1770.00	.0361	
			1828	.60	1.83	2012		1875.00	.0511	
			1834	.40	1.87	2026		1784.00	.0643	
			1853	.19	1.93	2046		1433.59	.0809	
			RG	17		2118		1142.00	.1021	
			9-4	1618	.00	2124		759.76	.1050	
			1927	1.04	1.04	2132		690.00	.1080	
			RG	22		2146		381.85	.1119	
			9-4	1642	.00	2158		258.48	.1139	
			1852	.16	.16	2214		206.15	.1158	
			20 RG	AVG <u>1/5/</u>		2246		195.48	.1191	
			9-4	1600	.00	2330		176.89	.1233	
1615	.04	.01	2400	155.28	.1259					
1630	.20	.06	9- 5	0132	94.55	.1318				
1645	.60	.21	0300	52.00	.1351					
1700	.60	.36	0432	30.05	.1370					
1715	.64	.52	0602	22.00	.1382					
1730	.52	.65	0902	13.31	.1399					
1745	.88	.87	1500	12.02	.1422					
1800	1.00	1.12	2400	11.40	.1455					
1815	.76	1.31	9- 6	2400	<u>6/9</u> .10	.1531				
1830	1.12	1.59								
1845	.28	1.66								
1900	.02	1.66								
1915	.02	1.67								

Watershed conditions: 20% of area in mature cotton and corn, fair cover; 13% in pasture and 42% idle, fair to good cover; 21% in woods, good cover; 2% in bare gullies; 2% urban.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000309. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA, MISC. PUB. 945, P. 62.5-5. 1/ RAIN GAGES 2, 4-9, 13-15, 17-20, 22, 25, AND 28-31 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1220 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ RUNOFF PRIOR TO 1630 ON 9-4-62. 4/ ISOHYETAL MAP ON P. 62.11-5. 5/ RAINFALL FOR GAGE 2 IS LISTED ON P. 62.6-3; GAGES 4, 5, 9, 25, 29, AND 31 ON P. 62.4-3; GAGE 6 ON P. 62.8-3; GAGES 7 AND 18 ON P. 62.1-3; GAGES 8 AND 19 ON P. 62.2-3; GAGES 13, 14, AND 20 ON P. 62.3-3; GAGE 28 ON P. 62.17-2; AND GAGE 30 ON P. 62.7-3. 6/ NORMAL BASE FLOW.



OXFORD, MISSISSIPPI WATERSHED W-17

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI							WATERSHED W-19		62.06	
						AREA—243 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ¹ / _Q	6.82	7.25	2.90	3.09	2.21	4.34	5.06	3.24	2.80	2.69	1.56	1.61	43.57		
	Q	2.45	2.57	.09	.22	.00	.00	.33	.14	.00	.19	.00	.01	6.00		
STA AV ² / _P		4.47	5.33	4.32	4.48	3.41	4.40	4.37	3.76	4.71	2.28	4.48	4.82	50.83		
(57-62) Q		.93	1.11	.59	.44	.30	.20	.16	.17	.53	.05	.40	.56	5.44		
MEAN P ³ / _{43 YR}		5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.66	2-23	.57	2-23	.91	2-23	1.18	2-23	1.77	2-23	1.93	2-23	1.99	2-23	2.58
MAXIMUMS FOR PERIOD OF RECORD																
1957 to 1962	9-19 1958	1.05	9-19 1958	.66	2-23 1962	.91	2-23 1962	1.18	2-23 1962	1.77	2-23 1962	1.93	9-19 1958	2.14	1-28 1957	3.23
NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 2% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 68% in pasture and idle land, good cover April to October with fair cover remainder of year; 29% in woods; 1% in bare gullies. 1/ Monthly precipitation from rain gage 2. 2/ Precipitation and runoff records began Jan. 1957. 3/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.																
Type	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Ruston fine sandy loam to sandy clay loam	67	0-4	Weak fine crumb	Moderate-ly rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderate-ly rapid	Rapid							
Providence silt loam and silty clay loam	12	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Collins silt loam	9	0-8	Weak fine granular	Moderate-ly rapid	-----	-----	6	Moderate-ly rapid	Rapid							
Crenada silt loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
Loring silt loam to silty clay loam	4	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
GEOLOGY: About 87% of the surface area is occupied by the Kosciusko formation and 13% is valley alluvial material. No structural interferences occur within the watershed. The dip of the stratigraphic units is to the west at 8 to 10 feet per mile. There is no base flow at the gaging station. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.																

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-19		62.06
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.00	.00	.00	.00	.24	.16	.00	.00	.00	.50	.00	.00			
2	.00	.00	.00	.00	.00	.40	.89	.29	.00	.00	.00	.00			
3	.00	.00	.00	.00	.00	.42	.00	.00	.00	.00	.05	.00			
4	.00	.00	.00	.00	.00	.51	.00	.00	.49	.00	.00	.00			
5	1.30	.11	.00	.15	.00	.00	.05	.00	.00	.00	.00	.04			
6	.02	.00	.00	.05	.00	.00	.40	.00	.00	.00	.00	.00			
7	.00	.00	.00	.00	.00	.50	.00	.00	.00	.75	.00	.00			
8	.00	.06	.42	.19	.00	.15	.00	.00	.20	.00	.20	.00			
9	.15	.00	.04	.00	.00	.00	.00	.00	.55	.00	.00	.00			
10	.00	.00	.31	.90	.00	.80	.00	.00	.00	.00	.00	.00			
11	.00	.00	.00	.48	.00	.08	.55	.00	.00	.00	.19	.00			
12	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00			
13	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00			
14	1.20	.00	.00	.00	.00	.00	.00	.00	.68	.00	.00	.00			
15	.11	.56	.00	.00	.00	.00	.00	.00	.15	.20	.00	.00			
16	.00	.00	.00	.00	.01	.00	.02	.00	.00	.80	.00	.00			
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45	.04			
18	.00	.46	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00			
19	.06	.00	.00	.00	.00	.16	.00	.00	.00	.00	.19	.00			
20	.06	.02	.76	.00	.00	.00	.00	.00	.00	.37	.00	.01			
21	.03	.49	.00	.00	.00	.00	.00	.00	.00	.07	.15	.59			
22	2.56	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
23	.13	3.60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
24	.11	.00	.00	.00	.00	.31	.45	1.65	.05	.00	.00	.45			
25	.44	1.28	.27	.00	.00	.68	2.10	1.15	.20	.00	.28	.00			
26	.53	.24	.00	.00	.00	.17	.00	.00	.40	.00	.00	.04			
27	.12	.43	.00	.31	.00	.00	.00	.00	.00	.00	.00	.00			
28	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.29			
29	.00	-----	.00	.00	.80	.00	.00	.00	.00	.00	.00	.15			
30	.00	-----	.96	.86	1.16	.00	.00	.15	.00	.00	.00	.00			
31	.00	-----	.14	-----	.00	-----	.60	-----	.00	-----	.00	.00			
TOTAL	6.82	7.25	2.90	3.09	2.21	4.34	3.06	3.24	2.80	2.69	1.56	1.61			
STA AV	4.47	5.33	4.32	4.48	3.41	4.40	4.37	3.76	4.71	2.28	4.48	4.82			

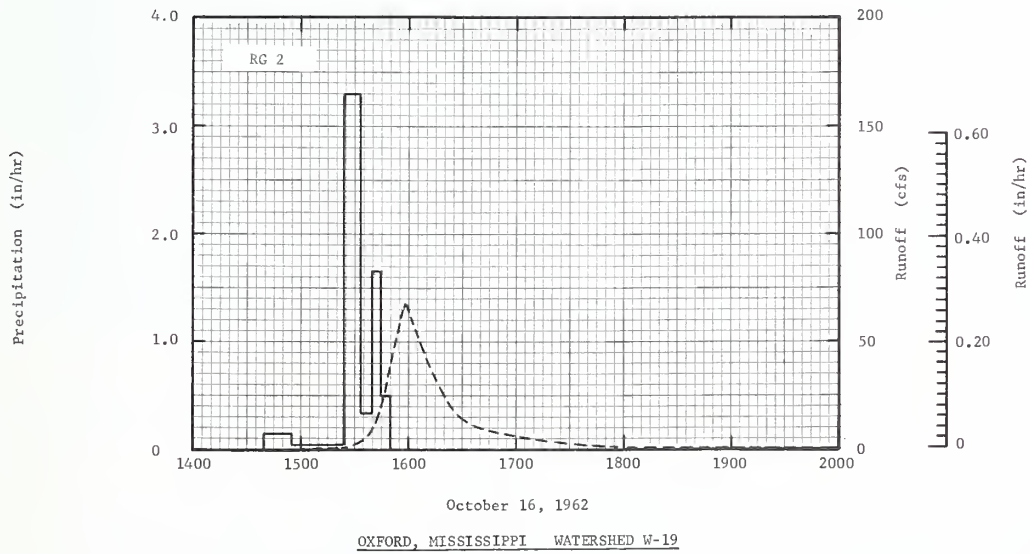
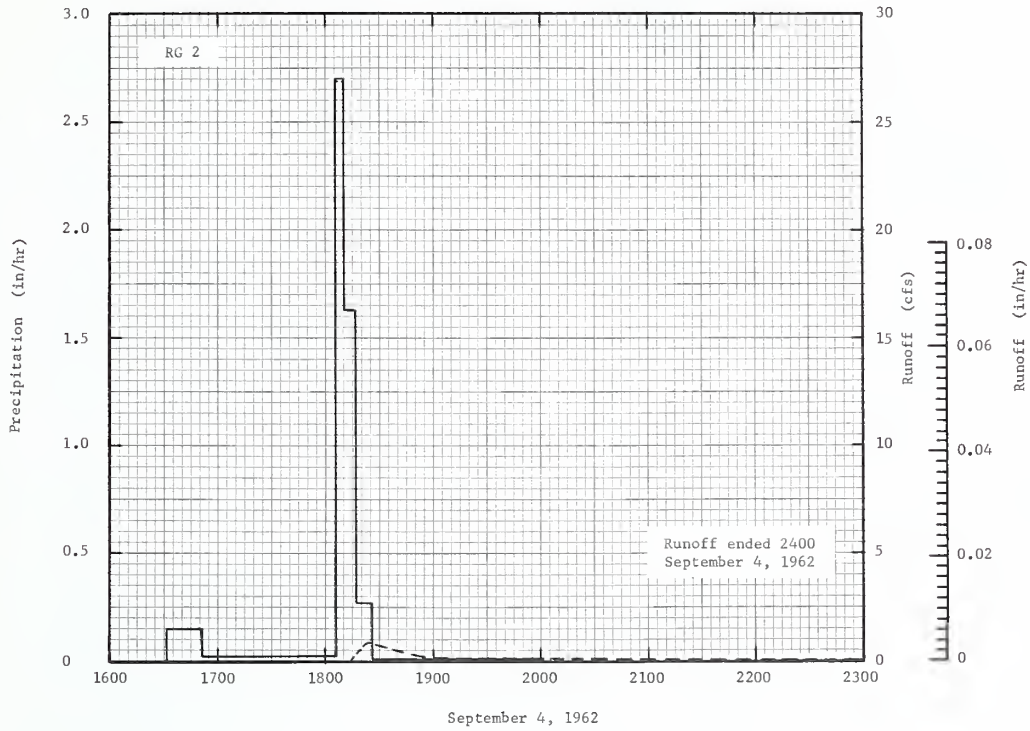
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES FROM RAIN GAGE 2. STA AV FOR 6-YR 1957-62.

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-19		62.06
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.61	.00	.07	.00	.04	.00	.00	.00	.00	.00	.00	.00			
2	.07	.00	.04	.00	.00	.01	.00	.00	.00	.00	.00	.00			
3	.05	.00	.04	.00	.00	.01	.00	.00	.00	.00	.00	.00			
4	.04	.00	.04	.00	.00	.01	.00	.00	.02	.00	.00	.00			
5	2.90	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00			
6	.30	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00			
7	.09	.00	.01	.00	.00	.00	.00	.00	.00	.08	.00	.00			
8	.06	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00			
9	.08	.00	.03	.00	.00	.00	.00	.00	.02	.00	.00	.00			
10	.04	.00	.03	1.32	.00	.00	.00	.00	.00	.00	.00	.00			
11	.04	.00	.01	.45	.00	.01	.00	.00	.00	.00	.00	.00			
12	.05	.00	.01	.31	.00	.00	.00	.00	.00	.00	.00	.00			
13	.07	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00			
14	3.30	.00	.00	.05	.00	.00	.00	.00	.02	.00	.00	.00			
15	.97	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00			
16	.01	.00	.00	.01	.00	.00	.00	.00	.02	1.89	.00	.00			
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00			
18	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
20	.00	.00	.26	.00	.00	.00	.00	.00	.00	.00	.00	.00			
21	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00			
22	12.72	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
23	1.54	19.58	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
24	.50	.73	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00			
25	.68	4.26	.01	.00	.00	.00	3.41	1.24	.00	.00	.01	.02			
26	.53	.94	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00			
27	.40	.58	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
28	.11	.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01			
29	.03	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04			
30	.01	-----	.03	.10	.01	.00	.00	.00	.00	.00	.00	.00			
31	.00	-----	.36	-----	.00	-----	.00	-----	.00	-----	.00	.00			
MEAN	.81	.94	.03	.08	.00	.00	.11	.04	.00	.06	.00	.00			
INCHES	2.45	2.57	.09	.22	.00	.00	.33	.14	.00	.19	.00	.01			

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.09795. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENTS			OXFORD, MISSISSIPPI				WATERSHED W-19				62.06					
ANTECEDENT CONITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)						
<u>Event of September 4, 1962 1/</u>																
9-4	.00	.0000	9-4	RC	2		9-4	1814	.00	.0000						
				1631	.00	.00		1824	.85	.0001						
				1651	.15	.05		1834	.52	.0005						
				1806	.02	.07		1854	.17	.0009						
				1810	2.70	.25		1932	.02	.0011						
				1817	1.63	.44										
				1826	.27	.48		2400	.00	.0013						
				2001	.01	.49										
				Watershed conditions: 2% of area in mature cotton and corn, fair cover; 4% in pasture and 64% idle, fair to good cover; 29% in woods, good cover; 1% bare gullies.												
				<u>Event of October 16-17, 1962</u>												
10-16	.00	.0000	10-16	RG	2		10-16	1500	.00	.0000						
				1439	.00	.00		1506	.37	.0000						
				1455	.15	.04		1526	.47	.0004						
				1523	.04	.06		1538	8.31	.0040						
				1533	3.30	.61		1546	23.44	.0126						
				1540	.34	.65										
				1544	1.65	.76		1558	68.39	.0499						
				1550	.50	.81		1612	41.10	.1020						
								1626	17.61	.1298						
								1710	3.99	.1621						
								1754	1.84	.1708						
								1908	.68	.1772						
								2226	.19	.1830						
								2400	.14	.1840						
								10-17	0226	.04	.1849					
			0600	.00	.1852											

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00408. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.6-5. 1/ ISOHYETAL MAP ON P. 62.11-5.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-24 ^{1/} 62.07 AREA—512 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P ^{2/}	6.52	6.87	2.66	3.17	2.11	6.17	5.09	2.57	3.07	2.92	1.99	1.46	44.60
Q	3.75	4.05	.75	1.09	.04	.40	.24	.06	.01	.06	.00	.00	10.45
STA AV ^{3/} P	4.45	5.25	4.36	4.27	3.89	4.40	4.20	3.12	4.42	2.61	4.74	4.58	50.29
(57-62) Q	1.50	1.79	.98	.94	.54	.21	.13	.08	.22	.09	.64	.77	7.89
MEAN P ^{4/} 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	1.04	2-23	.90	2-23	1.36	2-23	1.64	2-23	1.86	2-23	2.06	2-23	2.26	2-23	3.34
MAXIMUMS FOR PERIOD OF RECORD																
19 57 to 19 62	2-23 1962	1.04	2-23 1962	.90	2-23 1962	1.36	2-23 1962	1.64	2-23 1962	1.86	1-31 1957	2.08	1-30 1957	3.16	1-28 1957	4.37

NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 3% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 35% in pasture and idle land, good cover April to October with fair cover remainder of year; 59% in woods, 3% in bare gullies. ^{1/} About 6% of area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from rain gages 4, 30, and 31. ^{3/} Precipitation and runoff records began Jan. 1957. ^{4/} Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

AREA: (Revision) Drainage area changed from 511 to 512 acres after December 31, 1961.

SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Ruston fine sandy loam to sandy clay loam	64	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid
Collins silt loam	10	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid
Providence silt loam and silty clay loam	13	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow
Grenada silt loam	7	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Loring silt loam to silty clay loam	6	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid

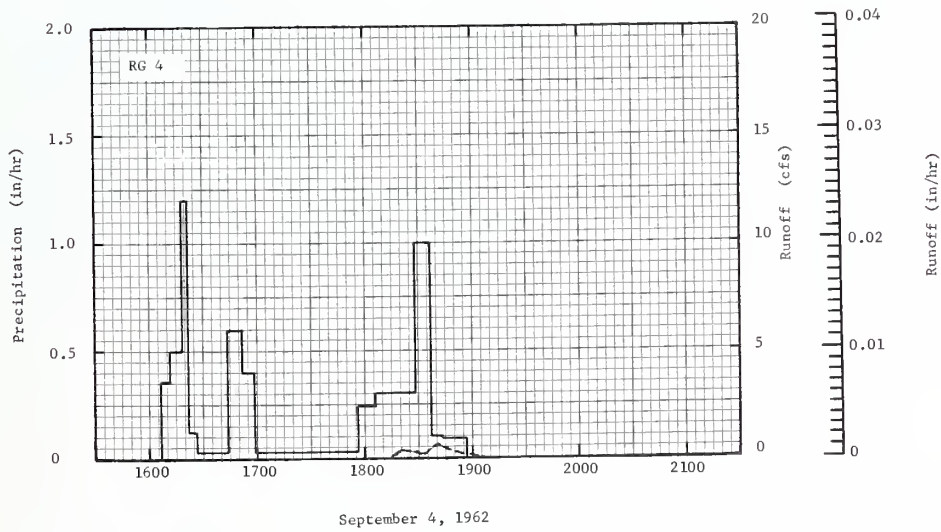
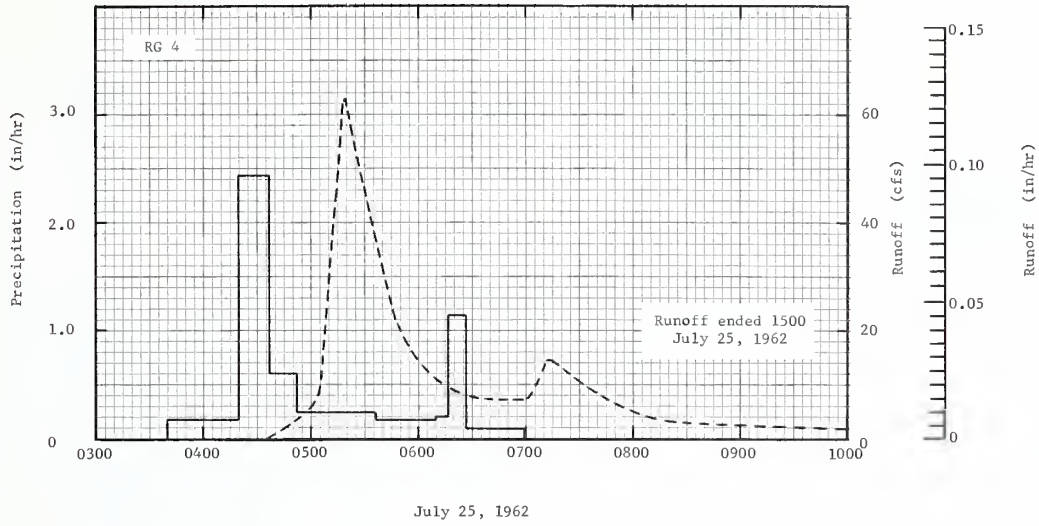
GEOLOGY: About 81% of the watershed is occupied by the Kosciusko formation, 13% is in the Tallahatta formation, and 6% is valley alluvial material. No structural interference occurs within the watershed. Although several relatively large clay lenses are known to exist in the area, the areal extent and probable affect of these lenses on the hydrology of the watershed is unknown. The dip is to the west at 8 to 10 feet per mile and the water table is more than 50 feet below the stream bed. Perched water bodies most likely occur above the clay lenses. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHEO W-24		62.07
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.00	.00	.00	.00	.18	.54	.00	.00	.00	.44	.00	.00			
2	.00	.00	.00	.00	.00	.28	.00	.38	.03	.00	.01	.00			
3	.00	.00	.00	.00	.00	.27	.00	.00	.00	.00	.02	.00			
4	.00	.00	.00	.00	.00	1.58	.00	.00	.75	.00	.00	.00			
5	.99	.12	.00	.11	.00	.00	.30	.00	.00	.00	.00	.06			
6	.03	.00	.00	.17	.00	.00	1.16	.00	.00	.00	.00	.00			
7	.00	.00	.00	.00	.00	.04	.00	.00	.00	.75	.00	.00			
8	.00	.07	.44	.24	.00	.29	.00	.00	.16	.00	.23	.00			
9	.21	.00	.00	.00	.00	.00	.00	.00	.48	.00	.00	.00			
10	.00	.00	.27	1.13	.00	.61	.00	.00	.00	.00	.00	.00			
11	.00	.00	.03	.60	.00	.27	.68	.00	.00	.00	.59	.00			
12	.00	.00	.00	.07	.00	.19	.00	.00	.00	.00	.00	.00			
13	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00			
14	1.20	.00	.00	.00	.00	.00	.00	.00	.60	.53	.00	.00			
15	.10	.54	.00	.00	.00	.00	.00	.00	.39	.09	.00	.00			
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.81	.00	.00			
17	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.49	.04			
18	.00	.61	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00			
19	.06	.00	.00	.00	.00	.24	.00	.00	.00	.00	.15	.00			
20	.05	.01	.49	.00	.00	.00	.00	.00	.00	.24	.00	.00			
21	.12	.41	.00	.00	.00	.00	.00	.00	.00	.06	.15	.47			
22	2.24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
23	.10	3.14	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00			
24	.15	.00	.00	.00	.00	.85	.91	.18	.04	.00	.00	.48			
25	.52	.79	.34	.00	.00	.46	1.59	1.64	.18	.00	.29	.00			
26	.44	.88	.00	.00	.00	.55	.00	.00	.36	.00	.00	.04			
27	.31	.30	.00	.21	.00	.00	.00	.00	.00	.00	.00	.00			
28	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.21			
29	.00	-----	.00	.00	.09	.00	.00	.00	.00	.00	.00	.16			
30	.00	-----	.91	.58	1.84	.00	.00	.29	.00	.00	.00	.00			
31	.00	-----	.14	-----	.00	-----	.45	.02	-----	.00	-----	.00			
TOTAL	6.52	6.87	2.66	3.17	2.11	6.17	5.09	2.57	3.07	2.92	1.99	1.46			
STA AV	4.45	5.25	4.36	4.27	3.89	4.40	4.20	3.12	4.42	2.61	4.74	4.58			

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES ARE THIESSEN WEIGHTED FROM RAIN GAGES 4, 30 AND 31. STA AV FOR 6-YR 1957-62.

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHEO W-24		62.07
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	2.27	.85	1.80	.39	.43	.12	.00	.00	.00	.00	.00	.00			
2	.89	.63	1.50	.24	.00	.00	.00	.00	.00	.00	.00	.00			
3	.50	.40	1.01	.05	.00	.00	.00	.00	.00	.00	.00	.00			
4	.45	.30	.85	.07	.00	6.44	.00	.00	.01	.00	.00	.00			
5	3.53	.30	.77	.13	.00	.36	.00	.00	.00	.00	.00	.00			
6	1.73	.40	.63	.13	.00	.00	2.42	.00	.00	.00	.00	.00			
7	.45	.45	.56	.18	.00	.00	.18	.00	.00	.18	.00	.00			
8	.28	.39	.40	.16	.00	.00	.00	.00	.00	.00	.00	.00			
9	.52	.39	.47	.08	.00	.00	.00	.00	.00	.00	.00	.00			
10	7.57	.28	.58	1.50	.00	.00	.00	.00	.00	.00	.00	.00			
11	7.63	.28	.45	3.26	.00	.12	.00	.00	.00	.00	.00	.00			
12	.22	.24	.50	1.95	.00	.00	.00	.00	.00	.00	.00	.00			
13	1.03	.14	.45	.66	.00	.00	.00	.00	.00	.00	.00	.00			
14	8.32	.20	.39	.28	.00	.00	.00	.00	.09	.04	.00	.00			
15	4.76	.94	.26	.14	.00	.00	.00	.00	.01	.00	.00	.00			
16	.16	.57	.18	.20	.00	.00	.00	.00	.00	1.05	.00	.00			
17	.01	.01	.18	.24	.00	.00	.00	.00	.00	.00	.01	.00			
18	.01	3.43	.22	.24	.00	.00	.00	.00	.00	.00	.00	.00			
19	.01	1.88	.35	.19	.00	.00	.00	.00	.00	.00	.00	.00			
20	.00	.50	.81	.07	.00	.00	.00	.00	.00	.00	.00	.00			
21	.00	3.41	.42	.06	.00	.00	.00	.00	.00	.00	.00	.00			
22	18.83	1.04	.06	.14	.00	.00	.00	.00	.00	.00	.00	.00			
23	5.46	43.86	.14	.12	.00	.00	.00	.00	.00	.00	.00	.00			
24	1.85	4.45	.16	.07	.00	.03	.00	.00	.00	.00	.00	.00			
25	3.74	7.16	.10	.10	.00	.81	2.63	1.27	.00	.00	.00	.01			
26	2.33	5.78	.16	.08	.00	.54	.00	.00	.00	.00	.00	.00			
27	4.20	6.50	.13	.03	.00	.20	.00	.00	.00	.00	.00	.00			
28	1.86	2.32	.03	.11	.00	.00	.00	.00	.00	.00	.00	.00			
29	.63	-----	.06	6.32	.00	.00	.00	.00	.00	.00	.00	.03			
30	.71	-----	.38	6.32	.51	.00	.00	.00	.00	.00	.00	.00			
31	.92	-----	2.24	-----	.00	-----	.00	.00	-----	.00	-----	.00			
MEAN	2.61	3.11	.52	.78	.03	.29	.17	.04	.00	.04	.00	.00			
INCHES	3.75	4.05	.75	1.09	.04	.40	.24	.06	.01	.06	.00	.00			

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.046468. QUALITY OF RECORDS: FAIR.



OXFORD, MISSISSIPPI WATERSHED W-24

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI		WATERSHED W-28 ¹ / ₁		62.08						
						AREA—1,080 ACRES (1.69 SQ. MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ² / ₂	5.82	7.74	2.96	3.43	2.13	6.71	5.54	2.44	5.42	1.53	1.56	1.48	46.76			
Q	.61	1.77	.15	.14	.00	.26	.12	.02	.12	.00	.00	.00	3.19			
STA AV ³ / ₃ /P (57-62) Q	4.31	5.30	4.37	4.14	3.62	4.54	4.18	2.44	4.86	2.66	4.87	4.54	49.83			
Q	.57	.62	.27	.29	.16	.09	.09	.00	.18	.05	.20	.20	2.72			
MEAN P ⁴ / ₄₃ YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.33	2-23	.29	2-23	.47	2-23	.70	2-23	.82	2-23	.90	2-23	.95	2-23	1.78
MAXIMUMS FOR PERIOD OF RECORD																
19 57 ₁₉ TO 62	9-9 1959	.58	9-9 1959	.42	9-9 1959	.54	2-23 1962	.70	1-31 1957	.92	1-31 1957	1.45	1-30 1957	2.02	1-27 1957	2.68
<p>NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 22% in cultivation (cotton and corn), fair cover November to March, poor cover in April and May improving to good by mid-July; 58% in pasture and idle land, good cover April to October with fair cover remainder of year; 26% in woods; 4% in bare gullies. 1/ Approximately 60% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 5, 6, and 7. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.</p>																
<p>SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.</p>																
Type	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Providence silt loam and silty clay loam	45	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Ruston fine sandy loam to sandy clay loam	38	0-4	Weak fine crumb	Moderate- ly rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderate- ly rapid	Rapid							
Grenada silt loam	17	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
<p>GEOLOGY: About 88% of the surface area is occupied by the Kosciusko formation, 11% is in the Tallahatta formation and 1% is valley alluvial material. A normal westerly dip of about 8 to 10 feet per mile has been increased slightly and changed to a southeasterly direction by a fault along the southeastern boundary of the watershed. Ground water flow has also been changed from westerly to southeasterly. A more detailed description of the geological formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.</p>																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1962 DAILY PRECIPITATION (inches)					OXFORD, MISSISSIPPI				WATERSHED W-28				62-08
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	.17	.88	.00	.00	.00	.21	.00	.00	
2	.00	.00	.00	.00	.00	.16	.00	.31	.00	.00	.00	.00	
3	.00	.00	.00	.00	.00	.44	.00	.00	.00	.00	.04	.00	
4	.00	.00	.00	.00	.00	1.24	.00	.00	2.20	.00	.00	.00	
5	1.42	.22	.00	.13	.00	.00	.15	.00	.00	.00	.00	.05	
6	.02	.00	.00	.15	.00	.00	1.05	.00	.00	.00	.00	.00	
7	.00	.00	.00	.00	.00	.14	.00	.00	.00	.55	.00	.00	
8	.00	.05	.51	.20	.00	.16	.00	.00	.42	.00	.22	.00	
9	.16	.02	.03	.00	.00	.00	.00	.00	.87	.00	.00	.00	
10	.00	.00	.29	.81	.00	.36	.00	.00	.00	.00	.00	.00	
11	.00	.00	.03	1.15	.00	1.56	.78	.00	.00	.00	.34	.00	
12	.00	.00	.00	.14	.00	.06	.00	.00	.00	.00	.00	.00	
13	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	
14	1.02	.00	.00	.00	.00	.00	.00	.00	.75	.01	.00	.00	
15	.09	.49	.00	.00	.00	.00	.00	.00	.57	.00	.00	.00	
16	.00	.00	.00	.00	.02	.00	.00	.00	.03	.44	.00	.00	
17	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.43	.04	
18	.00	.55	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	
19	.05	.00	.00	.00	.00	.09	.00	.00	.00	.00	.13	.00	
20	.05	.05	.55	.00	.00	.00	.00	.00	.00	.26	.00	.00	
21	.09	.38	.00	.00	.00	.01	.00	.00	.00	.06	.10	.53	
22	1.55	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
23	.10	3.20	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	
24	.12	.00	.00	.00	.00	.75	1.90	.03	.00	.00	.00	.48	
25	.46	1.01	.42	.00	.00	.63	1.23	1.45	.17	.00	.25	.00	
26	.39	1.38	.00	.00	.00	.21	.00	.00	.33	.00	.00	.01	
27	.30	.39	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00	
28	.00	.00	.00	.10	.00	.01	.00	.00	.00	.00	.00	.21	
29	.00	-----	.00	.00	.09	.02	.00	.00	.00	.00	.00	.16	
30	.00	-----	.95	.49	1.85	.00	.00	.50	.00	.00	.00	.00	
31	.00	-----	.18	-----	.00	-----	.42	.00	-----	.00	-----	.00	
TOTAL	5.82	7.74	2.96	3.43	2.13	6.71	5.54	2.44	5.42	1.53	1.56	1.48	
STA AV	4.31	5.30	4.37	4.14	3.62	4.54	4.18	2.44	4.86	2.66	4.87	4.54	

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 5, 6, AND 7. STA AV FOR 6-YR 1957-62.

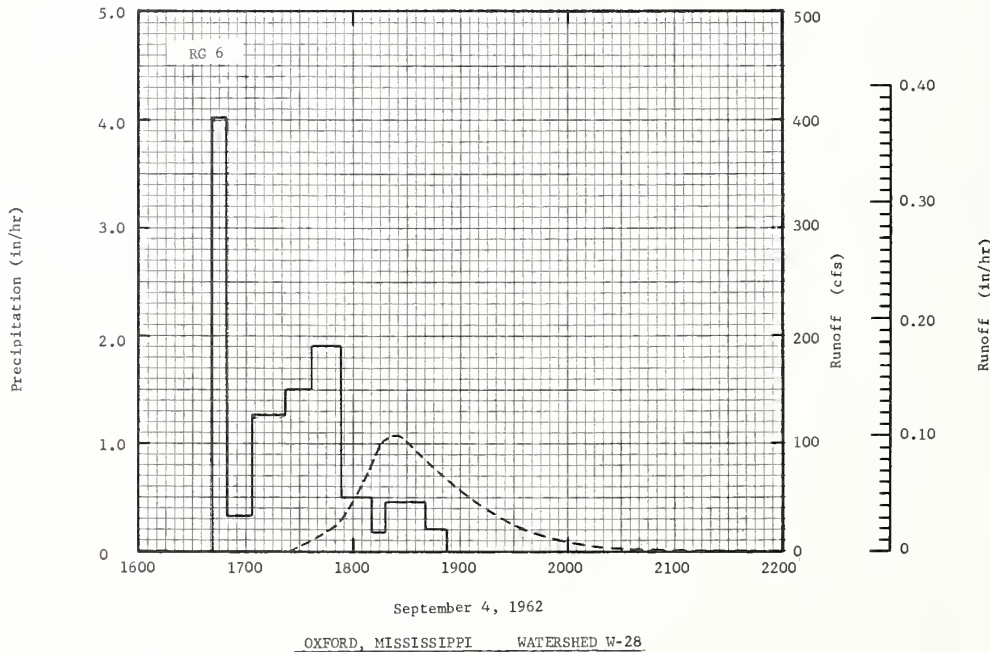
1962 MEAN DAILY DISCHARGE (cfs)					OXFORD, MISSISSIPPI				WATERSHED W-28				62-08
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	1.52	.10	.76	.00	.00	.97	.00	.00	.00	.00	.00	.00	
2	.37	.12	.56	.00	.00	.00	.00	.00	.00	.00	.00	.00	
3	.14	.12	.52	.00	.00	.00	.00	.00	.00	.00	.00	.00	
4	.10	.09	.43	.00	.00	3.13	.00	.00	5.25	.00	.00	.00	
5	3.61	.06	.33	.00	.00	.00	.00	.00	.00	.00	.00	.00	
6	.89	.07	.30	.00	.00	.00	.15	.00	.00	.00	.00	.00	
7	.19	.09	.25	.00	.00	.00	.01	.00	.00	.00	.00	.00	
8	.14	.10	.37	.00	.00	.00	.00	.00	.00	.00	.00	.00	
9	.14	.06	.35	.00	.00	.00	.00	.00	.08	.00	.00	.00	
10	.14	.00	.48	.30	.00	.00	.00	.00	.00	.00	.00	.00	
11	.14	.00	.15	3.86	.00	7.86	.00	.00	.00	.00	.00	.00	
12	.09	.00	.08	1.90	.00	.00	.00	.00	.00	1.90	.00	.00	
13	.10	.00	.02	.26	.00	.00	.00	.00	.00	.00	.00	.00	
14	4.43	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	
15	1.72	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	
16	.06	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	
17	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
18	.14	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
19	.15	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
20	.13	.00	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	
21	.13	.12	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	
22	4.93	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
23	1.82	40.24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
24	.56	2.66	.00	.00	.00	.00	2.32	.00	.00	.00	.00	.00	
25	1.59	11.57	.14	.00	.00	.00	2.97	.92	.00	.00	.00	.00	
26	1.13	13.80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
27	1.81	9.84	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
28	.61	1.55	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
29	.43	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
30	.33	-----	.37	.00	.00	.00	.00	.00	.00	.00	.00	.00	
31	.19	-----	1.27	-----	.00	-----	.00	.00	-----	.00	-----	.00	
MEAN	.89	2.88	.22	.21	.00	.40	.18	.03	.18	.00	.00	.00	
INCHES	.61	1.77	.15	.14	.00	.26	.12	.02	.12	.00	.00	.00	

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0220367. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-28				62.08
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4, 1962											
9-4	1/2/ .08	.0000	9-4	RG	6		9-4				
				1641	.00	.00		1726	.00	.0000	
				1648	4.02	.47		1752	26.90	.0053	
				1703	.32	.55		1806	66.51	.0153	
				1722	1.26	.95		1816	104.20	.0283	
				1737	1.52	1.33		1826	109.30	.0446	
				1753	1.91	1.84		1836	94.00	.0601	
				1811	.50	1.99		1906	47.00	.0924	
				1818	.17	2.01		1928	27.86	.1050	
				1841	.47	2.19		2004	3.80	.1136	
				1853	.20	2.23		2046	.55	.1150	
				3 RG	AVG 1/3/4/			2146	.00	.1153	
			9-4	1630	.00	.00					
				1645	1.16	.29					
				1700	.84	.50					
				1715	.96	.74					
				1730	1.36	1.08					
				1745	1.60	1.48					
				1800	1.20	1.78					
				1815	.40	1.88					
				1830	.48	2.00					
				1845	.40	2.10					
				1900	.08	2.12					

Watershed conditions: 12% of area in mature cotton and corn, fair cover; 10% in pasture and 48% idle, fair to good cover; 26% in woods, fair to good cover; 4% in bare gullies.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009183. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.8-5. 1/ RAIN GAGES 5, 6, AND 7 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1158 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ RAINFALL FOR GAGE 5 ON P. 62.4-3, AND GAGE 7 ON P. 62.1-3. 4/ ISOHYETAL MAP ON P. 62.11-5.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-321/ 62.10 AREA—20,000 ACRES (31.3 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P ² / _Q	5.85	7.15	2.81	3.91	2.07	5.64	4.53	2.32	5.01	3.09	1.95	1.65	45.98
STA AV ³ / _P	2.88	3.39	.28	.64	.07	.29	.24	.02	.28	.31	.00	.00	8.40
(57-62) Q	4.37	5.35	4.49	4.83	4.17	4.18	4.06	2.66	4.99	2.49	4.89	4.76	51.24
MEAN P ⁴ / _{43 YR}	1.50	1.95	1.30	1.15	.84	.26	.23	.10	.54	.14	.80	1.17	9.98
	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.57	2-23	.56	2-23	.83	2-23	1.88	2-23	2.11	2-23	2.34	2-23	2.40	2-23	3.30

MAXIMUMS FOR PERIOD OF RECORD

19 57 TO 19 62	2-23 1962	.57	2-23 1962	.56	2-23 1962	.83	2-23 1962	1.88	2-23 1962	2.11	2-23 1962	2.34	2-20 1961	2.98	1-27 1957	3.58
----------------	-----------	-----	-----------	-----	-----------	-----	-----------	------	-----------	------	-----------	------	-----------	------	-----------	------

NOTES: Quality of records: P, good; Q, good. Watershed conditions: About 23% in cultivation (cotton and corn), fair cover November to March, poor cover in May and June improving to good by mid-July; 63% in pasture and idle land, good cover April to October with fair cover remainder of year; 12% in woods; 2% in bare gullies. 1/ About 12% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 10 rain gages. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per-cent of area	Topsoil			Subsoil			Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme-ability	Structure	Perme-ability	Avg. depth to(in.)	Perme-ability		
Ruston fine sandy loam to sandy clay loam	46	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid	
Collins silt loam	20	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid	
Providence silt loam and silty clay loam	14	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow	
Crenada silt loam	12	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid	
Loring silt loam to silty clay loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid	

CEOLOGY: About 76% of the surface area is occupied by the Kosciusko formation, 11% is in the Tallahatta formation and 13% is valley alluvial material. A normal westerly dip of the stratigraphic units and the ground-water piezometric gradient has been changed to a southerly direction in the southern one-third of the watershed by a fault along the southern boundary. The ground water level is only a few feet below the stream bed along the lower reaches of the main channel. Intermittent base flow occurs in the main channel below the gaging station. A more detailed description of the geologic formations and ground-water conditions is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Ceology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Ceology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-32		62.10
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.00	.00	.00	.00	.17	.34	.00	.00	.01	.48	.00	.00			
2	.00	.00	.00	.00	.00	.85	.24	.32	.01	.00	.00	.00			
3	.00	.00	.00	.00	.00	.85	.00	.00	.00	.00	.04	.00			
4	.00	.00	.00	.00	.00	.54	.00	.00	1.71	.00	.00	.00			
5	.94	.24	.00	.12	.00	.00	.71	.00	.00	.00	.00	.05			
6	.04	.00	.00	.11	.00	.01	.08	.00	.00	.00	.00	.00			
7	.00	.00	.00	.00	.00	.07	.00	.00	.00	.71	.00	.00			
8	.00	.05	.54	.19	.00	.17	.00	.00	.45	.00	.21	.00			
9	.17	.00	.02	.00	.00	.01	.00	.00	1.00	.00	.00	.00			
10	.00	.00	.29	.59	.00	.26	.00	.00	.00	.00	.00	.00			
11	.00	.00	.02	1.38	.00	.89	.36	.00	.00	.00	.51	.00			
12	.00	.00	.00	.13	.00	.01	.00	.00	.00	.00	.00	.00			
13	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00			
14	1.12	.00	.00	.00	.00	.00	.00	.00	.97	.00	.00	.00			
15	.06	.55	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00			
16	.00	.00	.00	.00	.06	.00	.00	.00	.16	1.28	.00	.02			
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.51	.02			
18	.00	.53	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00			
19	.05	.00	.00	.00	.00	.10	.00	.00	.00	.00	.13	.00			
20	.05	.07	.47	.00	.00	.00	.00	.00	.00	.49	.00	.00			
21	.13	.28	.00	.00	.00	.10	.00	.00	.00	.13	.13	.56			
22	1.78	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
23	.20	3.39	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00			
24	.12	.00	.00	.00	.00	.65	1.46	.66	.00	.00	.00	.52			
25	.45	.93	.36	.00	.00	.60	1.48	.88	.13	.00	.36	.00			
26	.49	.69	.00	.00	.00	.13	.00	.00	.41	.00	.00	.02			
27	.25	.41	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00			
28	.00	.00	.00	.07	.00	.00	.13	.00	.00	.00	.00	.29			
29	.00	-----	.00	.00	.45	.06	.00	.00	.00	.00	.00	.17			
30	.00	-----	.94	1.00	1.39	.00	.00	.25	.00	.00	.00	.00			
31	.00	-----	.17	-----	.00	-----	.07	.06	-----	.00	-----	.00			
TOTAL	5.85	7.15	2.81	3.91	2.07	5.64	4.53	2.32	5.01	3.09	1.95	1.65			
STAAV	4.37	5.35	4.49	4.83	4.17	4.18	4.06	2.66	4.99	2.49	4.89	4.76			

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION THIESSEN WEIGHTED FROM GAGES 3, 10-14, 20, 21, 24, AND 26. STA AV FOR 6-YR 1957-62.

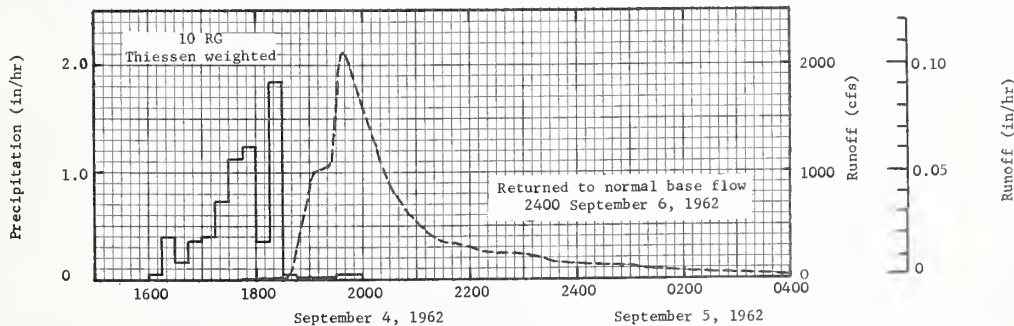
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-32		62.10
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	88.45	5.68	8.74	2.42	48.95	.14	.03	.01	.00	.02	.00	.00			
2	20.40	4.25	3.88	.71	1.62	12.02	.03	.00	.00	.00	.00	.00			
3	9.44	4.09	2.61	.24	.27	44.01	.01	.00	.00	.00	.00	.00			
4	4.60	4.09	2.00	.06	.09	60.85	.00	.01	146.07	.00	.00	.00			
5	151.43	5.06	1.91	.27	.07	4.56	15.00	.01	17.49	.00	.00	.00			
6	69.41	.70	1.91	.34	.06	.49	1.89	.00	.56	.00	.00	.00			
7	13.58	.60	1.26	.09	.09	4.06	.85	.00	.44	1.07	.00	.00			
8	5.63	.56	4.42	.20	.09	.85	.24	.00	.34	.03	.00	.00			
9	2.07	.51	13.14	.19	.05	.37	.08	.00	19.65	.00	.00	.00			
10	1.40	.56	12.75	2.43	.05	.72	.03	.00	4.70	.00	.00	.00			
11	1.40	.46	11.52	380.22	.03	108.44	.04	.00	.09	.00	.01	.00			
12	1.40	.46	4.12	129.60	.04	7.36	.05	.00	.05	.00	.00	.00			
13	1.14	.46	1.60	14.66	.06	.54	.02	.00	.05	.00	.00	.00			
14	185.97	.29	.81	3.20	.05	.02	.03	.00	43.66	.00	.00	.08			
15	374.16	2.43	.81	1.66	.05	.01	.02	.00	.15	.00	.00	.16			
16	15.53	2.25	.54	1.12	.05	.01	.01	.00	.01	257.32	.00	.00			
17	4.29	.70	.27	.68	.02	.01	.00	.00	.00	3.57	.01	.00			
18	3.97	30.38	.27	.33	.02	.01	.00	.00	.00	.00	.00	.00			
19	3.97	12.81	.20	.25	.05	.01	.00	.00	.00	.00	.01	.00			
20	3.40	2.25	5.79	.23	.04	.01	.00	.00	.00	.00	.01	.00			
21	3.16	11.64	5.13	.16	.02	.01	.00	.00	.00	.00	.01	.01			
22	533.20	9.24	.40	.13	.03	.02	.00	.00	.00	.00	.00	.00			
23	354.54	1951.90	.18	.11	.03	.01	.00	.00	.00	.00	.00	.00			
24	78.12	67.09	.19	.13	.02	.02	31.79	.19	.00	.00	.00	.01			
25	157.18	294.92	.99	.14	.04	.93	154.14	16.60	.00	.00	.01	.01			
26	87.17	99.74	.33	.11	.03	.16	.18	3.02	.00	.00	.00	.00			
27	152.05	261.04	.04	.13	.01	.03	.03	.00	.00	.00	.01	.00			
28	62.11	83.23	.03	.12	.01	.02	.02	.00	.00	.00	.00	.00			
29	17.51	-----	.03	.07	1.54	.01	.01	.00	.00	.00	.00	.03			
30	8.54	-----	.92	.28	5.95	.02	.01	.00	.00	.00	.00	.02			
31	6.96	-----	149.06	-----	.60	-----	.01	.00	-----	.00	-----	.01			
MEAN	78.13	102.05	7.60	18.00	1.93	8.19	6.59	.64	7.77	8.45	.00	.01			
INCHES	2.88	3.39	.28	.64	.07	.29	.24	.02	.28	.31	.00	.00			

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0011901. QUALITY OF RECORDS: GOOD.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-32				62.1
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4-6, 1962											
9-4	1 1/2 / .01	.0000	9-4	RG	26		9-4	1740	.00	.0000	
				1616	.00	.00		1800	.37	.0000	
				1625	.47	.07		1816	15.00	.0001	
				1630	2.64	.29		1836	13.48	.0003	
				1640	.12	.31		1846	345.00	.0018	
				1710	.06	.34					
				1716	1.60	.50		1904	1004.00	.0118	
				1725	.67	.60		1924	1100.00	.0292	
				1735	.12	.62		1932	1994.00	.0394	
				1745	1.26	.83		1938	2120.00	.0496	
				1750	2.04	1.00		1946	1958.00	.0631	
				1800	1.14	1.19		2000	1598.00	.0837	
				1808	2.02	1.46		2016	1211.59	.1022	
				1815	1.63	1.65		2046	662.91	.1255	
				1825	.24	1.69		2128	350.00	.1431	
				1933	.01	1.70		2148	325.00	.1486	
				RG	3			2214	264.63	.1550	
			9-4	1602		.00		2232	257.00	.1589	
				1957		1.66		2248	242.98	.1622	
				RG	10			2304	223.13	.1652	
			9-4	1651		.00		2332	179.43	.1699	
				2007		1.34		2400	155.58	.1738	
				RG	12			0102	101.47	.1804	
			9-4	1619		.00	9-5	0200	80.40	.1847	
				2000		.66		0300	51.51	.1880	
				RG	21			0446	25.06	.1913	
			9-4	1652		.00		0730	5.76	.1934	
				2003		1.27		0902	3.03	.1938	
				10 RG	AVG 1/3/4/			1158	1.47	.1941	
			9-4	1600		.00		1800	.60	.1944	
				1615		.04		2400	.60	.1946	
				1630		.40		9-6	2400	5 / .51	
				1645		.16					
				1700		.36					
				1715		.40					
				1730		.72					
				1745		1.12					
				1800		1.24					
				1815		.36					
				1830		1.84					
				1845		.04					
				1900		.02					
				1915		.02					
				1930		.02					
				1945		.04					
				2000		.04					

Watershed conditions: 23% of area in mature cotton and corn, fair cover; 14% in pasture, and 49% idle, fair to good cover; 12% in woods, good cover; 2% in bare gullies.

NOTES: TO CONVERT RUNOFF IN GFS TO IN/HR, MULTIPLY BY 0.0000496. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.10-5. 1/ RAIN GAGES 3, 10-14, 20, 21, 24, AND 26 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1156 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ RAINFALL FOR GAGE 11 IS LISTED ON P. 62.12-3; GAGES 13, 14, 20, AND 24 ON P. 62.3-3. 4/ ISOHYETAL MAP ON P. 62.11-5. 5/ RUNOFF DECREASED TO .32 GFS AT 2400, 9-8-62, THE BEGINNING OF NEXT EVENT.



OXFORD, MISSISSIPPI WATERSHED W-32

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI							WATERSHED W-341/		62.11	
						AREA—75,000 ACRES (117.2 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ² / _{Q³}	6.06	7.07	2.71	3.45	2.14	5.56	4.96	2.66	4.10	2.86	1.79	1.58	44.94		
		3.33	3.61	.76	.93	.45	.66	.58	.40	.43	.50	.35	.40	12.40		
	STA AV ⁴ / _P	4.36	5.22	4.39	4.61	3.86	4.44	4.18	3.10	4.76	2.49	4.72	4.72	50.85		
	(57-62) Q	1.72	2.10	1.57	1.32	.99	.59	.60	.43	.84	.41	1.08	1.41	13.06		
	MEAN P ⁵ / _{43 YR}	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.14	2-23	.14	2-23	.27	2-23	.78	2-23	1.35	2-23	1.88	2-23	1.96	2-23	3.04
MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO	2-23	.14	2-23	.14	2-23	.27	2-23	.78	2-23	1.35	2-23	1.88	1-30	2.18	1-28	3.28
19 62	1962		1962		1962		1962		1962		1962		1957	1957	1957	
NOTES: Quality of records: P, good; Q, good except for out-of-bank flow. Watershed conditions: About 22% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 55% in pasture and idle land, good cover April to October with fair cover remainder of year; 21% in woods; 2% in bare gullies. 1/ About 15% of area, principally in upper reaches, above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 31 rain gages. 3/ Monthly values of runoff include relatively insignificant flow through auxiliary station 34-A. 4/ Precipitation and runoff records began Jan. 1957. 5/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material:																
Type	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability								
Ruston fine sandy loam to sandy clay loam	50	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid							
Collins silt loam	20	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid							
Providence silt loam and silty clay loam	13	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Loring silt loam to silty clay loam	9	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
Grenada silt loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
CEOLOGY: About 52% of the surface area of the watershed is occupied by the Kosciusko formation, 26% by the Tallahatta formation, 1% by the Citronelle gravel, and 21% is valley alluvial material. The entire watershed is underlain by the Meridian formation, an extensive water saturated strata. All of these formations except the Citronelle gravel are of the Claiborne group of Eocene age. Their texture is predominantly sands with local clay lenses. The Kosciusko formation outcrops at the higher elevations along the watershed boundaries and ranges in depth to 120 feet. The Tallahatta formation outcrops at the lower elevations throughout the central portion of the watershed and ranges in depth from 120 to 150 feet. The underlying Meridian formation ranges in thickness from about 180 to 200 feet. Loess material and surface soil cover range in depth from 0 to 15 feet. The alluvial valleys are relatively wide and flat. The Meridian formation is the principal source of ground water in the area although perched water bodies occur in the Kosciusko and Tallahatta formations. The Meridian formation is the source of the relatively constant base flow along the lower reaches of the major stream channel. A normal westerly dip of the stratigraphic units of about 8 to 10 feet per mile has been altered by faulting south of the watershed to a greater southerly-southeasterly dip in the southern one-third of the watershed (Sub-watersheds W-28, W-4, W-5, W-10, and W-32). The normal piezometric gradient of about the same slope has been similarly altered. Springs south of the watershed indicate appreciable ground water outflow to the south. Normally, this water would flow westerly through the Meridian formation. Stratigraphic column of the major formations observed in Pigeon Roost Creek Watershed:																
Era	System	Series	Group	Formation	Description											
Cenozoic	Quaternary	Pleistocene and Recent		Alluvium	Cravels, sand, silt, and clay.											
				Loess	Silt and clay; massive; gray to brown.											
				Citronelle	Cravel, sand, and clay; irregular bedding and interfingering; cobbles 3 to 4 inches in diameter.											
	Tertiary	Eocene	Claiborne	Kosciusko	Sand, sandstone; white, brown to dark red; massive; high silt and clay content evenly disseminated; local clay lenses.											
				Tallahatta	Sand, clay shale, sandstone, silty limonite; silt and clay-white, gray to black lignitic; sand-fine, micaceous, white to brown, iron stained; iron concretions; abundant clay lenses.											
				Meridian	Sand, white to brown, limonite stained; micaceous; cross-bedded; local clay lenses white to brown.											
Sources of data: Marshall County Ceology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, vol. 5, No. 1, September 1963. See geologic map on page 62.11-4.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-34		62.11
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.00	.00	.00	.00	.18	.53	.00	.00	.01	.40	.00	.00			
2	.00	.00	.00	.00	.00	.68	.30	.31	.01	.00	.00	.00			
3	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.04	.00			
4	.00	.00	.00	.00	.00	.78	.00	.00	1.41	.00	.00	.00			
5	1.12	.19	.00	.13	.00	.00	.70	.00	.00	.00	.00	.06			
6	.03	.00	.00	.10	.00	.00	.42	.00	.00	.00	.00	.00			
7	.00	.00	.00	.00	.00	.22	.00	.00	.00	.69	.00	.00			
8	.00	.05	.48	.19	.00	.10	.00	.00	.30	.00	.21	.00			
9	.16	.00	.02	.00	.00	.00	.00	.00	.78	.00	.00	.00			
10	.00	.00	.29	.74	.00	.35	.00	.00	.00	.00	.00	.00			
11	.00	.00	.01	.99	.00	.41	.45	.00	.00	.00	.38	.00			
12	.00	.00	.00	.09	.00	.06	.00	.00	.00	.00	.00	.00			
13	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00			
14	1.10	.00	.00	.00	.00	.00	.00	.00	.56	.07	.00	.00			
15	.07	.54	.00	.00	.00	.00	.00	.00	.23	.03	.00	.00			
16	.00	.00	.00	.00	.06	.00	.01	.00	.06	1.17	.00	.02			
17	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.49	.03			
18	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00			
19	.06	.00	.00	.00	.00	.15	.00	.00	.00	.00	.15	.00			
20	.05	.05	.49	.00	.00	.00	.00	.00	.00	.42	.00	.01			
21	.09	.35	.00	.00	.00	.06	.00	.00	.00	.08	.14	.53			
22	1.98	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
23	.14	3.38	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00			
24	.12	.00	.00	.00	.00	.69	1.15	.75	.01	.00	.00	.48			
25	.46	.96	.32	.00	.00	.61	1.65	1.09	.17	.00	.32	.00			
26	.46	.64	.00	.00	.00	.18	.00	.00	.40	.00	.00	.02			
27	.22	.40	.00	.28	.00	.00	.00	.00	.00	.00	.00	.00			
28	.00	.00	.00	.05	.00	.00	.05	.00	.00	.00	.00	.28			
29	.00	-----	.00	.00	.44	.14	.00	.00	.00	.00	.00	.15			
30	.00	-----	.94	.87	1.46	.00	.00	.23	.00	.00	.00	.00			
31	.00	-----	.16	-----	.00	-----	.23	.04	-----	.00	-----	.00			
TOTAL	6.06	7.07	2.71	3.45	2.14	5.56	4.96	2.66	4.10	2.86	1.79	1.58			
STA AV	4.36	5.22	4.39	4.61	3.86	4.44	4.18	3.10	4.76	2.49	4.72	4.72			

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM GAGES 1-31. STA AV FOR 6-YR 1957-62.

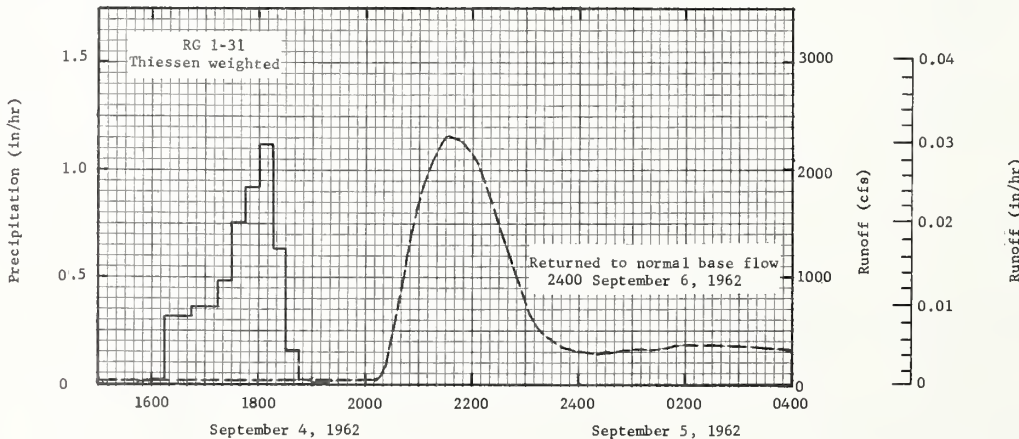
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-34		62.11
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	382.24	67.14	94.87	71.58	181.43	73.40	36.95	44.06	30.15	37.22	25.51	37.94			
2	118.10	63.47	82.83	55.88	54.14	87.92	52.74	42.99	30.14	43.71	27.83	38.44			
3	86.25	61.72	80.82	50.82	45.26	235.79	43.64	42.48	30.61	38.43	28.70	38.44			
4	67.99	60.09	80.56	48.57	44.13	299.23	35.46	37.96	225.37	36.45	27.79	38.44			
5	872.91	60.07	78.86	49.70	44.12	94.92	86.97	34.51	128.29	35.96	27.34	37.95			
6	391.72	63.92	76.57	50.94	43.58	51.83	68.07	33.55	39.14	36.45	27.34	36.47			
7	133.56	56.84	72.30	50.87	43.56	90.46	70.86	31.58	30.63	46.63	28.74	37.46			
8	92.11	48.61	82.54	50.86	43.55	53.60	29.67	33.02	27.83	44.43	31.61	38.44			
9	72.58	48.07	114.38	47.61	41.99	48.95	29.20	34.98	43.94	37.93	31.61	38.94			
10	71.80	45.81	109.53	52.17	41.47	46.75	31.63	33.54	59.77	34.99	30.63	43.61			
11	73.21	43.70	115.99	1049.11	41.46	185.36	33.56	33.54	41.50	34.51	32.10	43.11			
12	71.80	43.18	73.18	472.28	40.44	109.62	31.10	34.98	37.91	35.47	33.58	39.44			
13	67.18	42.68	51.53	97.02	39.93	35.03	29.64	35.46	37.91	34.99	35.02	39.44			
14	233.27	40.09	47.55	66.04	39.93	33.58	28.24	34.50	70.30	34.99	35.98	38.44			
15	1615.81	56.06	43.81	57.35	38.93	33.09	25.92	34.02	42.03	34.03	37.96	38.44			
16	132.22	81.00	39.60	51.87	38.43	33.09	26.36	31.58	37.46	430.26	39.94	38.44			
17	104.49	59.10	39.08	50.17	38.94	33.08	29.17	30.12	33.05	83.96	41.48	38.94			
18	96.14	111.21	38.09	50.16	37.94	33.08	30.12	30.12	29.67	50.63	43.55	40.45			
19	88.96	106.44	37.60	49.04	37.44	34.05	30.61	29.63	29.18	40.46	45.13	40.45			
20	81.06	54.78	54.80	46.27	37.93	34.05	30.61	31.09	30.13	37.44	46.74	41.48			
21	74.01	95.14	96.04	44.65	37.92	35.01	30.61	31.10	29.65	35.98	45.15	43.54			
22	1137.03	88.85	48.75	43.08	37.93	34.53	31.10	29.64	29.17	33.56	44.07	43.54			
23	2507.49	285.86	39.59	41.53	37.93	33.09	32.56	30.62	31.12	33.08	44.59	41.48			
24	216.08	462.92	38.54	41.02	38.42	34.58	59.44	33.55	33.08	34.53	43.54	40.96			
25	390.53	1277.80	46.34	41.02	38.42	81.19	619.13	144.44	33.08	33.55	44.07	43.02			
26	277.89	420.75	46.67	40.00	37.92	51.19	54.06	77.92	33.56	33.55	43.55	44.06			
27	542.50	1145.51	42.84	39.43	37.43	46.22	46.52	34.52	35.00	34.52	42.50	44.05			
28	220.88	373.80	44.14	40.00	36.45	38.61	45.12	31.12	34.52	34.04	40.98	43.54			
29	104.45	-----	43.09	39.48	40.54	44.17	43.52	59.01	32.59	32.57	39.44	41.48			
30	84.84	-----	49.14	42.66	62.12	36.47	41.45	60.48	32.10	31.11	38.94	40.96			
31	74.13	-----	492.02	-----	34.33	-----	43.04	32.58	-----	27.81	-----	41.47			
MEAN	338.17	405.88	77.46	97.71	45.61	69.44	58.93	40.60	45.30	50.75	36.85	40.41			
INCHES	3.33	3.61	.76	.93	.45	.66	.58	.40	.43	.50	.35	.40			

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.00031736. QUALITY OF RECORDS: GOOD. DAILY DISCHARGE VALUES INCLUDE RELATIVELY INSIGNIFICANT FLOW THROUGH AUXILIARY STATION 34-A.

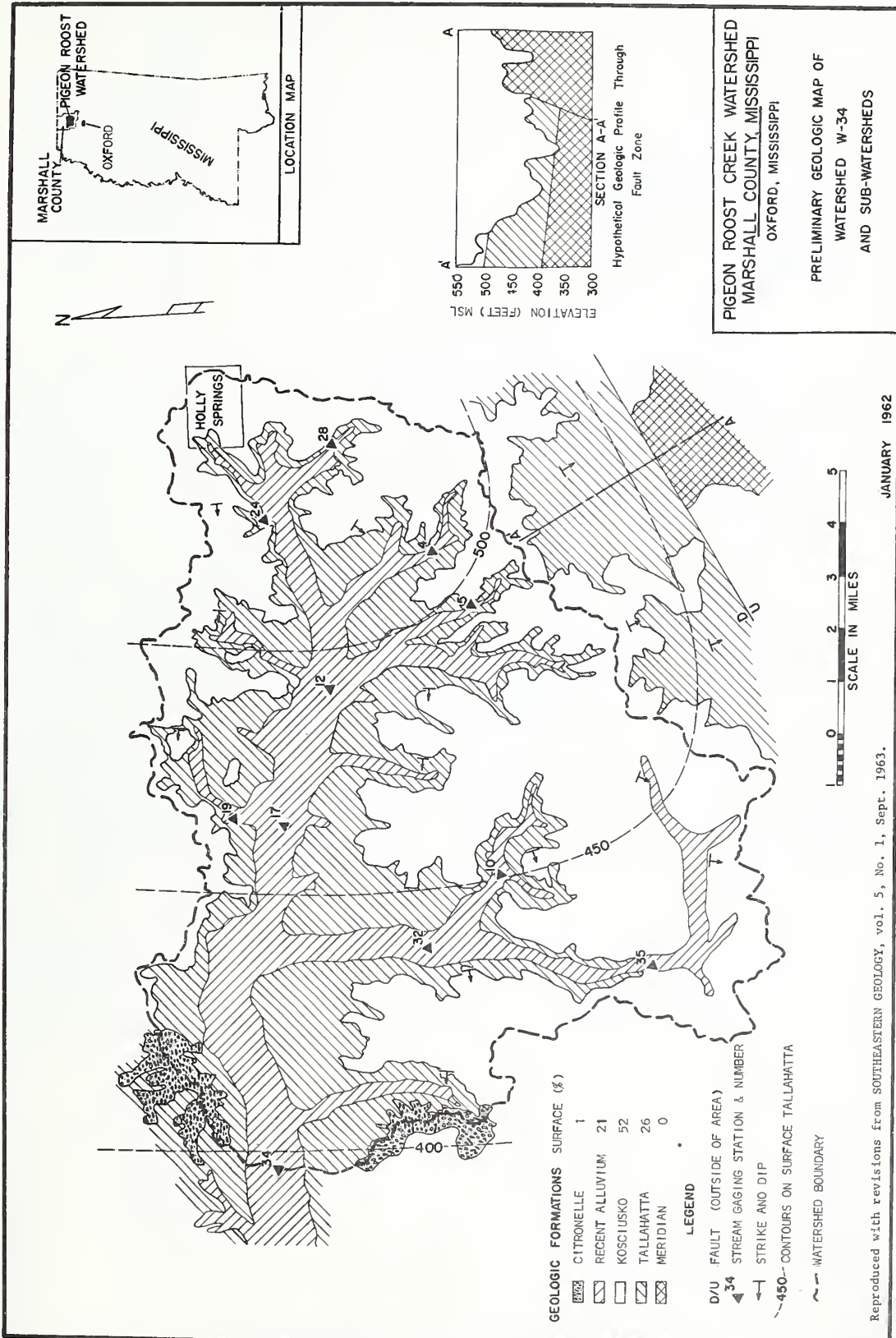
1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-34				62.11
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4-6, 1962 4/											
9-4	1/2/ .03	3/ .0086	9-4	1617	.00	.00	9- 4	1918	36.89	.0000	
				1627	1.86	.31		1944	40.89	.0002	
				1633	.50	.36		2014	41.92	.0004	
				1724	.04	.39		2032	575.13	.0017	
				1734	.96	.55		2052	1451.00	.0061	
				1742	3.45	1.01		2104	1858.00	.0105	
				1756	2.19	1.52		2114	2058.00	.0148	
				1810	1.54	1.88		2132	2316.26	.0235	
				1819	.33	1.93		2146	2281.59	.0306	
				1833	.04	1.94		2204	2098.00	.0393	
				1946	.02	1.96		2224	1617.52	.0475	
				RG	1			2300	788.00	.0571	
			9-4	1623		.00		2318	475.00	.0596	
				1847		.24		2332	382.40	.0609	
				RG	16			2346	328.77	.0620	
			9-4	1616		.00		2400	302.12	.0630	
				1836		.85	9- 5	0020	286.88	.0643	
				RG	23			0104	315.09	.0672	
			9-4	1711		.00		0134	339.08	.0694	
				1840		.79		0154	361.08	.0709	
				RG	27			0244	355.52	.0749	
			9-4	1612		.00		0324	344.52	.0780	
				1832		.86		0404	309.87	.0809	
				31 RG	AVG 1/5/			0504	236.87	.0845	
			9-4	1545		.00		0604	179.91	.0872	
				1600		.01		0704	143.00	.0894	
				1615		.02		0904	103.50	.0926	
				1630		.32		1054	72.81	.0948	
				1645		.32		1318	55.00	.0968	
				1700		.36		1506	50.55	.0981	
				1715		.36		1858	48.32	.1006	
				1730		.48		2400	46.13	.1038	
				1745		.76	9- 6	2400	32.05	.1162	
				1800		.92					
				1815		1.12					
				1830		.64					
				1845		.16					
				1900		.02					

Watershed conditions: 22% of area in mature cotton and corn, fair cover; 13% in pasture and 42% idle, fair to good cover; 21% in woods, good cover; 2% in bare gullies.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00001322. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.11-4. 1/ RAIN GAGES 1-31 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1220 ON 9-4-62. 3/ RUNOFF PRIOR TO 1918 ON 9-4-62. 4/ FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 5/ ISOHYETAL MAP ON P. 62.11-5. 6/ RAINFALL FOR GAGE 2 IS LISTED ON P. 62.6-3; GAGES 3, 10, 12, 21, AND 26 ON P. 62.10-3; GAGES 4, 5, 9, 25, 29, AND 31 ON P. 62.4-3; GAGE 6 ON P. 62.8-3; GAGES 7 AND 18 ON P. 62.1-3; GAGES 8 AND 19 ON P. 62.2-3; GAGE 11 ON P. 62.12-3; GAGES 13, 20, AND 24 ON P. 62.3-3; GAGES 15, 17, AND 22 ON P. 62.5-3; GAGE 28 ON P. 62.17-2; AND GAGE 30 ON P. 62.7-3. 6/ NORMAL BASE FLOW.



OXFORD, MISSISSIPPI WATERSHED W-34

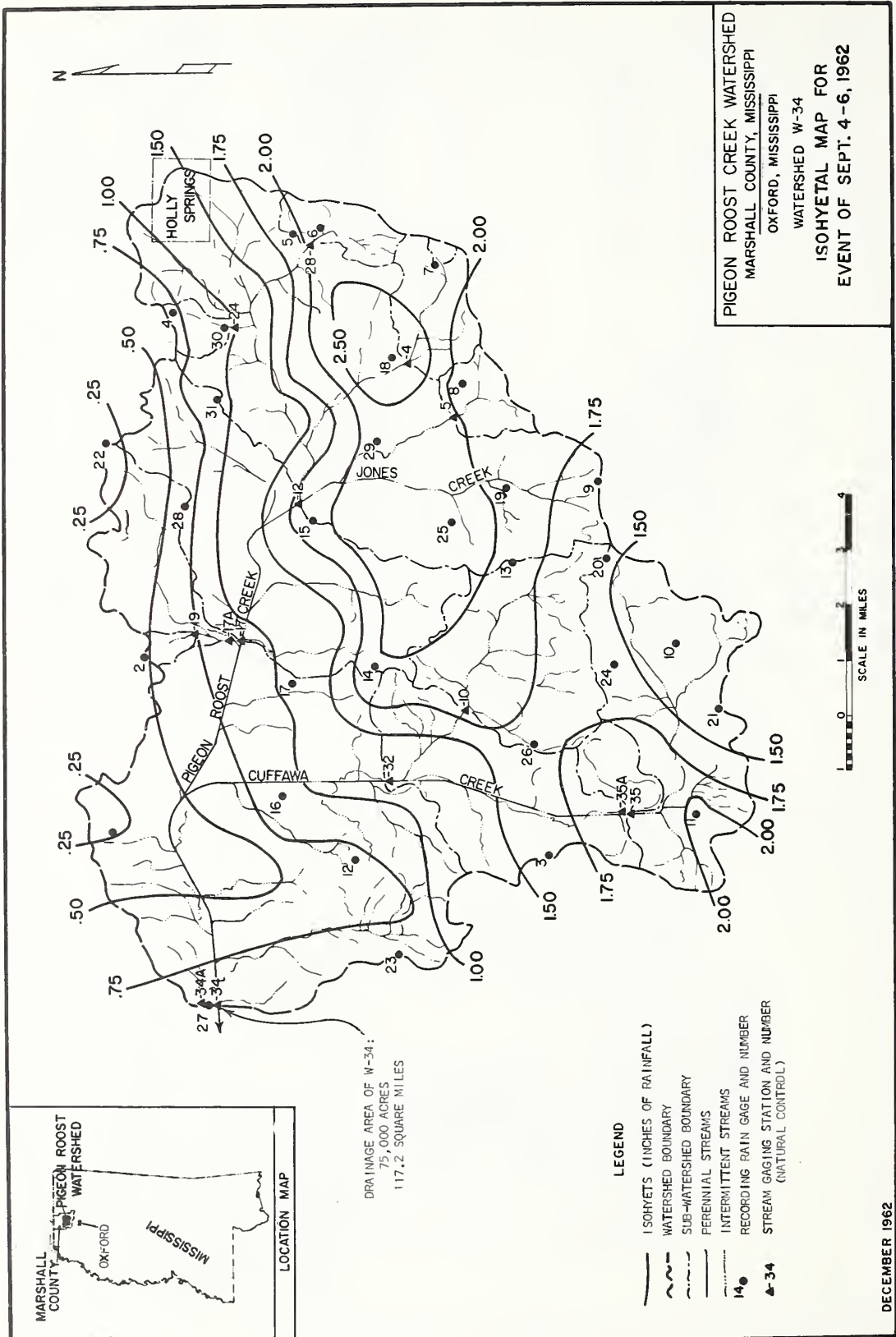


**PIGEON ROOST CREEK WATERSHED
MARSHALL COUNTY, MISSISSIPPI
OXFORD, MISSISSIPPI**

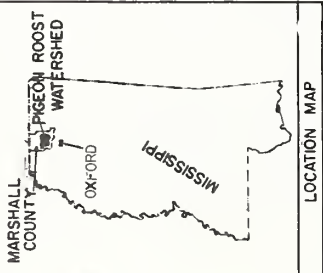
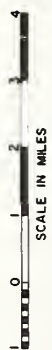
**PRELIMINARY GEOLOGIC MAP OF
WATERSHED W-34
AND SUB-WATERSHEDS**

JANUARY 1962

Reproduced with revisions from SOUTHEASTERN GEOLOGY, vol. 5, No. 1, Sept. 1963.



PIGEON ROOST CREEK WATERSHED
 MARSHALL COUNTY, MISSISSIPPI
 OXFORD, MISSISSIPPI
 WATERSHED W-34
 ISOHYETAL MAP FOR
 EVENT OF SEPT. 4-6, 1962



DRAINAGE AREA OF W-34:
 75,000 ACRES
 117.2 SQUARE MILES

- LEGEND**
- ISOHYETS (INCHES OF RAINFALL)
 - WATERSHED BOUNDARY
 - SUB-WATERSHED BOUNDARY
 - PERENNIAL STREAMS
 - INTERMITTENT STREAMS
 - ▲-34 RECORDING RAIN GAGE AND NUMBER (NATURAL CONTROL)
 - ▲-35 RECORDING RAIN GAGE AND NUMBER (NATURAL CONTROL)

DECEMBER 1962

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-35 ^{1/} 62.12 AREA—7,550 ACRES (11.8 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 p ^{2/}	5.85	7.11	2.88	3.86	2.11	6.19	4.40	2.00	5.72	2.65	2.01	1.66	46.44			
Q	3.43	4.23	.33	.69	.09	.36	.25	.00	.30	.01	.00	.00	9.69			
STA AV ^{3/} P	4.31	5.34	4.52	4.83	4.20	4.18	3.90	2.42	5.19	2.40	4.90	4.74	50.93			
(57-62) Q	1.86	2.14	1.40	1.30	.74	.23	.13	.03	.46	.06	.81	1.24	10.40			
MEAN ^{4/} 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.74	2-23	.73	2-23	1.37	2-23	2.19	2-23	2.43	2-23	2.69	2-23	2.76	2-21	4.20
MAXIMUMS FOR PERIOD OF RECORD																
19 57 to 19 62	2-23 1962	.74	2-23 1962	.73	2-23 1962	1.37	2-23 1962	2.19	2-23 1962	2.43	2-23 1962	2.69	1-30 1957	3.46	1-27 1957	4.46
NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 20% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 72% in pasture and idle land, good cover April to October with fair cover remainder of year; 6% in woods; 2% in bare gullies. 1/ About 8% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 5 rain gages. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.																
Type	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Ruston fine sandy loam to sandy clay loam	47	0-4	Weak fine crumb	Moderately rapid	Weak to moderate fine subangular blocky	Rapid	54	Moderately rapid	Rapid							
Collins silt loam	17	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid							
Grenada silt loam	15	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
Providence silt loam and silty clay loam	12	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Loring silt loam to silty clay loam	9	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
GEOLOGY: About 87% of the surface area is occupied by the Kosciusko formation and 13% is valley alluvial material. The dip of the stratigraphic units and the slope of the ground-water piezometric surface have changed from a normal westerly direction to the south by a fault along the southern boundary of the watershed. There is no base flow at the gaging station. The ground-water table is several feet below the stream bed at the gaging station. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.																

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI						WATERSHED W-35		62.12
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.16	.39	.00	.00	.02	.50	.00	.00		
2	.00	.00	.00	.00	.00	1.04	.27	.28	.02	.00	.00	.00		
3	.00	.00	.00	.00	.00	.99	.00	.00	.00	.00	.04	.00		
4	.00	.00	.00	.00	.00	.42	.00	.00	1.66	.00	.00	.00		
5	.94	.22	.00	.10	.00	.00	.47	.00	.00	.00	.00	.05		
6	.04	.00	.00	.12	.00	.02	.05	.00	.00	.00	.00	.00		
7	.00	.00	.00	.00	.00	.04	.00	.00	.00	.81	.00	.00		
8	.00	.06	.57	.24	.00	.19	.00	.00	.64	.00	.21	.00		
9	.15	.00	.03	.00	.00	.00	.00	.00	1.24	.00	.00	.00		
10	.00	.00	.29	.38	.00	.12	.00	.00	.00	.00	.00	.00		
11	.00	.00	.03	1.44	.00	1.02	.37	.00	.00	.00	.61	.00		
12	.00	.00	.00	.09	.00	.03	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00		
14	1.08	.00	.00	.00	.00	.00	.00	.00	1.15	.00	.00	.00		
15	.06	.56	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00		
16	.00	.00	.00	.00	.11	.00	.00	.00	.29	.71	.00	.01		
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.48	.02		
18	.00	.54	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00		
19	.05	.00	.00	.00	.00	.10	.00	.00	.00	.00	.14	.00		
20	.04	.06	.42	.00	.00	.00	.00	.00	.00	.46	.00	.00		
21	.16	.26	.00	.00	.00	.17	.00	.00	.00	.17	.11	.58		
22	1.76	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	.21	3.01	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00		
24	.12	.00	.00	.00	.00	.80	1.53	.55	.00	.00	.00	.52		
25	.50	1.01	.38	.00	.00	.67	1.53	.72	.11	.00	.37	.00		
26	.49	.90	.00	.00	.00	.18	.00	.00	.42	.00	.00	.02		
27	.25	.47	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00		
28	.00	.00	.00	.11	.00	.00	.16	.00	.00	.00	.00	.28		
29	.00	-----	.00	.00	.39	.01	.00	.00	.00	.00	.00	.18		
30	.00	-----	.99	1.06	1.45	.00	.00	.35	.00	.00	.00	.00		
31	.00	-----	.17	-----	.00	-----	.02	.07	-----	.00	-----	.00		
TOTAL	5.85	7.11	2.88	3.86	2.11	6.19	4.40	2.00	5.75	2.65	2.01	1.66		
STA AV	4.31	5.34	4.52	4.83	4.20	4.18	3.90	2.42	5.20	2.40	4.90	4.74		

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 10, 11, 20, 21, AND 24. STA AV FOR 6-YR 1957-62.

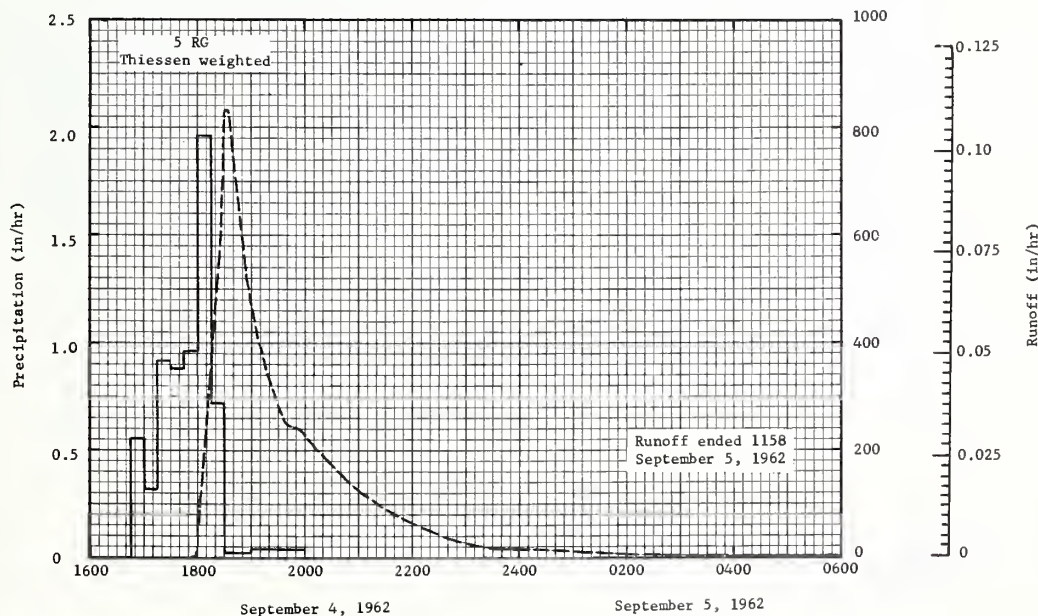
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI						WATERSHED W-35		62.12
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	38.76	.01	2.27	1.04	28.19	.00	.00	.00	.00	.00	.00	.00		
2	9.23	.01	.31	.00	.00	24.90	.14	.00	.00	.00	.00	.00		
3	2.20	.00	.04	.00	.00	29.73	.00	.00	.00	.00	.00	.00		
4	.31	.01	.03	.00	.00	16.85	.00	.00	48.16	.00	.00	.00		
5	85.09	.01	.03	.00	.00	.13	.00	.00	1.24	.00	.00	.00		
6	33.07	.01	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00		
7	10.56	.01	.00	.00	.00	.00	.00	.00	.00	2.57	.00	.00		
8	3.34	.01	3.33	.00	.00	.00	.00	.00	.30	.03	.00	.00		
9	.06	.00	8.95	.00	.00	.00	.00	.00	16.27	.00	.00	.00		
10	.00	.00	9.06	.00	.00	.00	.00	.00	.41	.00	.00	.00		
11	.00	.01	5.05	155.09	.00	36.85	.00	.00	.00	.00	.00	.00		
12	.01	.01	.80	60.36	.00	4.99	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	2.83	.00	.04	.00	.00	.00	.00	.00	.00		
14	91.84	.00	.00	.06	.00	.01	.00	.00	29.36	.00	.00	.00		
15	142.24	.34	.00	.00	.00	.01	.00	.00	.13	.00	.00	.00		
16	13.17	.49	.00	.00	.00	.00	.00	.00	.46	.34	.00	.00		
17	5.65	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00		
18	2.85	6.68	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
19	.67	3.66	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.05	.14	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00		
21	.00	2.86	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00		
22	288.42	2.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	147.64	843.67	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
24	21.70	29.74	.00	.00	.00	.00	14.93	.00	.00	.00	.00	.00		
25	82.69	178.00	.00	.00	.00	1.65	62.92	.82	.00	.00	.00	.00		
26	39.76	97.37	.00	.00	.00	.00	1.22	.34	.00	.00	.00	.00		
27	53.42	139.94	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
28	12.52	38.65	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
29	2.89	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
30	.93	-----	.80	.53	.05	.00	.00	.00	.00	.00	.00	.00		
31	.03	-----	73.09	-----	.00	-----	.00	.00	-----	.00	-----	.00		
MEAN	35.13	47.98	3.36	7.33	.91	3.84	2.55	.04	3.21	.10	.00	.00		
INCHES	3.43	4.23	.33	.62	.02	.36	.25	.00	.30	.01	.00	.00		

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0031526. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-35				62.12
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4-5, 1962											
9-4	.00	.0000	9-4	11			9-4	1752	.00	.0000	
				1655	.00	.00		1758	.05	.0000	
				1717	.08	.03		1826	585.00	.0179	
				1735	.77	.26		1832	836.76	.0272	
				1741	2.90	.55		1854	519.64	.0599	
				1755	1.67	.94					
				1759	1.20	1.02		1918	340.00	.0825	
				1810	4.58	1.86		1938	253.60	.0955	
				1816	1.30	1.99		1954	240.36	.1041	
				1825	.07	2.00		2032	168.22	.1211	
				1908	.01	2.01		2138	83.32	.1393	
				1936	.06	2.04		2238	38.60	.1473	
				2002	.02	2.05		2326	19.75	.1503	
				5 RG	AVG 1/2/3/			2400	18.19	.1518	
				1645	.00	.00		9-5	0232	1.97	.1551
				1700	.56	.14		0554	.18	.1556	
				1715	.32	.22		0732	.10	.1556	
				1730	.92	.45		1158	.00	.1556	
				1745	.88	.67					
				1800	.96	.91					
1815	1.96	1.40									
1830	.72	1.58									
1845	.02	1.58									
1900	.02	1.59									
1915	.04	1.60									
1930	.04	1.61									
1945	.04	1.62									
2000	.04	1.63									

Watershed conditions: 20% of area in mature cotton and corn, fair cover; 19% in pasture and 53% idle, fair to good cover; 6% in woods, good cover; 2% in bare gullies.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0001314. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59. USDA MISC. PUB. 945, P. 62.12-5. 1/ RAIN GAGES 10, 11, 20, 21, AND 24 THIESSEN WEIGHTED. 2/ RAINFALL FOR GAGES 10 AND 21 IS LISTED ON P. 62.10-3, AND GAGES 20 AND 24 ON P. 62.3-3. 3/ ISOHYETAL MAP ON P. 62.11-5.



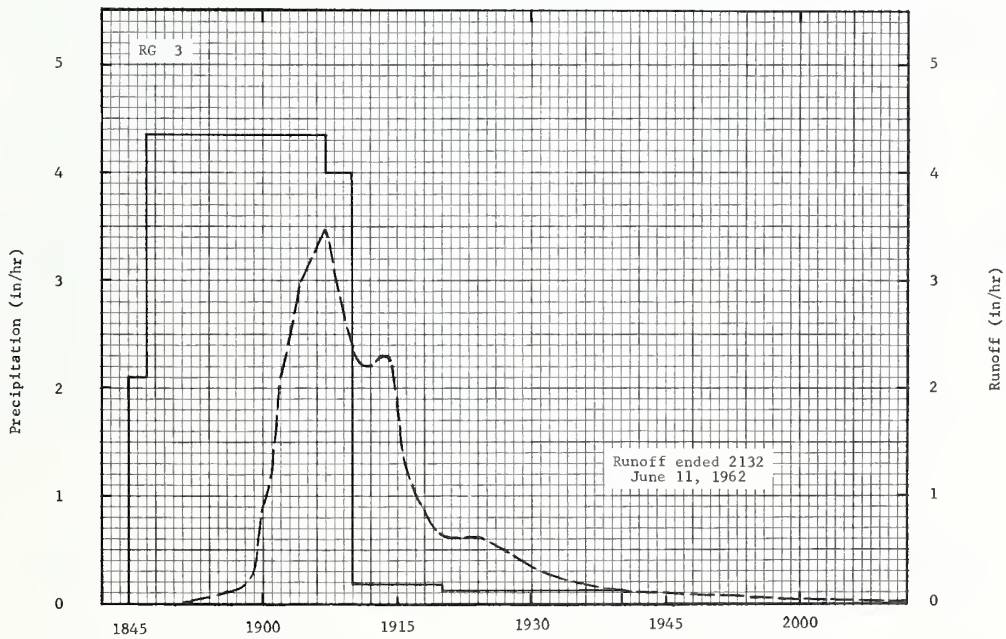
OXFORD, MISSISSIPPI WATERSHED W-35

MONTHLY PRECIPITATION AND RUNOFF (inches) <u>1/</u>						OXFORD, MISSISSIPPI WATERSHED WC-1 AREA—3.88 ACRES										
YEAR	MDNTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NDV	DEC	ANNUAL		
1962	P	7.10	6.92	3.07	3.53	1.92	7.11	5.20	3.87	3.62	2.08	1.94	1.45	47.81		
	Q	5.12	4.18	.96	1.27	.00	1.93	1.83	1.29	.84	.24	.02	.00	17.68		
	STA AV ^{2/} P	3.77	4.80	4.85	4.00	4.24	4.86	4.38	4.33	3.53	2.55	3.94	4.61	49.86		
	(58-62) Q	1.77	2.03	2.02	.71	1.20	1.40	.85	1.21	.83	.53	1.08	1.72	15.35		
	MEAN P ^{3/} 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-11	3.48	1-22	1.37	2-23	1.83	1-22	2.45	1-22	2.71	1-22	2.71	1-22	2.71	2-21	4.06
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1962	6-10 1961	7.34	6-10 1961	1.94	6-10 1961	1.98	1-22 1962	2.45	1-22 1962	2.71	1-22 1962	2.71	6-10 1959	2.76	12-9 1961	4.26
NOTES: Quality of records: Monthly P and Q, good. Watershed conditions: 100% of area was cultivated in corn, low crop yields, poor winter cover provided by crop residue. <u>1/</u> Precipitation data obtained from rain gage 3. <u>2/</u> Precipitation and runoff records began Jan. 1958. <u>3/</u> Mean precipitation based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material: Providence silt loam and silty clay loam - 100%. Topsoil: depth - 0-6 in.; structure-weak, fine to medium, granular; permeability - moderate. Subsoil: structure - weak, medium, subangular blocky; permeability - slow. Substratum: average depth to - 36 in.; permeability - moderate; internal drainage - medium to slow.																
GEOLOGY: Outcrops of geological material do not occur within the watershed. The surface soil cover, which ranges in depth from about 4 to 6 feet, is underlain by the Kosciusko formation of the Claiborne group of Eocene age. The texture of this formation is predominately sands with local clay lenses. Regional structure dips slightly to the west. The hydrology of the immediate area is not materially affected by local subsurface structure or ground-water interfaces. Ground water occurs at depths in excess of 50 feet. Small local perched water bodies may occur within or immediately below the surface soil cover. Source of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954.																
1962 SELECTED RUNOFF EVENT						OXFORD, MISSISSIPPI WATERSHED WC-1										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-OAY	TIME OF OAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF OAY	RATE (in/hr)	ACC. (inches)						
Event of June 11, 1962																
	RC 3			RC	3											
5-16	.05	.000	6-11	1845	.00	.00	6-11	1851	.000	.000						
5-29	.07	.000		1847	2.10	.07		1852	.033	.000						
5-30	1.78	.000		1907	4.35	1.52		1855	.087	.003						
6-1	.65	.000		1910	4.00	1.72		1858	.182	.010						
6-2	.25	.000		1920	.18	1.75		1859	.317	.014						
6-3	.38	.000		1940	.12	1.79		1900	.925	.024						
6-4	.75	.087						1901	1.229	.042						
6-7	.04	.000						1902	2.109	.070						
6-8	.28	.000						1903	2.505	.109						
6-10	.16	.000						1904	2.965	.154						
6-11	<u>4/</u> .03	.000						1906	3.297	.259						
								1907	3.476	.315						
								1908	3.067	.370						
								1909	2.709	.418						
								1910	2.369	.460						
								1911	2.206	.498						
								1912	2.206	.535						
								1913	2.303	.573						
								1914	2.303	.611						
								1915	1.858	.646						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.912. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4.																
<u>4/</u> RAINFALL BETWEEN 1045 AND 1055 ON 6-11-62.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED WC-1				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-OAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF OAY	RATE (in/hr)	ACC. (inches)	
Watershed conditions: 100% of area was in corn, 15" to 18" high. Relatively clean cultivated with about 4000 plants per acre. Last tillage operation was on May 17. Row direction ranges from approximate contour to up and down hill.			Event of June 11, 1962 - Continued								
			6-11	1916	1.283	.672					
				1918	.879	.708					
				1920	.613	.733					
				1924	.613	.774					
				1928	.440	.809					
				1930	.317	.821					
				1935	.197	.843					
				1946	.087	.869					
				2002	.033	.885					
				2017	.013	.890					
				2033	.005	.893					
				2046	.003	.894					
				2132	.000	.895					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.912.



June 11, 1962

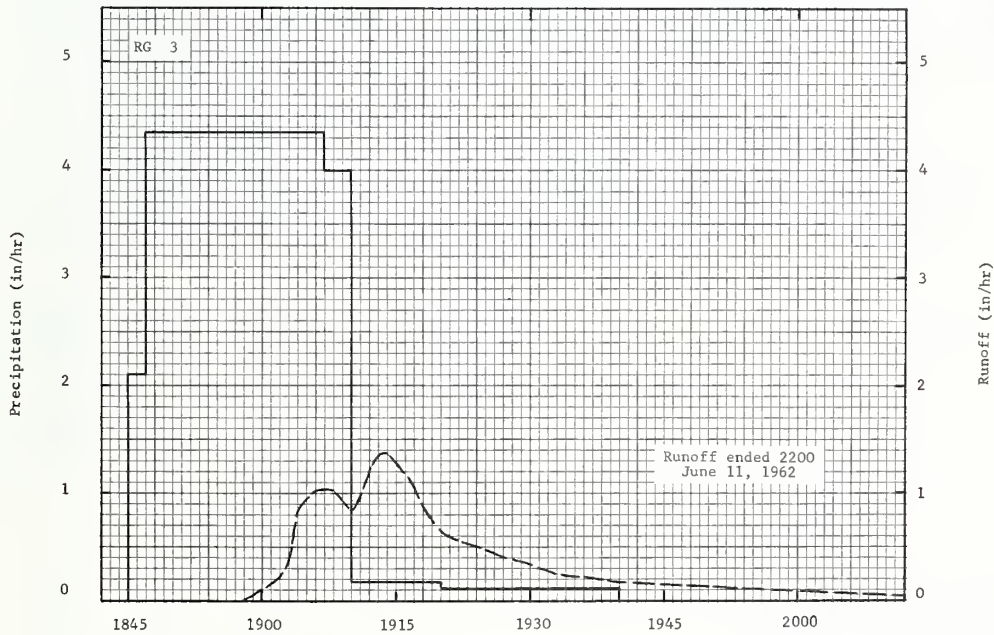
OXFORD, MISSISSIPPI WATERSHED WC-1

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						OXFORD, MISSISSIPPI WATERSHED WC-2 AREA—1.45 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P	7.10	6.92	3.07	3.53	1.92	7.11	5.20	3.87	3.62	2.08	1.94	1.45	47.81		
	Q	5.43	3.63	.51	1.03	.00	1.02	.94	.63	.28	.15	.02	.00	13.64		
STA AV ² /P (58-62)	P	3.77	4.80	4.85	4.00	4.24	4.86	4.38	4.33	3.53	2.55	3.94	4.61	49.86		
	Q	2.06	2.15	1.91	.51	.89	1.14	.58	.69	.57	.30	.76	1.49	13.05		
MEAN P ³ / 43 YR		5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	1-22	2.54	1-22	1.29	2-23	1.76	1-22	2.37	1-22	2.69	1-22	2.69	1-22	2.69	2-21	3.59
MAXIMUMS FOR PERIOD OF RECORD																
1958 to 1962	6-10 1961	4.81	1-22 1962	1.29	2-23 1962	1.76	1-22 1962	2.37	1-22 1962	2.69	1-22 1962	2.69	1-22 1962	2.69	12-9 1961	3.66
NOTES: Quality of records: Monthly P and Q, good. Watershed conditions: 100% of area was cultivated in corn, average crop yields, fair winter cover provided by crop residue. ^{1/} Precipitation data obtained from rain gage 3. ^{2/} Precipitation and runoff records began Jan. 1958. ^{3/} Mean precipitation based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material and soils derived from Coastal Plains material.																
Type	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Providence silt loam and silty clay loam	44	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Ruston sandy clay loam	41	0-4	Weak fine crumb	Moderate- ly rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderate- ly rapid	Rapid							
Loring silt loam	15	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
GEOLOGY: Outcrops of geological material do not occur within the watershed. The surface soil cover, which ranges in depth from about 4 to 6 feet, is underlain by the Kosciusko formation of the Claiborne group of Eocene age. The texture of this formation is predominately sands with local clay lenses. Regional structure dips slightly to the west. The hydrology of the immediate area is not materially affected by local subsurface structure or ground-water interfaces. Ground water occurs at depths in excess of 50 feet. Small local perched water bodies may occur within or immediately below the surface soil cover. Source of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954.																
1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI WATERSHED WC-2													
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 11, 1962																
	RG 3			RG	3											
5-16	.05	.000	6-11	1845	.00	.00	6-11	1858	.000	.000						
5-29	.07	.000		1847	2.10	.07		1859	.068	.001						
5-30	1.78	.000		1907	4.35	1.52		1902	.205	.007						
6-1	.65	.000		1910	4.00	1.72		1903	.383	.012						
6-2	.25	.000		1920	.18	1.75		1904	.848	.023						
6-3	.38	.000		1940	.12	1.79		1906	1.026	.054						
6-4	.75	.000						1908	1.026	.088						
6-7	.04	.000						1910	.848	.119						
6-8	.28	.000						1912	1.224	.154						
6-10	.16	.000						1913	1.375	.175						
6-11	4/.03	.000														
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.462. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4. ^{4/} RAINFALL BETWEEN 1045 AND 1055 ON 6-11-62.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED WC 2				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Watershed conditions: 100% of the area was in corn, 15" to 18" high. Relatively clean cultivated with about 12,000 plants per acre. Last tillage operation on May 29. Cultivated on the contour, 0.2 to 0.4% row slopes.			Event of June 11, 1962 - Continued								
			6-11	1914	1.375	.198					
				1917	1.074	.260					
				1920	.636	.302					
				1926	.451	.357					
				1933	.260	.398					
				1952	.109	.457					
				2013	.034	.482					
				2032	.014	.489					
				2050	.007	.493					
				2200	.000	.496					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.462.

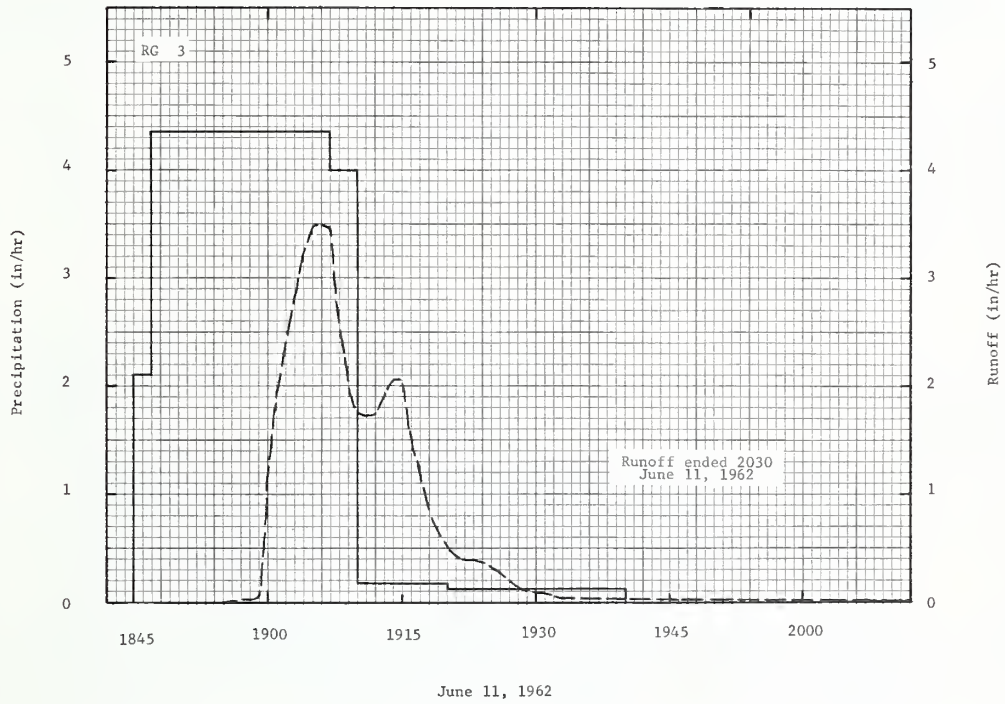


June 11, 1962

OXFORD, MISSISSIPPI WATERSHED WC-2

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						OXFORD, MISSISSIPPI WATERSHED WC-3 AREA—1.61 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P	7.10	6.92	3.07	3.53	1.92	7.11	5.20	3.87	3.62	2.08	1.94	1.45	47.81			
Q	4.72	3.90	.74	1.03	.00	1.79	2.00	1.56	.83	.25	.11	.02	16.95			
STA AV ^{2/} P	3.77	4.80	4.85	4.00	4.24	4.86	4.38	4.33	3.53	2.55	3.94	4.61	49.86			
(58-62) Q	1.73	2.37	2.25	.56	.97	1.59	.94	1.30	.74	.56	1.15	1.70	15.86			
MEAN P ^{3/} 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962	6-11	3.49	1-22	1.31	2-23	1.70	1-22	2.26	1-22	2.59	1-22	2.59	1-22	2.59	2.21	3.77
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1962	6-10 1961	5.96	6-10 1961	1.82	6-10 1961	1.85	1-22 1962	2.26	1-22 1962	2.59	1-22 1962	2.59	1-22 1962	2.59	12-9 1961	4.31
NOTES: Quality of records: Monthly P and Q, good. Watershed conditions: 100% of area was cultivated in corn, low crop yields, poor winter cover provided by crop residue. ^{1/} Precipitation data obtained from rain gage 3. ^{2/} Precipitation and runoff records began Jan. 1958. ^{3/} Mean precipitation based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material: Providence silt loam and silty clay loam - 100%. Topsoil: depth - 0-6 in.; structure-weak, fine to medium, granular; permeability - moderate. Subsoil: structure - weak, medium, subangular blocky; permeability - slow. Substratum: average depth to - 36 in.; permeability - moderate; internal drainage - medium to slow.																
GEOLOGY: Outcrops of geological material do not occur within the watershed. The surface soil cover, which ranges in depth from about 4 to 6 feet, is underlain by the Kosciusko formation of the Claiborne group of Eocene age. The texture of this formation is predominately sands with local clay lenses. Regional structure dips slightly to the west. The hydrology of the immediate area is not materially affected by local subsurface structure or ground-water interfaces. Ground water occurs at depths in excess of 50 feet. Small local perched water bodies may occur within or immediately below the surface soil cover. Source of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954.																
1962 SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI				WATERSHED WC-3								
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 11, 1962																
	RG 3			RG	3											
5-16	.05	.000	6-11	1845	.00	.00	6-11	1855	.000	.000						
5-29	.07	.000		1847	2.10	.07		1856	.012	.000						
5-30	1.78	.000		1907	4.35	1.52		1858	.018	.001						
6-1	.65	.000		1910	4.00	1.72		1859	.345	.004						
6-2	.25	.000		1920	.18	1.75		1900	1.189	.016						
6-3	.38	.000		1940	.12	1.79		1901	1.953	.043						
6-4	.75	.017						1904	3.222	.172						
6-7	.04	.000						1905	3.487	.228						
6-8	.28	.000						1907	3.487	.344						
6-10	.16	.000						1908	2.587	.395						
6-11	4/.03	.000						1910	1.737	.467						
								1912	1.737	.525						
								1914	2.064	.588						
								1915	2.064	.622						
								1916	1.528	.652						
								1918	.844	.692						
								1921	.407	.723						
								1924	.376	.743						
								1928	.142	.760						
								1933	.031	.767						
								1941	.012	.770						
								1948	.006	.771						
								2030	.000	.773						
Watershed conditions: 100% of area was in corn, 15" to 18" high. Relatively clean cultivated with about 4000 plants per acre. Last tillage operation was on May 17. Row direction ranges from approximate contour to up and down hill.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.623. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4. ^{4/} RAINFALL BETWEEN 1045 AND 1055 ON 6-11-62.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station



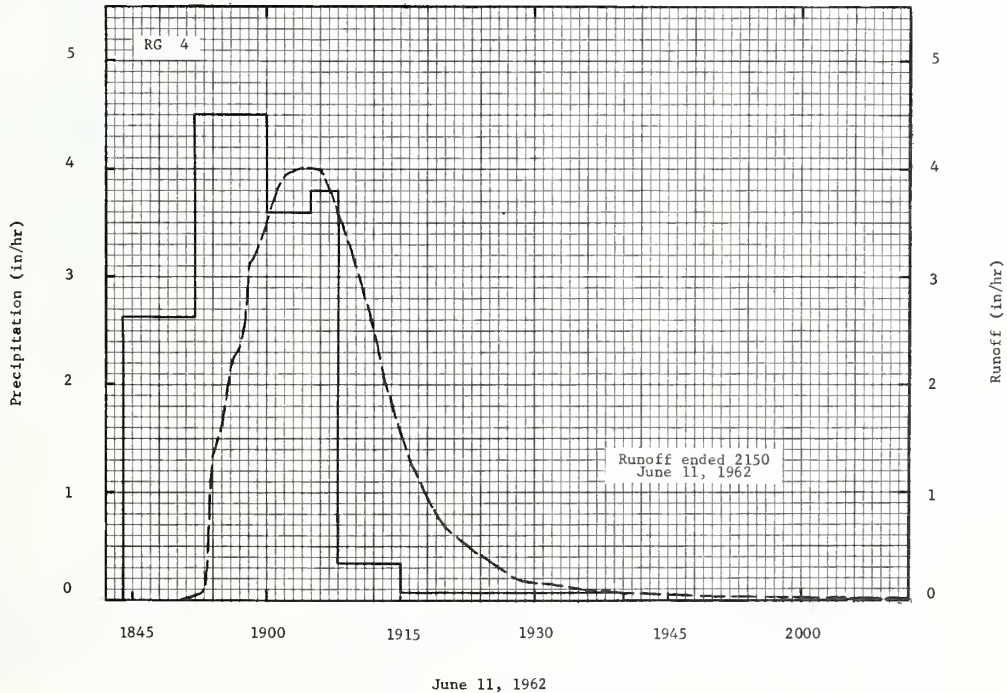
OXFORD, MISSISSIPPI WATERSHED WC-3

MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						OXFORD, MISSISSIPPI WATERSHED WP-4 AREA—3.01 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P	7.20	6.81	3.04	3.51	1.89	6.96	5.14	3.57	3.40	2.09	1.97	1.43	47.01		
	Q	5.01	4.06	.94	1.38	.29	2.82	1.90	.89	.45	.20	.04	.01	17.99		
STA AV ² / _P (58-62)	P	3.79	4.77	4.79	3.87	4.17	4.72	4.29	4.14	3.46	2.46	3.90	4.51	48.87		
	Q	1.93	2.54	2.40	.87	1.24	2.04	.99	.93	.56	.60	1.00	1.33	16.43		
MEAN P ³ / _{43 YR}		5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-11	4.02	1-22	1.49	2-23	1.90	1-22	2.45	1-22	2.79	1-22	2.79	1-22	2.79	2-21	3.93
MAXIMUMS FOR PERIOD OF RECORD																
19 58 to 19 62	6-10 1961	5.30	6-10 1961	1.97	6-10 1961	1.97	1-22 1962	2.45	1-22 1962	2.79	1-22 1962	2.79	1-22 1962	2.79	2-21 1962	3.93
NOTES: Quality of records: Monthly P and Q, good. Watershed conditions: 100% of area in permanent pasture since 1956. Good to fair cover on 85% area, 15% (steeper slopes) has poor cover. Poor management - overgrazed, no fertilization. 1/ Precipitation data obtained from rain gage 4. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean precipitation based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material and soils derived from Coastal Plains material.																
Type	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Providence silt loam and silty clay loam	45	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Ruston fine sandy loam	38	0-4	Weak fine crumb	Moderate- ly rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderate- ly rapid	Rapid							
Crenada silt loam	17	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
GEOLOGY: Outcrops of geological material do not occur within the watershed. The surface soil cover, which ranges in depth from about 4 to 6 feet, is underlain by the Kosciusko formation of the Claiborne group of Eocene age. The texture of this formation is predominately sands with local clay lenses. Regional structure dips slightly to the west. The hydrology of the immediate area is not materially affected by local subsurface structure or ground-water interfaces. Ground water occurs at depths in excess of 50 feet. Small local perched water bodies may occur within or immediately below the surface soil cover. Source of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954.																
1962 SELECTED RUNOFF EVENT						OXFORD, MISSISSIPPI WATERSHED WP-4										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 11, 1962																
	RC 4			RC	4											
5-16	.05	.000	6-11	1844	.00	.00	6-11	1850	.000	.000						
5-29	.08	.000		1852	2.63	.35		1851	.201	.002						
5-30	1.74	.287		1900	4.50	.95		1852	.567	.008						
6-1	.68	.165		1905	3.60	1.25		1853	.900	.020						
6-2	.26	.005		1908	3.80	1.44		1854	1.354	.039						
6-3	.38	.042		1915	.34	1.48		1855	1.618	.064						
6-4	.73	.322		1940	.07	1.51		1856	2.201	.096						
6-7	.04	.000						1857	2.316	.133						
6-8	.37	.068						1858	3.097	.178						
6-10	.19	.000						1900	3.493	.288						
6-11	4/.04	.000														
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.035. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4. 4/ RAINFALL BETWEEN 1040 AND 1050 ON 6-11-62.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED WP-4				
ANTECEDENT CONITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
<p>Watershed conditions: 100% of area was in permanent pasture (common lespedeza and native grasses). About 85% of area had good cover, 15% poor cover.</p>			Event of June 11, 1962 - Continued								
			6-11	1902	3.954	.412					
				1904	4.020	.545					
				1906	4.020	.679					
				1908	3.592	.806					
				1910	3.143	.918					
				1912	2.554	1.013					
				1914	1.865	1.087					
				1916	1.321	1.140					
				1918	.929	1.177					
				1920	.689	1.204					
				1924	.409	1.241					
				1928	.201	1.261					
				1936	.099	1.281					
				1949	.033	1.295					
	2005	.007	1.301								
	2018	.003	1.302								
	2150	.000	1.304								

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.035.



OXFORD, MISSISSIPPI WATERSHED WP-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-17A 62.17 AREA—3,200 ACRES (5.00 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ¹ / Q	6.62 3.48	6.81 4.12	2.64 .17	3.05 .29	2.12 .03	4.99 .01	5.44 .22	2.91 .07	2.84 .01	3.58 .38	1.66 .01	1.47 .02	44.13 8.81			
STA AV ² / (58-62) Q	3.81	4.76	4.59	4.16	3.22	4.06	4.71	4.15	3.97	2.34	3.51	4.68	47.96			
MEAN P ³ / 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.42	2-23	.42	2-23	.84	2-23	2.20	2-23	3.18	2-23	3.33	2-23	3.34	2-23	4.15
MAXIMUMS FOR PERIOD OF RECORD ⁴ / ₄																
19 61 to 19 62	2-23 1962	.42	2-23 1962	.42	2-23 1962	.84	2-23 1962	2.20	2-23 1962	3.18	2-23 1962	3.33	2-23 1962	3.34	2-23 1962	4.15
NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 16% of area in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 54% in pasture and idle land, good cover April to October with fair cover remainder of year; 28% in woods; 2% in bare gullies. 1/ Monthly precipitation Thiessen weighted from rain gages 2, 17, 22, and 28. 2/ Precipitation and runoff records began Jan. 1957, but monthly data for 1957 were excluded from the station averages because discharge values were estimated that year. 3/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss. 4/ Maximum discharges and volumes were not computed prior to 1961 - poor records 1957-60.																
SOILS: (Revision) Subsoil structure for Ruston fine sandy loam should read: <u>Weak to moderate, fine subangular blocky</u> (instead of weak, fine granular subangular blocky as previously described). Topsoil structure for Providence, Loring, and Grenada soils should read: <u>Weak, fine to medium, granular.</u>																
1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI WATERSHED W-17A 62.17										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.19	.18	.00	.00	.00	.72	.00	.00				
2	.00	.00	.00	.00	.00	.55	.65	.26	.00	.00	.00	.00				
3	.00	.00	.00	.00	.00	.46	.00	.00	.00	.00	.04	.00				
4	.00	.00	.00	.00	.00	.72	.00	.00	.54	.00	.00	.00				
5	1.07	.09	.00	.12	.00	.00	.24	.00	.00	.00	.00	.05				
6	.02	.00	.00	.07	.00	.00	.78	.00	.00	.00	.00	.00				
7	.00	.00	.00	.00	.00	.23	.00	.00	.00	.73	.00	.00				
8	.00	.06	.41	.20	.00	.06	.00	.00	.16	.00	.21	.00				
9	.13	.00	.05	.00	.00	.00	.00	.00	.60	.00	.00	.00				
10	.00	.00	.30	.82	.00	.54	.00	.00	.00	.00	.00	.00				
11	.00	.00	.00	.57	.00	.08	.58	.00	.00	.00	.32	.00				
12	.00	.00	.00	.10	.00	.10	.00	.00	.00	.00	.00	.00				
13	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00				
14	1.14	.00	.00	.00	.00	.00	.00	.00	.68	.02	.00	.00				
15	.10	.50	.00	.00	.00	.00	.00	.00	.13	.08	.00	.00				
16	.00	.00	.00	.00	.01	.00	.01	.00	.00	1.64	.00	.01				
17	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.46	.02				
18	.00	.42	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00				
19	.06	.00	.00	.00	.00	.19	.00	.00	.00	.00	.17	.00				
20	.05	.02	.57	.00	.00	.00	.00	.00	.00	.33	.00	.01				
21	.04	.44	.00	.00	.00	.00	.00	.00	.00	.06	.14	.51				
22	2.58	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
23	.13	3.50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
24	.14	.00	.00	.00	.00	.58	.72	1.17	.06	.00	.00	.44				
25	.48	1.07	.24	.00	.00	.57	1.94	1.22	.20	.00	.28	.00				
26	.49	.33	.00	.00	.00	.72	.00	.00	.40	.00	.00	.04				
27	.19	.38	.00	.25	.00	.00	.00	.00	.00	.00	.00	.00				
28	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.26				
29	.00	-----	.00	.00	.45	.01	.00	.00	.00	.00	.00	.13				
30	.00	-----	.93	.88	1.47	.00	.00	.10	.00	.00	.00	.00				
31	.00	-----	.14	-----	.00	-----	.52	.16	-----	.00	-----	.00				
TOTAL	6.62	6.81	2.64	3.05	2.12	4.99	5.44	2.91	2.84	3.58	1.66	1.47				
STAAV	3.81	4.76	4.59	4.16	3.22	4.06	4.71	4.15	3.97	2.34	3.51	4.68				
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM GAGES 2, 17, 22, AND 28. STATION AVERAGE IS FOR 5-YR RECORD PERIOD 1958-62.																

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI WATERSHED W-17A							62-17
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	8.94	.21	6.73	.09	2.70	.04	.03	.04	.06	.05	.07	.11	
2	4.21	.11	1.31	.10	.02	.04	.03	.05	.06	.03	.08	.10	
3	1.15	.11	1.09	.09	.01	.02	.04	.05	.05	.05	.05	.10	
4	.30	.11	.70	.09	.01	1.11	.04	.05	.08	.07	.03	.08	
5	20.63	.08	.27	.10	.01	.05	.05	.04	.10	.07	.03	.07	
6	7.00	.04	.35	.09	.01	.07	1.30	.05	.07	.05	.02	.09	
7	2.14	.07	.35	.07	.01	.07	1.38	.05	.07	.09	.02	.10	
8	.75	.11	1.47	.07	.01	.04	.02	.05	.09	.05	.04	.12	
9	.19	.11	1.52	.07	.01	.03	.04	.05	.10	.06	.03	.13	
10	.16	.09	1.44	9.00	.01	.03	.04	.05	.10	.07	.02	.13	
11	.17	.10	.83	20.66	.00	.03	.03	.05	.09	.07	.05	.12	
12	.16	.10	.28	7.48	.05	.03	.06	.05	.07	.06	.09	.11	
13	.15	.09	.15	.35	.07	.03	.06	.04	.06	.05	.08	.11	
14	46.86	.11	.13	.21	.03	.04	.02	.04	.05	.07	.06	.12	
15	38.41	.29	.13	.12	.02	.04	.04	.04	.06	.07	.05	.11	
16	1.78	.13	.13	.07	.03	.03	.03	.05	.09	49.73	.07	.11	
17	.77	.12	.13	.07	.02	.03	.01	.04	.07	.34	.11	.13	
18	.85	.48	.12	.14	.03	.03	.00	.03	.05	.03	.10	.13	
19	.65	.26	.11	.14	.05	.02	.00	.04	.03	.04	.10	.13	
20	.21	.14	1.15	.08	.04	.02	.00	.02	.06	.03	.10	.12	
21	.16	.92	.23	.06	.04	.03	.00	.02	.06	.03	.10	.12	
22	188.65	.14	.02	.05	.04	.04	.00	.03	.05	.03	.11	.12	
23	70.77	447.48	.02	.06	.04	.04	.00	.03	.04	.03	.10	.11	
24	17.51	.97	.01	.06	.04	.03	.00	.08	.04	.04	.08	.08	
25	18.40	60.23	.01	.04	.04	.03	24.85	7.73	.02	.04	.09	.07	
26	13.91	13.65	.02	.04	.05	.04	.09	.21	.03	.05	.09	.09	
27	12.79	15.79	.02	.05	.05	.03	.06	.06	.05	.04	.07	.12	
28	4.34	11.39	.02	.04	.04	.02	.05	.07	.05	.04	.07	.12	
29	2.93	-----	.02	.04	.03	.03	.07	.07	.05	.05	.07	.11	
30	1.73	-----	.09	.11	.03	.04	.07	.07	.04	.09	.10	.11	
31	.89	-----	4.65	-----	.03	-----	.98	.06	-----	.08	-----	.11	
MEAN	15.08	19.76	.75	1.32	.11	.07	.94	.30	.06	1.66	.06	.10	
INCHES	3.48	4.12	.17	.29	.03	.01	.22	.07	.01	.38	.01	.02	

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0074380. QUALITY OF RECORDS: FAIR.

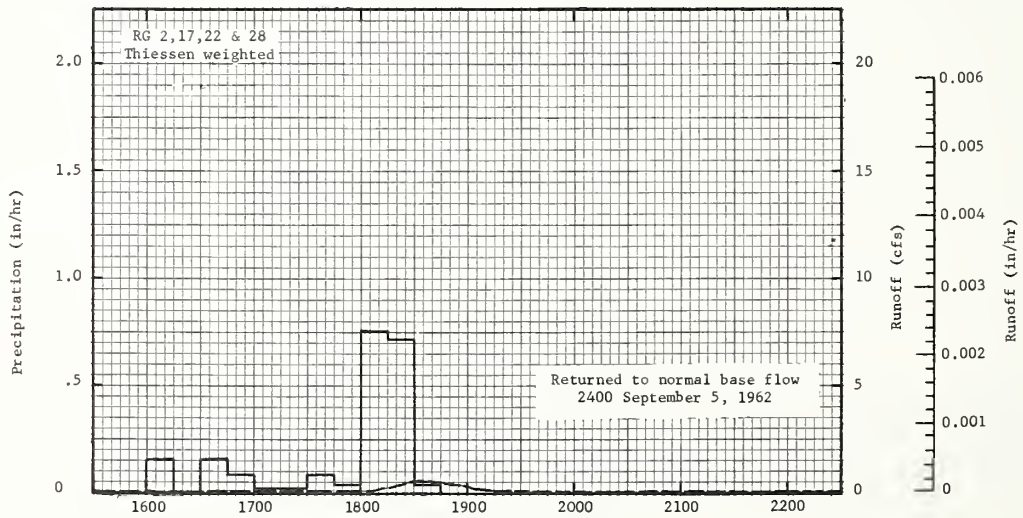
1962 SELECTED RUNOFF EVENTS			OXFORD, MISSISSIPPI WATERSHED W-17A							62-17	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4-5, 1962											
9-4	.00	1/.0005	9-4	RG	28			9-4	1634	.10	.0000
				1600	.00	.00					
				1607	.69	.08					
				1636	.02	.09					
				1641	.48	.13					
				1739	.02	.15					
				1745	.30	.18					
				1759	.04	.19					
				1808	.53	.27					
				1815	.17	.29					
				1821	.70	.36					
				1823	6.30	.57					
				1842	.28	.66					
				4 RG	AVG3/4/5/						
				1600	.00	.00					
1615	.16	.04									
1630	.00	.04	9-4	1645	.16	.08	9-5	0604	.10	.0005	
				1700	.08	.10					
				1715	.02	.10					
				1730	.02	.11					
				1745	.08	.13					
				1800	.04	.14					
				1815	.76	.33					
				1830	.72	.51					
1845	.04	.52									

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0003099. MAP OF WATERSHED SHOWN WITH MAP OF WATERSHED W-17 IN HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.5-5. 1/ RUNOFF PRIOR TO 1634 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 2/ NORMAL BASE FLOW. 3/ RAIN GAGES 2, 17, 22, AND 28 THIESSEN WEIGHTED. 4/ RAINFALL FOR GAGE 2 IS LISTED ON P. 62.6-3 AND GAGES 17 AND 22 ON P. 62.5-3. 5/ ISOHYETAL MAP ON P. 62.11-5.

1962 SELECTED RUNOFF EVENTS			OXFORD, MISSISSIPPI				WATERSHED W-17A				62.17
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of October 16-17, 1962											
10-16	.00	1/.0037	10-16	RG	.28	.00	10-16	1534	.06	.0000	
			1447	.86	.10	1554	5.86	.0003			
			1510	.30	.18	1626	5.86	.0012			
			1515	2.64	.40	1638	27.28	.0022			
			1523	1.20	.56	1654	274.00	.0146			
			1543	2.64	1.44	1706	556.00	.0402			
			1550	.77	1.53	1726	742.00	.1069			
			1559	2.93	1.97	1744	682.00	.1728			
			1619	.63	2.18	1752	568.00	.1985			
			1627	.22	2.21	1832	213.87	.2788			
			RG	2		1926	93.32	.3214			
			10-16	1439	.00	2014	58.66	.3402			
			1550	.81		2058	36.95	.3510			
			RG	17		2214	18.68	.3618			
			10-16	1430	.00	2314	8.23	.3660			
			1630	1.31		2400	5.33	.3676			
			RG	22		10-17	0204	.76	.3695		
			10-16	1500	.00	0318	.15	.3697			
			1623	2.46		0600	.08	.3698			
			4 RG	AVG 2/		1200	3.05	.3699			
			10-16	1430	.00						
			1445	.04	.01						
			1500	.28	.08						
			1515	.84	.29						
			1530	1.88	.76						
			1545	2.16	1.22						
			1600	1.20	1.53						
			1615	.92	1.62						
1630	.16	1.66									

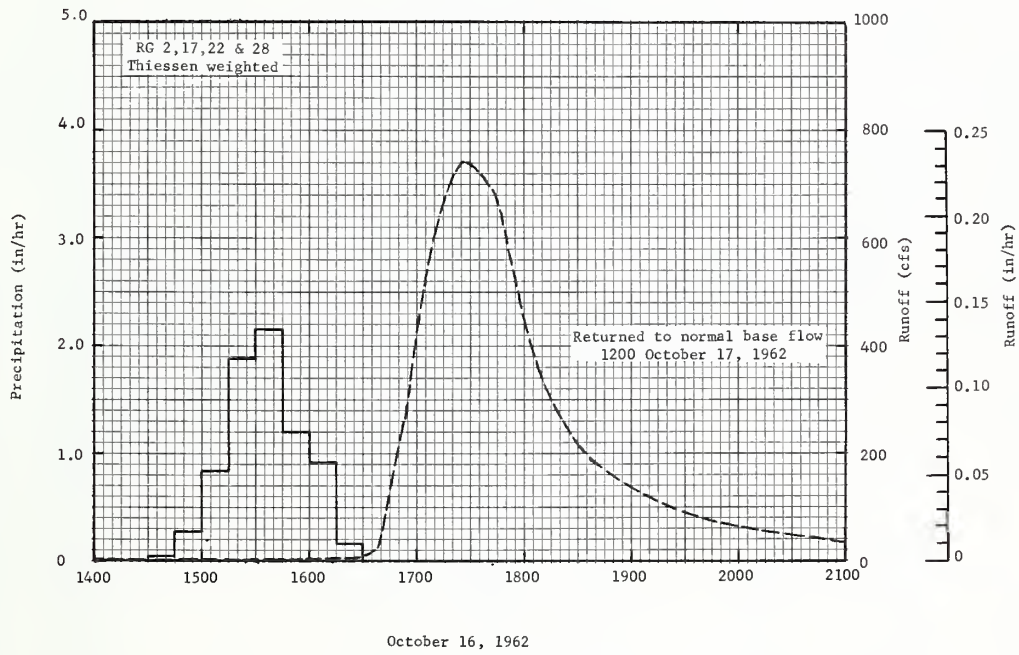
Watershed conditions: 16% of area in mature cotton and corn, fair cover; 2% in pasture and 52% idle, fair to good cover; 28% in woods, good cover; 2% in bare gullies.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0003099. 1/ RUNOFF PRIOR TO 1534 ON 10-16-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGES. 2/ RAIN GAGES 2, 17, 22, AND 28 THIESSEN WEIGHTED. 3/ NORMAL BASE FLOW.



September 4, 1962

OXFORD, MISSISSIPPI WATERSHED W-17A



OXFORD, MISSISSIPPI WATERSHED W-17A

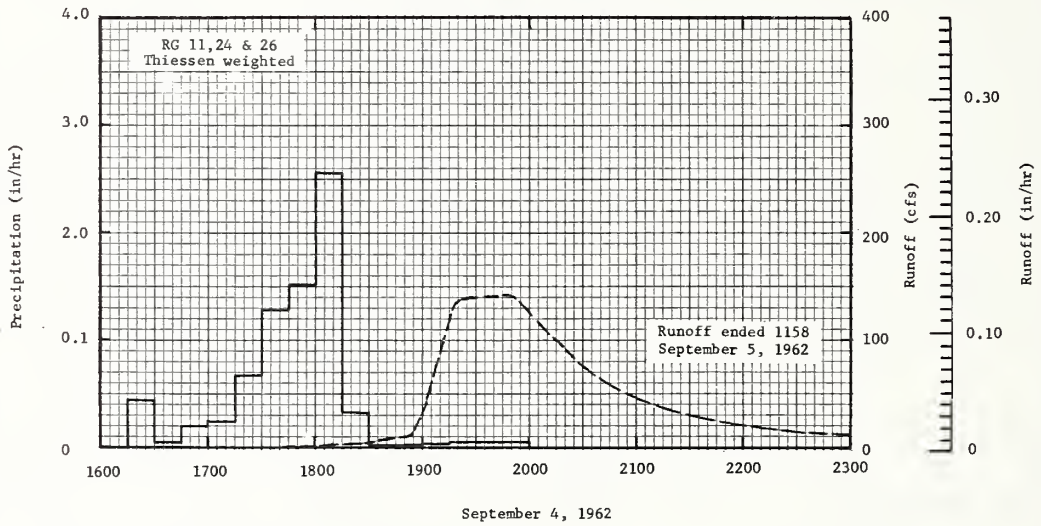
MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI							WATERSHED W-35A		62.18		
						AREA-1,090 ACRES (1.70 SQ. MILES)											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P ¹ /	5.73	7.04	2.81	3.90	1.99	6.45	4.56	2.24	5.16	2.79	2.01	1.66	46.34			
	Q	2.79	2.91	.40	.92	.15	.95	.38	.02	.33	.03	.00	.00	8.88			
STA AV ² /	P	3.59	5.02	4.92	4.38	3.77	3.62	4.35	2.46	4.58	2.23	3.83	4.68	47.43			
	Q	1.32	1.91	1.80	1.10	.83	.24	.23	.11	.32	.08	.31	1.09	9.34			
MEAN P ³ /	43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962		2-23	.59	2-23	.58	2-23	1.11	2-23	1.76	2-23	1.91	2-23	2.01	2-21	2.04	2-21	2.70
MAXIMUMS FOR PERIOD OF RECORD ⁴ /																	
19 61 to	2-23	.59	2-23	.58	2-23	1.11	2-23	1.76	2-23	1.91	2-23	2.01	2-20	2.63	2-17	3.24	
19 62	1962	1962	1962	1962	1962	1962	1962	1962	1962	1962	1962	1961	1961	1961	1961		
NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 25% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 73% in pasture and idle land, good cover April to October with fair cover remainder of year; 2% in bare gullies. ¹ / Monthly precipitation Thiessen weighted from rain gages 11, 24, and 26. ² / Precipitation and runoff records began Jan. 1957, but monthly data for 1957 were excluded from the station averages because discharge values were estimated for that year. ³ / Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss. ⁴ / Maximum discharges and volumes were not computed prior to 1961 - poor records 1957-60.																	
SOILS: (Revision) Subsoil structure for Ruston fine sandy loam should read: <u>Weak to moderate, fine subangular blocky</u> (instead of weak, fine granular subangular blocky as previously described). Topsoil structure for Providence, Loring, and Grenada soils should read: <u>Weak, fine to medium, granular.</u>																	
1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-35A		62.18		
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC					
1	.00	.00	.00	.00	.16	.26	.00	.00	.01	.46	.00	.00					
2	.00	.00	.00	.00	.00	.91	.41	.33	.00	.00	.00	.00					
3	.00	.00	.00	.00	.00	.96	.00	.00	.00	.00	.04	.00					
4	.00	.00	.00	.00	.00	.48	.00	.00	1.86	.00	.00	.00					
5	.86	.23	.00	.12	.00	.00	.56	.00	.00	.00	.00	.05					
6	.05	.00	.00	.12	.00	.02	.04	.00	.00	.00	.00	.00					
7	.00	.00	.00	.00	.00	.03	.00	.00	.00	.68	.00	.00					
8	.00	.05	.54	.18	.00	.30	.00	.00	.43	.00	.20	.00					
9	.16	.00	.03	.00	.00	.00	.00	.00	.96	.00	.00	.00					
10	.00	.00	.28	.58	.00	.25	.00	.00	.00	.00	.00	.00					
11	.00	.00	.02	1.44	.00	1.43	.36	.00	.00	.00	.59	.00					
12	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00					
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
14	1.13	.00	.00	.00	.00	.00	.00	.00	.99	.00	.00	.00					
15	.06	.54	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00					
16	.00	.00	.00	.00	.07	.00	.00	.00	.30	1.07	.00	.03					
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.52	.01					
18	.00	.57	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00					
19	.05	.00	.00	.00	.00	.10	.00	.00	.00	.00	.13	.00					
20	.04	.08	.47	.00	.00	.00	.00	.00	.00	.46	.00	.00					
21	.12	.28	.00	.00	.00	.13	.00	.00	.00	.12	.11	.56					
22	1.77	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
23	.19	3.35	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00					
24	.12	.00	.00	.00	.00	.75	1.54	.53	.00	.00	.00	.53					
25	.45	.89	.40	.00	.00	.65	1.48	.91	.12	.00	.37	.00					
26	.50	.64	.00	.00	.00	.18	.00	.00	.41	.00	.00	.02					
27	.23	.40	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00					
28	.00	.00	.00	.04	.00	.00	.14	.00	.00	.00	.00	.29					
29	.00	-----	.00	.00	.48	.00	.00	.00	.00	.00	.00	.17					
30	.00	-----	.91	1.02	1.28	.00	.00	.22	.00	.00	.00	.00					
31	.00	-----	.16	-----	.00	-----	.03	.10	-----	.00	-----	.00					
TOTAL	5.73	7.04	2.81	3.90	1.99	6.45	4.56	2.24	5.16	2.79	2.01	1.66					
STA AV	3.59	5.02	4.92	4.38	3.77	3.62	4.35	2.46	4.58	2.23	3.83	4.68					
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 11, 24, AND 26. STATION AVERAGE IS FOR 5-YR RECORD PERIOD 1958-62.																	

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI WATERSHED W-35A 62.18						
DAY	JAN	FEB	MAR	APR	NOV	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.80	.50	.42	.16	6.59	.00	.00	.00	.00	.00	.00	.00
2	.81	.40	.31	.18	.15	1.10	.00	.00	.00	.00	.00	.00
3	.56	.25	.27	.14	.00	1.94	.00	.00	.00	.00	.00	.00
4	.40	.18	.22	.11	.00	6.44	.00	.00	11.16	.00	.00	.00
5	11.19	.43	.18	.12	.00	.19	.05	.00	.34	.00	.00	.00
6	4.24	.22	.20	.15	.00	.04	.02	.00	.00	.00	.00	.00
7	1.21	.17	.17	.14	.00	.00	.00	.00	.00	1.15	.00	.00
8	.38	.18	.88	.16	.00	.00	.00	.00	.00	.01	.00	.00
9	.33	.18	.90	.10	.00	.00	.00	.00	.91	.00	.00	.00
10	.32	.13	1.16	.11	.00	.00	.00	.00	.07	.00	.00	.00
11	.22	.11	.73	30.56	.00	32.23	.00	.00	.00	.00	.00	.00
12	.29	.11	.35	8.02	.00	.52	.00	.00	.00	.00	.00	.00
13	.27	.07	.20	.90	.00	.00	.00	.00	.00	.00	.00	.00
14	15.17	.08	.18	.40	.00	.00	.00	.00	2.63	.00	.00	.00
15	13.56	.42	.15	.22	.00	.00	.00	.00	.04	.00	.00	.00
16	1.17	.11	.12	.12	.00	.00	.00	.00	.08	.00	.00	.00
17	.80	.04	.08	.11	.00	.00	.00	.00	.00	.00	.00	.00
18	.49	4.23	.07	.10	.00	.00	.00	.00	.00	.00	.00	.00
19	.31	1.33	.09	.04	.00	.00	.00	.00	.00	.00	.00	.00
20	.24	.49	.51	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.20	2.05	.57	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	33.99	1.18	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	10.37	91.88	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	3.03	.21	.12	.00	.00	.00	4.04	.00	.00	.00	.00	.00
25	8.47	12.09	.29	.00	.00	.23	13.20	.90	.00	.00	.00	.00
26	5.42	5.24	.11	.00	.00	.53	.01	.08	.00	.00	.00	.00
27	8.47	8.55	.03	.00	.00	.01	.00	.00	.00	.00	.00	.00
28	1.94	2.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.70	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.63	-----	.22	.18	.00	.00	.00	.00	.00	.00	.00	.00
31	.53	-----	9.57	-----	.00	-----	-----	-----	-----	-----	-----	-----
MEAN	4.11	4.75	.59	1.40	.22	1.44	.56	.03	.51	.04	.00	.00
INCHES	2.79	2.91	.40	.92	.15	.95	.38	.02	.33	.03	.00	.00

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0218365. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI WATERSHED W-35A 62.18						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of September 4-5, 1962										
9-4	.00	.0000	9-4	11			9- 4	1740	.00	.0000
				1655	.00	.00		1826	4.14	.0014
				1717	.08	.03		1840	8.87	.0028
				1735	.77	.26		1854	11.29	.0049
				1741	2.90	.55		1902	41.70	.0081
				1755	1.67	.94				
				1759	1.20	1.02		1920	138.27	.0326
				1810	4.58	1.86		1950	141.87	.0962
				1816	1.30	1.99		2018	97.00	.1468
				1825	.07	2.00		2102	45.20	.1942
				1908	.01	2.01		2142	25.50	.2156
				1936	.06	2.04		2232	14.00	.2305
				2002	.02	2.05		2400	4.95	.2431
				3 RC	AVG 1/2/3/			9- 5	0136	1.41
1615	.00	.00	0346	.34	.2495					
1630	.44	.11	0558	.16	.2500					
1645	.04	.12								
1700	.20	.17	1158	.00	.2504					
1715	.24	.23								
1730	.68	.40								
1745	1.28	.72								
1800	1.52	1.10								
1815	2.56	1.74								
1830	.32	1.82								
1845	.01	1.82								
1900	.01	1.82								
1915	.02	1.83								
1930	.04	1.84								
1945	.04	1.85								
2000	.04	1.86								

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009099. MAP OF WATERSHED SHOWN WITH MAP OF WATERSHED W-35, IN HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.12-5. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 1/ RAIN GAGES 11, 24, AND 26 THIESSEN WEIGHTED. 2/ RAINFALL FOR GAGE 24 IS LISTED ON P. 62.3-3 AND GAGE 26 ON P. 62.10-3. 3/ ISOHYETAL MAP ON P. 62.11-5.



OXFORD, MISSISSIPPI WATERSHED W-35A

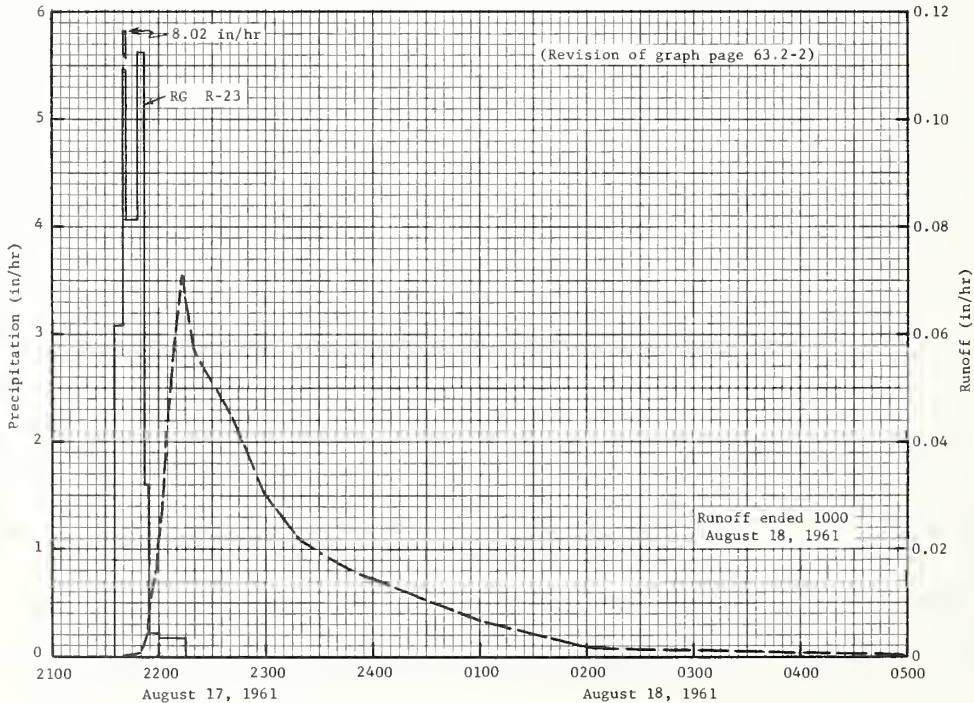
MONTHLY PRECIPITATION AND RUNOFF (Inches)								TOMBSTONE, ARIZONA WATERSHED W-1 AREA--36,900 ACRES (57.66 SQ. MILES)								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.32 .00	.05 .00	.46 .00	.00 .00	.00 .00	.14 .00	4.04 .16	.34 .00	1.57 .09	.18 .00	.61 .00	.89 .00	9.60 .25			
STA AV 2/ (58-62) P Q	.66 .00	.42 .00	.53 .00	.14 .00	.39 .00	2.64 .08	2.74 .15	1.20 .03	1.20 .00	.96 .00	.44 .00	.63 .00	10.75 .26			
MEAN P 3/ 65 YR	.85	.81	.63	.29	.19	.52	3.61	3.55	1.50	.69	.63	.86	14.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								TOMBSTONE, ARIZONA WATERSHED W-1								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-24	.0331	7-29	.0260	7-29	.0349	7-29	.0721	7-29	.0739	7-29	.0739	7-28	.0789	7-24	.1530
MAXIMUMS FOR PERIOD OF RECORD																
1957 to 1962 4/	8-17 1957	.5360	8-17 1957	.3186	8-17 1957	.3729	8-17 1957	.4039	8-17 1957	.4039	8-17 1957	.4039	8-17 1957	.4039	8-17 1957	.4158
Notes: Quality of records: Monthly P, good; Q, poor; annual maximum discharges and volumes, poor. Watershed conditions: 65% of area in desert shrubs (whitethorn, creosotebush, and tarbush), with 23% cover and 2% grass cover. 35% is grassland, with approximately 20% grass cover (crown spread) and 5% shrub cover. Watersheds W-2, W-3, W-4, W-5, and W-6 lie within the boundaries of W-1. 1/ Monthly precipitation is arithmetic average of rain gages on watershed. 2/ Precipitation records began in Jan. 1954; runoff records in May 1954. Incomplete runoff records in 1954 and 1957; no runoff records in 1955 and 1956. 3/ Mean P based on 65-yr. (1897-1961) U. S. Weather Bureau record period at Tombstone, Ariz. 4/ No maximums for 1954, 1955, and 1956, or through July 1957.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1962. FOR CONTOUR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 63.1-2.																

REVISIONS OF PREVIOUSLY PUBLISHED DATA SHEETS

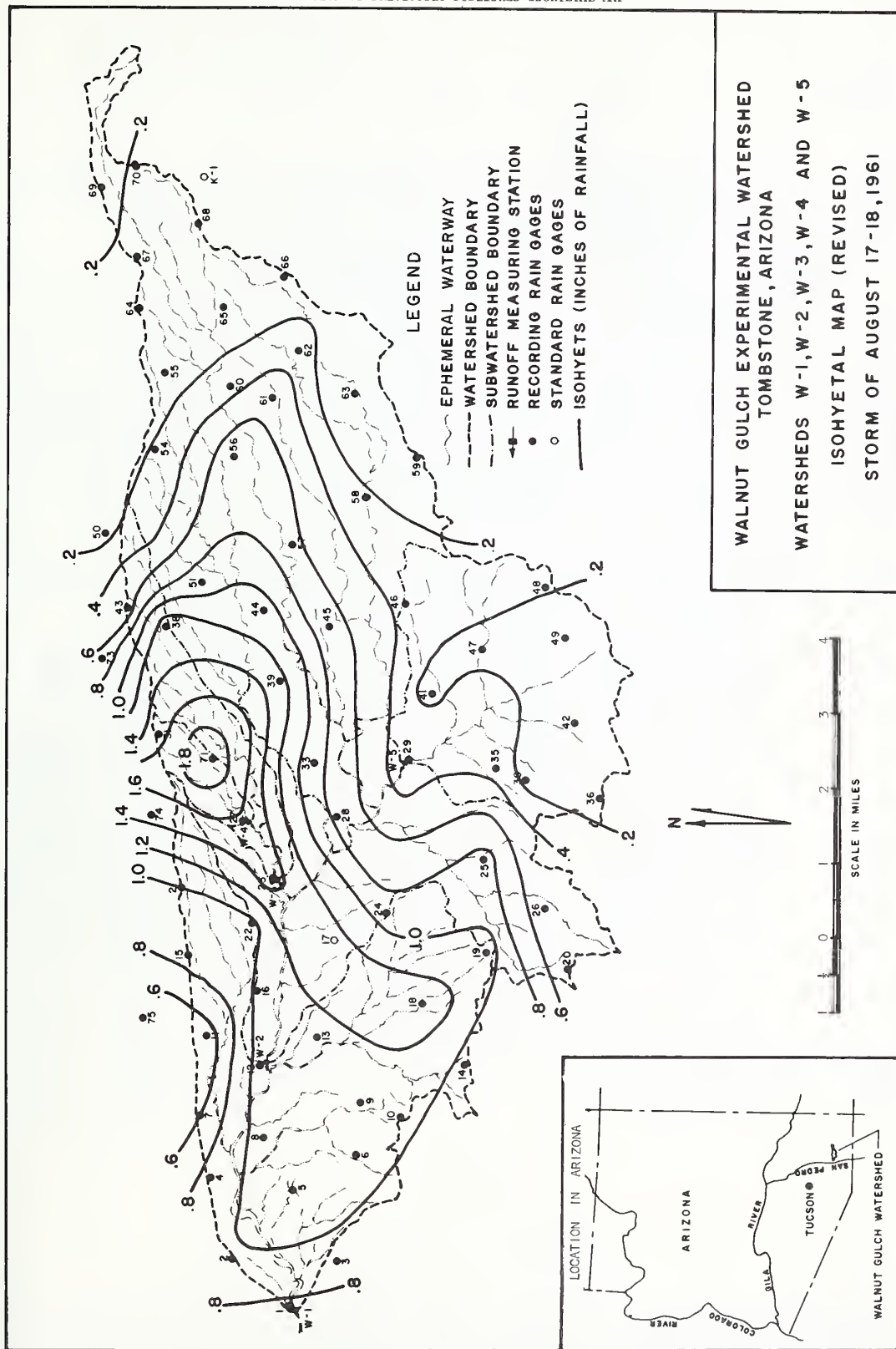
1961 SELECTED RUNOFF EVENTS			TOMBSTONE, ARIZONA WATERSHED W-2							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 17-18, 1961 (Revision of page 63.2-1)										
	RG R-23		8-17	RG	R-23 1/		8-17			
7-31	.03	.0120		2135	.00	.00		2138	.00000	.00000
8-8	.01	.0000		2140	3.08	.26		2140	.00000	.00000
8-12	.01	.0000		2142	8.02	.52		2145	.00008	.00000
8-14	.03	.0000		2148	4.07	.93		2147	.00026	.00001
				2152	5.62	1.31		2149	.00060	.00002
				2154	1.60	1.36		2150	.00107	.00003
				2200	.21	1.38		2152	.00202	.00008
				2215	.17	1.42		2154	.00474	.00019
								2155	.00957	.00031
	RG R-24		8-17	RG	R-24 1/		2159	.01666	.00118	
7-30	.09	.0000		2135	.00	.00	2200	.02238	.00151	
8-2	.02	.0000		2146	2.35	.43	2202	.02796	.00235	
8-3	.02	.0000		2154	2.48	.76	2203	.03452	.00287	
8-4	.04	.0000		2204	.42	.83	2207	.05119	.00573	
8-6	.22	.0000		2216	.20	.87	2211	.06463	.00959	
8-8	.10	.0000					2213	.07095	.01185	
8-11	.11	.0000					2215	.06608	.01413	
8-13	.73	.001					2220	.05690	.01925	
8-14	.05	.0000					2230	.05119	.02826	
8-15	.11	.0000					2240	.04564	.03633	
							2300	.02983	.04859	
							2320	.02164	.05717	
							2350	.01589	.06655	
							2400	.01458	.06909	
							8-18	0100	.00678	.07977
								0200	.00193	.08413
								0400	.00043	.08649
								1000	.00000	.08907

Watershed Conditions: 55% of area supports desert shrubs; whitethorn, tarbush and creosote-bush with 23% shrub cover and 2% grass cover. 45% is grassland with 20% cover (crown spread) of grasses and 5% shrub cover. (Includes subwatersheds W-3, W-4, and W-5).

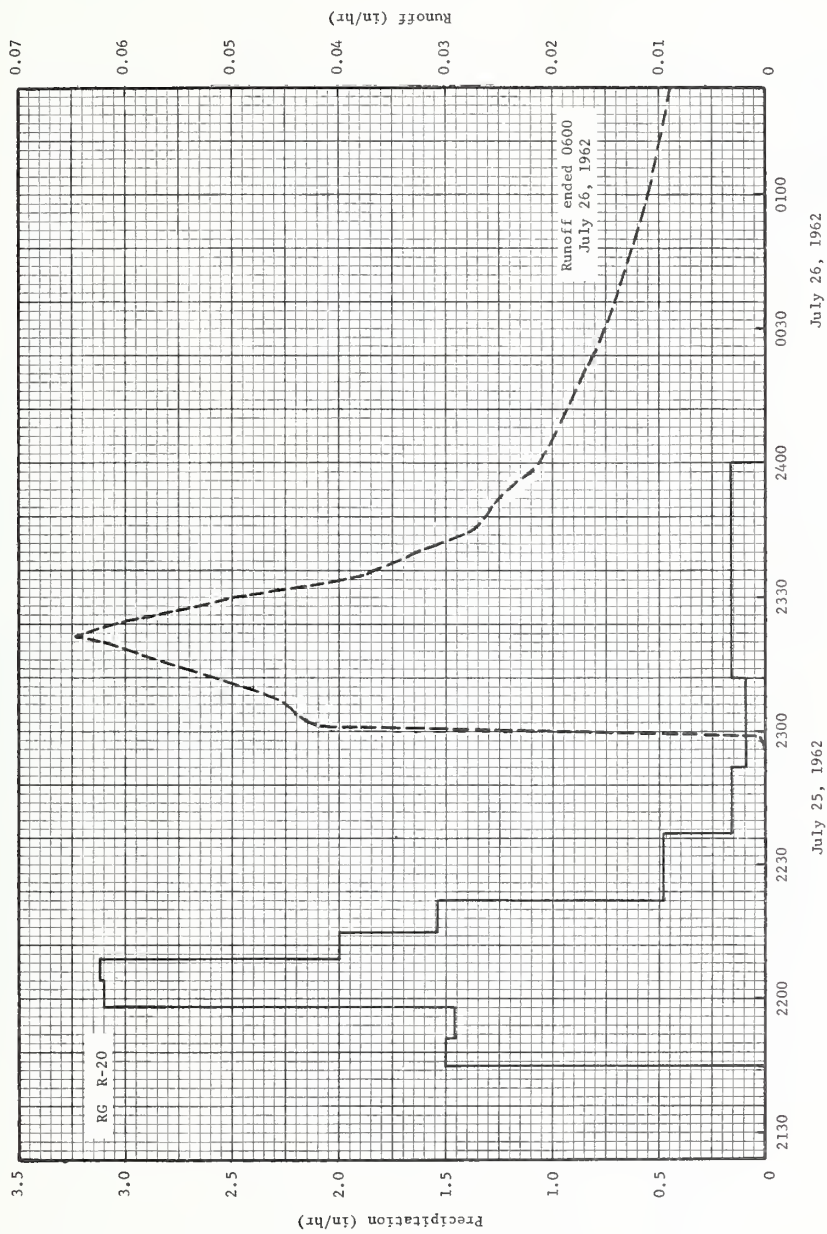
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 28,330. FOR MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES: USDA MISC. PUB. 945 (1956-59) P. 63.1-5, CULTURAL MAP; AND USDA MISC. PUB. 994 (1960-61) P. 63.1-2, CONTOUR MAP. 1/ PREVIOUSLY PUBLISHED RAINFALL DATA FOR R-23 AND R-24 REVISED AND REPLOTTED IN FOLLOWING GRAPH AND ISOHYETS REVISED ON MAP ON NEXT PAGE.



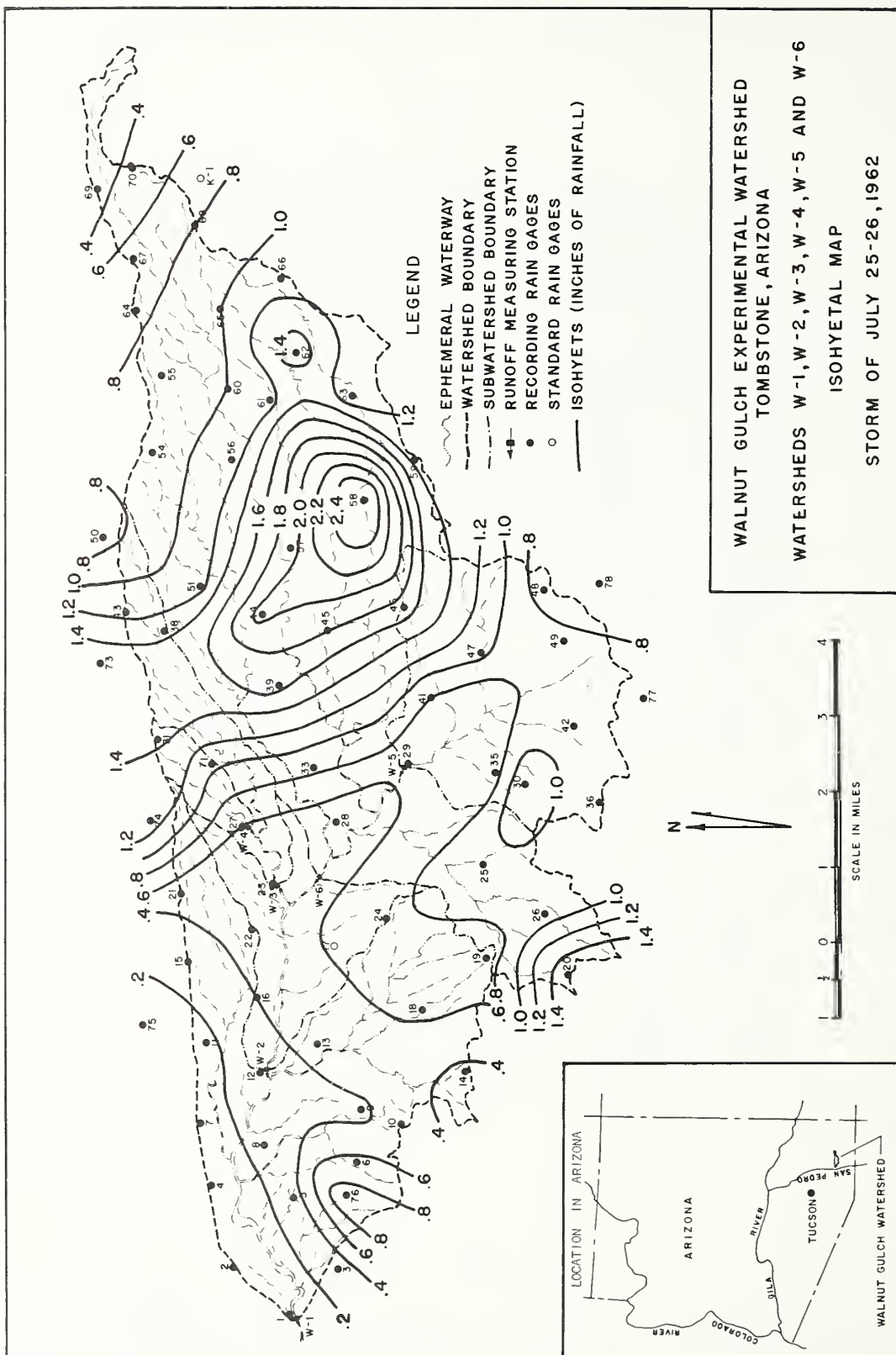
TOMBSTONE, ARIZONA WATERSHED W-2



MONTHLY PRECIPITATION-AND RUNOFF (Inches)								TOMBSTONE, ARIZONA WATERSHED W-2 AREA—28,100 ACRES (43.9 SQ. MILES)								
Year	Month	Jan.	Feh.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1962	P 1/ Q	1.28 .00	.04 .00	.50 .00	.00 .00	.00 .00	.19 .00	3.91 .15	.35 .00	1.66 .06	.13 .00	.57 .00	.88 .00	9.51 .21		
STA AV (54-62)	2/ P Q	.82 .00	.38 .00	.54 .00	.10 .00	.10 .00	.53 T	3.44 .18	3.13 .19	.80 .02	.82 .01	.26 .00	.42 .00	11.34 .40		
MEAN P 65 YR	3/	.85	.81	.63	.29	.19	.52	3.61	3.55	1.50	.69	.63	.86	14.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								TOMBSTONE, ARIZONA WATERSHED W-2								
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	
1962	7-25	.0646	7-25	.0417	7-25	.0565	7-25	.0734	7-25	.0734	7-25	.0734	7-24	.0734	7-24	.1504
MAXIMUMS FOR PERIOD OF RECORD																
1954 to 1962 4/	8-17 1957	.6707	8-17 1957	.4315	8-17 1957	.5845	8-17 1957	.6682	8-17 1957	.6682	8-17 1957	.6682	8-17 1957	.6682	7-19 1955	.8394
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: 55% of area in desert shrubs, 45% in grassland. Watersheds W-3, W-4, W-5, and W-6 lie within the boundaries of W-2. 1/ Monthly precipitation is arithmetic average of 57 rain gages. 2/ Precipitation and runoff records began Jan. 1954. No runoff record in 1958; average Q based on 8 years of record. 3/ Mean P based on 65-yr (1897-1961) U.S. Weather Bureau record period at Tombstone, Ariz. 4/ No maximums taken for 1958.																
1962 SELECTED RUNOFF EVENT								TOMBSTONE, ARIZONA WATERSHED W-2								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of July 25-26, 1962 5/																
7-4-62	RG R-24 .08	.00000	7-25-62 2135	RG R-24 .00	.00	7-25-62 2256	.00000	.00000								
7-18	1.04	.00300	2148	.46	.10	2257	.00013	.00000								
7-21	.27	.00000	2152	1.65	.21	2258	.00065	.00001								
7-24	.73	.00004	2200	1.20	.37	2259	.00315	.00004								
7-25	6/ .15	.00000	2214	.60	.51	2300	.01666	.00020								
			2230	.26	.58	2301	.04056	.00068								
			2301	.08	.62	2302	.04321	.00138								
			2332	.04	.64	2305	.04458	.00358								
			2351	.09	.67	2310	.04928	.00749								
7-4-62	RG R-20 .52	.00000	7-25-62 2145	RG R-20 .00	.00	2315	.05606	.01188								
7-17	.06	.00000	2151	1.50	.15	2320	.06276	.01683								
7-18	2.13	.00300	2158	1.46	.32	2321	.06463	.01789								
7-20	.12	.00000	2204	3.10	.63	2325	.05909	.02201								
						2330	.04967	.02654								
7-21	.46	.00000	2209	3.12	.89	2335	.03735	.03017								
7-24	.33	.00004	2215	2.00	1.09	2340	.03301	.03310								
			2222	1.54	1.27	2345	.02725	.03561								
			2237	.48	1.39	2350	.02591	.03783								
			2252	.16	1.43	2400	.02135	.04177								
			2312	.09	1.46	7-26-62 0030	.01500	.05086								
			2400	.16	1.59	0100	.01112	.05739								
						0200	.00600	.06595								
						0300	.00300	.07045								
						0400	.00106	.07248								
						0500	.00035	.07318								
						0600	.00000	.07336								
Watershed conditions: 55% of area supports desert shrubs (whitethorn, tarhush, and creosotehush), with 23% cover and 2% grass cover. 45% is grassland, with 20% cover (crown spread) of grasses and 5% cover of shrubs.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 28,330. FOR CONTOUR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 63.1-2. 5/ ISOHYETAL MAP ON P. 63.2-3. 6/ PRIOR TO 2135.																



TOMBSTONE, ARIZONA WATERSHED W-2

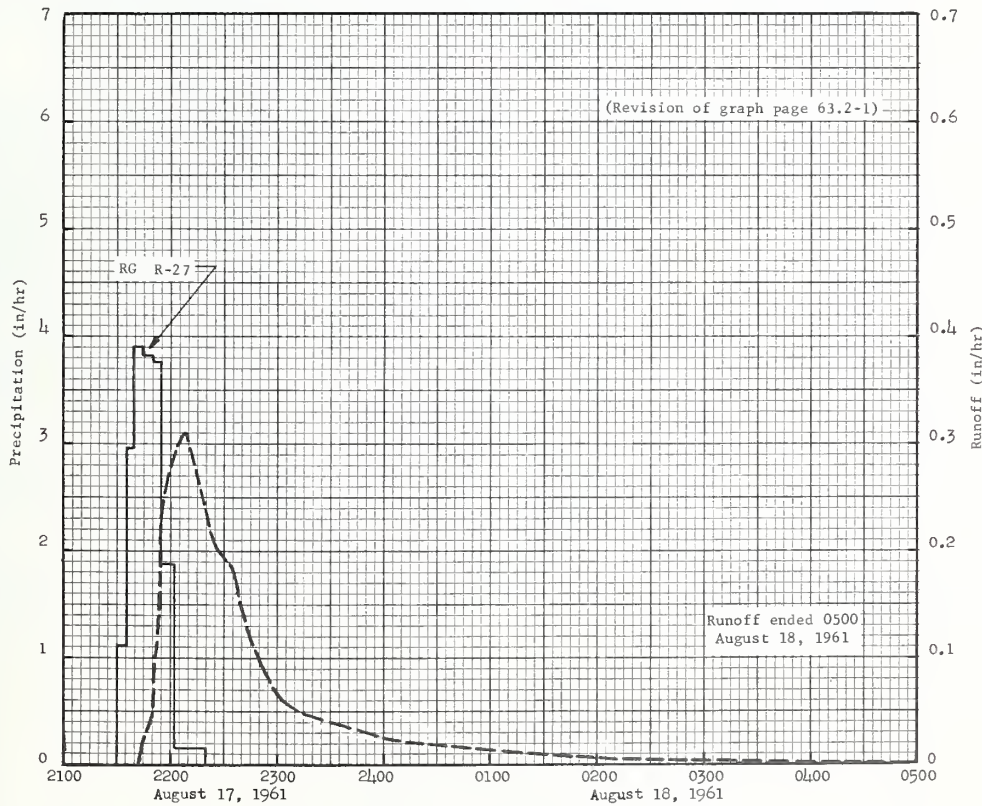


REVISIONS OF PREVIOUSLY PUBLISHED DATA SHEETS

1961 SELECTED RUNOFF EVENTS			TOMBSTONE, ARIZONA WATERSHED W-3							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 17-18, 1961 (Revision of page 63.3-1)										
	RG R-27		8-17	RG	R-27 ^{1/}		8-17			
7-31	.03	.00		2130	.00	.00		2142	.0000	.0000
8-6	.01	.00		2135	1.11	.09		2143	.0083	.0001
8-8	.02	.00		2139	2.96	.29		2144	.0152	.0003
8-11	.01	.00		2144	3.90	.61		2145	.0241	.0006
8-12	.05	.00		2150	3.83	1.00		2150	.0492	.0036
8-13	.01	.00		2155	3.76	1.31		2151	.1028	.0049
8-14	.03	.00		2202	1.89	1.53		2153	.1207	.0086
8-15	.01	.00		2220	.15	1.58		2154	.1632	.0110
8-17	.03	.00						2155	.2414	.0144
	RG R-38		8-17	RG	R-38 ^{1/}			2200	.2816	.0362
7-31	.30	.00		2117	.00	.00		2208	.3107	.0757
8-2	.13	.00		2126	.27	.04		2215	.2682	.1094
8-13	.07	.00		2132	2.10	.25		2225	.2056	.1489
8-15	.10	.00		2136	3.45	.48		2235	.1833	.1813
8-17	^{2/} .01	.00		2141	2.40	.68		2245	.1162	.2063
				2146	2.52	.89		2300	.0670	.2292
				2153	2.83	1.22		2315	.0483	.2436
				2158	.48	1.26		2400	.0250	.2711
				2216	.03	1.27		8-18	0100	.0134
								0200	.0056	.2998
								0300	.0015	.3034
								0500	.0000	.3049

Watershed Conditions: 55% of area supports desert shrubs; whitethorn, creosotebush and tarbush; shrubs cover 23% of area with 2% grass understory. 45% grassland with a grass canopy of 20%.

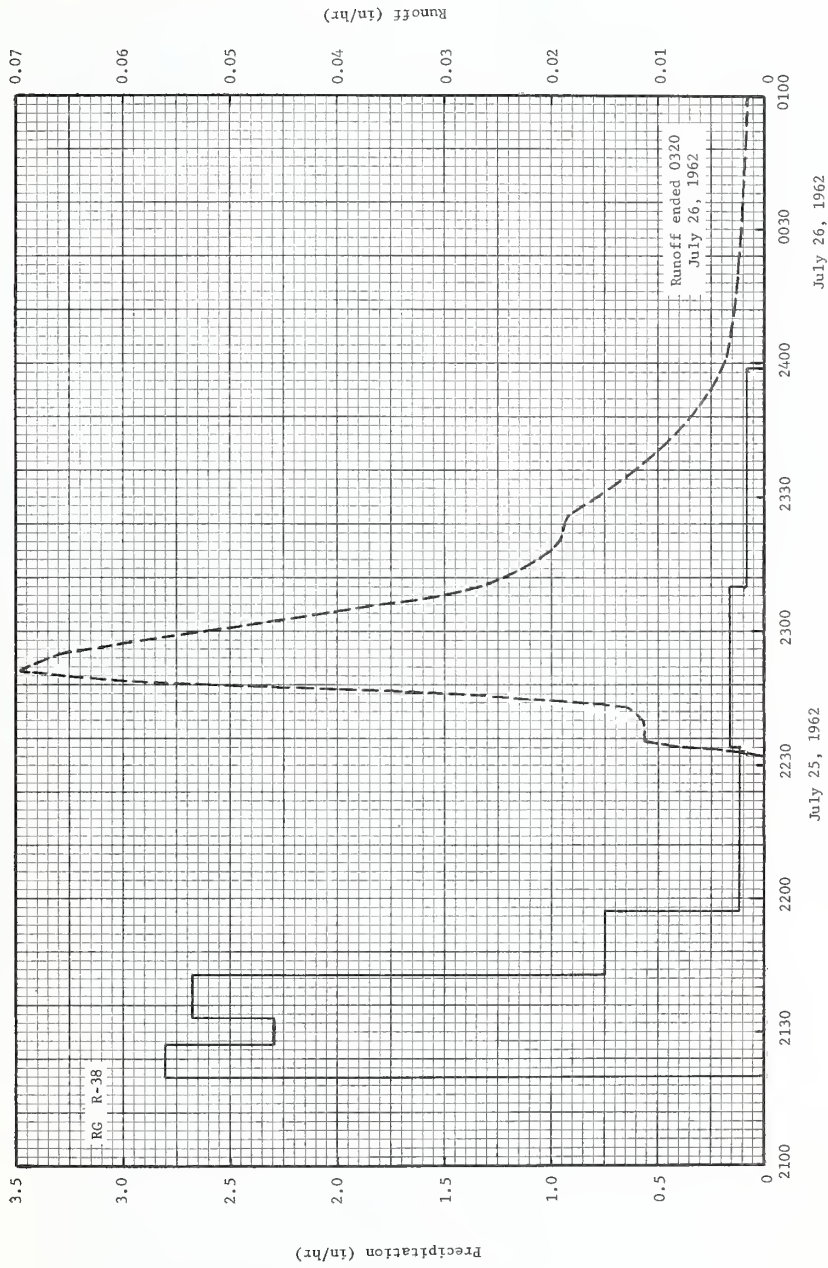
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2,238. FOR MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES; USDA MISC. PUB. 945 (1956-59) P. 63.1-5, CULTURAL MAP; AND USDA MISC. PUB. 994 (1960-61) P. 63.1-2, CONTOUR MAP. ^{1/} PREVIOUSLY PUBLISHED RAINFALL DATA FOR R-27 AND R-38 REVISED AND GRAPH BELOW REPLOTTED. REVISED ISOHYETALS SHOWN ON MAP P. 63.2-3. ^{2/} RAINFALL PRIOR TO 2125.



TOMBSTONE, ARIZONA WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF (Inches)								TOMBSTONE, ARIZONA WATERSHED W-3 AREA—2,220 ACRES (3.47 SQ. MILES)									
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962	P 1/ Q	1.18 .00	.17 .00	.43 .00	.00 .00	.00 .00	.08 .00	4.21 .11	.34 .00	1.66 T	.15 .00	.48 .00	.65 .00	9.35 .11			
STA AV (55-62)	2/ P Q	.80 .00	.40 .00	.49 .00	.17 .00	.06 .00	.36 .00	3.71 .56	2.96 .17	.80 .00	.75 .00	.29 .00	.42 .00	11.21 .73			
MEAN P	3/ 65 YR	.85	.81	.63	.29	.19	.52	3.61	3.55	1.50	.69	.63	.86	14.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								TOMBSTONE, ARIZONA WATERSHED W-3									
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.			
1962		7-25	.0696	7-25	.0320	7-25	.0360	7-25	.0383	7-25	.0383	7-25	.0383	7-24	.0386	7-24	.0757
MAXIMUMS FOR PERIOD OF RECORD																	
1954 to 1962	7-19 1955	1.2750	7-19 1955	.5750	7-22 1955	.7565	7-22 1955	.8450	7-22 1955	.8456	7-19 1955	1.2520	7-19 1955	1.2520	7-19 1955	2.9288	
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: 55% in desert shrubs, 45% grassland. Watershed W-4 lies within the boundaries of W-3. 1/ Monthly precipitation is arithmetic average of rain gages on watershed. 2/ Precipitation records began Aug. 1954; runoff records, May 1954. No runoff records for 1956 and 1957; average Q based on 6 years. Part-year amounts for 1954 not included in averages. 3/ Mean P based on 65-yr (1897-1961) U.S. Weather Bureau record period at Tombstone, Ariz. 4/ No maximum volumes for 1956 and 1957.																	
1962 SELECTED RUNOFF EVENT								TOMBSTONE, ARIZONA WATERSHED W-3									
Antecedent conditions			Rainfall			Runoff											
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)									
Event of July 25-26, 1962 5/																	
7-18-62	RG R-31 .82	.0321	7-25-62	RG R-31 .00	.00	7-25-62	.00000	.00000									
7-19	.03	.0000	2125	1.50	.15	2232	.00364	.00003									
7-21	.30	.0000	2131	2.40	.35	2234	.00799	.00013									
			2146	2.46	.76	2235	.01133	.00029									
			2152	1.20	.88	2240	.01133	.00123									
			2159	1.45	1.05	2243	.01305	.00184									
			2205	1.20	1.17	2245	.02351	.00245									
			2236	.19	1.27	2248	.05248	.00435									
			2308	.11	1.33	2251	.06964	.00740									
			2340	.07	1.37	2255	.06598	.01192									
7-18-62	RG R-38 .59	.0321	7-25-62	RG R-38 .00	.00	2300	.05248	.01686									
7-19	.15	.0000	2120	2.80	.33	2305	.03811	.02063									
7-21	.10	.0000	2127	2.29	.56	2310	.02672	.02333									
7-22	.05	.0000	2133	2.68	1.00	2320	.01917	.02715									
			2143	.75	1.17	2325	.01872	.02873									
			2157	.12	1.25	2330	.01568	.03016									
			2234	.16	1.35	2340	.01036	.03233									
			2310	.08	1.42	2350	.00620	.03371									
			2359			2400	.00393	.03455									
Watershed conditions: 55% supports desert shrubs, with a cover of 23% with a grass understorey of 2%. 45% grassland with a grass canopy of 20%.							7-26-62										
							0020	.00251	.03562								
							0100	.00150	.03695								
							0200	.00062	.03801								
			0300	.00003	.03834												
			0320	.00000	.03834												

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2,238. FOR CONTOUR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 63.1-2. 5/ ISOHYETAL MAP ON P. 63.2-3.



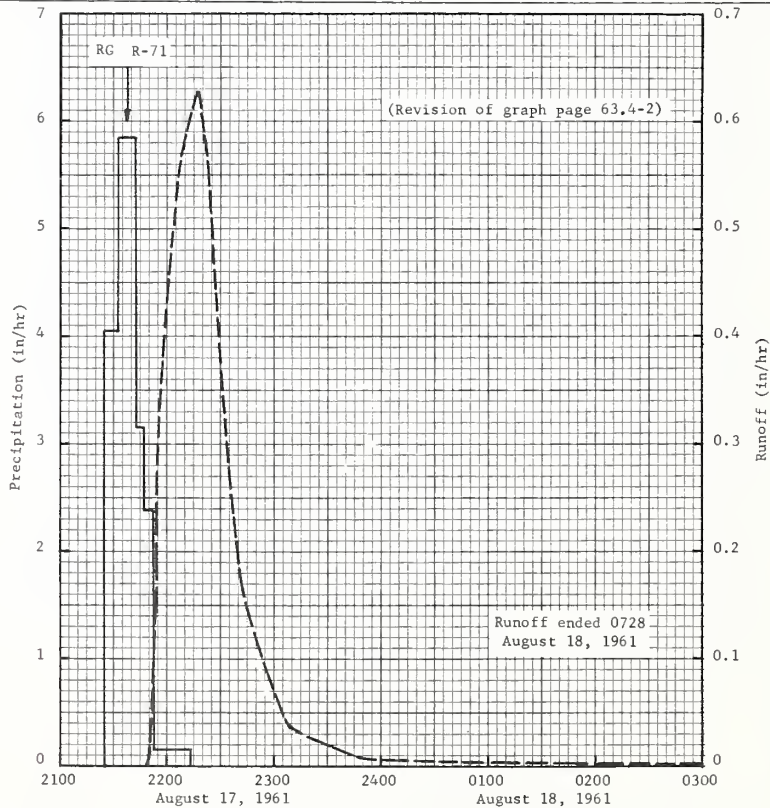
TOMBSTONE, ARIZONA WATERSHED W-3

REVISIONS OF PREVIOUSLY PUBLISHED DATA SHEETS

1961 SELECTED RUNOFF EVENTS			TOMBSTONE, ARIZONA WATERSHED W-4							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 17-18, 1961 (Revision of page 63.4-1)										
	RG R-31		8-17	RG	R-31 ^{1/}		8-17			
7-31	.15	.00		2125	.00	.00		2148	.0000	.0000
8-2	.17	.00		2128	2.20	.11		2151	.0142	.0004
8-13	.13	.00		2132	3.45	.34		2153	.0832	.0020
8-15	.06	.00		2136	3.75	.59		2154	.2319	.0046
8-17	<u>2/</u> .13	.00		2140	3.60	.83		2158	.3823	.0251
				2144	3.15	1.04		2202	.4832	.0539
				2148	3.15	1.25		2208	.5699	.1066
				2151	2.40	1.37		2213	.6000	.1553
				2158	1.11	1.50		2218	.6284	.2065
				2210	.15	1.53		2223	.5629	.2561
								2233	.3229	.3300
								2243	.1588	.3702
7-31	RG R-71	.00	8-17	RG	R-71 ^{1/}	.00		2308	.0375	.4111
8-2	.12	.00		2132	4.05	.47		2353	.0081	.4282
8-13	.05	.00		2142	5.86	1.45				
8-14	.02	.00		2147	3.15	1.71	8-18	0053	.0029	.4337
8-15	.05	.00		2152	2.39	1.91		0253	.0011	.4377
8-17	<u>2/</u> .10	.00		2213	.15	1.96		0453	.0003	.4391
								0728	.0000	.4395

Watershed Conditions: 25% of area has shrub cover of white-thorn, creosotebush, and tarbush.

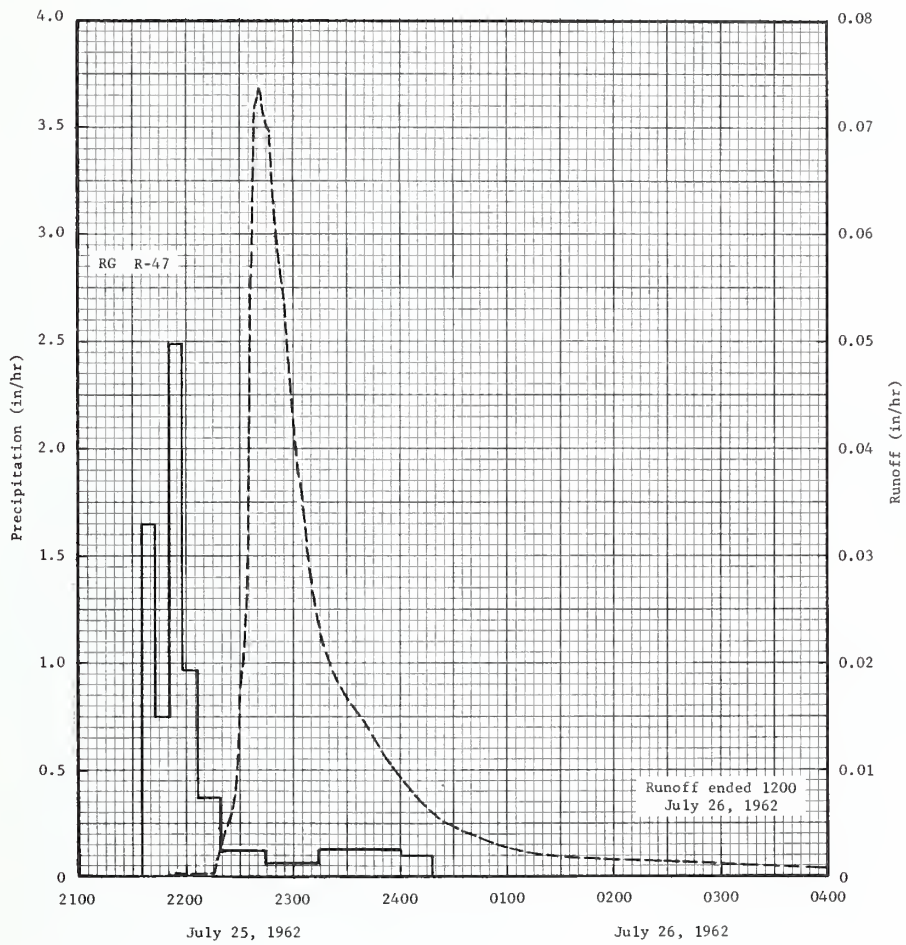
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 565. FOR MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES; USDA MISC. PUB. 945 (1956-59) P. 63.1-5, CULTURAL MAP; AND USDA MISC. PUB. 994 (1960-61) P. 63.1-2, CONTOUR MAP. ^{1/} PREVIOUSLY PUBLISHED RAINFALL DATA FOR R-31 AND R-71 REVISED AND REPLOTTED ON GRAPH BELOW. SEE CORRECTED ISOHYETAL MAP P. 63.2-3. ^{2/} RAINFALL PRIOR TO 2125.



TOMBSTONE, ARIZONA WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (Inches)							TOMBSTONE, ARIZONA WATERSHED W-4 AREA—560 ACRES									
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
		1962	P ^{1/}	1.29	.34	.42	.00	.00	.00	5.10	.41	1.06	.14	.45	.51	9.72
	Q	.00	.00	.00	.00	.00	.00	.06	.00	.01	.00	.00	.00	.07		
STA AV (55-62)	P ^{2/}	.74	.37	.50	.15	.04	.38	3.99	3.20	.65	.71	.30	.40	11.43		
	Q	.00	.00	.00	.00	.00	.00	.72	.20	T	.00	.00	.00	.92		
MEAN P 65 YR	P ^{3/}	.85	.81	.63	.29	.19	.52	3.61	3.55	1.50	.69	.63	.86	14.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS							TOMBSTONE, ARIZONA WATERSHED W-4									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	7-18	.0285	7-18	.0260	7-18	.0338	7-18	.0361	7-18	.0361	7-18	.0361	7-18	.0361	7-18	.0472
MAXIMUMS FOR PERIOD OF RECORD																
1954 to 1962	7-19 1955	2.5194	7-19 1955	1.0655	7-19 1955	1.2328	7-19 1955	1.2911	7-19 1955	1.2911	7-19 1955	1.9365	7-19 1955	1.9371	7-19 1955	4.7818
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good; Watershed conditions: Shrub cover of 25%. ^{1/} Monthly precipitation is arithmetic average of rain gages on watershed. ^{2/} Precipitation records began Aug. 1954. Runoff records began June 1954. Part-year amounts for 1954 not included in averages. ^{3/} Mean P based on 65-yr. (1897-1961) U. S. Weather Bureau record period at Tombstone, Ariz.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1962. FOR CONTOUR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 63.1-2.																

MONTHLY PRECIPITATION AND RUNOFF (Inches)										TOMBSTONE, ARIZONA WATERSHED W-5 AREA—5,510 ACRES (8.61 SQ. MILES)						
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1962	P <u>1/</u>	1.17	.01	.58	.00	.00	.07	4.47	.29	1.11	.03	.56	.92	9.21		
	Q	.00	.00	.00	.00	.00	.00	.10	T	.01	.00	.00	.00	.11		
STA AV (54-62)	P <u>2/</u>	.85	.33	.58	.11	.09	.45	3.46	3.25	.62	.95	.27	.43	11.39		
	Q	.00	.00	.00	.00	.00	.00	.10	.19	T	.12	.00	.00	.41		
MEAN P 65 YR	<u>3/</u>	.85	.81	.63	.29	.19	.52	3.61	3.55	1.50	.69	.63	.86	14.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS										TOMBSTONE, ARIZONA WATERSHED W-5						
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962		7-25	.0738	7-25	.04	7-25	.05	7-25	.06	7-25	.06	7-25	.06	7-25	.10	
MAXIMUMS FOR PERIOD OF RECORD																
1954 to 1962	10-4 1954	.9540	10-4 1954	.6245	10-4 1954	.8354	10-4 1954	1.0512	10-4 1954	1.0516	10-4 1954	1.0516	10-4 1954	1.0516	10-4 1954	1.0516
Notes: Quality of records: Monthly P, good; Q, fair; annual maximum discharges and volumes, fair. Watershed conditions: 78% of area in desert shrubs, 22% grassland. <u>1/</u> Monthly precipitation is arithmetic average of rain gages on watershed. <u>2/</u> Precipitation and runoff records began Jan. 1954. <u>3/</u> Mean P based on 65-yr. (1897-1961) U. S. Weather Bureau record period at Tombstone, Ariz.																
1962 SELECTED RUNOFF EVENT										TOMBSTONE, ARIZONA WATERSHED W-5						
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
<u>Event of July 25-26, 1962 <u>4/</u></u>																
7-4-62	RG R-30 .60	.0000	7-25-62 2130	RG R-30 .00	.00	7-25-62 2153	.00000	.00000								
7-9	.05	.0000	2135	.36	.03	2215	.00002	.00000								
7-17	.05	.0000	2143	.30	.07	2217	.00002	.00000								
7-18	.84	.0006	2149	2.00	.27	2218	.00176	.00001								
7-24	1.09	.0000	2159	1.14	.46	2219	.00259	.00005								
			2200	1.38	.69	2220	.00283	.00010								
			2300	.21	.90	2222	.00425	.00022								
			2329	.22	1.01	2224	.00526	.00038								
			2400	.12	1.07	2226	.00725	.00059								
7-26-62			0055	.07	1.14	2228	.01118	.00090								
			2230			2230	.01620	.00135								
			2232			2232	.02052	.00196								
			2234			2234	.02934	.00279								
			2236			2236	.05346	.00417								
			2238			2238	.07146	.00625								
			2240			2240	.07290	.00865								
			2241			2241	.07380	.00987								
			2245			2245	.07020	.01467								
			2247			2247	.06966	.01700								
7-25-62	RG R-47		2206	.97	.74	2250	.05994	.02024								
			2219	.37	.82	2255	.05346	.02496								
			2244	.12	.87	2300	.04284	.02901								
			2314	.06	.90	2305	.03510	.03226								
			2400	.13	1.00	2310	.02808	.03489								
			2320			2320	.02052	.03884								
			2330			2330	.01688	.04191								
			2340			2340	.01442	.04452								
			2400			2400	.00929	.04847								
			7-26-62			0020			0020	.00585	.05097					
0040						0040	.00407	.05260								
0100						0100	.00279	.05373								
0130						0130	.00191	.05485								
0200						0200	.00156	.05572								
0300						0300	.00109	.05704								
0400						0400	.00084	.05800								
0600						0600	.00051	.05932								
0800						0800	.00017	.06000								
1000						1000	.00002	.06016								
1200			1200	.00000	.06018											
Watershed conditions: 78% of area in desert shrubs (whitethorn, tar-bush, creosotebush) with 25% cover. 22% grassland with grass basal area of 2%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5,556. FOR CONTOUR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 63.1-2. <u>4/</u> ISOHYETAL MAP ON P. 63.2-3. <u>5/</u> PRIOR TO 2130.																



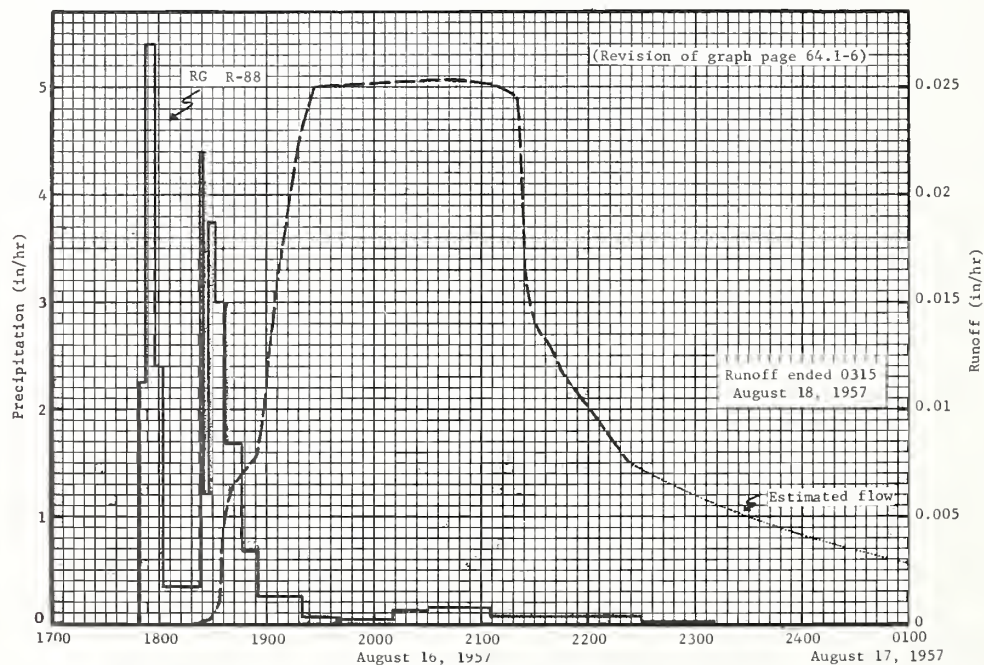
TOMBSTONE, ARIZONA WATERSHED W-5

REVISION OF PREVIOUSLY PUBLISHED DATA

1957 SELECTED RUNOFF EVENTS			SANTA ROSA, NEW MEXICO WATERSHED W-1							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of August 16-17, 1957 (Revision of page 64.1-3)							
	RG R-88		8-16	RG	R-88		8-16			
7-16	.10	.0000		1749	.00	.00		1820	.0000	.0000
7-24	.41	.0000		1753	2.25	.15		1829	.0004	.0001
7-25	.15	.0000		1758	5.40	.60		1834	.0010	.0002
7-26	.07	.0000		1802	2.40	.76		1842	.0045	.0009
7-27	.01	.0000		1822	.33	.87		1848	.0065	.0015
7-28	.05	.0000		1825	4.40	1.09		1855	.0079	.0023
7-31	.44	.0036		1828	1.20	1.15		1859	.0100	.0029
8-2	.05	.0000		1832	3.75	1.40		1903	.0136	.0037
8-7	.10	.0000		1837	3.00	1.65		1910	.0179	.0055
8-16	.28	1/.0001		1847	1.68	1.93		1915	.0209	.0071
				1855	.68	2.02		1921	.0235	.0093
				1920	.24	2.12		1927	.0250	.0117
				1940	2/.06	2/2.14		1950	.0251	.0213
				2010	.04	2.16		2005	.0252	.0276
				2030	.12	2.20		2030	.0253	.0381
				2105	.15	2.29		2050	.0253	.0465
				2230	.07	2.39		2100	.0252	.0528
				2310	2/.02	2/2.40		2111	.0250	.0553
								2120	.0245	.0590
								2125	.0162	.0607
								2132	.0139	.0625
								2139	.0128	.0641
								2146	.0116	.0656
								2155	.0106	.0674
								2205	.0096	.0690
								2223 3/	.0075	.0716
								2300	.0060E	.0757E
								2400	.0041E	.0807E
								8-17 0100	.0028E	.0841E
								0100	.0028E	.0841E
								0215	.0017E	.0868E
								8-18 0315	.0000E	.1027E

Watershed Conditions: Grazing land. About 75% of the area is grassland, vegetation consisting of blue grama, galleta, buffalo and ring mchly. Remaining 25% of area is pinon, juniper and various shrubs, with some grasses interspersed.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 43,240. 1/ LOCAL PRIOR RUNOFF FROM SMALL SHOWER IN IMMEDIATE VICINITY OF RUNOFF STATION. 2/ RAINFALL 1940 TO 2310 OMITTED FROM TABLE AND GRAPH PREVIOUSLY PUBLISHED ON PAGES 64.1-3 AND 6 OF USDA MISC. PUB. 945. (ISOHYETAL MAP CORRECT AS PUBLISHED ON PAGE 64.1-6). 3/ RECESSON FLOW ESTIMATED FROM 2223 TO END AT 0315.

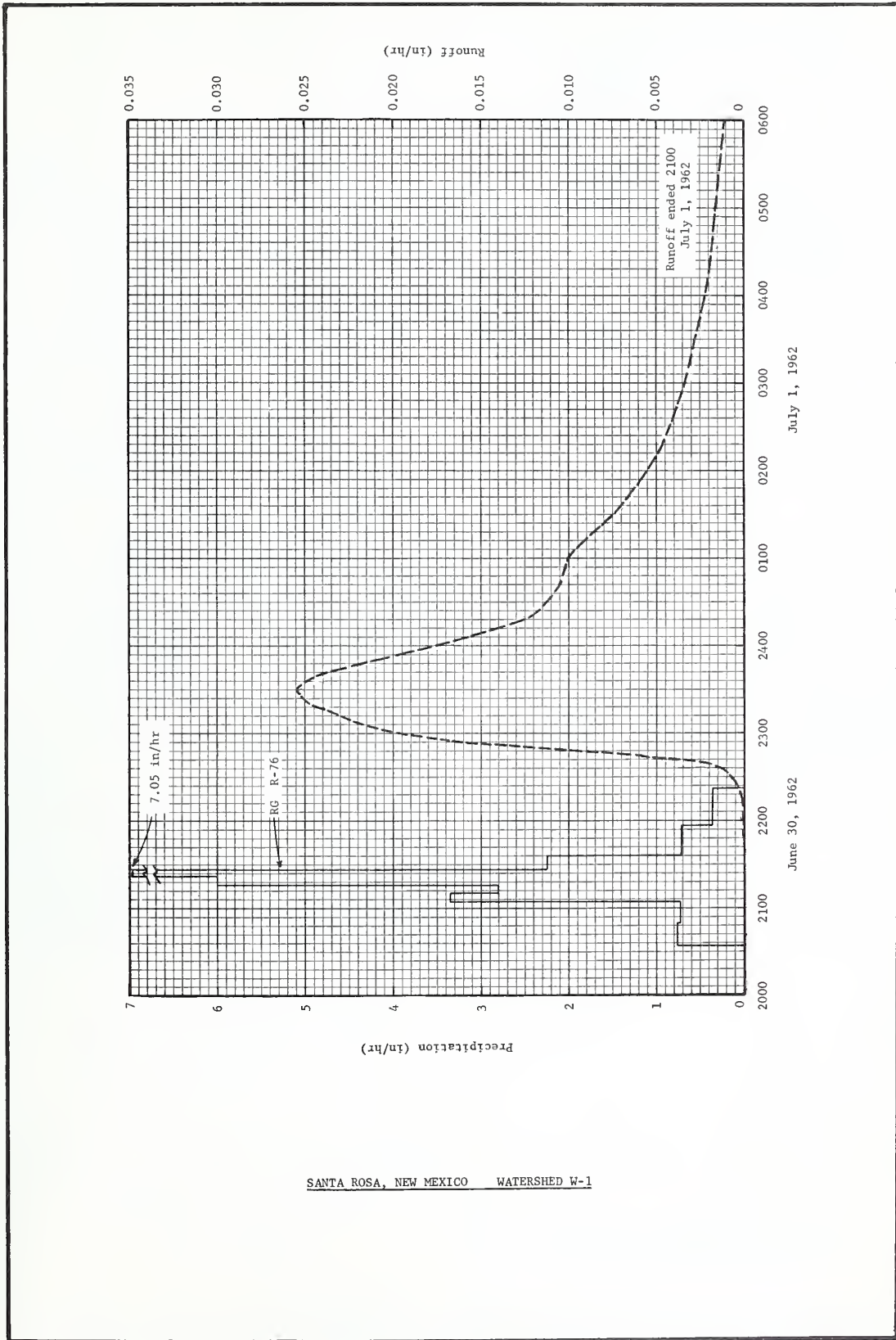


SANTA ROSA, NEW MEXICO WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								SANTA ROSA, NEW MEXICO WATERSHED W-1 AREA—42,880 ACRES (67 SQ. MILES)								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1962	P 1/ Q	.19 .00	.06 .00	.28 .00	.26 .00	.30 .00	1.96 .07	4.73 .07	.33 .13	1.99 T	.34 T	.41 .00	.33 .00	11.18 .27		
STA AV (56-62)	P 2/ Q	.24 .00	.15 .00	.54 .00	.42 .00	.85 T	1.56 .24	3.25 .29	1.49 .07	1.09 .02	1.20 T	.18 .00	.62 .00	11.59 .62		
MEAN P 3/ 54 YR		.37	.43	.63	.83	1.77	1.45	2.38	2.48	1.50	1.26	.39	.55	14.04		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								SANTA ROSA, NEW MEXICO WATERSHED W-1								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	7-30	.0311	7-30	.0224	7-30	.0319	7-30	.0920	7-30	.1128	7-30	.1397	7-28	.1484	7-24	.1953
MAXIMUMS FOR PERIOD OF RECORD																
1956 to 1962	6-5 1960	.1718	6-5 1960	.1713	6-5 1960	.3327	6-5 1960	.6975	6-5 1960	.8304	6-5 1960	.9197	6-5 1960	1.08	7-4 1960	1.26
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: Grazing land; 75% grassland, 25% shrubs. 1/ Monthly precipitation is arithmetic average of 55 rain gages. 2/ Precipitation and runoff records began Jan. 1955. Summer runoff incomplete, so 1955 not included in averages. 3/ Mean P based on 54-yr (1908-61) U. S. Weather Bureau record period at Santa Rosa, N. Mex.																
1962 SELECTED RUNOFF EVENT								SANTA ROSA, NEW MEXICO WATERSHED W-1								
Antecedent conditions			Rainfall				Runoff									
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 30—July 1, 1962 4/																
5-31-62	RG R-26 .07	.0000	6-30-62 2035	RG .00	R-76 .00	6-30-62 2149	.00000	.00000								
6-1	.05	.0000	2050	.76	.19	2200	T	T								
6-12	.10	.0000	2105	.72	.37	2205	.00002	T								
6-25	.10	.0000	2110	3.36	.65	2210	.00007	T								
6-26	.69	.0060	2116	2.80	.93	2215	.00010	.00001								
			2121	6.00	1.43	2220	.00025	.00002								
			2125	7.05	1.90	2225	.00048	.00005								
			2136	2.24	2.31	2230	.00063	.00010								
			2157	.71	2.56	2235	.00108	.00017								
			2222	.36	2.71	2240	.00213	.00030								
						2242	.00418	.00046								
						2245	.00589	.00063								
						2248	.00905	.00100								
						2250	.01109	.00134								
5-31-62	RG R-81 .05	.0000	6-30-62 2045	RG .00	R-81 .00	2252	.01334	.00175								
6-12	.30	.0000	2052	1.37	.16	2255	.01656	.00250								
6-24	.15	.0000	2100	2.47	.49	2300	.01965	.00401								
6-25	.05	.0000	2106	3.70	.86	2305	.02131	.00572								
6-26	1.32	.0060	2113	4.03	1.33	2310	.02262	.00755								
			2121	3.08	1.74	2315	.02369	.00948								
			2129	4.20	2.30	2320	.02459	.01149								
			2141	.95	2.49	2330	.02550	.01566								
						2340	.02406	.01979								
						2350	.02127	.02357								
						2355	.01942	.02527								
						2400	.01756	.02681								
						7-1-62										
						0005	.01591	.02820								
						0010	.01455	.02947								
						0015	.01327	.03063								
						0020	.01220	.03169								
						0030	.01125	.03364								
						0040	.01060	.03546								
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 43,240. 4/ ISORHYETAL MAP ON P. 64.1-4.																

1962 SELECTED RUNOFF EVENT			SANTA ROSA, NEW MEXICO WATERSHED W-1					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
			<u>Event of June 30—July 1, 1962—Continued</u>					
						7-1-62		
						0100	.01018	.03892
						0110	.00940	.04055
						0120	.00833	.04203
						0130	.00747	.04335
						0140	.00673	.04453
						0150	.00617	.04560
						0200	.00550	.04657
						0215	.00475	.04785
						0230	.00429	.04898
						0245	.00385	.05000
						0300	.00336	.05090
						0330	.00283	.05245
						0400	.00217	.05370
						0430	.00185	.05470
						0500	.00157	.05555
						0530	.00135	.05628
						0600	.00110	.05689
						0700	.00077	.05782
						0800	.00054	.05847
						0900	.00035	.05891
						1000	.00020	.05918
						1100	.00013	.05934
						1300	.00006	.05952
						1500	.00004	.05962
						1800	.00002	.05974
						2100	.00000	.05980

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 43,240.



SANTA ROSA, NEW MEXICO WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA		WATERSHED W-2		57M-2 ^{1/}				
						AREA — 115 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P ^{2/}	.27	.26	.33	1.15	6.29	1.75	2.39	1.10	.49	1.31	.40	.23	15.97
	Q	.02	.09	.17	.00	.15	.05	.26	.02	.00	.00	.00	.00	.76
	STA AV ^{3/} P	.16	.21	.22	.81	2.10	2.04	1.70	1.12	1.19	.59	.35	.20	10.69
	(58-62) Q	.00	.03	.19	.00	.03	.04	.07	.01	.02	.00	.00	.00	.39
	MEAN P ^{4/}													
55 YR		.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49

Notes: Quality of records: P, good; Q Jan.—Apr., fair; May—Dec., good. Watershed conditions: 100% rangeland. Condition classes: Excellent, 19%; good, 64%; fair, 17%. Degree of grazing: Full. Estimated production of cover: 1,770 lb/ac of oven dry material (production based on 1961 and 1963 data). ^{1/} Local watershed code number. ^{2/} Monthly precipitation obtained from rain gage W-2A. ^{3/} Precipitation and runoff records began Jan. 1958. ^{4/} Mean P based on 55-yr. (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.

1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA		WATERSHED W-2		57M-2			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1													
2								.06			.02	.07	
3			.02				.90				.02		
4						.21					.03		
5								.72		.42	.17		
6	.10					.23				.79			
7				.20						.06			
8	.02								.19				
9													
10			.09	.03								.06	
11			.01										
12		.08	.03	.10		.03	.14						
13		.02	.04	.02		.04							
14						.14	.46						
15					1.20	.12					.05		
16							.73						
17		.01			.52								
18	.01	.02			1.36								
19	.04	.03								.04		.10	
20	.06	.06			.30	.02							
21	.03	.04			.37	.67							
22	.01				.70	.04		.10					
23											.11		
24			.14		.35	.25							
25				.60	.35								
26				.10	.10		.06						
27				.08	.14		.10						
28				.02	.39								
29					.51			.20	.10				
30								.02	.20				
31													
TOTAL	.27	.26	.33	1.15	6.29	1.75	2.39	1.10	.49	1.31	.40	.23	
STA AV	.16	.21	.22	.81	2.10	2.04	1.70	1.12	1.19	.59	.35	.20	

NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-2A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.2-4.

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-2						57M-2
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1		.03										
2		.03										
3		.02					.12					
4		.01										
5								.02				
6												
7						T				T		
8												
9												
10												
11												
12												
13							.01					
14												
15							.13					
16												
17												
18			T			.05						
19			.03									
20			.06									
21			.07			.03	.05					
22			.01			.03						
23			T									
24			T			T						
25			T			.01						
26			T									
27						T						
28												
29						.03						
30												
31	.02											
MEAN	.02	.09	.17			.15	.05	.26	.02		T	
INCHES												

NOTES: DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-5 AREA—46 ACRES 57M-5 1/							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P ^{2/}	.32	.25	.32	1.15	7.11	3.86	2.78	.26	.45	.81	.18	.13	17.62
Q	.00	.04	.07	.00	.34	.30	.08	.00	.00	.00	.00	.00	.83
STA AV ^{3/} P (58-62) Q	.17	.25	.33	.86	2.40	2.56	1.59	1.02	.92	.39	.20	.26	10.95
MEAN P ^{4/} 55 YR	.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49

Notes: Quality of records: P, good; Q, fair. Watershed conditions: 100% rangeland. Condition classes: Excellent, 7%; good, 93%. Degree of grazing: Full. Estimated production of cover: 2,400 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/Local watershed code number. 2/ Precipitation obtained from rain gage W-5A. 3/ Precipitation and runoff records began Jan. 1958. 4/ Mean P based on 55-yr (1908-62) U.S. Weather Bureau record period at Newell, S. Dak.

1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-5 57M-5							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1				.01				.05			.02		
2													
3			.03				.67				.03		
4						.48							
5						.13				.10			
6	.10					.03	.05			.55			
7				.25	.03					.07	.07		
8									.07				
9							.13		.08				
10			.08	.09								.05	
11			.09	.07									
12		.08	.02	.03		.11	.13						
13		.02	.02		.04	.07	.07						
14	.04				.80	.65	.50						
15	.03				.25	.52	.13				.02		
16		.04			.01		.28				.01		
17					.29								
18	.01				1.07	.06	.05						
19	.04				.23	.03	.03			.03		.08	
20	.01	.02			.50	.09					.07		
21	.08	.04			1.00	.80				.02	.03		
22	.01	.02			.41	.74		.11		.04			
23			.03										
24		.03			.34								
25				.03	.38								
26				.55	.22		.25						
27				.06	.12		.07						
28			.05	.06	.92		.25						
29					.50		.04		.14				
30							.13	.10	.16				
31						.18							
TOTAL	.32	.25	.32	1.15	7.11	3.86	2.78	.26	.45	.81	.18	.13	
STA AV	.17	.25	.33	.86	2.40	2.56	1.59	1.02	.92	.39	.20	.26	

NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW. ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-5A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.5-4.

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-5						57M-5
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2												
3												
4							.08					
5												
6												
7												
8												
9		.04	.07									
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21					.17							
22						.30						
23												
24												
25												
26												
27												
28					.12							
29					.05							
30												
31												
MEAN		.04	.07		.34	.30	.08					
INCHES												
NOTES:												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-7 AREA—160 ACRES							57M-7 1/	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P 2/	.32	.28	.33	1.15	6.84	3.10	2.85	.32	.44	.73	.18	.13	16.67
	Q	.00	.02	.17	.00	.16	.52	.13	.00	.00	.00	.00	.00	1.00
	STA AV 3/P	.20	.30	.39	.91	2.43	2.72	1.66	1.15	1.00	.44	.29	.28	11.77
(58-62)	Q	.00	.00	.15	.00	.03	.11	.07	.01	.00	.00	.00	.00	.37
	MEAN P 4/ 55 YR	.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49
Notes: Quality of records: P, good; Q Jan.—Apr., fair; May—Dec., good. Watershed conditions: 100% rangeland. Condition classes: Good, 82%; fair, 18%. Degree of grazing: Full. Estimated production of cover: 2,600 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/ Local watershed code number. 2/ Precipitation obtained from rain gage W-7A. 3/ Precipitation and runoff records began Jan. 1958. 4/ Mean P based on 55-yr. (1908- 62) U. S. Weather Bureau record period at Newell, S. Dak.														
1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-7							57M-7	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1				.01				.08			.02			
2											.03			
3			.03				.82							
4						.42								
5						.13				.10				
6	.10					.03	.05			.50				
7				.25	.03					.04				
8									.05					
9							.20		.06					
10			.08	.09								.05		
11			.09	.07										
12		.08	.02	.03		.11	.13							
13		.02	.02		.04	.07	.07							
14	.04				.80	.79	.50							
15	.03				.25	.27	.06				.02			
16		.04			.01	.01	.28				.01			
17		.03			.29									
18	.01				1.07	.06	.05							
19	.04				.23	.10	.03			.03		.08		
20	.01	.02			.50						.07			
21	.08	.04			.96	.11				.02	.03			
22	.01	.02			.34	.90		.15		.04				
23			.04											
24		.03			.30									
25				.03	.40									
26				.55	.20		.25							
27				.06	.12		.05							
28				.06	.90		.18							
29			.05		.40		.04							
30						.10	.13		.09	.14				
31							.01			.19				
TOTAL	.32	.28	.33	1.15	6.84	3.10	2.85	.32	.44	.73	.18	.13		
STA AV	.20	.30	.39	.91	2.43	2.72	1.66	1.15	1.00	.44	.29	.28		
NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-7A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED, 1956-59, USDA MISC. PUB. 945, P. 65.7-4.														

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-7						57M-7
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2												
3												
4						.03	.13					
5												
6												
7												
8												
9		.02	.02									
10												
11												
12												
13												
14												
15						.12						
16												
17												
18												
19												
20												
21					.01							
22						.37						
23			.10									
24			.03									
25			.02									
26			T									
27												
28												
29					.15							
30		-----		-----		-----			-----		-----	
31		-----		-----		-----			-----		-----	
MEAN		.02	.17		.16	.52	.13					
INCHES												
NOTES:												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-12							57F-12 1/	
						AREA - 90 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P2/	.35	.31	.37	1.03	8.63	4.74	3.95	1.06	.58	1.09	.41	.08	22.60
	Q	.00	.00	.51	.00	3.59	1.28	.74	.00	.00	.00	.00	.00	6.12
	STA AV3/P	.20	.23	.43	.93	2.77	3.23	1.67	.93	.93	.42	.31	.21	12.26
	(58-62) Q	.00	.03	.41	.14	.84	.68	.19	.11	.01	.00	.01	.01	2.43
	MEAN P 4/													
	55 YR	.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49
Notes: Quality of records: P, good; Q, fair. Watershed conditions: 100% rangeland. Condition classes: Good, 94%; fair, 6%. Degree of grazing: Close. Estimated production of cover: 1,000 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/ Local watershed code number. 2/ Precipitation obtained from rain gage W-12A. 3/ Precipitation and runoff records began Jan. 1958. 4/ Mean P based on 55-yr. (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.														
1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-12							57F-12	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1													.01	
2													.05	
3													.06	
4				.03			.65	.70					.02	
5							.20				.85			
6	.10													
7				.12	.23						.06	.04		
8										.08	.10			
9			.08	.03		.07	.28			.10				
10			.06				.03	.30					.03	
11			.04	.10										
12		.10	.01	.09		.10	.50							
13		.07	.02			.08	.45							
14	.04				.80	1.82	.82						.02	
15	.02				.40	.95	.01						.02	
16		.04				.23	.56						.03	
17		.04			.70									
18	.03				2.05									
19	.02				.08		.17			.03				
20	.11	.02			.24								.05	
21	.02	.04			1.47	.04				.03	.06			
22	.01				.23			.22		.02				
23														
24			.07		.33	.40								
25				.03	.80									
26				.50	.20		.15							
27					.12		.09							
28				.16	.58									
29			.06		.40			.15	.05					
30						.20		.25	.35					
31							.19							
TOTAL	.35	.31	.37	1.03	8.63	4.74	3.95	1.06	.58	1.09	.41	.08	.08	
STAAV	.20	.23	.43	.93	2.77	3.23	1.67	.93	.93	.42	.31	.21	.21	
NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-12A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.12-4.														

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-12						57F-12
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2												
3							.07					
4						.16						
5												
6												
7												
8												
9												
10												
11												
12							.03					
13												
14					T	.75	.59					
15					.03	.26						
16						.11	.05					
17					.17							
18			.21		1.64							
19												
20			.11									
21					.89							
22			.19		.13							
23												
24												
25					.40							
26					.08							
27												
28					.10							
29					.15							
30		-----										
31		-----		-----		-----			-----		-----	
MEAN			.51		3.59	1.28	.74					
INCHES												

NOTES: SPILLWAY FLOW: MAY, JUNE, JULY.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-13							57F-13 ^{1/}
						AREA — 160 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P ^{2/}	.25	.25	.36	.76	7.29	3.27	1.94	.74	.35	.73	.33	.25	16.52
Q	.00	.00	.09	.03	1.48	.90	.00	.00	.00	.00	.00	.00	2.50
STA AV ^{3/} P	.20	.25	.31	.80	2.63	2.85	1.09	.66	.78	.48	.33	.27	10.65
(58-62) Q	.00	.01	.22	.02	.30	.44	.00	.00	.00	.00	.00	.00	.99
MEAN P ^{4/}													
55 YR	.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49

Notes: Quality of records: P, fair; Q, fair. Watershed conditions: 100% rangeland. Condition classes: Excellent, 8%; good, 67%; fair, 25%. Degree of grazing: Full. Estimated production of cover: 1,700 lb/ac of oven dry material (production based on 1961 and 1963 data). ^{1/} Local watershed code number. ^{2/} Thiessen weighted precipitation obtained from rain gages W-13B and W-13C. ^{3/} Precipitation and runoff records began Jan. 1958. ^{4/} Mean P based on 55-yr. (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.

1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-13							57F-13
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1													
2											.07		
3			.03								.05		
4						.25	.43						
5						.04				.02	.12		
6	.10									.65			
7				.20					.05	.06			
8													
9			.02										
10			.08	.07	.16			.10				.10	
11			.02	.08	.16								
12		.08	.08	.04	.02	.03	.18						
13		.05	.02		.80		.12						
14	.01				.21	1.45	.18						
15	.01					.64							
16		.02			.39	.17	.22						
17		.02			.39								
18	.07				.30								
19	.02					.02	.28				.09	.15	
20	.02	.02			.67	.12							
21	.01	.04			1.28								
22	.01				.19			.20					
23			.08										
24			.03		.35	.37							
25					.51								
26		.02			.19		.05						
27				.21	.02		.48						
28				.16	1.12								
29					.53	.18		.04	.03				
30								.25	.27				
31													
TOTAL	.25	.25	.36	.76	7.29	3.27	1.94	.74	.35	.73	.33	.25	
STA AV	.20	.25	.31	.80	2.63	2.85	1.09	.66	.78	.48	.33	.27	

NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. THIESSEN WEIGHTED PRECIPITATION OBTAINED FROM RAIN GAGES W-13B AND W-13C. SIA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.13-4.

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-13					57F-13	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2												
3					.03							
4												
5												
6												
7												
8												
9		T										
10												
11												
12												
13												
14						.78						
15												
16						.11						
17												
18												
19												
20												
21					.50							
22					T							
23			.09									
24						.01						
25					.06							
26					.12							
27					.80							
28												
29												
30		-----		-----		-----			-----		-----	
31												
MEAN		T	.09	.03	1.48	.90						
INCHES												
NOTES:												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-14 AREA—35 ACRES							57F-14 ^{1/}
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1959 P	.24	.12	.15	.74	2.36	1.43	.89	.23	2.02	.45	.66	.13	9.42
Q ^{2/}	.00	.092	.142	<u>.055</u>	<u>.036</u>	.017	.016	.00	.018	.00	.069	.008	.45
1962 P ^{3/}	.24	.36	.91	1.03	7.88	3.98	2.49	.63	.40	.90	.41	.16	19.39
Q	.00	.00	.42	.00	1.26	.55	.09	.00	.01	.01	.00	.00	2.34
STA AV ^{4/} P	.23	.21	.40	1.14	2.78	3.05	2.28	.87	.87	.52	.41	.27	13.03
(58-62) Q	.00	.05	.24	<u>.04</u>	<u>.26</u>	.51	.29	.04	.01	.00	.02	.00	1.46
MEAN P ^{5/} 55 YR	.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49

Notes: Quality of records: P, fair; Q, good except May and June, fair. Watershed conditions: 100% rangeland. Condition classes: Good, 54%, fair, 46%. Degree of grazing: Full. Estimated production of cover: 1,400 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/ Local watershed code number. 2/ Previously published runoff totals for April and May revised and correct values underlined. 3/ Precipitation obtained from rain gage W-14A. 4/ Precipitation and runoff records began Jan. 1958. 5/ Mean P based on 55-yr (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.

1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-14							57F-14
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1							.01						
2								.08			.10		
3			.03				.20						
4						.25					.02		
5						.13				.03			
6	.08					.08				.77	.10		
7				.20		.06				.10			
8													
9			.03										
10			.10	.03								.06	
11			.14	.12									
12		.01	.26	.02	.15	.05							
13		.08	.16		.05		.15						
14	.04		.10		.88	1.68	.40				.02		
15	.02				.22	.77					.02		
16		.08					1.50				.03		
17		.05			.62								
18	.01	.03			1.28								
19	.03				.03		.01				.07	.10	
20	.03	.06			.12						.05		
21	.02	.01			1.20	.10							
22	.01	.04				.10		.25					
23													
24			.02		1.65	.67							
25			.04		.30								
26				.40	.30		.07						
27				.08	.30								
28				.06	.34								
29			.03	.12	.44			.05					
30						.09		.25	.40				
31							.15						
TOTAL	.24	.36	.91	1.03	7.88	3.98	2.49	.63	.40	.90	.41	.16	
STA AV	.23	.21	.40	1.14	2.78	3.05	2.28	.87	.87	.52	.41	.27	

NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-14A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MI5C. PUB. 945, P. 65.14-4.

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-14						57F-14	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1													
2													
3													
4													
5													
6										.01			
7													
8													
9													
10													
11													
12													
13													
14						.42							
15													
16													
17					.02								
18			T		.26		.09						
19			.03										
20			.20										
21			.06		.26								
22			.03										
23			.08										
24			.02			.13							
25					.31								
26													
27													
28					.29								
29					.12								
30		-----							.01				
31		-----		-----							-----		
MEAN													
INCHES			.42		1.26	.55	.09		.01	.01			

NOTES: SPILLWAY FLOW: MAY, JUNE, JULY.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-15 AREA—115 ACRES							57F-15 1/	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P 2/	.24	.36	.91	1.03	8.64	4.38	2.59	.65	.40	.90	.41	.16	20.67
	Q	.00	.00	.15	.00	1.56	.66	.15	.00	.01	T	.00	.00	2.53
STA AV 3/	P	.36	.22	.41	1.25	2.99	3.14	2.49	.91	.89	.58	.49	.30	14.03
	Q	.00	.01	.13	.09	.32	.45	.33	.02	.01	.00	.01	.00	1.37
MEAN P 4/		.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49
55 YR														

Notes: Quality of records: P, fair; Q Jan.—July, fair; Aug.—Dec., good. Watershed conditions: 100% rangeland. Condition classes: Good, 41%, fair, 59%. Degree of grazing: Full. Estimated production of cover: 1,300 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/ Local watershed code number. 2/ Precipitation obtained from rain gage W-15A. 3/ Precipitation and runoff records began Jan. 1958. 4/ Mean P based on 55-yr (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.

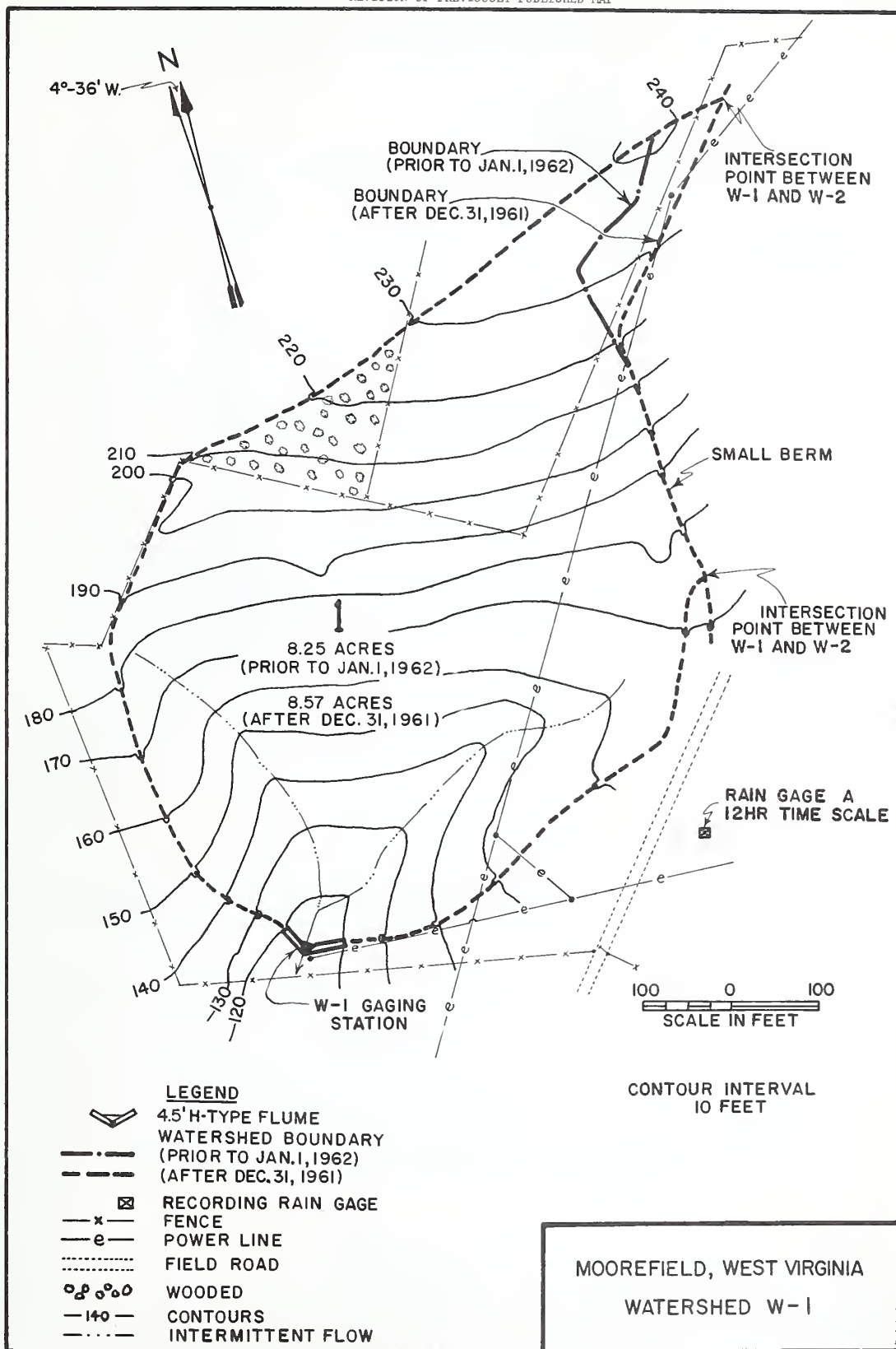
MONTHLY RUNOFF 1958: (Revision) July monthly total Q should be 1.242 in., not 1.240. Rounded annual total of 2.29 in. is unchanged.

DAILY PRECIPITATION 1960: (Revision) Delete .45 in. of precipitation on August 23, 1960. Monthly and annual totals remain the same.











1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-15							57F-15
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1							.01						
2								.10					
3			.03				.20				.10		
4						.20					.02		
5						.13				.03			
6	.08					.03				.77	.10	.06	
7				.20		.06				.10			
8													
9			.03										
10			.10	.03									
11			.14	.12									
12		.01	.26	.02	.17	.04	.07						
13		.08	.16		.06		.08						
14	.04		.10		.87	1.78	.65				.02		
15	.02				.27	.80					.02		
16		.08									.03		
17		.05			.71		1.35						
18	.01	.03			1.33								
19	.03				.03		.01				.07	.10	
20	.03	.06			.12						.05		
21	.02	.01			1.43	.30							
22	.01	.04				.12		.25					
23						.83							
24			.02		1.75								
25			.04		.40								
26				.40	.37								
27				.08	.39		.07						
28				.06	.37								
29			.03	.12	.37			.04					
30						.09		.26	.40				
31							.15						
TOTAL	.24	.36	.91	1.03	8.64	4.38	2.59	.65	.40	.90	.41	.16	
STA AV	.36	.22	.41	1.25	2.99	3.14	2.49	.91	.89	.58	.49	.30	

NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-15A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.15-4.

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-15					57F-15	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2												
3												
4												
5												
6												
7										T		
8												
9												
10												
11												
12												
13												
14					T	.38						
15						.10						
16							.15					
17					.06							
18												
19					.30							
20												
21												
22			.15		.48							
23												
24					.03	.18						
25					.32							
26												
27					.03							
28					.26							
29					.08							
30									.01			
31												
MEAN			.15		1.56	.66	.15		.01	T		
INCHES:												
NOTES:	SPILLWAY FLOW: MAY, JUNE, JULY.											



LEGEND

-  4.5' H-TYPE FLUME
-  WATERSHED BOUNDARY (PRIOR TO JAN. 1, 1962)
-  WATERSHED BOUNDARY (AFTER DEC. 31, 1961)
-  RECORDING RAIN GAGE
-  FENCE
-  POWER LINE
-  FIELD ROAD
-  WOODED
-  CONTOURS
-  INTERMITTENT FLOW

CONTOUR INTERVAL
10 FEET

MOOREFIELD, WEST VIRGINIA
WATERSHED W-1

Type		Percent of area	Topsoil		Subsoil			Substratum		Internal drainage
			Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth (in.)	Permeability	
Litz shaly silt loam		90	4	Weak fine granular	Rapid	-----	-----	4	Rapid	Medium
Undifferentiated alluvium		6	8	Strong, fine subangular blocky	Moderate	-----	-----	8	Slow	Slow
Litz shaly silt loam (moderately deep phase)		3	2	Weak fine granular	Rapid	Fine subangular blocky	Moderate	8	Moderate	Medium
Litz silt loam		1	3	Moderate fine granular	Moderate	Weak to moderate medium subangular, blocky	Moderate	17	Moderate	Medium

Depth to shale (in)	0-12	12-18	18-24	24-30	>30
Percent of area	24	28	14	10	24

Erosion class	1	2	3	4
Percent of area	4	3	91	2

Class	I	II	III	IV	V	VI	VII
Percent of area	0	6	4	88	0	0	2

EROSION: (Revision) _____

LAND CAPABILITY: (Revision) _____

GEOLOGY: Marcellus shale of Devonian age predominates with a small cap of the younger Hamilton formation present in the northwest corner of the area. Depths to bedrock range from 10 in. to 60+ in. Structurally, the area is composed of several small anticlines and synclines with the axial planes striking N30°E. The exit channels are located in the troughs, and one- to three-foot-diameter concretions top the anticlines. The Hamilton cap has a similar strike, and both formations have a constant dip of 22°SE. Source of data: W. B. Ferguson, Geologist, SCS.

SURFACE DRAINAGE: Good; length of principal waterway, approximately 1000 ft.; a natural watershed with surface flow to two well defined waterways which intersect 30 ft. above the gaging station.

CHARACTER OF FLOW: Spring-fed, intermittent flow, continuous.

INSTRUMENTATION: (Revision) Runoff: N-4.5 precalibrated flume equipped with FW-1 recorder, with 12-hr. time scale. Precipitation: recording rain gage with 12-hr. time scale.

WATERSHED CONDITIONS: (Revision) Permanent pasture with controlled grazing. The predominant species are native perennial lespedeza, Canada and Kentucky bluegrass, povertygrass, and buckhorn plantain. Agricultural lime and phosphate (0-20-0) applied at the rate of 2 tons and 800 pounds per acre, respectively. Vegetative cover estimates for period of record are:

Year	1958	1959	1960	1961	1962
Percent bare space	25-30	20-50	10-50	0-10	20-45

GENERALLY REPRESENTS: Pasture practices on shallow shale soil typical of large areas in eastern West Virginia, central Pennsylvania, western Maryland and parts of Virginia and Tennessee. Applicable to similar lands in the land resource areas of the Southern Appalachian Ridges and Valleys (N-128) and the Northern Appalachian Ridges and Valleys (S-147).

MONTHLY PRECIPITATION AND RUNOFF (inches)												MOOREFIELD, WEST VIRGINIA WATERSHED W-1			66.01
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962 P ₁ /Q	1.42 .15	3.47 .93	3.87 2.92	2.33 .29	5.59 .18	2.60 .05	3.06 T	1.09 .00	2.43 .00	3.06 T	2.96 .14	2.12 .03	34.00 4.69		
STA AV ₂ /P (58-62) Q	1.49 .08	2.62 .84	2.47 1.02	2.69 .45	3.69 .34	2.93 .10	3.17 .01	2.43 .10	2.66 .02	1.97 .02	1.43 .03	1.91 .03	29.46 3.04		
MEAN P $\frac{3}{67}$ YR	2.21	2.05	2.74	2.73	3.43	3.76	3.58	3.36	2.51	2.41	1.74	1.99	32.51		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																				
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																	
			1 HOUR			2 HOURS			6 HOURS			12 HOURS			1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962	5-23	.09	3-12	.08	3-12	.16	3-12	.40	3-12	.59	3-12	.87	3-12	1.35	3-11	1.87				

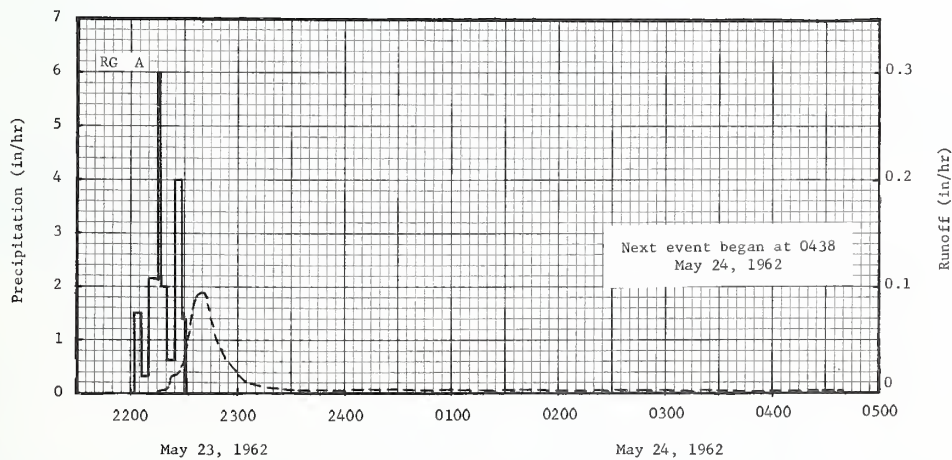
MAXIMUMS FOR PERIOD OF RECORD																		
1958 TO 1962	8-3 1958	.44	8-3 1958	.17	8-3 1958	.19	3-12 1962	.40	3-12 1962	.59	3-12 1962	.87	3-12 1962	1.35	3-11 1962	1.87		

Notes: Quality of records: Monthly P and Q, excellent. Watershed conditions: 100% permanent pasture with controlled grazing. 1/Precipitation data obtained from rain gage A. 2/Precipitation records began Apr. 1958. Runoff records began June 1958. 3/Mean P based on 67-yr (1896-1962) U.S. Weather Bureau record period at or near Moorefield, W. Va. No records for 7 months each in 1915 and 1922 or for Mar. through June 1933. Missing records from July 1933 through Sept. 1940, Feb. through May 1948, and full years 1959-62 supplied from Moorefield McNeill station, 9 miles NNE of Moorefield, W. Va.

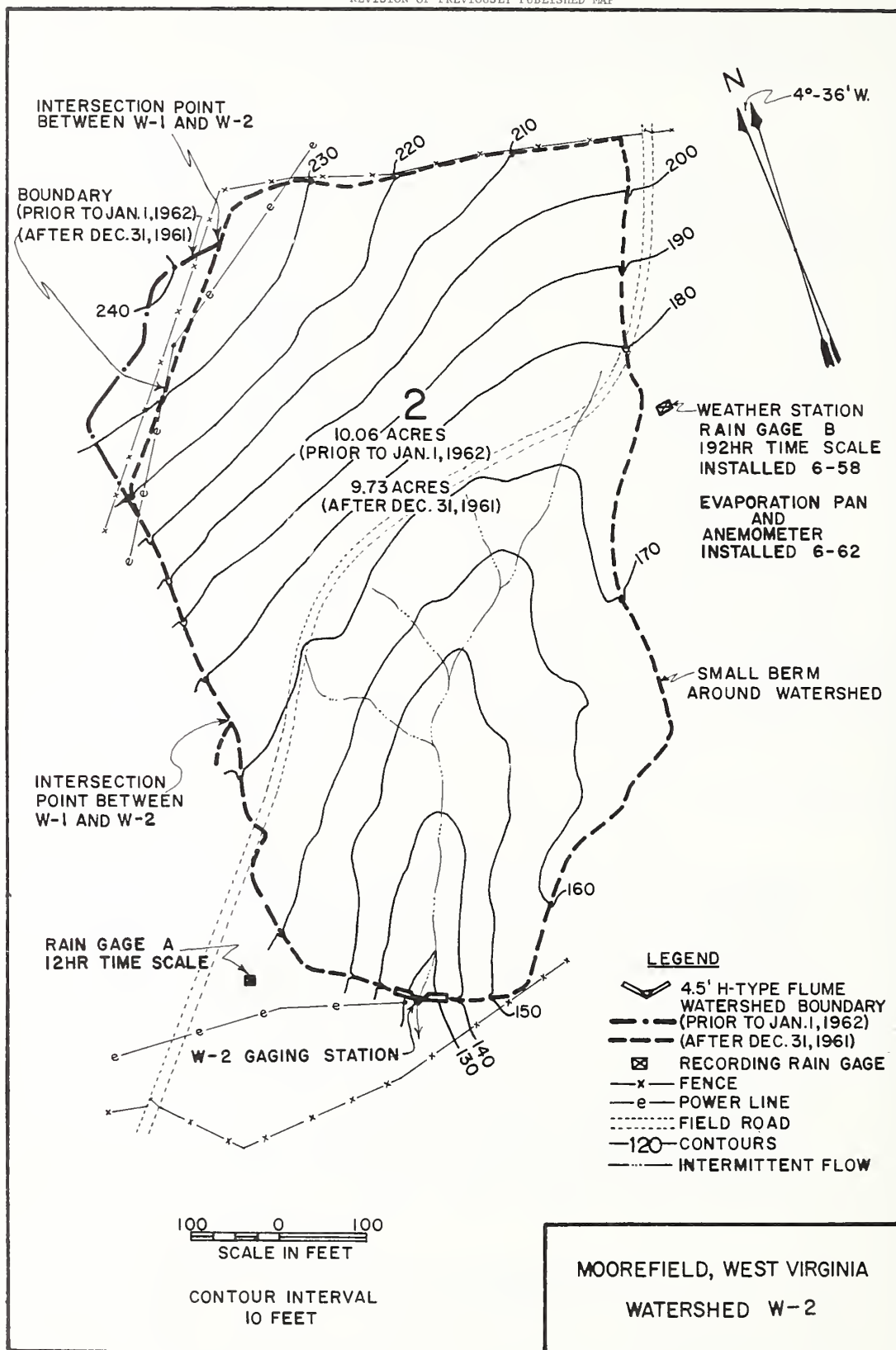
1962 SELECTED RUNOFF EVENT			MOOREFIELD, WEST VIRGINIA				WATERSHED W-1				66.01
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of May 23 and 24, 1962											
	RG A				RG	A					
4-23	.00	1/.0027	5-23	2202	.00	.00	5-23	2215	.0001	.0000	
4-24	.00	.0058		2206	1.50	.10		2220	.0024	.0001	
4-25	.00	.0058		2210	.30	.12		2223	.0150	.0006	
4-26	.00	.0029		2215	2.16	.30		2224	.0164	.0008	
4-27	.00	.0029		2217	6.00	.50		2227	.0179	.0017	
4-28	.00	.0029		2220	2.00	.60		2237	.0908	.0107	
4-29	.33	.0045		2225	.60	.65		2240	.0944	.0154	
4-30	.08	.0058		2228	4.00	.85		2242	.0944	.0185	
5-1	1.01	.0143		2231	1.40	.92		2252	.0405	.0297	
5-2	.39	.0109						2300	.0179	.0336	
5-3	.00	.0084						2310	.0068	.0357	
5-4	.00	.0058						2320	.0031	.0365	
5-5	.00	.0029						2400	.0008	.0378	
5-6	.00	.0029									
5-7	.00	.0029					5-24	0030	.0004	.0381	
5-8	.30	.0043						0438	2/.0001	.0391	
5-9	.00	.0031									
5-10	.00	.0029									
5-11	.00	.0029									
5-12	.04	.0029									
5-13	.36	.0040									
5-14	.00	.0029									
5-15	.00	.0016									
5-16	.20	.0020									
5-17	.00	.0008									
5-18	.00	.0001									
5-19	.19	.0013									
5-20	.00	.0001									
5-23	3/.43	4/.0007									

Watershed conditions: Mixed grass cover. 55% to 80% of area covered. Average height, 3 in. to 5 in.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.6414. 1/ RUNOFF FROM 2215 TO 2400. 2/ BEGINNING OF NEXT RUNOFF EVENT. 3/ RAINFALL FROM 1650 TO 1720. 4/ RUNOFF FROM 0001 TO 2215.



MOOREFIELD, WEST VIRGINIA WATERSHED W-1



Revised 1-1-62

MOOREFIELD, WEST VIRGINIA WATERSHED W-2

LOCATION: Hardy County, W. Va.; approximately 5 miles southwest of Moorefield; South Branch Potomac River Basin.

AREA: (Revision) 9.73 acres (10.06 acres prior to 1-1-62)

SLOPES: Slope—Percent	0-3	3-10	10-20	20-30	30-40
Percent of area	0	17	62	20	1

SOILS: (Revision) Residual, derived from gray siltstones with some interbedding of calcareous shales.

Type	Percent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Litz shaly silt loam	83	4	Weak, fine granular	Rapid	-----	-----	4	Rapid	Medium
Undifferentiated alluvium	8	8	Strong, fine sub-angular blocky	Moderate	-----	-----	8	Slow	Slow
Clarksburg silt loam	7	6	Weak medium granular	Slow	Moderate, fine, sub-angular (upper B); strong, fine, blocky (lower B)	Slow	20	Slow	Slow
Litz silt loam (moderately well-drained phase)	2	4	Weak fine granular	Moderate	Medium to fine, sub-angular blocky	Slow	12	Slow	Slow

Depth to shale (in.)	0-12	12-18	18-24	24-30	> 30
Percent of area	2	8	20	24	46

EROSION: Erosion class	1	2	3	4
Percent of area	8	0	89	3

LAND CAPABILITY: Class	I	II	III	IV	V	VI	VII
Percent of area	0	6	15	77	0	0	2

GEOLOGY: Marcellus shale of Devonian age predominates. Depths to bedrock range from 6 in. to 60+ in. Structurally, the area is composed of several small anticlines and synclines with the axial planes striking N30°E. The exit channels are located in the troughs, and one- to three-foot-diameter concretions top the anticlines. Source of data: W. B. Ferguson, Geologist, SCS.

SURFACE DRAINAGE: (Revision) Good; length of principal waterway, 700 ft.; a natural watershed with surface flow into a well defined waterway.

CHARACTER OF FLOW: Spring-fed, intermittent flow, continuous.

INSTRUMENTATION: (Revision) Runoff: H-4.5 precalibrated flume equipped with FW-1 recorder, with 12-hr. time scale. Precipitation: recording rain gage with 12-hr. time scale.

WATERSHED CONDITIONS: (Revision) Permanent pasture with controlled grazing. The predominant species are Canada and Kentucky bluegrass, cheat, povertygrass, sheep sorrel and buckhorn plantain. Agricultural lime and phosphate (0-20-0) applied at the rate of 2 tons and 800 pounds per acre, respectively. Vegetative cover estimates for period of record are:

Year	1958	1959	1960	1961	1962
Percent bare space	30-40	2-30	20-50	5-15	10-35

GENERALLY REPRESENTS: Pasture practices on shallow shale soil typical of large areas in eastern West Virginia, central Pennsylvania, western Maryland and parts of Virginia and Tennessee. Applicable to similar lands in the land resource areas of the Southern Appalachian Ridges and Valleys (N-128) and the Northern Appalachian Ridges and Valleys (S-147).

MONTHLY PRECIPITATION AND RUNOFF (inches)							MOOREFIELD, WEST VIRGINIA WATERSHED W-2							66.02
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962 P ¹ / _Q	1.42 .19	3.47 1.19	3.87 2.79	2.33 .30	5.59 .30	2.60 .03	3.06 T	1.09 .00	2.43 .00	3.06 .02	2.96 .25	2.12 .02	34.00 5.09	
STA AV 2/P (58-62) Q	1.49 .19	2.62 .96	2.47 .99	2.69 .53	3.69 .43	2.93 .13	3.17 .07	2.43 .18	2.66 .06	1.97 .06	1.43 .05	1.91 .09	29.46 3.74	
MEAN P 3/67 YR	2.21	2.05	2.74	2.73	3.43	3.76	3.58	3.36	2.51	2.41	1.74	1.99	32.51	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
			DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	5-23	.25	2.26	.11	2-26	.18	3-12	.43	3-12	.63	3-12	.89	3-11	1.44	3-11	1.94

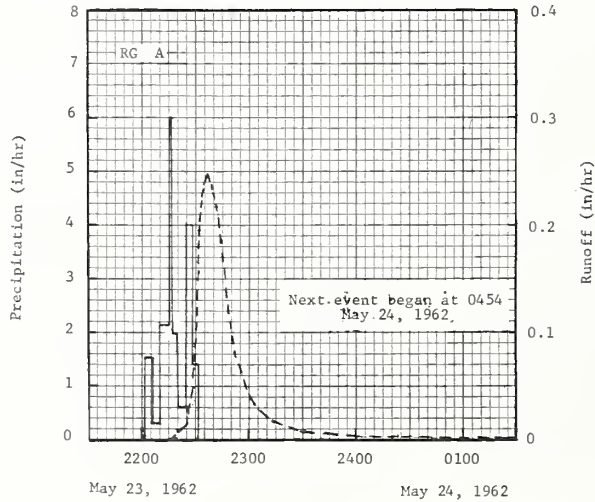
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1962	8-3 1958	.76	8-2 1958	.36	8-3 1958	.38	5-8 1960	.48	3-12 1962	.63	3-12 1962	.89	3-12 1962	1.44	3-11 1962	1.94

Notes: Quality of records: Monthly P and Q, excellent. Watershed conditions: 100% permanent pasture with controlled grazing. 1/Precipitation data obtained from rain gage A. 2/Precipitation records began Apr. 1958. Runoff records began June 1958. 3/Mean P based on 67-yr (1896-1962) U.S. Weather Bureau record period at or near Moorefield, W. Va. No records for 7 months each in 1915 and 1922 or for Mar. through June 1933. Missing records from July 1933 through Sept. 1940, Feb. through May 1948, and full years 1959-62 supplied from Moorefield McNeill station, 9 miles NNE of Moorefield, W. Va.

1962			SELECTED RUNOFF EVENT				MOOREFIELD, WEST VIRGINIA				WATERSHED W-2		66.02	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME DF DAY	RATE (in/hr)	ACC. (inches)				
Event of May 23 and 24, 1962														
	RG A			RG	A									
4-23	.00	1/.0022	5-23	2202	.00	.00	5-23	2212	.0000	.0000				
4-24	.00	.0024		2206	1.50	.10		2216	.0003	T				
4-25	.00	.0024		2210	.30	.12		2220	.0088	.0003				
4-26	.00	.0024		2215	2.16	.30		2225	.0145	.0013				
4-27	.00	.0012		2217	6.00	.50		2228	.0485	.0029				
4-29	.33	.0011		2220	2.00	.60		2229	.0743	.0039				
4-30	.08	.0027		2225	.60	.65		2231	.1355	.0074				
5-1	1.01	.0509		2228	4.00	.85		2233	.1977	.0129				
5-2	.39	.0314		2231	1.40	.92		2234	.2284	.0165				
5-3	.00	.0040						2236	.2496	.0244				
5-4	.00	.0024						2242	.2181	.0478				
5-5	.00	.0024						2247	.1396	.0627				
5-6	.00	.0024						2252	.0800	.0719				
5-7	.00	.0024						2258	.0485	.0783				
5-8	.30	.0012						2304	.0317	.0823				
5-12	.04	.0003						2314	.0158	.0863				
5-13	.36	.0028						2328	.0077	.0890				
5-14	.00	.0004						2348	.0035	.0909				
5-16	.20	.0003						2400	.0021	.0915				
5-19	.19	.0003												
5-23	2/.43	3/ T					5-24	0020	.0011	.0920				
								0140	.0003	.0930				
								0454	4/.0001	.0936				

Watershed conditions: Mixed grass cover. 65% to 90% of area covered; average height, 3 in. to 5 in.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 9.8111. 1/ RUNOFF FROM 2212 TO 2400. 2/ RAINFALL FROM 1650 TO 1720. 3/ RUNOFF FROM 0001 TO 2212. 4/ BEGINNING OF NEXT RUNOFF EVENT.



MOOREFIELD, WEST VIRGINIA WATERSHED W-2

Revised 1-1-62

MOOREFIELD, WEST VIRGINIA WATERSHED W-4

LOCATION: Hardy County, W. Va.; approximately 5 miles southwest of Moorefield; South Branch Potomac River Basin.

AREA: 6.32 acres.

SLOPES:	Slope—Percent	0-3	3-10	10-20
	Percent of area	0	26	74

SOILS: (Revision) Residual, derived from gray siltstones with some interbedding of calcareous shales.

Type	Percent of area	Topsoil			Subsoil			Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability		
Litz shaly silt loam	79	4	Weak fine granular	Rapid	-----	-----	4	Rapid	Medium	
Litz silt loam	14	3	Moderate, fine granular	Moderate	Medium, sub-angular, blocky	Moderate	17	Moderate	Medium	
Litz silt loam (moderately well-drained phase)	7	4	Weak fine granular	Moderate	Medium to fine, sub-angular blocky	Slow	12	Slow	slow	

Depth to shale (in.)	0-12	12-18	18-24	24-30	>30
Percent of area	9	39	26	11	15

EROSION:	Erosion class	1	2	3
	Percent of area	0	1	.99

LAND CAPABILITY:	Class	I	II	III	IV
	Percent of area	0	7	30	63

GEOLOGY: Marcellus shale of Devonian age predominates. Depths to bedrock range from 6 in. to 60+ in. Structurally, the area is composed of several small anticlines and synclines with the strike of the formation being N34°E. Recording gage is located in a small erosional channel running down the dip. The average dip is 40°SE. Source of data: W. B. Ferguson, Geologist, SCS.

SURFACE DRAINAGE: (Revision) Cood; length of principal waterway, 480 ft.; a 290-ft. diversion used to bring runoff from west slope through gaging station. Remainder of watershed drains into a well defined waterway.

CHARACTER OF FLOW: Spring-fed, intermittent flow, continuous.

INSTRUMENTATION: (Revision) Runoff: H-4.5 precalibrated flume equipped with FW-1 recorder, with 12-hr. time scale. Precipitation: Recording rain gage with 12-hr. time scale.

WATERSHED CONDITIONS: (Revision) Permanent pasture with controlled grazing. The predominant species are Kentucky bluegrass, perennial lespedeza, povertygrass, buckhorn plantain and cinquefoil. Agricultural lime and phosphate (0-20-0) applied at the rate of 2 tons and 800 pounds per acre, respectively. Vegetative cover estimates for period of record are:

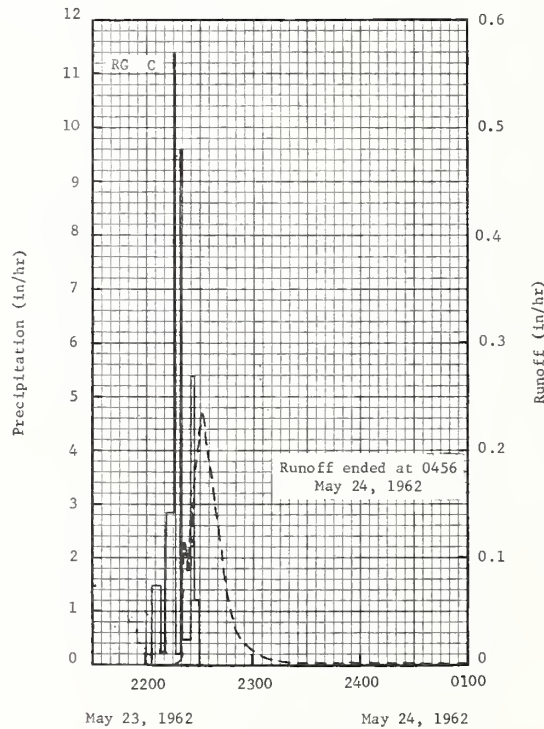
Year	1958	1959	1960	1961	1962
Percent bare space	45-60	5-40	5-25	5-35	5-30

GENERALLY REPRESENTS: Pasture practices on shallow shale soil typical of large areas in eastern West Virginia, central Pennsylvania, western Maryland and parts of Virginia and Tennessee. Applicable to similar lands in the land resource areas of the Southern Appalachian Ridges and Valleys (N-128) and the Northern Appalachian Ridges and Valleys (S-147).

MONTHLY PRECIPITATION AND RUNOFF (inches)						MOOREFIELD, WEST VIRGINIA WATERSHED W-4								66.04		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ^{1/}	1.43	3.41	4.01	2.12	5.61	2.77	2.98	1.35	2.45	2.89	2.95	2.14	34.11		
	Q	.13	.86	2.11	.07	.16	.02	.01	T	.01	.06	.17	.04	3.64		
STA AV ^{2/}	P	1.57	2.77	2.61	2.69	4.27	3.16	3.27	2.56	2.66	1.94	1.54	1.89	30.93		
	Q	.08	.71	.66	.27	.26	.07	.08	.16	.07	.06	.04	.07	2.53		
MEAN P ^{3/}	67 YR	2.21	2.05	2.74	2.73	3.43	3.76	3.58	3.36	2.51	2.41	1.74	1.99	32.51		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	5-23	.23	5-23	.07	2-26	.11	3-12	.25	3-12	.38	3-12	.51	3-12	.86	3-11	1.39
MAXIMUMS FOR PERIOD OF RECORD																
1958 to 1962	8-3 1958	.69	8-3 1958	.27	2-19 1961	.31	2-19 1961	.54	2-19 1961	.67	2-18 1961	.81	2-18 1961	.97	2-17 1961	1.54
Notes: Quality of records: Monthly P and Q, excellent. Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage C. 2/ Precipitation and runoff records began June 1958. 3/ Mean P based on 67-yr (1896-1962) U.S. Weather Bureau record period at or near Moorefield, W. Va. No records for 7 months each in 1915 and 1922 or for Mar. through June 1933. Missing records from July 1933 through Sept. 1940, Feb. through May 1948, and full years 1959-62 supplied from Moorefield McNeill station, 9 miles NNE of Moorefield, W. Va.																

1962 SELECTED RUNOFF EVENT			MOOREFIELD, WEST VIRGINIA				WATERSHED W-4		66.04			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
			Event of May 23 and 24, 1962									
	RG C			RG	C							
4-29	.31	.0000	5-23	2204	.00	.00	5-23	2216	.0000	.0000		
4-30	.02	.0000		2208	1.50	.10		2218	.0005	.0002		
5-1	1.20	.0252		2211	.20	.11		2219	.0243	.0002		
5-2	.23	.0076		2215	2.85	.30		2220	.0518	.0009		
5-8	.30	.0006		2216	11.40	.49		2221	.1145	.0022		
5-12	.03	.0000		2219	.20	.50		2223	.0895	.0056		
5-13	.37	.0006		2220	9.60	.66		2225	.1377	.0094		
5-16	.20	.0000		2225	.48	.70		2231	.2338	.0280		
5-19	.11	.0064		2227	5.40	.88		2238	.1527	.0506		
5-23	<u>1</u> /.50	<u>2</u> T		2230	1.20	.94		2244	.0746	.0619		
Watershed conditions: Mixed grass cover. 70% to 95% of area covered; average height, 3 in. to 5 in.								2252	.0286	.0688		
								2300	.0119	.0715		
										2310	.0042	.0729
										2322	.0017	.0735
										2400	.0005	.0742
										5-24	0456	.0000

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 6.3728. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 66.4-3. 1/ RAINFALL FROM 1650 TO 1659. 2/ RUNOFF FROM 0001 TO 2216.



MOOREFIELD, WEST VIRGINIA WATERSHED W-4

Revised 1-1-62

MOOREFIELD, WEST VIRGINIA WATERSHED W-5

LOCATION: Hardy County, W. Va.; approximately 5 miles southwest of Moorefield; South Branch Potomac River Basin.

AREA: 9.55 acres.

SLOPES: (Revision)	Slope--Percent	0-3	3-10	10-20	20-30	30-40
	Percent of area	0	62	31	6	1

SOILS: (Revision) Residual, derived from gray siltstones with some interbedding of calcareous shales.

Type	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Litz shaly silt loam	75	4	Weak, fine granular	Rapid	-----	-----	4	Rapid	Medium
Litz silt loam (moderately well-drained phase)	10	4	Weak fine granular	Moderate	Medium to fine, sub-angular blocky	Slow	12	Slow	Slow
Litz silt loam (moderately deep phase)	8	2	Weak fine granular	Rapid	Fine sub-angular blocky	Moderate	8	Moderate	Medium
Clarksburg silt loam	7	6	Weak medium granular	Slow	Moderate, fine, sub-angular (upper B); strong, fine, blocky (lower B)	Slow	20	Slow	Slow

Depth to shale (in.)	0-12	12-18	18-24	24-30	>30
Percent of area	3	25	31	7	34

EROSION:	Erosion class	1	2	3	4
	Percent of area	0	14	85	1

LAND GAPABILITY:	Class	I	II	III	IV	V	VI	VII
	Percent of area	0	9	45	45	0	0	1

GEOLOGY: Marcellus shale of Devonian age predominates. Depths to bedrock range from 4 in. to 60+ in. Structurally, the area is composed of several small anticlines and synclines with the general strike of the formation being N34°E. The runoff recording station is located in a small erosional channel running down the dip. The average dip of the formation is 40°SE. Source of data: W. B. Ferguson, Geologist, SCS.

SURFACE DRAINAGE: (Revision) Good; length of principal waterway, approximately 720 ft. A natural watershed with flow to a number of secondary waterways which drain into a common, well defined waterway.

CHARACTER OF FLOW: Spring-fed, intermittent flow, continuous.

INSTRUMENTATION: (Revision) Runoff: H-4.5 precalibrated flume equipped with FW-1 recorder, with 12-hr. time scale. Precipitation: Recording rain gage with 12-hr. time scale.

WATERSHED CONDITIONS: (Revision) Permanent pasture with controlled grazing. The predominant species are Canada and Kentucky bluegrass, provertygrass, buckhorn plantain and cinquefoil. Agricultural lime and phosphate (0-20-0) applied at the rate of 2 tons and 800 pounds per acre, respectively. Vegetative cover estimates for period of record are:

Year	1958	1959	1960	1961	1962
Percent bare space	35-85	5-35	2-5	5-15	5

GENERALLY REPRESENTS: Pasture practices on shallow shale soil typical of large areas in eastern West Virginia, central Pennsylvania, western Maryland and parts of Virginia and Tennessee. Applicable to similar lands in the land resource areas of the Southern Appalachian Ridges and Valleys (N-128) and the Northern Appalachian Ridges and Valleys (S-147).

MONTHLY PRECIPITATION AND RUNOFF (inches) MOOREFIELD, WEST VIRGINIA WATERSHED W-5 66.05

MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P	1.43	3.41	4.01	2.12	5.61	2.77	2.98	1.35	2.45	2.89	2.95	2.14	34.11
Q	.25	1.37	3.08	.21	.26	.03	T	.00	.00	.00	.30	.01	5.51
STA AV ² /P	1.57	2.77	2.61	2.69	4.27	3.16	3.27	2.56	2.66	1.94	1.54	1.89	30.93
Q	.19	1.22	1.03	.49	.44	.10	.04	.11	.03	.07	.06	.12	3.90
MEAN P 3/67 YR	2.21	2.05	2.74	2.73	3.43	3.76	3.58	3.36	2.51	2.41	1.74	1.99	32.51

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR			2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
			DATE	RATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	5-23	.17	2-26	.09	2-26	.15	3-12	.33	3-12	.55	3-12	.82	3-12	1.30	3-11	2.14	

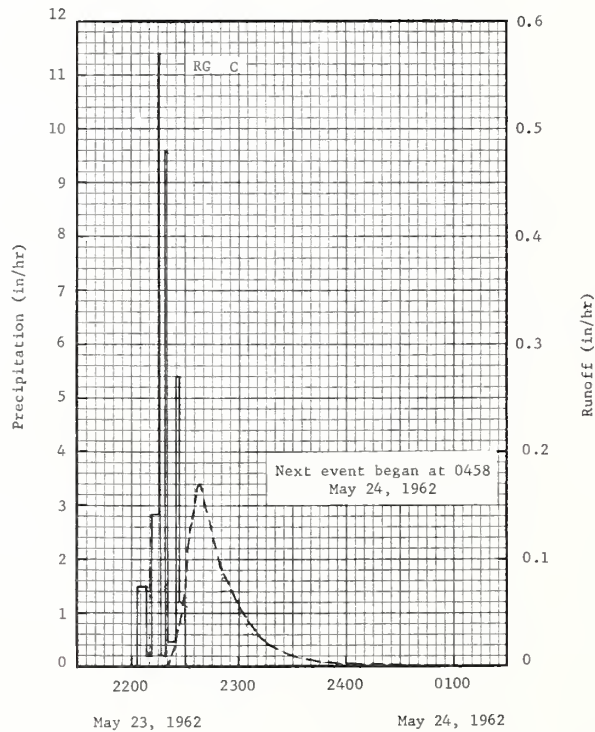
MAXIMUMS FOR PERIOD OF RECORD

1958 TO 1962	8-3 1958	.65	8-3 1958	.27	8-3 1958	.31	5-8 1960	.56	5-8 1960	.75	2-18 1961	.99	2-18 1961	1.39	2-17 1961	2.21
--------------	----------	-----	----------	-----	----------	-----	----------	-----	----------	-----	-----------	-----	-----------	------	-----------	------

Notes: Quality of records: Monthly P and Q, excellent. Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage C. 2/ Precipitation and runoff records began June 1958. 3/ Mean P based on 67-yr (1896-1962) U.S. Weather Bureau record period at or near Moorefield, W. Va. No records for 7 months each in 1915 and 1922 or for Mar. through June 1933. Missing records from July 1933 through Sept. 1940, Feb. through May 1948, and full years 1959-62 supplied from Moorefield McNeill station, 9 miles NNE of Moorefield, W. Va.

1962 SELECTED RUNOFF EVENT			MOOREFIELD, WEST VIRGINIA			WATERSHED W-5			66.05		
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of May 23 and 24, 1962											
	RG C			RG	C						
4-20	.07	.0000	5-23	2204	.00	.00	5-23	2217	.0000	.0000	
4-23	.00	T		2208	1.50	.10		2222	.0007	T	
4-29	.31	.0000		2211	.20	.11		2224	.0189	.0004	
4-30	.02	.0000		2215	2.85	.30		2227	.0404	.0018	
5 -1	1.20	.0564		2216	11.40	.49		2230	.0758	.0047	
5 -2	.23	.0206		2219	.20	.50		2232	.1153	.0079	
5 -3	.00	.0055		2220	9.60	.66		2237	.1639	.0196	
5 -4	.00	.0017		2225	.48	.70		2238	.1684	.0223	
5 -8	.30	.0029		2227	5.40	.88		2240	.1684	.0280	
5-12	.03	.0000		2230	1.20	.94		2252	.0847	.0533	
5-13	.37	.0020						2303	.0471	.0654	
5-16	.20	.0000						2313	.0251	.0714	
5-19	.11	.0001						2332	.0100	.0769	
5-23	<u>1</u> /1.50	<u>2</u> /T						2346	.0052	.0787	
Watershed conditions: Mixed grass cover, 95% to 100% of area covered; average height, 3 in. to 6 in.								5-24	2400	.0028	.0796
									0030	.0011	.0806
									0120	.0007	.0814
									0200	.0003	.0818
									0342	.0003	.0823
				0350	<u>3</u> /.0001	.0823					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 9.6296. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 66.4-3. 1/ RAINFALL FROM 1650 TO 1659. 2/ RUNOFF FROM 0001 TO 2217. 3/ RUNOFF CONTINUES AT THIS RATE UNTIL NEXT RUNOFF WHICH BEGINS AT 0458.



MOOREFIELD, WEST VIRGINIA WATERSHED W-5

MONTHLY PRECIPITATION AND RUNOFF (inches)						NORTH DANVILLE, VERMONT WATERSHED W-1 AREA--10,610 ACRES (16.58 SQ. MILES)								67.01	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	P 1/	2.23	2.55	2.12	2/ 3.59	2.79	2.80	5.97	3.03	4.08	7.29	2.60	2.11	41.16	
	Q	.78	.29	1.02	6.55	2.04	.44	.61	.62	.70	3.42	2.42	.99	19.88	
	STA AV 2/p	1.92	2.83	1.96	3.76	2.99	3.64	4.49	2.56	3.29	4.36	2.81	2.20	36.81	
	(58-62) Q	1.05	1.00	1.23	7.35	2.14	.92	.53	.37	.41	1.98	1.87	1.42	20.27	
	MEAN P 4/	2.32	2.14	2.47	2.64	2.96	3.53	3.64	3.57	3.52	2.93	2.96	2.48	35.16	
	67 YR														

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	10-7	.06	10-7	.06	10-7	.11	10-7	.29	10-6	.57	10-6	1.00	10-6	1.34	4-6	2.94

MAXIMUMS FOR PERIOD OF RECORD																
1959 TO	10-24		10-24		10-24		10-24		10-24		10-24		10-24		4-12	3.86
1959	1959	.10	1959	.10	1959	.20	1959	.50	1959	.77	1959	1.14	1959	1.45	1960	

NOTES: Quality of records: P and Q, excellent. Watershed conditions: Predominantly hardwood forest, 64%; cultivated in long hay rotations, with about 1% in row crops, 17%; pasture, largely bluegrass, 15%; idle land in grass and woody plants, 3%; and homesites and roads, 1%. 1/ Precipitation is Thiessen weighted using 17 rain gages. 2/ Snow water equivalent on Mar. 27 was 6.4 in. and had completely melted by Apr. 30. 3/ Precipitation records began on some rain gages Oct. 1958. STA AV P values are averages of monthly Thiessen weighted values for 1960-62. Runoff records began Oct. 1958, all Q values included in averages. 4/ Mean P based on 67-yr (1895-1961) U.S. Weather Bureau record period at St. Johnsbury, Vt.

GEOLOGY: Very slightly anticlinal with no faults. Eastern portion (86 percent of watershed) is Waits River formation made up of calcareous granulate, calcareous schists, and cal-silicate rocks interbedded with quartz-mica schists and micaceous quartzite. This formation is approximately 10,000 ft. thick. The western portion (14 percent of watershed) is Gile Mountain formation of dark and light gray schists 3,000-6,500 ft. thick. Both formations are dense and impervious with no solution chambers. Both formations are Silurian and/or Devonian. Strike is generally north-south with dip toward the east in the eastern part of the watershed. Strike becomes east-west in the central part of the watershed with dip to the north. The western portion has a north-south strike with dip to the west. Dip ranges from 9° to 45° with an average of about 30°. Overlying these geologic formations is a dense, impervious glacial till (boulder clay) that is from 0-90 ft. deep. Source of data: The Geology of the Lyndonville Area, Vt., and The Geology of the St. Johnsbury Quadrangle, Vt. and N. H., Bulletin Nos. 8 and 13, Vermont Geological Survey, Vermont Development Commission, Montpelier, Vt. For geologic map and sections see, Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1960-61, USDA Misc. Pub. 994, P. 67.5-6.

1962 DAILY AIR TEMPERATURE (degrees F)														NORTH DANVILLE, VERMONT WATERSHED W-1								67.01			
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	22	-3	-4	-27	30	1	33	29	56	35	80	53	69	49	78	50	82	59	56	45	39	30	50	22	
2	20	-6	10	-28	7	-6	30	17	42	37	62	46	68	38	74	46	72	44	67	31	45	22	49	20	
3	29	3	25	10	9	-7	27	13	44	36	67	43	69	32	81	42	74	38	73	32	36	25	38	22	
4	29	-12	29	19	23	4	37	8	45	37	78	34	72	34	80	54	73	38	68	44	39	30	50	26	
5	21	-9	43	24	31	20	46	19	53	30	63	48	61	40	83	60	57	47	59	47	32	26	47	27	
6	31	21	32	-7	32	24	53	21	53	28	71	50	68	33	84	63	56	33	48	46	26	21	45	35	
7	34	30	11	-13	35	17	45	34	51	30	71	38	77	42	76	66	68	28	50	45	41	15	35	26	
8	36	26	20	-9	41	8	50	36	46	23	70	36	82	42	75	55	74	36	53	46	53	32	38	28	
9	25	12	24	8	45	3	57	29	52	29	77	32	82	60	63	55	73	36	50	44	52	30	33	22	
10	14	5	11	-11	50	11	36	28	56	33	79	49	74	55	60	51	76	59	47	42	54	32	30	18	
11	15	-9	13	-22	46	12	42	24	57	23	79	56	78	45	64	52	69	56	50	32	48	26	20	-1	
12	22	-6	20	-16	32	22	49	23	63	21	70	50	84	50	78	44	60	54	71	39	30	15	16	-10	
13	19	-5	25	-9	32	25	32	25	67	25	70	42	71	56	72	51	75	44	42	33	29	15	14	-14	
14	28	-2	25	0	35	17	31	25	50	38	81	40	74	52	66	60	77	54	46	22	26	22	13	-4	
15	44	21	28	2	35	28	35	24	68	45	89	52	75	55	78	49	65	44	56	19	29	21	5	-14	
16	38	7	27	0	39	28	39	23	66	50	86	49	75	55	80	44	56	36	66	32	39	16	24	-4	
17	21	-7	27	9	37	27	41	27	85	48	87	50	77	51	75	55	60	36	66	43	32	21	18	-4	
18	12	-17	17	-5	32	17	47	19	89	56	67	47	74	56	67	43	62	46	55	29	30	18	28	-6	
19	17	5	15	-10	31	10	54	21	92	56	77	49	75	53	68	41	58	39	66	28	32	15	37	17	
20	20	7	22	14	40	5	56	27	79	52	65	52	81	45	87	54	47	28	73	36	33	15	26	-20	
21	23	-5	24	2	41	24	62	24	67	49	77	44	79	57	79	59	48	25	54	40	36	26	13	-24	
22	33	17	26	10	50	21	57	32	66	36	78	49	75	50	72	45	50	24	52	33	39	29	26	0	
23	25	1	29	18	36	24	58	31	73	33	73	59	72	44	75	39	60	34	54	36	30	20	27	17	
24	18	-7	18	-1	41	27	35	23	65	48	75	61	72	47	78	45	61	28	38	28	33	20	24	-4	
25	25	15	24	-8	37	34	50	23	69	41	76	59	78	41	80	46	65	28	38	26	38	19	19	-10	
26	25	-5	27	12	39	35	64	30	66	38	76	50	72	51	84	50	62	48	33	25	36	15	30	4	
27	29	-3	33	27	43	33	81	35	61	36	74	44	62	50	80	54	56	48	39	24	46	15	18	-20	
28	0	-15	32	30	51	26	84	46	73	28	82	38	79	50	79	58	54	48	50	32	54	15	27	0	
29	-3	-23	---	---	53	26	63	41	74	33	87	41	72	55	72	64	65	47	38	23	49	15	30	-2	
30	15	-11	---	---	61	34	41	36	86	40	86	53	82	60	82	58	56	47	35	20	56	16	20	-12	
31	-9	-22	---	---	36	29	---	---	76	58	---	---	72	58	84	50	---	---	42	31	---	---	---	0	-20
AV.	22	0	23	1	37	19	48	26	64	38	76	47	74	48	76	52	64	41	53	34	39	21	27	4	
MEAN	11.0		11.6		27.9		37.1		51.0		61.5		63.4		63.8		52.4		43.4		30.0		15.6		
STA AV	23	3	28	7	33	15	47	28	64	41	74	48	74	51	75	51	68	45	55	35	40	26	26	6	

NOTES: TEMPERATURE DATA FROM R-12. READINGS TAKEN DAILY EXCEPT WEEKENDS WHEN TAKEN FROM THERMOGRAPH CHARTS. STA AV (STATION AVERAGE) BASED ON 1960-62 RECORDS.

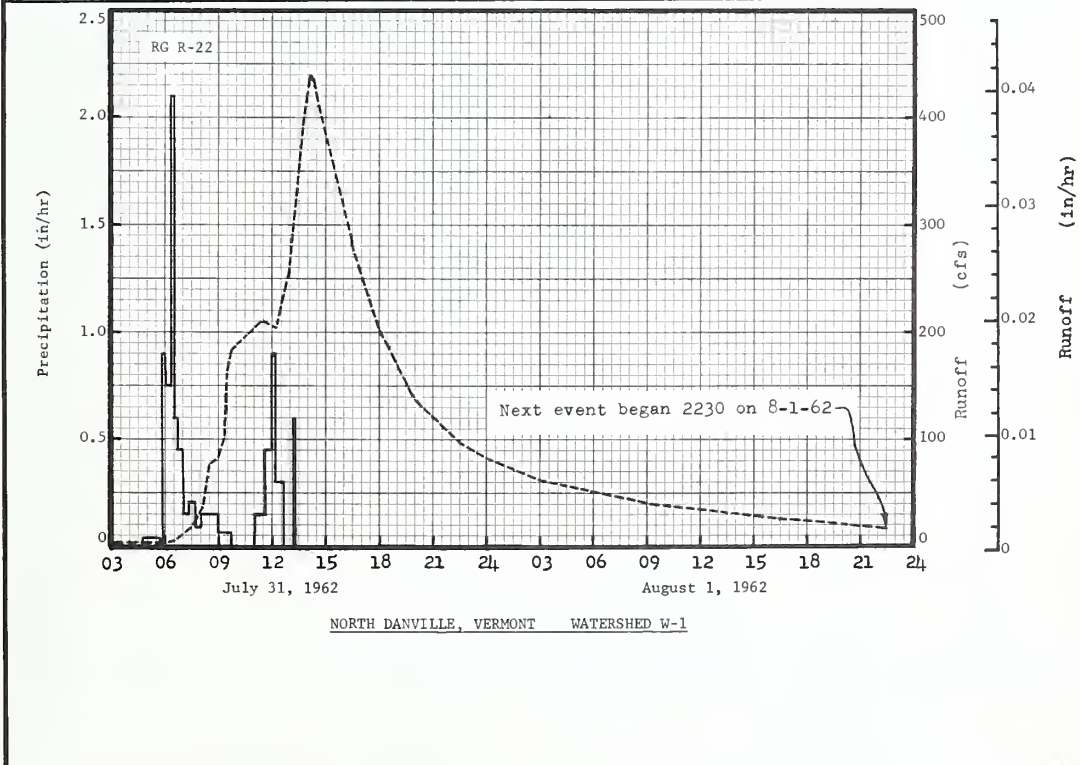
1962 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.02E	.00	.80	.02	.08	.03	.27	.00	.00	.34	.00
2	.00	.02E	.00	.01	.25	.00	.00	.00	.00	.00	.00	.00
3	.04	.04E	.06	.00	.30	.00	.00	.00	.00	.00	.28	.00
4	.10	.04E	.06	.00	.11	.00	.00	.00	.00	.00	.05	.00
5	.15	.06E	.14	.00	.00	.00	.00	.00	.22	.83	.00	.00
6	.37	.07E	.00	.00	.03	.00	.00	.00	.04	2.20	.00	.10
7	.25	.00	.00	.73	.00	.00	.00	.26	.00	.98E	.00	.05
8	.05	.00	.00	.00	.00	.00	.00	.00	.00	.02E	.00	.03
9	.00	.05	.00	.20	.00	.00	.65	.00	.00	.54	.00	.29
10	.00	.05	.00	.05	.00	.00	.00	.49	.95	.20	.30	.08
11	.00	.00	.00	.00	.00	.25	.00	.01	.48	.00	.40	.00
12	.00	.00	.32	.00	.00	.00	.10	.00	.00	.15	.00	.00
13	.00	.00	.28	.39S	.00	.00	.72	.00	.00	.00	.00	.00
14	.00	.11	.00	.115	.20	.00	.00	.33	.10	.00	.00	.00
15	.53	.00	.00	.08S	.00	.00	.36	.00	.00	.00	.00	.00
16	.00	.00	.00	.04S	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.13	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00	.00	.00
19	.00	.35	.00	.00	.00	.75	.00	.00	.02	.00	.00	.05
20	.00	.08	.00	.00	1.10	.00	.00	.35	.12	.00	.00	.00
21	.00	.00	.00	.00	.05	.00	.26	.35	.00	.18	.14	.00
22	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.75	.63
23	.02	.15	.00	.17	.00	.85	.37	.00	.00	.06	.00	.14
24	.00	.70	.00	.00	.67	.08	.27	.00	.00	.03	.20S	.01
25	.03	.00	.00	.00	.00	.45	.00	.00	.00	.12	.00	.00
26	.08	.03	.00	.00	.00	.00	.33	.00	.25	.00	.00	.00
27	.15	.15	.02	.00	.00	.00	.00	.00	.30	.05	.00	.00
28	.00	.12	.00	.00	.00	.00	.05	.00	.05	.33	.00	.00
29	.00	-----	.00	.06	.00	.00	.00	.40	.05	.00	.00	.25
30	.28	-----	.00	.56	.00	.03	.00	.00	.00	.10	.00	.06
31	.00	-----	.92	-----	.00	-----	1.90	.00	-----	1.06	-----	.08
TOTAL	2.05	2.37	1.80	3.20	2.73	2.49	5.36	2.46	3.58	6.85	2.46	1.77
STA AV	2.37	2.55	2.10	2.92	2.40	2.95	3.31	2.99	2.70	5.26	3.31	2.48
NOTES: PRECIPITATION VALUES ARE FOR R-22A; ALL PRECIPITATION IN DEC., JAN., FEB., AND MAR. IS SNOW EXCEPT MAR. 31. STA AV (STATION AVERAGE) BASED ON 1959-62 RECORDS.												

1962 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	5.14	4.71	4.28	245.53	62.91	7.60	3.00	38.62	3.00	7.38	151.28	17.22
2	5.03	4.17	4.28	144.75	58.73	7.60	2.57	16.15	2.78	6.63	51.57	17.12
3	5.03	4.28	4.28	64.83	81.09	6.95	2.25	8.13	2.57	5.78	37.02	17.54
4	5.03	4.60	4.28	55.31	58.52	5.78	2.14	5.67	2.35	5.35	47.61	18.40
5	4.92	5.14	4.28	69.90	51.35	5.67	1.93	6.21	2.46	16.37	38.30	18.29
6	5.24	9.95	4.28	85.91	40.23	6.21	1.93	5.03	4.81	228.84	28.78	30.60
7	12.41	7.06	4.28	249.59	34.98	4.92	1.82	10.27	3.64	365.56	24.18	34.02
8	15.62	5.46	4.28	311.97	28.35	4.28	1.71	12.84	2.89	76.17	25.68	21.72
9	10.27	4.92	4.28	190.22	23.86	3.85	7.17	7.17	2.46	82.38	27.17	19.15
10	8.34	4.81	4.39	194.60	20.22	3.85	5.78	7.38	7.17	76.39	35.20	18.72
11	7.17	4.49	4.81	98.32	18.29	5.67	3.21	25.78	39.16	55.42	97.68	13.05
12	6.21	4.17	5.24	87.94	16.80	6.10	2.78	12.52	14.23	48.36	44.29	9.84
13	5.67	3.85	5.14	88.58	15.62	4.28	11.55	7.06	8.88	41.94	29.53	10.27
14	5.35	3.96	4.92	67.61	18.94	3.64	5.88	8.77	6.42	29.74	26.10	10.70
15	6.63	4.07	4.81	58.52	19.90	3.10	5.78	23.32	7.06	25.25	22.68	9.52
16	49.43	4.17	4.81	50.82	16.58	2.78	4.28	8.77	4.81	23.54	20.75	9.20
17	58.73	4.28	5.03	43.11	16.15	2.57	3.96	6.95	5.67	22.68	19.47	8.77
18	24.50	4.60	5.03	41.83	14.23	2.35	4.17	5.46	67.40	19.79	18.51	8.67
19	19.69	4.60	5.03	45.90	12.73	9.20	6.95	4.39	15.41	18.40	14.66	9.41
20	12.09	4.28	5.24	54.67	14.23	10.16	3.53	4.28	12.41	17.33	14.55	9.63
21	9.09	4.17	5.46	63.11	85.16	5.14	3.74	8.34	9.63	20.11	18.40	6.31
22	8.34	4.17	6.21	72.32	26.10	3.85	3.64	8.77	7.38	21.50	90.83	6.63
23	8.56	4.17	7.06	112.44	16.80	13.91	3.21	5.14	6.63	20.01	50.39	9.41
24	7.70	4.17	7.17	67.83	29.63	15.08	11.66	4.07	5.67	18.61	30.17	12.09
25	7.49	4.28	7.17	48.36	52.21	26.53	5.46	3.42	4.92	18.94	25.03	12.73
26	7.17	4.28	8.13	47.82	22.15	9.20	4.49	3.10	8.02	18.08	16.90	12.62
27	7.38	4.28	11.66	60.34	15.41	5.14	5.67	2.89	17.01	17.12	17.55	12.62
28	6.31	4.28	20.11	60.55	12.20	3.85	5.78	2.89	17.33	26.96	20.75	13.05
29	5.14	-----	40.65	52.85	10.16	3.21	3.85	5.24	10.48	46.43	17.22	14.23
30	4.71	-----	84.20	85.05	8.88	2.89	3.42	6.21	8.45	24.29	16.48	15.19
31	4.81	-----	162.51	-----	8.13	-----	137.15	3.64	-----	118.86	-----	13.48
MEAN	11.23	4.71	14.66	97.25	29.31	6.53	8.67	8.99	10.38	49.21	35.95	14.23
INCHES	.782	.294	1.016	6.549	2.042	.438	.605	.624	.697	3.419	2.419	.986
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0022433. RECORDS ARE EXCELLENT. SOME PERIODS OF WINTER RECORDS ADJUSTED DUE TO ICE JAMS AT THE WEIR.												

1962 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-1 67.01			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of July 31-August 1, 1962										
7-31	RG R-22 0.00	1/.0017	7-31		RG R-22		7-31			
				0440	0.00	0.00		0600	2.89	0.0000
				0540	0.03	0.03		0630	3.21	0.0002
				0550	0.00	0.03		0730	18.62	0.0012
				0600	0.90	0.18		0745	26.43	0.0017
				0620	0.75	0.43		0808	36.91	0.0028
				0630	2.10	0.78		0830	77.24	0.0048
				0640	0.60	0.88		0900	84.52	0.0086
				0700	0.45	1.03		0915	100.67	0.0107
				0720	0.15	1.08		0930	160.16	0.0138
				0740	0.21	1.15		0945	184.01	0.0178
				0800	0.09	1.18		1030	196.85	0.0312
				0900	0.15	1.33		1130	210.12	0.0502
				0940	0.06	1.37		1215	204.77	0.0647
				1100	0.00	1.37		1300	253.45	0.0808
				1140	0.15	1.47		1345	395.95	0.1036
				1200	0.45	1.62		1415	438.10	0.1230
				1210	0.90	1.77		1630	285.33	0.1991
				1240	0.30	1.92		1800	204.77	0.2335
				1312	0.00	1.92		2000	198.33	0.2656
				1314	0.60	1.94		2230	98.96	0.2933
			OTHER	RAIN	GAGE	TOTALS		2400	83.02	0.3061
			R-1	2.25	R-15	2.50	8-01	0300	61.19	0.3263
			R-2	2.15	R-16	1.89		0900	40.55	0.3548
			R-3	2.20	R-19	2.03		1630	25.68	0.3781
			R-5	2.34	R-20	1.77		2015	19.79	0.3861
			R-6	2.00	R-20A	1.75		2230	2/ 18.62	0.3901
			R-8	2.05	R-21	1.85				
			R-10	1.80	R-22A	1.90				
			R-12	1.99	AVG 3/	2.03				

Watershed conditions:
64% forest land; 16% hay with about 6-inch growth since last cutting; 15% pastured land; 3% idle land with dense grass and brush growth; 1% seeded to corn which was just coming up; 1% homesites.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000935. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 67.1-4. FOR ISOHYETAL MAP OF ABOVE STORM, SEE P. 67.5-4. 1/ RUNOFF PRIOR TO 0600 ON 7-31-62. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF, SEE PREVIOUS PAGE. 2/ BEGINNING OF NEXT EVENT. 3/ ARITHMETIC AVERAGE OF 16 RAIN GAGES.



MONTHLY PRECIPITATION AND RUNOFF (inches)						NORTH DANVILLE, VERMONT WATERSHED W-2								67.02
						AREA—146 ACRES								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	P ¹ / _o 1.96 .63	2.17 .30	2/ 1.84 1.88	3/ 3.26 3.53	2.70 1.46	2.60 .72	5.54 .57	2.69 .41	3.61 .52	7.03 1.84	2.44 2.21	1.76 2.57	37.60 16.64	
STA AV ⁴ / _p (58-62) o	2.13 .85	2.65 .72	1.89 1.44	2.93 3.94	2.38 1.85	2.93 .87	3.35 .52	3.21 .39	2.70 .35	5.11 .87	3.11 1.33	2.26 1.63	34.65 14.76	
MEAN 67 YR	2.32	2.14	2.47	2.64	2.96	3.53	3.64	3.57	3.52	2.93	2.96	2.48	35.16	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	3-30	.05	3-30	.05	3-30	.10	3-30	.27	3-30	.44	3-30	.63	3-30	1.14	3-28	2.54

MAXIMUMS FOR PERIOD OF RECORD																
19 59 TO 19 62	3-30 1962	.05	3-30 1962	.05	3-30 1962	.10	3-30 1962	.27	3-30 1962	.44	3-30 1962	.63	3-30 1962	1.14	3-28 1962	2.54

NOTES: Quality of records: P and Q, excellent. Watershed conditions: Pasture of mostly bluegrass, 38%; cultivated land entirely in clover and orchard grass hay, 37%; and forest stand, predominantly hardwoods, 25%. 1/ Average watershed precipitation from Thiessen weighted average of R-22 and R-22A. 2/ Snow water loss from March 13 to March 27 was 1.0 inch. 3/ Snow water equivalent on March 27 was 4.1 inches and had completely melted by April 10. 4/ Precipitation records began in Sept. 1958; runoff records began in Oct. 1958. 5/ Mean P based on 67-yr (1895-1961) U.S. Weather Bureau record period at St. Johnsbury, Vt.

GEOLOGY: Very slightly anticlinal with no faults. The entire watershed is Waits River formation made up of calcareous granulate, calcareous schists, and cal-silicate rocks interbedded with quartz-mica schists and micaceous quartzite. The formation is Silurian and/or Devonian. The formation is dense and impervious with no solution chambers, and it is approximately 10,000 ft. thick. Strike is north-south with dip 40° toward the east. Overlying this formation is a dense, impervious glacial till (boulder clay) that is from 0-90 ft. deep. Source of data: The Geology of the St. Johnsbury Quadrangle, Vt. and N. H., Bulletin No. 13, Vermont Geological Survey, Vermont Development Commission, Montpelier, Vt. See Geologic map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1960-61, USDA Misc. Pub. 994, P. 67.5-6.

1962 DAILY AIR TEMPERATURE (degrees F)												NORTH DANVILLE, VERMONT WATERSHED W-2								67.02					
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	22	-3	-4	-27	30	1	33	29	56	35	80	53	69	49	78	50	82	59	56	45	39	30	50	22	
2	20	-6	10	-28	7	-6	30	17	42	37	62	46	68	38	74	46	72	44	67	31	45	22	49	20	
3	29	3	25	10	9	-7	27	13	44	36	67	43	69	32	81	42	74	38	73	32	36	25	38	22	
4	29	-12	29	19	23	4	37	8	45	37	78	34	72	34	80	54	73	38	68	44	39	30	50	26	
5	21	-9	43	24	31	20	46	19	53	30	63	48	61	40	83	60	57	47	59	47	32	26	47	27	
6	31	21	32	-7	32	24	53	21	53	28	71	50	68	33	84	63	56	33	48	46	26	21	45	35	
7	34	30	11	-13	35	17	45	34	51	30	71	38	77	42	76	66	68	28	50	45	41	15	35	26	
8	36	26	20	-9	41	8	50	36	46	23	70	36	82	42	75	55	74	36	53	46	53	32	33	28	
9	25	12	24	8	45	3	57	29	52	29	77	32	82	60	63	55	73	36	50	44	52	30	38	22	
10	14	5	11	-11	50	11	36	28	56	33	79	49	74	55	60	51	76	59	47	42	54	32	30	18	
11	15	-9	13	-22	46	12	42	24	57	23	79	56	78	45	64	52	69	56	50	32	48	26	20	-1	
12	22	-6	20	-16	32	22	49	23	63	21	70	50	84	50	78	44	60	54	71	39	30	15	16	-10	
13	19	-5	25	-9	32	25	32	25	67	25	70	42	71	56	72	51	75	44	42	33	29	15	14	-14	
14	28	-2	25	0	35	17	31	25	50	38	81	40	74	52	66	60	77	54	46	22	26	22	13	-4	
15	44	21	28	2	35	28	35	24	68	45	89	52	75	55	78	49	65	44	56	19	29	21	5	-14	
16	38	7	27	0	39	28	39	23	66	50	86	49	75	55	80	44	56	36	66	32	39	16	24	-4	
17	21	-7	27	9	37	27	41	27	85	48	87	50	77	51	75	55	60	36	66	43	32	21	18	-4	
18	12	-17	17	-5	32	17	47	19	89	56	67	47	74	56	67	43	62	46	55	29	30	18	28	-6	
19	17	5	15	-10	31	10	54	21	92	56	77	49	75	53	68	41	58	39	66	28	32	15	37	17	
20	20	7	22	14	40	5	56	27	79	52	65	52	81	45	87	54	47	28	73	36	33	15	26	-20	
21	23	-5	24	2	41	24	62	24	67	49	77	44	79	57	79	59	48	25	54	40	36	26	13	-24	
22	33	17	26	10	50	21	57	32	66	36	78	49	75	50	72	45	50	24	52	33	39	29	26	0	
23	25	1	29	18	36	24	58	31	73	33	73	59	72	44	75	39	60	34	54	36	30	20	27	17	
24	18	-7	18	-1	41	27	35	23	65	48	75	61	72	47	78	45	61	28	38	28	33	20	24	-4	
25	25	15	24	-8	37	34	50	23	69	41	76	59	78	41	80	46	65	28	38	26	38	19	19	-10	
26	25	-5	27	12	39	35	64	30	66	38	76	50	72	51	84	50	62	48	33	25	36	15	30	4	
27	29	-3	33	27	43	33	81	35	61	36	74	44	62	50	80	54	56	48	39	24	46	15	18	-20	
28	0	-15	32	30	51	26	84	46	73	28	82	38	79	50	79	58	54	48	50	32	54	15	27	0	
29	-3	-23	---	---	53	26	63	41	74	33	87	41	72	55	72	64	65	47	38	23	49	15	30	-2	
30	15	-11	---	---	61	34	41	36	86	40	86	53	82	60	82	58	56	47	35	20	56	16	20	-12	
31	-9	-22	---	---	36	29	---	---	76	58	---	---	72	58	84	50	---	---	42	31	---	---	---	0	-20
AV.	22	0	23	1	37	19	48	26	64	38	76	47	74	48	76	52	64	41	53	34	39	21	27	4	
MEAN	11.0	11.6	27.9	37.1	51.0	61.5	63.4	63.8	62.5	63.8	62.4	63.8	62.4	63.8	62.4	63.8	62.4	63.8	62.4	63.8	62.4	63.8	62.4	63.8	62.4
STA AV	23	3	28	7	33	15	47	28	64	41	74	48	74	51	75	51	68	45	55	35	40	26	26	8	

NOTES: TEMPERATURE DATA FROM R-12. READINGS TAKEN DAILY EXCEPT WEEKENDS WHEN TAKEN FROM THERMOGRAPH CHARTS. STA AV (STATION AVERAGE) BASED ON 1960-62 RECORDS.

1962 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-2 67.02						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.02E	.00	.80	.02	.08	.03	.27	.00	.00	.34	.00
2	.00	.02E	.00	.01	.25	.00	.00	.00	.00	.00	.00	.00
3	.04	.04E	.06	.00	.30	.00	.00	.00	.00	.00	.28	.00
4	.10	.04E	.06	.00	.11	.00	.00	.00	.00	.00	.05	.00
5	.15	.06E	.14	.00	.00	.00	.00	.00	.22	.83	.00	.00
6	.37	.07E	.00	.00	.03	.00	.00	.00	.04	2.20	.00	.10
7	.25	.00	.00	.73	.00	.00	.00	.26	.00	.98E	.00	.05
8	.05	.00	.00	.00	.00	.00	.00	.00	.00	.02E	.00	.03
9	.00	.05	.00	.20	.00	.00	.65	.00	.00	.54	.00	.29
10	.00	.05	.00	.05	.00	.00	.00	.49	.95	.20	.30	.08
11	.00	.00	.00	.00	.00	.25	.00	.01	.48	.00	.40	.00
12	.00	.00	.32	.00	.00	.00	.10	.00	.00	.15	.00	.00
13	.00	.00	.28	.39S	.00	.00	.72	.00	.00	.00	.00	.00
14	.00	.11	.00	.11S	.20	.00	.00	.33	.10	.00	.00	.00
15	.53	.00	.00	.08S	.00	.00	.36	.00	.00	.00	.00	.00
16	.00	.00	.00	.04S	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.13	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00	.00	.00
19	.00	.35	.00	.00	.00	.75	.00	.00	.02	.00	.00	.05
20	.00	.08	.00	.00	1.10	.00	.00	.35	.12	.00	.00	.00
21	.00	.00	.00	.00	.05	.00	.26	.35	.00	.18	.14	.00
22	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.75	.63
23	.02	.15	.00	.17	.00	.85	.37	.00	.00	.06	.00	.14
24	.00	.70	.00	.00	.67	.08	.27	.00	.00	.03	.20S	.01
25	.03	.00	.00	.00	.00	.45	.00	.00	.00	.12	.00	.00
26	.08	.03	.00	.00	.00	.00	.33	.00	.25	.00	.00	.00
27	.15	.15	.02	.00	.00	.00	.00	.00	.30	.05	.00	.00
28	.00	.12	.00	.00	.00	.00	.05	.00	.05	.33	.00	.00
29	.00	-----	.00	.06	.00	.00	.00	.40	.05	.00	.00	.25
30	.28	-----	.00	.56	.00	.03	.00	.00	.00	.10	.00	.06
31	.00	-----	.92	-----	.00	-----	1.90	.00	-----	1.06	-----	.08
TOTAL	2.05	2.37	1.80	3.20	2.73	2.49	5.36	2.46	3.58	6.85	2.46	1.77
STA AV	2.37	2.55	2.10	2.92	2.40	2.95	3.31	2.99	2.70	5.26	3.31	2.48

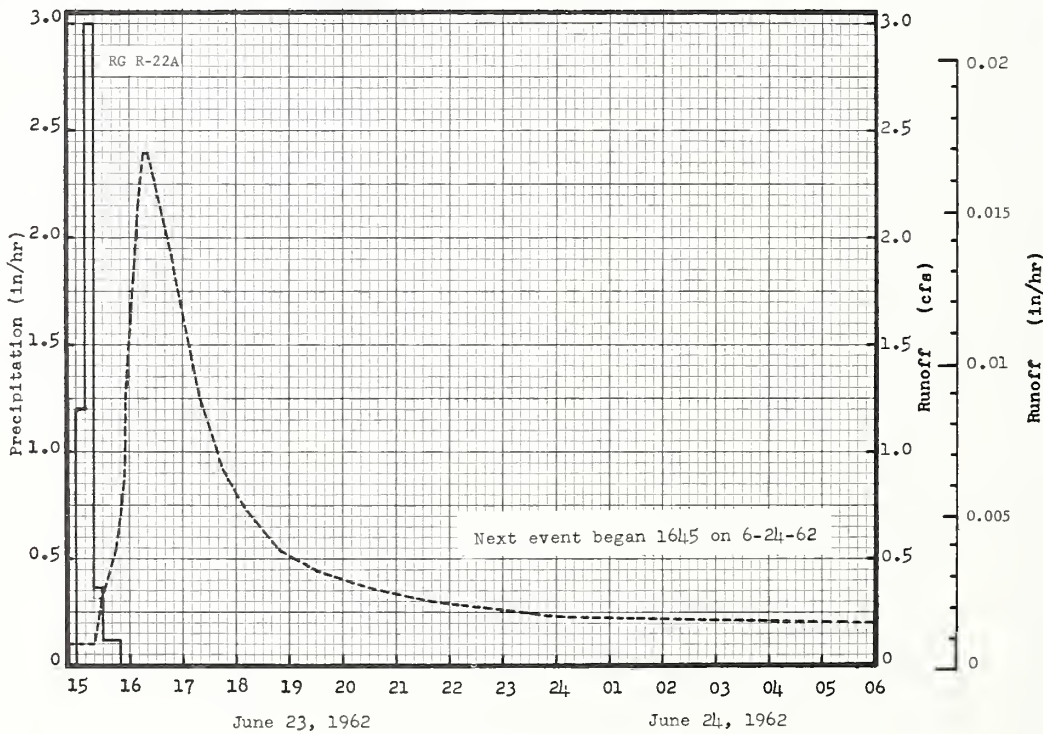
NOTES: PRECIPITATION VALUES ARE FOR R-22A, ALL PRECIPITATION IN DEC., JAN., FEB., AND MAR. IS SNOW EXCEPT MAR. 31. STA AV BASED ON 1959-62 RECORDS.

1962 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-2 67.02						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.07	.06	.06	3.37	.40	.17	.08	.16	.04	.10	.77	.25
2	.07	.06	.07	1.17	.51	.17	.05	.10	.03	.08	.42	.30
3	.07	.06	.07	.96	.53	.16	.05	.08	.03	.08	.42	.45
4	.06	.06	.07	1.10	.41	.16	.05	.09	.03	.08	.60	.59
5	.06	.13	.07	1.21	.35	.15	.05	.08	.06	.31	.42	.62
6	.09	.16	.07	.94	.35	.17	.04	.07	.09	1.30	.41	.69
7	.18	.11	.07	1.66	.30	.13	.04	.10	.05	1.34	.39	.74
8	.12	.08	.07	1.21	.24	.13	.05	.09	.04	.30	.40	.60
9	.10	.07	.07	.89	.20	.11	.20	.07	.03	.57	.37	.47
10	.12	.06	.07	.82	.19	.14	.09	.14	.21	.44	.47	.49
11	.13	.04	.07	.60	.18	.20	.06	.17	.33	.34	.77	.52
12	.13	.05	.07	.55	.20	.15	.06	.09	.11	.34	.44	.54
13	.09	.08	.07	.63	.20	.13	.29	.07	.09	.26	.42	.43
14	.07	.07	.07	.60	.31	.11	.08	.15	.08	.23	.41	.41
15	.19	.06	.07	.58	.30	.09	.19	.11	.08	.23	.39	.57
16	.33	.07	.07	.47	.32	.08	.09	.06	.06	.23	.40	.43
17	.44	.07	.07	.43	.24	.08	.06	.09	.22	.27	.40	.41
18	.23	.07	.07	.40	.21	.09	.09	.07	.33	.23	.43	.46
19	.42	.06	.07	.40	.20	.35	.10	.05	.10	.23	.43	.42
20	.10	.06	.07	.38	.36	.20	.06	.08	.13	.23	.40	.65
21	.10	.06	.07	.37	.73	.13	.09	.13	.10	.33	.44	1.25
22	.10	.06	.10	.38	.25	.09	.05	.09	.08	.31	1.04	1.00
23	.08	.06	.10	.47	.20	.34	.09	.05	.08	.33	.55	.72
24	.08	.06	.17	.35	.48	.19	.21	.05	.07	.26	.47	.51
25	.08	.06	.13	.36	.37	.37	.06	.04	.07	.34	.57	.42
26	.08	.06	.19	.31	.25	.14	.12	.03	.14	.33	.39	.41
27	.08	.06	.49	.30	.20	.08	.11	.03	.20	.31	.40	.38
28	.10	.06	1.23	.28	.18	.08	.06	.04	.17	.36	.33	.34
29	.07	-----	1.68	.34	.17	.07	.05	.16	.10	.42	.31	.34
30	.06	-----	3.48	.61	.16	.07	.05	.06	.10	.34	.24	.38
31	.06	-----	2.80	-----	.17	-----	.95	.04	-----	1.02	-----	.37
MEAN	.13	.07	.38	.74	.30	.15	.12	.08	.11	.37	.46	.52
INCHES	.632	.303	1.882	3.526	1.459	.720	.575	.414	.516	1.836	2.213	2.572

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.1630258. RECORDS ARE EXCELLENT. SOME PERIODS OF WINTER RECORDS ARE ADJUSTED DUE TO ICE JAMS AT THE WEIR.

1962 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-2 67.02					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (cfs)	ACC. (inches)		
Event of June 23-24, 1962												
6-23	RG R-22A 0.00	1/0.0123	6-23	1500	RG R-22A 0.00	0.00	6-23	1520	0.10	0.0000		
				1510	1.20	0.20		1530	0.33	0.0002		
				1520	3.00	0.70		1545	0.54	0.0010		
				1530	0.36	0.76		1550	0.69	0.0013		
				1550	0.12	0.80		1555	0.86	0.0017		
Watershed conditions: 30% pastured land; 37% hay with about 10 to 12 inch just summer growth; and 25% forest.				OTHER	GAGE	TOTAL		1557	1.27	0.0020		
				RG	R-22	0.70		1610	2.18	0.0045		
								1615	2.39	0.0057		
								1620	2.39	0.0070		
				2 RG	AVG 2/	.75		1650	1.88	0.0141		
										1720	1.27	0.0194
										1745	0.92	0.0224
										1810	0.74	0.0247
										1850	0.54	0.0275
										1930	0.45	0.0297
							2030	0.37	0.0325			
							2140	0.30	0.0351			
							2400	0.23	0.0392			
							6-24	0600	0.20	0.0477		
								1200	0.17	0.0551		
								1645	3/ 0.15	0.0601		

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.006793. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 67.2-4. 1/ RUNOFF PRIOR TO 1520 ON 6-23-62. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF, SEE TABLES ON PREVIOUS PAGE. 2/ THIESSEN WEIGHTED USING 2 RAIN GAGES. 3/ BEGINNING OF NEXT EVENT.



NORTH DANVILLE, VERMONT WATERSHED W-2

MONTHLY PRECIPITATION AND RUNOFF (inches)						NORTH DANVILLE, VERMONT WATERSHED W-3						67.03		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P ^{1/}	2.35	2.69	2.20	2/3.75	2.91	2.96	5.96	3.55	4.32	7.47	2.72	2.22	43.10
	Q	.67	.40	.85	6.33	2.73	.83	.75	.85	.85	3.18	2.70	1.35	21.49
STA AV	P	2.10	3.03	2.04	4.42	3.12	4.10	4.45	2.68	3.45	4.52	2.95	2.36	39.22
	Q	1.05	1.05	1.18	6.85	3.13	1.61	.93	.62	.61	1.51	1.54	1.00	21.08
67 YR	MEAN P ^{4/}	2.32	2.14	2.47	2.64	2.96	3.53	3.64	3.57	3.52	2.93	2.96	2.48	35.16

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	10-7	.03	10-7	.03	10-7	.06	4-7	.19	4-7	.36	4-7	.64	4-7	1.09	4-6	2.75

MAXIMUMS FOR PERIOD OF RECORD

19 60 TO	4-18	.06	4-18	.05	4-18	.09	4-18	.28	4-18	.56	4-18	.86	4-17	1.40	4-14	3.79
19 62	1960		1960		1960		1960		1960		1960		1960		1960	

NOTES: Quality of records: P and Q, excellent. Watershed conditions: Forest, predominantly hardwoods, 67%; pasture of mostly bluegrass, 19%; cultivated land consisting of clover, orchard grass, and timothy hay with very small areas in row crops, 11%; and idle land in tall grasses and woody plants, 3%. 1/ Thiessen weighted values using 6 rain gauges. 2/ Snow water equivalent on Mar. 27 was 6.4 inches, snow had completely melted by Apr. 30. 3/ Records of P and Q began Jan. 1, 1960. STA AV P values are averages of Thiessen weighted monthly values. 4/ Mean P based on 67-yr (1895-1961) U.S. Weather Bureau record period at St. Johnsbury, Vt.

1962 DAILY AIR TEMPERATURE (degrees F) NORTH DANVILLE, VERMONT WATERSHED W-3 67.03

DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	21	-6	-5	-26	28	0	36	32	55	34	74	51	67	46	73	63	76	58	52	43	38	31	50	30	
2	21	-5	10	-26	8	-12	33	14	39	34	55	43	64	40	68	48	65	47	63	38	44	23	48	29	
3	25	9	25	10	9	-10	32	12	39	33	63	41	66	36	73	46	68	44	70	40	36	27	44	28	
4	27	-13	27	13	26	2	39	12	43	35	71	40	68	37	72	52	69	43	66	48	36	30	50	32	
5	21	-9	45	27	32	23	48	20	46	32	61	50	57	40	74	54	53	49	55	47	32	28	44	30	
6	29	20	30	-14	35	23	55	26	49	30	66	48	66	37	75	59	55	34	48	46	28	23	41	34	
7	35	27	7	-15	38	14	46	34	47	28	68	42	72	40	69	61	62	34	49	44	41	15	34	25	
8	37	22	19	-11	42	8	50	37	43	20	68	41	77	44	70	52	66	39	53	46	47	33	30	26	
9	22	8	27	7	43	10	59	32	47	25	72	40	73	57	58	52	68	41	49	44	47	32	32	22	
10	10	1	10	-12	49	15	38	31	51	39	73	49	67	48	57	47	68	56	49	42	47	36	28	20	
11	18	-10	15	-15	46	16	44	26	53	25	70	53	70	53	59	49	63	52	53	40	44	27	20	3	
12	22	-5	19	-9	32	22	52	25	58	27	66	48	77	50	71	43	52	50	65	40	33	14	17	-1	
13	18	-1	26	0	35	33	55	27	63	28	68	44	65	53	68	55	72	45	44	34	30	14	10	-6	
14	28	2	24	2	36	20	33	26	45	35	75	41	70	54	62	56	70	46	48	27	27	23	12	-2	
15	43	14	27	5	35	25	39	27	60	41	79	53	68	51	69	49	60	41	56	28	29	22	7	-10	
16	34	4	28	3	39	23	35	23	59	44	78	52	68	51	71	46	54	39	62	36	37	17	19	0	
17	19	-12	26	8	37	24	37	23	77	42	78	51	70	47	67	52	59	38	60	38	34	23	18	2	
18	9	-20	15	-4	33	9	43	15	84	52	63	40	69	53	61	41	58	44	52	32	32	19	21	4	
19	14	-2	15	-9	32	3	49	19	84	53	70	48	68	52	62	40	55	37	62	34	35	13	27	17	
20	19	4	24	8	45	7	51	24	74	50	61	49	72	47	76	53	46	30	64	39	33	15	22	-12	
21	19	-3	21	2	40	23	57	24	60	43	71	44	70	56	71	54	47	30	50	38	36	27	9	-18	
22	39	19	26	10	46	17	52	28	60	38	72	49	69	48	66	47	48	28	50	34	38	28	18	6	
23	31	6	29	14	36	18	52	28	67	35	70	54	65	44	69	45	56	36	49	36	32	20	21	11	
24	24	-5	18	0	41	23	31	20	54	43	68	58	67	46	71	46	59	34	38	30	34	21	19	-6	
25	31	20	32	-6	35	30	48	21	63	38	69	54	70	44	74	46	60	35	38	24	34	15	16	-4	
26	32	-1	27	14	41	32	61	27	60	37	69	49	66	50	76	51	57	46	34	26	39	13	25	-2	
27	36	2	32	27	42	31	79	35	59	32	70	44	59	50	75	53	54	47	39	25	45	19	16	-8	
28	7	-14	32	28	50	28	78	41	70	33	74	42	72	50	71	56	53	46	46	33	54	25	20	2	
29	5	-23	---	---	57	28	63	37	72	37	79	46	69	52	65	58	62	46	38	26	50	30	22	2	
30	23	-6	---	---	66	37	38	34	79	41	80	32	72	57	75	54	53	47	34	22	54	30	14	-19	
31	5	-19	---	---	43	32	---	---	69	58	---	---	74	56	78	52	---	---	42	32	---	---	---	---	-3
AV.	23	0	20	1	38	18	47	26	59	37	70	47	69	48	69	51	60	42	51	36	38	23	24	7	
MEAN	11.5		10.5		28.0		36.5		48.0		58.5		58.5		60.0		51.0		43.5		30.5		15.5		
STA AV	21	-1	26	4	36	16	44	20	58	37	70	47	71	50	70	51	66	46	54	36	38	24	25	10	

NOTES: TEMPERATURE DATA FROM R-3, READINGS TAKEN DAILY MON. THROUGH FRI. FROM MAY 1 TO OCT. 1. WINTER AND WEEKEND VALUES TAKEN FROM HYGROTHERMOGRAPH CHARTS. STA AV (STATION AVERAGE) BASED ON 1960-62 RECORDS.

1962 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-3 67.03						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.02	.02E	.05	.06	.05	.18	.04	.15	.00	.03	.27	.00
2	.00	.00E	.00	.06	.22	.00	.00	.00	.00	.00	.00	.00
3	.05	.10E	.06	.00	.36	.00	.00	.00	.00	.00	.33	.00
4	.12	.04E	.14	.00	.17	.00	.00	.30	.00	.00	.05	.00
5	.13	.12E	.26	.00	.00	.03	.00	.00	.31	.85	.00	.05
6	.41	.12E	.00	.03	.05	.00	.00	.50	.09	2.15	.00	.20
7	.24	.00	.00	.82	.00	.00	.00	.55	.00	1.05	.00	.10
8	.05	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.05
9	.04	.08	.00	.27	.00	.00	1.09	.05	.00	.56	.00	.30
10	.00	.03	.00	.08	.00	.00	.02	.45	1.00	.25	.38	.14
11	.00	.00	.00	.00	.00	.34	.00	.02	.45	.00	.37	.00
12	.00	.00	.38	.00	.00	.00	.00	.00	.04	.20	.00	.00
13	.00	.00	.33	.40S	.00	.00	.66	.00	.00	.00	.00	.00
14	.00	.13	.00	.15S	.20	.00	.00	.60	.06	.00	.00	.00
15	.63	.03	.00	.15S	.00	.00	.18	.00	.00	.00	.00	.00
16	.02	.02	.00	.06S	.08	.00	.10	.00	.00	.00	.00	.00
17	.05	.16	.00	.00	.00	.00	.05	.00	1.13	.05	.00	.00
18	.00	.00	.00	.00	.00	.00	.06	.00	.07	.00	.05	.00
19	.00	.37	.00	.00	.00	.91	.00	.00	.09	.00	.00	.08
20	.00	.05	.06	.00	1.26	.00	.00	.45	.12	.00	.00	.03
21	.00	.02	.00	.00	.00	.00	.30	.32	.00	.19	.15	.00
22	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00	.80	.65
23	.05	.05	.00	.14	.00	.70	.43	.00	.00	.06	.05S	.13
24	.00	.62	.00	.00	.63	.13	.23	.00	.00	.06	.20S	.18
25	.04	.10	.00	.05	.00	.30	.00	.00	.00	.19	.00	.00
26	.07	.10	.00	.00	.00	.00	.39	.00	.23	.00	.00	.00
27	.17	.02	.04	.00	.00	.00	.19	.00	.36	.10	.00	.00
28	.00	.10	.00	.00	.00	.00	.00	.00	.13	.40	.00	.00
29	.00	-----	.00	.14	.00	.00	.03	.45	.05	.00	.00	.30
30	.27	-----	.00	.52	.00	.05	.00	.00	.00	.16	.00	.00
31	.02	-----	.91	-----	.00	-----	1.92	.00	-----	1.14	-----	.10
TOTAL	2.38	2.60	2.23	3.76	3.02	2.64	5.69	3.84	4.13	7.43	2.65	2.31
STA AV	2.65	2.89	2.41	3.33	3.11	4.17	3.49	3.39	3.22	5.79	3.62	2.94

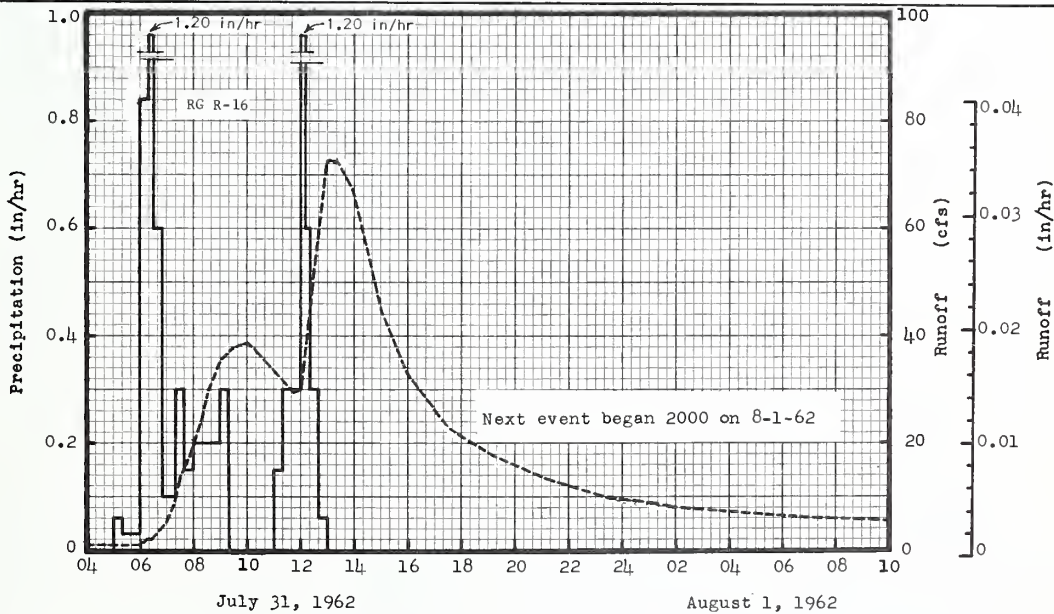
NOTES: PRECIPITATION VALUES ARE FROM R-16. ALL PRECIPITATION IN DEC., JAN., FEB., AND MAR. IS SNOW EXCEPT MAR. 31. STA AV BASED ON 1959-62 RECORDS.

1962 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-3 67.03						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.45	1.28	1.24	27.69	13.91	3.24	1.24	5.25	1.13	2.07	22.27	5.04
2	1.39	1.28	1.19	16.39	14.02	3.20	1.02	2.71	1.09	1.90	10.28	4.99
3	1.37	1.24	1.19	8.98	17.18	2.90	.96	1.75	1.00	1.77	8.71	4.69
4	1.37	1.19	1.19	9.73	14.21	2.52	.94	1.83	.98	1.69	10.01	5.08
5	1.32	1.47	1.19	10.35	12.72	2.54	.85	1.98	1.07	4.35	8.47	4.95
6	1.62	1.98	1.19	13.55	10.63	2.69	.83	2.05	1.94	29.55	7.15	7.25
7	2.94	1.51	1.19	39.96	9.49	2.20	.81	4.97	1.15	44.46	6.59	6.66
8	2.37	1.39	1.19	52.02	8.24	2.05	.81	3.52	1.02	12.76	7.06	5.14
9	1.96	1.34	1.19	39.17	7.40	1.86	4.16	2.30	1.00	15.21	7.28	4.84
10	1.62	1.26	1.30	34.67	6.83	1.79	1.90	2.90	3.37	14.51	8.90	4.65
11	1.56	1.19	1.43	21.66	6.29	2.65	1.15	5.08	8.45	11.35	16.62	4.05
12	1.54	1.19	1.45	20.91	5.97	2.22	1.02	2.56	3.03	10.67	9.24	4.22
13	1.43	1.19	1.39	19.14	5.50	1.81	3.80	2.11	2.15	9.22	7.60	3.48
14	1.37	1.19	1.30	15.40	6.70	1.56	1.66	3.58	1.81	7.72	6.96	3.56
15	2.01	1.19	1.28	13.72	6.36	1.43	1.62	5.10	1.54	6.96	6.42	6.02
16	7.60	1.19	1.30	13.08	6.38	1.32	1.49	2.35	1.39	6.51	6.02	3.76
17	3.71	1.19	1.28	11.14	5.68	1.26	1.56	1.94	2.39	6.55	5.95	3.03
18	2.47	1.19	1.28	11.44	5.10	1.19	1.17	1.64	11.03	5.95	5.74	2.92
19	2.07	1.19	1.28	12.52	4.59	4.25	1.09	1.54	2.99	5.46	5.18	2.92
20	1.98	1.19	1.32	14.23	5.87	3.05	.96	1.60	2.80	5.14	4.86	2.86
21	1.88	1.19	1.37	16.07	17.75	1.96	1.49	3.29	2.24	6.00	5.23	2.54
22	1.75	1.19	1.49	17.03	6.36	1.54	1.22	2.52	1.98	5.70	15.77	2.65
23	1.69	1.19	1.56	23.04	5.01	5.70	1.19	1.75	1.94	5.31	8.96	2.65
24	1.58	1.19	1.54	15.06	7.62	3.71	3.35	1.47	1.71	5.18	6.89	2.60
25	1.56	1.19	1.58	12.65	9.09	6.91	1.43	1.32	1.62	5.29	6.12	2.60
26	1.51	1.24	1.62	12.78	5.48	2.65	1.58	1.19	2.41	5.16	5.57	2.75
27	1.56	1.28	1.98	14.70	4.50	1.77	2.15	1.19	3.80	4.99	5.27	2.88
28	1.47	1.28	3.41	14.21	4.03	1.47	1.83	1.19	3.99	6.51	5.01	2.88
29	1.32	-----	5.31	12.89	3.65	1.32	1.28	2.20	2.47	9.24	5.04	2.88
30	1.28	-----	10.95	18.50	3.35	1.17	1.19	1.88	2.22	5.74	5.04	2.82
31	1.28	-----	19.61	-----	3.18	-----	21.38	1.22	-----	19.59	-----	2.73
MEAN	1.94	1.28	2.45	18.75	7.83	2.45	2.15	2.45	2.52	9.11	8.00	3.88
INCHES	.675	.401	.853	6.329	2.734	.830	.754	.854	.851	3.177	2.702	1.351

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0115191. RECORDS ARE EXCELLENT. SOME PERIODS OF WINTER RECORDS ARE ADJUSTED DUE TO ICE JAMS AT THE WEIR.

1962 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT WATERSHED W-3				67.03				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
7-31	RG R-16 .00	1/0032	Event of July 31-August 1, 1962								
			7-31	RG	R-16		7-31	0600	1.19	.0000	
				0500	.00	.00		0615	2.09	.0002	
				0520	.06	.02		0625	2.09	.0004	
				0600	.03	.04		0635	3.03	.0006	
				0620	.84	.32		0645	3.48	.0008	
				0630	1.20	.52					
				0650	.60	.72		0700	5.14	.0013	
				0720	.10	.77		0715	8.24	.0021	
				0740	.30	.87		0730	14.15	.0034	
				0800	.15	.92		0745	17.41	.0053	
				0900	.20	1.12		0800	20.14	.0075	
				0920	.30	1.22		0815	23.66	.0100	
				1100	.00	1.22		0830	28.68	.0131	
				1120	.15	1.27		0900	34.97	.0206	
				1200	.30	1.47		0930	37.72	.0291	
				1210	1.20	1.67		1000	38.43	.0380	
				1220	.60	1.77		1015	37.72	.0425	
				1240	.30	1.87		1145	29.87	.0662	
				1300	.06	1.89		1200	30.49	.0698	
				OTHER	GAGE	TOTALS		1230	52.51	.0795	
								1300	72.48	.0942	
				RG	R-1	2.25		1330	72.48	.1112	
				RG	R-3	2.20		1355	67.36	.1248	
				RG	R-6	2.00		1500	45.13	.1534	
				RG	R-20	1.77		1600	33.01	.1717	
				RG	R-20A	1.75		1730	23.13	.1914	
				6 RG	AVG 2/	2.03		1910	17.86	.2074	
								2100	13.76	.2210	
								2315	10.31	.2337	
								2400	9.69	.2372	
								8-01 0100	8.81	.2416	
								0330	7.45	.2511	
								0630	6.23	.2607	
								2000	3/ 3.03	.2900	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004798. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USOA MISC. PUB. 994, P. 67.3-5. FOR ISOHYETAL MAP OF ABOVE EVENT, SEE P. 67.5-4, THIS VOLUME. 1/ RUNOFF PRIOR TO 0600 ON 7-31-62. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF, SEE TABLES ON PREVIOUS PAGE. 2/ THIESSEN WEIGHTED, USING 6 RAIN GAGES. 3/ BEGINNING OF NEXT EVENT.



NORTH DANVILLE, VERMONT WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF (inches)						NORTH DANVILLE, VERMONT WATERSHED W-5 AREA—27,469 ACRES (42.92 SQ. MILES)								67.05
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P ¹ / _o	2.14	2.39	2/2.01	3/3.45	2.70	2.55	5.72	2.95	3.79	7.12	2.54	2.09	39.45
	o	2.01	1.22	2.74	6.15	2.16	.45	.55	.56	.59	2.92	2.52	1.92	23.79
STA AV ⁴ / _p		1.80	2.63	1.89	3.67	2.90	3.68	4.39	2.60	3.13	4.26	2.71	2.16	35.82
(60-62) o		1.82	1.89	2.58	6.61	2.63	1.21	.69	.43	.46	1.40	1.41	1.28	22.41
MEAN ⁵ / _p														
67 YR		2.32	2.14	2.47	2.64	2.96	3.53	3.64	3.57	3.52	2.93	2.96	2.48	35.16

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	10-7	.03	10-7	.03	10-7	.06	10-7	.20	10-7	.38	10-6	.70	4-7	1.07	4-5	2.64

MAXIMUMS FOR PERIOD OF RECORD																
19 60 TO 1962	4-18 1960	.04	4-18 1960	.04	4-18 1960	.08	4-18 1960	.20	10-7 1962	.38	10-6 1962	.70	4-7 1962	1.07	4-12 1960	3.14

NOTES: Quality of records: P and Q, excellent. Watershed conditions: Forest, predominantly hardwoods, 67%; cultivated land consisting of mostly clover, orchard grass, and timothy hay with very little in row crops, 17%; pasture of mostly bluegrass, 13%; idle land in tall grasses and woody plants, 2%; and homesites and roads, 1%. 1/ Monthly P values are Thiessen weighted using 24 rain gages. 2/ Snow melt from Feb. 27 to Mar. 27 totaled 1.1 inches. 3/ Snow water equivalent on Mar. 27 was 6.4 inches and had completely melted by Apr. 30. 4/ Runoff records began Jan. 1, 1960; precipitation records began at various times, averages computed from gages with records from Jan. 1, 1960 to Dec. 31, 1962, average P values from Thiessen weighted monthly values. 5/ Mean P based on 67-yr (1895-1961) U.S. Weather Bureau record period at St. Johnsbury, Vt.

1962 DAILY AIR TEMPERATURE (degrees F)												NORTH DANVILLE, VERMONT WATERSHED W-5 67.05													
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	19	0	-4	-19	27	0	39	36	54	35	75	57	68	50	73	53	78	61	48	40	35	27	49	31	
2	19	5	12	-18	7	-7	37	23	40	36	57	45	66	40	70	51	66	47	62	33	42	22	46	28	
3	26	6	24	12	8	-7	34	22	41	35	63	42	68	41	76	51	70	47	66	38	32	28	46	34	
4	28	-16	26	12	24	1	43	21	43	36	72	45	69	43	74	59	69	48	63	47	33	26	48	34	
5	19	-8	48	26	29	23	51	30	46	38	62	53	57	40	77	60	55	48	51	43	28	22	40	32	
6	30	19	28	-10	32	21	56	36	49	37	66	49	67	40	78	64	56	38	44	42	23	18	38	32	
7	37	27	8	-14	36	18	51	45	49	30	69	41	74	43	70	64	66	38	45	40	40	13	31	23	
8	35	21	21	0	38	16	58	41	43	27	69	43	78	52	70	52	70	46	49	41	46	31	28	24	
9	21	8	25	9	39	18	60	35	47	29	73	48	74	58	59	52	70	49	47	41	44	32	30	24	
10	10	0	9	-11	45	15	39	33	53	34	74	59	68	50	56	45	72	58	46	39	45	34	26	16	
11	20	-4	11	-14	48	15	46	29	55	30	72	53	72	52	58	47	66	53	50	40	42	23	18	6	
12	23	4	17	-4	30	27	52	33	59	33	65	50	78	56	69	42	54	52	62	40	29	14	15	-2	
13	18	4	25	1	31	23	39	31	64	39	67	48	66	54	68	53	74	48	42	31	24	14	14	-4	
14	27	9	21	8	34	20	34	29	48	37	76	45	72	55	64	57	72	51	46	26	22	18	14	-4	
15	43	22	24	10	31	25	41	28	60	43	80	52	69	54	73	52	60	47	55	28	24	18	7	-8	
16	52	11	26	8	38	25	35	21	59	46	80	54	69	54	75	53	53	40	60	41	34	14	21	5	
17	17	-13	24	8	35	24	35	19	78	44	80	57	69	52	70	53	60	40	61	39	30	19	20	6	
18	9	-14	16	-1	32	17	40	17	84	60	64	43	72	55	64	42	58	44	50	30	28	16	36	8	
19	15	1	15	-2	33	13	45	23	84	60	70	50	71	53	64	44	57	40	60	38	31	12	29	18	
20	18	4	22	10	41	16	49	29	75	55	61	51	76	51	80	57	44	32	62	44	28	15	24	-14	
21	21	0	20	4	36	28	54	29	61	47	74	50	72	57	73	55	46	32	59	34	34	22	10	-16	
22	37	21	25	9	44	24	49	34	61	38	74	54	70	50	68	49	47	32	48	32	35	23	17	4	
23	29	5	26	14	35	18	49	24	67	39	71	57	66	48	69	47	58	37	46	32	26	22	20	9	
24	26	1	16	2	40	21	27	21	58	45	69	62	68	49	73	51	60	37	35	27	30	21	18	-2	
25	29	20	23	-2	33	29	44	19	62	45	71	58	72	48	77	53	62	38	36	24	31	16	14	0	
26	32	5	27	14	38	30	59	27	61	45	70	50	68	50	77	57	58	48	36	23	38	14	24	0	
27	35	1	31	26	39	29	79	45	60	38	70	48	54	49	75	60	53	46	35	22	46	22	10	-6	
28	7	-11	30	28	48	30	78	53	69	40	76	50	73	50	72	60	50	45	46	30	54	28	18	5	
29	3	-19	---	---	57	32	60	39	73	49	81	53	66	57	67	58	59	45	34	22	58	36	21	8	
30	22	-7	---	---	66	47	39	36	81	55	82	58	74	58	77	55	52	46	30	20	54	34	21	-22	
31	-4	-19	---	---	47	36	---	---	73	61	---	---	65	56	81	57	---	---	43	29	---	---	6	-22	
AV.	23	3	21	4	36	20	47	30	60	41	71	51	69	50	71	53	61	44	49	34	36	22	24	8	
MEAN	13.0		12.5		28.0		38.5		50.5		61.0		59.5		62.0		52.5		41.5		29.0		16.0		
STA AV	20	3	25	8	32	15	45	29	61	46	70	51	71	53	72	53	65	47	51	34	37	25	25	10	

NOTES: TEMPERATURE DATA FROM R-1, READINGS TAKEN DAILY MON. THROUGH FRI. FROM MAY 1 TO OCT. 1. WINTER AND WEEKEND VALUES TAKEN FROM HYGROTHERMOGRAPH CHARTS. FOR OTHER TEMPERATURE RECORDS SEE PAGES 67.2 1 AND 67.3-1 OF THIS PUBLICATION. STA AV (STATION AVERAGE) BASED ON 1960-62 RECORDS.

1962 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-5 67.05						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.02E	.00	.80	.02	.08	.03	.27	.00	.00	.34	.00
2	.00	.02E	.00	.01	.25	.00	.00	.00	.00	.00	.00	.00
3	.04	.04E	.06	.00	.30	.00	.00	.00	.00	.00	.28	.00
4	.10	.04E	.06	.00	.11	.00	.00	.00	.00	.00	.05	.00
5	.15	.06E	.14	.00	.00	.00	.00	.00	.22	.83	.00	.00
6	.37	.07E	.00	.00	.03	.00	.00	.00	.04	2.20	.00	.10
7	.25	.00	.00	.73	.00	.00	.00	.26	.00	.98E	.00	.05
8	.05	.00	.00	.00	.00	.00	.00	.00	.00	.02E	.00	.03
9	.00	.05	.00	.20	.00	.00	.65	.00	.00	.54	.00	.29
10	.00	.05	.00	.05	.00	.00	.00	.49	.95	.20	.30	.08
11	.00	.00	.00	.00	.00	.25	.00	.01	.48	.00	.40	.00
12	.00	.00	.32	.00	.00	.00	.10	.00	.00	.15	.00	.00
13	.00	.00	.28	.39S	.00	.00	.72	.00	.00	.00	.00	.00
14	.00	.11	.00	.11S	.20	.00	.00	.33	.10	.00	.00	.00
15	.53	.00	.00	.08S	.00	.00	.36	.00	.00	.00	.00	.00
16	.00	.00	.00	.04S	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.13	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00	.00	.00
19	.00	.35	.00	.00	.00	.75	.00	.00	.02	.00	.00	.05
20	.00	.08	.00	.00	1.10	.00	.00	.35	.12	.00	.00	.00
21	.00	.00	.00	.00	.05	.00	.26	.35	.00	.18	.14	.00
22	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.75	.63
23	.02	.15	.00	.17	.00	.85	.37	.00	.00	.06	.00	.14
24	.00	.70	.00	.00	.67	.08	.27	.00	.00	.03	.20S	.01
25	.03	.00	.00	.00	.00	.45	.00	.00	.00	.12	.00	.00
26	.08	.03	.00	.00	.00	.00	.33	.00	.25	.00	.00	.00
27	.15	.15	.02	.00	.00	.00	.00	.00	.30	.05	.00	.00
28	.00	.12	.00	.00	.00	.00	.05	.00	.05	.33	.00	.00
29	.00	-----	.00	.06	.00	.00	.00	.40	.05	.00	.00	.25
30	.28	-----	.00	.56	.00	.03	.00	.00	.00	.10	.00	.06
31	.00	-----	.92	-----	.00	-----	1.90	.00	-----	1.06	-----	.08
TOTAL	2.05	2.37	1.80	3.20	2.73	2.49	5.36	2.46	3.58	6.85	2.46	1.77
STA AV	2.37	2.55	2.10	2.92	2.40	2.95	3.31	2.99	2.70	5.26	3.31	2.48

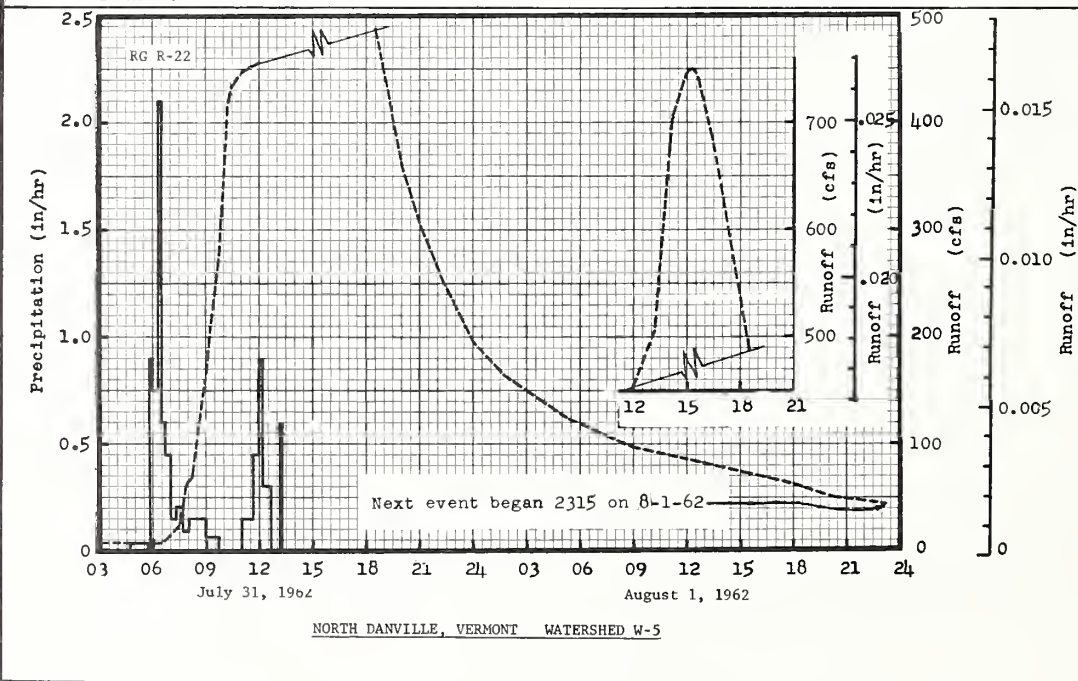
NOTES: PRECIPITATION VALUES ARE FOR R-22A, ALL PRECIPITATION IN DEC., JAN., FEB., AND MAR. IS SNOW EXCEPT MAR. 31. STA AV BASED ON 1959-62 RECORDS.

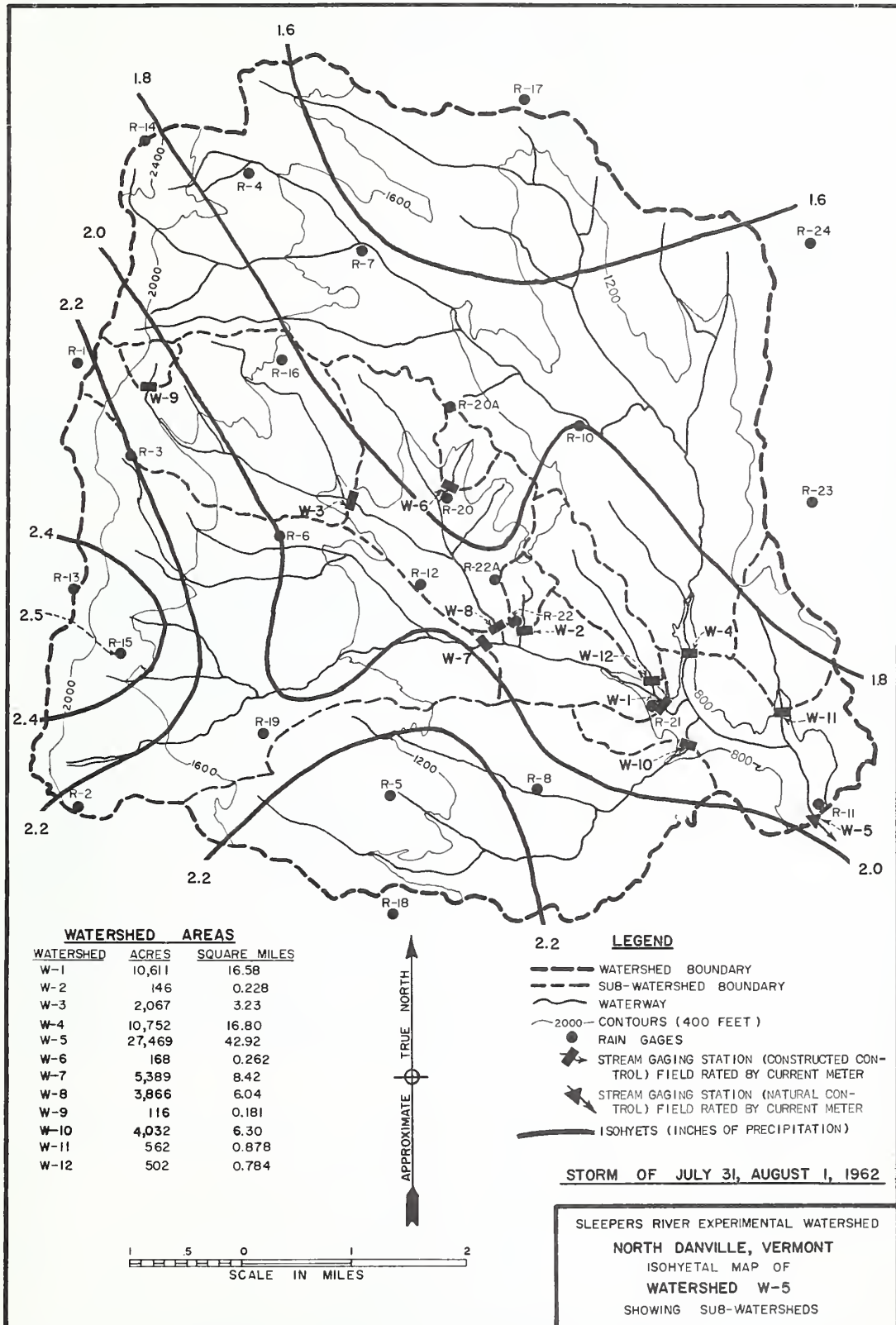
1962 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-5 67.05						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	25.80	39.13	37.71	586.93	164.17	21.27	8.79	94.14	8.79	16.45	358.68	57.84
2	49.62	21.55	35.73	322.39	151.70	21.27	7.37	31.47	8.51	15.03	128.44	57.28
3	66.63	26.94	33.46	279.57	202.17	19.56	6.24	17.86	7.37	14.18	97.82	59.26
4	48.76	34.31	29.49	141.49	151.41	17.30	5.67	13.89	6.52	13.61	121.92	58.41
5	30.33	47.35	27.50	212.37	133.27	16.73	5.10	15.03	6.81	30.91	104.34	57.84
6	33.17	134.40	27.50	245.55	112.28	18.43	5.10	12.48	13.61	435.24	83.08	85.06
7	92.71	92.72	22.68	541.85	102.08	15.59	4.54	22.68	10.49	714.53	72.59	92.43
8	104.06	46.50	23.53	674.55	85.35	13.89	4.25	30.34	8.22	178.63	75.71	64.08
9	70.88	31.19	27.22	461.61	75.42	12.76	14.18	16.73	7.09	182.60	78.82	56.71
10	47.64	26.94	25.52	458.77	67.20	11.91	17.01	16.16	13.89	178.92	90.17	58.41
11	63.80	22.12	31.47	251.22	60.68	15.31	9.36	66.07	96.40	134.68	224.85	45.93
12	92.85	31.76	47.92	222.58	55.57	16.16	9.07	25.24	26.94	118.80	116.82	33.74
13	77.97	79.68	51.04	228.82	47.64	12.48	28.92	16.45	18.43	107.18	84.21	53.31
14	81.66	121.07	44.80	189.41	59.26	10.77	16.73	19.28	15.59	82.23	77.12	49.90
15	106.04	128.16	43.38	165.31	64.08	9.92	15.59	57.56	19.56	72.02	69.75	54.16
16	256.61	97.54	42.53	142.91	59.26	8.79	12.19	19.28	13.61	68.33	76.84	66.35
17	202.17	77.97	48.49	125.61	49.34	7.66	11.63	15.59	13.04	66.63	81.38	75.99
18	143.47	55.57	49.05	117.67	38.56	7.09	12.19	14.18	149.43	59.83	60.39	86.76
19	114.83	30.62	45.93	123.62	33.74	27.22	18.15	11.63	34.31	53.02	68.62	87.61
20	72.87	39.13	43.10	136.38	37.14	28.92	10.49	11.06	22.97	49.34	48.77	88.47
21	52.17	21.83	49.90	155.10	239.88	15.31	11.06	20.70	19.00	56.99	55.86	47.64
22	38.85	23.82	73.72	169.84	80.24	11.63	10.77	20.70	15.88	64.65	223.43	47.07
23	42.25	28.92	101.51	243.00	55.29	30.34	8.22	13.89	15.03	56.71	132.70	100.66
24	37.99	28.64	104.91	162.47	77.97	41.40	28.92	10.77	13.89	53.31	86.20	135.82
25	37.14	33.46	130.15	121.64	138.09	58.41	15.31	9.36	12.48	51.89	74.86	121.07
26	36.86	41.96	119.09	121.36	66.35	20.70	13.04	8.79	17.58	51.04	77.41	102.64
27	44.23	41.96	237.04	147.44	43.38	13.61	16.45	8.22	34.03	46.50	49.05	88.47
28	47.64	39.98	309.34	151.98	30.34	10.49	14.74	7.94	33.46	60.96	50.19	80.24
29	73.15	-----	427.87	139.79	24.67	8.79	10.77	12.48	20.98	103.21	53.31	81.38
30	103.21	-----	475.50	222.86	22.12	8.22	9.64	17.58	18.15	65.21	53.59	91.30
31	81.94	-----	466.71	-----	21.27	-----	294.03	10.49	-----	249.52	-----	85.35
MEAN	76.84	51.60	104.34	242.15	82.23	17.58	20.98	21.55	23.25	111.43	99.24	73.15
INCHES	2.013	1.223	2.737	6.149	2.158	.450	.554	.565	.594	2.921	2.520	1.922

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0008665. RECORDS ARE EXCELLENT. SOME PERIODS OF WINTER RECORDS ARE ADJUSTED DUE TO ICE JAMS AT THE CONTROL SECTION.

1962 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT			WATERSHED W-5			67.05					
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF								
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
Event of July 31-August 1, 1962														
7-31	RG R-22 .00	1/.0018	7-31	RG 0440 0540 0550 0600 0620	R-22 .00 .03 .00 .90 .75	.00 .03 .03 .18 .43	7-31	0600 0623 0700 0715 0730	8.22 9.36 15.03 17.30 24.10	.0000 .0001 .0004 .0005 .0007				
Watershed conditions: 67% forest; 17% hay with average of 6-inch growth since last cutting; 13% pastured land; 2% idle land with dense grass and brush growth; and 1% homesites and roads.				0630 0640 0700 0720 0740	2.10 .60 .45 .15 .21	.78 .88 1.03 1.08 1.15		0750 0808 0900 0915 0945	62.38 66.92 161.62 209.25 272.20	.0012 .0019 .0054 .0070 .0113				
				0800 0900 0940 1100 1140	.09 .15 .06 .00 .15	1.18 1.33 1.37 1.37 1.47		1000 1015 1030 1100 1200	343.65 416.52 435.80 448.00 455.94	.0140 .0174 .0211 .0289 .0449				
				1200 1210 1240 1312 1314	.45 .90 .30 .00 .60	1.62 1.77 1.92 1.92 1.94		1315 1415 1500 1515 1530	506.41 705.45 744.87 749.69 747.42	.0661 .0874 .1066 .1132 .1198				
				OTHER RAIN	GAGE	TOTALS		1630 1830 2000 2100 2215	685.89 489.11 360.95 307.64 252.07	.1451 .1865 .2090 .2208 .2332				
				R-1 R-2 R-3 R-4	2.25 2.15 2.20 1.77	R-16 R-17 R-18 R-19	1.89 1.50 2.25 2.03							
				R-5 R-6 R-7 R-8 R-10	2.34 2.00 1.62 2.05 1.80	R-20 R-20A R-21 R-22A R-23	1.77 1.75 1.85 1.90 1.67		2400 0145 0515 0900 1800	197.91 164.17 123.62 98.96 62.38	.2471 .2582 .2760 .2908 .3164			
				R-11 R-12 R-15	1.97 1.99 2.50	R-24 AVG 3/	1.62 1.95		2015 2315	49.62 2/41.96	.3209 .3257			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.000036104. FOR TOPOGRAPHIC AND GEOLOGIC MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, PP. 67.5-5 AND 6. FOR ISOHYETAL MAP OF ABOVE EVENT, SEE NEXT PAGE. 1/ RUNOFF PRIOR TO 0600 ON 7-31-62. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF, SEE PREVIOUS PAGE. 2/ BEGINNING OF NEXT EVENT. 3/ ARITHMETIC AVERAGE OF 23 RAIN GAGE TOTALS SHOWN.





CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO

LOCATION: WATERSHED — Washita River above Anadarko, Okla.; Southwest Central Oklahoma and Texas Panhandle; in Caddo, Kiowa, Washita, Custer, Beckham, and Roger Mills Counties, Okla.; and Hemphill, Wheeler, and Gray Counties, Tex.; Washita River, Red River Basin.

GAGING STATION — NW½ sec. 15, T. 7 N., R. 10 W., lat. 35°05', long. 98°14'; north edge of Anadarko, Okla., 35 feet upstream from U.S. Highway 281 bridge over Washita River; at river mile 305.2, approximately 8.1 miles upstream from confluence of Sugar Creek.

AREA: 2,340,000 acres (3,656 sq. miles). This is drainage area at inflow point to study reach.

SLOPES: 1/ Not applicable.

SOILS: 1/ Not applicable.

EROSION: 1/ Not applicable.

LAND CAPABILITY: 1/ Not applicable.

GEOLOGY: 1/ Not applicable.

SURFACE DRAINAGE: Good, length of principal waterway 321 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: **Precipitation:** Weather Bureau substations. No precipitation data are presented. **Runoff:** U.S.G.S. wire weight gage on bridge, datum 1,151.88 ft. m.s.l. elev., all datum by 1929 adjustment. Staff gage, datum 1,150.00 ft. m.s.l. elev., and Stevens A-35 water-level recorder installed in 30-inch well on left bank with 4.8 inch per day time scale, datum 1,150.00 ft. m.s.l. elev. Rock channel control - very insensitive at low flow. Low flow current meter measurements made by wading channel. High flow current meter measurements made by crane from upstream side of bridge. Measurements made periodically and during each major rise.

WATERSHED CONDITIONS: 1/ Not applicable.

GENERALLY REPRESENTS: Large rivers of the Central Great Plains, specifically the Central Rolling Red Plains land resource area (H-78).

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1961 P 2/ Q										.152	.256	.080	
1962 P 2/ Q	.065	.059	.061	.080	.143	.469	.092	.060	.216	.128	.066	.071	1.510
STA AV P2/ Q2/										.140	.161	.076	
MEAN P 4/ 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-12	.0021	6-12	.0021	6-12	.0043	6-12	.013	6-12	.027	6-12	.051	6-11	.096	6-7	.257

MAXIMUMS FOR PERIOD OF RECORD 3/																
1961 TO 1962	6-12 1962	.0021	6-12 1962	.0021	6-12 1962	.0043	6-12 1962	.013	6-12 1962	.027	6-12 1962	.051	6-11 1962	.096	6-7 1962	.257

Notes: Quality of records: Q, good to excellent. Watershed conditions not applicable. For maps see pp. 69.7-7 and 9. 1/ Since this is the inflow station to the study reach, these data are not applicable. 2/ Since this is the inflow station to the study reach, the U.S. Weather Bureau substation precipitation data upstream are not presented. 3/ Runoff records began Oct. 1961. 4/ Mean P based on 62-yr (1901-62) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 5/ Period of record began Oct. 1961.

MISCELLANEOUS DATA

RUNOFF PEAK DATA: YEAR (1962): Maximum — June 12, 5,074 cfs (17.98 ft). Minimum — Aug. 31, 47 cfs (6.94 ft). PERIOD OF RECORD: Maximum — June 12, 1962, 5,074 cfs (17.98 ft). Minimum — Aug. 31, 1962, 47 cfs (6.94 ft).

PEAK DISCHARGES: (Above base of 3,000 cfs) 1961 — Oct. 12, 3,364 cfs (14.05 ft); Nov. 5, 4,850 cfs (17.44 ft). 1962 — June 12, 5,074 cfs (17.98 ft); Sept. 21, 4,150 cfs (15.84 ft).

ABBREVIATED RATING TABLE: 1961 and 1962 (Stage recorder datum; gage height in ft, discharge in cfs).

GAGE HEIGHT	DISCHARGE	GAGE HEIGHT	DISCHARGE	GAGE HEIGHT	DISCHARGE
5.3	0	10.0	1,600	15.0	3,780
7.1	100	11.0	2,080	16.0	4,250
7.5	275	12.0	2,500	17.0	4,750
8.0	650	13.0	2,930	18.0	5,230
9.0	1,100	14.0	3,350		

1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										247	E 401	267
2										224	E *1020	267
3										* 200	E *2810	267
4										185	E *3820	267
5										172	E *4270	267
6										164	E *1930	264
7										154	E 892	253
8										146	E 648	243
9										151	* 562	243
10										205	E 503	243
11										*1920	E 476	243
12										*3180	E 407	243
13										1260	E 379	243
14										733	E 378	232
15										1850	E 393	<u>222</u>
16										* 908	E 499	253
17										419	E 729	267
18										340	E 719	*272
19										290	E 520	286
20										256	E 398	<u>293</u>
21										235	E 347	282
22										219	E 347	267
23										* 204	E 347	253
24										194	E 346	246
25										174	E 322	243
26										155	E 314	241
27										<u>137</u>	E 295	237
28										130	* 277	234
29										158	E 267	232
30										171	E 267	230
31										191	E 267	228
MEAN										483	E 839	252
INCHES										.152	E .256	.080

NOTES: RECORDS BEGAN OCT 1, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00001017. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 195,000. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	221	<u>215</u>	197	170	608	816	387	214	<u>74</u>	300	* 305	265
2	219	<u>211</u>	190	170	308	* 867	325	222	112	287	251	246
3	224	209	183	164	239	1170	295	1010	93	272	228	278
4	228	209	187	167	215	*1630	270	<u>830</u>	110	257	217	343
5	230	205	197	180	205	995	250	515	163	255	209	<u>368</u>
6	226	201	205	198	237	1310	237	332	219	267	203	309
7	231	201	208	205	216	2410	219	267	174	279	205	263
8	250	201	201	201	171	*2770	201	235	159	287	201	235
9	<u>255</u>	201	194	197	115	*2020	170	* 211	117	284	190	221
10	206	E 201	197	* 220	105	2840	142	187	* 739	250	187	215
11	120	E 207	201	362	103	*4320	125	159	448	226	180	209
12	131	E 213	197	271	100	*4970	118	134	260	211	170	201
13	184	E 213	190	279	100	*3370	112	116	184	205	<u>164</u>	*195
14	243	E 213	187	258	100	2530	107	103	139	194	* 167	201
15	232	E 213	187	212	100	*2100	105	100	219	* 183	170	208
16	235	E 213	187	177	103	1570	107	98	258	171	167	208
17	216	E 213	180	161	105	1880	112	94	202	<u>161</u>	174	208
18	215	E 211	<u>174</u>	161	* 103	*1470	E 116	90	*2080	161	183	209
19	209	E 207	* 184	<u>158</u>	98	837	E 179	89	*3580	E 161	190	207
20	115	E * 203	203	158	98	680	E 171	85	*4000	E 181	197	205
21	<u>109</u>	E 201	<u>211</u>	164	98	581	E 106	80	*3090	1520	205	205
22	121	E 201	205	177	98	500	E 100	72	963	*2210	208	205
23	145	E 201	201	190	95	458	E * 128	71	738	* 954	205	203
24	235	E 201	201	201	94	444	E 142	70	* 576	527	197	201
25	254	<u>199</u>	201	205	<u>90</u>	473	E 134	<u>69</u>	507	364	194	203
26	* 231	199	201	205	200	* 595	1120	69	455	298	201	203
27	224	201	201	215	*1610	787	*1680	69	423	267	209	*201
28	224	201	197	345	*2640	752	1000	69	391	280	* 209	201
29	226	-----	190	*1020	*2580	556	363	69	348	333	<u>504</u>	201
30	224	-----	183	<u>1070</u>	*1830	430	319	69	319	1030	369	199
31	219	-----	174	-----	*1250	-----	237	72	-----	644	-----	201
MEAN	206	206	194	262	452	1538	293	189	708	407	215	226
INCHES	.065	.059	.061	.080	.143	.469	.092	.060	.216	.128	.066	.071

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00001017. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 195,000. YEARLY MEAN DISCHARGE, 408 CFS. YEARLY DISCHARGE, 1.513 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN

LOCATION: WATERSHED — Washita River above Verden, Okla.; Southwest Central Okla. and Tex. Panhandle; in Caddo, Canadian, Kiowa, Washita, Custer, Beckham, and Roger Mills Counties, Okla.; and Hemphill, Wheeler, and Gray Counties, Tex.; Washita River; Red River Basin.

GAGING STATION — SW $\frac{1}{4}$ sec. 7, T. 7 N., R. 8 W., lat. 35°05', long. 98°05'; north edge of Verden, Okla., at county road bridge over Washita River; at river mile 283.4, approximately 8.4 miles upstream from confluence with Ionine Creek.

AREA: 2,613,000 acres (4,083 sq. miles). Local drainage area for reach between Anadarko and Verden gaging stations: 273,000 acres (426.3 sq. miles). See composite map, page 69.7-7.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	1/
	Percent of area	25	12	23	15	23	2	

SOILS: The alluvial soils are derived from alkaline red bed sediments, and the residual soils are derived from Rush Springs sandstone. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Darnell Quinlan Woodward sandy loams	35	6	Weak medium granular	Moderate	Weak fine crumb	Moderate	18	Slow	Slow
McLain Reinacb Pulaski silt loams	25	14	Moderate fine granular	Moderate	Moderate fine crumb	Moderate	60	Moderate	Medium
Noble Daugherty Cobb fine sandy loams	25	10	Structureless fine granular	Rapid to moderate	Moderate medium prismatic	Moderate	48	Moderate	Medium
Noble Vanoss Cobb sandy loams	15	12	Moderate medium granular	Moderate	Moderate medium prismatic	Moderate	48	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	1/
	Percent of area	22	55	20	3	

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	1/
	Percent of area	18	18	23	12	3	23	3	

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations in area tributary to reach in percent are: Flood plain alluvium and terrace deposits, 14; Cloud Chief formation, 1; Rush Springs formation, 62; and Marlow, Dog Creek, and Blaine formations, 23. See description of hydrogeology and general geologic map, pp. 69.7-8 and 9.

SURFACE DRAINAGE: Good, length of principal waterway 343 miles; length of reach between Anadarko and Verden gaging stations 21.8 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: Precipitation: Above Anadarko, Weather Bureau substations exist, but no data are presented. Between Anadarko and Verden, one Weather Bureau substation plus recording weighing type gages installed on a 3-mile square grid. Grid pattern oriented in north northeast direction and consists of approximately 66 gages, all in operation. Time scales vary, but are primarily 24-hour. Runoff: Tape down from reference point on bridge, datum 1,100.00 ft.; all datum m.s.l. elev. by 1929 adjustment. Stevens A-35 water level recorder and bubble gage servomanometer on right bank with a 4.8-inch per day time scale. Gage height measured on upstream side of bridge, datum 1,100.00 ft. Sandy shifting channel control. Low flow current meter measurements made by wading channel; high flow current meter measurements made by crane from upstream side of bridge. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: Most of the bottom land of this area is farmed with a rotation of alfalfa, small grains, and cotton. The remainder is farmed to small grains, cotton, and sorghums. 90% of the farmed land with a slope greater than 1- $\frac{1}{2}$ % has needed structural practices such as terraces, farm ponds, and grassed waterways applied. There is some irrigated land in the area. Moldboard plowing which buries the crop residue is practiced by most farmers in the area. Spring-tooth or spike-tooth harrows are used to control weeds until the following crops are planted. Fertilization is based on soil test recommendations. There are approximately 4 farm ponds per sq. mile. The following table shows the land use.

Cultivation - 45						Percent of watershed in					
Percent of cultivated land in						Pasture or range - 44		Wooded pasture - 9		Miscellaneous - 2	
Classification of range site condition based on production						Classification of range site condition based on production		Classification of range site condition based on production		Farmsteads, roads, airports, etc.	
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	Exc. - 5%	Good - 10%	Good - 5%	Fair - 15%		
4	40	35	40	50	600	Fair - 25%	Poor - 60%	Poor - 80%			
						The general practice for good range utilization is 1 animal unit per 12 acres.					

GENERALLY REPRESENTS: Large rivers of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Plains and Central Rolling Red Prairies, land resource areas (H-78 and H-80), with general application to the Cross Timbers land resource area (J-84) of the Southwestern Prairies Cotton and Forage Region.

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1961 P ^{1/} Q										1.95 .150	3.13 .257	.85 .096				
1962 P ^{1/} Q	.36 .075	.53 .055	.54 .051	2.66 .065	2.73 .132	8.32 .470	1.77 .095	1.39 .063	4.99 .199	2.48 .127	1.08 .064	1.26 .065	28.11 1.461			
STA AV ^{2/} P Q										2.22 .138	2.10 .160	1.06 .080				
MEAN P ^{3/} 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-12	.0020	6-12	.0020	6-12	.0039	6-12	.012	6-12	.023	6-12	.046	6-11	.088	6-7	.259
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
1961 TO 1962	6-12 1962	.0020	6-12 1962	.0020	6-12 1962	.0039	6-12 1962	.012	6-12 1962	.023	6-12 1962	.046	6-11 1962	.088	6-7 1962	.259
Notes: Quality of records: P, excellent; Q, excellent. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.7-7 and 9. ^{1/} Precipitation data obtained from a Thiessen weighted average of 66 gages for the reach between stations at Anadarko and Verden. ^{2/} Precipitation and runoff records began Oct. 1961. ^{3/} Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Oct. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Maximum — June 12, 5,161 cfs (25.36 ft). Minimum — Aug. 30, 58 cfs (8.54 ft).																
PERIOD OF RECORD: Maximum — June 12, 1962, 5,161 cfs (25.36 ft). Minimum — Aug. 30, 1962, 58 cfs (8.54 ft).																
PEAK DISCHARGES: (Above base of 3,000 cfs) 1961 — Oct. 12, 3,008 cfs (19.41 ft); Nov. 5, 4,786 cfs (23.66 ft). 1962 — June 12, 5,161 cfs (25.36 ft); Sept. 21, 4,060 cfs (21.95 ft).																
ABBREVIATED RATING TABLE: 1961 and 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																
Jan. 1 — June 1, 1962				June 1 — Dec. 31, 1962												
<u>GAGE HEIGHT</u>		<u>DISCHARGE</u>		<u>DISCHARGE</u>		<u>GAGE HEIGHT</u>		<u>DISCHARGE</u>								
6.3		0					15.0		1,600							
8.5		100				58		17.0	2,300							
9.5		218				190		19.0	3,000							
10.5		340				340		21.0	3,700							
11.5		550				550		23.0	4,220							
13.0		890				890		25.0	5,060							

1961 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										.01	1.12	.00
2										.03	.70	.00
3										.00	.00	.00
4										.00	.00	.08
5										.00	.00	.00
6										.00	.00	.00
7										.00	.00	.00
8										.00	.00	.44
9										.89	.00	.00
10										.37	.02	.00
11										.00	.00	.00
12										.00	.00	.00
13										.10	.05	.00
14										.00	.17	.00
15										.01	.74	.00
16										.00	.00	.32
17										.00	.00	.01
18										.00	.00	.00
19										.00	.00	.00
20										.00	.00	.00
21										.00	.26	.00
22										.00	.07	.00
23										.00	.00	.00
24										.00	.00	.00
25										.00	.00	.00
26										.00	.00	.00
27										.00	.00	.00
28										.00	.00	.00
29										.07	.00	.00
30										.45	.00	.00
31										.02		.00
TOTAL										1.95	3.13	.85

NOTES: RECORDS BEGAN OCT 1, 1961. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 66 GAGES ON THE REACH BETWEEN STATION 100 AND 200.

1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1										325	<u>280</u>	*362	
2										295	*1090	357	
3										* 267	*2020	354	
4										246	*3330	356	
5										231	<u>*4390</u>	357	
6										220	*3020	349	
7										205	1160	343	
8										* 195	847	341	
9										202	* 699	350	
10										258	630	359	
11										* 871	596	349	
12										*3000	561	341	
13										*1860	523	*326	
14										* 782	498	334	
15										*1620	703	E 325	
16										*1240	* 639	349	
17										670	722	394	
18										463	937	381	
19										382	728	372	
20										351	569	365	
21										328	509	359	
22										306	507	359	
23										* 282	470	345	
24										263	445	328	
25									1090	249	431	315	
26										*2460	236	421	312
27										*1190	226	400	*305
28										599	226	* 386	297
29										* 427	224	377	293
30										358	225	370	297
31													294
MEAN										532	942	341	
INCHES										.150	.257	.096	

NOTES: RECORDS BEGAN SEPT 25, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000009109. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 217,700. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	3.04	.00	.51	.00	.00	.00	.09
2	.00	.00	.00	.00	.00	.05	.00	.00	.07	.00	.00	1.00
3	.00	.00	.00	.00	.00	.01	.00	.00	1.12	.00	.00	.03
4	.10	.00	.00	.12	.22	.06	.00	.01	.34	.00	.00	.00
5	.00	.00	.00	.11	.00	1.00	.00	.00	.07	.71	.00	.00
6	.00	.00	.00	.14	.00	.02	.00	.00	.03	.00	.12	.00
7	.00	.00	.00	.00	.00	.47	.00	.00	.50	.00	.01	.00
8	.00	.00	.00	.00	.00	.02	.00	.00	.24	.00	.00	.00
9	.00	.00	.00	.00	.00	1.24	.08	.00	.00	.00	.00	.00
10	.00	.00	.00	.73	.00	.05	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.62	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
14	.08	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.02	.00	.00	.00	.08	.01	.00	1.91	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.05	.00	.01	.00	.00	.00
17	.00	.00	.00	.01	.00	.00	.00	.00	.00	.17	.35	.00
18	.00	.00	.00	.00	.00	.38	.09	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.01	.00	.00	.01	.30	.00	.00
20	.00	.04	.47	.01	.06	.00	.01	.00	.56	.52	.00	.00
21	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.02	.00	.50	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.03	.00	.00	.25	.00	.00	.00	.00	.00
24	.00	.00	.05	.11	.06	.04	.57	.14	.00	.00	.00	.08
25	.13	.02	.02	.00	.49	.40	.43	.00	.12	.00	.00	.05
26	.00	.00	.00	.12	1.16	.22	.00	.00	.00	.00	.60	.00
27	.00	.20	.00	1.25	.00	.02	.01	.00	.00	.26	.00	.00
28	.00	.00	.00	.01	.74	.00	.26	.00	.00	.52	.00	.01
29	.00	-----	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.01	.00	.01	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.71	-----	.00	-----	.00
TOTAL	.36	.53	.54	2.66	2.73	8.32	1.77	1.39	4.99	2.48	1.08	1.26
STA AV										2.22	2.10	1.06

NOTES: YEARLY PRECIPITATION 28.11 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 66 GAGES ON THE REACH BETWEEN STATIONS 100 AND 200.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	277	<u>256</u>	195	152	759	979	465	279	<u>90</u>	360	431	298
2	262	* 247	* 195	148	380	*1760	E 390	260	117	342	303	266
3	259	241	194	* <u>148</u>	* 300	1450	E 345	704	146	324	266	320
4	260	238	193	157	251	*1830	E 322	<u>975</u>	290	306	247	329
5	261	234	192	164	226	1200	301	693	185	294	235	<u>370</u>
6	268	227	193	167	204	*1310	289	451	230	309	229	336
7	<u>280</u>	226	194	168	290	*2290	275	* 336	222	317	226	293
8	<u>268</u>	222	193	174	155	*3180	256	295	232	* 312	221	259
9	<u>255</u>	219	193	183	172	*2610	243	260	197	324	218	248
10	260	218	191	243	161	3410	* 235	233	* 368	305	214	230
11	267	216	186	307	149	*4220	214	210	* 353	276	211	218
12	267	214	182	316	133	* <u>5070</u>	200	194	372	253	205	207
13	266	210	181	* 263	130	*4210	183	170	253	240	199	*197
14	264	210	180	253	* 125	*2780	170	158	184	235	* 196	201
15	262	219	181	218	121	2070	163	147	234	226	193	202
16	* 260	218	180	185	117	1620	156	135	432	216	191	197
17	258	214	179	171	115	1780	160	128	277	<u>209</u>	<u>190</u>	197
18	261	210	178	156	113	*1530	172	119	* 999	209	199	201
19	264	205	* 177	161	110	951	178	126	*3350	209	202	205
20	266	* 201	* 177	170	108	779	237	112	<u>3890</u>	239	204	204
21	267	201	* <u>198</u>	154	107	889	180	105	*3740	735	207	201
22	270	201	193	151	104	764	148	96	*1380	* <u>2310</u>	208	201
23	272	200	185	153	100	529	<u>143</u>	90	791	*1260	206	199
24	274	199	173	156	98	<u>447</u>	190	* 89	* 638	655	201	195
25	275	198	173	162	* <u>92</u>	484	246	83	582	449	196	201
26	277	198	172	163	120	* 679	* 451	79	530	370	207	199
27	280	<u>197</u>	167	220	*1070	732	* <u>1660</u>	78	482	324	227	* <u>194</u>
28	278	<u>195</u>	167	359	*2570	829	*1260	78	443	333	* 219	204
29	274	-----	164	* 769	* <u>2760</u>	699	563	78	413	367	304	204
30	272	-----	160	* <u>986</u>	*2030	540	366	77	385	* 781	<u>435</u>	199
31	<u>266</u>	-----	<u>157</u>	-----	*1350	-----	<u>323</u>	79	-----	* 874	-----	195
MEAN	267	216	182	239	468	1721	338	223	727	450	233	231
INCHES	.075	.055	.051	.065	.132	.470	.095	.063	.199	.127	.064	.065

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000009109. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 217,700. YEARLY MEAN DISCHARGE, 440 CFS. YEARLY DISCHARGE, 1.461 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

CHICKASHA, OKLAHOMA WATERSHED 400 NEAR CHICKASHA

LOCATION: WATERSHED — Washita River above Chickasha, Okla.; Southwest Central Oklahoma and Texas Panhandle; in Grady, Caddo, Canadian, Kiowa, Washita, Custer, Beckham, and Roger Mills Counties, Okla.; and Hemphill, Wheeler, and Gray Counties, Tex.; Washita River, Red River Basin.

GAGING STATION — SE½ sec. 9, T. 7 N., R. 7 W., lat. 35°05', long. 97°56'; 2-3/4 miles north of Chickasha, Okla., at county road bridge over Washita River (4th St. extended); at river mile 262.2, approximately 4.3 miles upstream from confluence of Line Creek.

AREA: 2,726,000 acres (4,259 sq. miles). Local drainage area for reach between Verden and Chickasha gaging stations: 112,910 acres (176.4 sq. miles). See composite map, page 69.7-7.

SLOPES:

Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	1/
Percent of area	20	15	10	20	33	2	

SOILS: Residual, derived from siltstone, shale, sandstone, and terrace and flood plain alluvium: 1/

Soil	Percent of area	Topsoil		Subsoil		Substratum		Internal drainage	
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)		Permeability
Kingfisher-Grant Stephenville silt loams	50	16	Moderate fine granular	Moderate	Moderate medium subangular blocky	Moderate	30	Moderate	Medium
Kirkland-Renfrow silt loams	23	14	Moderate fine granular	Moderate	Strong medium blocky	Very slow	34	Moderately slow	Very slow
Reinach-McLain silt clay loams	20	20	Moderate fine granular	Moderate	Moderate medium subangular blocky	Moderate	45	Moderate	Medium
Teller-Vanoss silt loams	7	16	Moderate fine granular	Moderate	Moderate fine granular	Moderate	40	Moderate	Medium

EROSION:

Erosion class	1	2	3	4	1/
Percent of area	20	30	49	1	

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII	1/
Percent of area	10	13	30	10	2	35	0	

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations in area tributary to reach, in percent are: Recent flood plain alluvium and terrace deposits, 21; Rush Springs formation, 2; Marlow, Dog Creek, and Blaine formations, 57; and Chickasha formation, 20. See description of hydrogeology and general geology map, pages 69.7-8 and 9.

SURFACE DRAINAGE: Good, length of principal waterway 364 miles; length of reach between Verden and Chickasha gaging stations 21.2 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: Precipitation: Above Anadarko, Weather Bureau substations exist, but no data are presented. Between Anadarko and Verden see description for watershed 200. Between Verden and Chickasha (4th St.), 3 Weather Bureau substations plus recording weighing type gages installed on 3-mile square grid. Grid pattern oriented in north northeast direction and consists of approximately 33 gages, all in operation. Time scales vary but are primarily 24-hr. Runoff: Tape down from reference point on bridge, datum 1,060.00 ft.; all datum m.s.l. elev., by 1929 adjustment. Stevens A-35 water-level recorder and bubble gage servo-manometer on right bank with a 4.8 inches per day time scale. Gage height measured on upstream side of bridge, datum 1,060.00 ft. Sandy but stable channel control. Low flow current meter measurements made by wading channel. High flow current meter measurements made by crane from upstream side of bridge. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: Approximately 25% of this area is farmed with a rotation of alfalfa, small grains, and cotton. The remainder is farmed to small grains, cotton, and sorghums. 95% of the farmed land with a slope greater than 1-1/2% has needed structural practices such as terraces, farm ponds, and grassed waterways applied. There is some irrigated land in the area. Moldboard plowing which buries the crop residue is practiced by most farmers of the area. Spring-tooth or spike-tooth harrows are used to control weeds until the following crops are planted. Fertilization is based on soil test recommendations. There are approximately 5 farm ponds per sq. mile. The following table shows the land use:

Percent of watershed in									
Cultivation - 54					Pasture or range - 43		Wooded pasture - 1		Miscellaneous - 2
Percent of cultivated land in					Classification of range site condition based on production		Classification of range site condition based on production		Farmsteads, roads, airports, etc.
Alfalfa - 20	Sowed crops - 52		Row crops - 28		Exc. - 0% Good - 20% Fair - 66% Poor - 14%	Fair - 50% Good - 30%	Fair - 50% Good - 30%	Poor - 20%	The general practice for good range utilization is 1-1/2 animal units per 10 acres.
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac					
4.5	33	42	45	35	310				

GENERALLY REPRESENTS: Large rivers of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Plains and Central Rolling Red Prairies, Land resource areas (H-78 and H-80), with general application to the Cross Timbers land resource area (J-84) of the Southwestern Prairies Cotton and Forage Region.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 400 NEAR CHICKASHA										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1961 P ^{1/} Q										1.85 .143	3.76 .247	.97 .093				
1962 P ^{1/} Q	.34 .078	.83 .060	.71 .056	2.61 .069	2.60 .130	8.05 .494	1.39 .089	1.61 .058	3.90 .179	2.01 .111	1.47 .065	1.32 .067	26.84 1.456			
STA AV ^{2/} P Q										1.93 .127	2.62 .156	1.14 .080				
MEAN P ^{3/} 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-2	.0022	6-2	.0022	6-2	.0044	6-2	.013	6-2	.025	6-13	.043	6-13	.080	6-8	.245
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
1961 TO 1962	6-2 1962	.0022	6-2 1962	.0022	6-2 1962	.0044	6-2 1962	.013	6-2 1962	.025	6-13 1962	.043	6-13 1962	.080	6-8 1962	.245
Notes: Quality of records: P, excellent; Q, excellent. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.7-7 and 9. ^{1/} Precipitation data obtained from a Thiessen weighted average of 33 gages for the reach between stations at Verden and Chickasha (4th St.). ^{2/} Precipitation and runoff records began Oct. 1961. ^{3/} Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Oct. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Maximum — June 2, 5,998 cfs (26.20 ft). Minimum — Aug. 30, 70 cfs (8.72 ft). PERIOD OF RECORD: Maximum — June 2, 1962, 5,998 cfs (26.20 ft). Minimum — Aug. 30, 1962, 70 cfs (8.72 ft).																
PEAK DISCHARGES: (Above base of 3,000 cfs) 1961 — Nov. 6, 4,275 cfs (23.53 ft). 1962 — June 2, 5,998 cfs (26.20 ft); June 13, 5,053 cfs (24.41 ft); Sept. 21, 3,890 cfs (21.64 ft).																
ABBREVIATED RATING TABLE: 1961 and 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																
GAGE HEIGHT	DISCHARGE		GAGE HEIGHT	DISCHARGE		DISCHARGE (June 10-14, 1962)										
6.3	0		16.0	1,720												
10.3	268		18.0	2,370												
11.0	380		20.0	3,100		2,940										
12.0	618		22.0	3,980		3,570										
13.0	810		24.0	4,780		4,470										
14.0	1,060		26.0	5,970												

1961 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 400 NEAR CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										.01	1.37	.00
2										.05	.97	.00
3										.00	.00	.00
4										.00	.00	.10
5										.00	.00	.00
6										.00	.00	.00
7										.00	.00	.00
8										.00	.00	.47
9										1.22	.00	.00
10										.27	.02	.00
11										.00	.00	.00
12										.00	.00	.00
13										.05	.12	.00
14										.02	.13	.00
15										.00	.72	.00
16										.00	.00	.37
17										.00	.00	.03
18										.00	.00	.00
19										.00	.00	.00
20										.00	.00	.00
21										.00	.32	.00
22										.00	.11	.00
23										.00	.00	.00
24										.00	.00	.00
25										.01	.00	.00
26										.00	.00	.00
27										.00	.00	.00
28										.00	.00	.00
29										.05	.00	.00
30		-----								.15	.00	.00
31		-----								.02	-----	.00
TOTAL										1.85	3.76	.97

NOTES: RECORDS BEGAN OCT 1, 1961. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 33 GAGES ON THE REACH BETWEEN STATION 200 AND 400.

1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 400 NEAR CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										359	<u>255</u>	368
2										* 319	*1780	362
3										296	*1640	361
4										277	*2830	360
5										259	*3670	359
6										244	* <u>3830</u>	358
7										237	*1500	356
8										<u>228</u>	942	354
9										266	716	354
10										430	630	357
11										374	579	352
12										*2140	533	337
13										* <u>2280</u>	490	*324
14										* 944	475	326
15										1180	620	327
16										*1460	* 630	374
17										823	634	<u>408</u>
18										520	826	396
19										* 424	733	374
20									* 601	372	571	362
21										574	341	357
22										469	316	351
23										389	296	337
24										331	280	322
25										*1110	267	314
26										*2500	256	313
27										1590	243	308
28										* 741	242	* 392
29										493	241	381
30		-----								405	239	<u>292</u>
31		-----								* 242	-----	292
MEAN										529	943	344
INCHES										.143	.247	.093

NOTES: RECORDS BEGAN SEPT 20, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000008731. TO CONVERT DISCHARGE IN INCHES TO AC-FI, MULTIPLY BY 227.200. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA		WATERSHED 400 NEAR CHICKASHA					
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	.00	3.52	.00	.39	.00	.00	.00	.03	
2	.00	.00	.00	.00	.00	.22	.00	.00	.02	.00	.00	1.11	
3	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00	.00	.00	
4	.13	.00	.00	.08	.08	.02	.00	.07	.82	.00	.00	.00	
5	.00	.00	.00	.07	.00	.86	.00	.00	.00	.56	.00	.00	
6	.00	.00	.00	.11	.00	.05	.00	.00	.03	.00	.28	.00	
7	.00	.00	.00	.00	.00	.37	.00	.00	.50	.00	.03	.00	
8	.00	.00	.00	.00	.00	.04	.00	.00	.19	.00	.00	.00	
9	.00	.00	.00	.00	.00	1.08	.01	.00	.00	.00	.00	.00	
10	.00	.00	.00	1.05	.00	.01	.00	.00	.00	.00	.00	.00	
11	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
14	.08	.28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
15	.00	.14	.00	.00	.00	.01	.01	.00	1.05	.00	.00	.00	
16	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	
17	.00	.00	.00	.00	.00	.00	.01	.00	.00	.20	.28	.00	
18	.00	.00	.00	.00	.00	.22	.01	.00	.00	.01	.00	.00	
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	
20	.00	.05	.63	.00	.05	.00	.00	.00	.86	.28	.00	.00	
21	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
22	.00	.00	.00	.00	.00	.54	.00	.00	.00	.00	.00	.00	
23	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	
24	.00	.00	.08	.09	.13	.00	.39	.02	.00	.00	.00	.11	
25	.09	.02	.00	.00	.35	.37	.27	.00	.16	.00	.00	.05	
26	.00	.00	.00	.01	1.21	.27	.00	.00	.00	.00	.88	.00	
27	.00	.34	.00	1.17	.05	.01	.04	.00	.00	.15	.00	.00	
28	.00	.00	.00	.01	.73	.00	.62	.00	.00	.73	.00	.02	
29	.00	-----	.00	.00	.00	.30	.00	.00	.00	.00	.00	.00	
30	.00	-----	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	
31	.00	-----	.00	-----	.00	-----	.00	1.13	-----	.00	-----	.00	
TOTAL	.34	.83	.71	2.61	2.60	8.05	1.39	1.61	3.90	2.01	1.47	1.32	
STA AV										1.93	2.62	1.14	

NOTES: YEARLY PRECIPITATION 26.84 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 33 GAGES ON THE REACH BETWEEN STATIONS 200 AND 400.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA		WATERSHED 400 NEAR CHICKASHA					
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	294	292	216	176	982	*2070	490	289	153	333	547	366	
2	294	* 281	211	171	688	*4070	438	258	99	314	343	300	
3	292	273	208	* 170	401	1630	378	312	138	297	289	426	
4	294	266	211	169	273	1650	339	949	200	281	264	347	
5	296	259	215	174	248	1550	310	715	267	269	251	354	
6	295	253	213	188	238	*1490	286	492	175	272	245	373	
7	292	248	218	195	187	2050	266	* 359	228	278	247	323	
8	303	246	218	199	231	*2870	252	297	226	* 278	245	287	
9	295	246	* 217	194	153	*3520	237	258	199	283	228	259	
10	274	E 245	213	* 437	276	3020	* 229	225	163	289	224	*240	
11	<u>259</u>	E 243	208	394	177	3770	213	199	* 571	265	225	232	
12	262	E 244	206	362	163	*4610	198	184	418	245	221	220	
13	281	E 245	204	287	153	*4880	186	173	277	230	215	208	
14	285	E 244	200	282	* 145	3170	178	161	204	221	210	208	
15	* 287	E 248	198	263	135	*2200	170	151	224	211	* 209	205	
16	288	E 252	198	225	132	1850	164	141	374	202	209	205	
17	288	E 250	200	204	127	1630	160	133	311	195	205	208	
18	282	E 242	198	193	124	*1740	161	126	280	193	206	208	
19	279	E* 237	196	191	122	1210	168	119	*2430	193	213	202	
20	287	E 239	229	189	119	861	183	116	*3540	199	214	200	
21	291	E 237	* <u>232</u>	178	116	819	200	113	*3720	252	215	207	
22	291	E 231	219	172	113	894	160	* 106	*2030	*1820	217	208	
23	291	E 229	213	171	111	633	145	101	908	E *1560	218	207	
24	291	E 226	203	* 173	107	501	150	94	* 669	767	215	204	
25	291	E 223	199	174	<u>104</u>	<u>474</u>	204	88	564	510	211	204	
26	291	E 219	198	188	111	574	* 214	86	510	402	217	*204	
27	303	E 221	194	218	* 572	711	*1190	84	455	345	* 246	<u>199</u>	
28	<u>312</u>	<u>218</u>	189	* 530	*1930	* 813	<u>1400</u>	82	415	327	239	200	
29	304	-----	185	458	*2760	* 750	762	<u>81</u>	387	338	226	208	
30	299	-----	177	* 948	*2300	597	409	81	359	470	423	207	
31	299	-----	176	-----	*1540	-----	353	84	-----	* 928	-----	199	
MEAN	290	245	205	262	479	1887	329	215	683	412	248	246	
INCHES	.078	.060	.056	.069	.130	.494	.089	.058	.179	.111	.065	.067	

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000008731. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 227,200. YEARLY MEAN DISCHARGE, 457 CFS. YEARLY DISCHARGE, 1.456 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX

LOCATION: WATERSHED — Washita River Watershed above Alex, Okla., Southwest Central Oklahoma and Texas Panhandle; in Grady, Caddo, Canadian, Kiowa, Washita, Custer, Beckham, and Roger Mills Counties, Okla.; and Hemphill, Wheeler, and Gray Counties, Tex.; Washita River, Red River Basin.

GAGING STATION — NW¼ sec. 7, T. 5 N., R. 5 W., lat. 34°55', long. 97°46', 1 mile north of Alex, Okla.; at county road bridge over Washita River at river mile 226.5 approximately 3.8 miles downstream from confluence of Winter Creek.

AREA: 3,064,000 acres (4,787 sq. miles). Local drainage area for reach between Tabler and Alex gaging stations: 50,830 acres (79.4 sq. miles). See composite map on page 69.7-7.

SLOPES:

Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above
Percent of area	30	20	30	10	6	4

1/

SOILS: Residual, derived from sandstone and shale materials. Gently rolling to strongly rolling alluvial terraces and bottom lands. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Stephenville-Cobb Nash-Quinlan loams	40	10	Moderate fine granular	Moderate	Moderate fine subangular blocky	Moderate	28	Moderate	Medium
Reinach-McLain Port-Yahola Norwood silt loams	30	18	Moderate fine granular	Moderate	Moderate medium granular	Moderate	40	Moderate	Medium
Chickasha-Kingfisher silt loams	25	14	Moderate fine granular	Moderate	Moderate fine subangular blocky	Moderate	40	Moderate	Medium
Kirkland-Renfrow silt loams	5	10	Moderate fine granular	Moderate	Strong medium blocky	Very slow	36	Slow	Very slow

EROSION:

Erosion class	1	2	3	4
Percent of area	20	20	30	30

1/

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII
Percent of area	21	10	30	15	3	20	1

1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations in area tributary to reach, in percent are: Alluvium, 17.9; Cloud Chief, 0.0; Rush Springs, 0.0; Marlow, Dog Creek and Blaine, 3.2; and Chickasha, 78.9. See description of hydrogeology and general geology map on pages 69.7-8 and 9.

SURFACE DRAINAGE: Good, length of principal waterway 399 miles.

CHARACTER OF FLOW: Perennial continuous.

INSTRUMENTATION: **Precipitation:** Above Anadarko, Weather Bureau substations exist but no data are presented. Between Anadarko and Chickasha (4th St.), see descriptions for watersheds 200 and 400, pages 69.2-1 and 69.4-1. Between Chickasha (4th St.) and Chickasha (Turnpike) see description for watershed 500 in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1964, USDA Misc. Pub. . . . , p 69.5-1. Between Chickasha (Turnpike) and Tabler see description for watershed 600 in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1963, USDA Misc. Pub. . . . , p 69.6-1. Between Tabler and Alex, 1 Weather Bureau substation plus recording weighing type gages installed on 3-mile square grid. Grid pattern oriented in north northeast direction and consists of approximately 21 gages, all in operation with various time scales, (primarily 24-hr). See footnotes under monthly and daily tables for more specific information. **Runoff:** Staff gage on north pier of bridge, datum 1,000 ft.; all datum m.s. l. elev.; by 1929 adjustment. Stevens A-35 water-level recorder and bubble gage servo-manometer on left bank with 4.8 inch per day time scale. Gage height measured under bridge, datum 1,000 ft. Sandy shifting channel control, very unstable. Low flow current meter measurements made by wading channel. High flow current meter measurements made by crane from upstream side of bridge and from cableway across flood plain. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: Approximately 50% of the cropland is farmed to small grains, alfalfa, and cotton rotation. The remainder is farmed to small grains, cotton, and sorghums. Approximately 90% of the Class III land has structural conservation practices such as terraces, farm ponds, and grassed waterways applied. There are some irrigated farms on the bottomland areas. Moldboard plowing which buries the crop residue is practiced by most farmers of the area. Spring tooth or spike tooth harrows are used to control weeds until the following crops are planted. Fertilizer is applied according to needs shown by soil analysis. There are approximately three farm ponds per sq. mile. The following table shows the land use:

Percent of watershed in										
Cultivation - 55						Pasture or range - 42		Wooded pasture - 1	Miscellaneous - 2	
Percent of cultivated land in						Classification of range site condition based on production		Classification of range site condition based on production	Farmsteads, roads, airports, etc.	
Alfalfa - 20		Sowed crops - 50				Row crops - 30				
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	Good - 16%	Fair - 75%	Good - 36%	Fair - 54%	
4.5	30	40	45	30	290	Poor - 9%		Poor - 10%		
The general practice for good range utilization is 1 animal unit per 10 acres.										

GENERALLY REPRESENTS: Large rivers of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Plains and Central Rolling Red Prairies, land resource areas (H-78 and H-80), with general application to the Cross Timbers land resource area (J-84) of the Southwestern Prairies Cotton and Forage Region.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1961 P 1/ Q										1.97 .150	3.81 .266	1.17 .103				
1962 P 1/ Q	.40 .083	1.02 .073	1.09 .070	2.12 .080	2.67 .131	7.37 .525	2.29 .102	1.06 .063	5.81 .204	2.74 .112	1.45 .070	1.20 .085	29.22 1.598			
STA AV 2/P Q										.131	.168	.094				
MEAN P 3/ 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-20	.0032	9-20	.0032	9-20	.0063	9-20	.019	9-20	.035	9-20	.057	9-20	.097	6-8	.240
MAXIMUMS FOR PERIOD OF RECORD 4/																
1961 TO 1962	9-20 1962	.0032	9-20 1962	.0032	9-20 1962	.0063	9-20 1962	.019	9-20 1962	.035	9-20 1962	.057	9-20 1962	.097	6-8 1962	.240
Notes: Quality of records: P, excellent; Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.7-7 and 9. 1/ Precipitation data based on a Thiessen weighted average of 81 gages on the reach between Chickasha (4th St.) and Alex prior to March 20, 1962; after March, 84 gages on the same reach. 2/ Precipitation records began Oct. 1961, however since the reach lengths reported are not yet fixed, no averages are shown; runoff records began Oct. 1961. 3/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Oct. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Maximum — Sept. 20, 9,750 cfs (16.18 ft). Minimum — Aug. 29, 93 cfs (4.43 ft). PERIOD OF RECORD: Maximum — Sept. 20, 1962, 9,750 cfs (16.18 ft). Minimum — Aug. 29, 1962, 93 cfs (4.43 ft).																
PEAK DISCHARGES: (Above base of 3,000 cfs) 1961, 1962 — Sept. 13, 1961, 5,037 cfs (11.85 ft); Nov. 6, 1961, 4,339 cfs (11.07 ft); June 2, 1962, 6,911 cfs (13.40 ft); June 6, 1962, 5,472 cfs (12.80 ft); Sept. 20, 1962, 9,750 cfs (16.18 ft).																
ABBREVIATED RATING TABLE: 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																
GAGE HEIGHT	Jan. 1 - June 1			June 1 - Oct. 1			Oct. 1 - Dec. 1									
	DISCHARGE			DISCHARGE			DISCHARGE									
2.8	0															
4.0	178															
5.0	419			210			340									
6.0	910			600			680									
7.0	1,640			1,100												
8.0	1,960															
10.0	3,400															
12.0	5,200															
14.0	6,900															
16.0	9,200															

CLIMATOLOGICAL DATA APPLICABLE TO ENTIRE EXPERIMENTAL WATERSHED
(ANADARKO TO ALEX)

1961 DAILY AIR TEMPERATURE (degrees F)												CHICKASHA, OKLAHOMA												CHICKASHA EXPERIMENT STATION											
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC												
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN											
1	49	22	50	34	64	27	63	30	80	58	91	70	89	67	94	74	94	74	68	43	72	55	67	40											
2	45	25	59	30	73	41	73	40	69	37	91	71	89	69	94	70	94	74	68	49	72	52	58	40											
3	48	21	52	19	81	52	73	50	69	59	85	63	86	63	91	72	93	60	68	39	52	28	67	45											
4	54	29	42	24	81	59	80	42	76	57	81	62	89	61	92	70	65	54	68	47	59	33	67	48											
5	51	32	42	29	79	50	80	42	82	57	83	62	92	71	95	68	82	55	65	48	59	34	50	34											
6	51	23	30	25	78	35	59	33	83	54	83	64	95	72	94	67	87	62	72	51	43	30	50	31											
7	45	30	32	24	74	43	63	45	83	68	81	62	95	70	88	66	87	69	76	56	59	28	47	34											
8	45	26	34	20	65	37	63	40	83	54	82	65	85	68	93	65	86	70	86	63	52	28	47	34											
9	50	18	47	18	59	27	51	38	75	44	87	63	85	72	93	70	86	69	76	64	65	33	48	36											
10	57	29	64	27	67	33	65	31	75	50	87	64	83	54	91	73	87	66	75	64	64	45	44	20											
11	56	24	77	38	73	42	73	38	82	57	88	65	83	60	91	74	87	70	85	47	69	51	22	19											
12	55	29	79	46	74	43	70	30	85	61	88	68	85	67	91	69	86	71	86	66	71	51	20	8											
13	55	31	69	43	66	40	75	34	85	65	84	73	89	63	88	72	71	59	81	62	71	40	30	6											
14	52	36	68	30	77	30	75	47	83	57	83	64	89	65	88	70	66	47	72	47	44	38	41	26											
15	54	26	68	37	79	53	69	37	75	44	79	64	84	72	85	70	70	45	73	44	48	43	38	30											
16	59	24	72	46	79	46	59	28	80	48	71	60	94	70	86	70	74	49	73	48	45	37	45	31											
17	61	29	72	54	65	44	68	40	85	67	70	59	92	65	87	69	74	52	73	49	45	25	44	31											
18	61	26	72	28	46	32	80	41	85	64	70	60	94	79	87	68	76	52	73	49	48	35	38	33											
19	49	24	52	26	46	36	87	60	79	65	79	64	94	73	87	70	76	54	70	40	48	35	38	26											
20	46	18	43	34	40	30	88	69	79	61	80	59	94	72	85	67	79	59	68	36	50	34	50	21											
21	42	8	41	37	59	30	88	69	87	65	85	52	92	67	85	62	85	69	72	49	51	45	59	25											
22	54	25	59	40	60	35	86	65	87	58	93	63	81	67	81	64	85	70	77	52	51	41	51	39											
23	64	22	56	42	65	32	86	67	77	55	89	67	87	67	69	56	86	72	77	52	67	28	39	29											
24	49	15	50	31	70	40	86	65	73	56	79	57	89	71	82	53	86	62	80	44	65	34	40	20											
25	24	13	70	26	70	52	86	53	80	60	82	67	89	72	80	69	67	47	80	53	69	49	61	27											
26	27	14	66	41	79	51	67	41	80	55	82	64	90	69	87	59	82	52	62	31	73	53	56	35											
27	27	13	63	36	76	43	77	37	74	40	87	65	91	69	88	60	82	62	67	45	62	37	41	25											
28	33	12	55	22	69	45	76	50	82	55	91	71	91	70	90	63	69	56	75	65	37	36	36	21											
29	42	14	---	---	69	39	87	41	90	60	91	70	91	69	90	62	84	63	75	68	37	25	40	16											
30	56	20	---	---	42	38	81	63	90	65	91	71	90	70	88	64	84	59	72	54	51	37	56	19											
31	56	26	---	---	53	36	---	---	90	65	---	---	89	71	89	65	---	---	62	53	---	---	48	29											
AV.	49	23	57	32	67	40	74	46	81	57	84	64	89	68	88	67	81	61	74	51	57	38	46	28											
MEAN	35.8		44.5		53.6		59.8		68.8		74.0		78.7		77.4		70.9		62.2		47.3		37.4												
STA AV	50	26	56	31	63	36	75	48	81	58	90	67	94	70	94	69	87	61	75	50	62	36	53	29											

NOTES: TEMPERATURE DATA ARE BASED ON CHICKASHA EXPERIMENT STATION RECORDS PUBLISHED IN U. S. WEATHER BUREAU CLIMATOLOGICAL DATA FOR OKLAHOMA, VOL. 70. STATION AVERAGE BASED ON RECORDS FROM JUNE 1953 THROUGH DEC. 1961.

1961 MONTHLY EVAPORATION AND WIND

MONTH	EVAPORATION (INCHES)	TOTAL WIND (MILES)
APRIL	8.05	3588
MAY	8.38	3017
JUNE	8.86	1647
JULY	10.29	754
AUGUST	7.79	---
SEPTEMBER	6.90	---
OCTOBER	5.37	---

EVAPORATION DATA ARE BASED ON CHICKASHA EXPERIMENT STATION RECORDS PUBLISHED IN U. S. WEATHER BUREAU CLIMATOLOGICAL DATA FOR OKLAHOMA, VOL. 70.

CLIMATOLOGICAL DATA APPLICABLE TO ENTIRE EXPERIMENTAL WATERSHED
(ANADARKO TO ALEX)

1962 DAILY AIR TEMPERATURE (degrees F)												CHICKASHA, OKLAHOMA CHICKASHA EXPERIMENT STATION												
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	44	20	66	29	35	10	63	40	71	44	83	61	86	69	88	68	85	68	67	46	65	43	62	54
2	55	22	67	27	51	20	55	24	73	42	71	61	87	70	86	69	85	65	64	46	60	39	59	47
3	65	27	74	30	66	30	61	39	81	52	72	59	91	74	91	69	89	69	74	46	52	36	64	48
4	65	48	76	44	66	25	61	47	83	60	85	59	92	74	91	74	89	63	83	57	70	29	60	42
5	55	23	76	30	55	25	55	47	87	63	87	67	93	71	97	75	64	57	80	69	66	37	48	32
6	34	10	42	15	51	22	55	47	90	58	87	63	94	70	97	77	70	61	85	68	75	38	60	25
7	47	29	56	25	61	36	63	37	90	60	83	65	94	70	100	73	70	61	85	65	71	48	56	36
8	42	26	64	27	61	47	62	48	90	63	82	62	95	71	98	70	83	64	82	52	55	34	54	28
9	34	12	64	32	59	28	62	40	87	61	82	61	95	75	98	70	83	54	82	59	67	33	49	28
10	13	5	65	28	70	45	62	47	87	66	83	68	95	75	99	71	77	51	82	66	71	32	61	23
11	24	2	81	43	70	43	58	47	87	65	83	65	95	72	101	72	86	55	88	70	66	36	52	19
12	39	11	81	54	53	28	59	34	87	65	84	65	95	73	101	68	91	77	88	72	65	38	25	14
13	48	26	81	53	52	27	77	35	87	67	84	63	96	73	95	65	91	73	83	70	71	29	52	20
14	48	25	74	44	46	20	77	48	85	65	83	61	95	73	92	60	92	71	83	67	72	41	62	24
15	41	16	68	45	55	23	76	44	83	68	83	67	92	79	93	62	92	66	83	68	69	57	63	32
16	37	24	63	30	67	21	68	35	83	70	87	69	95	66	93	59	84	64	87	60	65	41	68	28
17	42	19	63	45	67	34	70	54	82	69	89	71	90	68	93	59	86	66	67	56	44	36	68	33
18	42	19	59	29	67	56	80	47	82	70	89	68	90	69	103	66	86	65	68	56	39	35	65	38
19	19	7	55	23	72	58	83	45	86	69	88	71	91	67	95	69	86	65	71	62	49	36	71	49
20	20	4	55	37	72	56	85	61	85	66	92	65	95	71	95	69	86	55	71	56	57	29	63	41
21	40	18	58	48	66	39	85	62	87	66	92	68	95	67	95	69	80	55	76	42	72	31	49	37
22	20	10	58	25	65	42	80	57	90	69	91	65	97	68	95	70	83	55	87	45	63	32	61	28
23	38	11	67	40	72	42	60	50	92	52	92	66	92	75	104	73	83	61	64	50	63	45	54	21
24	61	28	61	26	72	52	65	55	92	69	92	71	86	70	94	69	82	62	70	46	60	48	34	27
25	51	37	41	30	56	45	76	51	88	69	89	66	82	70	85	59	77	65	58	34	62	42	36	28
26	47	39	41	22	69	33	76	52	88	65	84	67	84	67	87	48	78	50	76	35	57	43	33	16
27	51	30	26	13	41	37	75	57	85	69	85	69	84	70	89	49	82	54	80	52	55	50	47	20
28	56	23	26	9	81	58	76	53	84	65	85	67	82	74	92	60	81	52	62	58	55	49	46	32
29	68	24	---	---	81	45	86	62	83	61	83	65	90	70	92	69	74	59	62	45	65	45	46	33
30	68	30	---	---	52	38	86	56	87	62	85	67	90	74	93	66	74	61	71	35	62	46	45	21
31	68	26	---	---	63	28	---	---	87	69	---	---	88	70	93	67	---	---	66	34	---	---	58	21
AV.	45	21	61	32	63	36	70	47	86	63	85	65	91	71	94	67	82	62	76	54	62	39	54	30
MEAN	32.8		46.7		49.4		58.6		74.4		75.3		81.2		80.6		71.9		65.0		50.7		42.2	
STA AV	49	26	56	31	63	36	74	48	81	59	90	67	94	70	94	69	87	61	76	50	62	36	53	29

NOTES: TEMPERATURE DATA ARE BASED ON CHICKASHA EXPERIMENT STATION RECORDS PUBLISHED IN U. S. WEATHER BUREAU CLIMATOLOGICAL DATA FOR OKLAHOMA, VOL. 71. STATION AVERAGE BASED ON RECORDS FROM JUNE 1953 THROUGH DEC. 1962.

1962 MONTHLY EVAPORATION AND WIND

MONTH	EVAPORATION (INCHES)	TOTAL WIND (MILES)
APRIL	5.99	3017
MAY	13.40	4631
JUNE	8.31	2248
JULY	9.49	1776
AUGUST	10.12	1600
SEPTEMBER	6.17	1730
OCTOBER	5.13	2363
NOVEMBER	3.47	2188

EVAPORATION DATA ARE BASED ON CHICKASHA EXPERIMENT STATION RECORDS PUBLISHED IN U. S. WEATHER BUREAU CLIMATOLOGICAL DATA FOR OKLAHOMA, VOL. 71.

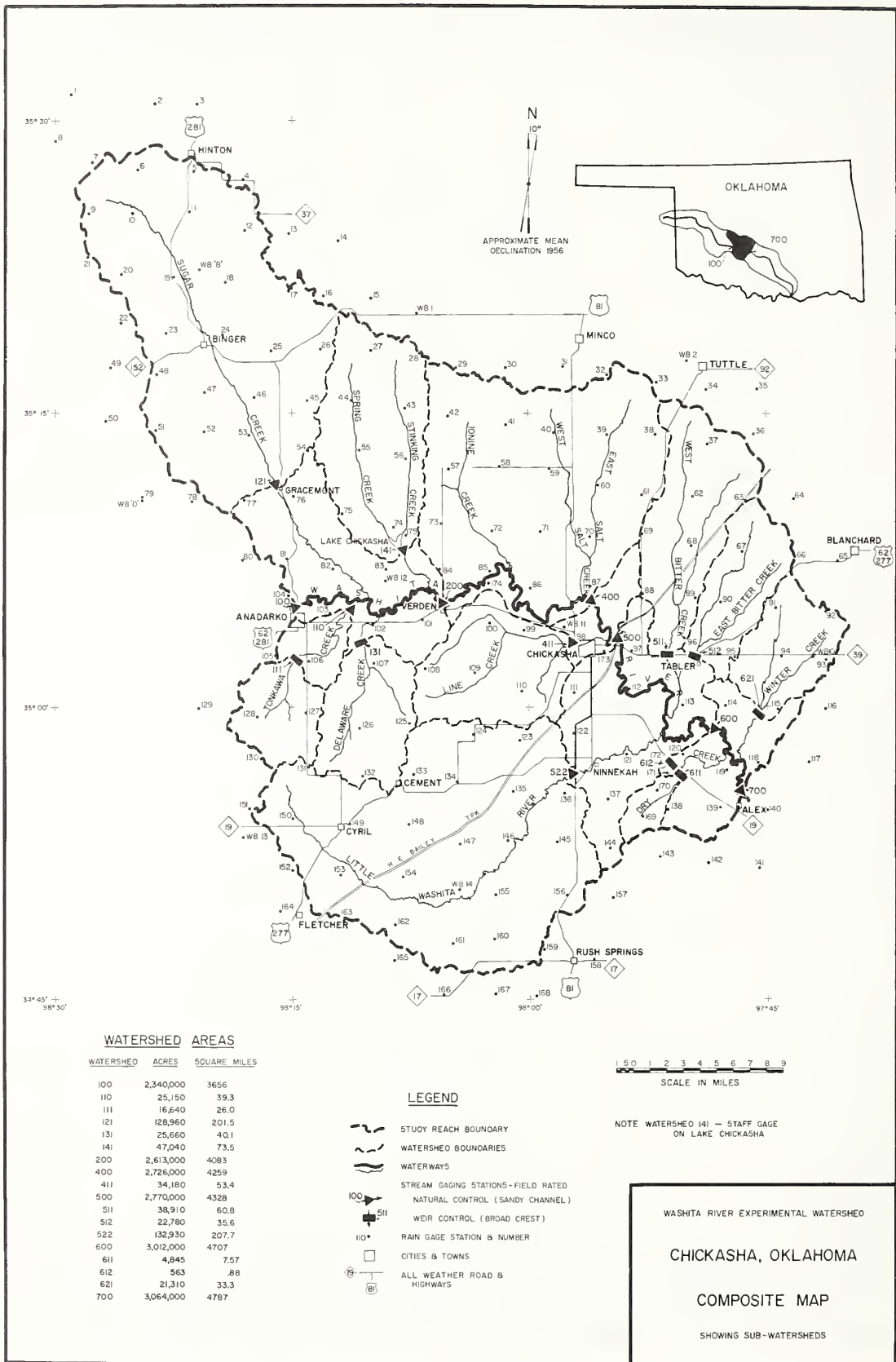
1961 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										.00	.98	.00
2										.12	1.07	.00
3										.00	.00	.00
4										.00	.00	.08
5										.00	.00	.00
6										.00	.00	.00
7										.00	.00	.00
8										.00	.00	.54
9										1.13	.00	.00
10										.42	.01	.00
11										.00	.00	.00
12										.00	.00	.00
13										.06	.07	.00
14										.00	.05	.00
15										.00	.84	.00
16										.00	.06	.51
17										.00	.00	.04
18										.00	.00	.00
19										.00	.00	.00
20										.00	.00	.00
21										.00	.51	.00
22										.00	.22	.00
23										.00	.00	.00
24										.00	.00	.00
25										.00	.00	.00
26										.00	.00	.00
27										.00	.00	.00
28										.00	.00	.00
29										.06	.00	.00
30										.11	.00	.00
31										.07		.00
TOTAL										1.97	3.81	1.17
STAAV												
NOTES: RECORDS BEGAN OCT 1, 1961. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 81 GAGES ON THE REACH BETWEEN STATION 400 AND 700.												
1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										514	<u>381</u>	405
2										* 502	*2170	449
3										375	*2340	474
4										355	*2450	396
5										325	*3390	*412
6										* 305	*4160	401
7										280	*2880	395
8										<u>260</u>	1530	398
9										282	*1000	407
10										713	793	408
11										612	709	392
12										*1010	669	387
13										*4390	*2570	621
14										*3470	*1780	563
15										*4540	* 935	650
16										*4310	*1730	*1020
17										*2110	1250	715
18										*1130	725	722
19										865	* 607	900
20										* 709	514	736
21										748	455	706
22										627	423	834
23										495	386	711
24										401	349	638
25										* 462	* 319	577
26										*2000	296	538
27										*2250	284	508
28										*1280	281	* 474
29										748	280	438
30										620	279	407
31											273	
MEAN										622	1141	426
INCHES										.150	.266	.103
NOTES: RECORDS BEGAN SEPT 13, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000007768. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 255,300. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	2.34	.00	.24	.00	.00	.00	.03
2	.00	.00	.00	.00	.00	.19	.00	.00	.01	.00	.00	.91
3	.00	.00	.00	.00	.00	.06	.00	.00	.01	.00	.00	.00
4	.14	.00	.00	.08	.08	.08	.00	.03	.78	.00	.00	.00
5	.00	.00	.00	.13	.00	.93	.00	.00	.00	.68	.00	.00
6	.00	.00	.00	.03	.00	.06	.00	.00	.23	.02	.28	.00
7	.00	.00	.00	.00	.00	.59	.00	.00	.44	.00	.08	.00
8	.00	.00	.00	.00	.00	.16	.00	.00	.15	.00	.00	.00
9	.00	.00	.00	.00	.00	1.05	.02	.00	.00	.00	.00	.00
10	.00	.00	.01	.20	.00	.01	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
14	.11	.14	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
15	.00	.23	.00	.00	.00	.01	.00	.00	1.38	.00	.01	.00
16	.00	.00	.00	.00	.00	.00	.01	.00	.02	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.01	.00	.00	.09	.28	.00
18	.00	.00	.00	.00	.00	.33	.06	.00	.00	.03	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.01
20	.00	.21	<u>1.97</u>	.00	.13	.00	.24	.00	2.54	.20	.00	.06
21	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.02	.00	.24	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.06	.00	.00	.04	.00	.00	.00	.00	.00
24	.00	.00	.10	.33	.12	.01	.14	.06	.01	.00	.00	.13
25	.07	.02	.01	.00	.21	.51	1.48	.00	.24	.00	.00	.04
26	.03	.00	.00	.10	1.44	.05	.00	.00	.00	.00	.80	.00
27	.00	.42	.00	1.15	.01	.02	.01	.00	.00	.50	.00	.00
28	.00	.00	.00	.02	.68	.01	.24	.00	.00	1.17	.00	.02
29	.00	-----	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.70	-----	.00	-----	.00
TOTAL	.40	1.02	1.09	2.12	2.67	7.37	2.29	1.06	5.81	2.74	1.45	1.20

NOTES: YEARLY PRECIPITATION 29.22 INCHES. 1/INSTALLATION OF ADDITIONAL GAGES ON REACH COMPLETED. PRECIPITATION VALUES FOR PERIOD JAN 1, 1962 TO MAR 19, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 81 GAGES ON THE REACH BETWEEN STATIONS 400 AND 700. PRECIPITATION VALUES FOR PERIOD MAR 20, 1962 TO DEC 31, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 84 GAGES ON THE REACH BETWEEN STATIONS 600 AND 700.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	352	<u>401</u>	312	239	* 963	1990	643	497	334	395	* <u>829</u>	540
2	344	392	329	235	768	*5940	593	453	225	389	472	445
3	* 340	377	325	236	* 550	*3040	558	411	133	362	412	830
4	341	362	313	* 236	442	*1710	516	624	160	345	355	730
5	338	354	296	252	374	1760	491	<u>818</u>	378	335	310	765
6	334	352	285	267	338	*3230	468	* 676	* 345	370	290	480
7	337	354	290	277	314	2140 E	428	578	238	340	348	470
8	357	354	* 294	274	274	*3050	381	489	340	335	322	380
9	351	347	295	276	275	*4500	* 347	406	305	* 330	280	330
10	336	336	288	305	217	3720	311	331	* 249	332	255	*300
11	314	326	276	* 594	326	*3680	291	284	290	338	252	290
12	311	* 322	271	468	220	*4220	254	240	* 585	315	245	280
13	311	316	269	* 441	199	*4850	217	212	497	295	243	275
14	311	310	267	367	186	4090	204	194	387	275	* 241	275
15	311	320	268	354	175	*2760	229	167	581	267	239	273
16	311	379	265	327	166	2250	170	146	* 630	256	239	272
17	311	374	262	295	164	1820	164	137	509	<u>248</u>	239	270
18	311	349	259	279	* 159	*1960	153	126	410	249	241	260
19	286	316	* 260	267	155	1670	159	119	*1160	255	245	260
20	<u>249</u>	309	368	259	151	1260	165	118	*5450	265	248	270
21	249	321	* <u>425</u>	251	* 151	969	208	112	*4670	265	243	268
22	314	304	328	245	149	846	206	* 106	*3210	* 752	240	265
23	374	* 298	306	246	139	766	150	104	*1270	*1870	240	<u>258</u>
24	389	293	286	269	<u>134</u>	<u>619</u>	* <u>139</u>	98	807	1060	242	258
25	404	294	281	283	138	627	* 688	91	643	582	<u>238</u>	265
26	* 420	298	277	265	150	626	466	87	566	* 500	286	*261
27	452	292	267	* 408	* 743	714	536	85	525	444	* 339	268
28	<u>460</u>	<u>288</u>	259	* <u>749</u>	*1240	* 756	*1520	81	490	895	298	268
29	425	-----	252	605	*2680	1170	1320	<u>80</u>	444	509	260	270
30	403	-----	246	* 749	*2750	803	* 659	81	430	445	262	270
31	401	-----	<u>244</u>	-----	*2130	-----	533	193	-----	810	-----	268
MEAN	347	334	289	344	543	2251	425	263	875	465	298	352
INCHES	<u>.082</u>	.073	.070	.080	.131	.525	.102	.063	.204	.112	.070	.085

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00000768. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 255,300. YEARLY MEAN DISCHARGE, 563 CFS. YEARLY DISCHARGE, 1,598 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

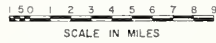


WATERSHED AREAS

WATERSHED	ACRES	SQUARE MILES
100	2,340,000	3656
110	25,150	39.3
111	16,640	26.0
121	128,960	201.5
131	25,660	40.1
141	47,040	73.5
200	2,613,000	4083
400	2,726,000	4259
411	34,180	53.4
500	2,770,000	4328
511	38,910	60.8
512	22,780	35.6
522	132,930	207.7
600	3,012,000	4707
611	4,845	7.57
612	563	.88
621	21,310	33.3
700	3,064,000	4787

LEGEND

- STUDY REACH BOUNDARY
- WATERSHED BOUNDARIES
- WATERWAYS
- STREAM GAGING STATIONS - FIELD RATED
- NATURAL CONTROL (SANDY CHANNEL)
- WEIR CONTROL (BROAD CREST)
- RAIN GAGE STATION & NUMBER
- CITIES & TOWNS
- ALL WEATHER ROAD & HIGHWAYS



NOTE WATERSHED 141 - STAFF GAGE ON LAKE CHICKASHA

WASHITA RIVER EXPERIMENTAL WATERSHED
CHICKASHA, OKLAHOMA
COMPOSITE MAP
 SHOWING SUB-WATERSHEDS

HYDROGEOLOGY OF THE WASHITA EXPERIMENTAL WATERSHED

Ground water and the related geology have an important influence on both the quantity and quality of stream water in the study area. The character, the magnitude, and the areal and depth distribution of the hydrogeologic influences that affect stream conditions are described in the following text, tables, geologic map and section.

Stratigraphy of experimental watershed:

System	Group	Formation (map symbol)	Approximate thickness (feet)	Description
Quarternary		Alluvium and terrace deposits (Qat)	0-100	Silt, clay, fine sand, and some gravel. Unconsolidated deposits in Washita and tributary valleys. Maximum well yield about 200 gpm. Water generally very hard; relatively soft water (less than 400 ppm total hardness) occurs in upper terrace along Washita; in extreme upper end of tributary valleys near Rush Springs formation; and in East Bitter and Winter Greek valleys.
	Permian	White Horse	Gloud Chief (Pcc)	0-25
Rush Springs sandstone (Prs)			0-200	Fine-grained sandstone; cross-bedded and even-bedded. Most important aquifer in area; supplies as much as 500 gpm to irrigation wells. In most areas provides relatively soft, potable water.
Marlow (upper part of Pmdb)			0-100	Shale, siltstone, fine-grained sandstone; gypsiferous. Verden sandstone member, near the middle, forms cap rock of buttes and small hills. Contains very little, highly mineralized water.
El Reno		Dog Creek shale and Blaine (lower part of Pmdb)	0-200	Shale, interbedded with some gypsum and fine-grained gypsiferous sandstone. Contains small amount of water. Water from gypsiferous zones is highly mineralized.
	Chickasha (Pc)	100-250	Mixture of cross-bedded shales, siltstones, sandstones, and conglomerates. Contains moderate amount of water (wells yield as much as 50 gpm). Water locally may be highly mineralized but generally is of better quality than water in other formations, except Rush Springs and certain alluvial deposits.	

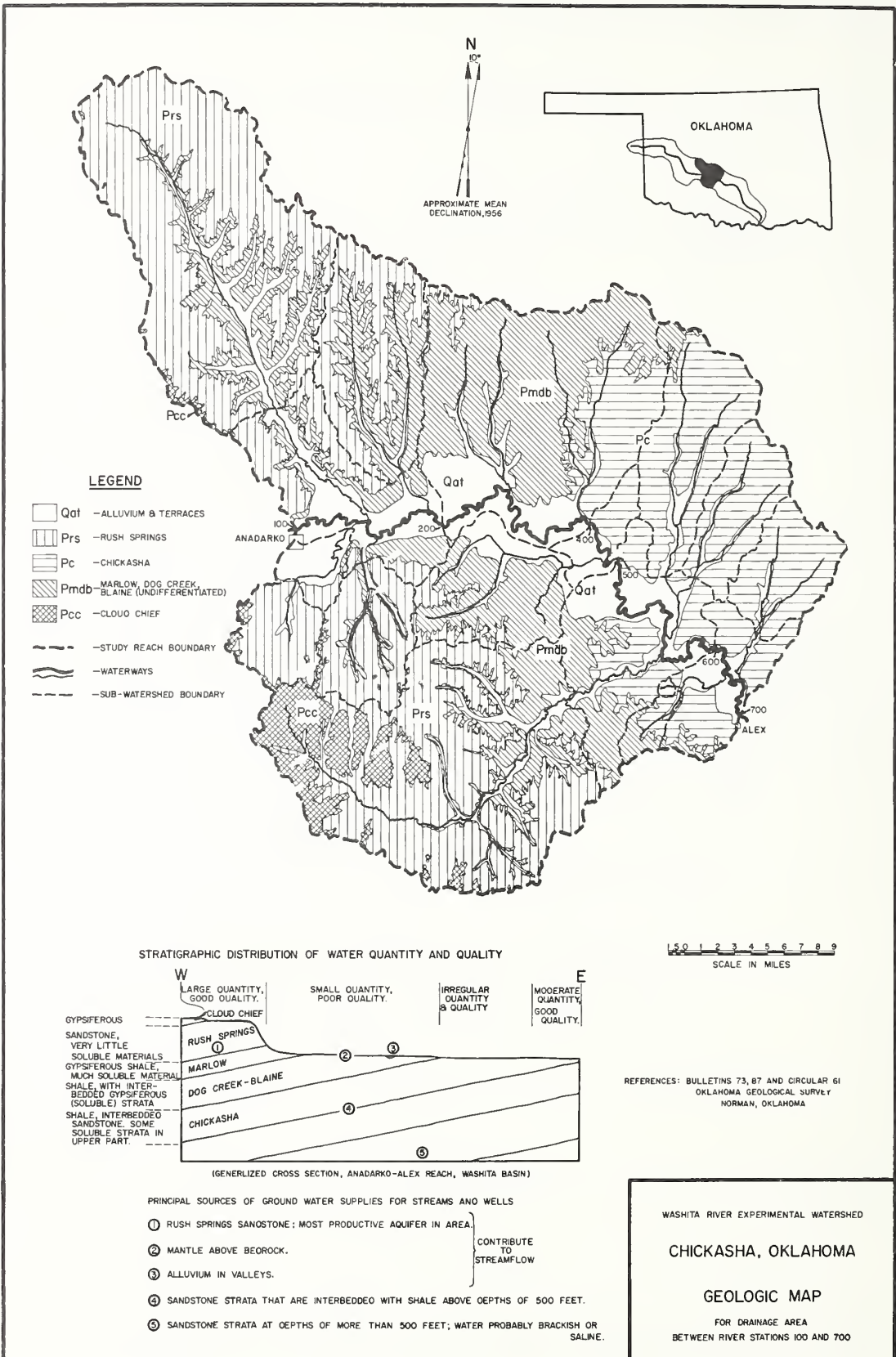
Structure of experimental watershed:

The axis of the north-west-plunging Anadarko syncline bisects the area. Generally, in the northern part, the rocks dip to the southwest and in the southern part, they dip to the north. Some jointing but no faulting has been observed. Available information indicates that surface-water and ground-water divides around reach nearly coincide; apparently there are no appreciable ground-water flows into or out of reach except as underflow through Washita valley alluvium.

Geology within experimental watershed between main-stem gaging stations:

Station location and number (intervening drainage area)	Percent of drainage area underlain by formation				
	Alluvium and terrace deposits	Gloud Chief	Rush Springs	Marlow, Dog Creek, and Blaine	Chickasha
Anadarko 100 (426.3 sq mi)	14.4	1.4	61.7	22.5	0.0
Verden 200 (176.4 sq mi)	21.1	0.0	2.0	57.3	19.6
Chickasha 400 (4th St.) (68.5 sq mi)	28.7	0.0	13.0	47.1	11.2
Chickasha 500 (TpK.) (379.8 sq mi)	13.4	11.5	29.7	16.7	28.7
Tabler 600 (79.4 sq mi)	17.9	0.0	0.0	3.2	78.9
Alex 700					

References: Oklahoma Geological Survey, Norman, Oklahoma, Bulletins 73, 87, and Circular 61.



CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX

LOCATION: WATERSHED — Big Dry Creek Watershed above State Road 19 bridge in Grady County, Okla.; tributary to Washita River; Red River Basin.

GAGING STATION — SW $\frac{1}{2}$ sec. 33, T. 6 N., R. 6 W., lat. 35°57', long. 97°51', 4- $\frac{1}{2}$ miles northwest of Alex, Okla.; at State Road 19 bridge over Big Dry Creek.

AREA: 4,845 acres (7.57 sq. miles).

SLOPES:

Slope — Percent	0-1	1-3	3-5	5-8	1/
Percent of area	10	12	28	50	

SOILS: Residual, derived from shale and sandstone materials. These are moderately deep and shallow, gently rolling to steep rolling, and alluvium soils. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Nash-Quinlan loams	50	8	Weak fine granular	Moderate	Weak very fine subangular blocky	Moderate	28	Slow	Medium
Chickasha Zaneis silt loams	28	14	Moderate fine granular	Moderate	Moderate fine subangular blocky	Moderate	36	Moderate	Medium
Norwood-Yahola silt loams	22	18	Moderate fine granular	Moderate	Moderate medium granular	Moderate	40	Rapid	Medium

EROSION:

Erosion class	1	2	3	4	1/
Percent of area	7	10	45	38	

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII	1/
Percent of area	10	2	30	10		48		

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area, in percent are: Alluvium, 4; Chickasha formation, 38; and Dog Creek-Blaine, 58. For a distance of 1- $\frac{1}{2}$ miles above the gaging station, Dry Creek shares its alluvial valley with a parallel flowing tributary stream. Within this reach these two streams also share a common water table; as a result there may be some interchange of water between these two streams, through intervening aquifers. See description of hydrogeology and the general geology map, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87, and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 5.9 miles. The channel is one of two constructed channels with a common levee, which carry flows through the same valley, each draining the slopes on its side.

CHARACTER OF FLOW: Intermittent, continuous.

INSTRUMENTATION: **Precipitation:** Seven recording weighing type gages, 3 of which are installed on a 3-mile square grid and 4 of which are located specifically for Dry Creek. Grid pattern oriented in north-northeast direction. All gages are in operation, with various time scales (primarily 24-hr.). See footnotes under monthly and daily tables for more specific information. **Runoff:** Staff gage, datum 1,050.98 ft.; all datum m.s.l. elev.; by 1929 adjustment. Stevens A-35 recorder in 30-inch well on right bank, with 9.6 in. per day time scale, datum 1,050.98 ft. Control, prior to June 20, 1963, sandy channel; after June 20, 1963, 5 to 1 V-notch weir installed between wing walls on upstream side of culvert. Low flow current meter measurements made by wading channel; high flow measurements made by crane from upstream side of culvert. Ratings defined by current meter measurements and model study.

WATERSHED CONDITIONS: A rotation of small grains, alfalfa, and cotton are grown on the bottomland areas comprising approximately 16% of the drainage area. The rest of the cultivated area is farmed to broomcorn, cotton, and sorghums. Most of the row crops are followed by winter cover crops. Farmers in the area use moldboard plows which bury crop residue. Weeds are controlled by surface tillage with spring-tooth or spike-tooth harrows prior to the planting of the following crops. Fertilization is based on recommendations made from soil tests. There are very few structural conservation measures such as farm ponds or grassed waterways applied. Farm ponds will average about 2 per sq. mile. The following table shows the land use:

Percent of watershed in									
Cultivation - 22					Pasture or range - 72		Wooded pasture - 5		Miscellaneous - 1
Percent of cultivated land in					Classification of range site condition based on production		Classification of range site condition based on production		Farmsteads, roads, airports, etc.
Alfalfa - 15	Sowed crops - 65			Row crops - 20		Good - 10% Fair - 75% Poor - 15%	Fair - 75% Poor - 20%		
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac				
4.7	28	35	35	30	250	The general practice for good range utilization is 1 animal unit per 15 acres.			

GENERALLY REPRESENTS: Pastures of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1961 P <u>1</u> / Q										2.21	3.58	1.28 .343				
1962 P <u>1</u> / Q	.39 .246	.92 .247	1.31 .217	1.61 .271	2.30 .085	6.05 .525	2.49 .131	.76 .071	4.45 .114	3.58 .236	1.43 .063	1.36 .126 1.32 .234	26.65 2.332			
STA AV <u>2</u> / Q										2.90	2.50					
MEAN P <u>3</u> / 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	10-28	.0959	10-28	.0772	10-28	.1110	6-9	.159	10-28	.180	10-28	.194	6-7	.237	6-1	.411
MAXIMUMS FOR PERIOD OF RECORD <u>4</u>																
1961 TO 1962	10-28 1962	.0959	10-28 1962	.0772	10-28 1962	.1110	6-9 1962	.159	10-28 1962	.180	10-28 1962	.194	6-7 1962	.237	6-1 1962	.411
Notes: Quality of records: P, excellent; Q, good. Watershed conditions same as that described on previous page under <u>WATERSHED CONDITIONS</u> . For maps see pp. 69.8-5 and 69.7-7 and 9. <u>1</u> / Precipitation data obtained from a Thiessen weighted average of 5 gages on the watershed prior to Mar. 20, 1962, and 7 gages on the watershed after Mar. 20, 1962. <u>2</u> / Precipitation records began Oct. 1961; runoff records began Dec. 1961. <u>3</u> / Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. <u>4</u> / Period of record began Dec. 1961.																
MISCELLANEOUS DATA																
<u>RUNOFF PEAK DATA</u> : YEAR (1962): Maximum — Oct. 29, 469 cfs (2.22 ft). Minimum — no flow at times.																
PERIOD OF RECORD: Maximum — Oct. 29, 1962, 469 cfs (2.22 ft). Minimum — no flow at times.																
PEAK DISCHARGES: (Above base of 250 cfs) 1962 — June 6, 297 cfs (1.85 ft); July 16, 267 cfs (1.77 ft); Oct. 29, 469 cfs (2.22 ft).																
<u>ABBREVIATED RATING TABLE</u> : 1961 and 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																
<u>GAGE HEIGHT</u>								<u>DISCHARGE</u>								
0.12								0								
0.50								21.5								
1.00								83.6								
1.50								187								
2.00								356								
2.50								638								
3.00								996								

1961 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										.00	.77	.00
2										.18	1.16	.00
3										.00	.00	.00
4										.00	.00	.06
5										.00	.00	.00
6										.00	.00	.00
7										.00	.00	.00
8										.00	.00	.48
9										1.15	.00	.00
10										.62	.00	.00
11										.00	.00	.00
12										.00	.00	.00
13										.04	.00	.00
14										.00	.00	.00
15										.00	.87	.00
16										.00	.00	.69
17										.00	.00	.05
18										.00	.00	.00
19										.00	.00	.00
20										.00	.00	.00
21										.00	.52	.00
22										.00	.26	.00
23										.00	.00	.00
24										.00	.00	.00
25										.00	.00	.00
26										.00	.00	.00
27										.00	.00	.00
28										.00	.00	.00
29		-----								.08	.00	.00
30		-----								.01	.00	.00
31		-----		-----		-----			-----	.13	-----	.00
TOTAL										2.21	3.58	1.28
STAAV												

NOTES: RECORDS BEGAN OCT 1, 1961. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 7 GAGES ON THE WATERSHED.

1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												1.8
2												1.8
3												1.8
4												1.8
5												1.7
6												<u>1.5</u>
7												1.7
8												1.8
9												1.8
10												1.8
11												2.0
12												2.0
13												1.8
14											2.2	1.7
15											* 10	1.7
16											2.2	<u>1.6</u>
17											2.2	3.1
18											2.2	1.8
19											2.2	1.7
20											2.2	1.5
21											* 4.5	1.5
22											* 6.4	1.5
23											2.7	1.7
24											1.8	1.8
25											1.8	1.8
26											1.8	1.8
27											1.8	1.8
28											1.8	1.8
29		-----									1.8	1.8
30		-----									1.8	1.8
31		-----		-----		-----			-----		-----	1.8
MEAN												2.3
INCHES												.343

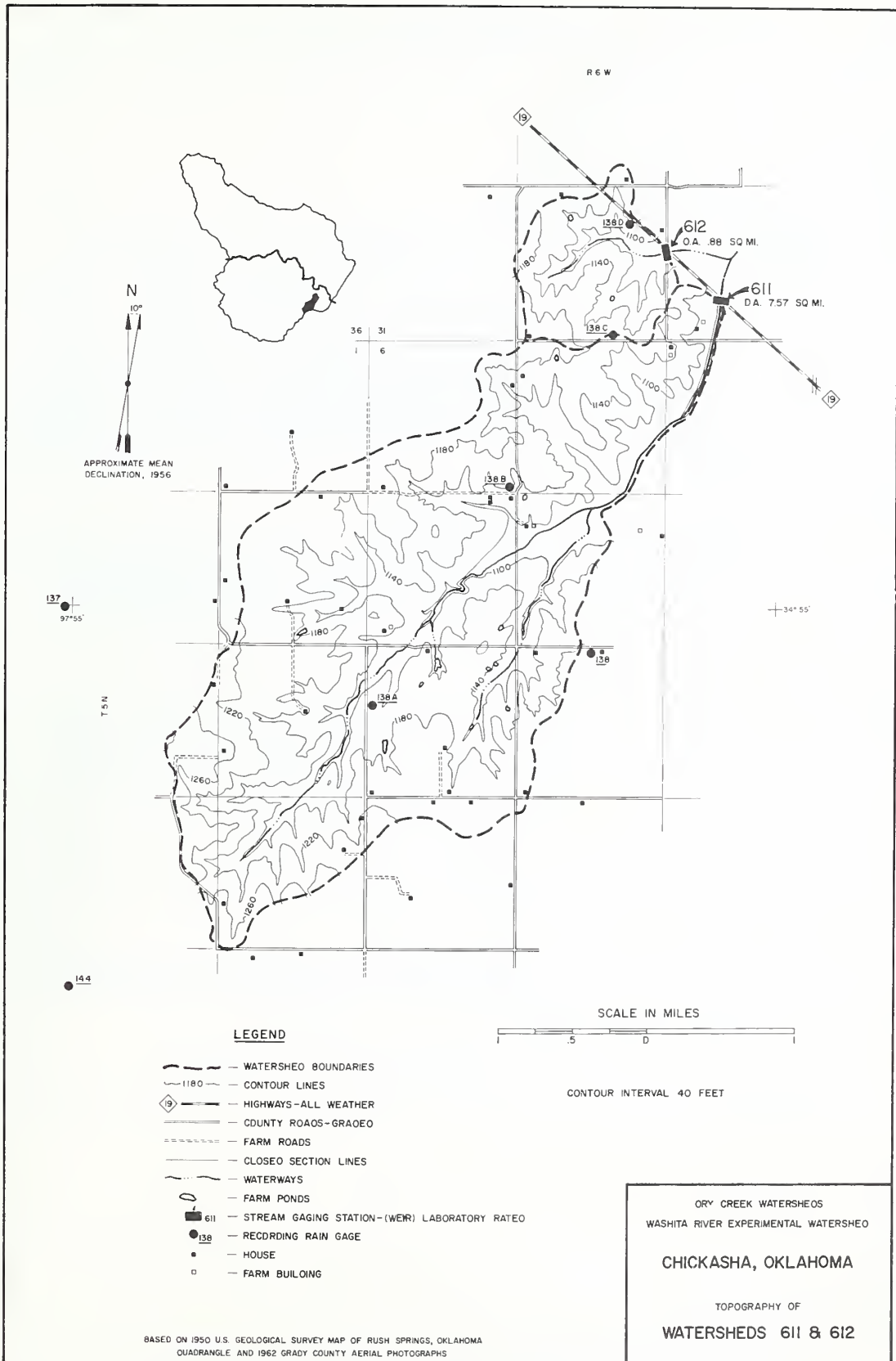
NOTES: RECORDS BEGAN NOV 14, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .004913. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 403.7. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1962 DAILY PRECIPITATION (inches)					CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	2.31	.00	.19	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00	.00	.95
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.14	.00	.00	.04	.08	.03	.00	.00	.06	.00	.00	.00
5	.00	.00	.00	.18	.00	.28	.00	.00	.00	.69	.00	.00
6	.00	.00	.00	.00	.00	.04	.00	.00	.38	.00	.19	.00
7	.00	.00	.00	.00	.00	.39	.00	.00	.31	.00	.22	.00
8	.00	.00	.00	.00	.00	.13	.00	.00	.02	.00	.00	.00
9	.00	.00	.00	.00	.00	1.38	.00	.00	.00	.00	.00	.00
10	.00	.00	.05	.11	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
14	.04	.06	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
15	.00	.21	.00	.00	.00	.00	.00	.00	1.15	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.27	.00
18	.00	.00	.00	.00	.00	.27	.30	.00	.00	.01	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
20	.00	.17	<u>1.08</u>	.00	.19	.00	.02	.00	2.20	.04	.00	.23
21	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.07	.00	.13	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.18	.33	.00	.06	.08	.12	.02	.00	.00	.13
25	.06	.03	.00	.00	.12	.13	1.83	.00	.28	.00	.00	.03
26	.09	.00	.00	.02	1.26	.16	.00	.00	.00	.00	.75	.00
27	.00	.45	.00	.81	.00	.01	.01	.00	.00	1.28	.00	.00
28	.00	.00	.00	.02	.65	.00	.23	.00	.00	1.43	.00	.01
29	.00	-----	.00	.00	.00	.47	.00	.00	.00	.00	.00	.01
30	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.42	-----	.00	-----	.00
TOTAL	.39	.92	1.31	1.61	2.30	6.05	2.49	.76	4.45	3.58	1.43	1.36
STAAV										2.90	2.50	1.32

NOTES: YEARLY PRECIPITATION 26.65 INCHES. 1 INSTALLATION OF ADDITIONAL GAGES ON WATERSHED COMPLETED. PRECIPITATION VALUES FOR PERIOD JAN 1, 1962 TO MAR 19, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 5 GAGES ON THE WATERSHED. PRECIPITATION VALUES FOR PERIOD MAR 20, 1962 TO DEC 31, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 7 GAGES ON THE WATERSHED.

1962 MEAN DAILY DISCHARGE (cfs)					CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.8	1.7	1.8	1.2	.9	30	.9	.3	.5	.1	.4	.4
2	1.8	1.8	* 1.8	1.2	.9	7.2	.6	<u>.2</u>	.3	.1	.4	<u>6.9</u>
3	1.8	1.8	1.7	1.3	.9	.9	.5	.2	.2	.2	.4	3.1
4	* 1.8	1.8	1.2	1.7	.7	.6	.4	.3	.2	.2	.4	.5
5	1.8	1.8	<u>.9</u>	1.8	.6	.6	.4	.4	.2	.3	.4	.4
6	1.8	1.8	.9	1.8	.6	.8	.4	.4	.2	.4	.4	.4
7	1.8	1.8	1.0	1.8	.6	.8	.4	.4	.1	.1	1.0	.4
8	1.8	1.8	1.2	1.8	.6	9.9	.4	.4	.1	.1	<u>.2</u>	.4
9	1.7	1.8	1.2	1.8	.5	<u>36</u>	.5	.5	.1	.2	<u>.2</u>	.4
10	1.5	1.8	1.2	* 1.8	.4	2.3	.6	.6	.1	.3	.2	.4
11	1.5	1.8	1.2	1.8	.4	1.2	.6	.5	.1	.4	.2	.4
12	1.5	1.8	1.3	1.8	.4	.9	.6	.4	<u>.0</u>	.3	.2	.4
13	1.5	1.8	1.5	1.8	.3	.7	.5	.4	.0	.2	.2	.4
14	1.7	1.8	1.5	1.8	.2	.6	.3	.4	.0	.1	.2	.4
15	1.7	<u>2.0</u>	1.5	1.8	.2	.6	<u>.2</u>	.4	2.6	.1	.2	.4
16	1.5	2.0	1.3	1.8	.2	.5	.2	.4	.0	.1	.2	.5
17	1.5	1.8	1.2	1.8	.2	<u>.4</u>	.2	.4	.0	.1	.2	.6
18	1.5	1.8	1.2	1.8	.2	.5	.2	.4	.0	.2	.3	.6
19	1.2	1.7	1.2	1.8	.2	.7	.2	.6	.0	.2	.4	.6
20	<u>1.0</u>	<u>1.5</u>	* <u>4.5</u>	1.8	.2	.9	.2	.6	<u>17</u>	.2	.4	.7
21	1.3	1.7	1.5	1.8	.2	.7	.2	.4	.7	.2	.4	.9
22	<u>2.1</u>	1.8	1.2	1.8	.2	.6	.2	.6	.1	.2	.4	.9
23	1.5	1.8	1.2	1.8	<u>.1</u>	.6	.2	<u>.7</u>	.1	.2	.4	.7
24	1.5	1.8	1.5	2.5	.1	.7	.2	.6	.1	.2	.4	.6
25	1.7	1.8	1.7	2.0	.1	1.0	<u>16</u>	.5	.1	.3	.4	.6
26	1.8	1.8	1.3	1.8	1.6	1.2	.4	.5	.1	.4	<u>2.4</u>	.6
27	1.8	1.8	1.2	<u>6.0</u>	<u>3.4</u>	1.5	.2	.6	.1	4.1	.8	.6
28	1.7	1.8	1.2	1.5	.8	1.2	.2	.6	.1	<u>37</u>	.4	.6
29	1.5	-----	1.3	<u>.9</u>	1.2	2.1	.3	.6	.1	.7	.4	.6
30	1.5	-----	1.5	<u>.9</u>	.2	1.2	.2	.6	.1	.4	.4	.6
31	1.5	-----	1.3	-----	.2	-----	.3	.6	-----	.4	-----	.6
MEAN	1.6	1.8	1.4	1.8	.6	3.6	.9	.5	.8	1.5	.4	.8
INCHES	.246	.247	.217	.271	.085	.525	.131	.071	.114	.236	.063	.126

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .004913. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 403.7. YEARLY MEAN DISCHARGE, 1.3 CFS. YEARLY DISCHARGE, 2.332 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.



CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX

LOCATION: WATERSHED — Little Dry Creek Watershed above State Road 19 bridge in Grady County, Okla.; tributary to Big Dry Creek, Washita River; Red River Basin.

GAGING STATION — NW¼ sec. 33, T. 6 N., R. 6 W., lat. 35°57', long. 97°51', 5 miles northwest of Alex, Okla.; on State Road 19 bridge over Little Dry Creek.

AREA: 563 acres (.88 sq. mile).

SLOPES:

Slope — Percent	0-1	1-3	3-5	5-8
Percent of area	1	1	2	96

1/

SOILS: Residual, derived from shale and sandstone materials. These are moderately deep and shallow, on rolling to steeply rolling and sloping land. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Quinlan loam	74	8	Weak fine granular	Moderate	Moderate medium granular	Moderate	24	Moderate	Medium
Noble-Nash loams	15	14	Moderate medium granular	Moderate	Moderate medium granular	Moderate	34	Moderate	Medium
Kingfisher silt loam	10	12	Moderate medium granular	Moderate	Strong medium subangular blocky	Moderate	40	Moderately slow	Medium
Norwood silt loam	1	16	Moderate fine granular	Moderate	Moderate medium granular	Moderate	50	Moderate	Medium

EROSION:

Erosion class	1	2	3	4
Percent of area	2	10	78	10

1/

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII
Percent of area		1	5	4		90	

1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, trace; Cloud Chief, 0.0; Rush Springs, 0.0; Dog Creek-Blaine and Marlow, 0.0; Chickasha, 100.0. Little Dry, the smallest gaged watershed in the study reach, contains only the Chickasha geologic formation. See description of hydrogeology and the general geology map, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 1.25 miles.

CHARACTER OF FLOW: Intermittent, continuous.

INSTRUMENTATION: **Precipitation:** Two recording weighing type gages in operation, with 24-hr. time scales. See footnotes under monthly and daily tables for more specific information. **Runoff:** Staff gage on left bank; Stevens A-35 recorder installed in 30-in. well on left bank upstream from State Road 19 bridge with 9.6 in. per day time scales, datum 1,067.10 ft. (all datum m.s.l. elev.; by 1929 adjustment) from Nov. 14, 1961 to Mar. 20, 1962. After Mar. 20, staff gage on left bank, two Belfort FW-1's installed in 30-in. well on left bank with 1.8 in. per day and 28.8 in. per day time scales, datum 1,067.10 ft. Artificial control consisting of a broad crested "W" notch weir installed June 24, 1963, with 5 to 1 side slopes made of reinforced concrete and placed between the upstream wing walls of the culvert. Weir rated by model studies and checked periodically by current meter measurements.

WATERSHED CONDITIONS: A small area in creek bottom is farmed to an alfalfa, small grain rotation. This area has a high water table and is quite high in production. The grass is big and little bluestem with some buffalo grass. Pastures have always been well managed with proper grazing for good production. Fertilization is based on soil test recommendations. There is no need for structural conservation measures such as terraces, farm ponds, or grassed waterways. The following table shows the land use:

Percent of watershed in							
Cultivation - 4					Pasture or range - 92	Wooded pasture - 4	Miscellaneous - 0
Percent of cultivated land in					Classification of range	Classification of range	Farmsteads, roads,
Alfalfa - 100	Sowed crops - 0	Row crops - 0			site condition based on	site condition based on	airports, etc.
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lin- lb/ac	Good - 90% Fair - 10%	Fair - 100%
5	35	45	40	30	300	The general practice for good range utilization is 1 animal unit per 5 acres.	

GENERALLY REPRESENTS: Small tributary watersheds (pastures) of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX							
YEAR \ MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1961 P ^{1/} Q										2.42	3.20	1.21	.744
1962 P ^{1/} Q	.31 .655	.97 .537	1.62 .503	2.76 .790	1.90 .207	6.39 .900	2.92 .182	.80 .000	5.08 .528	2.68 .055	1.45 .004	1.51 .368	28.39 4.729
STA AV ^{2/} P Q										2.55	2.32	1.36	.556
MEAN P ^{3/} 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962	9-20	.1335	9-20	.1068	9-20	.1756	9-20	.399	9-20	.496	9-20	.504	9-20	.504	9-15	.528		
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																		
1961 TO 1962	9-20 1962	.1335	9-20 1962	.1068	9-20 1962	.1756	9-20 1962	.399	9-20 1962	.496	9-20 1962	.504	9-20 1962	.504	9-15 1962	.528		

Notes: Quality of records: P, excellent, Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.8-5 and 69.7-7 and 9. ^{1/} Precipitation data obtained from one gage on the watershed prior to Mar. 20, 1962 and from a Thiessen weighted average of 2 gages on the watershed after Mar. 20, 1962. ^{2/} Precipitation records began Oct. 1961; runoff records began Dec. 1961. ^{3/} Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Dec. 1961.

MISCELLANEOUS DATA

RUNOFF PEAK DATA: YEAR (1962): Maximum — Sept. 20, 75.8 cfs (1.11 ft). Minimum — no flow (.14 ft).
PERIOD OF RECORD: Maximum — Sept. 20, 1962, 75.8 cfs (1.11ft). Minimum — no flow (.14 ft).
PEAK DISCHARGES: (Above base of 100 cfs) 1962 — none.

ABBREVIATED RATING TABLE: 1962 (Stage recorder datum; gage height in ft, discharge in cfs).

GAGE HEIGHT	DISCHARGE
.19	.61
.22	2.3
.32	8.6
.42	15.9
.52	28.9
.72	40.6
1.02	61.9
1.52	105
1.92	186
2.42	264

1961 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										.00	.55	.00
2										.19	1.15	.00
3										.00	.00	.00
4										.00	.00	.07
5										.00	.00	.00
6										.00	.00	.00
7										.00	.00	.00
8										.00	.00	.47
9										1.13	.00	.00
10										.81	.00	.00
11										.00	.00	.00
12										.00	.00	.00
13										.00	.00	.00
14										.00	.03	.00
15										.00	.87	.00
16										.00	.00	.62
17										.00	.00	.05
18										.00	.00	.00
19										.00	.00	.00
20										.00	.00	.00
21										.00	.38	.00
22										.00	.22	.00
23										.00	.00	.00
24										.00	.00	.00
25										.00	.00	.00
26										.00	.00	.00
27										.00	.00	.00
28										.00	.00	.00
29		-----								.05	.00	.00
30		-----								.08	.00	.00
31		-----								.16	.00	.00
TOTAL										2.42	3.20	1.21
STA AV												

NOTES: RECORDS BEGAN OCT 1, 1961. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 3 GAGES ON THE WATERSHED.

1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												.7
2												.7
3												.7
4												.7
5												.7
6												.6
7												.5
8												.5
9												.5
10												.5
11												.5
12												.5
13												.5
14											.1	.5
15											* .4	.5
16											.0	<u>1.5</u>
17											.0	.5
18											.1	.5
19											.4	.5
20											.4	.5
21											* .4	.5
22											.5	.5
23											.5	.5
24											.5	.5
25											.5	.5
26											.5	.5
27											.5	.5
28											.5	.5
29		-----									.5	.5
30		-----									.7	.5
31		-----									.5	.5
MEAN												.744
INCHES												.744

NOTES: RECORDS BEGAN NOV 14, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .04228. TO CONVERT DISCHARGE IN INCHES TO AC/FT, MULTIPLY BY 46.92. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	2.00	.00	.19	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.36	.00	.00	.02	.00	.00	1.17
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.10	.00	.00	.05	.10	.15	.00	.00	.11	.00	.00	.00
5	.00	.00	.00	.14	.00	.32	.00	.00	.00	.65	.00	.00
6	.00	.00	.00	.00	.00	.07	.00	.00	.24	.00	.18	.00
7	.00	.00	.00	.00	.00	.85	.00	.00	.24	.00	.22	.00
8	.00	.00	.00	.00	.00	.12	.00	.00	.04	.00	.00	.00
9	.00	.00	.00	.00	.00	.92	.00	.00	.00	.00	.00	.00
10	.00	.00	.03	.12	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00
13	.00	.00	.00	.00	.00	.6	.00	.02	.00	.00	.00	.00
14	.04	.03	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
15	.00	.27	.00	.00	.00	.00	.00	.00	1.30	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.27	.00
18	.00	.00	.00	.00	.00	.33	.13	.00	.00	.06	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
20	.00	.21	<u>1.30</u>	.00	.14	.60	.11	.00	2.82	.00	.00	.16
21	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.04	.00	.26	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.29	.34	.00	.00	.08	.09	.03	.00	.00	.13
25	.05	.03	.00	.00	.11	.37	2.43	.00	.27	.00	.00	.03
26	.07	.00	.00	.02	.94	.00	.00	.00	.00	.00	.78	.00
27	.00	.43	.00	2.02	.00	.03	.00	.00	.00	.63	.00	.00
28	.00	.00	.00	.01	.61	.00	.15	.00	.00	1.24	.00	.02
29	.00	-----	.00	.00	.00	.61	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.50	-----	.00	-----	.00
TOTAL	.31	.97	1.62	2.76	1.90	6.39	2.92	.80	5.08	2.68	1.45	1.51
ST. AV.										2.55	2.32	1.36

NOTES: YEARLY PRECIPITATION 28.39 INCHES. 1/ INSTALLATION OF ADDITIONAL GAGES ON WATERSHED COMPLETED. PRECIPITATION VALUES FOR PERIOD JAN 1, 1962 TO MAR 19, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 1 GAGE ON THE WATERSHED. PRECIPITATION VALUES FOR PERIOD MAR 20, 1962 TO DEC 31, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 2 GAGES ON THE WATERSHED.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.5	<u>.4</u>	<u>.5</u>	.5	.3	2.6	.2	.0	<u>.0</u>	<u>.0</u>	<u>.0</u>	<u>.0</u>
2	.5	<u>.4</u>	*.4	.5	.3	2.0	.1	.0	.0	.0	.0	<u>2.3</u>
3	.5	.4	.2	.5	.2	<u>.1</u>	.2	.0	.0	.0	.0	.2
4	.5	.4	.2	.5	.2	.1	.2	.0	.0	.0	.0	.0
5	.5	.4	.2	.5	.1	.2	.1	.0	.0	.2	.0	.0
6	.5	.4	.2	.5	.1	.1	<u>.0</u>	.0	.0	.0	.0	.0
7	.5	.4	.3	.5	.1	2.6	.0	.0	.0	.0	.0	.1
8	.5	.4	.4	.5	.1	2.0	.0	.0	.0	.0	.0	.1
9	.5	.4	.4	.4	.1	<u>5.4</u>	.0	.0	.0	.0	.0	.1
10	.5	.4	.4	*.4	.1	.2	.0	.0	.0	.0	.0	.1
11	.5	.4	.4	.4	.1	.2	.0	.0	.0	.0	.0	.1
12	.5	.4	.4	.3	.1	.3	.0	.0	.0	.0	.0	.1
13	.5	.4	.4	.3	.1	.3	.0	.0	.0	.0	.0	.1
14	.5	.4	.4	.3	.1	.4	.0	.0	.0	.0	.0	.2
15	.5	.4	.4	<u>.2</u>	.1	.4	.0	.0	.6	.0	.0	.2
16	.5	.4	.4	.2	.1	.4	.0	.0	.0	.0	.0	.2
17	.5	.5	.4	.2	.1	.4	.0	.0	.0	.0	.0	.2
18	.5	.5	.4	.2	.1	.4	.0	.0	.0	.0	.0	.2
19	.5	.5	.4	.2	.1	*.3	.0	.0	.0	.0	.0	.2
20	.5	.5	.5	.2	.1	.2	.0	.0	<u>12</u>	.0	.0	.2
21	.5	.5	.3	.2	.1	.3	.0	.0	.0	.0	.0	.3
22	.5	.5	.2	.2	.1	.3	.0	.0	.0	.0	.0	.3
23	.5	.5	<u>.1</u>	.2	<u>.0</u>	.3	.0	.0	.0	.0	.0	.3
24	.5	.5	.5	.2	.0	.3	.0	.0	.0	.0	.0	.4
25	.5	.5	.5	.2	.0	.2	<u>3.4</u>	.0	.0	.0	.0	.4
26	.5	.5	.5	.2	<u>1.2</u>	.2	.1	.0	.0	.0	<u>.1</u>	.4
27	.5	<u>.8</u>	.5	<u>8.6</u>	.2	.2	.0	.0	.0	.0	.0	.4
28	.5	.5	.5	.6	.4	.2	.0	.0	.0	<u>1.1</u>	.0	.4
29	.5	-----	.5	.5	.1	.5	.0	.0	.0	.0	.0	.4
30	.5	-----	.5	.5	.1	.2	.0	.0	.0	.0	.0	.4
31	.5	-----	.5	-----	.1	-----	.0	.0	-----	.0	-----	.4
MEAN	.5	.5	.4	.6	.2	.7	.1	.0	.4	.0	.0	.3
INCHES	.655	.537	.503	.790	.207	.900	.182	.000	.528	.055	.004	.368

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .04228. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 46.92. YEARLY MEAN DISCHARGE, .31 CFS. YEARLY DISCHARGE, 4.729 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO

LOCATION: WATERSHED — Tonkawa Creek Watershed above county road south of Anadarko in Caddo County, Okla.; tributary to Washita River; Red River Basin.

GAGING STATION — NW $\frac{1}{4}$ sec. 34, T. 7 N., R. 10 W., lat. 35°03', long. 98°15', 2 miles south of Anadarko, Okla., on upstream side of section line road bridge.

AREA: 16,640 acres (26.0 sq. miles).

Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	1/
Percent of area	15	15	22	15	30	3	

SOILS: The alluvial soils are derived from alkaline red bed sediments, and the residual soils are derived from Rush Springs sandstone. 1/

Soil	Percent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Darnell Noble sandy loams	35	8	Weak medium granular	Moderate	Weak fine crumb	Moderate	60	Moderate	Medium
Noble Cobb Vanoss sandy loams	30	12	Moderate medium granular	Moderate	Moderate medium prismatic	Moderate	48	Moderate	Medium
Cobb Daugherty Noble fine sandy loams	20	10	Structureless fine granular	Rapid	Moderate medium prismatic	Moderate	36	Moderate	Medium
Pulaski Cyril silty clay loams	15	14	Moderate fine granular	Moderate	Moderate fine crumb	Moderate	60	Moderate	Medium

Erosion class	1	2	3	4	1/
Percent of area	21	55	20	4	

Class	I	II	III	IV	V	VI	VII	1/
Percent of area	15	15	28	15	2	23	2	

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 4.3; Cloud Chief, 10.3; Rush Springs, 85.4; Dog Creek, Blaine, and Marlow, 0.0; and Chickasha, 0.0. In comparison to most tributary watersheds this one has a small area of alluvium and large areas of Cloud Chief and Rush Springs. See description of hydrogeology and general geology map pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla., Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 4.8 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: **Precipitation:** Recording weighing type gages installed on a 3-mile square grid. Grid pattern oriented in north-northeast direction and consists of approximately 6 gages, all in operation, with various time scales (primarily 24-hour). **Runoff:** Stevens A-35 recorder on 24-inch well on upstream side of county road with 9.6 inches per day time scale; from June 27, 1962, to Aug. 10, 1963, datum 1,175.91 ft., all datum m.s.l. elev. by 1929 adjustment. After Aug. 10, 1963, tape down from reference point on upstream side of bridge; Stevens A-35 water-level recorder and bubble gage servo-manometer on left bank with 9.6 inches per day time scale for headwater gage, datum 1,181.92 ft.; Stevens A-35 water-level recorder installed in 24-inch well on left bank with 9.6 inches per day time scale for tailwater gage, datum 1,171.92 ft. Artificial control consisting of a reinforced concrete broad crested "V" notch weir with 5 to 1 side slopes. Low flow current meter measurements made by wading; high flow current meter measurements made by crane from upstream side of bridge. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: The better bottom land soils comprising about 10% of the drainage area have a rotation of alfalfa, cotton, and maize. The remaining bottom land and sloping land have been seeded to grass or lie idle. Farmers in the area use moldboard plows which bury crop residue. Weeds are controlled by surface tillage with spring-tooth or spike-tooth harrows prior to the planting of the following crops. Fertilization is based on recommendations made from soil tests. Much of the sloping land has been terraced. There are very few structural conservation measures such as farm ponds or grassed waterways other than terraces. Farm ponds will average about 4 per sq. mile. The following table shows the land use:

Percent of watershed in									
Cultivation - 10					Pasture or range - 83		Wooded pasture - 4		Miscellaneous - 3
Percent of cultivated land in					Classification of range site condition based on production		Classification of range site condition based on production		Farmsteads, roads, airports, etc.
Alfalfa - 14	Sowed crops - 32			Row crops - 54		Good - 10% Fair - 30% Poor - 60%	Fair - 35% Poor - 65%		
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield lint lb/ac				
4	30	28	30	40	450	The general practice for good range utilization is 1 animal unit per 15 acres.			

GENERALLY REPRESENTS: Small mixed tributary watersheds of the Southwestern Prairies, Cotton and Forage Region, specifically the Cross Timbers and the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Plains land resource areas (J-04 and H-78) in Kansas, Oklahoma, and Texas.

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

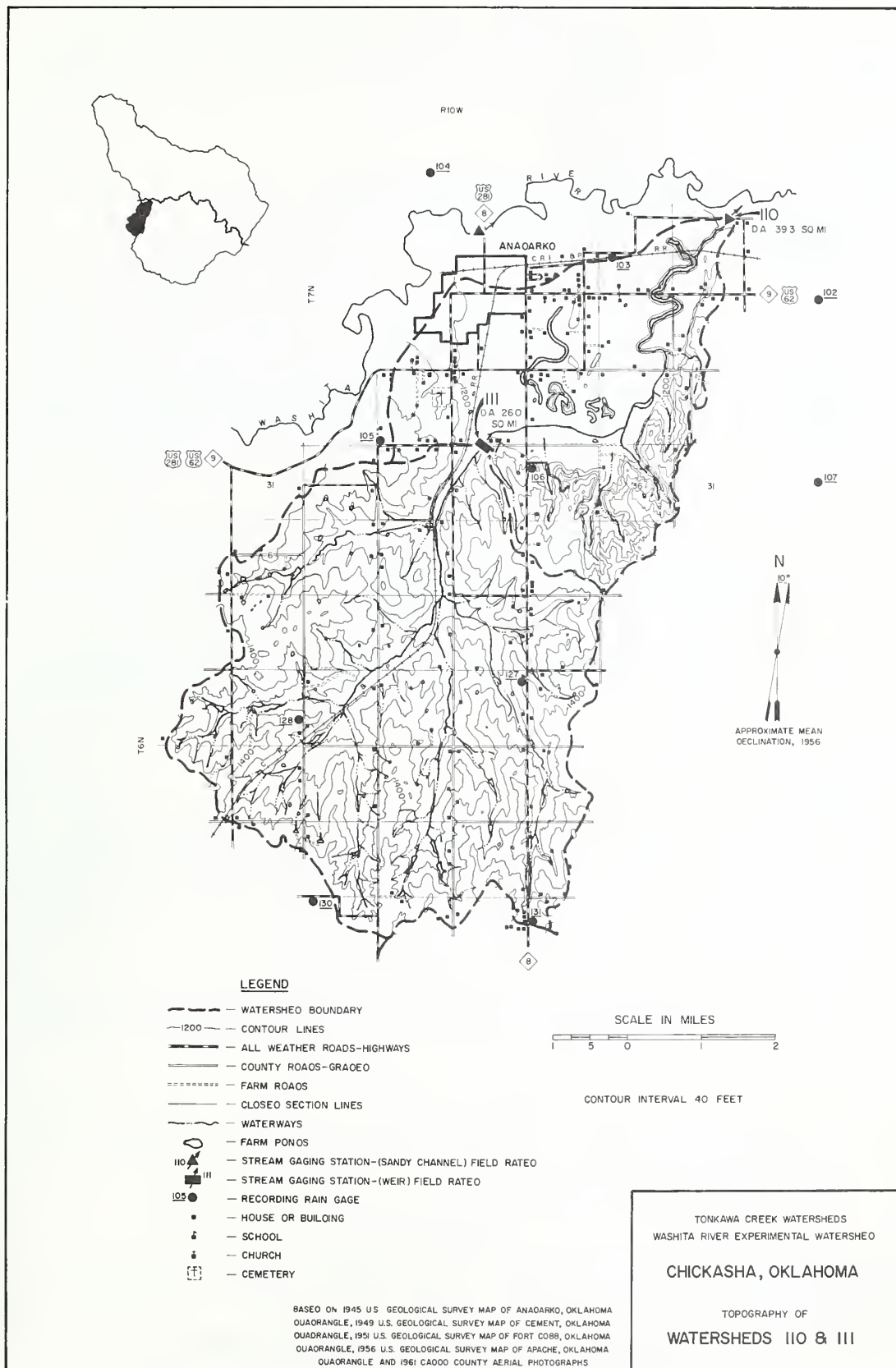
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P ^{1/}	.29	.88	.70	2.11	4.16	8.42	3.03	1.87	4.61	2.12	1.13	1.27	30.59			
	Q							.150	.086	.214	.091	.110	.157				
STA AV	2/P										2.02	2.22	1.02				
	Q																
MEAN P	3/	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
62 YR																	
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																	
1962 TO	9-15	.0471	9-15	.0361	9-15	.0670	9-15	.118	9-15	.126	9-15	.128	9-15	.132	9-15	.170	
1962	1962		1962		1962		1962		1962		1962		1962		1962		
Notes: Quality of records: P, excellent; Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.7-7 and 9 and 69.10-4. ^{1/} Precipitation data obtained from a Thiessen weighted average of 6 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began July 1962. ^{3/} Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began July 1962, therefore, the maximum discharge and depths shown are probably not the annual maximums for 1962.																	
MISCELLANEOUS DATA																	
<u>RUNOFF PEAK DATA:</u> YEAR (1962): Incomplete.																	
<u>PERIOD OF RECORD:</u> Maximum — Sept. 15, 1962, 790 cfs E (11.17 ft). Minimum — Aug. 23, 1962, 0.8 cfs (6.86 ft).																	
<u>PEAK DISCHARGES:</u> (Above base of 400 cfs) 1962 — partial year - Sept. 15, 1962, 790 cfs E (11.17 ft).																	
<u>ABBREVIATED RATING TABLE:</u> 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																	
	<u>GAGE HEIGHT</u>							<u>DISCHARGE</u>									
	6.50							0									
	6.80							.4									
	7.00							1.8									
	7.50							5.0									
	8.00							35									
	9.00							100									
	10.00							315									
	11.00							700									

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	3.80	.00	.42	.00	.00	.00	.10
2	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	1.02
3	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
4	.11	.00	.00	.06	.15	.00	.00	.00	.67	.00	.00	.00
5	.00	.00	.00	.19	.00	1.06	.00	.00	.00	.62	.00	.00
6	.00	.00	.00	.03	.00	.00	.00	.00	.13	.00	.14	.00
7	.00	.00	.00	.00	.00	.32	.00	.00	.66	.00	.00	.00
8	.00	.00	.00	.00	.00	.06	.01	.00	.17	.00	.00	.00
9	.00	.00	.00	.00	.00	1.12	.11	.00	.00	.00	.00	.00
10	.00	.00	.00	.38	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	1.16	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
14	.04	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.03	.00	.00	.00	.04	.00	.00	2.24	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.16	.38	.00
18	.00	.00	.00	.00	.00	.32	.19	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00
20	.00	.14	.65	.00	.05	.00	.02	.00	.42	.23	.00	.00
21	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.02	.00	.01	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.01	.00	.00	.51	.00	.00	.00	.00	.00
24	.00	.00	.03	.37	.08	.01	.12	.02	.01	.00	.00	.07
25	.08	.00	.02	.00	.34	.35	1.54	.00	.28	.00	.00	.06
26	.02	.00	.00	.49	2.51	.07	.00	.00	.00	.00	.61	.00
27	.00	.29	.00	.56	.00	.00	.00	.00	.00	.33	.00	.00
28	.00	.00	.00	.00	1.03	.00	.41	.00	.00	.73	.00	.02
29	.00	-----	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	1.42	-----	.00	-----	.00
TOTAL	.29	.88	.70	2.11	4.16	8.42	3.03	1.87	4.61	2.12	1.13	1.27
ST. AV.										2.02	2.22	1.02

NOTES: RECORDS BEGAN OCT 1, 1961. YEARLY PRECIPITATION 30.59 INCHES. PRECIPITATION VALUES ARE A THIENSEN WEIGHTED AVERAGE OF 6 GAGES ON THE WATERSHED.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1							3.1	2.4	1.3	2.0	2.4	3.0
2							2.9	1.9	1.0	2.1	2.4	6.6
3							* 2.9	1.9	.9	2.1	2.4	5.9
4							2.9	1.8	4.0	2.0	2.4	3.4
5							2.8	1.8	1.6	2.3	2.4	* 3.2
6							2.8	1.6	1.7	2.5	2.4	3.2
7							2.8	1.6	2.9	2.2	2.5	3.2
8							2.8	* 1.6	2.6	1.9	2.4	3.1
9							2.8	1.5	2.1	1.9	2.4	3.1
10							2.7	1.5	1.9	1.9	2.4	3.1
11							* 2.6	1.4	1.8	1.9	2.5	3.1
12							2.5	1.4	1.7	2.0	2.6	3.3
13							2.3	1.4	* 1.6	2.0	2.6	3.7
14							2.3	1.2	1.6	1.9	2.5	3.2
15							2.5	1.2	* .89	* 1.9	* 2.5	3.2
16							2.7	1.2	3.0	2.1	2.6	3.1
17							2.9	1.2	2.4	2.1	2.3	* 3.2
18							2.6	1.0	2.2	2.1	2.1	3.2
19							2.6	1.0	2.4	2.4	2.3	3.3
20							2.5	1.0	* 5.7	1.8	2.4	3.3
21							2.5	1.0	2.0	2.0	2.4	3.2
22							2.5	.9	1.7	2.0	2.4	3.2
23							* 6.5	.8	1.6	1.9	2.5	3.2
24							2.6	* .9	1.6	1.9	2.6	3.3
25							* 2.3	.9	1.9	1.9	2.9	3.3
26							2.3	.9	1.9	1.9	3.7	3.9
27							3.1	2.3	1.0	1.9	1.9	3.9
28							3.0	2.6	.9	1.9	* 2.1	3.9
29							3.3	2.4	.9	1.9	2.3	3.8
30							3.2	2.0	.9	1.9	2.4	3.7
31							1.9	* 2.1	-----	2.3	-----	3.7
MEAN							3.4	1.9	5.0	2.1	2.6	3.5
INCHES							.150	.086	.214	.091	.110	.157

NOTES: RECORDS BEGAN JUNE 27, 1962. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001430. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1,387. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.



CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO

LOCATION: WATERSHED — Delaware Creek Watershed above county road bridge east of Anadarko in Caddo County, Okla.; tributary to Washita River; Red River Basin.

GAGING STATION — NW $\frac{1}{4}$ sec. 29, T. 7 N., R. 9 W., lat 35°03', long. 98°10', 3 miles east and 1 mile south of Anadarko, Okla., at section line road bridge.

AREA: 25,660 acres (40.1 sq. miles).

SLOPES:	Slope	Percent	0-1	1-3	3-5	5-8	8-12	12 and above	1/
			15	10	20	40	10	5	

SOILS: The alluvial soils are derived from alkaline red bed sediments, and the residual soils are derived from Rush Springs sandstone. 1/

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Darnell Quinlan sandy loams	50	6	Weak medium granular	Moderate	Weak fine crumb	Moderate	18	Slow	Slow
Noble fine sandy loam	20	14	Weak medium granular	Moderate	Weak fine crumb	Moderate	60	Moderate	Rapid
Daugherty sandy loam	15	12	Structureless fine granular	Rapid	Moderate coarse prismatic	Moderate	48	Moderate	Rapid
Pulaski Cyril silty clay loams	15	14	Moderate fine granular	Moderate	Moderate fine crumb	Moderate	60	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	1/
		15	50	33	2	

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	1/
		3	25	25	10	3	30	4	

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 9.7; Cloud Chief, 3.4; Rush Springs, 84.5; Dog Creek, Blaine, and Marlow, 2.4; and Chickasha, 0.0. The chloride content of the low-flow stream water of this tributary is 3 to 6 times the content found in adjoining tributaries. This may be due either to contaminating oil field brine or to the presence of evaporite deposits of unique chemical composition. See description of hydrogeology and general geology map, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla. Bulletins 73, 87, and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 9.2 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: **Precipitation:** Recording weighing type gages installed on a 3-mile square grid. Grid pattern oriented in north-northeast direction and consists of approximately 10 gages, all in operation, with various time scales (primarily 24-hour). **Runoff:** Tape down from reference point on upstream bridge rail; Stevens A-35 recorder installed in 30-inch well on upstream side of county road bridge with 9.6 inches per day time scale; datum 1,157.07 ft. (all datum m.s.l. elev. by 1929 adjustment), from Aug. 13, 1962, to July 22, 1963. After July 22, 1963, tape down from reference point on upstream bridge rail; Stevens A-35 water level recorder installed in 30-inch well on upstream side of county road bridge with 9.6 inches per day time scale, datum 1,158.12 ft. Artificial control consisting of a broad crested "V" notch weir with 4 to 1 side slopes made of steel sheet piling with a reinforced concrete cap. Low flow current meter measurements made by wading; high flow current meter measurements made by crane from upstream side of bridge. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: The better bottom land soils comprising about 20% of the drainage area have a rotation of alfalfa, cotton, and maize. The remaining bottom land and sloping land have been seeded to grass or lie idle. Farmers in the area use moldboard plows which bury crop residue. Weeds are controlled by surface tillage with spring-tooth or spike-tooth harrows prior to the planting of the following crops. Fertilization is based on recommendations made from soil tests. Much of the sloping land has been terraced. There are very few structural conservation measures such as farm ponds or grassed waterways other than terraces. Farm ponds will average about 4 per sq. mile. The following table shows the land use:

Percent of watershed in									
Cultivation - 21					Pasture or range - 49		Wooded pasture - 28		Miscellaneous - 2
Percent of cultivated land in					Classification of range site condition based on production		Classification of range site condition based on production		Farmsteads, roads, airports, etc.
Alfalfa - 10	Sowed crops - 30		Row crops - 60			Exc. - 2% Good - 5% Fair - 13% Poor - 80%	Fair - 15% Poor - 85%		
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac				
3.5	30	28	30	40	240	The general practice for good range utilization is 1 animal unit per 15 acres.			

GENERALLY REPRESENTS: Small mixed tributary watersheds of the Southwestern Prairies, Cotton and Forage Region, specifically the Cross Timbers and the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Plains and the Central Rolling Red Prairies land resource areas (J-84 and H-78, 80) in Kansas, Oklahoma, and Texas.

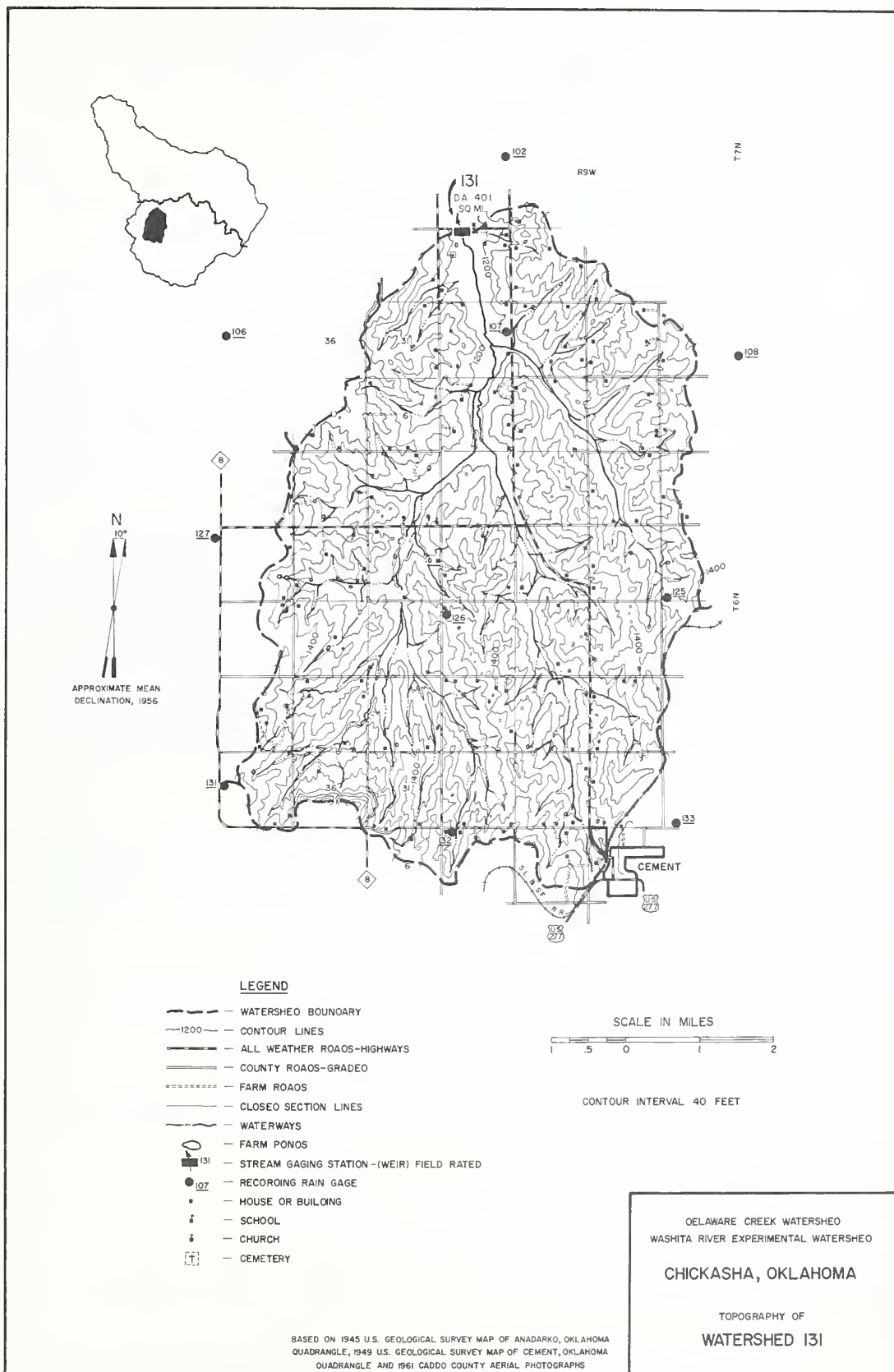
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{1/} Q	.35	1.01	.71	2.23	3.12	7.90	2.97	1.33	5.56 .075	2.27 .062	1.35 .099	1.08 .139	29.88			
STA AV ^{2/} P Q										2.26	2.58	1.06				
MEAN P ^{3/} 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
1962 TO 1962	9-15 1962	.0046	9-15 1962	.0045	9-15 1962	.0078	9-15 1962	.013	9-15 1962	.017	9-15 1962	.019	12-2 1962	.022	11-26 1962	.056
Notes: Quality of records: P, excellent; Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.7-7 and 9 and 69.11-4. ^{1/} Precipitation data obtained from a Thiessen weighted average of 10 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began Sept. 1962. ^{3/} Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Sept. 1962, therefore, the maximum discharge and depths shown are probably not the annual maximums for 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Incomplete.																
PERIOD OF RECORD: Maximum — Sept. 15, 118 cfs (11.80 ft). Minimum — no flow (7.18 ft).																
PEAK DISCHARGES: (Above base of 400 cfs) 1962 — partial year, none.																
ABBREVIATED RATING TABLE: 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																
<u>GAGE HEIGHT</u>						<u>DISCHARGE</u>										
7.30						.3										
7.50						1.2										
8.00						6.6										
9.00						31										
10.00						75										
11.00						140										
12.00						224										

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	3.91	.00	.37	.00	.00	.00	.07
2	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.84
3	.00	.00	.00	.00	.00	.01	.00	.00	.04	.00	.00	.00
4	.17	.00	.00	.08	.08	.07	.00	.00	1.11	.00	.00	.00
5	.00	.00	.00	.16	.00	1.05	.00	.00	.00	.53	.00	.00
6	.00	.00	.00	.04	.00	.01	.00	.00	.14	.00	.24	.00
7	.00	.00	.00	.00	.00	.41	.00	.00	.73	.00	.01	.00
8	.00	.00	.00	.00	.00	.08	.00	.00	.18	.00	.00	.00
9	.00	.00	.00	.00	.00	.89	.20	.00	.00	.00	.00	.00
10	.00	.00	.00	.28	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.53	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00
14	.06	.41	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.06	.00	.00	.00	.02	.00	.00	1.97	.00	.01	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.38	.00
18	.00	.00	.00	.00	.00	.28	.06	.00	.00	.03	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00
20	.00	.13	.67	.00	.05	.00	.08	.00	1.11	.34	.00	.00
21	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.04	.00	.00	.03	.00	.00	.00
23	.00	.00	.00	.01	.00	.00	.41	.00	.00	.00	.00	.00
24	.00	.00	.03	.37	.23	.01	.09	.09	.01	.00	.00	.10
25	.06	.02	.01	.00	.33	.52	1.83	.00	.26	.00	.00	.04
26	.01	.00	.00	.22	1.72	.01	.00	.00	.00	.00	.71	.00
27	.00	.37	.00	1.05	.00	.01	.00	.00	.00	.40	.00	.00
28	.00	.00	.00	.01	.71	.00	.29	.00	.00	.74	.00	.02
29	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.82	-----	.00	-----	.00
TOTAL	.35	1.01	.71	2.23	3.12	7.90	2.97	1.33	5.56	2.27	1.35	1.08
ST. AV.										2.26	2.58	1.06

NOTES: RECORDS BEGAN OCT 1, 1961. YEARLY PRECIPITATION 29.88 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 10 GAGES ON THE WATERSHED.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1									<u>.2</u>	1.5*	2.6	4.9	
2									.3	* 1.4	<u>2.3</u>	12	
3									.3	1.6	2.4	12	
4									5.1	1.5	2.5	6.6	
5									1.2	1.7	2.6*	5.3	
6									1.1	3.5	2.7	5.0	
7									3.2	1.9	4.7	4.7	
8									1.8	1.6	3.1	4.2	
9									1.2	1.5	2.9	4.0	
10									* 1.0	1.6	2.9	4.1	
11									.8	1.3	2.9	3.8	
12									.8	1.2	2.6	<u>3.5</u>	
13									.6	1.1	2.6	3.7	
14									.5	1.1	2.5	4.1	
15								.4*	<u>1.9</u>	* 1.0*	2.4	4.1	
16									.3	4.5	<u>2.9</u>	2.6	4.1
17									.3	1.8	1.0	3.8*	4.1
18									.2	1.2	1.8	4.9	4.1
19									.2	1.1	1.7	3.6	4.1
20									.2	12	3.3	3.5	4.1
21									.2	5.9	2.3	3.6	3.9
22									.2	2.7	1.8	3.0	4.0
23									.2	1.8	1.4	2.8	3.6
24								*	.2	1.6	1.3	2.9	4.0
25									.2	2.4	1.4	3.2	4.8
26									.2	2.8	1.5	<u>9.2</u>	4.2
27									.2	2.0	1.6	7.6	4.4
28									.2	1.6	* 12	5.5	4.9
29		-----							.1	1.5	5.2	4.8	4.7
30		-----							.1	1.4	3.1	4.6	4.3
31		-----							.3	-----	2.7	-----	4.4
MEAN													
INCHES									.075	.062	.099	.139	

NOTES: RECORDS BEGAN AUG 15, 1962. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0009276. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 2,138. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.



LEGEND

- WATERSHED BOUNDARY
- - - - - 1200 - - - - - CONTOUR LINES
- ALL WEATHER ROADS-HIGHWAYS
- COUNTY ROADS-GRADEO
- FARM ROADS
- CLOSED SECTION LINES
- WATERWAYS
- FARM PONDS
- 131 STREAM GAGING STATION-(WEIR) FIELD RATED
- 107 RECORDING RAIN GAGE
- HOUSE OR BUILDING
- SCHOOL
- CHURCH
- CEMETERY



CONTOUR INTERVAL 40 FEET

OELAWARE CREEK WATERSHED
 WASHITA RIVER EXPERIMENTAL WATERSHED
CHICKASHA, OKLAHOMA
 TOPOGRAPHY OF
WATERSHED 131

BASED ON 1945 U.S. GEOLOGICAL SURVEY MAP OF ANADARKO, OKLAHOMA
 QUADRANGLE, 1949 U.S. GEOLOGICAL SURVEY MAP OF CEMENT, OKLAHOMA
 QUADRANGLE AND 1961 CADDO COUNTY AERIAL PHOTOGRAPHS

CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA

LOCATION: WATERSHED — Line Creek Watershed above U. S. Highway 81 bridge at Chickasha, Grady and Caddo Counties, Okla.; tributary to Washita; Red River Basin.

GAGING STATION — NE $\frac{1}{2}$ sec. 29, T. 7 N., R. 7 W., lat. 35°03', long. 97°58', northwest edge of Chickasha, Okla., at U. S. Highway 81 bridge.

AREA: 34,180 acres (53.4 sq. miles).

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	1/
	Percent of area	6	4	50	36	3	1	

SOILS: Residual, derived from siltstone and shale, alluvial terraces, and flood plain materials: 1/

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Kingfisher-Renfrow silt loams	50	14	Moderate fine granular	Moderate	Strong medium blocky	Moderately slow	38	Moderately slow	Slow
Grant-Teller silt loams	36	14	Moderate medium granular	Moderate	Moderate medium subangular blocky	Moderate	34	Moderate	Medium
Reinach-McLain Port-Yahola silt loams	10	20	Moderate fine granular	Moderate	Moderate medium granular	Moderate	45	Moderate	Medium
Nash-Quinlan silt loams	4	10	Moderate medium granular	Moderate	Moderate medium granular	Moderate	30	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	1/
	Percent of area	29	50	20	1	

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	1/
	Percent of area	10	10	53	20	3	4	0	

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 22.8; Cloud Chief, 0.0; Rush Springs, 18.6; Dog Creek, Blaine, and Marlow, 58.6; and Chickasha, 0.0. The percent area covered by the Dog Creek, Blaine, and Marlow formations is greater in this tributary watershed than in other gaged watersheds of the study reach. The percent area of alluvium is relatively high. This tributary is unique in several respects: It is composed of several tributaries that flow from areas of Permian rocks onto the alluvial plain of the Washita Valley; here they join a 6-mile long alluvial channel that leads the water along the south side of the valley to the gaging station. Some water leaks from this 6-mile long channel into the Washita alluvium before it reaches the gaging station and thus is ungaged. See description of hydrogeology and general geology map, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla., Bulletins 73, 87, and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 12.8 miles.

CHARACTER OF FLOW: Intermittent, interrupted.

INSTRUMENTATION: **Precipitation:** Weather Bureau substations plus recording weighing type gages installed on a 3-mile square grid. Grid pattern oriented in north-northeast direction and consists of approximately 13 gages, all in operation, with various time scales (primarily 24-hour). **Runoff:** Staff gage on right bank; Stevens A-35 recorder installed in 30-inch well upstream from U.S. 81 Highway bridge with 9.6 inches per day time scale, datum 1,073.79 ft.; all datum m.s.l. elev. by 1929 adjustment. Sandy channel control, fairly stable. Low flow current meter measurements made by wading; high flow current meter measurements made by crane at 12th Street bridge about 1,400 ft. downstream from gage well. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: Approximately 25% of the cropland area is farmed with a rotation of small grains, cotton, and alfalfa. The remainder is farmed to small grains, cotton, and sorghums. Most farmers use a moldboard plow in land preparation. Spring-tooth or spike-tooth harrows are used to control weeds until the following crops are planted. 85% of the farmed land with a slope greater than 1- $\frac{1}{2}$ % has structural conservation practices such as terraces, farm ponds, and grassed waterways applied. There are approximately 5 farm ponds per sq. mile. The following table shows the land use:

Percent of watershed in									
Cultivation - 75						Pasture or range - 23		Wooded pasture - 0	Miscellaneous - 2
Percent of cultivated land in						Classification of range site condition based on production		Classification of range site condition based on production	
Alfalfa - 20		Sowed crops - 52			Row crops - 28				
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	Good - 26% Fair - 71%			
4.2	28	38	40	33	290	Poor - 3%			
						The general practice for good range utilization is 1 animal unit per 10 acres.			

GENERALLY REPRESENTS: Small tributary watersheds of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

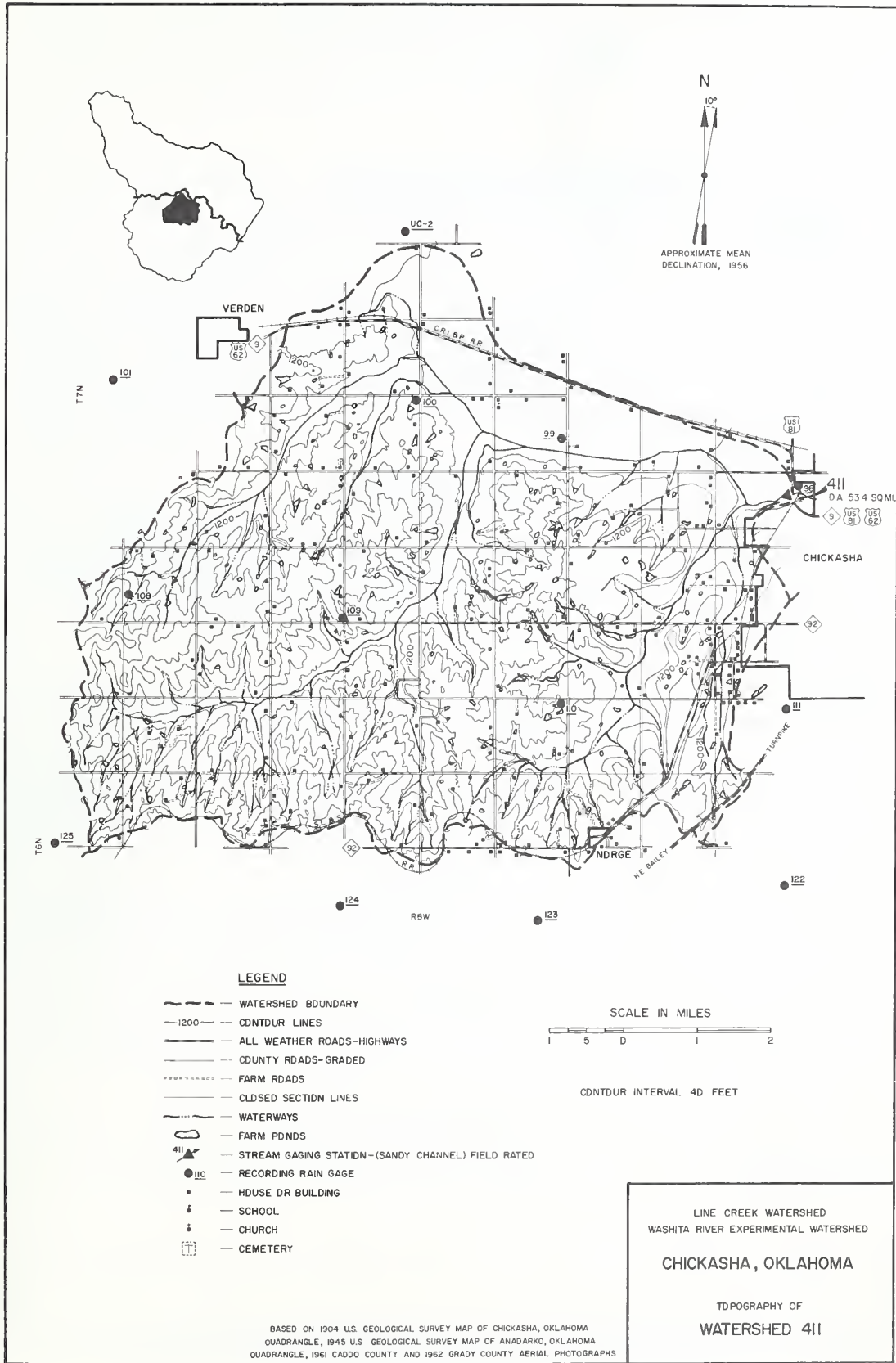
MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA									
YEAR \ MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{1/} Q	.27	.92	.90	1.78	2.88	7.38	2.49	.97	5.51 .124	2.09 .002	1.27 .008	1.22 .048	27.68			
STA AV ^{2/} Q										1.98	2.52	1.18				
MEAN P ^{3/} 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
19 62 TO 19 62	9-20 1962	.0138	9-20 1962	.0134	9-20 1962	.0263	9-20 1962	.063	9-20 1962	.074	9-20 1962	.091	9-20 1962	.098	9-20 1962	.121
Notes: Quality of records: P excellent, Q good. Watershed conditions same as that described on previous page under <u>WATERSHED CONDITIONS</u> . For maps see pp. 69.7-7 and 9 and 69.12-4. ^{1/} Precipitation data obtained from a Thiessen weighted average of 13 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began Sept. 1962. ^{3/} Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Sept. 1962, therefore, the maximum discharge and depths shown are probably not the annual maximums for 1962.																
MISCELLANEOUS DATA																
<u>RUNOFF PEAK DATA:</u> YEAR (1962): Incomplete.																
PERIOD OF RECORD: Maximum — Sept. 20, 1962, 478 cfs (16.18 ft). Minimum — no flow (7.70 ft).																
PEAK DISCHARGES: (Above base of 400 cfs) 1962 — partial year - Sept. 20, 478 cfs (16.18 ft).																
<u>ABBREVIATED RATING TABLE:</u> 1962 (Stage recorder datum; gage height in ft, discharge in cfs.)																
<u>GAGE HEIGHT</u>							<u>DISCHARGE</u>									
8.00							.6									
8.50							3.5									
9.00							9.6									
10.00							32									
11.00							67									
12.00							117									
14.00							259									
16.00							460									

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	3.08	.00	.35	.01	.00	.00	.04
2	.00	.00	.30	.00	.00	.09	.00	.00	.00	.00	.00	.98
3	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
4	.13	.00	.00	.05	.10	.02	.00	.00	1.17	.00	.00	.00
5	.00	.00	.00	.13	.00	.94	.00	.00	.00	.61	.00	.00
6	.00	.00	.00	.06	.00	.05	.00	.00	.11	.02	.17	.00
7	.00	.00	.00	.00	.00	.47	.00	.00	.57	.00	.03	.00
8	.00	.00	.00	.00	.00	.08	.00	.00	.26	.00	.00	.00
9	.00	.00	.00	.00	.00	.78	.18	.00	.00	.00	.00	.00
10	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
14	.04	.21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.15	.00	.00	.00	.01	.00	.00	1.37	.00	.03	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.29	.00
18	.00	.00	.00	.00	.00	.29	.10	.00	.00	.05	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
20	.00	.14	.82	.00	.04	.00	.22	.00	1.72	.27	.00	.00
21	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.07	.24	.27	.02	.18	.01	.01	.00	.00	.13
25	.07	.02	.01	.00	.33	.92	1.58	.00	.25	.00	.00	.04
26	.00	.00	.00	.05	1.31	.05	.00	.00	.00	.00	.75	.00
27	.00	.40	.00	.97	.00	.03	.01	.00	.00	.28	.00	.00
28	.00	.00	.00	.01	.83	.00	.21	.00	.00	.76	.00	.03
29	.00	-----	.00	.00	.00	.27	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.58	-----	.00	-----	.00
TOTAL	.27	.92	.90	1.78	2.88	7.38	2.49	.97	5.51	2.09	1.27	1.22
STA AV									1.98	1.98	2.52	1.18

NOTES: RECORDS BEGAN OCT 1, 1961. YEARLY PRECIPITATION 27.68 INCHES. PRECIPITATION VALUES ARE A THIENSEN WEIGHTED AVERAGE OF 13 GAGES ON THE WATERSHED.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1									.0	.2	* .1	<u>.5</u>
2									.0	.2	.1	* <u>.25</u>
3									.0	.2	.1	16
4									.1	.2	.1	2.8
5									.7	.1	* .1	1.6
6									.2	.5	.2	1.2
7									.3	.2	.4	1.1
8									.3	.1	.2	.9
9									.0	.1	.2	.8
10									.0	.1	.2	.8
11									.0	.1	.2	.8
12									.0	<u>.0</u>	.1	.7
13									.0	.0	.1	.7
14									.0	.0	.2	.8
15									* 49	.0	.2	.9
16									3.2	.0	.2	.9
17									.3	.0	.3	* .9
18									.0	.0	.4	.9
19									.0	.0	.4	.9
20									* 112	.1	.3	.9
21									9.5	.1	.2	.9
22									.8	.0	.3	.9
23									.3	.0	.3	.8
24									.2	.0	.3	.8
25									.3	.0	.3	.8
26									.2	.0	1.4	.9
27									.2	.0	<u>1.8</u>	.9
28									.2	<u>.6</u>	1.1	1.0
29		-----							.2	.4	.6	1.0
30		-----							.2	.1	.5	.9
31		-----		-----		-----			.1	-----	-----	.9
MEAN									5.9	.1	.4	2.2
INCHES									.124	.002	.008	.048

NOTES: RECORDS BEGAN SEPT 1, 1962. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0006964. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 2,848. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.



LEGEND

- WATERSHED BOUNDARY
- 1200 — CONTOUR LINES
- ALL WEATHER ROADS-HIGHWAYS
- COUNTY ROADS-GRADED
- FARM ROADS
- CLOSED SECTION LINES
- WATERWAYS
- FARM POND
- 411 — STREAM GAGING STATION-(SANDY CHANNEL) FIELD RATED
- 110 — RECORDING RAIN GAGE
- — HOUSE DR BUILDING
- — SCHOOL
- — CHURCH
- — CEMETERY



CONTOUR INTERVAL 40 FEET

LINE CREEK WATERSHED
 WASHITA RIVER EXPERIMENTAL WATERSHED
CHICKASHA, OKLAHOMA
 TOPOGRAPHY OF
WATERSHED 411

BASED ON 1904 U.S. GEOLOGICAL SURVEY MAP OF CHICKASHA, OKLAHOMA
 QUADRANGLE, 1945 U.S. GEOLOGICAL SURVEY MAP OF ANADARKO, OKLAHOMA
 QUADRANGLE, 1961 CADDO COUNTY AND 1962 GRADY COUNTY AERIAL PHOTOGRAPHS

CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER

LOCATION: WATERSHED — West Bitter Creek Watershed above U. S. Highway 62 bridge, east of Chickasha in Grady County, Okla.; tributary to Washita River; Red River Basin.

GAGING STATION: SW¼ sec. 29, T. 7 N., R. 6 W., lat. 35°03', long. 97°51', 4 miles east of Chickasha, Okla.; at U. S. Highway 62 bridge.

AREA: 38,910 acres (60.8 sq. miles).

SLOPES:

Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above
Percent of area	20	15	40	10	10	5

SOILS: Residual, derived from shales and interbedded sandstone materials; these are deep fine textured soils gently sloping to gently rolling with more shallow soils on the steeper slopes and breaks. 1/

Soil	Percent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Kingfisher silt loam	65	14	Moderate medium granular	Moderate	Strong medium subangular blocky	Moderate	40	Moderately slow	Medium
Renfrow silt loam	20	12	Moderate fine granular	Moderate	Strong medium blocky	Moderately slow	45	Slow	Slow
Grant-Nash silt loams	15	7	Moderate medium granular	Moderate	Moderate medium subangular blocky	Moderate	30	Moderate	Medium

EROSION:

Erosion class	1	2	3	4
Percent of area	12	18	60	10

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII
Percent of area	2	25	40	10	0	15	8

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 15.0; Cloud Chief, 0.0; Rush Springs, 0.0; Dog Creek, Blaine, and Marlow, 2.5; and Chickasha, 82.5. The 15.0 percent alluvial area is entirely upstream from the Washita alluvial plain, in contrast to the lower Tonkawa and Line Creek Watersheds where most of the alluvial area is part of the Washita alluvial plain. Water from the tributary, derived largely from alluvium and Chickasha formations, has a relatively low mineral content. See description of hydrogeology and general geology map pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87, and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 15.7 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: **Precipitation:** Weather Bureau substation plus recording weighing type gages installed on a 3-mile square grid. Grid pattern oriented in north-northeast direction and consists of approximately 15 gages, all in operation, with various time scales (primarily 24-hour). **Runoff:** Staff gage on right bank; Stevens A-35 recorder installed in 30-inch well on right bank upstream from U. S. Highway 62 bridge with 9.6 inches per day time scale, datum 1,051.33 ft., all datum m.s.l. elev. by 1929 adjustment; from Oct. 19, 1962, to May 14, 1963. After May 14, 1963, tape down from tape weight gage; Stevens A-35 recorder and bubble gage servo-manometer on right bank with 9.6 inches per day time scale for headwater gage, datum 1,060.52 ft. Tailwater consists of a staff gage on right bank; Stevens A-35 recorder installed in 30-inch well on right bank with 9.6 inches per day time scale, datum 1,050.52 ft. Artificial control consisting of a broad crested "V" notch weir with 4 to 1 side slopes made of steel sheet piling with a reinforced concrete cap. Low flow current meter measurements made by wading; high flow current meter measurements made from cableway upstream from weir. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: Approximately 30% of the land which lies in the Class I and II land, and a small portion of the Class III is farmed with a rotation of alfalfa and cotton. The remainder of the cultivated land is farmed with a rotation of small grains, sorghums, and cotton. Most farmers use the moldboard plow which buries all crop residue. Weeds are controlled by the use of spring-tooth harrow or spike-tooth harrow following the flat breaking and seeding of the above crops. Most farmers apply fertilizer according to recommendations made from soil tests. Approximately 95% of the Class II and III land has the needed structural conservation measures such as terraces, farm ponds, and grassed waterways applied. There are approximately 5 farm ponds per sq. mile. The following table shows the land use.

Percent of watershed in									
Cultivation - 58					Pasture or range - 38		Wooded pasture - 1		Miscellaneous - 3
Percent of cultivated land in					Classification of range		Classification of range		Farmsteads, roads, airports, etc.
Alfalfa - 10	Sowed crops - 64			Row crops - 26		site condition based on production		site condition based on production	
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	Exc. - 2%	Good - 26%	Good - 20%	Fair - 60%
4.5	30	50	45	35	300	Fair - 64%	Poor - 8%	Poor - 20%	
The general practice for good range utilization is 1 animal unit per 12 acres									

GENERALLY REPRESENTS: Medium size tributary watersheds of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

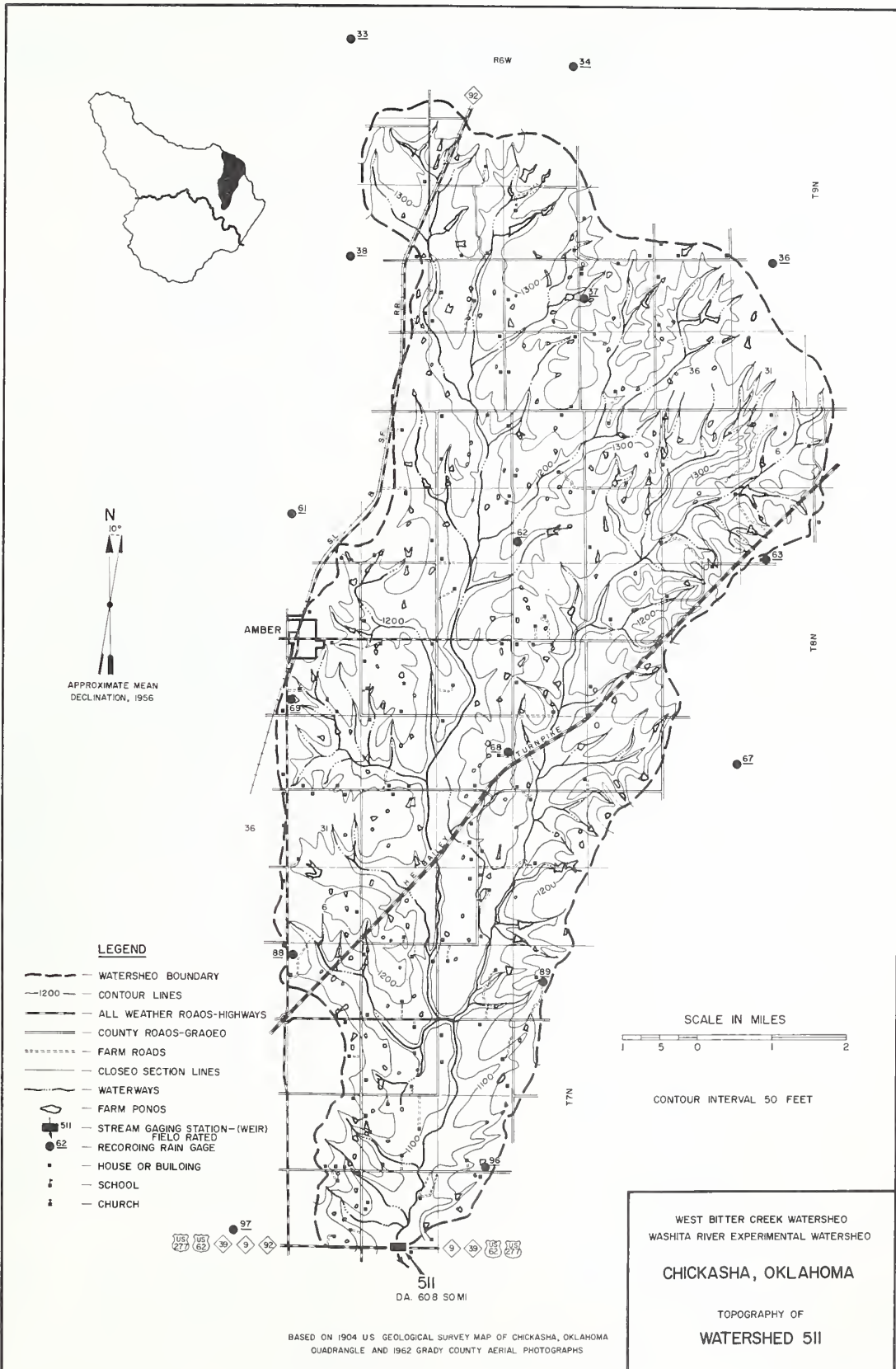
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER											
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1962 P ^{1/} Q	.47	.91	1.19	1.96	2.63	7.32	1.40	1.92	4.32	1.92	1.41 .098	1.18 .146	26.63				
STA AV ^{2/} Q										1.90	2.62	1.22					
MEAN P ^{3/} 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																	
19 62 TO	12-3	.0040	12-3	.0039	12-3	.0074	12-3	.0153	12-2	.0240	12-3	.0319	12-2	.0383	11-27	.0768	
19 62	1962		1962		1962		1962		1962		1962		1962		1962		
<p>Notes: Quality of records: P, excellent; Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pages 69.7-7 and 9 and 69.13-4. ^{1/} Precipitation data obtained from a Thiessen weighted average of 15 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began Nov. 1962. ^{3/} Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Nov. 1962, therefore, the maximum discharge and depths shown are probably not the annual maximums for 1962.</p>																	
MISCELLANEOUS DATA																	
<p><u>RUNOFF PEAK DATA:</u> YEAR (1962): Incomplete. PERIOD OF RECORD: Maximum — Dec. 3, 1962, 158 cfs (10.25 ft). Minimum — Nov. 22, 1962, 21 cfs (6.95 ft). PEAK DISCHARGES: (Above base of 600 cfs) 1962 - partial year — none.</p>																	
<p>ABBREVIATED RATING TABLE: 1962 (Stage recorder datum; gage height in ft, discharge in cfs).</p>																	
								GAGE HEIGHT				DISCHARGE					
								7.00					2.5				
								8.00					30				
								9.00					110				
								10.00					300				

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	2.36	.00	.25	.00	.00	.00	.01
2	.00	.00	.00	.00	.00	.38	.00	.00	.01	.00	.00	.99
3	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00
4	.16	.00	.00	.05	.07	.01	.00	.14	.61	.00	.00	.00
5	.00	.00	.00	.08	.00	1.36	.00	.00	.00	.60	.00	.00
6	.00	.30	.00	.07	.00	.10	.00	.00	.06	.03	.31	.00
7	.00	.00	.00	.00	.00	.12	.00	.00	.44	.00	.07	.00
8	.00	.00	.00	.00	.00	.11	.00	.00	.30	.00	.00	.00
9	.00	.00	.00	.00	.00	.92	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.77	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
14	.18	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.30	.00	.00	.00	.00	.00	.00	.65	.00	.03	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
17	.00	.00	.00	.01	.00	.00	.12	.00	.00	.10	.26	.00
18	.00	.00	.00	.00	.00	.28	.09	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00
20	.00	.13	.88	.00	.05	.00	.00	.00	1.97	.29	.00	.01
21	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.63	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.04	.00	.00	.05	.00	.00	.00	.00	.00
24	.00	.00	.31	.07	.15	.00	.33	.02	.00	.00	.00	.12
25	.07	.02	.00	.00	.28	.52	.41	.00	.19	.00	.00	.04
26	.00	.00	.00	.01	1.31	.00	.00	.00	.00	.00	.74	.00
27	.00	.37	.00	.84	.03	.01	.05	.00	.00	.12	.00	.00
28	.00	.00	.00	.02	.74	.00	.33	.00	.00	.72	.00	.01
29	.00	-----	.00	.00	.00	.31	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	1.50	-----	.00	-----	.00
TOTAL	.47	.91	1.19	1.96	2.63	7.32	1.40	1.92	4.32	1.92	1.41	1.18
STA AV										1.90	2.62	1.22

NOTES: RECORDS BEGAN OCT 1, 1961. YEARLY PRECIPITATION 26.63 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 15 GAGES ON THE WATERSHED.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1											3.1	4.8	
2											3.1	9.5	
3											3.1	* 6.8	
4											3.1	7.9	
5											3.2	* 5.6	
6											* 3.5	5.3	
7											* 2.7	5.1	
8											1.2	4.8	
9											5.4	4.8	
10											3.6	4.8	
11											3.3	4.5	
12											2.8	7.1	
13											3.0	8.7	
14											3.5	5.8	
15											3.5	5.9	
16											3.2	5.9	
17											2.7	5.9	
18											2.5	5.9	
19										3.1	9.1	* 5.9	
20										3.8	* 3.8	5.6	
21											3.8	2.8	5.3
22											3.2	2.1	5.1
23											2.8	6.4	4.8
24										*	2.7	2.9	4.8
25											2.7	3.9	5.1
26											2.8	* 8.1	5.5
27											2.9	9.8	5.1
28											5.9	10	4.9
29											5.4	5.1	5.3
30											3.7	4.3	5.1
31											3.2	-----	5.1
MEAN											5.3	7.7	
INCHES											.098	.146	

NOTES: RECORDS BEGAN OCT 19, 1962. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0006117. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 3,242. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.



N
10°

APPROXIMATE MEAN
DECLINATION, 1956

- LEGEND**
- WATERSHED BOUNDARY
 - 1200- CONTOUR LINES
 - == ALL WEATHER ROADS-HIGHWAYS
 - COUNTY ROADS-GRADO
 - FARM ROADS
 - CLOSE SECTION LINES
 - WATERWAYS
 - FARM PONOS
 - 511 --- STREAM GAGING STATION-(WEIR)
FIELD RATED
 - 52 --- RECORDING RAIN GAGE
 - --- HOUSE OR BUILDING
 - ⌘ --- SCHOOL
 - ⌘ --- CHURCH

SCALE IN MILES

1 5 0 1 2

CONTOUR INTERVAL 50 FEET

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962

Location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Reference No. 1/	Location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Reference No. 1/
ARIZONA						FLORIDA—Continued					
Safford						Vero Beach					
45.1 W-I	519	7-19-57 7-26-57 8-3,4-59 7-28,29-61 8-7,8-61 9-25,26-62	0.1560 .3266 .2426 .4813 .6284 .3228	1-39	4 4 4 5 5 6	8.3 W-3	10,050 (15.7)	3-16—24-59 6-17—24-59 3-15—31-60 9-15—10-1-60 9-19—10-2-62	0.0441 .0941 .0911 .0462 .0329	10-55	4 4 5 5 6
45.2 W-II	682 (1.07)	7-26-40 9-28-41 8-7-42 8-9-43 8-20-56 7-16-59 8-22-61	1.01 1.45 .848 1.00 .4118 1.2035 .4452	1-39	3 3 3 3 4 4 5	8.4 W-4	3,968 (6.20)	10-16—30-59 2-3—16-60 9-22—10-4-60 1-12—21-61	.0425 .0145 .1912 .0170	7-59	6 6 6 6
ARIZONA						GEORGIA					
45.3 W-IV	764 (1.19)	7-28-58 8-16-58	.1716 .6565	1-39	4 4	Watkinsville 10.1 W-1	19.2	7-11-41 5-15-42 11-26—30-48 4-22,23-51 8-13-58 3-5,6-59 1-29-60 1-30,31-60 8-1-61 4-24,25-45	1.96 1.26 .4013 .0738 1.3377 .0914 .0197 .0405 1.8336 2.7113	9-39	4 4 4 4 5 5 5 5 5 6
45.4 W-V	723 (1.13)	8-28-57 8-30-57 8-20-60 7-13-61 8-15-61 9-13-61	.3603 .3603 .4096 .1713 .2904 .1548	1-39	4 4 5 5 5 5						
Tombstone						IOWA					
63.1 W-1	36,900 (57.7)	8-17,18-57 8-16,17-58 7-26,27-59	.5380 .1641 .1332	1-54	4 4 4	Iowa City 21.1 Ralston Creek	1,926 (3.01)	6-1—3-43 7-21-48 7-1,2-50 7-18,19-56 11-15,16-61 7-13,14-62	.4890 .3395 .6490 .8580 .129 .550	9-24	3 3 3 3 5 6
63.2 W-2	28,100 (43.9)	10-4,5-54 7-19,20-55 7-20,21-59 7-21,22-59 7-26,27-59 8-17,18-61 7-25,26-62	.0918 .1853 .0376 .0516 .1298 .07095 .06463	1-54	4 4 4 4 4 5 6						
63.3 W-3	2,220 (3.47)	7-19,20-55 8-14-58 8-16,17-58 8-17,18-61 7-25,26-62	1.2637 .3174 .5588 .3107 .06964	5-54	4 4 4 5 6						
63.4 W-4	560	8-14,15-54 7-19,20-55 7-22,23-55 8-14-58 8-16-58 8-17,18-61	.8443 2.4795 .9523 .2301 .3151 .6284	6-54	4 4 4 4 4 5						
63.5 W-5	5,510 (8.61)	10-4,5-54 8-17,18-57 7-25,26-62	.9540 .5652 .07380	1-54	4 4 6						
FLORIDA						MARYLAND					
Vero Beach						College Park 5.6 W-6	3.53	8-19-41 8-10-42 8-27-43 7-22-45 12-20,21-57 7-8,9-58 9-11-60 9-11-60 9-11,12-60 ^{2/} 8-25,26-61 8-26-61 3-11,12-62	.452 1.65 1.01 1.80 .083 .142 .142 .026 .154 .051 .074 .0151	9-40	3 3 3 3 4 4 5 5 5 5 5 6
8.1 W-1	49,915 (78.0)	10-1—6-51 10-17—22-53 6-15—22-54 10-15—22-56 3-16—23-59 6-17—23-59 3-15—25-60 9-21—10-2-60 9-19—26-62	.0419 .0306 .0399 .0797 .0349 .0781 .0748 .1033 .0427	4-51	3 3 3 3 4 4 5 5 6	5.7 W-7	4.11 3/3.52	8-19-41 8-10-42 8-27-43 7-22-45 12-20,21-57 7-8,9-58 9-11-60 9-11-60 9-11,12-60 ^{2/} 8-25,26-61 8-26-61 3-11,12-62	.795 2.42 .324 1.44 .355 .277 .260 .041 .355 .204 .355 .142	9-40	3 3 3 3 4 4 5 5 5 5 6
8.2 W-2	63,170 (98.7)	3-16—28-59 6-17—25-59 3-15—4-1-60 9-15—10-4-60 9-19—10-2-62	.0221 .0700 .0303 .0374 .0127	7-55	4 4 5 5 6						
FLORIDA						MISSISSIPPI					
						Oxford 62.1 W-4	2,000 (3.13)	5-22-57 4-3,4-58 9-9,10-59 1-17-60 8-31-61 9-4,5-62	.2445 .1453 .2910 .0659 .0470 .1438	1-57	3 4 4 5 5 6

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Donna hurricane.
3/ Area reduced 8-29-41.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/
MISSISSIPPI—Continued						MISSISSIPPI—Continued					
Oxford						Oxford					
62.2 W-5	1,130 (1.76)	1-22,23-57 12-6,7-57 4-3,4-58 6-10,11-59 6-11-59 1-17-60 8-31-61 9-4-62	0.1509 .2808 .3072 .6073 .4994 .1273 .3388 .1831	1-57	3 3 4 4 4 5 5 6	62.14 WC-2	1.45	5-26-59 6-11-59 8-9-60 8-31-61 6-11-62	4.022 4.022 1.074 1.477 1.375	7-58	4 4 5 5 6
62.3 W-10	5,530 (8.64)	4-3-5-58 9-10-12-58 5-22,23-59 1-17-60 8-31,9-1-61 9-4,5-62	.4824 .1354 .0941 .0845 .4331 .1309	1-57	3 3 4 5 5 6	62.15 WC-3	1.61	5-26-59 6-11-59 8-9-60 8-31-61 6-11-62	4.552 5.082 1.897 3.487 3.487	7-58	4 4 5 5 6
62.4 W-12	22,800 (35.6)	5-22,23-57 11-13,14-57 4-3,4-58 3-2,3-60 8-31,9-1-61 9-4,5-62	.2475 .1818 .0835 .1084 .0541 .0676	1-57	4 4 4 5 5 6	62.16 WP-4	3.01	5-26-59 6-11-59 8-9-60 8-31-61 6-11-62	2.596 4.646 .517 3.143 4.020	7-58	4 4 5 5 6
62.5 W-17	32,100 (50.2)	5-22,23-57 11-13,14-57 3-2,3-60 8-31,9-1-61 9-4-6-62	.1990 .1778 .1057 .1013 .0579	1-57	4 4 5 5 6	62.17 W-17A	3,200 (5.0)	8-31,9-1-61 9-4,5-62 10-16,17-62	.1289 .0158 .2299	1-57	5 6 6
62.6 W-19	243	6-4,5-57 7-12-58 8-24,25-59 1-17-60 8-31,9-1-61 9-4-62 10-16,17-62	.2734 .1061 .1469 .0347 .3017 .0035 .2790	1-57	4 4 4 5 5 6 6	62.18 W-35A	1,090 (1.7)	8-31,9-1-61 9-4,5-62	.2487 .1291	1-57	5 6
62.7 W-24	511	11-18,19-57 5-9,10-58 1-17-60 8-31-61 7-25-62 10-4-62	.3919 .1102 .0757 .0182 .1220 .0012	1-57	4 4 5 5 6 6	MISSOURI					
62.8 W-28	1,080 (1.69)	6-30-57 7-22-58 9-9-59 1-17-60 11-15,16-61 9-4-62	.1331 .2415 .5610 .0468 .1456 .1004	1-57	4 4 4 5 5 6	McCredie					
62.10 W-32	20,000 (31.3)	11-18,19-57 4-14-16-58 5-22,23-59 3-2,3-60 8-31,9-1-61 9-4-6-62	.2826 .0823 .0892 .2142 .2150 .1052	1-57	4 4 4 5 5 6	25.1 W-1	153	10-4,5-41 6-26-42 6-7-45 8-19-49 9-21,22-51 6-30-7-1-61	2.01 .944 1.18 .359 .183 .181	1-41	4 4 4 4 4 6
62.11 W-34	75,000 (117.2)	12-6-8-57 3-25-27-58 4-14-16-59 5-22,23-59 3-2-4-60 8-31,9-1-61 9-4-6-62	.0859 .0123 .0467 .0230 .0626 .0519 .0306	1-57	3 3 3 4 5 5 6	25.2 Pond #2	44.3	6-29,30-57 6-30-7-1-61	1.328 .260	1-51	4 6
62.12 W-35	7,550 (11.8)	11-18,19-57 4-14,15-58 5-22,23-59 3-2-4-60 8-31,9-1-61 9-4,5-62	.2325 .1135 .1708 .2330 .0342 .1100	1-57	4 4 4 5 5 6	NEBRASKA					
62.13 WC-1	3.88	5-26-59 6-11-59 8-9-60 8-31-61 6-11-62	3.911 4.959 1.533 3.169 3.476	1-58	4 4 5 5 6	Hastings					
						44.1 W-3	481	6-20,21-39 7-10-51 6-7,8-53 4-22,23-57 5-1,2-57 6-15-57 6-15-57 6-12-58 5-15,16-60 8-11-61 8-23,24-62	1.15 1.74 .718 .404 .466 1.82 1.18 .182 .932 .144 .2700	8-38	3 3 3 4 4 4 4 5 5 6
						44.2 W-5	411	5-29,30-57 6-15-57 6-12-58 7-3-5-59 5-15-17-60 6-14,15-61	.159 .270 .323 1.15 .644 .249	7-39	4 4 4 4 5 5
						44.3 W-8	2,086 (3.26)	6-5,6-42 7-10-51 6-7-9-53 8-28-30-57 6-12-58 7-3-6-59 5-15-17-60 6-14,15-61 8-23-25-62	.164 .352 .264 .217 .136 .601 .266 .0960 .1270	1-39	3 3 3 3 4 4 5 5 6
						44.4 W-11	3,490 (5.45)	6-15,16-57 8-28-9-1-57 7-3-6-59 5-15-17-60 6-14-17-61 8-23-26-62	.415 .118 .237 .231 .101 .0667	1-39	4 4 4 5 5 6

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Area increased to 512 after 12-31-61.
3/ Data in Reference 3 revised.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/
NEBRASKA—Continued						NEW MEXICO—Continued					
Hastings						Albuquerque					
44.5 1-H	3.62	6-16,17-57	1.35	3-39	4	47.3 W-III	183 8/168	8-19-56	0.5259	8-39	4
		6-12-58	.677		4			10-19-57	.2006		4
		7-3-59	.901		4			8-21-58	.1386		4
		5-15-60	.970		5			8-15-61	.0146		5
		8-11-61	.441		5						
		7-10-51	1.16		6	Santa Rosa					
44.6 2-H <u>2/</u>	3.40	6-12-58	.849	3-39	4	64.1 W-1	42,880 (67.0)	7-19—21-55	.0622	1-55	4
		7-3-59	2.52		4			7-9—11-56	.0437		4
		5-15-60	1.55		5			8-16—18-57	.0253		4
		8-11-61	.613		5			6-5—7-60	.1718		5
		8-23-62	1.23		6			7-13-61	.02609		5
								6-30—7-1-62	.0255		6
44.7 3-H <u>2/</u>	3.95 3/3.77	7-18,19-58	1.56	3-39	4	OHIO					
		7-3-59	6.45		4	Coshocton					
		5-15,16-60	4.32		5	26.1 102 <u>2/</u>	1.26	9-23-45	.583	4-37	4
		8-11-61	1.66		5			6-12-57	3.64	5-57	4
		8-23-62	1.99		6			6-28-57	1.76		4
44.8 4-H <u>2/</u>	3.84 3/3.64	7-18,19-58	1.25	4-39	4			8-21,22-60	.725	4-60	5
		5-4-59	1.23		4			4-25-61	1.42		5
		5-15,16-60	6.08		5			6-28-40	.780		6
		8-11-61	3.17		5						
		8-23-62	5.48		6						
44.9 5-H <u>4/</u>	3.93 3/4.02	6-12,13-58	.469	4-39	4	26.3 129	2.71	9-23-45	.527	4-38	4
		5-4-59	.531		4			6-12-57	2.36		4
		7-3-59	3.50		4			6-28-57	1.16		4
		5-15,16-60	3.43		5			1-21-59	.249		4
		8-11-61	2.77		5			8-21,22-60	.556		5
		8-23-62	.69		6			4-25-61	1.16		5
								6-28-40	1.12		6
44.10 6-H <u>4/</u>	4.16 3/4.01	6-27-56	1.48	4-39	4	26.4 135	2.69	9-23-45	.678	4-38	4
		6-12,13-58	.424		4			6-12-57	2.38		4
		7-3-59	3.24		4			6-28-57	1.01		4
		5-15,16-60	2.89		5			1-21-59	.199		4
		6-14,15-60	3.61		5			8-21,22-60	.324		5
		8-23-62	.48		6			4-25-61	1.32		5
44.11 7-H <u>4/</u>	4.15 3/4.26	7-18,19-58	.782	4-39	4			6-28-40	.933		6
		5-4-59	.720		4						
		7-3-59	5.56		4						
		5-15,16-60	3.63		5						
		6-14,15-60	2.88		5	26.5 130	1.63	9-23-45	.852	5-38	4
		8-23-62	2.96		6			6-12-57	4.06		4
								6-28-57	1.43		4
								1-21-59	.444		4
								8-21,22-60	.195		5
44.12 8-H <u>2/</u>	3.93 3/3.97	7-18,19-58	.394	3-39	4			4-25-61	1.23		5
		5-15,16-60	2.19		5			6-28-40	1.03		6
		9-28,29-60	3.35		5						
		8-23-62	.40		6						
44.22 18-H <u>5/</u>	3.74	6-15-57	2.07	7-39	4	26.7 131	2.21	9-23-45	.101	5-38	4
		6-12-58	1.31		4			6-12-57	1.18		4
		5-18-59	.427		4			6-28-57	.328		4
		5-15,16-60	2.19		5			1-21-59	.0749		4
		8-11-61	.374		5			8-21,22-60	0		5
		8-23-62	.71		6			4-25-61	.283		5
								5-22-41	.139		6
44.26 22-H	3.83	8-23-62	3.18	6/5-62	6	26.8 132	0.59	8-21,22-60	0	5-48	5
44.27 23-H	4.20	8-23-62	3.24	6/5-62	6			4-25,26-61	1.05		5
								1-25—27-52	.106		6
NEW MEXICO						26.10 123	1.37	9-23-45	.377	1-39	4
Albuquerque								6-12-57	5.97		4
47.1 W-I	97.2	9-8-47	1.58	8-39	3			6-28-57	1.91		4
		8-4-48 <u>7/</u>	.636		3			1-21-59	.553		4
		8-4-48 <u>7/</u>	.652		3			8-21,22-60	.478		5
		8-19-56	.871		4			4-25-61	1.23		5
		8-9-57	.551		4			6-28-40	1.68E		6
		8-24-57	2.71		3						
		8-14-59	.324		4	26.11 115	1.61	9-23-45	1.63	4-39	4
		7-6-61	.014		5			6-12-57	4.12		4
47.2 W-II	40.5	8-24-57	2.793	8-39	4			6-28-57	1.59		4
		8-21,22-58	1.186		4			1-21-59	.321		4
		5-23-59	.519		4			8-21,22-60	.172		5
		8-15-61	.034		5			4-25-61	1.16		5
								6-28-40	2.57		6

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Watershed discontinued 1-4-55 to 1-1-58.

3/ Areas changed 1-1-59.

4/ Watershed discontinued 1-7-57 to 1-1-58.

5/ Watershed discontinued 7-31-55 to 2-8-57.

6/ P and Q available April 1941 to 12-31-54, but no selected events presented.

7/ Two storms on same day.

8/ Area reduced in 1957.

9/ Watershed discontinued 1-1-47 to 4-30-57 and 9-1-57 to 3-29-60.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Reference No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Reference No. 1/
OHIO—Continued						OHIO—Continued					
Coshocton						Coshocton					
26.12	1.65	6-12-57	3.12	5-49	4	26.23	7.40	9-23-45	1.90	9-39	4
127		6-28-57	1.27		4	185		6-12-57	2.65		4
		1-21-59	.468		4			6-28-57	1.31		4
		8-21,22-60	1.18		5			1-21-59	.229		4
		4-25,26-61	1.39		5			8-21,22-60	.0730		5
		6-24,25-56	2.64		6			4-25,26-61	.834		5
								6-28-40	2.13		6
26.13	1.69	9-23-45	.780	11-38	4	26.24	7.20	9-23-45	.806	1-41	4
109		6-12-57	3.99		4	187		6-12-57	2.75		4
		6-28-57	1.36		4			6-28-57	1.57		4
		8-21,22-60	.106		5			1-21-59	.354		4
		4-25-61	.827		5			8-21,22-60	.0231		5
		6-28-40	3.55		6			4-25-61	1.03		5
								8-15,16-41	1.43		6
26.14	0.65	9-23-45	1.54	4-39	4	26.25	7.59	9-23-45	.789	9-39	4
103		6-12-57	4.01		4	192		6-12-57	2.09		4
		6-28-57	1.94		4			6-28-57	.776		4
		1-21-59	.600		4			1-21-59	.600		4
		8-21,22-60	.0598		5			8-21,22-60	T		5
		4-25,26-61	1.63		5			4-25—27-61	.568		5
		6-28-40	4.62		6			5-31—6-2-43	.730		6
26.15	1.27	9-23-45	.905	4-39	4	26.26	43.6	9-23-45	.353	2-39	4
110		6-12-57	4.24		4	172		6-12-57	2.64E		4
		6-28-57	1.66		4			6-28-57	.969		4
		1-21-59	.478		4			1-21-59	.278		4
		8-21,22-60	0		5			8-21,22-60	.0573		5
		4-25-61	1.23		5			4-25-61	.833		5
		6-28-40	2.87		6			6-28-40	.544		6
26.16	1.45	9-23,24-45	1.08	9-39	4	26.27	29.0	9-23-45	1.37	1-40	4
113		6-12-57	3.77		4	169		6-12-57	2.59		4
		6-28-57	2.08		4			6-28-57	1.40		4
		1-21-59	.505		4			1-21-59	.465		4
		8-21,22-60	.274		5			8-21,22-60	.0499		5
		4-25-61	1.20		5			4-25-61	1.04		5
		6-28-40	2.47		6			6-28-40	.674		6
26.17	1.96	9-23-45	1.36	1-40	4	26.28	75.6	9-23-45	.721	1-40	4
118		6-12-57	3.11		4	177		6-12-57 2/	3.14		4,5
		6-28-57	1.36		4			6-28-57	1.18		4
		1-21-59	.393		4			1-21-59	.441		4
		8-21,22-60	.0622		5			8-21,22-60	.165		5
		4-25—27-61	1.02		5			4-25-61	1.04		5
		6-28-40	1.93		6			6-28-40	.684		6
26.18	1.18	9-23-45	1.47	9-39	4	26.29	74.2	9-23-45	1.41	3-38	4
111		6-12-57	3.82		4	183		6-16-46	2.58		3
		6-28-57	1.62		4			8-16-47	.388		3
		1-21-59	.620		4			9-1-50	1.76		3
		8-21,22-60	.0133		5			6-12,13-57	2.50		3
		4-25-61	1.29		5			6-28-57	1.30		4
		6-28-40	.950		6			8-21,22-60	.0373		5
26.19	1.42	9-23-45	.592	4-39	4	26.30	303	9-23-45	1.06	5-37	4
121		6-12-57	1.62		4	196		6-16,17-46	1.90		3
		6-28-57	.936		4			8-16-47	.586		3
		8-21,22-60	.218		5			9-1,2-50	1.77		3
		4-25,26-61	.633		5			6-12-57	3.72		3
		6-28-40	1.10		6			6-28-57	1.39		4
26.20	1.56	9-23-45	2.21	4-39	4			1-21-59	.504		4
106		6-12-57	3.03		4			8-21,22-60	.145		5
		6-28-57	1.35		4			4-25-61	1.11		5
		1-21-59	.452		4			6-28-40	.458		6
		8-21,22-60	1.28		5						
		4-25-61	.954		5						
		8-23-44	7.63		6						
26.21	2.05	9-23-45	1.95	9-39	4	26.31	122	9-23-45	1.72	1-39	4
188		6-28-57	1.25		4	10		6-12-57	.329		4
		1-21-59	.432		4			1-21-59	.236		4
		8-21,22-60	.186		5			8-21,22-60	.363		5
		4-25-61	.798		5			4-25-61	.880		5
		6-28-40	1.56		6			6-28,29-40	.146		6

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Reprinted on page 182 of Reference 5.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Reference No. <u>1/</u>	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Reference No. <u>1/</u>
OHIO—Continued						OKLAHOMA—Continued					
Coshocton						Cherokee					
26.32 5	349	9-23-45 6-12-57 6-28-57 1-21-59 8-21,22-60 4-25-61 6-28,29-40	0.321 .432 1.09 .290 .960 .275 .0887	1-40	4 4 4 4 5 5 6	34.13 W-13	1.99	7-4-60 5-21-61 6-2-61 6-9-62 9-14-62	1.17 1.51 2.83 .522 .681	7-60	5 5 5 6 6
26.33 92	920 (1.44)	9-23-45 6-12-57 6-28-57 1-21-59 8-21,22-60 4-25,26-61 6-28,29-40	.229 .282 .623 .282 .541 .470 .0804	1-39	4 4 4 4 5 5 6	34.14 W-14	2.16	5-21-61 6-2-61 6-9-62 9-14,15-62	1.68 2.29 .625 .919	9-60	5 5 6 6
26.34 94	1,520 (2.37)	9-23-45 6-12-57 6-28-57 1-21-59 8-21,22-60 4-25,26-61 6-28,29-40	.397 .437 .918 .348 .625 .503 .120	1-39	4 4 4 4 5 5 6	34.15 W-15	2.15	5-21-61 6-2-61 6-9-62 9-14,15-62	2.41 2.64 .578 .983	9-60	5 5 6 6
26.35 95	2,570 (4.02)	9-23-45 6-12-57 6-28-57 1-21-59 8-21,22-60 4-25-61 6-28,29-40	.362 .346 .614 .350 .411 .456 .1529	1-39	4 4 4 4 5 5 6	Stillwater					
26.36 97	4,580 (7.16)	6-4-41 9-23,24-45 7-11-46 6-12-57 6-28,29-57 1-21-59 ^{2/} 8-21,22-60 4-25-61 6-28,29-40	.360 .323 .211 .260 .724 .373 .272 .548 .204	1-37	3 3 3 4 3 4,5 5 5 6	37.1 W-1	16.7	4-18-57 ^{3/} 6-27,28-57 ^{3/} 10-1,2-59 10-2,3-59 5-28,29-60 5-21-61 6-7-62	6.99 2.46 2.669 1.82 3.0210 2.9243 3.06	7-51	4,5 4,5 4 4 5 5 6
26.37 994	17,500 (27.34)	9-23,24-45 6-28,29-57 1-21,22-59 8-21,22-60 4-25,26-61	.114 .4385 .2510 .1386 .2216	10-36	4 4 4 5 5	37.2 W-3	92.0	5-23,24-55 4-18-57 6-10-57 6-27,28-57 10-1,2-59 10-2,3-59 5-28-6-1-60 5-21-61 6-7,8-62	.936 4.52 .859 .934 1.749 1.24 1.4168 1.8575 1.43	7-51	3 3 3 4 4 5 5 6
26.38 174	52.8	8-21,22-60 4-25-61 6-13,14-60	0 1.034 .702	5-60	5 5 6	37.3 W-4	206	4-18-57 6-27-29-57 10-1,2-59 10-2,3-59 5-28-6-3-60 5-21-61 6-7,8-62	2.79 .865 1.633 .939 .9980 1.2552 1.15	7-51	4 4 4 4 5 5 6
26.39 194	187	8-21,22-60 4-25-61 6-13,14-60	.0992 .8697 .732	1-60	5 5 6	TEXAS					
OKLAHOMA						Riesel (Waco)					
Cherokee						42.2 C ^{4/}	579	4-24,25-57 5-9-57 5-13-57 6-23,24-59 7-9,10-61 7-16,17-61 6-4,5-62	.868 .112 .566 .625 .0498 .149 .314	2-38 3-49	4 4 4 4 5 5 6
34.10 W-10	1.68	5-21-61 6-2-61 6-9-62 9-14,15-62	2.58 2.76 1.13 3.77	8-60	5 5 6 6	42.3 D ^{4/}	1,110 (1.73)	6-10,11-41 6-15,16-42 7-15-50 4-24,25-57 5-3,4-57 6-23,24-59 12-31-59 7-16,17-61 7-23-61 6-4,5-62	.747 .322 .536 .797 .670 .604 .0697 .164 .0459 .223	12-37 3-49	3 3 3 3 4 4 4 5 5 6
34.11 W-11	2.12	5-21-61 6-2-61 6-9-62 9-14-62	1.20 2.03 .470 .698	8-60	5 5 6 6	42.4 G ^{5/}	4,380 (6.84)	2-14-59 7-23,24-59 11-4,5-59 12-31-59 7-16,17-61 7-23,24-61 6-9-11-62	.0487 .384 .0743 .0517 .0675 .0211 .0964	1-38 7-57	4 4 4 4 5 5 6
34.12 W-12	1.68	7-3,4-60 5-21-61 6-2-61 6-9-62 9-14-62	2.86 2.29 2.96 .925 1.19	7-60	5 5 6 6 6						

^{1/} For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

^{2/} Reprinted on page 208 of Reference 5.

^{3/} Reprinted on pages 252 and 253 of Reference 5.

^{4/} Watershed discontinued 6-30-43 to 3-1-49.

^{5/} Watershed discontinued 7-22-43 to 7-1-57.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Reference No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Reference No. 1/
TEXAS—Continued						TEXAS—Continued					
Riesel (Waco)						Riesel (Waco)					
42.6 W-1	176	6-10-41 3-26-46 4-27,28-49 4-24-57 5-13-57 6-4-57 6-23,24-59 6-15-61 7-16,17-61 6-9,10-62	3.40 .926 .627 2.20 1.64 1.09 1.89 .270 .132 2.18	7-37	3 3 3 3 4 4 4 5 5 6	42.16 Y-8 <u>7/</u>	20.8	4-24-57 5-13-57 6-4-57 6-23,24-59 6-18,19-61 6-9,10-62	2.71 2.23 2.15 1.68 .0782 1.86	3-39 1-49	4 4 4 4 5 6
42.7 W-2	130	4-24-57 5-13-57 6-23,24-59 5-22,23-61 6-25-61 6-9,10-62	2.04 1.54 1.42 .0459 .201 .943	7-37	4 4 4 5 5 6	42.17 Y-10 <u>8/</u>	18.6	4-24-57 5-13-57 6-4-57 6-23,24-59 5-25-61 6-15-61 6-9-62	2.70 1.91 2.40 .703 .366 .338 .394	7-38 5-46	4 4 4 5 5 6
42.8 W-6 <u>2/</u>	42.3	4-24-57 5-13-57 6-24,25-59 6-18-61 6-25-61 6-9-62	2.20 1.64 1.60 .230 .135 1.41	5-39 1-46	4 4 4 5 5 6	42.24 SW-12 <u>9/</u>	2.97	6-4-57 6-23,24-59 6-9-62	.610 .714 .468	1-38 6-47	4 4 6
42.10 W-10 <u>3/</u>	19.7	4-24-57 5-13-57 6-4-57 6-23,24-59 5-22,23-61 6-25-61 6-9,10-62	2.79 1.98 .853 1.96 .422 .334 .824	8-38 6-46	4 4 4 5 5 6	42.28 SW-17 <u>10/</u>	2.99	3-31-57 4-24-57 5-13-57 6-23,24-59 6-25-61 7-16,17-61 6-9-62	.441 2.90 1.74 2.17 .604 .348 3.79	2-39 1-48	4 4 4 4 5 5 6
42.11 Y <u>4/</u>	309	3-31,4-1-57 4-24,25-57 6-4,5-57 6-23,24-59 6-25-61 7-16,17-61 6-9-11-62	.150 1.81 1.43 .661 .205 .0598 .711	5-37 5-46	4 4 4 4 5 5 6	42.31 P-1 <u>11/</u>	0.243	6-25-61 7-16,17-61 6-9-62	1.67 .131 3.76	1-38 1-60	5 5 6
42.12 Y-2	132	4-24-57 5-13-57 6-4-57 6-23,24-59 6-25-61 7-16,17-61 6-9,10-62	1.68 1.24 1.79 .796 .253 .0721 .899	1-39	4 4 4 4 5 5 6	42.32 P-2 <u>11/</u>	0.243	6-25-61 7-16,17-61 6-9-62	1.67 .188 3.73	1-38 1-60	5 5 6
42.13 Y-4 <u>5/</u>	79.9	4-24,25-57 5-13-57 6-4,5-57 6-23,24-59 6-25-61 7-16,17-61 6-9,10-62	1.61 1.14 1.59 .789 .325 .0622 .663	1-39 1-46	4 4 4 4 5 5 6	42.33 P-3 <u>11/</u>	0.243	6-25-61 7-16,17-61 6-9-62	1.53 .310 3.43	1-38 1-60	5 5 6
42.14 Y-6 <u>6/</u>	16.3	4-24-57 5-13-57 6-4-57 6-23,24-59 5-25-61 6-15-61 6-9,10-62	1.05 .803 .931 1.03 .211 .815 1.00	1-39 5-47	4 4 4 4 5 5 6	42.34 P-4 <u>11/</u>	0.243	6-25-61 7-16,17-61 6-9-62	1.86 .245 3.51	1-38 1-60	5 5 6
42.15 Y-7 <u>6/</u>	40.0	4-24-57 5-13-57 6-4-57 6-23,24-59 5-22,23-61 7-16,17-61 6-9,10-62	2.36 2.03 1.37 1.76 .152 .0687 .953	1-39 5-47	4 4 4 4 5 5 6	VERMONT					
						North Danville					
						67.1 W-1	10,610 (16.58)	10-24,25-59 7-30-8-4-60 6-2-5-61 7-31,8-1-62	.1029 .0131 .0207 .0410	11-58	4 5 5 6
						67.2 W-2	146	11-28,29-59 7-30,31-60 6-2,3-61 6-23,24-62	.0360 .0224 .0262 .0162	10-58	4 5 5 6
						67.3 W-3	2,067 (3.23)	7-30-8-2-60 6-2-5-61 7-31,8-1-62	.0177 .0180 .0348	1-60	5 5 6
						67.5 W-5 Sleepers River	27,469 (42.92)	7-30-8-5-60 6-2-5-61 7-31,8-1-62	.0131 .0200 .0271	1-60	5 5 6

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Watershed discontinued 6-30-43 to 1-1-46.

3/ Watershed discontinued 6-30-43 to 6-1-46.

4/ Watershed discontinued 6-30-43 to 5-1-46.

5/ Watershed discontinued 6-30-43 to 1-1-46.

6/ Watershed discontinued 6-30-43 to 5-1-47.

7/ Watershed discontinued 6-30-43 to 1-1-49.

8/ Watershed discontinued August 1943 through April 1946.

9/ Watershed discontinued 6-30-43 to 6-1-47.

10/ Watershed discontinued 6-30-43 to 1-1-48.

11/ Watershed discontinued 7-21-43 to 1-1-60.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer-ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer-ence No. 1/
VIRGINIA						VIRGINIA—Continued					
Blacksburg						Blacksburg					
13.2	19.3	8-15-39	1.10	5-39	3	13.14	389	9-5-10-60	0.0427	9-60	5
W-III		6-14-40	.103		3	W-1		2-25-28-61	.1200		5
		6-5-42	1.90		3	Fosters		5-1,2-62	.1486		6
		7-6-49	.420		3	Creek					
		8-18-56	.073		4	13.15	1,058	8-24,25-61	.0423	9-60	5
		7-17,18-57	.118		4	W-1	(1.65)	11-6-8-61	.2610		5
		9-6-57	.039		4	Chestnut		6-13,14-62	.2317		6
		9-10-57	.034		4	Branch					
		8-21-60	1.775		5						
		9-4-62	.0012		6						
13.3	3.49	5-5-58	.747	9-51	5	WEST VIRGINIA					
W-IV		9-30-59	.280		5	Moorefield					
		4-4-60	.120		5	66.1	8.25	8-3-58 ^{3/}	.4436	6-58	4,5
		9-4-62	.089		6	W-1		5-7-10-60	.1092		5
13.4	6.08	5-5-58	.705	1-52	5			8-9-61	.0686		5
W-V		9-30-59	.276		5		^{2/} 8.57	5-23,24-62	.0944		6
		4-4-60	.060		5	66.2	10.06	8-3,4-58 ^{3/}	.7587	6-58	4,5
		9-4-62	.004		6	W-2		5-7-10-60	.1599		5
13.5	7.70	6-23-55	.317	9-51	5			8-9-61	.1686		5
W-VI		5-5-8-58	.953		5		^{2/} 9.73	5-23,24-62	.2496		6
		4-4-7-60	.207		5	66.4	6.32	8-3,4-58 ^{3/}	.6936	6-58	4,5
		9-4-62	.071		6	W-4		5-7-10-60	.1377		5
13.6	3,054 (4.77)	7-29,30-57	.0532	6-57	4			8-9-61	.0935		5
W-I		9-13,14-57	.0344		4			5-23,24-62	.2338		6
Thorne		1-14-58	.0347		4	66.5	9.55	8-3,4-58	.6513	6-58	4
Creek		4-3,4-60	.0397		5	W-5		5-7-10-60	.1593		5
		8-2,3-61	.0043		5			8-11-61	.0235		5
		10-14-16-62	.1152		6			5-23,24-62	.1684		6
13.7	786 (1.23)	7-28,29-57	.0728	8-57	5	WISCONSIN					
W-I		7-21-59	.0189		5	Colby					
Crab		7-27-59	.0087		5	29.1	345	7-28,29-49	.0808	5-49	3
Creek		10-16,17-60	.0066		5	W-1		5-13,14-56	.151		3
		8-25-28-61	.1656		5			6-4,5-58	.576		3
		6-23,24-62	.1403		6			5-16-18-60	.1847		5
13.8	893 (1.40)	5-30,31-59	.2874	8-57	4			5-4,5-59	.1550		6
W-I		7-22,23-59	.8471		4			9-13,14-62	.3231		6
Brush		9-6,7-59	.0862		4	Fennimore					
Creek		8-14,15-60	.1510		5	31.1	330	8-12-43	.906	7-38	3
		8-31,9-1-59	.0697		5	W-1		7-11,12-44	.303		3
		11-9-11-62	.0667		6			6-28-45	1.01		3
13.9	182	7-10-12-59	.0816	1-58	5			6-24-49	.723		3
W-I		10-8-59	.3908		5			7-15,16-50	1.04		4
Powells		4-9-12-61	.4277		5			8-5,6-51	1.69		4
Creek		4-12-14-61	.2502		5			8-3,4-40	.774		6
		5-31,6-1-62	1.314		6	31.2	22.8	8-12-43	.371	7-38	3
13.10	1,471 (2.30)	10-10-12-59	1.1156	1-58	5	W-2		7-11-44	2.69		3
W-I		8-26-28-60	.2566		5			6-28-45	2.68		3
Little		9-2-4-60	.1793		5			6-24-49	.730		3
Winns		8-23-61	.0672		5			7-15,16-50	1.56		4
Creek		6-20,21-62	.0612		6			8-5,6-51	2.14		4
13.11	555	6-26-29-58	.1289	4-58	5			8-3-40	.954		6
W-I		7-10,11-59	.1303		5	31.3	52.5	8-12-43	1.125	7-38	4
Rocky		9-30-10-2-59	.0282		5	W-3		7-11-44	.6640		4
Run		6-7,8-61	.2240		5			6-28-45	1.63		4
Branch		6-20,21-62	.0769		6			6-24,25-49	.4785		4
13.12	192	6-9,10-58	.0921	6-58	5			7-15,16-50	1.30		4
W-I		6-12,13-58	.4323		5			8-5,6-51	1.40		4
Pony		6-2-10-59	.2842		5			8-3-40	.693		6
Mt.		9-30,10-1-59	.0367		5						
Branch		5-26,27-62	.0247		6						
13.13	2,023 (3.16)	9-30-10-8-59	.2855	10-59	5						
W-I		6-9,10-61	.0160		5						
Chub		8-25-61	.0061		5						
Run		6-19,20-62	.0931		6						

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Drainage area changed to this value on 1-1-62.

3/ Original tabular data and graph in Reference 4 revised in Reference 5.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Reference No. ^{1/}	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Reference No. ^{1/}
WISCONSIN—Continued											
Fennimore											
31.4	171	8-12-43	1.21	6-38	3						
W-4		7-11-44	.362		3						
		6-28-45	1.31		3						
		6-24-49	1.00		3						
		7-15, 16-50	1.07		4						
		8-5, 6-51	1.76		4						
		8-3-40	.950		6						
La Crosse											
32.3	2.71	8-16-40	1.92	1-37	4						
CW		6-29-41	1.25		4						
		9-15-41	2.58		4						
		6-23-52	4.50		4						
		7-19-52	3.55		4						
		8-26, 27-59	2.78		4						
32.4	2/2.95	6-23-52	3.39	1-52	4						
CWA		7-19-52	3.53		4						
		8-26, 27-59	2.30		4						

^{1/} For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

^{2/} Erroneously reported as 3.06 acres in References 1 and 5.





